ISD-CL300A

■ To calibrate optical measuring instruments, also can be used
as optical positioning elements in precision machine tools

STANDARD TYPE

Code	Measuring range	Graduation	Length	Width	Thickness	Accuracy
ISD-CL100A	100mm	1mm	130mm	30mm	5mm	1µm
ISD-CL200A	200mm	1mm	230mm	30mm	5mm	1µm
ISD-CL300A	300mm	1mm	330mm	30mm	5mm	1µm
ISD-CL400A	400mm	1mm	430mm	30mm	5mm	1µm
ISD-CL500A	500mm	1mm	530mm	30mm	5mm	2µm

ECONOMIC TYPE

Code	Measuring range	Graduation	Length	Width	Thickness	Accuracy
ISD-CL100B	100mm	1mm	130mm	30mm	5mm	3µm
ISD-CL200B	200mm	1mm	230mm	30mm	5mm	3µm
ISD-CL300B	300mm	1mm	330mm	30mm	5mm	3µm
ISD-CL400B	400mm	1mm	430mm	30mm	5mm	3µm
ISD-CL500B	500mm	1mm	530mm	30mm	5mm	3µm

PROFESSIONAL TYPE (The scale is between two layers of glass and will not be worn off)

Code	Measuring range	Graduation	Length	Width	Thickness	Accuracy
ISD-CL100S	100mm	1mm	130mm	30mm	10mm	1µm
ISD-CL200S	200mm	1mm	230mm	30mm	10mm	1.5µm
ISD-CL300S	300mm	1mm	330mm	30mm	15mm	2.5µm
ISD-CL400S	400mm	1mm	430mm	30mm	15mm	3µm
ISD-CL500S	500mm	1mm	530mm	30mm	15-25mm	3.5µm

24

Toolmaker Microscopes
Page 595-596

Digital Microscopes
Page 597-635

Cutting Tools Microscopes
Page 622

Industrial Microscopes
Page 636-637

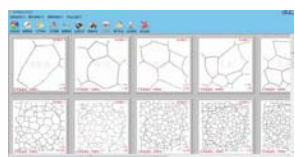**Metallurgical Microscopes**
Page 638-641

Zoom Stereo Microscopes
Page 642-648

Polarizing Microscopes
Page 649

Digital Cameras For Microscopes
Page 650-658

Metallurgical Analysis Softwares
Page 657-658

Portable Measuring Microscopes
Page 659

Table Magnifiers With Illumination
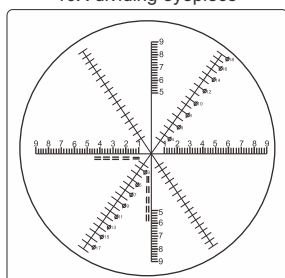Page 660

Digital Magnifiers
Page 661-662

Magnifiers
Page 663-667

Telescoping Inspection Mirrors
Page 667

Telescoping Pick-up
Page 668

INSPECTION CERTIFICATE

VIDEO

10X dividing eyepiece

the horizontal and vertical scale lines are used for length measurement, the graduation is 0.2mm. the two diagonals scale lines are used for diameter measurement, the graduation is 1mm (when using 1X objective)

10X eyepiece

3X objective

X-axis reset switch

Y-axis reset switch

illumination control panel

laser positioning switch

aperture diaphragm adjustment knob

computer is optional

ISD-VMM215

SPECIFICATION

Code	binocular	ISD-VMM205	ISD-VMM215	ISD-VMM225	ISD-VMM235
	monocular	ISD-VMM205D	ISD-VMM215D	ISD-VMM225D	ISD-VMM235D
X/Y axis travel		150×100mm	200×100mm	250×150mm	300×200mm
Z axis travel		150mm	150mm	200mm	200mm
Metal stage size		354×228mm	404×228mm	450×280mm	500×330mm
Glass stage size		210×160mm	260×160mm	306×196mm	350×250mm
Resolution of X/Y/Z axis		0.5µm			
Accuracy of X/Y axis		≤(3.5+L/100)µm (L is the measuring length in mm)			
Repeatability		2µm			
Camera		1/3" color CCD, 0.3M pixel			
Optical magnification		30X (with 3X objective)			
Image magnification		114X (on 19" monitor)			
Illumination		surface and contour with adjustable LED			
Max. weight of workpiece		25kg			
Power supply		100V~240V, 50/60Hz			
Operation system		Windows 7/8/10			
Drive method		manual			
Dimension (L×W×H)		540×667×850mm	540×667×850mm	800×675×920mm	800×675×920mm
Weight		100kg	110kg	135kg	140kg

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To be continued

DATA PROCESSING UNIT

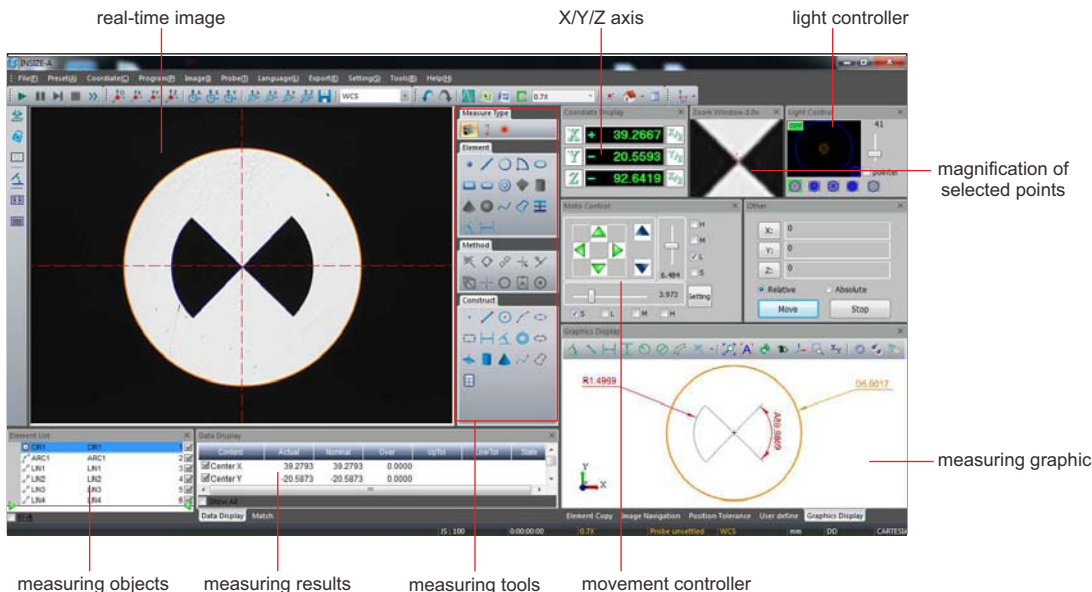|	
Output	RS232
Function	☼ simple measuring tools
	☒ measure coordinate of points
	⊶ measure lines
	⊚ measure center coordinate, radius of circle with three points
	◺ measure distances betwen two objects
	◁ measure angles
	⌐ set origin of coordinate
	◪ skew and calibrate the workpiece
	⬚ measure rectangle (including length, width, perimeter and center coordinate)
	⟁ measure thread (including thread diameter, screw pitch, screw angle)
	⬯ measure slot (including center coordinate, length, width)

STANDARD DELIVERY

Main unit	1 pc
Video card with dongle	1 pc
Software disc	1 pc
Calibration glass chart	1 pc
Demo sample	1 pc
Foot switch	1 pc
3X objective	1 pc

OPTIONAL ACCESSORY

1X objective	**ISD-VMM-LENS1X**
5X objective	**ISD-VMM-LENS5X**
10X objective	**ISD-VMM-LENS10X**
Toolmaker microscopes (with computer)	code: **ISD-VMM205A** (binocular) **ISD-VMM215A** (binocular) **ISD-VMM225A** (binocular) **ISD-VMM235A** (binocular)
	code: **ISD-VMM205DA** (monocular) **ISD-VMM215DA** (monocular) **ISD-VMM225DA** (monocular) **ISD-VMM235DA** (monocular)

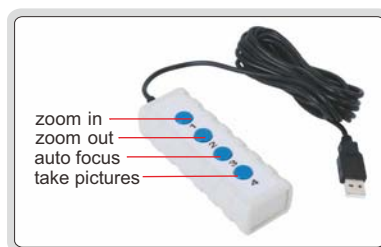**SOFTWARE (INCLUDED)**

■ Refer to page 590~591 for details

real-time image

X/Y/Z axis

light controller

magnification of selected points

measuring graphic

measuring objects   measuring results   measuring tools   movement controller

AUTO FOCUS DIGITAL MICROSCOPES (LARGE VIEW FIELD)

TAKE PICTURES AND VIDEOS **MEASUREMENT** **CAN BE CONNECTED TO PC AND TV AT THE SAME TIME**

AUTO FOCUS

USB port
USB port
power
RJ45 port
I/O port
HDMI port
built-in lens

360° rotation
front/back adjustment
stand
locking ring
up/down adjustment
LED illumination

TV is optional (HDMI port)

computer (optional, RJ45 port)

connect to computer through cable to save pictures (software for computer is included)

5302-AF105

mouse

optical zoom adjustment

- Auto focus camera
- Take pictures and videos
- Can be connected to TV (HDMI port) and computer (RJ45 port) at the same time
- Built-in measuring software for TV
- Measuring software for computers is included
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red /yellow/black/brown colors)

zoom in
zoom out
auto focus
take pictures

controller (**optional**, for TV)

TV SOFTWARE (INCLUDED)

focus
auxiliary tools
measuring tools
calibration
cross hair

VIDEO

SPECIFICATION

Code	5302-AF105 (standard type)	5302-AF108 (high-definition type)
Pixel	2M	8M
Resolution	1920×1080	3840×2160
Magnification	1.4X~25.8X (on 28" TV)	1.4X~51.6X (on 28" TV)
Sensor	1/2.8" CMOS	
Auto focus distance	100mm~∞	
Output	HDMI, RJ45	
Frame rate	HDMI: 60fps, RJ45: 50fps	
Power supply	power adapter	
Dimension (L×W×H)	500×280×410mm	
Weight	17kg	

VIEW FIELD

Focus distance	Adjustable magnification (on 28" TV)	View field
100mm	3.9~25.8X	24×14~168×91mm
150mm	2.6~20X	30×17~240×128mm
200mm	2.1~17X	37×20~315×170mm
250mm	1.7~14.7X	42×24~385×210mm
270mm	1.4~14X	43×25~415×225mm

MEASURING ACCURACY

Optical magnification (5302-AF105)	Optical magnification (5302-AF108)	Measuring accuracy
2X	2X	±0.1mm
4X	4X	±0.1mm
6X	6X	±0.04mm
8X	8X	±0.02mm
14X	14X	±0.02mm
/	28X	±0.02mm

STANDARD DELIVERY

Main unit (with stand)	1 pc
LED illumination	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
HDMI cable (for TV)	1 pc
Network cable (for computer)	1 pc
Switch	1 pc
Software for computer	1 pc
Power adapter	2 pcs

OPTIONAL ACCESSORY

28" 4K TV	5302-AF-TV28
32" 4K TV	5302-AF-TV32
Computer	5302-AF-COMPUTER
Controller	5302-AF-CONTROLLER

25

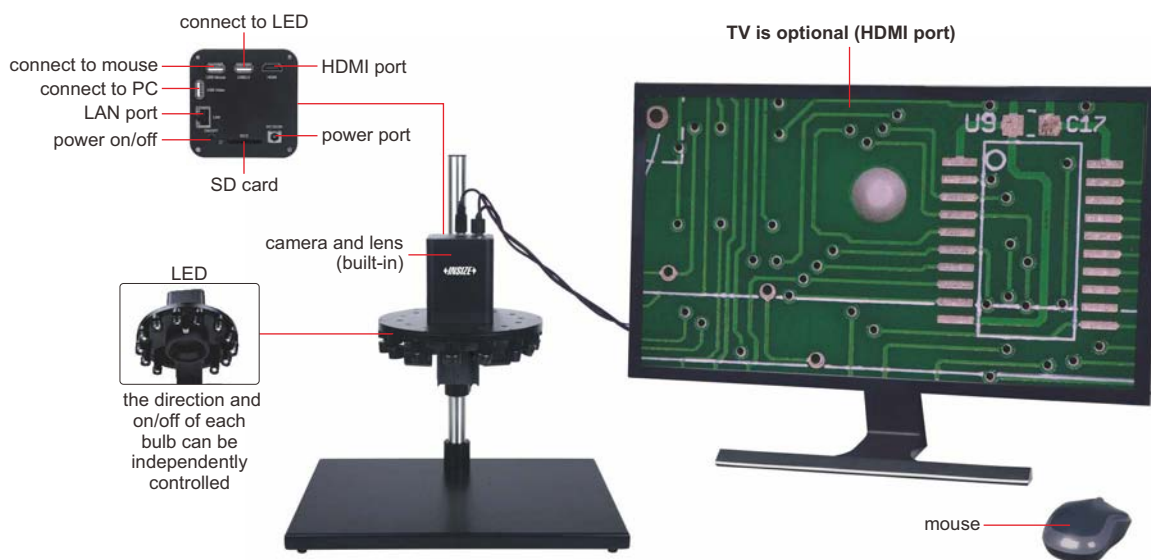# HIGH-DEFINITION AUTO FOCUS DIGITAL MICROSCOPE (LARGE VIEW FIELD)
CODE 5320-AF410

| AUTO FOCUS | MEASUREMENT | TAKE PICTURES AND VIDEOS | LED INDEPENDENT ADJUSTMENT | CAN BE CONNECTED TO PC AND TV AT THE SAME TIME |

connect to LED

TV is optional (HDMI port)

connect to mouse
connect to PC
LAN port
HDMI port
power on/off
power port
SD card

camera and lens (built-in)

LED

the direction and on/off of each bulb can be independently controlled

mouse

VIDEO

- Auto focus camera
- Take pictures and videos
- Built-in measuring software
- Automatic exposure, sharpening, denoising and white balance
- 4K/1080P automatically switched by display resolution
- Display actual magnification
- Digital magnification
- Motorized light control
- Display cross hair and gridline

computer and TV are optional

can be connected to PC and TV at the same time

SPECIFICATION

Magnification (on 28" TV)	2.4X~43.7X
View field	14.2×8~255×145mm
Auto focus distance	200~255mm
Sensor	1/2.8" CMOS
Pixel	8M
Resolution	3840×2160
Frame rate	30fps
Output	HDMI/USB/LAN
Power supply	power adapter
Dimension (L×W×H)	400×300×450mm
Weight	5.8kg

MEASURING ACCURACY (ON 28" TV)

Optical magnification	Measuring accuracy
2X	±0.1mm
4X	±0.1mm
6X	±0.04mm
10X	±0.02mm
14X	±0.02mm
18X	±0.01mm

STANDARD DELIVERY

Main unit (with stand)	1 pc
LED illumination	1 pc
32G memory card and holder	1 pc
Mouse	1 pc
HDMI cable	1 pc
USB 2.0 cable	1 pc
Power adapter	1 pc

25

SOFTWARE FOR TV (INCLUDED)

magnification

measuring tools

control toolbar

auto focus control panel
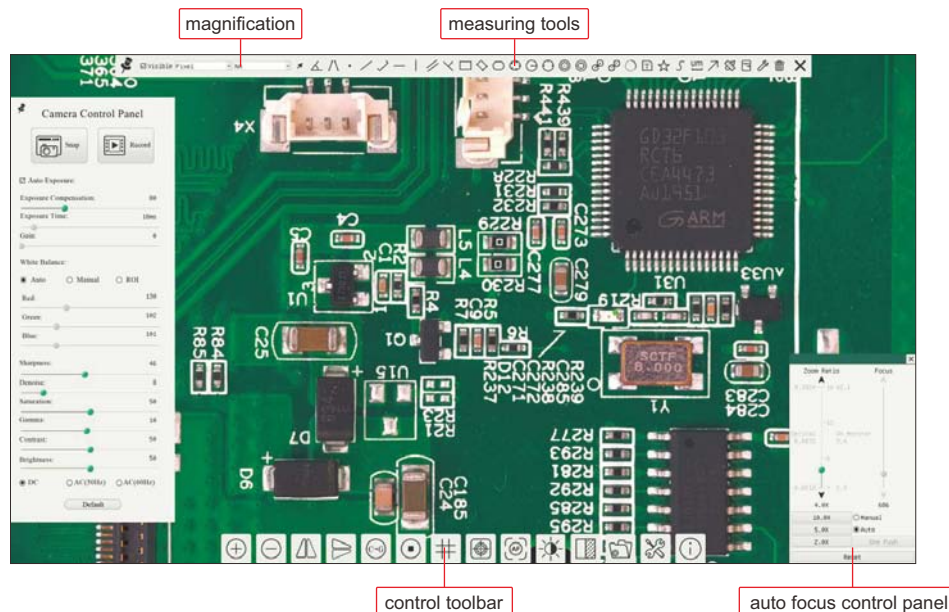
PROFESSIONAL SOFTWARE (INCLUDED, FOR COMPUTER)

measuring items

real-time gray calibration

binary

separate target and background

3D plot

visualize the distribution of image brightness and color

selectable resolution

histogram (quantify the distribution of color and brightness)

white balance (reduce color difference)

flat field balance (reduce brightness difference)

dark field balance (reduce thermal noise)
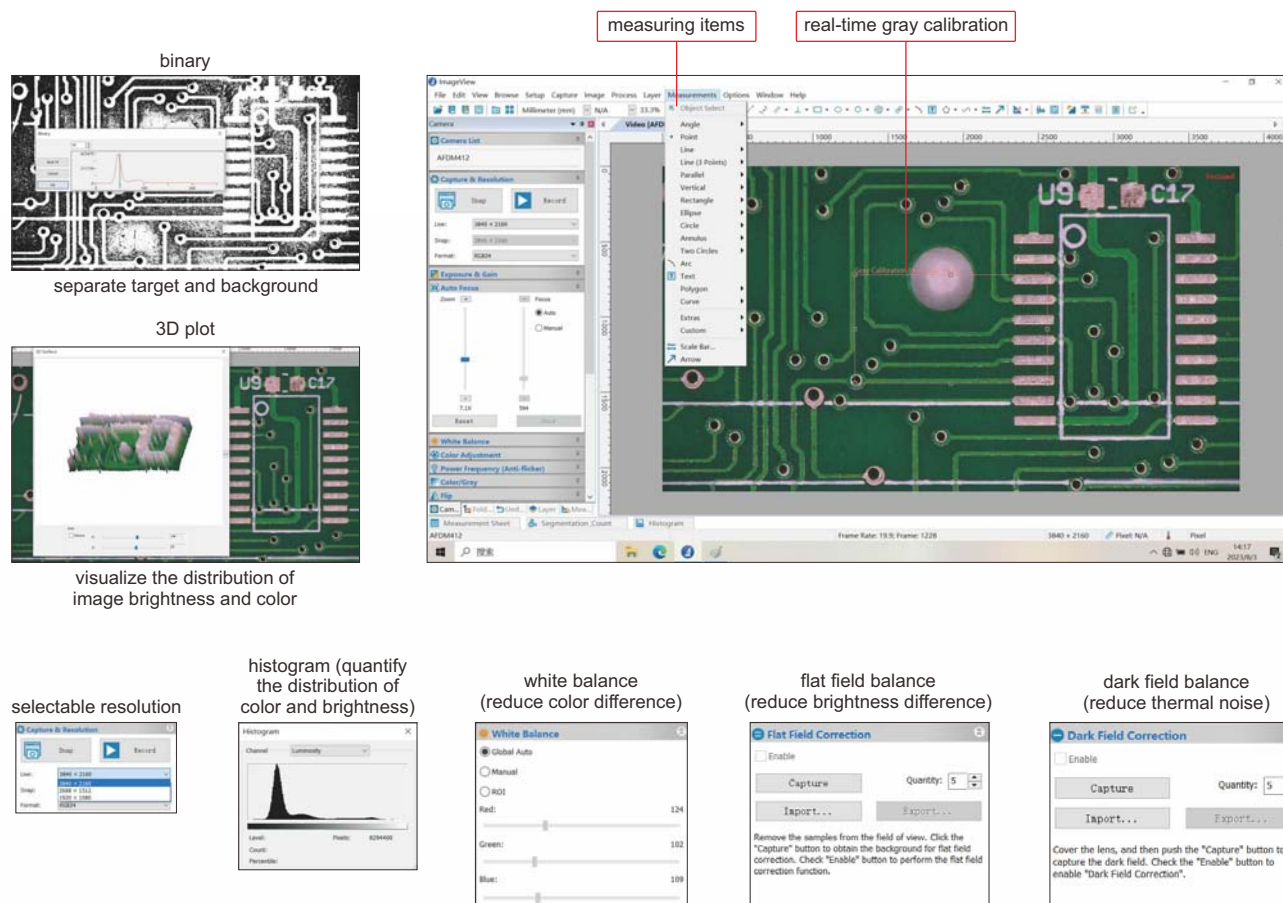
the software can control image completely, including measurement, image stitching, image gray processing, RGB histogram observation, image color sampling, 3D plot (3D representation of image intensity), image exposure, white balance, image bit depth, flat field correction and dark field correction, etc.

25

HIGH-DEFINITION AUTO FOCUS MEASURING MICROSCOPE
CODE 5315-S710

IMAGE STITCHING   **DUAL SCREEN OPERATION**   **FOCUS STACKING**

mode switch
HDMI port
USB port
memory card
power
13.3" LCD (included)

step-zoom lens 0.75X~5X (zoom)

LED

fine focus knob (graduation: 2µm)

mouse

VIDEO

focus stacking

focus on the top
+
focus on the bottom

clear image of both top and bottom
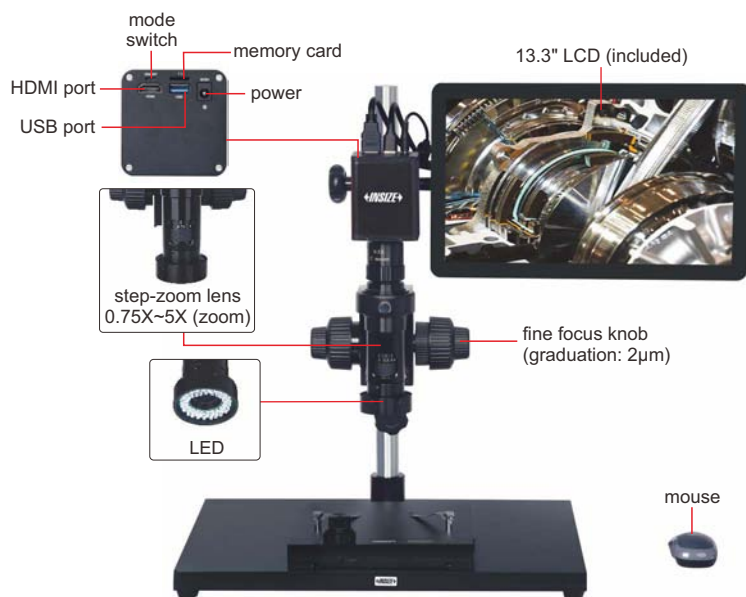
- 12M high-definition image
- Switchable LCD mode and computer mode
- Take pictures or videos, save to memory card
- Measurement results can be sent to Excel
- Auto focus
- Automatic white balance and exposure

calibration plate (included)

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)

computer is optional

switchable LCD mode and computer mode (can't display both at the same time)

stage moving knob

X-Y metal stage (included)
(X-Y travel: 100×86mm)

image stitching

+ **+** →

adjust the X-Y metal stage to move the workpiece slowly to generate a stitched image automatically

To be continued

25

SPECIFICATION

Magnification	15X~100X (on 13.3" LCD)
Sensor	1/1.7" CMOS
Pixel	12M
Resolution	1920×1080
Frame rate	30fps
Output	HDMI/USB
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (on 13.3" LCD)

Specification	Camera adapter	
	0.5X (included)	1X (optional)
Magnification	15~100X	30~200X
Focus distance	80±2mm	80±2mm
View filed	20.0×11.2~5.5×3.1mm	10.0×5.6~2.7×1.5mm

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
32G memory card	1 pc
Mouse	1 pc
X-Y metal stage	1 pc

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
Computer	ISM-DL-COMPUTER
LED light	page 626~627
Auxiliary objective	page 628

MAGNIFICATION AND MEASURING ACCURACY (on 13.3" LCD)

Objective magnification	Image magnification	Measuring accuracy
0.75X	15X	±20µm
1X	20X	±20µm
1.5X	30X	±20µm
2X	40X	±20µm
2.5X	50X	±20µm
3X	60X	±20µm
3.5X	70X	±20µm
4X	80X	±10µm
4.5X	90X	±10µm
5X	100X	±10µm

SOFTWARE FOR LCD (INCLUDED)

focus
AF ROI
AE
AWB

aassist tools
main tool
calibration
list show

SOFTWARE FOR COMPUTER (INCLUDED)

real-time image
calibration
measuring tools
focus mode
focus area
exposure
white balance
function
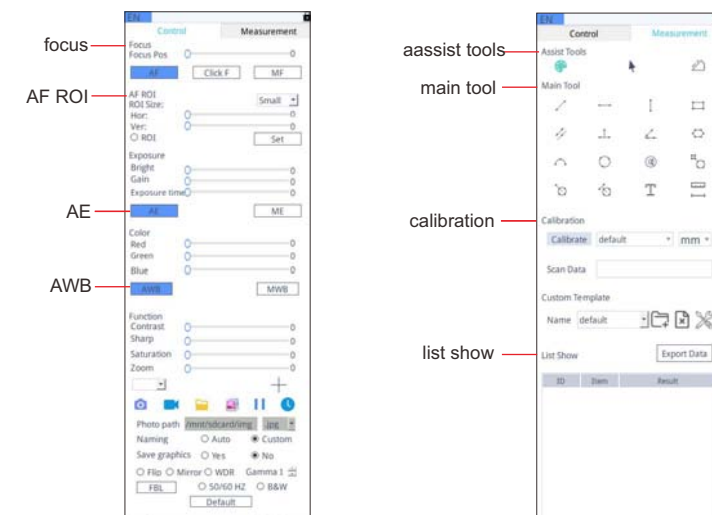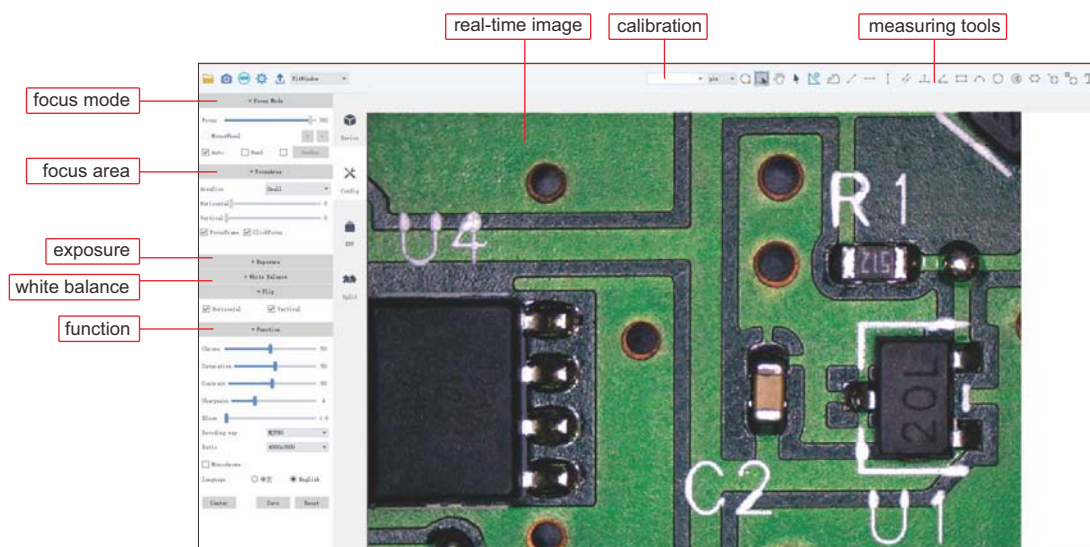
AUTO FOCUS DIGITAL MICROSCOPE
CODE 5303-AF103

| AUTO FOCUS | TAKE PICTURES AND VIDEOS | MEASUREMENT |

VIDEO

USB port

HDMI port — power

13.3" LCD (included)

0.75X~5X zoom lens

focus adjustment

LED light

mouse

16G USB flash disk (included)

0.5X camera adapter (included)

1X auxiliary objective

1X auxiliary objective (included)

- 1080P high-definition image
- Auto focus camera
- Take pictures and videos, saved to USB flash disk
- Picture review, picture compare
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/ brown colors)
- Built-in software without computer, operation by mouse
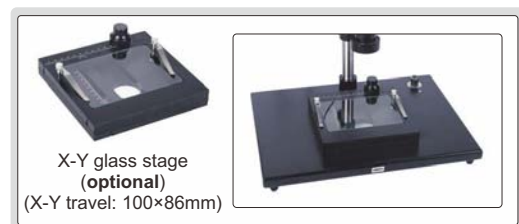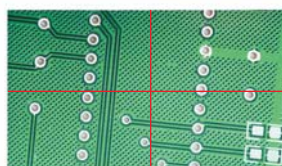
display cross hair (blue/green/red/yellow/ black/brown colors)

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)

X-Y glass stage (**optional**) (X-Y travel: 100×86mm)

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
1X (included)	magnification	20~123X	40~246X
	focus distance	48~84mm	48~84mm
	view field	13×7~2.2×1mm	6.3×3.5~1.1×0.5mm
	measuring accuracy	±0.02mm	±0.02mm
2X (optional)	magnification	40~246X	80~492X
	focus distance	24~42mm	24~42mm
	view field	6.5×3.5~1.1×0.5mm	3.3×1.8~0.6×0.3mm
	measuring accuracy	±0.02mm	±0.02mm

SPECIFICATION

Magnification	20X~123X
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm
Weight	6.5kg

AUTO FOCUS DISTANCE

Zoom objective scale	0.75X	1X	1.5X	2X	2.5X
Auto focus distance (mm)	48~84	50~78	55~73	62~71	65~70

Zoom objective scale	3X	3.5X	4X	4.5X	5X
Auto focus distance (mm)	66~70	67~70	68~70	68~70	68~70

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	2 pcs

OPTIONAL ACCESSORY

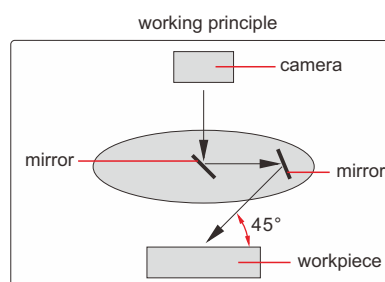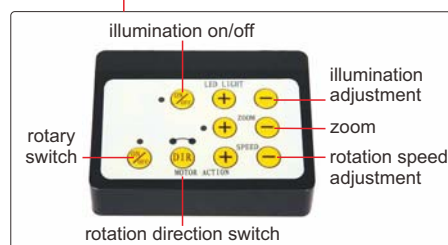| 1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
X-Y glass stage (travel: 100×86mm)	ISM-DL-STAGE
X-Y metal stage	ISM-DL-STAGE1
LED light	page 626~627
Auxiliary objective	page 628

25

TAKE PICTURES AND VIDEOS

SUITABLE TO CHECK CONVEX OBJECTS AND WALL OF HOLE

3D MOTORIZED ROTATION MICROSCOPE
CODE 5301-D400

USB port

HDMI port — power

21.5" LCD (included)

focus adjustment

360° rotation lens with LED

0.7X~4.5X zoom

X-Y metal stage

rotation controller

mouse

illumination on/off

illumination adjustment

rotary switch

zoom

rotation speed adjustment

rotation direction switch

0°

270°

90°

180°

360° rotation observation

working principle

camera

mirror

mirror

45°

workpiece

VIDEO

25

SPECIFICATION

Magnification	15X~100X
View field	4.2×2.7mm~28×18mm
Focus distance	40mm
View angle	45°
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Rotation speed	2~4RPM
Power supply	110/220V, 50/60Hz
Dimension (L×W×H)	570×300×430mm
Weight	10kg

- 1080P high-definition 3D image
- Take pictures and videos, save to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio and gain are adjustable

STANDARD DELIVERY

Main unit	1 pc
Rotation controller	1 pc
X-Y metal stage	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
Power adapter	2 pcs

3D MANUAL ROTATION MICROSCOPE
CODE 5313-S407

TAKE PICTURES AND VIDEOS

SUITABLE TO CHECK CONVEX OBJECTS AND WALL OF HOLES

USB port
HDMI port
power
13.3" LCD (included)
VIDEO
360° manual rotation lens with LED
focus adjustment
0.7X~4.5X zoom
rotation handle
illumination controller
X-Y metal stage
mouse

working principle
camera
mirror
mirror
45°
workpiece

0°
90°
180°
270°

360° rotation observation
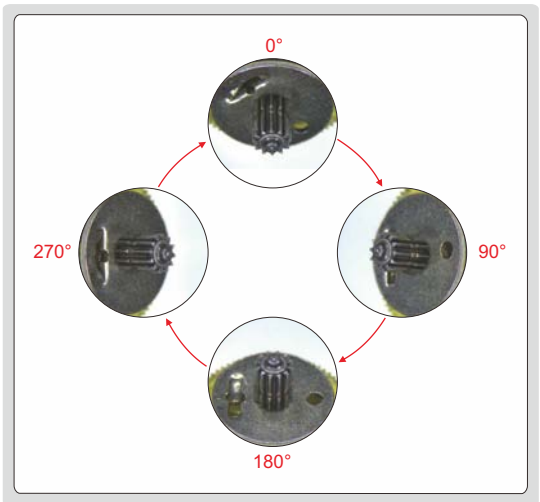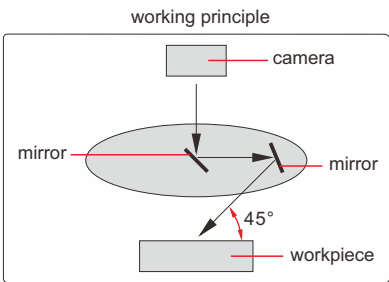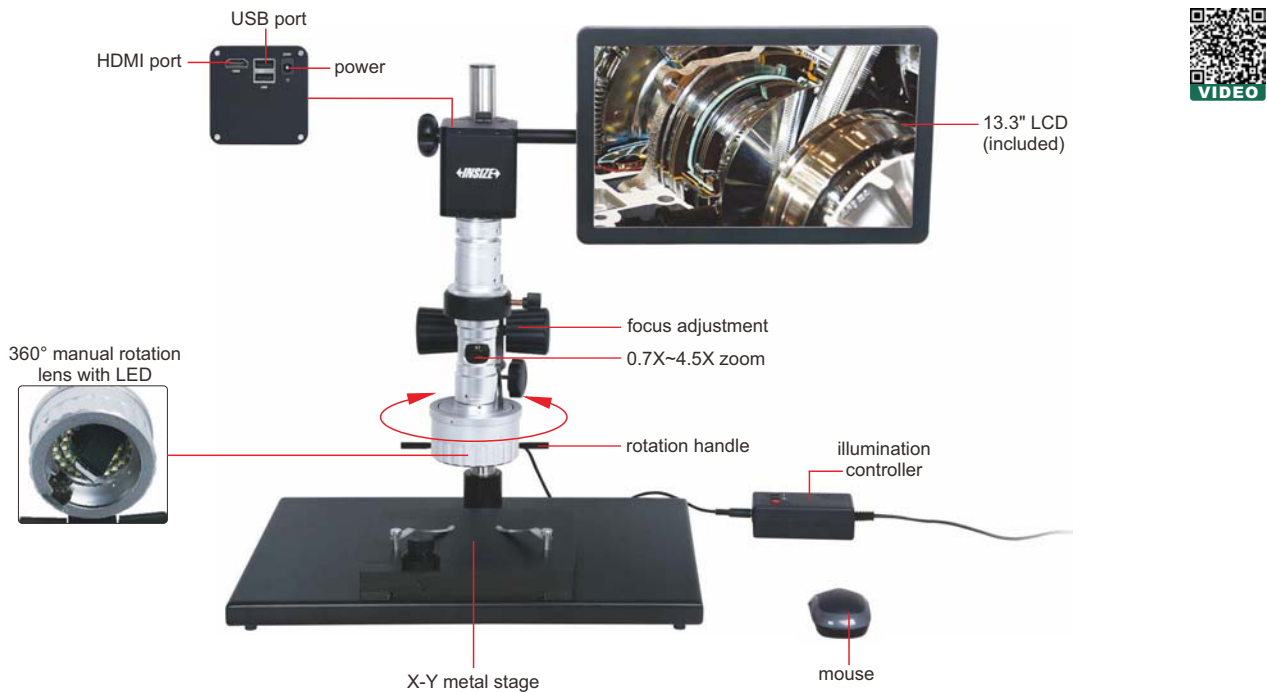
SPECIFICATION

Magnification	18X~120X
View field	2.4×1.5mm~16×9mm
Focus distance	20mm
View angle	45°
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Power supply	220V, 50/60Hz
Dimension (L×W×H)	570×300×430mm
Weight	10kg

STANDARD DELIVERY

Main unit	1 pc
X-Y metal stage	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
Power adapter	2 pcs

MEASUREMENT

TAKE PICTURES

BUILT-IN SOFTWARE WITHOUT COMPUTER

POPULAR MODEL

DIGITAL MEASURING MICROSCOPE (BASIC TYPE)
CODE 5318-MD60

HDMI port
power
USB port
13.3" LCD (included)
0.7X~4.5X lens
focus adjustment
LED light
mouse

VIDEO

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Brightness, contrast ratio, gain are adjustable

16G USB flash disk (included)

white/black plate (included)

glass calibration rule (graduation 0.1mm, included)

SPECIFICATION

Magnification	12.5X~80X
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Measuring accuracy	±0.02mm
Lines	cross lines, scale lines (number, color and position of lines are adjustable)
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	380×260×350mm
Weight	4.5kg
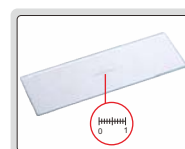
MAGNIFICATION AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter
		0.5X (included)
0.5X (optional)	magnification	6.2~40X
	view field	47×26~7.4×4mm
1X (included)	magnification	12.5~80X
	view field	23.5×13~3.7×2mm
2X (optional)	magnification	25~160X
	view field	11.8×6.5~1.8×1mm

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
White/black plate	1 pc
Glass calibration rule	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	3 pcs

OPTIONAL ACCESSORY

0.5X auxiliary objective	5318-OB05X
2X auxiliary objective	5318-OB2X

MEASURING SOFTWARE (INCLUDED)

auxiliary tools
measuring tools
calibration
lines
real-time image

25
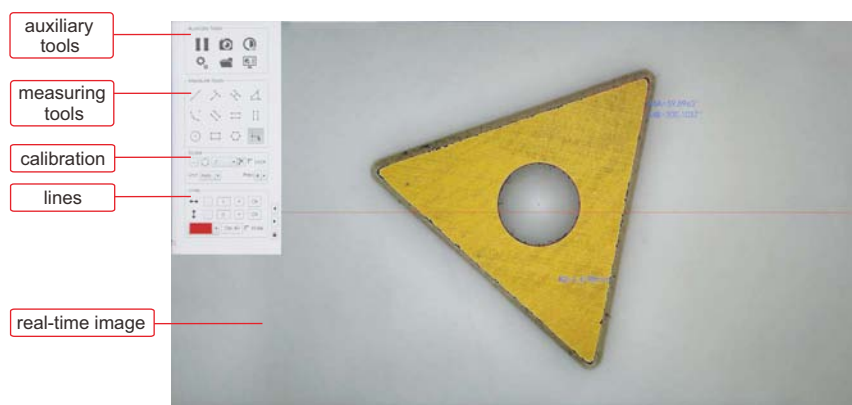
DIGITAL MEASURING MICROSCOPES

BUILT-IN SOFTWARE WITHOUT COMPUTER   MEASUREMENT   TAKE PICTURES

VIDEO

0.5X camera adapter (included)

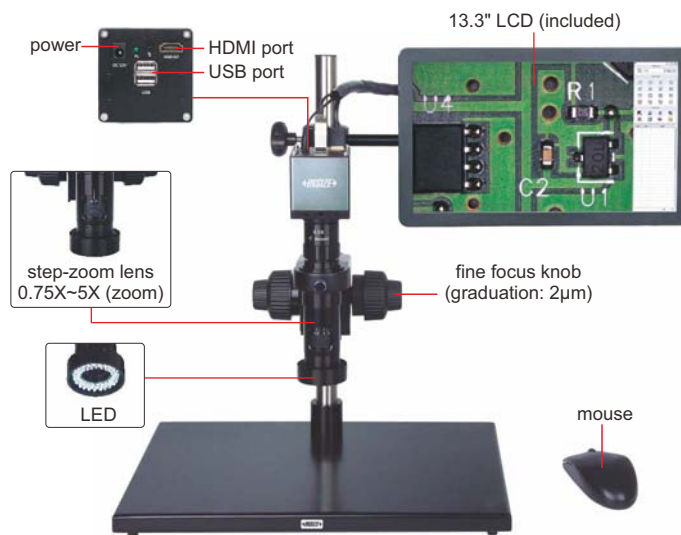1X auxiliary objective
1X auxiliary objective (included)

calibration plate (included)

16G USB flash disk (included)

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)

power — HDMI port — USB port — 13.3" LCD (included)
step-zoom lens 0.75X~5X (zoom)
LED
fine focus knob (graduation: 2μm)
mouse

ISM-DL300 (without contour illumination)

power — HDMI port — USB port — 13.3" LCD (included)
step-zoom lens 0.75X~5X (zoom)
LED
fine focus knob (graduation: 2μm)
contour illumination brightness adjustment
contour illumination
mouse
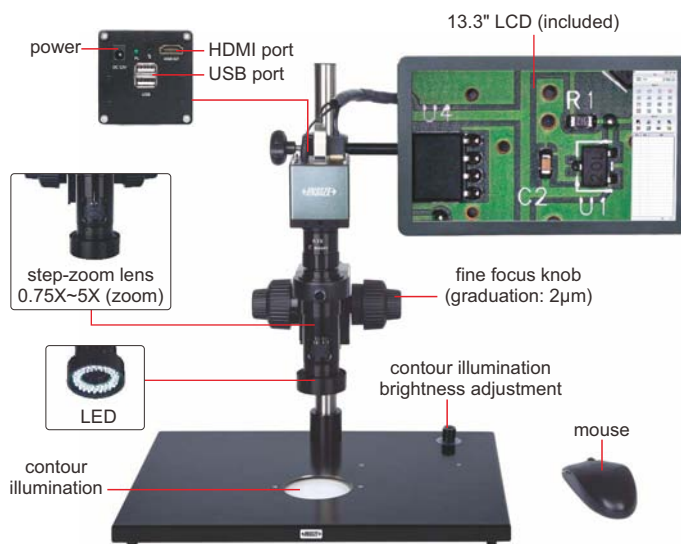
ISM-DL301 (with contour illumination)

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

SPECIFICATION

Code	ISM-DL300 (without contour illumination)	ISM-DL301 (with contour illumination)
Magnification	15X~100X	
Sensor	1/2" CMOS	
Pixel	2M	
Resolution	1920×1080	
Frame rate	60fps	
Output	HDMI	
Power supply	power adapter	
Dimension (L×W×H)	570×300×430mm	
Weight	6.5kg	

25

STANDARD DELIVERY

Code	ISM-DL300	ISM-DL301
Main unit	1 pc	1 pc
0.5X camera adapter	1 pc	1 pc
1X auxiliary objective	1 pc	1 pc
Calibration plate	1 pc	1 pc
16G USB flash disk	1 pc	1 pc
White/black plate	1 pc	1 pc
Mouse	1 pc	1 pc
HDMI cable	1 pc	1 pc
Power adapter	2 pcs	3 pcs

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
X-Y glass stage (travel: 100×86mm)	ISM-DL-STAGE
X-Y metal stage	ISM-DL-STAGE1
LED light	page 626~627
Auxiliary objective	page 628

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Image magnification	Measuring accuracy*
0.75X	15X	±8μm
1X	20X	±7μm
1.5X	30X	±6μm
2X	40X	±6μm
2.5X	50X	±6μm
3X	60X	±5μm
3.5X	70X	±5μm
4X	80X	±4μm
4.5X	90X	±4μm
5X	100X	±4μm

* When measuring the contour of workpieces, please use **ISM-DL301** to ensure accuracy.

X-Y glass stage
(**optional**)
(X-Y travel: 100×86mm)

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
1X (included)	magnification	15~100X	30~200X
	focus distance	70±2mm	70±2mm
	view filed	16×11~2.5×1.6mm	7.8×5.3~1.2×0.8mm
2X (optional)	magnification	30~200X	60~400X
	focus distance	29±2mm	29±2mm
	view filed	7.8×5.3~1.2×0.8mm	3.8×2.7~0.6×0.4mm

SOFTWARE (INCLUDED)

■ Refer to page 623 for details

real-time image

measurement

calibration

measuring tools

assist tools

measuring results

A1=59.699°
A1'=300.301°

HIGH MAGNIFICATION MEASURING MICROSCOPE
CODE ISM-DL302

**SOFTWARE IS INCLUDED,
REFER TO PAGE 623 FOR DETAILS**

**OBSERVATION AND MEASUREMENT
AT HIGH MAGNIFICATION**

VIDEO

power — HDMI port
USB port —

13.3" LCD (included)

calibration plate
(included)

step-zoom lens
0.75X~5X (zoom)

fine focus knob
(graduation: 2µm)

0.5X camera adapter
(included)

4.5X auxiliary
objective

coaxial illumination

X-Y metal stage

16G USB flash disk
(included)

mouse

1X camera adapter
(**optional**)
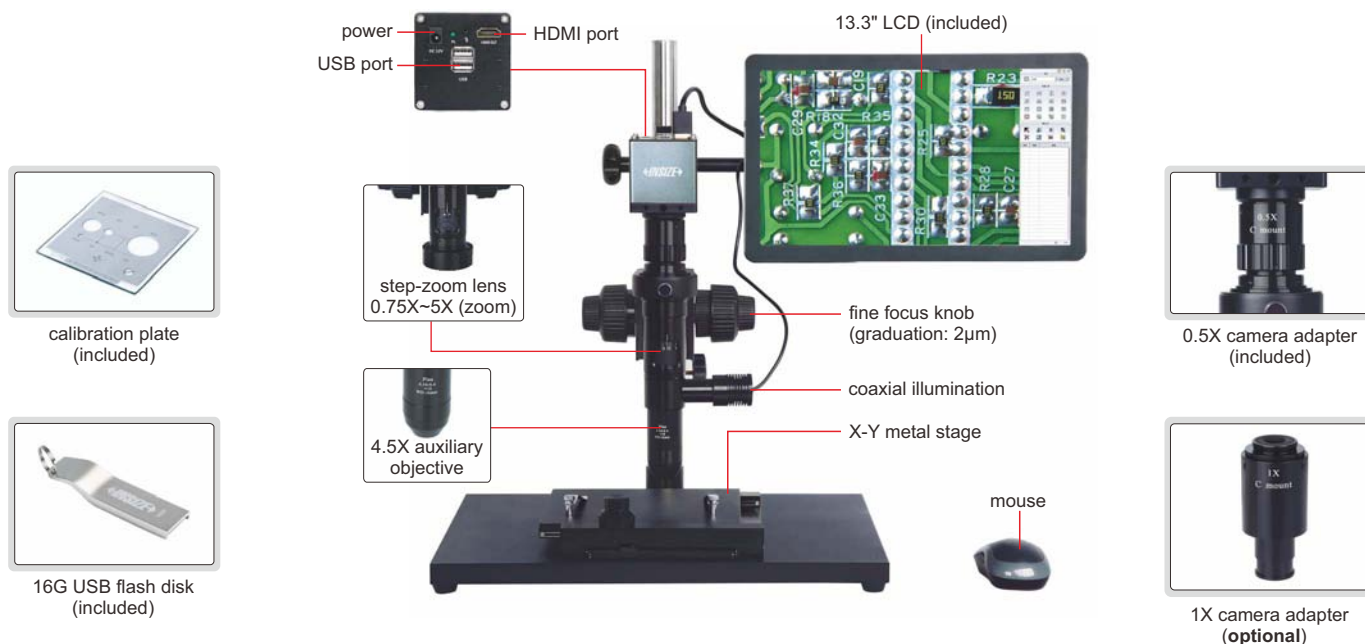
- 1080P high-definition image
- Maximum 1000X optical magnification (using camera adapter 1X, optional)
- Built-in software without computer, operated by mouse
- Solid base and column to avoid lens shaking during focusing
- Software is included, refer to page 623 for details

SPECIFICATION

Magnification	78X~504X
Sensor	1/2" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm
Weight	15kg

SATNDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
4.5X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
HDMI cable	1 pc
X-Y metal stage	1 pc

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
LED light	page 626~627

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Image magnification	Measuring accuracy
0.75X	78X	±5µm
1X	102X	±4µm
1.5X	153X	±4µm
2X	204X	±4µm
2.5X	255X	±4µm
3X	305X	±4µm
3.5X	356X	±4µm
4X	408X	±4µm
4.5X	458X	±4µm
5X	504X	±4µm

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Camera adapter	0.5X (included)	1X (**optional**)
Magnification	78~504X	156~1008X
Focus distance	14±2mm	14±2mm
View field	2.8×1.7~0.5×0.3mm	1.4×0.9~0.3×0.2mm

| BUILT-IN SOFTWARE WITHOUT COMPUTER | TAKE PICTURES | MEASUREMENT |

4K DIGITAL MEASURING MICROSCOPE
CODE 5310-DL401

15.6" LCD (included)

USB port

HDMI port power

step-zoom lens 0.75X~5X (zoom)

fine focus knob (graduation: 2μm)

LED

contour illumination brightness adjustment

mouse

contour illumination

VIDEO
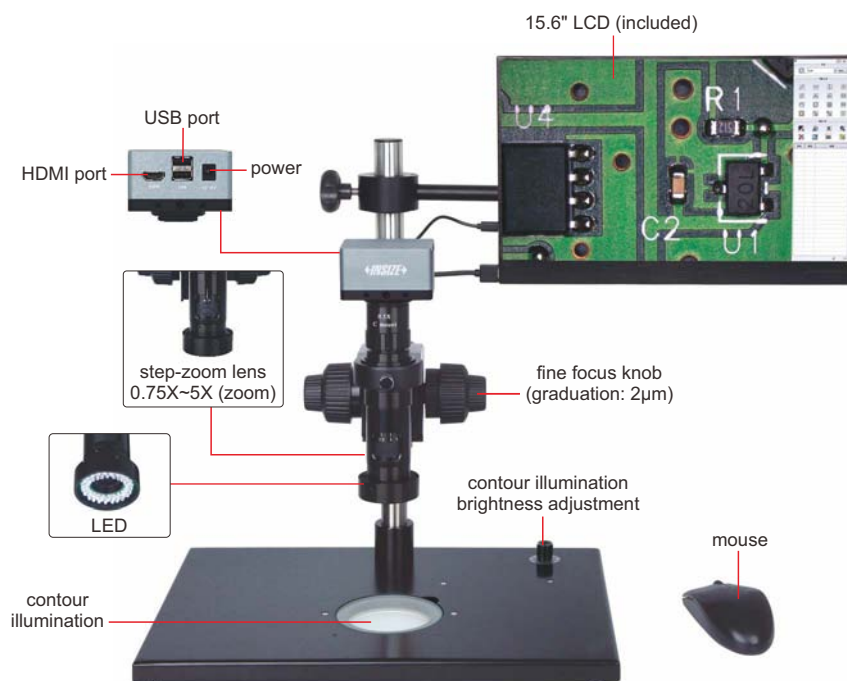
X-Y glass stage (**optional**) (X-Y travel: 100×86mm)

X-Y metal stage (**optional**) (X-Y travel: 100×86mm)

calibration plate (included)

16G USB flash disk (included)

25

- 4K high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

0.5X camera adapter (included)

1X auxiliary objective

1X auxiliary objective (included)

SPECIFICATION

Magnification	17.6X~120X
Sensor	1/2.3" CMOS
Pixel	8M
Resolution	3840×2160
Frame rate	4K: 30fps, 1080P: 60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm
Weight	6.5kg

1X camera adapter (**optional**)

2X auxiliary objective (**optional**)

MAGNIFICATION, VIEW FIELD AND MEASURING ACCURACY

Objective magnification	Image magnification	View field	Measuring accuracy
0.75X	17.6X	19.5×11.5mm	±5µm
1X	23.7X	14.0×8.0mm	±5µm
1.5X	36.6X	9.0×5.0mm	±5µm
2X	49X	7.0×4.0mm	±5µm
2.5X	62X	5.5×3.0mm	±4µm
3X	73X	4.5×2.5mm	±4µm
3.5X	85X	4.0×2.2mm	±4µm
4X	97X	3.5×2.0mm	±3µm
4.5X	109X	3.0×1.8mm	±3µm
5X	120X	2.7×1.5mm	±3µm

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	3 pcs

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
X-Y glass stage (travel: 100×86mm)	ISM-DL-STAGE
X-Y metal stage (travel: 100×86mm)	ISM-DL-STAGE1
LED light	page 626~627
Auxiliary objective	page 628

25

SOFTWARE (INCLUDED)

- Refer to page 623 for details
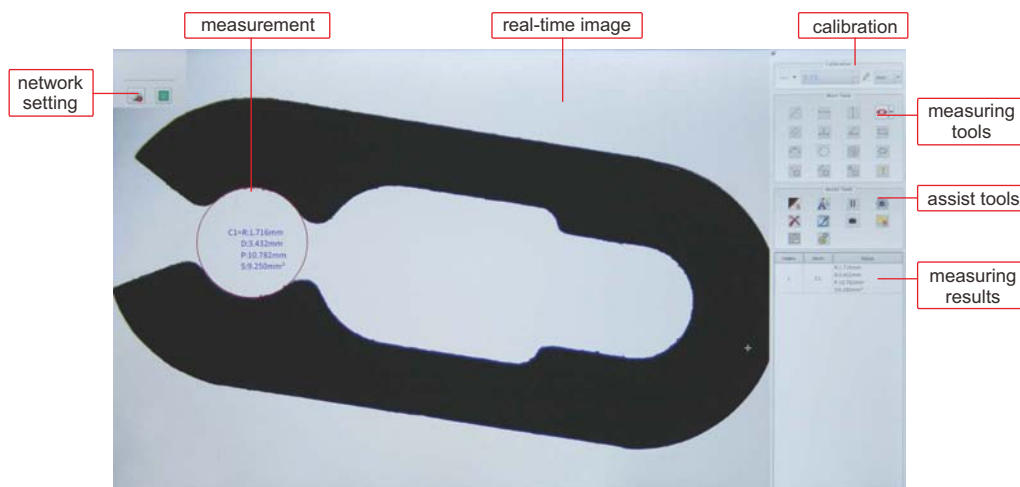
MOTORIZED FOCUS STACKING

BUILT-IN SOFTWARE WITHOUT COMPUTER

MOTORIZED FOCUS STACKING MICROSCOPE (LARGE DEPTH OF VIEW) CODE ISM-DL520

RJ45 port
HDMI port
USB port
power
I/O port

13.3" LCD (included)

electric motor

fine focus knob

step-zoom lens 0.75X~5X (zoom)

LED

mouse

VIDEO

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Motorized focus stacking
- Send photos and measurement data via ethernet (TCP/IP)
- Name photos and measurement data files with serial number of workpieces read by scanner

SPECIFICATION

Magnification	24.5X~204.5X
View field	2.8×1.6~18×10mm
Focus distance	65mm
Sensor	1/1.2" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	30fps
Output	RJ45
Power supply	power adapter
Dimension (L×W×H)	320×260×500mm
Weight	7kg

focus stacking

focus on the top

+

focus on the bottom
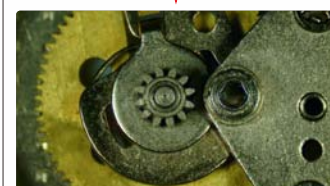
clear image of both top and bottom

To be continued
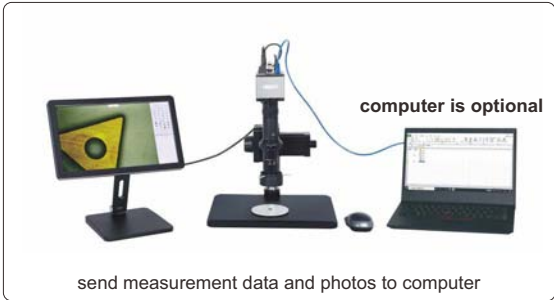
25

computer is optional

send measurement data and photos to computer

calibration plate
(included)

16G USB flash disk
(included)

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Image magnification	Measuring accuracy
0.6X	24.5X	±8µm
0.8X	32.7X	±7µm
1X	40.9X	±6µm
1.5X	61.3X	±6µm
2X	81.8X	±6µm
2.5X	102.2X	±5µm
3X	122.7X	±5µm
3.5X	143.1X	±4µm
4X	163.6X	±4µm
4.5X	184.0X	±4µm
5X	204.5X	±4µm

STANDARD DELIVERY

Main unit	1 pc
1X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
LED ring light	1 pc
White/black plate	1 pc
Power adapter	3 pcs

X-Y metal stage
(**optional**)
(X-Y travel: 100×86mm)

OPTIONAL ACCESSORY

X-Y metal stage (travel: 100×86mm)	ISM-DL-STAGE1

SOFTWARE (INCLUDED)

- Refer to page 623 for details

real-time image   measurement   calibration

network setting

measuring tools

assist tools

motorized focus
stacking tools

measuring results
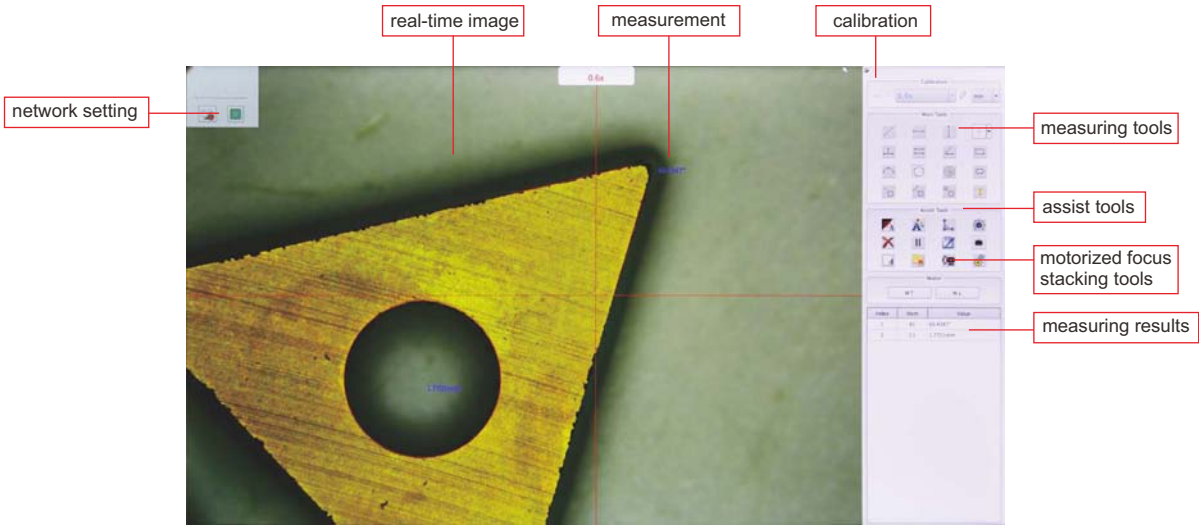
BUILT-IN SOFTWARE WITHOUT COMPUTER

FOCUS STACKING

MANUAL FOCUS STACKING MICROSCOPE (LARGE DEPTH OF VIEW)
CODE ISM-DL510

RJ45 port
USB port
power
HDMI port

13. 3" LCD (included)

step-zoom lens 0.75X~5X (zoom)

fine focus knob (graduation: 2µm)

LED

mouse

contour illumination

VIDEO

focus stacking

focus on the top

+

focus on the bottom

clear image of both top and bottom

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measurement results can be sent to Excel
- Automatic white balance and exposure
- Focus stacking
- Send photos and measurement data via ethernet (TCP/IP)
- Name photos and measurement data files with serial number of workpieces read by scanner

computer is optional

send measurement data and photos to computer

1X auxiliary objective

1X auxiliary objective (included)

2X auxiliary objective (**optional**)

0.5X camera adapter (included)

1X camera adapter (**optional**)

SPECIFICATION

Magnification	15X~100X
Sensor	1/2" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm

25

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
Power adapter	3 pcs

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
X-Y glass stage (travel: 100×86mm)	ISM-DL-STAGE
Scanner and hub	7328-SCAN
LED light	page 626~627
Auxiliary objective	page 628

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Image magnification	Measuring accuracy
0.75X	15X	±8µm
1X	20X	±7µm
1.5X	30X	±6µm
2X	40X	±6µm
2.5X	50X	±6µm
3X	60X	±5µm
3.5X	70X	±5µm
4X	80X	±4µm
4.5X	90X	±4µm
5X	100X	±4µm

X-Y glass stage
(**optional**)
(X-Y travel: 100×86mm)

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
1X (included)	magnification	15~100X	30~200X
	focus distance	70±2mm	70±2mm
	view filed	16×11~2.5×1.6mm	7.8×5.3~1.2×0.8mm
2X (optional)	magnification	30~200X	60~400X
	focus distance	29±2mm	29±2mm
	view filed	7.8×5.3~1.2×0.8mm	3.8×2.7~0.6×0.4mm

SOFTWARE (INCLUDED)

■ Refer to page 623 for details

network setting · measurement · real-time image · calibration · measuring tools · assist tools · measuring results

BUILT-IN SOFTWARE
WITHOUT COMPUTER

TAKE
PICTURES

VIDEO

USB port

HDMI port

power

13.3" LCD (included)

0.2X~1.2X
zoom

stage
(up/down and left/right move)

LED ring light

contour
illumination

mouse

focus
adjustment

contour
illumination switch

- 1080P high-definition image
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/brown colors)

plastic calibration rule
(included, graduation 1mm)

16G USB flash disk
(included)

SPECIFICATION

Magnification	10.5X~62.5X
View field	4.5×2.5~28×12.3mm
Focus distance	115mm
Measuring accuracy	±0.02mm
Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	1080P: 60fps/50fps
Output	HDMI
Power supply	110/220V, 50/60Hz
Dimension (L×W×H)	500×200×200mm
Weight	7kg

STANDARD DELIVERY

Main unit	1 pc
1X camera adapter	1 pc
1X auxiliary adapter	1 pc
Plastic calibration rule	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
LED ring light	1 pc

SOFTWARE (INCLUDED)

auxiliary tools

measure tools

scale

lines

EN

Auxiliary Tools

MeasureTools

Custom Template
Name default

Scale
Power:
Unit: mm Bits: 3   2
Pos: Right Down   Scale Show

Lines

1

25
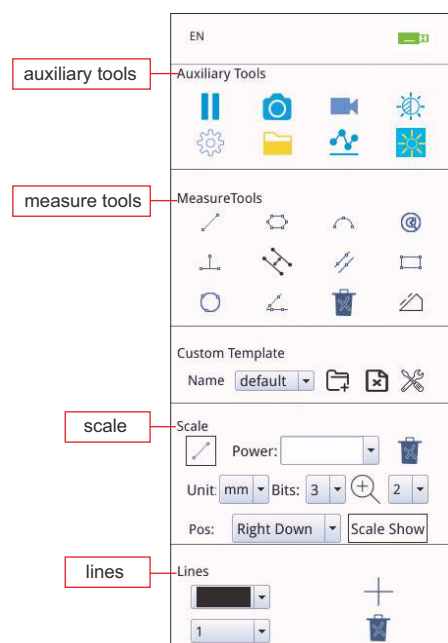
FLEXIBLE ARM AUTO FOCUS DIGITAL MICROSCOPES

VIDEO

USB port

HDMI port

power port

13.3" LCD (included)

step-zoom lens
0.75X~5X (zoom)

fine focus
knob

LED

mouse

magnetic
stand

5317-AF109

USB port

HDMI port

power port

fine focus knob

13.3" LCD (included)

LED

step-zoom lens
0.75X~5X (zoom)

mouse

desktop clamp

5317-AF110

- 1080P high-definition image
- Auto focus camera
- Take pictures and videos, saved to USB flash disk
- Picture review, picture compare
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display cross hair (blue/green/red/yellow/black/ brown colors)
- Built-in software without computer, operation by mouse
- Flexible arm

display cross hair
(blue/green/red/yellow/
black/brown colors)
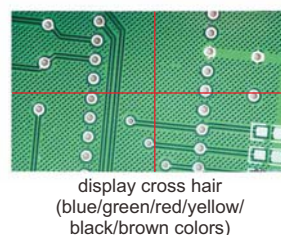
To be continued

SPECIFICATION

Code	5317-AF109 (with magnetic stand)	5317-AF110 (with desktop clamp)
Magnification	20X~123X	
Sensor	1/2.8" CMOS	
Pixel	2M	
Resolution	1920×1080	
Frame rate	60fps	
Power supply	power adapter	
Dimension (height)	480mm	600mm
Weight	5.6kg	8.5kg

calibration plate
(included)

16G USB flash disk
(included)

0.5X camera adapter
(included)

1X auxiliary objective

1X auxiliary objective
(included)

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
1X (included)	magnification	20~123X	40~246X
	focus distance	48~84mm	48~84mm
	view field	13×7~2.2×1mm	6.3×3.5~1.1×0.5mm
	measuring accuracy	±0.02mm	±0.02mm
2X (optional)	magnification	40~246X	80~492X
	focus distance	24~42mm	24~42mm
	view field	6.5×3.5~1.1×0.5mm	3.3×1.8~0.6×0.3mm
	measuring accuracy	±0.02mm	±0.02mm

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	2 pcs

AUTO FOCUS DISTANCE

Zoom objective scale	0.75X	1X	1.5X	2X	2.5X
Auto focus distance	48~84mm	50~78mm	55~73mm	62~71mm	65~70mm

Zoom objective scale	3X	3.5X	4X	4.5X	5X
Auto focus distance	66~70mm	67~70mm	68~70mm	68~70mm	68~70mm

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
Auxiliary objective	page 628

MEASURING SOFTWARE (INCLUDED)

assist tools

measuring tools

calibration

measuring results

real-time image
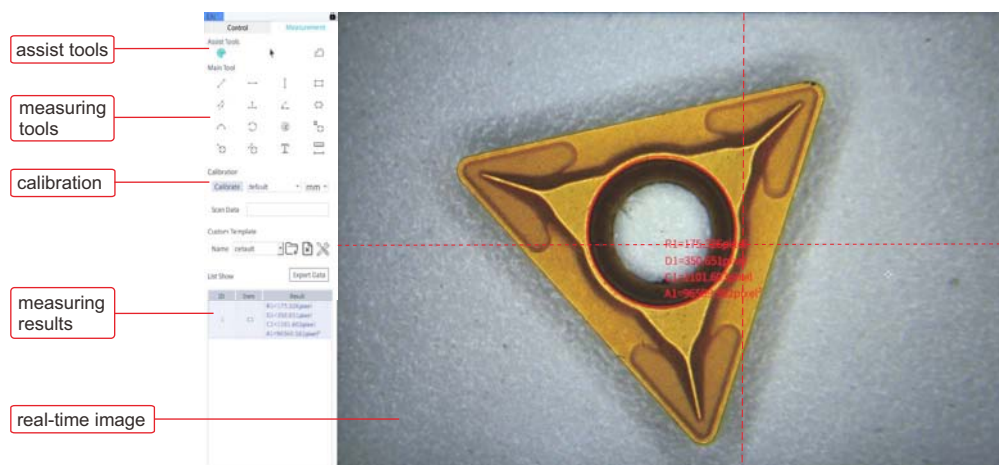
DIGITAL MEASURING MICROSCOPE (BASIC TYPE)
CODE 5307-ID100A

ELECTRONIC MAGNIFICATION FEEDBACK LENS

BUILT-IN SOFTWARE WITHOUT COMPUTER

VIDEO

- Electronic magnification feedback lens: when the objective lens magnification is changed manually, the software automatically selects the corresponding pre-calibration data and calibration is not needed
- Two methods of LED brightness adjustment, knob adjustment and software adjustment
- Built-in software without computer, operated by mouse
- Take pictures, save to USB flash disk
- Measuring results can be sent to Excel

adjustable display angle
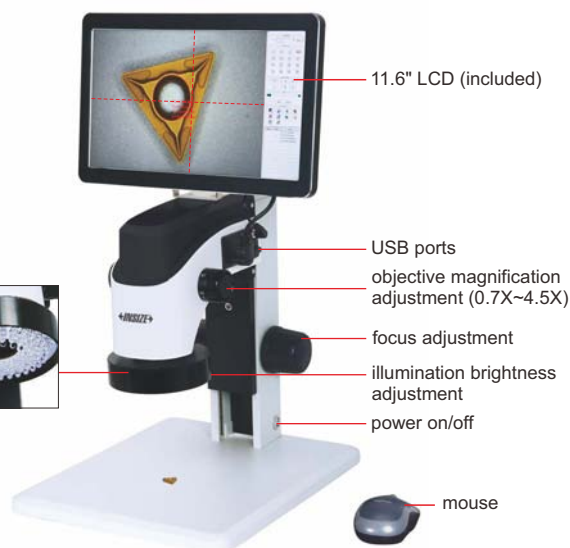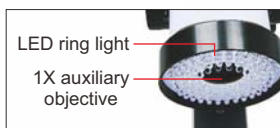
11.6" LCD (included)

USB ports
objective magnification adjustment (0.7X~4.5X)
focus adjustment
illumination brightness adjustment
power on/off

LED ring light
1X auxiliary objective

mouse

SPECIFICATION

Sensor	1/2" CMOS
Pixel	2M
Resolution	1920×1080
Magnification	12~77X
Focus distance	65mm
View field	3.2×1.8~20.9×11.7mm
Max. workpiece height	60mm
Frame rate	60fps
Output	USB/HDMI
Power supply	power adapter
Dimension (L×W×H)	260×320×500mm
Weight	5.2kg

STANDARD DELIVERY

Main unit	1 pc
Calibration plate	1 pc
Power adapter	1 pc
Mouse	1 pc
16G USB flash disk	1 pc

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Magnification	Measuring accuracy
0.7X	12X	±9µm
1X	17X	±9µm
1.5X	26X	±8µm
2X	35X	±7µm
2.5X	43X	±7µm
3X	51X	±7µm
3.5X	60X	±6µm
4X	68X	±6µm
4.5X	77X	±5µm

OPTIONAL ACCESSORY

0.5X auxiliary objective	5307-ID100A-OB05X
0.75X auxiliary objective	5307-ID100A-OB075X
2X auxiliary objective	5307-ID100A-OB2X

SOFTWARE (INCLUDED)

- Refer to page 623 for details

measurement
real-time image
calibration
measuring tools
gridlines
illumination brightness adjustment
assist tools
measuring results
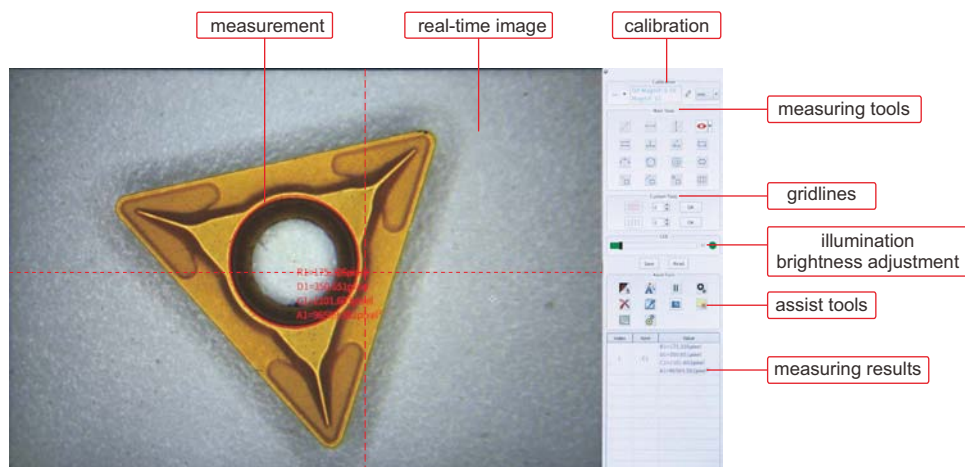
LARGE DEPTH OF VIEW DIGITAL MEASURING MICROSCOPE (ADVANCED TYPE)
CODE 5322-ID250A

DUAL SCREEN OPERATION

FOCUS STACKING

ELECTRONIC MAGNIFICATION FEEDBACK LENS

PROGRAMMABLE SEGMENTED RING LIGHT

VIDEO

adjustable display angle

11.6" LCD (included)

USB ports
objective magnification adjustment (0.7X~4.5X)

focus adjustment

power on/off

mouse

eight-zone LED ring light

1X auxiliary objective

- Electronic magnification feedback lens: when the objective lens magnification is changed manually, the software automatically selects the corresponding pre-calibration data and calibration is not needed
- Send photos and measurement data via ethernet (TCP/IP)
- Digital magnification
- Can be connected to display and computer at the same time
- Take pictures, save to USB flash disk
- Measuring results can be sent to Excel

16G USB flash disk (included)

calibration plate (included)

SPECIFICATION

Sensor	1/2" CMOS
Pixel	2M
Resolution	1920×1080
Magnification	12~77X
Focus distance	60mm
View field	3.2×1.8~20.9×11.7mm
Max. workpiece height	53mm
Frame rate	60fps
Output	USB/HDMI/LAN
Power supply	power adapter
Dimension (L×W×H)	260×320×500mm
Weight	5.2kg

MAGNIFICATION AND MEASURING ACCURACY

Objective magnification	Magnification	Measuring accuracy
0.7X	12X	±9μm
1X	17X	±9μm
1.5X	26X	±8μm
2X	35X	±7μm
2.5X	43X	±7μm
3X	51X	±7μm
3.5X	60X	±6μm
4X	68X	±6μm
4.5X	77X	±5μm

focus stacking

focus on the top

+

focus on the bottom

clear image of both top and bottom

25

STANDARD DELIVERY

Main unit	1 pc
Calibration plate	1 pc
Power adapter	1 pc
Mouse	1 pc
16G USB flash disk	1 pc

OPTIONAL ACCESSORY

0.5X auxiliary objective	5307-ID100A-OB05X
0.75X auxiliary objective	5307-ID100A-OB075X
2X auxiliary objective	5307-ID100A-OB2X

computer is optional

send measurement data and photos to computer, and also take photos, make measurement via computer software

SOFTWARE FOR LCD (INCLUDED)

■ Refer to page 623 for details

measurement real-time image calibration

measuring tools

assist tools

illumination brightness adjustment

measuring results

SOFTWARE FOR COMPUTER (INCLUDED)

measurement calibration

measuring tools

real-time image

measuring results

25

INSIZE

| NO CALIBRATION AFTER ZOOM | TAKE PICTURES AND VIDEOS | MEASUREMENT | MOTORIZED ZOOM |
| MOTORIZED LIGHT CONTROL | AUTO FOCUS | | |

21.5" LCD (included)

camera and lens
(built-in)

LED

mouse

16G USB flash disk
(included)

calibration plate
(included)
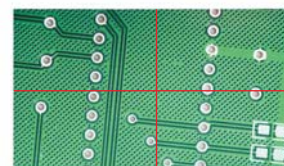
VIDEO

display cross hair and gridline
(blue/green/red/yellow/
black/white colors)

- Auto focus camera
- Take pictures and videos
- Built-in measuring software
- Automatic exposure and white balance
- Brightness, contrast ratio, gain are adjustable
- Display actual magnification
- Digital magnification
- Shortcut keyboard operation
- Display cross hair and gridline (blue/green/red/
  yellow/black/white colors)

Shortcut keyboard fuction
- Take picture: take a picture and save it
- Video: record a video
- Freeze: the image can be frozen
- Manual focus-: reduce the manual focus value
- Manual focus+: increase the manual focus value
- Zoom+: increase the magnification
- Zoom-: reduce the magnification
- AF/MF: switch to auto focus or manual focus
- FBL: center the camera motor
- Mirror: image horizontal flipover
- Flip: image vertical flipover
- Focus: achieve one-key focus
- Zoom 1, 2, 3, 4: save the current magnification
- Brightness+: increase the brightness of the light
- Brightness-: reduce the brightness of the light

shortcut keyboard
(included)

SPECIFICATION

Magnification	27.4X~163X
Sensor	1/2.8" CMOS
Pixel	2M
Measuring accuracy	±0.02mm
Resolution	1920×1080
Frame rate	50/60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	600×280×390mm
Weight	6.5kg

STANDARD DELIVERY

Main unit (with stand)	1 pc
21.5" LCD	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
HDMI cable	1 pc
Calibration plate	1 pc
White/black plate	1 pc
Shortcut keyboard	1 pc
Power adapter	2 pcs

SOFTWARE (INCLUDED)

focus

focus area

exposure

AWB
light control

function

assist tools

main tools

calibration

list show

FOCUS DISTANCE AND VIEW FIELD

Optical magnification*	0.8X	1X	2X	3X	4X	4.76X
Focus distance	88~133mm	88~133mm	98~123mm	103~115mm	108~111mm	108~111mm
View field (mm)	19.4×11~15.8×8.8	15×8.3~12.7×7.2	7.1×4~6.7×3.8	4.8×2.7~4.5×2.5	3.6×2~3.3×1.8	3×1.7~2.8×1.6

*The optical zoom lens can be arbitrarily zoomed between 0.8X and 4.76X

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CUTTING TOOLS MICROSCOPE
CODE ISM-CT820

TAKE PICTURES AND VIDEOS **BUILT-IN SOFTWARE WITHOUT COMPUTER** **SPLIT SCREEN DESIGN**

- side illumination
- upper illumination
- clamping device
- bottom illumination
- illumination control panel
- 21.5" LCD (included)
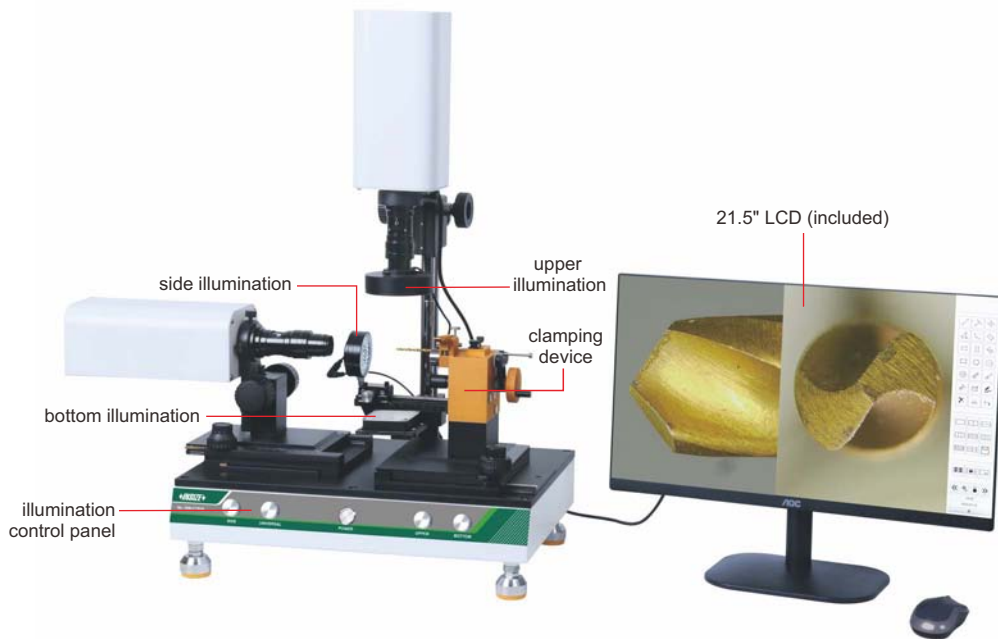
- Split screen design, zoom in and out independently
- One mouse can operate two cameras
- Display cross hairs
- Brightness, contrast ratio, white balance are adjustable
- Basic measuring tools including point to point, point to line, line to line, angle, three-point circle, etc.

glass calibration plate (included)
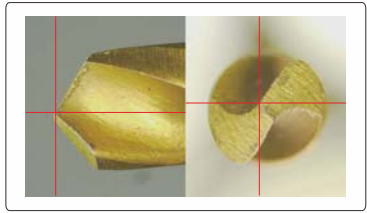
display cross hairs separately (movable)

SOFTWARE (INCLUDED)

- measuring tools
- split screen tool
- photo and video
- other settings

screen display

single screen display
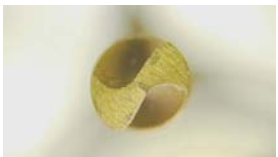
single screen display
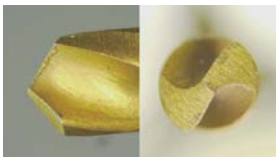
split screen display

SPECIFICATION

Cutting tools range	Ø4~12mm, length 30-75mm
Lens	step-zoom lens
Output	HDMI
Resolution	1920×1080
Frame rate	60fps
Focus distance	85mm
View field	2×3.5~13.2×23.9mm
Magnification	20-132X
Power supply	AC 100-240V
Dimension (L×W×H)	450×300×700mm
Weight	20kg

STANDARD DELIVERY

Main unit	1 pc
Display	1 pc
32G USB flash disk	1 pc
Mouse	1 pc
HDMI cable	1 pc
Glass calibration plate	1 pc
Anti-dust cover	1 pc

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MEASURING SOFTWARE OF DIGITAL MICROSCOPES

real-time image • measurement • zoom in • calibration • measuring tools • assist tools • measuring results
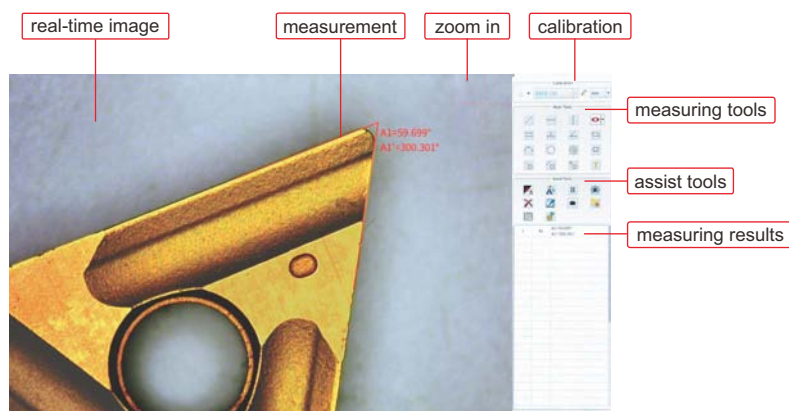
■ **Included in digital microscopes (ISM-DL300, ISM-DL301, 5310-DL401, ISM-DL302, ISM-DL510, ISM-DL520, 5307-ID100A)**

■ **Language:** Simplified Chinese, Traditional Chinese, English, Korean

■ **Calibration:**

circle calibration   unit selection

■ **Edge-detection:**

point tool   box tool   click tool
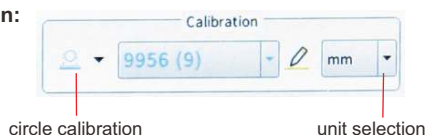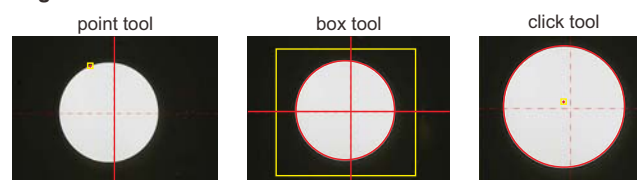
■ **Measurement tools:**

✎	measure length of line or distance between two points
⊢	measure length of line or distance between two points in horizontal direction
	measure length of line or distance between two points in vertical direction
	measure angle from horizontal line
	measure angle from vertical line
	measure angle of two lines
	measure distance between two parallel lines
	measure distance between two parallel lines
	measure distance between multiple parallel lines
	measure distance between point and line
	measure radius, length and angle of arc
	measure girth and area of polygon
	measure radius, diameter, girth and area of circle with three points
	measure radius, diameter, girth and area concentric of circles
	measure length, width, girth and area of rectangle
	measure minimum distance between point and circle
	measure distance between point and center of circle
	measure maximum distance between point and circle
	measure minimum distance between line and circle
	measure distance between line and center of circle
	measure maximum distance between line and circle
	measure minimum distance between two circles
	measure center distance between two circles
	measure maximum distance between two circles
T	add text
	measure radius, diameter, girth and area of circle with two points
	cross hair and graduated cross hair

■ **Assist tools:**

	manual/automatic point selection		delete images
	line width and color settings		export measurement data to U disk
	freeze screen		take pictures and save
	camera parameter settings		review pictures
	layout settings of measurement items		system settings

■ **Comparison:**

set the standard workpiece as the background image, superimpose the measured workpieces on the image for quick comparison

■ **Cross hair:**

cross hair   graduated cross hair for comparison measurement
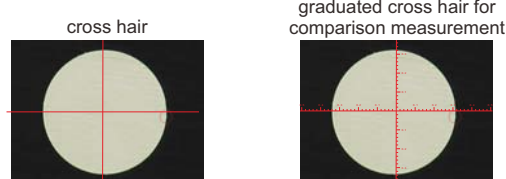
■ **Grid comparison measurement:**

full-screen grid for comparison measurement, adjustable grid number

■ **Output to Excel:**

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SMART MICROSCOPE
CODE ISM-DL400

13.3" LCD (included)

camera function

- surface defect detection
- dimension measurement
- read barcode
- burr detection
- contour matching
- character recognition
- color detection
- read QR code
- object counting
- thread measurement

NG: red light

OK: green light

NG: buzzer alarm

sensor switch (triggered when an object passes by within 3cm and a detection is performed, the interval time between triggering and detection is adjustable)

detect different workpieces at one time
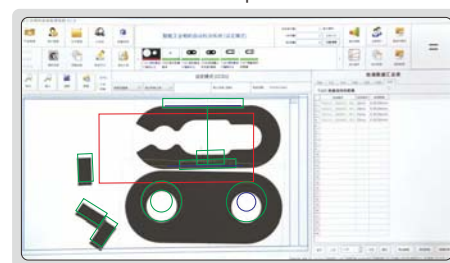
- Automatically identify different workpieces
- Automatically locate workpieces regardless of position and direction
- Built-in software, PLC control input and output interface
- Including multiple detection tools
- Automatically calculate, store the test results and sent to Excel

report showing the perform times of each tool, quantity of OK and NG, the report can be saved

report of each detection is automatically created and saved

SPECIFICATION

Magnification	15X~100X
Resolution	1920×1080
Pixel	2M
Single pixel size	3.75×3.75µm
Frame rate	60fps
Sensor	1/2" CMOS
Chip structure	FPGA+ARM
Operation system	Linux 3.10
Power supply	power adapter
Dimension (L×W×H)	570×300×430mm
Weight	6.5kg

STANDARD DELIVERY

Main unit	1 pc
0.5X camera adapter	1 pc
1X auxiliary objective	1 pc
Calibration plate	1 pc
16G USB flash disk	1 pc
White/black plate	1 pc
HDMI cable	1 pc
Power adapter	3 pcs

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
1X (included)	magnification	15~100X	30~200X
	focus distance	70±2mm	70±2mm
	view filed	16×11~2.5×1.6mm	7.8×5.3~1.2×0.8mm
2X (optional)	magnification	30~200X	60~400X
	focus distance	29±2mm	29±2mm
	view filed	7.8×5.3~1.2×0.8mm	3.8×2.7~0.6×0.4mm

OPTIONAL ACCESSORY

1X camera adapter	ISM-DL-CA1X
2X auxiliary objective	ISM-DL-OB2X
LED light	page 626~627
Auxiliary objective	page 628

■ **APPLICATION EXAMPLES:**

dimension measurement

OK   out of tolerance, NG

automatically locate and measure, and judge OK or NG

thread measurement

OK   out of tolerance, NG

automatically measure major diameter, minor diameter, thread angle, pitch of thread, and judge OK or NG
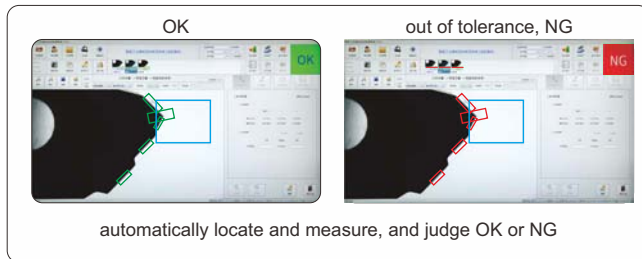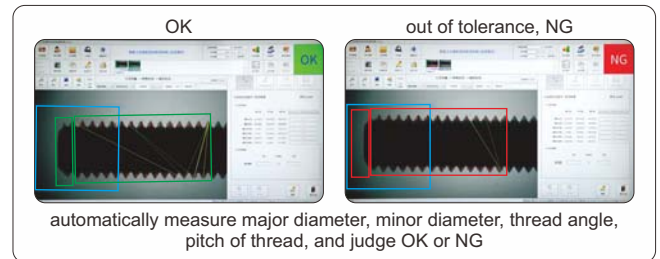
cutting tools measurement

OK   length is too short, NG

measure length and angle

counting

15 pcs holes, OK   12 pcs holes, NG

automatically locate and count, and judge OK or NG

existence or absence

existence, OK   absence, NG

automatically detect the existence or absence of the target

character recognition

character is "EF", OK   character is "E", NG

automatically detect letters or numbers in the area, and judge OK or NG

color detection

OK   sequence error, NG

automatically detect colors, and judge OK or NG

location detection

center line aligned, OK   center line misaligned, NG

automatically detect whether the center line is aligned or not

surface defect detection

no defect, OK   defect, NG

detect missing and burr on the edge of circle, and judge OK or NG

glue detection

complete, OK   broken, NG

automatically detect if there is break of glue, measure width, and judge OK or NG

X-Y METAL STAGE
CODE ISM-DL-STAGE1

- Suitable for digital microscopes **5315-S710, 5301-D400, 5313-S407, 5310-DL401, 5303-AF103, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL520**

SPECIFICATION

X-Y travel range	100×86mm
Dimension (L×W×H)	180×180×50mm
Weight	2.3kg

stage moving knob
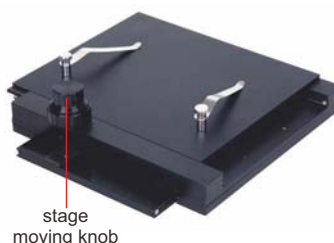
LED RING LIGHT
CODE ISM-LED-9245R

RED, GREEN, BLUE, INFRARED AND UV LIGHT CAN BE CUSTOMIZED

ATTENSION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER

- Diffuser plate is included to reduce the reflective effect on workpieces
- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510**, **5315-S710**

diffuser plate

SPECIFICATION

Light color	white
Power supply	24V
Power	5.5W
Angle	45°
Outside/inside diameter	92/52mm
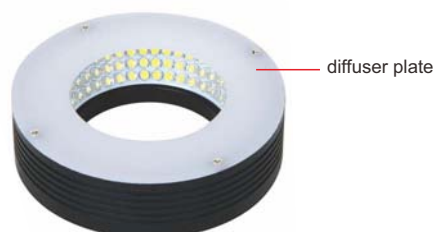
LED SQUARE LIGHT
CODE ISM-LED-100L4

RED, GREEN, BLUE, INFRARED AND UV LIGHT CAN BE CUSTOMIZED

ATTENSION: MUST BE USED WITH LIGHT BRACKET AND LIGHT CONTROLLER

- Diffuser plate is included to reduce the reflective effect on workpieces
- Angle and brightness can be adjusted independently
- Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510**, **5315-S710**

diffuser plate

SPECIFICATION

Light color	white
Power supply	24V
Power	10.36W
Angle	0~90°
Dimension (L×W×H)	154×154×30mm
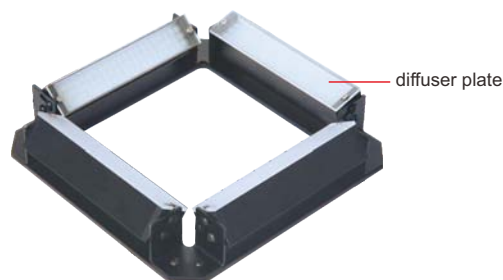
DIGITAL LIGHT CONTROLLER
CODE ISM-LED-CTRL

- 256 (0-255) steps of brightness adjustment
- With power off memory function and short circuit protection function
- Suitable for **ISM-LED-100L4, ISM-LED-9245R**

output channel   power on/off

power indicator

screen

external trigger port

RS-232 port

adjustment button

SPECIFICATION

Power supply	100~240V, 50/60HZ
Output power (rated)	60W
Output voltage (rated)	24V
Dimension (L×W×H)	145×118×83mm

BRACKET FOR LIGHTS
CODE ISM-LED-BRACKET

application

L-shape metal

- 4 pcs L-shape bars are included,
  multiple combinations can be realized
- Suitable for **ISM-LED-100L4, ISM-LED-9245R**

SPECIFICATION

Size (L×W×H)	260×300×20mm
Weight	0.7kg

DUAL HEAD LED LIGHT
CODE ISM-ZS-LED

- Adjustable illumination
- For digital and stereo microscopes

application

SPECIFICATION

Power	3W
Power supply	100~240V
Working	10000h
Illumination	10000lux

LED AUXILIARY LIGHT
CODE ISM-DL-LED

brightness
adjustment knob

- Suitable for digital microscopes
  **5303-AF103, 5310-DL401, ISM-DL300,
  ISM-DL301, ISM-DL302, ISM-DL400,
  ISM-DL510, 5315-S710**

SPECIFICATION

Power	8W
Diameter of mounting hole	Ø25mm
Power supply	10~12V, 0~300mA

illumination direction and brightness
are adjustable

COAXIAL LIGHT
CODE ISM-DL-COAXIAL

- Suitable for digital microscopes
  **5303-AF103, 5310-DL401, ISM-DL300,
  ISM-DL301, ISM-DL302, ISM-DL400,
  ISM-DL510, 5315-S710**

brightness
adjustment knob

SPECIFICATION

Power	1W
Power supply	0~3.4V, 0~400mA

for smooth surfaces and small holes,
brightness is adjustable

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AUXILIARY OBJECTIVES

| 0.3X auxiliary objective* ISM-DL-OB03X | 0.5X auxiliary objective* ISM-DL-OB05X | 0.75X auxiliary objective* ISM-DL-OB075X | 1X auxiliary objective ISM-DL-OB1X | 1.5X auxiliary objective ISM-DL-OB1D5X | 2X auxiliary objective ISM-DL-OB2X |

■ Suitable for digital microscopes **5303-AF103, 5310-DL401, ISM-DL300, ISM-DL301, ISM-DL302, ISM-DL400, ISM-DL510, 5315-S710, 5317-AF109, 5317-AF110**

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (5303-AF103)

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
0.3X (optional)	magnification	6~37X	12~74X
	focus distance	120~310mm	120~310mm
	view field	52×30~8×5mm	26×15~4×2.5mm
0.5X (optional)	magnification	10~61X	20~123X
	focus distance	78~230mm	78~230mm
	view field	37×20~5×3mm	18×10~2.5×1.5mm
0.75X (optional)	magnification	15~92X	30~184X
	focus distance	60~125mm	60~125mm
	view field	21×13~3.4×2mm	10×6.5~1.7×1mm
1X (included)	magnification	20~123X	40~246X
	focus distance	48~84mm	48~84mm
	view field	15×8~2.5×1.5mm	7.5×4~1.3×0.7mm
1.5X (optional)	magnification	30~184X	60~368X
	focus distance	36~63mm	36~63mm
	view field	10×6~1.7×1mm	5×3~0.9×0.5mm
2X (optional)	magnification	40~246X	80~492X
	focus distance	24~42mm	24~42mm
	view field	7.5×4~1.3×0.7mm	3.8×2~0.7×0.4mm

MAGNIFICATION, FOCUS DISTANCE AND VIEW FIELD (ISM-DL300, ISM-DL301, ISM-DL510)

Auxiliary objective	Specification	Camera adapter	
		0.5X (included)	1X (optional)
0.3X (optional)	magnification	5~34X	10~68X
	focus distance	287±2mm	287±2mm
	view field	42×26~6.5×4.5mm	21×13~3.3×2.3mm
0.5X (optional)	magnification	9~56X	18~112X
	focus distance	166±2mm	166±2mm
	view field	25.6×16.8~5×3.5mm	12.8×8.4~2×1.3mm
0.75X (optional)	magnification	13~84X	26~168X
	focus distance	105±2mm	105±2mm
	view field	17×10.5~2.6×1.7mm	8.5×5.3~1.3×0.9mm
1X (included)	magnification	15~100X	30~200X
	focus distance	70±2mm	70±2mm
	view field	16×11~2.5×1.6mm	7.8×5.3~1.2×0.8mm
1.5X (optional)	magnification	26~168X	52~336X
	focus distance	42±2mm	42±2mm
	view field	8.5×5.2~1.3×0.9mm	4.3×2.6~0.7×0.5mm
2X (optional)	magnification	30~200X	60~400X
	focus distance	29±2mm	29±2mm
	view field	7.8×5.3~1.2×0.8mm	3.8×2.7~0.6×0.4mm

*For auxiliary objectives 0.3X, 0.5X, 0.75X,
use contour illumination of **ISM-DL301, ISM-DL400, ISM-DL510, 5310-DL401** or LED light

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MEASUREMENT

TAKE PICTURES AND VIDEOS

15.6" LCD (included)

display angle is adjusted

take pictures and videos

connect to USB cable

HDMI port

memory card

MENU

vertical illumination adjustment

connect to remote controller

focus adjustment

power on/off

diffuse illumination adjustment

power indicator

straight arm

adjust working distance, view field and magnification

display angle is adjusted

15.6" LCD (included)

universal arm
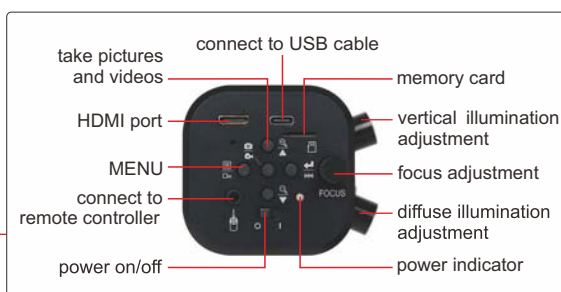
5309-DM50

5309-DM51

- Independent control of vertical illumination and diffuse illumination
- Back focus adjustment extends working distance
- Take pictures and videos, save to memory card

VIDEO

SPECIFICATION

Code	5309-DM50	5309-DM51
Arm type	straight	universal
Sensor	1/2.8" CMOS	
Pixel	2M	
Resolution	1920×1080	
Exposure	real-time auto, single auto, manual adjustment	
White balance	real-time auto, single auto, manual RGB adjustment	
Record format	pictures: JPG videos: MOV	
Record media	memory card	
Working distance	45~169mm	42~195mm
Magnification	9~41X	7.6~49.4X
View field	7.6×4~38.5×21.7mm	7×4~45×25mm
Power supply	DC12V 3A	

computer is optional

connect to computer with USB cable, take pictures and videos, make measurement

USE COMPUTERS, OPTIONAL

Image magnification	View field	Measuring accuracy
9.0X	38.5×21.7mm	±0.02mm
13.0X	26.6×15.0mm	±0.02mm
17.0X	20.5×11.7mm	±0.02mm
22.0X	16.0×9.0mm	±0.02mm
28.5X	11.9×6.3mm	±0.02mm
34.0X	9.8×5.5mm	±0.01mm
41.0X	7.6×4.1mm	±0.01mm

STANDARD DELIVERY

Main unit	1 pc
Memory card and holder	1 pc
Plastic calibration rule (graduation 1mm)	1 pc
White/black plate	1 pc
Remote controller	1 pc
USB cable	1 pc
Measuring software	1 pc
Power adapter	1 pc

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Continued from previous page

remote controller
(included)
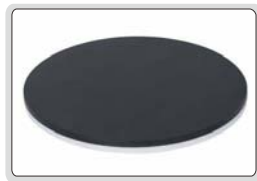
white/black plate
(included)

plastic calibration rule
(graduation 1mm, included)

SOFTWARE FOR COMPUTER

- **Language**: Chinese (Simplified), English, French, Chinese (Traditional), Portuguese, Korean, Japanese
- **Operation system**: Windows 7/8/8.1/10 (64bit)

sent to Word   real-time image   measurement

sent to Excel

measurement tools

calibration

measuring results
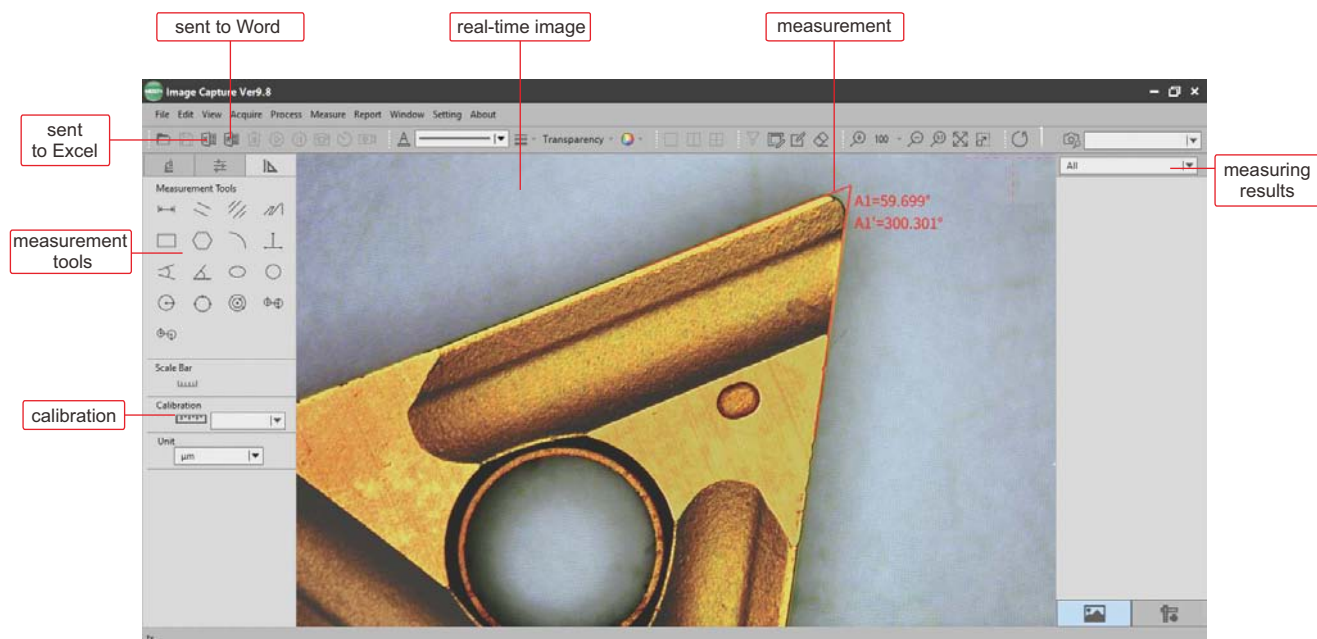
- **Measurement tools:**

	straight line distance measurement		parallel lines distance measurement		centre distance between parallel lines measurement		polyline line measurement
	rectangular measurement		polygon measurement		arc measurement		three-vertical-line measurement
	four-point perspective measurement		angle measurement		ellipse measurement		round measurement
	circle measurement by radius		circle measurement by 3-point		torus measurement		center distance measurement by radius
	center distance measurement by 3-point						

- **Data is sent to Word or Excel:**

sent to word

sent to excel

MINI DIGITAL MICROSCOPE (ECONOMIC TYPE)
CODE 5311-M710
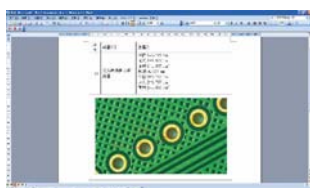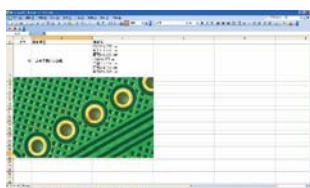
TAKE PICTURES AND VIDEOS

BUILT-IN LITHIUM BATTERY

VIDEO

7.0" LCD (included)

memory card

USB port

HDMI port

mouse

built-in lithium battery

buttons

illumination touch control

focus adjustment

illumination

angle adjustment

auxiliary illumination

auxiliary illumination touch control
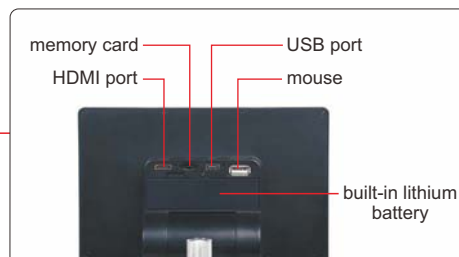
8G memory card and holder (included)

infrared ray remote controller (included)

computer is optional

connect to computer with USB cable,
take pictures and videos, make measurement
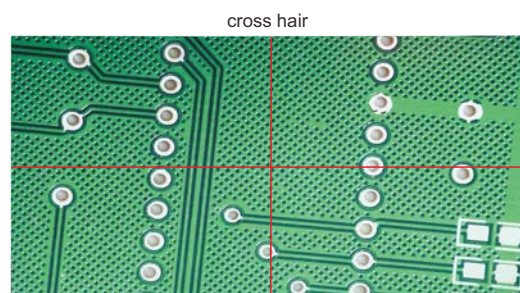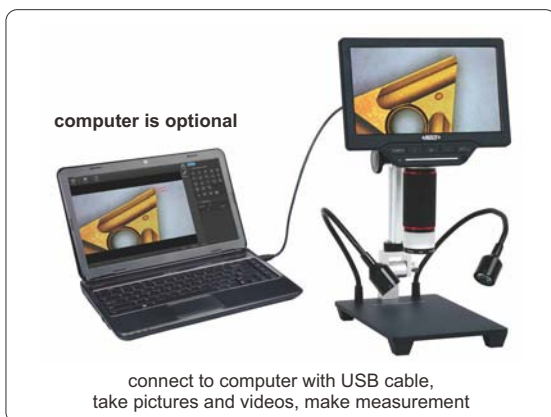
cross hair

grid (color, line width and positions are adjustable)

SPECIFICATION

Display resolution	1024×600
Sensor	1/3" CMOS
Sensor resolution	1280×960
Single pixel size	2μm×2μm
Frame rate	60fps/30fps
Magnification	1X~16X
White balance	auto/manual (10 levels RGB)/calibration
Exposure control	AE lock/exposure compensation (10 levels)
Image control	contrast/saturation/sharpness
Record media	memory card
Output	HDMI
Power supply	built-in lithium battery/power adapter
Dimension (L×W×H)	174×200×350mm
Weight	1.5kg

STANDARD DELIVERY

Main unit	1 pc
USB cable	1 pc
HDMI cable	1 pc
IR remote controller	1 pc
8G memory card and holder	1 pc
Plastic calibration rule	1 pc
Power adapter	1 pc

To be continued

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Continued from previous page

- **Screen freezing:**
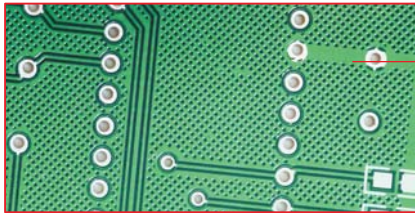
full screen

up-down split screen
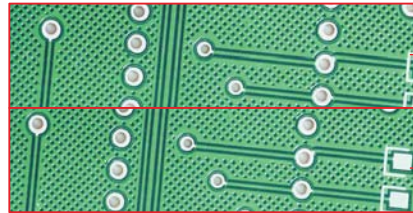
freezing screen

freezing screen

real-time image

left-right split screen
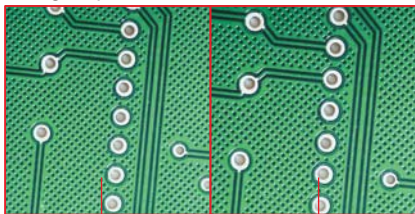
1/4 split screen

first freezing screen
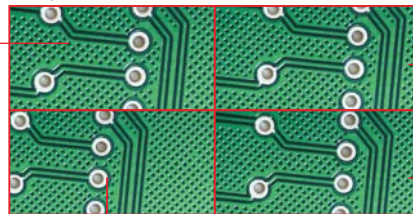
second freezing screen

real-time image

freezing screen   real-time image

third freezing screen

SOFTWARE FOR COMPUTER (included)

- **Language**: Chinese (Simplified), English
- **Operation system**: Windows 7/8/8.1/10 (64bit)
- **Port**: USB2.0 or above
- **Measuring accuracy**: 0.02mm

	point counting		straight line length		continuous line length		area of a rectangle
	area of a polygon		distance between 2 lines		distance between parallel lines		distance between line and first parallel line
	point-line distance		cross line		double cross line		angle
	arc		radius of a circle		radius of a 2-point circle		radius of a 3-point circle
	center distance of 2 circles		center distance of concentric circle				

take videos   browse

measuring tools

take pictures

real-time image

calibration

25

DIGITAL MEASURING MICROSCOPES

focus support
(included)

put the digital microscope directly on the workpiece for inspection and measurement

VIDEO

stand

measurement

take picture

illumination adjustment

focus adjustment

magnification adjustment

white/black plate
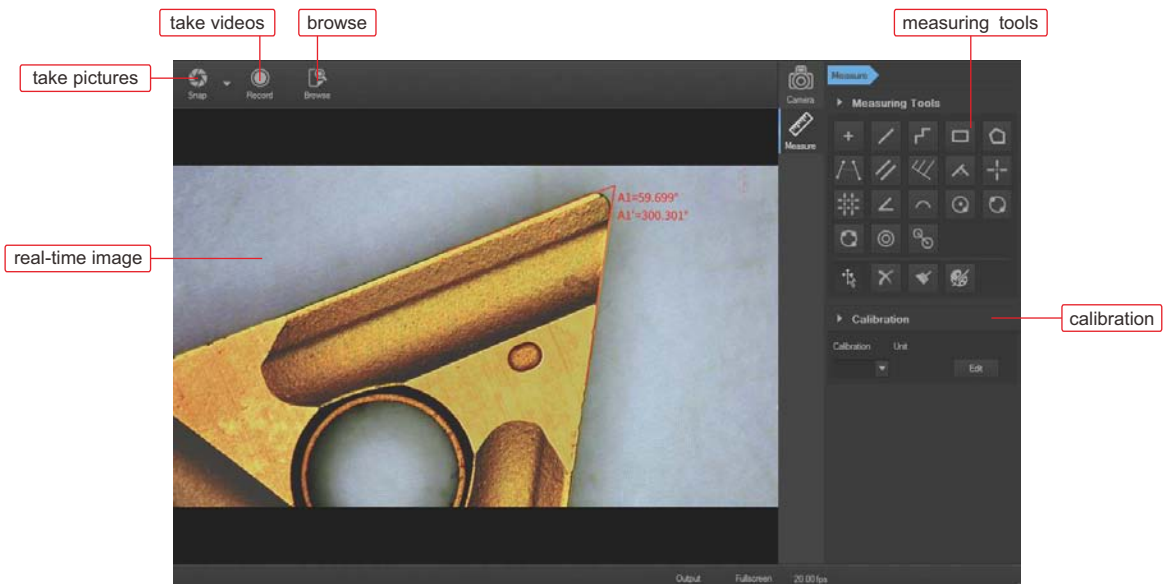
**ISM-PM200SA
computer is optional**
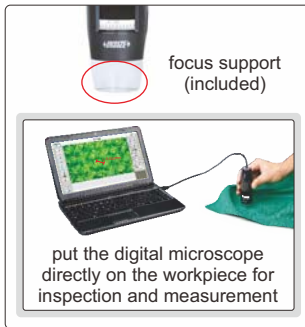
- Can take pictures and videos
- Supplied with software
- Calibration rules
  (graduation 0.1 and 1mm) are included
- With focus support
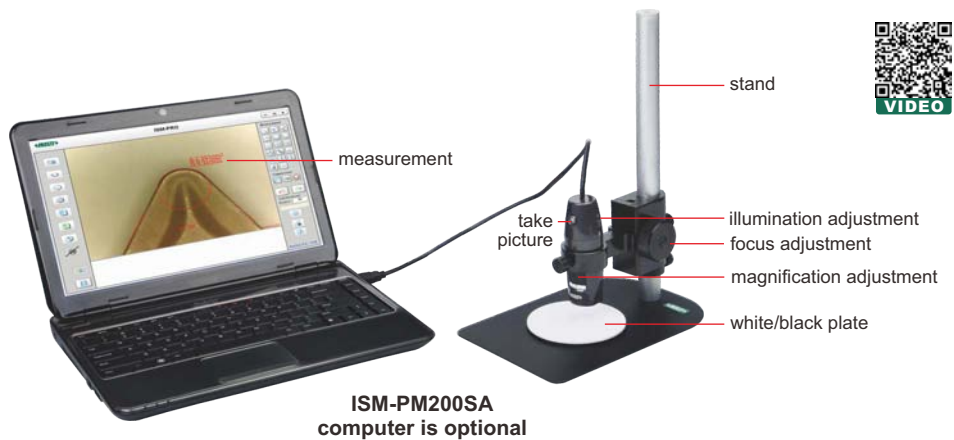
SPECIFICATION

Code	ISM-PM200SA	ISM-PM200SB
Magnification	10X~200X	10X~200X
Stand	standard	universal
Pixel	2M (resolution: 1600×1200)	
Illumination	built-in adjustable LED	
Power supply	USB 2.0 cable (voltage required: 5±0.1V)	

universal stand (included in **ISM-PM200SB**)

filter (**optional**)

OPTIONAL ACCESSORY

Green filter	ISM-PM-GREEN
Yellow filter	ISM-PM-YELLOW
Blue filter	ISM-PM-BLUE

software flash disk
(included)

MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
50X	21mm	8.1×6.4mm	30µm
100X	13mm	3.9×3.1mm	15µm
150X	16mm	2.6×2.1mm	10µm
200X	19mm	1.8×1.5mm	8µm

SOFTWARE

- **Language**: English, Japanese, Korean, German, Turkey, Portuguese, Chinese
- **Operation system**: Windows 7/8/XP/Vista
- **Measuring tools:**

measure length of line or distance between two points

measure radius, length and angle of arc

measure area of rectangle

add number with circle

measure distance between two circles

measure length of continuous line

measure distance between two parallel lines

measure angle with three points

measure angle with two lines

measure radius, girth and area of circle

measure distance between point and line

add text

- **Edge detection measurement tools:**

detect two parallel lines automatically and calculate distance

detect circle automatically, and calculate radius, girth and area

detect arc automatically, and calculate radius, angle and arc length

detect two lines automatically, and calculate angle

detect line automatically, and calculate length

real-time image | measurement

take picture
take video
sent to Excel
sent to CAD
picture taken before

measuring tools
edge detection measurement tools
comparison tools
calibration
zoom in

- **Comparison tools:**
  Create line, angle or circle with desired size, to compare with workpieces

create line | create angle | create circle with tolerance

- **Data is sent to CAD or Excel:**

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WIFI DIGITAL MEASURING MICROSCOPE
CODE ISM-WF200

VIDEO

- Maximum working distance is 5m under WIFI mode
- Can be connected to multiple iPads, Android devices or computers together under WIFI mode
- Take pictures and videos
- Supplied with software

take picture
illumination adjustment
USB/WIFI switch

magnification adjustment

focus support

stand (code **ISM-PM-STAND**, **optional**)

software flash disk (included)

filter (**optional**)

plastic calibration rule (graduation 1mm, included)

glass calibration rule (graduation 0.1mm, included)
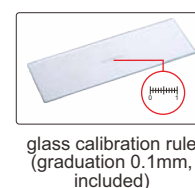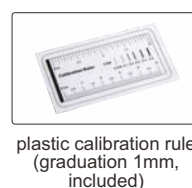
SPECIFICATION

Magnification	10X~200X
Pixel	1.3M (resolution: 1280×1024)
Illumination	built-in adjustable LED
Power supply	built-in rechargeable battery

connected to iPad by WIFI

connected to Android device by WIFI

STANDARD DELIVERY

Microscope	1 pc
Focus support ring for 80X/150X	1 pc
Focus support ring for 60X/200X	1 pc
Glass calibration rule (graduation 0.1mm)	1 pc
Plastic calibration rule (graduation 1mm)	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

connected to computer by WIFI

connected to computer by USB cable

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OPTIONAL ACCESSORY

Stand	ISM-PM-STAND
Green filter	ISM-PM-GREEN
Yellow filter	ISM-PM-YELLOW
Blue filter	ISM-PM-BLUE

MAGNIFICATION, FOCUS DISTANCE, VIEW FIELD AND ACCURACY

Magnification	Focus distance	View field	Accuracy
50X	21mm	8.1×6.4mm	30μm
100X	13mm	3.9×3.1mm	15μm
150X	16mm	2.6×2.1mm	10μm
200X	19mm	1.8×1.5mm	8μm

❶ **Software ISM-PAD** (for iPad by WIFI)

measure length of line or distance between two points

measure radius, girth and area of circle with three points

measure angle

real-time image   measurement

picture taken before

take picture and video

measuring tools and calibration

resolution setting

move measuring piont   take picture/video switch
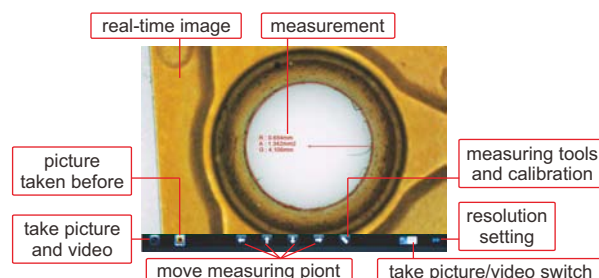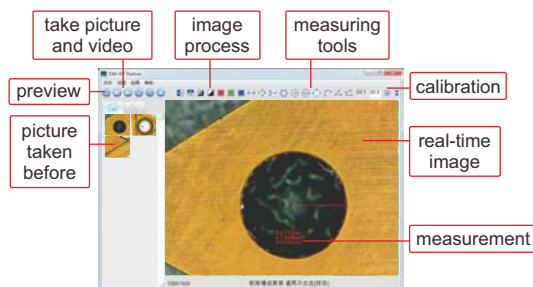
To be continued

Continued from previous page

❷ Software ISM-APK (for Android devices by WIFI)

measure length of line or distance between two points

measure radius, girth and area of circle with three points

measure angle

real-time image | measurement

take picture

picture taken before | move measuring piont | measuring tools and calibration | resolution setting
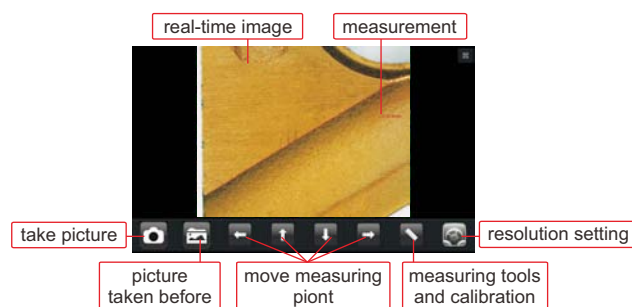
❸ Software ISM-WF Partner (for computer by WIFI)

measure length of line or distance between two points

measure area of polygon

measure angle with three points

measure radius, girth and area of circle with center point

measure length of continuous line

measure radius, girth and area of circle with three points

measure angle with two lines

measure radius, girth and area of circle with two points

measure distance between point and line

measure radius, length and angle of arc

measure area of rectangle

take picture and video | image process | measuring tools

preview | calibration

picture taken before | real-time image

measurement

❹ Software ISM-PRO (for computer by USB cable)

■ **Measuring tools:**

measure length of line or distance between two points

measure length of continuous line

measure radius, length and angle of arc

measure distance between two circles

measure distance between two parallel lines

measure radius, girth and area of circle

measure distance between point and line

measure area of rectangle

measure angle with two lines

add number with circle

measure angle with three points

A add text

take picture | measurement | real-time image

take video

sent to Excel

sent to CAD

measuring tools

edge detection measurement tools
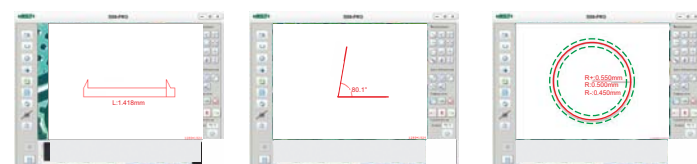
comparison tools

calibration

picture taken before | zoom in

■ **Edge detection measurement tools:**

detect line automatically, and calculate length

detect arc automatically, and calculate radius, angle and arc length

detect circle automatically, and calculate radius, girth and area

detect two lines automatically, and calculate angle
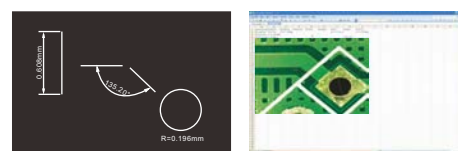
detect two parallel lines automatically and calculate distance

■ **Comparison tools:**
Create line, angle or circle with desired size, to compare with workpieces

create line   create angle   create circle with tolerance

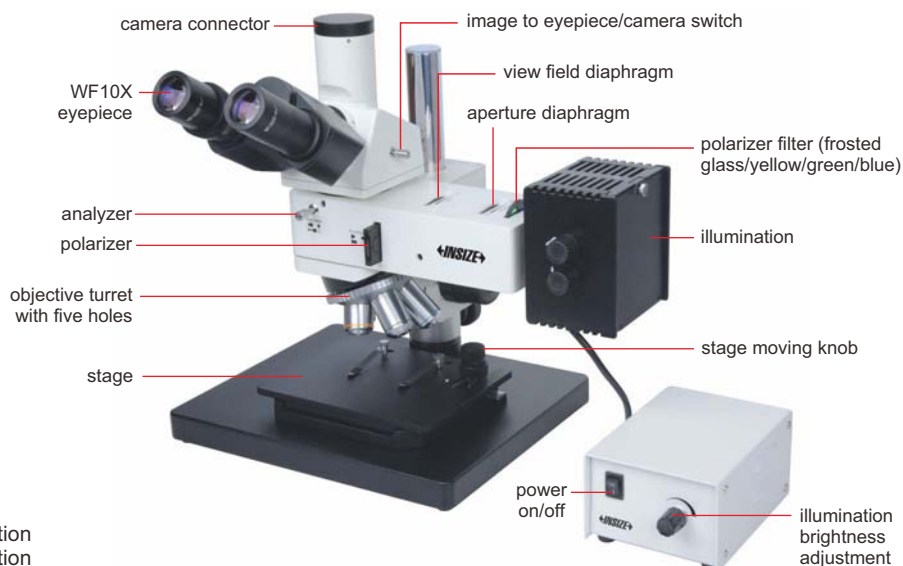■ **Data is sent to CAD or Excel:**

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INDUSTRIAL MICROSCOPES

VIDEO

- Infinite optical system, polarization observation, dark field observation
- Kohler illumination system provides uniform illumination field
- Objective 50X is spring type

camera connector — image to eyepiece/camera switch

WF10X eyepiece — view field diaphragm

aperture diaphragm

polarizer filter (frosted glass/yellow/green/blue)

analyzer
polarizer — illumination

objective turret with five holes

stage — stage moving knob

power on/off — illumination brightness adjustment

5101-M500

SPECIFICATION

Code	5101-M500 (bright field objectives)				5101-M500BD (bright & dark field objectives)			
Illumination	6V/30W halogen lamp, brightness is adjustable				12V/50W halogen lamp, brightness is adjustable			
Objective (infinite plan achromatic)	bright field objectives				bright & dark field objectives			
	5X	10X	20X	50X	5X	10X	20X	50X
Working distance	26.1mm	20.2mm	8.80mm	3.68mm	9.70mm	9.30mm	7.23mm	2.50mm
Numerical aperture	0.12	0.25	0.40	0.70	0.12	0.25	0.40	0.70
Magnification	50X~500X							
Eyepiece (wide field)	10X (view field: Ø22mm)							
Stage	double layer							
	size: 160×140mm							
	travel: 35x30mm							
Pupil distance	53~75mm							
Diopter adjustment	±5 diopter (one eyepiece)							
Power supply	220V, 50/60Hz							
Dimension (L×W×H)	415×345×380mm							
Weight	14kg							

STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Bright & dark field objective (for 5101-M500BD)	PL40X	5101-M-BD40X
	PL60X	5101-M-BD60X
	PL80X	5101-M-BD80X
	PL100X	5101-M-BD100X
10X dividing eyepiece (0.1mm/div.)		5101-M-EPD10X
Bright field objective (for 5101-M500)	PL40X	5101-M-OB40X
	PL60X	5101-M-OB60X
	PL80X	5101-M-OB80X
	PL100X	5101-M-OB100X
Digital camera		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter *		5101-M-ADAPTER

*Digital camera must be used with camera adapter

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INDUSTRIAL INSPECTION MICROSCOPE (LARGE STAGE)
CODE 5104-M700

VIDEO

camera connector

eyepiece

illumination

plug-in polarizer filter
(frosted glass/yellow/green/blue)

aperture diaphragm

view field diaphragm

objective turret with five holes

stage fast moving knob

glass stage

stage moving knob

illumination brightness adjustment
fine focusing knob

coarse focusing knob

■ For observation and inspection of large IC and chip in IT industry

SPECIFICATION

Magnification	40X~400X			
Eyepiece (wide field)	10X (view field: Ø22mm)			
Objective (plan achromatic)	4X	10X	20X	40X
Numerical aperture	0.10	0.25	0.40	0.60
Working distance	17.8mm	10mm	5.8mm	2.9mm
Stage	double layer, size: 300×268mm, travel: 250×200mm			
Kohler illumination	6V/20W halogen lamp, brightness is adjustable built-in green, blue, yellow and frosted glasses			
Pupil distance	48~75mm			
Diopter adjustment	±5 diopter (two eyepieces)			
Power supply	220V, 50/60Hz			
Dimension (L×W×H)	647×268×376mm			
Weight	12kg			

STANDARD DELIVERY

Main unit	1 pc
Camera connector	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Bright field objective	5X plan achromatic objective (focus distance: 15.5mm)	5104-M700-OB5X
	50X plan achromatic objective (focus distance: 0.32mm)	5104-M700-OB50X
	100X plan achromatic objective (focus distance: 2mm)	5104-M700-OB100X
Polarizer and analyzer		5104-M700-AP
Digital camera		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter 0.5X *		ISM-MAS-ADAPTER

*Digital camera must be used with camera adapter

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METALLURGICAL MICROSCOPES

camera connector
polarizer filter (frosted glass/yellow/green/blue)
illumination
image to eyepiece/camera switch
objective turret with five holes
stage
condenser lifting knob
coarse focusing knob
fine focusing knob (graduation 2µm)
power on/off
WF10X eyepiece
view field diaphragm
aperture diaphragm
analyzer
polarizer
stage moving knob
view field diaphragm
transmitted/reflected illumination switch
auxiliary condenser
aperture diaphragm

5102-M600

blue filter (included)

frosted glass filter (included)

- Infinite optical system, observation in reflected or transmitted illumination, polarizing observation
- Kohler illumination system provides uniform illumination field
- Objectives 40X, 60X are spring type

SPECIFICATION

Code	5102-M600 (bright field objectives)				5102-M600BD (bright & dark field objectives)			
Illumination	6V/30W (transmitted)		6V/30W (reflected)		12V/30W (transmitted)		12V/50W (reflected)	
Objective (infinite plan achromatic)	bright field objectives				bright & dark field objectives			
	5X	10X	40X	60X	5X	10X	20X	40X
Working distance	26.1mm	20.2mm	3.98mm	3.18mm	9.70mm	9.30mm	7.20mm	3.00mm
Numerical aperture	0.12	0.25	0.60	0.70	0.12	0.25	0.40	0.70
Magnification	50X~600X				50X~400X			
Eyepiece (wide field)	10X (view field: Ø22mm)							
Stage	double layer							
	size: 210×140mm							
	travel: 75x50mm							
Pupil distance	53~75mm							
Diopter adjustment	±5 diopter (one eyepiece)							
Power supply	220V, 50/60Hz							
Dimension (L×W×H)	456×260×498mm							
Weight	11kg							

STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc
Filter (blue/frosted glass)	1 pc of each

OPTIONAL ACCESSORY

	PL50X	5101-M-BD50X
Bright & dark field objective (for 5102-M600BD)	PL60X	5101-M-BD60X
	PL80X	5101-M-BD80X
	PL100X	5101-M-BD100X
10X dividing eyepiece (0.1mm/div.)		5101-M-EPD10X
Bright field objective (for 5102-M600)	PL20X	5101-M-OB20X
	PL50X	5101-M-OB50X
	PL80X	5101-M-OB80X
	PL100X	5101-M-OB100X
Digital camera		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter *		5101-M-ADAPTER

*Digital camera must be used with camera adapter

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METALLURGICAL MICROSCOPES (PROFESSIONAL TYPE)

digital camera (supplied with software)
and computer are optional

Labels: WF10X eyepiece, camera connector, illumination, analyzer slot, bright and dark field switch, view field diaphragm, DIC slot, aperture diaphragm, objective turret with five holes, stage, stage moving knob, illumination brightness adjustment, fine focusing knob (graduation 1μm), coarse focusing knob

5108-M3000

- Infinite chromatic aberration correction optical system
- Three way observation tube with infinite hinge
- Translucent and reflective frame, front low-hand position coarse and fine coaxial focus adjustment mechanism, with adjustment elastic device to prevent sliding and random upper limit device
- Bright and dark field five-hole converter with DIC slot
- Adopt digital dimming, with light intensity reset and setting function
- With polarizer insert plate and 360° rotating analyzer insert slot

VIDEO

SPECIFICATION

Code	5108-M3000 (standard type)				5108-M3000H (high-definition type)			
Eyepiece	high eye point large field SWH10X-H (view field: Ø25mm, adjustable visibility)							
Objective (infinite long working distance bright and dark field semi achromatic)	5X	10X	20X	50X	5X	10X	20X	50X
Working distance	15mm	8.4mm	10.3mm	3.0mm	20mm	11mm	3.0mm	1.0mm
Numerical aperture	0.15	0.30	0.40	0.75	0.15	0.30	0.45	0.80
Optical magnification	50X~500X (up to 1000X with optional 100X objective)							
Digital magnification	170X~1700X (on 21.5" monitor), up to 3400X with optional 100X objective							
Stage	double layer							
	size: 310×240mm							
	travel: 150×100mm							
Condenser	roll-out achromatic condenser (numerical aperture 0.9)							
Illumination	5W LED, transmitted and reflected							
Observation tube	inverse image, distance adjustment: 50~76mm, two grade spectral ratio binocular: trinocular=100:0							
Diopter adjustment	±5 diopter (two eyepieces)							
Power supply	AC 100-240V							
Dimension (L×W×H)	310×600×500mm							
Weight	27kg							

STANDARD DELIVERY

Main unit	1 pc
Anti-dust cover	1 pc
0.65X camera adapter (adjustable focus)	1 pc
Polarizer and analyzer	1 pc of each

OPTIONAL ACCESSORY

Camera and software	ISM-CM63
Glass calibration rule	ISM-MAS-SCALE
Computer	5108-M-COMPUTER
2.5X infinite long working distance bright field semi achromatic objective	5108-M-OB2D5X
100X infinite long working distance bright and dark field semi achromatic objective	5108-M-BD100X
50X infinite long working distance bright and dark field achromatic objective	5108-M-APO50X
100X infinite long working distance bright and dark field achromatic objective	5108-M-APO100X
Differential interference module (DIC)	5108-M-DIC

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METALLURGICAL MICROSCOPES

rotary table (O.D. Ø130mm, I.D. Ø20mm)

WF10X eyepiece

stage

illumination

polarizer filter (frosted glass/yellow/green/blue)

aperture diaphragm

view field diaphragm

objective turret with five holes

camera connector

coarse focusing knob

fine focusing knob (graduation 2µm)

power on/off

analyzer   polarizer

stage moving knob

image to eyepiece/camera switch
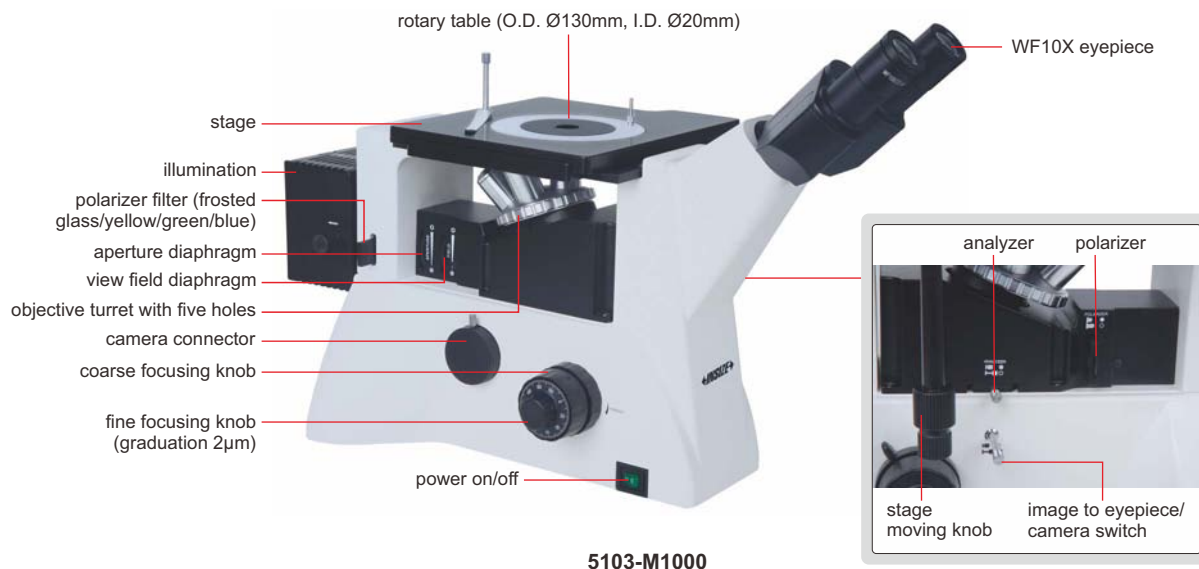
5103-M1000

- Infinite optical system, polarization observation
- Kohler illumination system provides uniform illumination field
- Objectives 50X, 100X are spring type

SPECIFICATION

Code	5103-M1000 (bright field objectives)				5103-M1000BD (bright & dark field objectives)			
Illumination	6V/30W halogen lamp, brightness is adjustable				12V/50W halogen lamp, brightness is adjustable			
Objective (infinite plan achromatic)	bright field objectives				bright & dark field objectives			
	10X	20X	50X	100X	5X	10X	20X	50X
Working distance	20.2mm	8.80mm	3.68mm	0.40mm	9.70mm	9.30mm	7.23mm	2.50mm
Numerical aperture	0.25	0.40	0.70	0.85	0.12	0.25	0.40	0.70
Magnification	100X~1000X				50X~500X			
Eyepiece (wide field)	10X (view field: Ø22mm)							
Stage	double layer							
	size: 242×200mm							
	travel: 30x30mm							
Pupil distance	53~75mm							
Diopter adjustment	±5 diopter (one eyepiece)							
Power supply	220V, 50/60Hz							
Dimension (L×W×H)	614×250×394mm							
Weight	13kg							

STANDARD DELIVERY

Main unit	1 pc
Polarizer and analyzer	1 pc of each
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Bright & dark field objective (for 5103-M1000BD)	PL40X	5101-M-BD40X
	PL60X	5101-M-BD60X
	PL80X	5101-M-BD80X
	PL100X	5101-M-BD100X
10X dividing eyepiece (0.1mm/div.)		5103-M-EPD10X
Bright field objective (for 5103-M1000)	PL5X	5101-M-OB5X
	PL40X	5101-M-OB40X
	PL60X	5101-M-OB60X
	PL80X	5101-M-OB80X
Digital camera		ISM-CM63
Camera adapter *		5101-M-ADAPTER

*Digital camera must be used with camera adapter

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PORTABLE METALLURGICAL MICROSCOPE
CODE 5109-PM500

digital camera (supplied with software) **and computer are optional**

connect to digital camera

eyepiece

focusing ring

battery

aperture diaphragm

LED light

X-Y stage moving knob

magnetic base switch
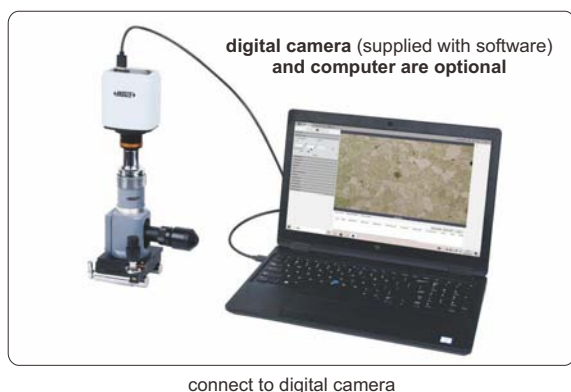
- Illumination is powered by batteries
- Aperture diaphragm improves image quality and increases depth of field
- Magnetic base with on/off switch can adhere on metal workpieces
- Can be connected to digital cameras

SPECIFICATION

Magnification	100X~500X	
Eyepiece (wide field)	10X/12.5X	
Objective (plan achromatic)	10X (included)	40X (included)
Numerical aperture	0.25	0.64
Illumination	3W LED, built-in batteries	
Stage	double layer, size: 15×12mm	
Dimension (L×W×H)	210×160×95mm	
Weight	1.5kg	

STANDARD DELIVERY

Main unit	1 pc
Eyepiece	2 pcs
Objective	2 pcs
Battery (AAA)	3 pcs

OPTIONAL ACCESSORY

Objective	5X plan achromatic	5109-PM500-OB5X
	20X plan achromatic	5109-PM500-OB20X
	100X plan achromatic	5109-PM500-OB100X
Eyepiece	5X	5109-PM500-EP5X
	15X	5109-PM500-EP15X
Digital camera＊		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter 0.5X		ISM-MAS-ADAPTER

＊Digital camera must be used with camera adapter

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ZOOM STEREO MICROSCOPE (PROFESSIONAL TYPE)
CODE 5107-S70T

VIDEO

LED ring light (**optional**)

0.5X camera connector

10X eyepiece

image to eyepiece/camera switch

objective magnification adjustment

focus adjustment

reflected LED light

objective

working stage
diameter：100mm

LED light adjustment

■ Greenough optical system, clear observation, real color
■ High working distance is convenient for operation
■ Excellent flat image and large depth of field, make observation comfortable
■ 6.7:1 large zoom ratio, allow quick observation adjustment

SPECIFICATION

Optical tube	trinocular
Eyepiece (wide field)	10X (view field: Ø22mm)
Objective	0.67X~4.5X (zoom)
Observation tube	45° trinocular tube inclination angle, built-in 0.5X adapter
Zoom ratio	6.7:1
Pupil distance	50~75mm
Diopter adjustment	-8~+5 diopter (both eyepieces)
Working distance of objective	110mm
Max. workpiece height	106mm
Illumination	adjustable LED light
Power supply	110/220V, 50/60HZ
Dimension (L×W×H)	330×300×368mm
Weight	3.5kg

frosted glass filter
(included)

white/black plate
(included)

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STANDARD DELIVERY

Main unit	1 pc
10X eyepiece	2 pcs
Ø100mm glass plate	1 pc
Ø100mm white/black plate	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Auxiliary objective	0.5X	5107-S70T-OB05X
	1.5X	5107-S70T-OB15X
	2X	5107-S70T-OB20X
Eyepiece	15X (view field: Ø16mm)	5107-S70T-EP15X
	20X (view field: Ø12.5mm)	5107-S70T-EP20X
LED ring light		ISM-ZS-RL
Digital camera		ISM-CM20, ISM-CM63, ISM-ZS70-S

PARALLEL LIGHT STEREO MICROSCOPE
CODE ISM-ZS200

PARALLEL LIGHT PATH: REDUCE FATIGUE, ACCESSORIES CAN BE ADDED INTO LIGHT PATH

coaxial illumination (**optional**)

10X eyepiece

objective magnification adjustment

coarse focusing knob

fine focusing knob

1X plan field achromatic objective

transmitted illumination adjustment

reflected illumination adjustment

working stage diameter: 100mm

VIDEO
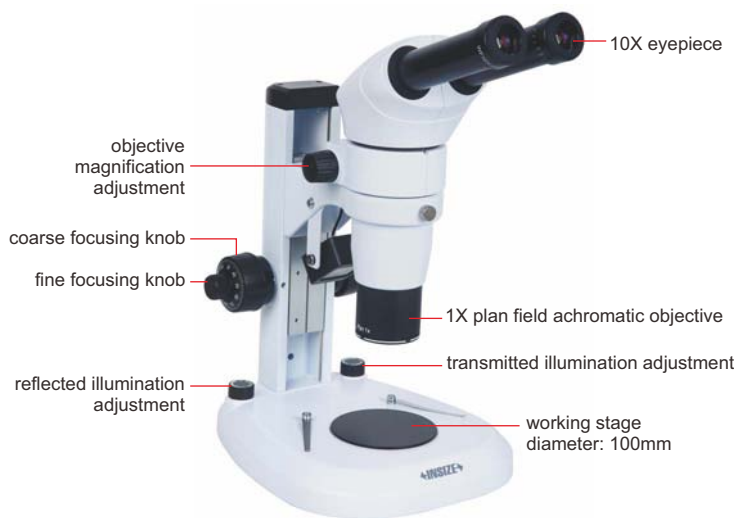
- Infinity parallel optical system and 20° inclined optical tube reduce fatigue
- Coaxial illumination is optional for deep holes which cannot be observed by ring light
- Aperture diaphragm is optional for large depth of field and high quality image

optical path splitter (**optional**)

iris diaphragm (**optional**)

SPECIFICATION

Optical tube	binocular (20° inclined)
Eyepiece (wide field)	10X (view field: Ø22mm)
Objective	0.8X~8X (zoom)
Zoom ratio	1:10
Pupil distance	55~75mm
Diopter adjustment	±5 diopter (both eyepieces)
Working distance of objective	78mm
Max. workpiece height	72mm
Illumination	adjustable reflected and transmitted LED light
Power supply	110/220V, 50/60HZ
Dimension (L×W×H)	240×280×440mm
Weight	4.3kg

STANDARD DELIVERY

Main unit	1 pc
WF10X eyepiece	2 pcs
Ø100mm glass plate	1 pc
Ø100mm white/black plate	1 pc
Anti-dust cover	1 pc

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OPTIONAL ACCESSORY

|		
Objective	0.5X achromatic objective (focus distance: 186mm)	ISM-ZS200-OB05X *
	2X plan achromatic objective (focus distance: 32.5mm)	ISM-ZS200-OB2X
	0.5X plan apochromatic objective (focus distance: 126mm)	ISM-ZS200-APO05X *
Eyepiece	WF15X (view field: Ø16mm)	ISM-ZS200-EP15X
	WF20X (view field: Ø12mm)	ISM-ZS200-EP20X
	WF30X (view field: Ø20mm)	ISM-ZS200-EP30X
Sleeve for objective		ISM-ZS200-ADAPTER
Iris diaphragm		ISM-ZS200-IRD
Optical path splitter		ISM-ZS200-OBS
Coaxial illumination		ISM-ZS200-COAXIAL
Digital camera **		ISM-CM20, ISM-CM63

*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**

**Digital camera must be used with optical path splitter

ZOOM STEREO MICROSCOPES (ADVANCED TYPE)

LARGE ZOOM RATIO

connect to digital camera
(for **ISM-ZS100T**)

10X eyepiece

0.55X camera connector

objective magnification adjustment

objective

focus adjustment

reflected illumination adjustment

transmitted illumination adjustment

working stage diameter: 100mm

VIDEO
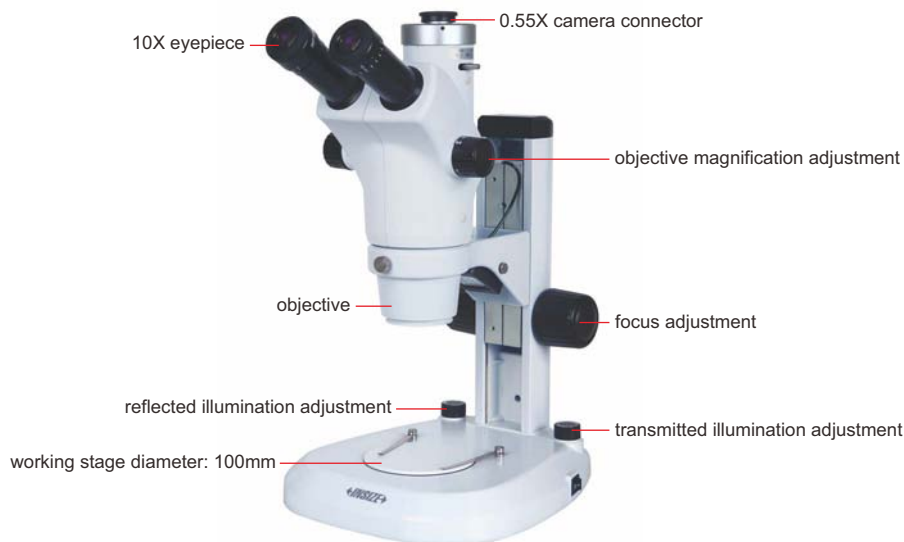
ISM-ZS100T

LED ring light (**optional**)

SPECIFICATION

Code	ISM-ZS100	ISM-ZS100T
Optical tube	binocular	trinocular
Eyepiece (wide field)	10X (view field: Ø23mm)	
Objective	0.6X~5X (zoom)	
Zoom ratio	1:8.3	
Pupil distance	55~75mm	
Diopter adjustment	±5 diopter (two eyepieces)	
Working distance of objective	115mm	
Max. workpiece height	75mm	
Illumination	adjustable reflected and transmitted LED light	
Power supply	110/220V, 50/60HZ	
Dimension (L×W×H)	260×310×490mm	
Weight	4.9kg	

STANDARD DELIVERY

Main unit	1 pc
Camera connector 0.55X for ISM-ZS100T	1 pc
Digital camera adapter 1X for ISM-ZS100T	1 pc
WF10X eyepiece	2 pcs
Ø100mm glass plate	1 pc
Ø100mm white/black plate	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Auxiliary objective	0.5X (focus distance: 220mm)	ISM-ZS100-OB05X *
	0.7X (focus distance: 125mm)	ISM-ZS100-OB07X
	2X (focus distance: 45mm)	ISM-ZS100-OB2X
Eyepiece	WF15X (view field: Ø16mm)	ISM-ZS100-EP15X
	WF20X (view field: Ø12mm)	ISM-ZS100-EP20X
	WF30X (view field: Ø8mm)	ISM-ZS100-EP30X
Sleeve for auxiliary objective		ISM-ZS200-ADAPTER
LED ring light		ISM-ZS-RL
Digital camera for ISM-ZS100T		ISM-CM20, ISM-CM63, ISM-ZS70-S

*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**

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ZOOM STEREO MICROSCOPES (STANDARD TYPE)

VIDEO

WF 10X eyepiece

objective magnification adjustment

objective

reflected LED light

reflected LED light adjustment

focus adjustment

transmitted LED light adjustment

working stage diameter：100mm

LED ring light (**optional**)

ISM-ZS50

SPECIFICATION

Code	ISM-ZS50	ISM-ZS50T
Optical tube	binocular	trinocular
Eyepiece (wide field)	10X (view field: Ø22mm)	
Objective	0.8X~5X (zoom)	
Zoom ratio	1: 6.3	
Pupil distance	55~75mm (adjustable)	
Diopter adjustment	±5 diopter (two eyepieces)	
Working distance of objective	115mm	
Max. workpiece height	75mm	
Illumination	adjustable reflected and transmitted LED light	
Power supply	110/220V, 50/60HZ	
Dimension (L×W×H)	290×260×480mm	
Weight	4.9kg	

STANDARD DELIVERY

Main unit	1 pc
WF 10X eyepiece	2 pcs
Ø100mm glass plate	1 pc
Ø100mm white/black plate	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Auxiliary objective	0.5X	ISM-ZS50-OB05X*
	2X	ISM-ZS50-OB2X
Eyepiece	10X dividing eyepiece (graduation 0.1mm/div.)	ISM-ZS50-EPD10X
	WF15X (view field: Ø16mm)	ISM-ZS50-EP15X
	WF20X (view field: Ø12mm)	ISM-ZS50-EP20X
LED ring light		ISM-ZS-RL
Sleeve for auxiliary objective		ISM-ZS200-ADAPTER
Digital camera for ISM-ZS50T		ISM-CM20, ISM-CM63, ISM-ZS70-S
Camera adapter 0.5X for ISM-ZS50T **		ISM-MAS-ADAPTER

*0.5X auxiliary objective must be used with **ISM-ZS200-ADAPTER**

**Digital camera must be used with camera adapter 0.5X

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ZOOM STEREO MICROSCOPES (WITH UNIVERSAL STAND)
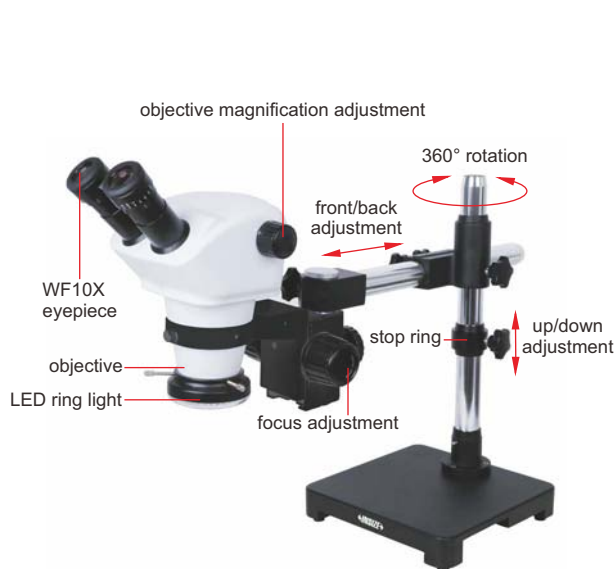
5106-M40 (with stand type A)
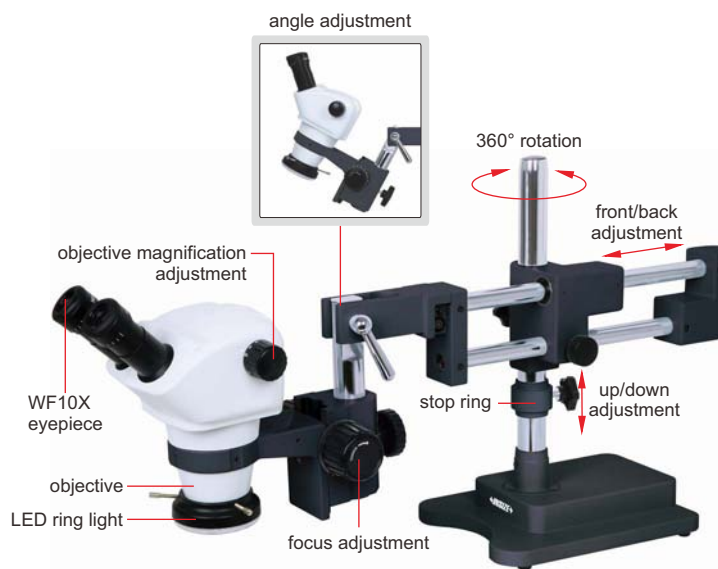
5106-M50 (with stand type B)

SPECIFICATION

Code	5106-M40	5106-M40T	5106-M50	5106-M50T
Stand	type A		type B	
Optical tube	binocular	trinocular	binocular	trinocular
Eyepiece (wide field)	10X (view field: Ø22mm)			
Objective	0.8X~5X (zoom)			
Zoom ratio	1:6.3			
Pupil distance	55~75mm			
Diopter adjustment	±5 diopter (two eyepieces)			
Working distance of objective	115mm			
Max. workpiece height	300mm			
Illumination	adjustable reflected LED ring light			
Power supply	power adapter			
Dimension (L×W×H)	610×220×430mm		790×230×430mm	
Weight	13.7kg		20kg	

STANDARD DELIVERY

Main unit (with stand)	1 pc
WF10X eyepiece	2 pcs
LED ring light	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Auxiliary objective	0.5X	ISM-ZS50-OB05X *
	2X	ISM-ZS50-OB2X
Eyepiece	10X dividing eyepiece (0.1mm/div.)	ISM-ZS50-EPD10X
	WF15X (view field: Ø16mm)	ISM-ZS50-EP15X
	WF20X (view field: Ø12mm)	ISM-ZS50-EP20X
Adapter sleeve		ISM-ZS30-ADAPTER
0.5X adapter for 5106-M40T/M50T		ISM-MAS-ADAPTER
Digital camera for 5106-M40T/M50T **		ISM-CM20, ISM-CM63

* 0.5X auxiliary objiective must be used with **ISM-ZS30-ADAPTER**

** Digital camera must be used with 0.5X adapter **ISM-MAS-ADAPTER**

WF 10X eyepiece

objective magnification adjustment

reflected LED light

objective

focus adjustment

reflected LED light adjustment

transmitted LED light adjustment

working stage diameter: 95mm

SPECIFICATION

Optical tube	binocular
Eyepiece (wide field)	10X (view field: Ø20mm)
Objective	1X~4.5X (zoom)
Zoom ratio	1:4.5
Pupil distance	55~75mm (adjustable)
Diopter adjustment	±5 diopter (two eyepieces)
Working distance of objective	97mm
Max. workpiece height	60mm
Illumination	adjustable reflected and transmitted LED light
Power supply	110/220V, 50/60HZ
Dimension (L×W×H)	260×190×400mm
Weight	4.3kg

LED ring light (**optional**)

STANDARD DELIVERY

Main unit	1 pc
WF 10X eyepiece	2 pcs
Ø95mm glass plate	1 pc
Ø95mm white/black plate	1 pc
Anti-dust cover	1 pc

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OPTIONAL ACCESSORY

Auxiliary objective	**0.5X**	**ISM-ZS30-OB05X** *
	0.63X	**ISM-ZS30-OB06X** *
	0.75X	**ISM-ZS30-OB07X** *
	2X	**ISM-ZS30-OB2X**
Eyepiece	**10X dividing eyepiece (graduation 0.1mm/div.)**	**ISM-ZS30-EPD10X**
	WF15X (view field: Ø16mm)	**ISM-ZS50-EP15X**
	WF20X (view field: Ø12mm)	**ISM-ZS50-EP20X**
LED ring light		**ISM-ZS-RL**
Sleeve for auxiliary objective		**ISM-ZS30-ADAPTER**
Digital camera		**ISM-CM63**
Camera adapter 0.75X **		**ISM-AD-0D75**

*0.5X, 0.63X and 0.75X auxiliary objectives must be used with **ISM-ZS30-ADAPTER**

**Digital camera must be used with camera adapter 0.75X

LONG WORKING DISTANCE STEREO MICROSCOPES (LOW MAGNIFICATION)

VIDEO

10X eyepiece

flexible arm

0.8X objective

5305-ZS80

10X eyepiece

0.8X objective

flexible arm

magnetic base

5305-ZS90

SPECIFICATION

Code	5305-ZS80 (with metal base)	5305-ZS90 (with magnetic base)
Magnification	8X	
Eyepiece (wide field)	10X (view field: Ø20mm)	
Objective	0.8X	
Pupil distance	55~75mm	
Diopter adjustment	±5 diopter (one eyepiece)	
Working distance of objective	115mm	
Max. workpiece height	100mm	140mm
Dimension (L×W×H)	280x160x370mm	280x180x410mm
Weight	3.7kg	2.1kg

STANDARD DELIVERY

Main unit	1 pc
10X eyepieces	1 pair
0.8X objective	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Eyepiece	WF5X (view field: Ø20mm)	5305-ZS80-EP5X
	WF15X (view field: Ø15mm)	5305-ZS80-EP15X
	WF20X (view field: Ø10mm)	5305-ZS80-EP20X
LED ring light		ISM-ZS-RL

LED ring light (**optional**)

POLARIZING MICROSCOPE
CODE ISM-POL1000

VIDEO

10X eyepiece

analyzer revolving disc

illumination

bertrand lens (sliding in/out of optical path)

polarizer filter

aperture diaphragm

reflected-transmitted observation switch

view field diaphragm

reflector polarizer

objective turret with four holes

revolving round stage

condenser (aperture diaphragm is adjustable)

stay lens

coarse focusing knob

fine focusing knob (graduation: 2μm)

polarizer (adjusting disc with scale)

condenser

- Widely used in geology, mineralogy, fossil fuel exploration
- Single polarization, othorgonal polarization or conoscopic observation are available

SPECIFICATION

Magnification	40X~600X				
Eyepiece	10X (view field: Ø20mm)				
Infinite strain free plan achromatic objective	4X (transmitted/reflected)	10X (transmitted/reflected)	20X (transmitted)	40X (transmitted)	60X (transmitted)
Working distance	22.2mm	6.1mm	6.4mm	0.6mm	0.3mm
Numerical aperture	0.1	0.25	0.4	0.65	0.8
Stage	revolving round stage				
	diameter: Ø160mm				
	graduation: 1°, resolution: 6'				
Pupil distance	53~75mm				
Diopter adjustment	±5 diopter (one eyepiece)				
Illumination	12V/50W halogen lamp, brightness is adjustable (reflected illumination)				
	12V/20W halogen lamp, brightness is adjustable (transmitted illumination)				
Power supply	110/220V, 50/60HZ				
Dimension (L×W×H)	614×250×394mm				
Weight	13kg				

STANDARD DELIVERY

Main unit	1 pc
Micrometer	1 pc
Grid plate	1 pc
10X crossing eyepiece (view field: Ø20mm)	1 pc
10X dividing eyepiece (view field: Ø20mm, graduation 0.1mm)	1 pc
λ slip (first class red) and 1/4λ slip	1 pc
Quartz wedge	1 pc

OPTIONAL ACCESSORY

Objective for reflected system	PL20X	ISM-POL1000-OBR20X
	PL40X	ISM-POL1000-OBR40X
	PL60X	ISM-POL1000-OBR60X
	PL100X	ISM-POL1000-OBR100X
Objective for transmitted system	PL100X	ISM-POL1000-OBT100X
Specimen presser		ISM-POL1000-SP

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DIGITAL CAMERA FOR MICROSCOPES (WITH PAD)
CODE ISM-ZS70-S

ATTENTION: CAMERA CONNECTOR AND ADAPTER ARE NEEDED ACCORDING TO MICROSCOPES

MEASUREMENT, TAKE PICTURES AND VIDEOS
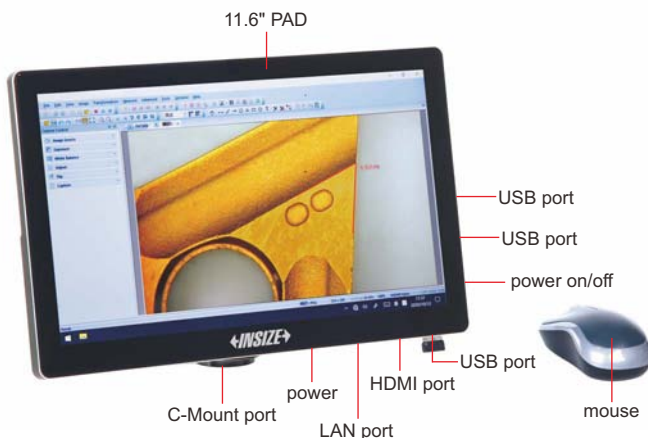
VIDEO

11.6" PAD

USB port
USB port
power on/off
USB port
power
HDMI port
C-Mount port
LAN port
mouse

glass calibration rule
(included, graduation 0.1mm)
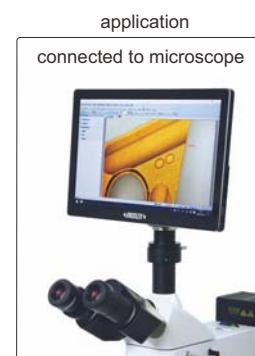
application

connected to microscope

- Windows 10 operation system
- Built-in software, can take pictures and videos, can measure
- Language: Chinese, English, French, Japanese, German, Polish, Arabic
- Automatic exposure, white balance, brightness, contrast ratio, saturation are adjustable
- Image process feature: zoom in/out, flip, mirror, stitching and so on
- Output to Excel or CSV file

software (included)
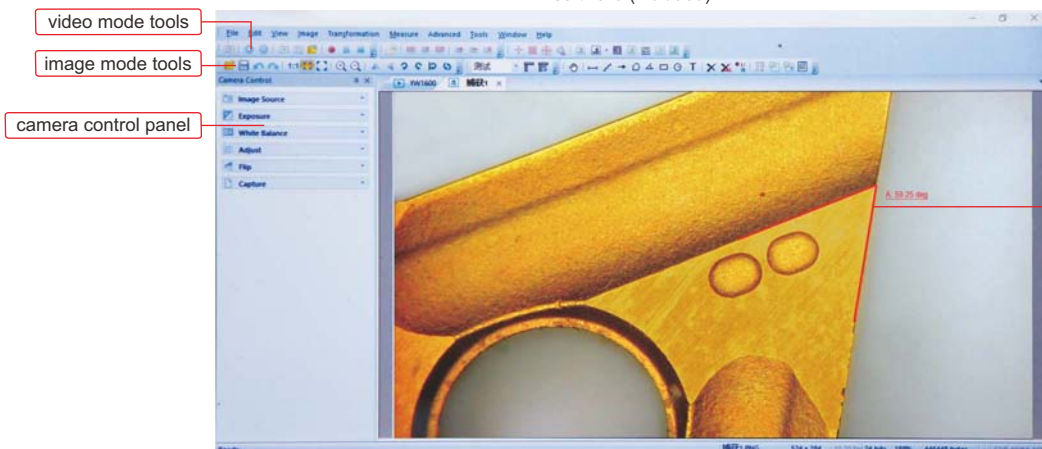
video mode tools
image mode tools
camera control panel

measurement on pictures

- **Measuring tools**

measure line	measure meander line	arrow mark	measure polygon	calibration
measure angle	measure rectangle	measure circle	text mark	show/hide scale

SPECIFICATION

Sensor	1/2.3" CMOS
Pixel	16M
Resolution	800×600, 1600×1200, 1920×1080, 2048×1536, 2304×1728, 2592×1944, 4608×3456
Frame rate	30fps (1920×1080)
Output	HDMI, USB 3.0
Power supply	power adapter
Dimension (L×W×H)	280.3×177.4×12.5mm
Weight	0.9kg

STANDARD DELIVERY

Main unit	1 pc
Mouse	1 pc
Glass calibration rule (graduation 0.1mm)	1 pc
AC/DC adapter	1 pc

DIGITAL CAMERA FOR MICROSCOPES
CODE ISM-CM63

- To be used with computers
- Sony Exmor back-illuminated CMOS sensor
- USB3.0 transmission
- Automatic exposure, gain adjustment, white balance, chrominance adjustment, saturation adjustment, gamma correction, luminance adjustment, contrast adjustment

application

adapter 0.75X (**optional**)

C-mount port

glass calibration rule
(included, graduation 0.1mm)

0   1

VIDEO

software (included)

automatic image stitching (expand field of view)

selectable resolution
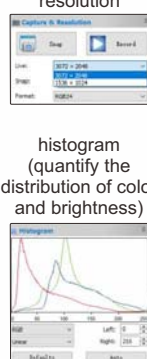
measurement items

real time gray calibration

left side   right side

+

histogram
(quantify the distribution of color and brightness)
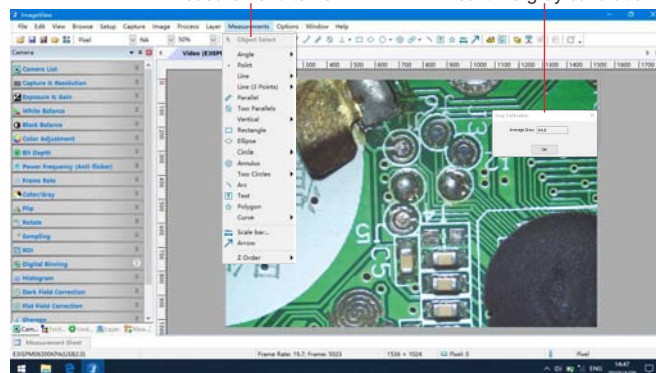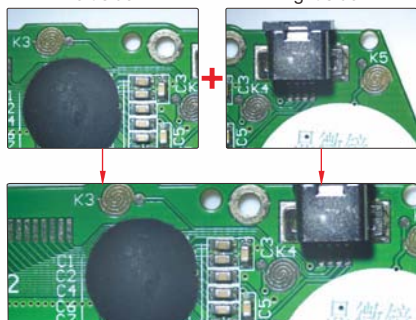
after stitching

counting
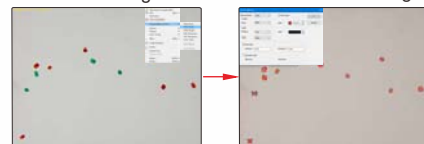
black balance
(reduce color difference)

flat field correction
(reduce brightness difference)
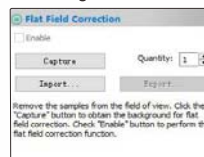
dark field correction
(reduce thermal noise)

select counting tool   automatic counting
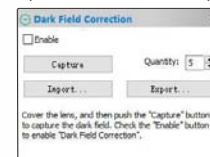
The software can control image completely, including measurement, image stitching, extend focus depth, image gray processing, RGB histogram observation, image color sampling, 3D plot (3D representation of image intensity), image exposure, white balance, black balance, image bit depth, flat field correction and dark field correction, etc.

Measuring tools:

measure length of line or distance between two points

measure rectangle

measure distance between two parallel lines

measure width and diameter of ring

measure angle

measure diameter, length, perimeter angle of arc

measure radius, girth and area of circle

measure area of polygon

measure axis lengths, girth and area of ellipse

measure center distance between two circles

calibration

measure length of open curve

focus stacking
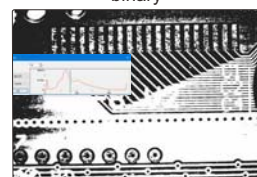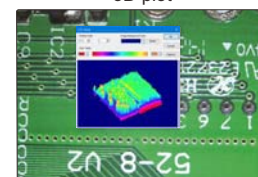
focus on the top   focus on the bottom   clear image of both top and bottom

+

binary   3D plot

separate target and background   visualize the distribution of image brightness and color

25

SPECIFICATION

Sensor (back-up)	1/1.8" CMOS
Resolution	3072×2048
Pixel	6.3M
Single pixel size	2.4×2.4µm
Spectral range	380-650nm (with infrared cut filter)
Frame rate	30fps
Sampling average	1×1
Exposure time	0.1ms~15s
Power supply	USB port
Weight	400g

COMPUTER REQUIREMENT

Operation system	Windows 7/8/10
CPU	Intel Core 2 2.8Hz or above
Memery	2GB or above
USB port	USB3.0 (recommand) or USB2.0
Display	17" or above

STANDAER DELIVERY

Camera (USB cable included)	1 pc
Software	1 pc
Glass calibration rule (graduation 0.1mm)	1 pc

OPTIONAL ACCESSORY

Adapter 0.75X	ISM-AD-0D75

SMART CAMERA
CODE ISM-MV10

HDMI port

power

USB port

I/O port

VIDEO

- Built-in software, operated by mouse.
- Automatically calculate, store the test results and sent to Excel
- Camera with PLC control input and output interface, can be integrated with automation equipment
- Functions: presence or absence of objects, position tilt correction, object counting, color detection, stain detection, dimension measurement, position guide, etc.

SPECIFICATION

Chip structure	FPGA+ARM
Operation system	Linux 3.10
Kernel structure	dual-core Cortex-A9
Frequency	1GHZ
I/O port	3 sets of input and output (can be connected to photoelectric switch, wire switch, PLC, etc.)
Operation temperature	-10~70°C
Sensor	1/2" CMOS
Single pixel size	3.75×3.75µm
Resolution	1920×1080
Frame rate	60fps
Video output	HDMI port
Lens connection	standard C port

SOFTWARE

presence or absence of objects

OK   NG

select the area and specify the target, the camera will automatically detect the presence or absence of the target.

automatic counting

OK   NG

select the area and specify the target, the camera will automatically calculate the number of targets.

dimension measurement

OK   NG

measuring angle, distance, radius, center distance, etc.

STANDAER DELIVERY

Camera (with HDMI cable)	1 pc
Software	1 pc

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ATTENTION: ADAPTERS ARE NEEDED ACCORDING TO MICROSCOPES

FOCUS STACKING

AUTOMATIC IMAGE STITCHING

DIGITAL CAMERA FOR MICROSCOPES
CODE ISM-CM20
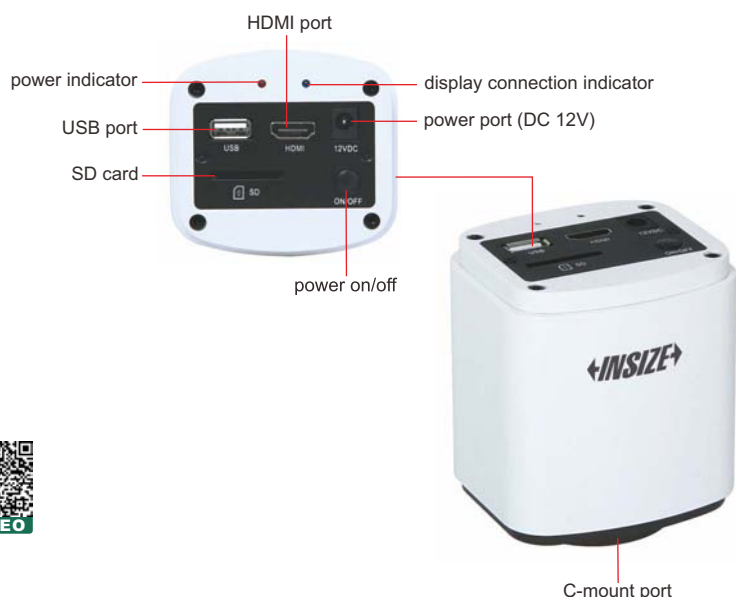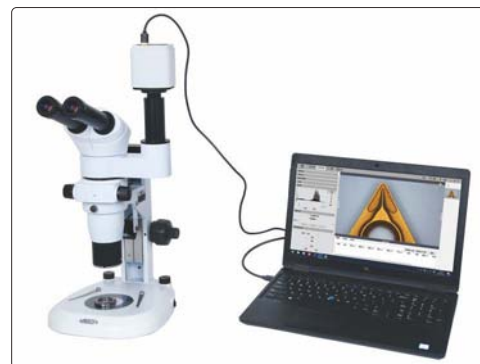
HDMI port

power indicator

display connection indicator

USB port

power port (DC 12V)

SD card

power on/off

application

VIDEO

C-mount port

adapter 0.5X (**optional**)

glass calibration rule
(included, graduation 0.1mm)

- 1080P high-definition image
- Can be connected with displays or computers
- Built-in simple measuring software for displays, without computer
- Professional measuring software for computers is included
- For bright field, dark field or fluorescent field
- Automatic exposure, white balance, gain adjustment, gamma correction, brightness contrast adjustment, saturation adjustment, chroma sharpness adjustment
- Focus stacking, automatic image stitching

SIMPLE MEASURING SOFTWARE (BUILT-IN, FOR DISPLAYS)

- **Measuring tools:**

measure length of line or distance between two points

measure distance between point and line

measure rectangle

measure concentric circles

measure circle

measure curve

measure polygon

measure center distance of two circles

measure angle of two lines

camera setting

measurement

calibration

horizontal mirror

vertical mirror

zoom in

zoom out

block

review

comparison

cancel

cross hair

ruler
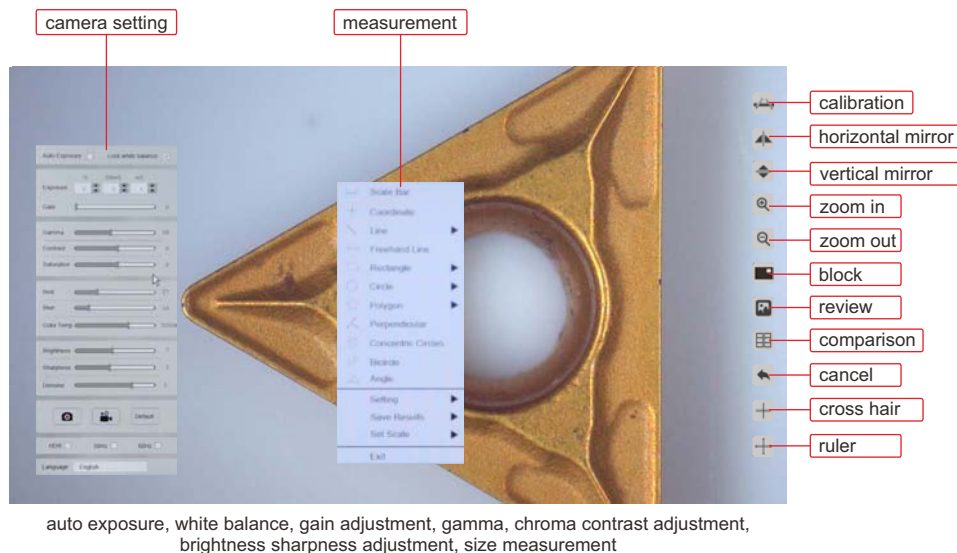
auto exposure, white balance, gain adjustment, gamma, chroma contrast adjustment, brightness sharpness adjustment, size measurement

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PROFESSIONAL MEASURING SOFTWARE (INCLUDED, FOR COMPUTERS)

selectable resolution
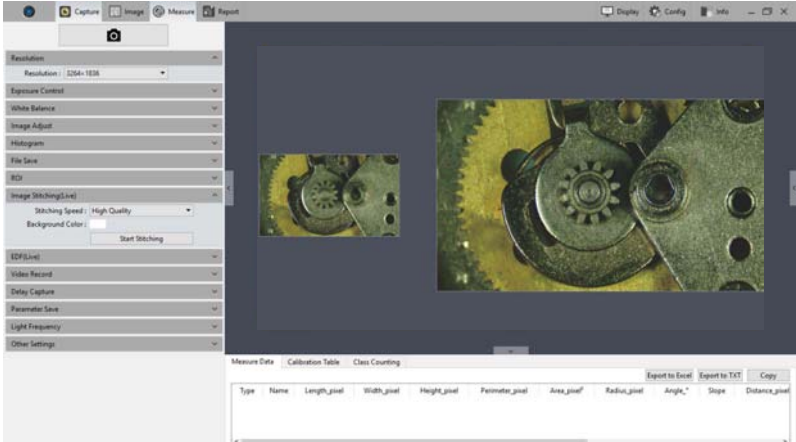
white balance
(balance color based
on actual light source)

histogram
(quantify the distribution
of color and brightness)
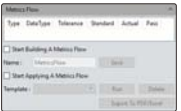
flat field correction

metrics flow
(create templates,
set tolerances and
build metrics flow)

manual counting
(class counting)

image coloring, fluorescence synthesis, binary, image smoothing, color filter/color extraction/ color inversion, delay capture, focus stacking, automatic image stitching, metrics flow, manual counting, dynamic and static measurement, layered measurement, report generation and printing, delay record, flat field correction, image adjustment, histogram.

focus stacking
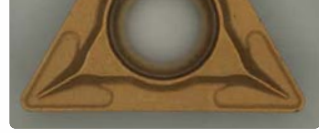
focus on the top   focus on the bottom   clear image of both top and bottom

automatic image stitching

slowly move the workpiece to generate a stitched image automatically (this image can not be used for size measurement)

SPECIFICATION

Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	30fps
Power supply	power adapter
Output	HDMI/USB
Lens connection	C-mount

COMPUTER (optional) REQUIREMENT

Operation system	Windows 7/8/10 (64 bit)
CPU	Intel Core i5 or above
Memory	8GB or above
USB port	USB 3.0

DISPLAY (optional) REQUIREMENT

Size	13" or above
Resolution	1080P or above
HDMI port	type A

STANDARD DELIVERY

Main unit	1 pc
16G memory card and holder	1 pc
Glass calibration rule (graduation 0.1mm)	1 pc
Mouse	1 pc
HDMI cable	1 pc
USB cable	1 pc
Power supply	1 pc

OPTIONAL ACCESSORY

Adapter 0.5X	**ISM-MAS-ADAPTER**

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| WIRELESS AD-HOC NETWORK | AUTOMATIC IMAGE STITCHING | FOCUS STACKING |

WIFI 4K CAMERA FOR MICROSCOPES
CODE ISM-MP8B
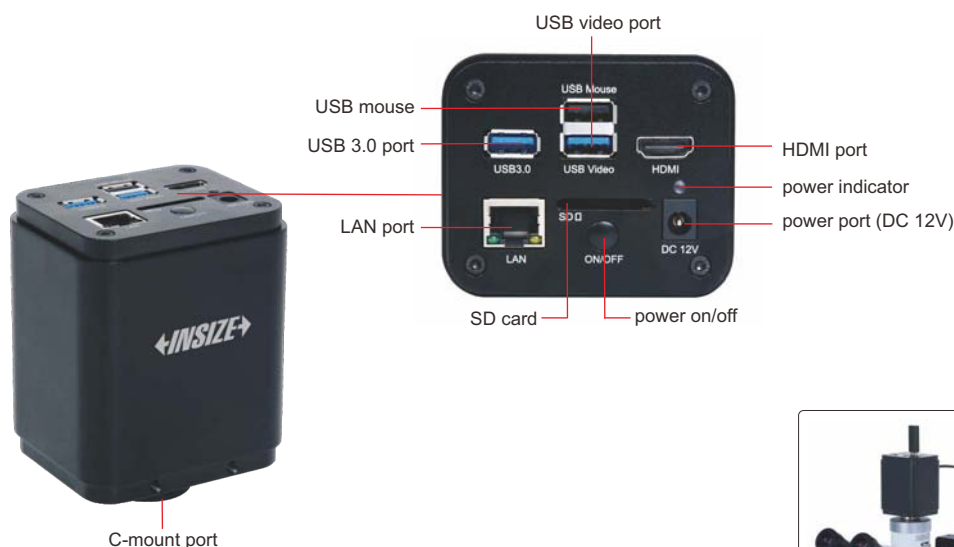
USB video port

USB mouse
USB 3.0 port
HDMI port
power indicator
LAN port
power port (DC 12V)

SD card
power on/off

C-mount port

application

- 4K high-definition image
- Can be connected with displays or computers
- Built-in simple measuring software for display, without computer
- Professional measuring software for computers is included
- 4K HDMI/LAN/USB multiple video outputs
- 4K/1080P automatically switched by display resolution
- Focus stacking, automatic image stitching
- Wireless network or wired network

VIDEO

simple measuring software (built-in, for displays)
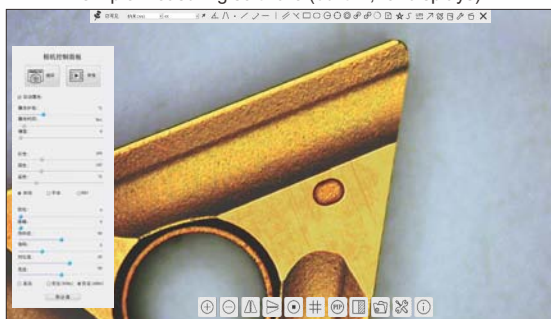
professional measuring software (included, for computers)
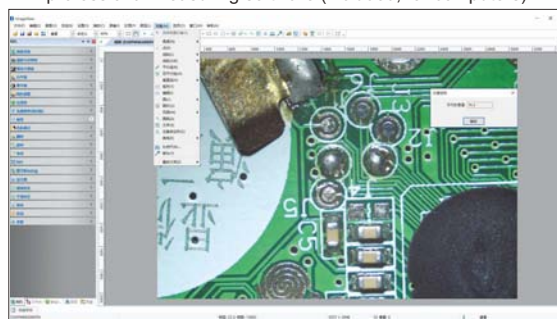
SPECIFICATION

Sensor	1/1.2" CMOS
Pixel	8M
Resolution	3840×2160, 1920×1080
Single pixel	2.9×2.9μm
Frame rate	60fps@3840×2160 (HDMI) 30fps@3840×2160 (LAN) 30fps@3840×2160 (USB)
Binning	1×1
Exposure	0.04~1000ms
Output	HDMI/USB/LAN
Lens connection	C-mount
Power supply	DC 12V 1A
Dimension (L×W×H)	80×65×105mm
Weight	700g

CONNECTION

HDMI	comply with HDMI 2.0 standard 4K/1080P automatically switched by display resolution
LAN	H264 encoded video bandwidth adjustment in real time DHCP configuration or manual configuration unicast/multicast configuration
WLAN	connecting 5G WLAN adapter (USB 3.0 interface) in AP/STA mode
COMPUTER	connecting USB video port of PC for video transfer H264/MJPEG format video

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STANDARD DELIVERY

Main unit	1 pc
32G SD card	1 pc
USB mouse	1 pc
HDMI2.0 cable	1 pc
USB3.0 cable	1 pc
USB wlan adapter	1 pc
Wlan cable	1 pc
Glass calibration ruler	1 pc
Calibration plate	1 pc
Software	1 pc
Power adapter	1 pc

OPTIONAL ACCESSORY

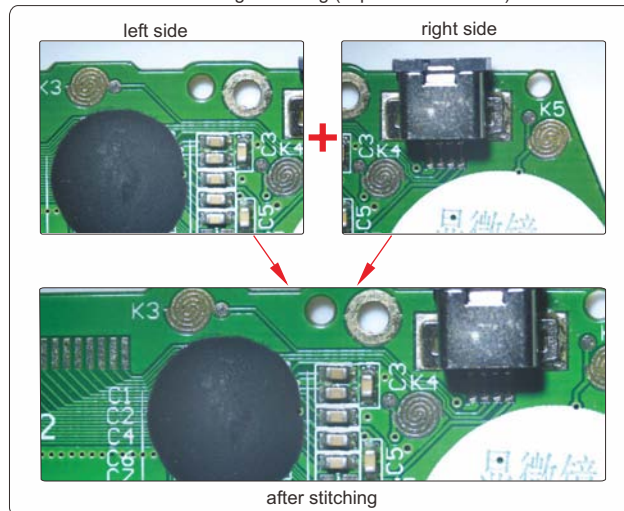|		
16G USB flash disk		IS-USBDISK-16G
Adjustable lens adapter	Ø23.2mm eyepiece tube	ISM-MP-2A075
	Ø31.75mm eyepiece tube	ISM-MP-3A075
Fixed lens adapter	Ø23.2mm eyepiece tube	ISM-MP-2F075
	Ø31.75mm eyepiece tube	ISM-MP-3F075
Adapter ring for Ø30.0mm eyepiece tube		ISM-MP-300R
Adapter ring for Ø30.5mm eyepiece tube		ISM-MP-305R

COMPUTER

Operation system	Windows 7/8/10/11
CPU	Intel Core 2 2.8Hz
Memory	2GB
USB port	USB 3.0 or USB 2.0 port
Display	17"

PROFESSIONAL MEASURING SOFTWARE (INCLUDED, FOR COMPUTERS)

Measuring tools:

- measure length of line or distance between two points
- measure distance between two parallel lines
- measure angle
- measure radius, girth and area of circle
- measure axis lengths, girth and area of ellipse
- calibration

- measure rectangle
- measure width and diameter of ring
- measure diameter, length, perimeter angle of arc
- measure area of polygon
- measure center distance between two circles
- measure length of open curve

automatic image stitching (expand field of view)
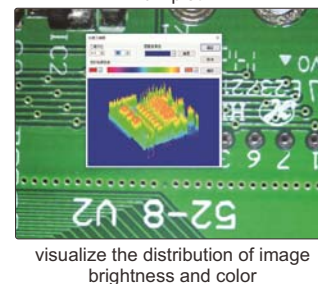
left side   right side

+

after stitching

25

focus stacking

+

focus on the top   focus on the bottom   clear image of both top and bottom

3D plot

visualize the distribution of image brightness and color

counting

select counting tool   automatic counting

binary

separate target and background
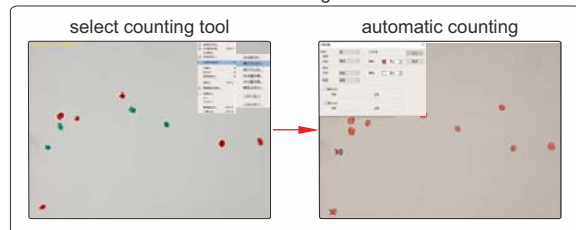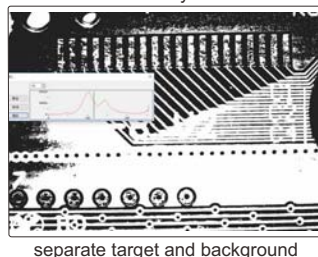
- More than 100 standards (ISO, ASTM, JIS, etc.)
- For metallurgical microscopes
- The camera can be inserted into the eyepiece tube
  or camera connector of microscopes
- Metallurgical analysis software is included,
  which can make comparative analysis,
  measurement and evaluation of various materials

application

VIDEO
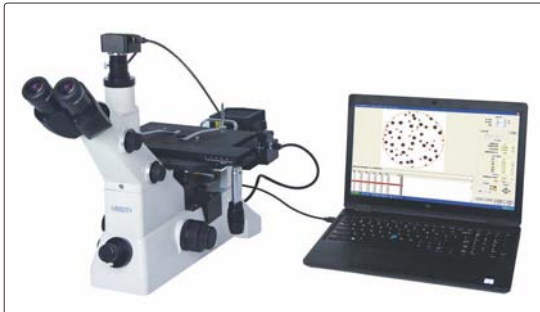
software flash disk
(included)

glass calibration rule
(included)

metallurgical analysis software (included)

tool bar

gallery

this software can be used with variety of metallographic microscopes for
acquisition, processing, analysis, report generation of metallurgical images

25
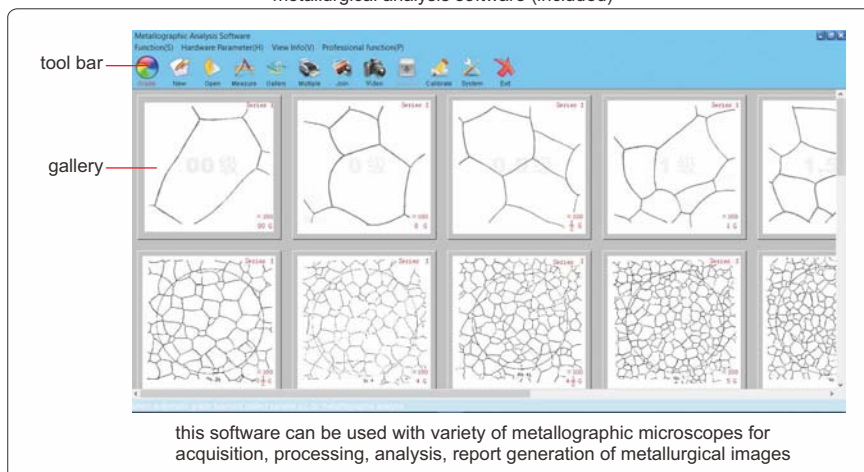
metallurgical module list
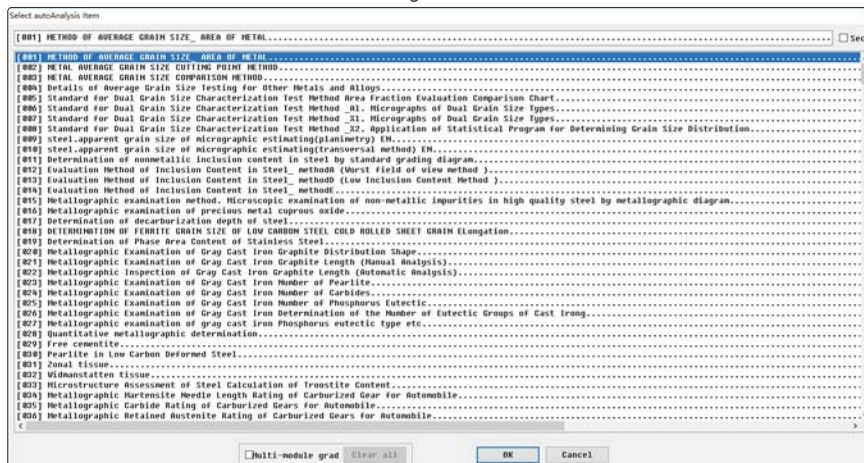
examples of metallurgical analysis

metallurgical analysis of ductile cast iron-spheroidizing grading
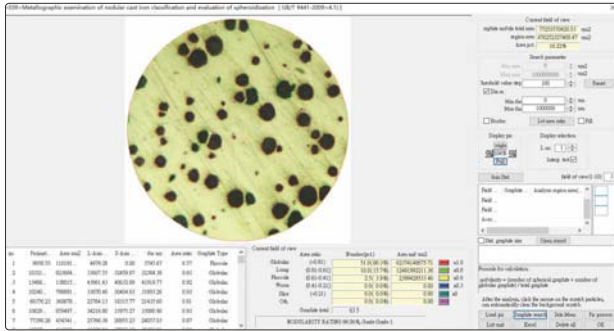
metallurgical analysis of ductile cast iron-pearlite quantity
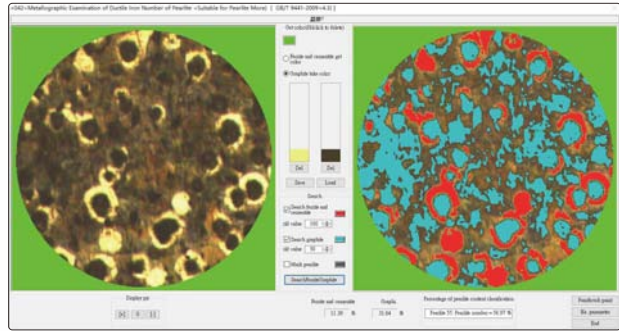
dimension measurement
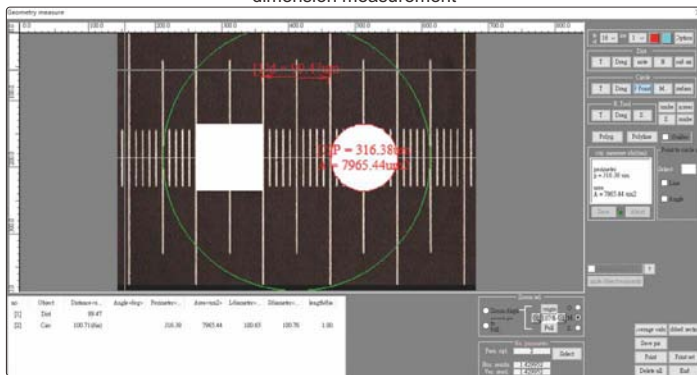
report
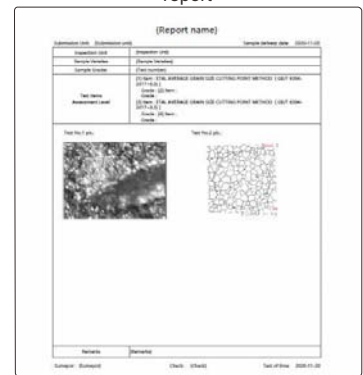
focus stacking
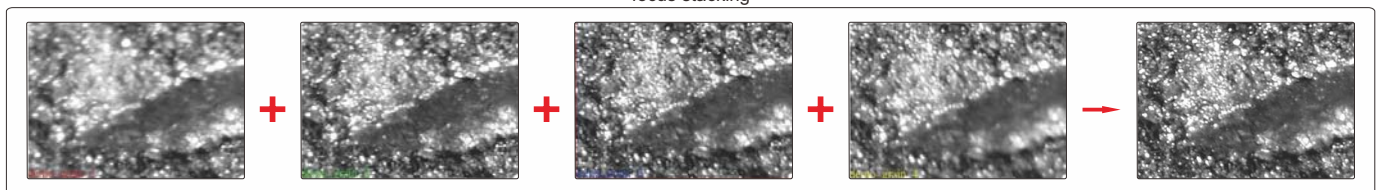
image stitch
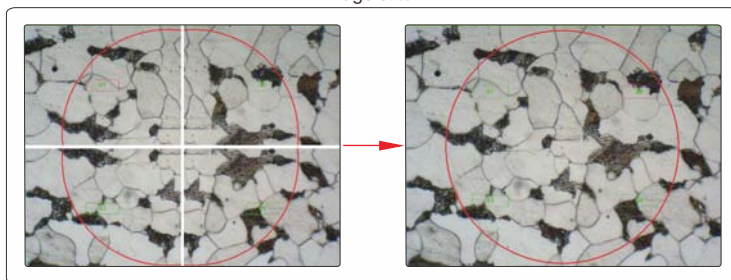
three dimension map
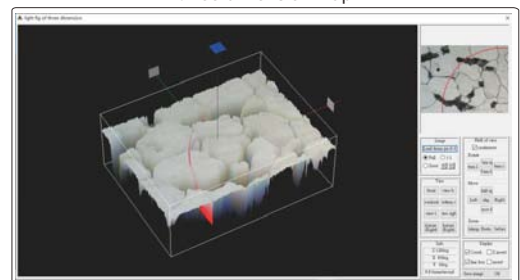
SPECIFICATION

Sensor	1/1.8" CMOS
Pixel	6.3M
Resolution	3072×2048
Frame rate	30fps
Exposure time	0.1ms~15s
Power supply	USB port
Weight	400g

STANDARD DELIVERY

Camera (USB cable included)	1 pc
Software	1 pc
Glass calibration rule	1 pc

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CAMERA ADAPTERS

- Ø23.2/30mm eyepiece adapter is included
- Suitable for digital cameras **ISM-CM20, ISM-CM63, ISM-ZS70-S**

0.5X camera adapter (fixed focus distance) ISM-AD-0D5

0.75X camera adapter (fixed focus distance) ISM-AD-0D75

application

inserted into eyepiece tube

Ø23.2/30mm eyepiece adapter (included)

focus distance adjustment ring

focus distance adjustment ring

inserted into camera connecter

0.5X camera adapter (adjustable focus distance) ISM-AD-A0D5

0.75X camera adapter (adjustable focus distance) ISM-AD-A0D75

SPECIFICATION

Code	ISM-AD-0D5	ISM-AD-A0D5 *	ISM-AD-0D75	ISM-AD-A0D75
Type	fixed focus distance	adjustable focus distance	fixed focus distance	adjustable focus distance
Magnification	0.5X	0.41X~0.58X	0.75X	0.64X~0.86X

* There may be shadows on the edge of image when **ISM-AD-A0D5** is used

PORTABLE MEASURING MICROSCOPES

10X eyepiece

10X eyepiece with graduation

pen light

focus adjustment

10X objective

ISM-PM100

SPECIFICATION

Code	ISM-PM20	ISM-PM40	ISM-PM50	ISM-PM100
Total magnification	20X	40X	50X	100X
Eyepiece	10X with graduation	10X with graduation	10X with graduation	10X with graduation
Objective (achromatic)	2X (numerical aperture: 0.05)	4X (numerical aperture: 0.1)	5X (numerical aperture: 0.12)	10X (numerical aperture: 0.25)
Working distance	17.2mm	18mm	17.6mm	7mm
Graduation	0.05mm	0.025mm	0.02mm	0.01mm
Viewing field	Ø9mm	Ø4.5mm	Ø3.6mm	Ø1.8mm
Focus range	30mm			
Illumination	LED light			
Diameter of base	Ø63mm			
Height	210mm			
Weight	650g			

STANDARD DELIVERY

Main unit	1 pc
Pen light	1 pc
Battery (AAA)	2 pcs

TABLE MAGNIFIER WITH ILLUMINATION
CODE 7517-3D

- Four steps brightness adjustment
- LED illumination, working life 20000h
- Resin lens

SPECIFICATION

Magnification	1.75X
Diopter	3D
Lens diameter	Ø125mm
Illumination	power: 3W, illumination: 260lm
Power supply	power adapter 12V, 1A

lens cover

3 pcs LED

7517-3D

TABLE MAGNIFIERS WITH ILLUMINATION
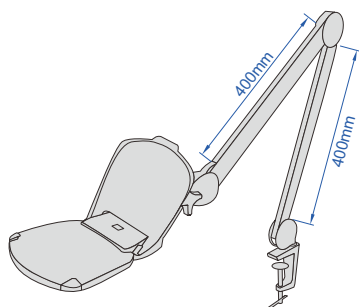
- LED illumination, working life 20000h
- Resin lens

SPECIFICATION

Code	7520-320D	7521-3D
Magnification	two magnifications 1.75X/6X	1.75X
Diopter	3D/20D	3D
Lens dimension	160×127mm	Ø126mm
Illumination	power: 6W, illumination: 550lm	
Power supply	power adapter 12V, 1A	

400mm

400mm

6 pcs LED

lens cover

1.75X

6X

clamping holder
(clamping range
10~60mm)

7520-320D

6 pcs LED

lens cover

clamping holder
(clamping range
10~60mm)

7521-3D

25

TABLE MAGNIFIER WITH ILLUMINATION
CODE 7516-5D

- LED illumination,
  working life 20000h
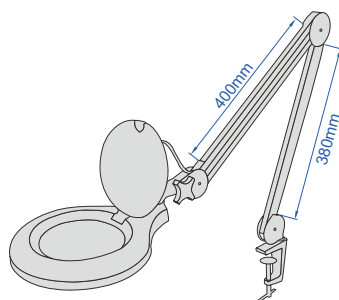
SPECIFICATION

Magnification	2.25X
Diopter	5D
Lens diameter	Ø122mm
Illumination	power: 7W, illumination: 420lm
Power supply	100~240V, 50~60Hz

400mm

380mm

60 pcs LED

lens cover

european
power plug

clamping holder
(clamping range
10~60mm)

7516-5D

660

DIGITAL MAGNIFIER
CODE 7525-D4

zoom in

screen freezing

mode switch

zoom out

after the handle is folded, the magnifier can be directly placed on the object for observation
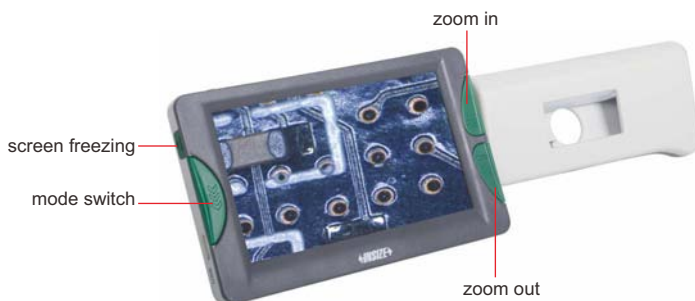
- 720P60 camera
- Auto focus
- With screen freezing function
- 26 color modes can be switched to meet the needs of different people
- Port to TV
- Automatic shutdown after 3 minutes

SPECIFICATION

Screen size	4.3 inch
Screen resolution	480x272
Magnification	2X-32X
Pixel	8M
Focus	manual/automatic
Color mode (26 modes)	color mode, color enhancement mode, negative mode, monochrome mode, black on white, white on black, blue on white, white on blue, yellow on black, black on yellow, yellow on blue, blue on yellow, green on white, white on green, orange on white, white on orange, red on black, black on red, orange on black, black on orange, yellow on green, green on yellow, red on white, white on red, yellow on white, white on yellow
Output	TV
Charging port	Type-C
Lithium battery	1600mAH (for 4 hours working)
Dimension (LxWxH)	123x39x76mm (when the handle is folded)
Weight	210g

side and back

lens

illumination   illumination

power

power light   reset   TV port

Type-C port

screen freezing

STANDARD DELIVERY

Main unit	1 pc
Video output cable	1 pc
USB charging cable	1 pc
Power adapter	1 pc

25

DIGITAL MAGNIFIER
CODE 7526-D5

VIDEO

zoom in

screen freezing

zoom out

close/far view switch

mode switch

picture saving

power

automatic/manual focus switch

horizontal and vertical red lines
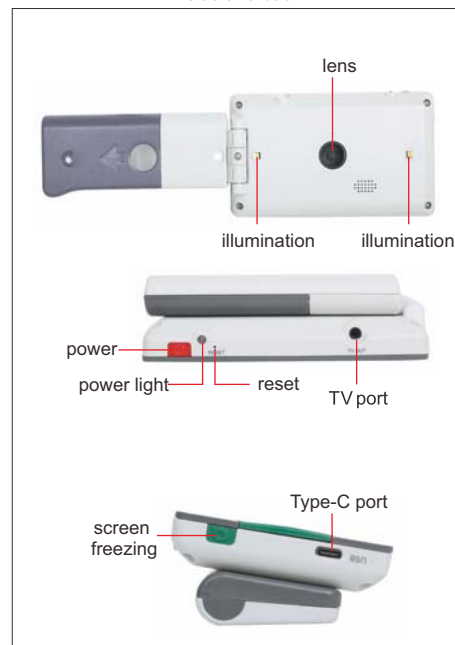
- 720P60 (close view) and 1080P30 (far view) cameras
- Double autofocus
- 26 color modes can be switched to meet the needs of different people
- Adopt folding bracket
- Detachable handle design, suitable for left-handed or right-handed use
- TV and HDMI ports to TV and display
- Automatic shutdown after 3 minutes

SPECIFICATION

Screen size	5 inch
Screen resolution	800x480
Magnification	2X-32X
Close view pixel	8M
Far view pixel	8M
Focus	manual/automatic
Color mode (26 modes)	color mode, color enhancement mode, negative mode, monochrome mode, black on white, white on black, blue on white, white on blue, yellow on black, black on yellow, yellow on blue, blue on yellow, green on white, white on green, orange on white, white on orange, red on black, black on red, orange on black, black on orange, yellow on green, green on yellow, red on white, white on red, yellow on white, white on yellow
Line	horizontal and vertical red lines
Function	screen freezing, image moving, photo playback, and high definition storage
Output	TV and HDMI
Storage	supports up to 32G TF card
Charging port	Type-C
Lithium battery	2500mAH (for 4 hours working)
Dimension (LxWxH)	145x30x85mm (when the handle is folded)
Weight	275g

STANDARD DELIVERY

Main unit	1 pc
HDMI cable	1 pc
Video output cable	1 pc
USB charging cable	1 pc
Power adapter	1 pc

after the handle is folded, the magnifier can be directly placed on the object for observation

side and back

far view illumination

far view lens

close view lens

close view illumination

close view illumination

HDMI port

Type-C port

power light

TV port

TF card port

25
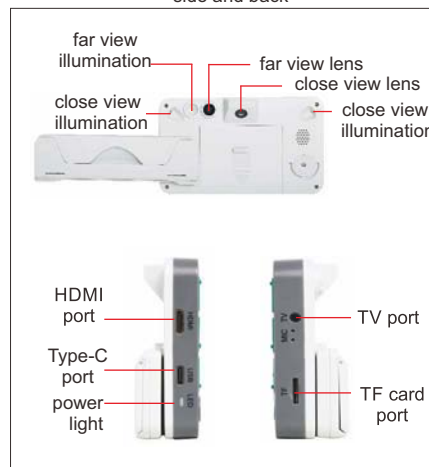
FOLDING MAGNIFIER

- Glass lens

closed

Unit: mm

15
60
18
25
ØD

7511-8

Code	Magnification	Lens diameter (ØD)
7511-8	10X	Ø21mm
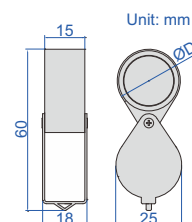
FOLDING MAGNIFIER WITH ILLUMINATION

- Resin lens
- Powered by 3xLR927 batteries (included)

2 pcs LED

closed

7515-10

Unit: mm

19
85
25
26
ØD
LED
ON/OFF
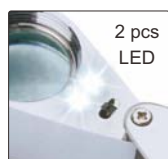
Code	Magnification	Lens diameter (ØD)
7515-10	10X	Ø21mm

FOLDING MAGNIFIER WITH ILLUMINATION

closed

LED lights up when opened

- Resin lens
- Powered by 2xCR1620 batteries (included)
- LED lights up automatically when opened

7514-1

LED

Unit: mm

ØD
60
52

Code	Magnification	Lens diameter (ØD)
7514-1	2.5X	Ø45mm

25
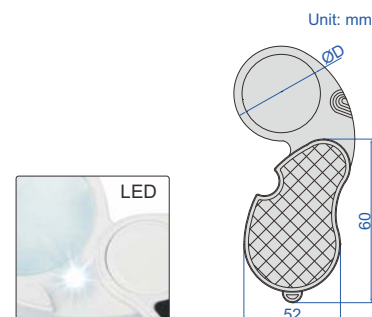
MAGNIFIER WITH ILLUMINATION

- Glass lens
- Powered by 3xAG7 batteries
- 3 pcs LED and 3 pcs UV
- Base with scale, graduation: 0.5mm, 1/16"

base with scale

0.5mm
1/16inch

rotate lens to adjust focus

ON/OFF

7524-10

H
L
W
ØD
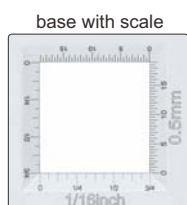
Code	Magnification	Lens diameter (ØD)	L	H	W
7524-10	10X	Ø30mm	60mm	50mm	56mm
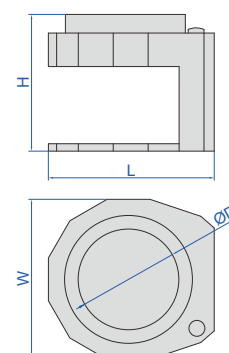
MEASURING MAGNIFIERS (WITH ILLUMINATION)

Unit: mm
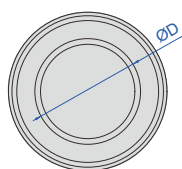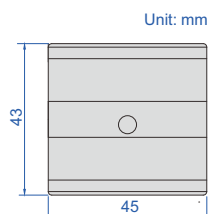
7527-D1

scale of **7527-D1**

0.5mm

base with scale

| 7527-D1 | 7527-D2 |

- Base with scale
- With 5 white LED and 5 UV LED
- Charging port: Type-C
- Work for 1.5h after fully charged

scale of **7527-D2**
(0-5mm graduation: 0.1mm, 5-10mm graduation: 0.5mm)

Code	Magnification	Lens diameter (ØD)
7527-D1	10X	Ø30mm
7527-D2	10X	Ø30mm

MAGNIFIER WITH ILLUMINATION

- Glass lens
- With 4 white LED, three levels brightness adjustment
- Charging port: Type-C

7528-3

Unit: mm

switch
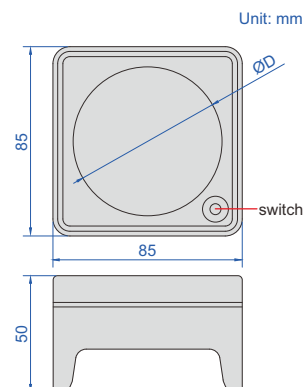
Code	Magnification	Lens diameter (ØD)
7528-3	3X	Ø70mm

MAGNIFIERS WITH ILLUMINATION

2 pcs
LED

- Glass lens
- Powered by 3xAAA batteries (included)

7513-2 **7513-4**

ØD
L
h
ON/OFF
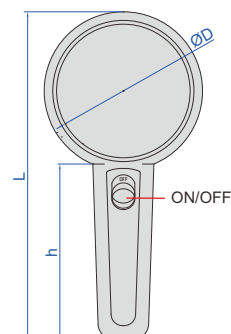
Code	Magnification	Lens diameter (ØD)	L	h
7513-2	2X	Ø75mm	170mm	90mm
7513-4	4X	Ø50mm	145mm	90mm

MAGNIFIER WITH ILLUMINATION

- Resin lens
- With 20 white LED, three levels brightness adjustment
- Charging port: Type-C

2X   4X

7529-24

Unit: mm
ØD
Ø20
245
120
switch
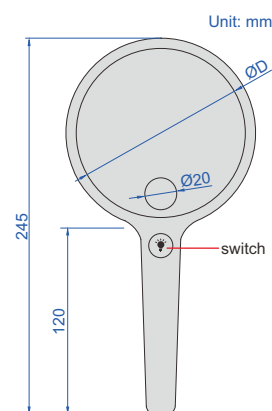
Code	Magnification	Lens diameter (ØD)
7529-24	2X/4X	Ø105mm

MAGNIFIER WITH TWO LENSES

2 pcs LED

- Resin lens
- Interchangeable lenses
- Powered by 3 pcs AAA batteries (included)

6X

10X

7522-610

Unit: mm
ØD
power on/off
105
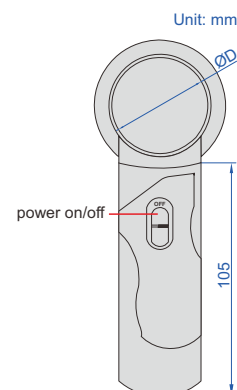
Code	Lens number	Magnification	Lens diameter (ØD)
7522-610	2 pcs	6X	50mm
		10X	37mm

THREE WAYS MAGNIFIER WITH ILLUMINATION

three ways use

battery house | power adapter | 10 pcs LED

- Resin lens
- Powered by 2xAA batteries (included)
  or power adapter (110~240V, 50~60Hz)
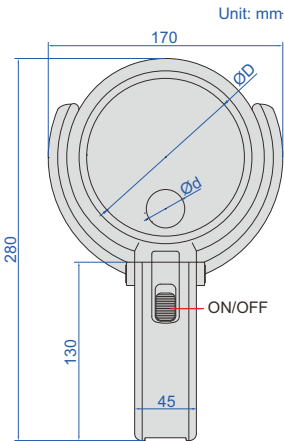
Code	Magnification	Lens diameter (ØD/Ød)
7512-1	2X/4X	Ø120mm/Ø28mm

2X   4X

7512-1

Unit: mm

170

280

130

45

ØD

Ød

ON/OFF

MAGNIFICATION GLASSES

7523-3D5

- Resin lens
- Interchangeable lenses
- Powered by 3 pcs AAA batteries (included)

interchangeable lenses

adjustable lens and LED angle

60°

45°
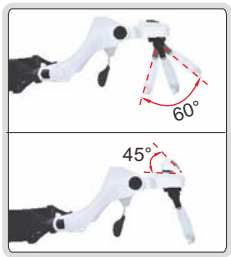
head band (included)

Code	Lens number	Magnification
7523-3D5	5 pcs	1X
		1.5X
		2X
		2.5X
		3.5X

adjustable holder angle

90°

moveable lens for focus

2 pcs LED

25

MAGNIFIER

using on table   hanging around neck

Unit: mm

120
180

silicone hose

- Resin lens
- Silicone hose can be shaped according to needs
- Can be used on table or hanging around neck

Code	Magnification	Lens size
7530-1D8	1.8X	180x120mm

7530-1D8

TELESCOPING INSPECTION MIRRORS

Unit: mm

50
90
Ø32
Ø7.5
178~515
Ø10
330~490
94
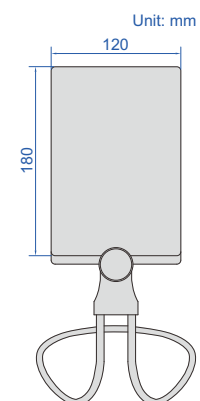
7160-1

7160-2

- Inspect hidden areas
- Rotation of the mirror: 360°
- Length of handle is adjustable, handle is made of stainless steel

Code	Size of mirror	Length
7160-1	Ø32mm	178~515mm
7160-2	50x90mm	330~490mm
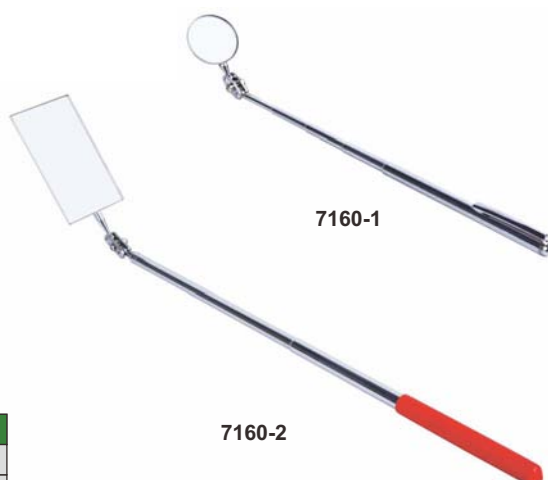
7160-1
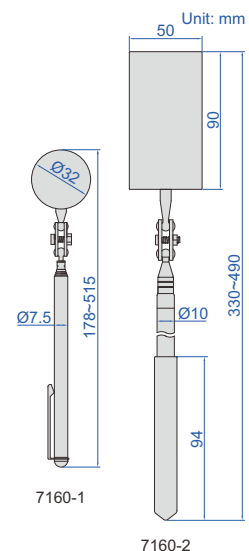
7160-2

TELESCOPING INSPECTION MIRROR (WITH ILLUMINATION)

Unit: mm

42
65
285~875
Ø10
116

- Inspect hidden areas
- Head can bend and rotate
- Telescoping handle, made of stainless steel
- With two CR2032 batteries

head can bend and rotate | handle length is adjustable

Code	Size of mirror	Length
7162-1	65x42mm	285~875mm

7162-1
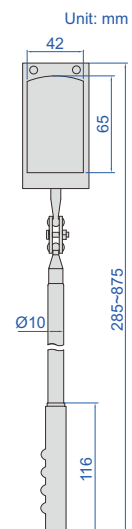
TELESCOPING MAGNETIC PICK-UP AND FLASHLIGHT

head can bend, handle length is extendible

handle is closed

7163-1

magnetic head

magnetic end to attach on steel surfaces

- For illumination and pick up steel parts in hidden areas
- Head can bend
- Telescoping handle, made of stainless steel
- Magnetic head and end
- With four LR44 batteries

Code	Magnetic force of the end	Magnetic force of the head	Flashlight range	Battery life	Length
7163-1	4kgf	2kgf	3m	8h	172~568mm

Unit: mm
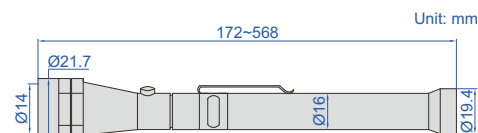
FLEXIBLE PICK-UP AND FLASHLIGHT

Unit: mm
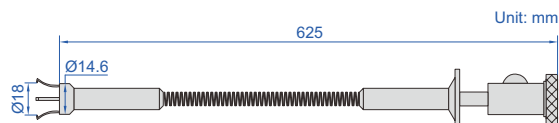
7164-1

- For illumination and pick up steel parts in hidden areas
- Flexible spring rod, made of stainless steel
- Three LR44 batteries

Code	Magnetic force	Flashlight range	Battery life
7164-1	0.9kgf	1m	24h

flexible spring rod

flashlight head

4 retractable claws

magnetic head

TELESCOPING MAGNETIC PICK-UP

Unit: mm
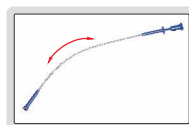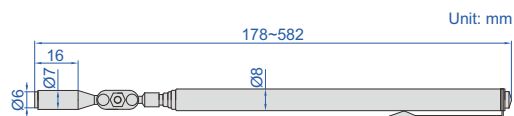
- Pick up steel parts from hidden areas
- Rotation of magnetic head: 360°
- Length of handle is adjustable, handle is made of stainless steel

7161-1

Code	Size of magnetic tip	Magnetic force	Length
7161-1	Ø6mm	0.45kgf	178~582mm

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Videoscopes
Page 670-682

Pipe Videoscopes
Page 683

Rigid Borescopes
Page 684

VIDEOSCOPE (DESK TYPE)

USB port   COM port   lens tube port

10" HD touch display

power on/off   LAN port   VGA port

cable (0.8m)

VIDEO

lens tube (**optional**)
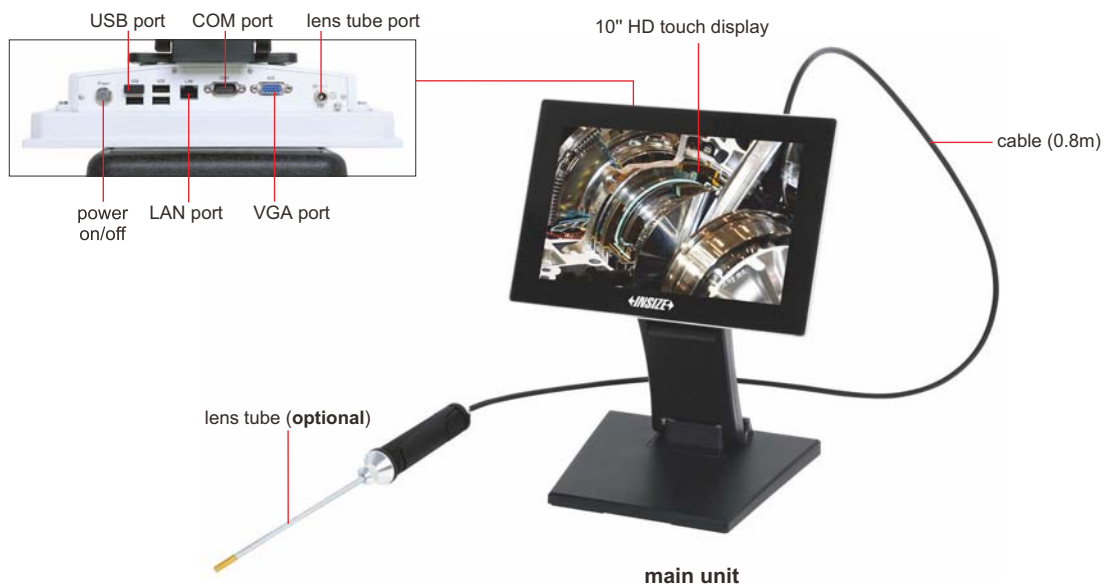
main unit

MAIN UNIT (WITHOUT LENS TUBE)

Code	ISV-Y
Display	10" HD touch display
Function	take picture, take video
File format	picture: JPG, video: MP4
Memory	built-in hard disk or USB flash disk
Image process	image zoom (1X, 2X, 3X)
Image control	noise reduction, negative film, flip over, freeze, on-line edit
Illumination	stepless adjustment
Additional function	real-time dynamic annotation, real-time watermark, rapid defect mark
Output	USB, HDMI
Power supply	AC/DC adapter (for continuous working)
Weight	1000g

STANDARD DELIEVERY

Main unit	1 pc
USB disk	1 pc
Mouse	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Lens tube	refer to below details
Software for automatic defect identification	can be customized

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diameter (ØD)   depth of field (DOF)   angle of view (θ)   view direction (α)
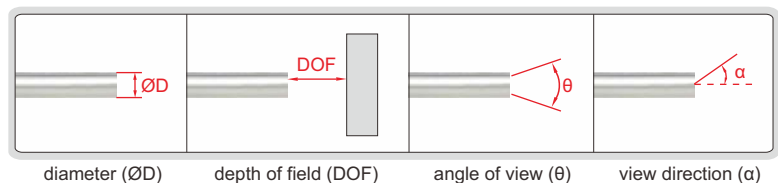
RIGID STRAIGHT LENS TUBE, FRONT VIEW

Code	Lens tube			Lens			
	diameter (ØD)	length (L)	pixel	illumination	angle of view (θ)	depth of field (DOF)	view direction (α)	dust/waterproof
ISV-Y1210	1.2mm	90mm	0.04M	rear optical fiber	120°	3~70mm	0°	IP67
ISV-Y1810	1.8mm	120mm (**optional** 90-150mm)	0.16M			3~70mm	0°	
ISV-Y2010	2.0mm	120mm (**optional** 90-150mm)	0.16M			3~70mm	0°	
ISV-Y2410	2.4mm	150mm (**optional** 90-300mm)	0.16M			3~70mm	0°	
ISV-Y2810	2.8mm	150mm (**optional** 90-300mm)	0.16M			3~70mm	0°	
ISV-Y3910	3.9mm	200mm (**optional** 90-500mm)	1M			8~150mm	0° (**optional** 30°, 70°)	
ISV-Y6010	6.0mm	300mm (**optional** 90-1000mm)	1M			12~200mm	0° (**optional** 30°, 70°)	

diameter (ØD)   depth of field (DOF)   angle of view (θ)   view direction (α)
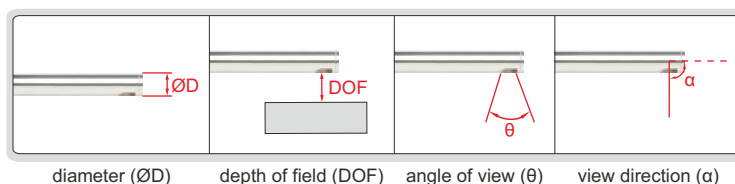
RIGID STRAIGHT LENS TUBE, SIDE VIEW

Code	Lens tube		Lens					
	diameter (ØD)	length (L)	pixel	illumination	angle of view (θ)	depth of field (DOF)	view direction (α)	dust/waterproof
ISV-Y2810C	2.8mm	150mm (**optional** 90-300mm)	0.16M	rear optical fiber	120°	3~70mm	90°	IP67
ISV-Y3910C	3.9mm	200mm (**optional** 90-500mm)	1M			8~150mm		
ISV-Y4510C	4.5mm	250mm (**optional** 90-800mm)	1M			8~150mm		
ISV-Y6010C	6.0mm	300mm (**optional** 90-1000mm)	1M			12~200mm		

diameter (ØD)   depth of field (DOF)   angle of view (θ)   view direction (α)
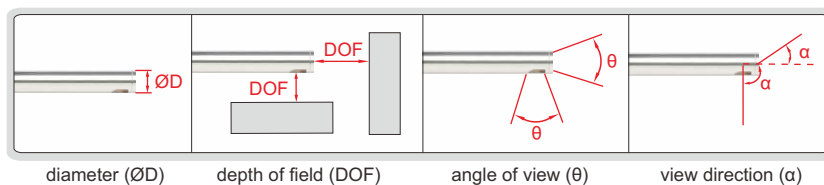
RIGID STRAIGHT LENS TUBE, FRONT VIEW & SIDE VIEW

Code	Lens tube		Lens					
	diameter (ØD)	length (L)	pixel	illumination	angle of view (θ)	depth of field (DOF)	view direction (α)	dust/waterproof
ISV-Y6010S	6.0mm	300mm (**optional** 90-1000mm)	1M	rear optical fiber	120°	front view: 12~200mm side view: 8~150mm	front view: 0° side view: 90°	IP67

diameter (ØD)   depth of field (DOF)   angle of view (θ)   view direction (α) bending angle (β)
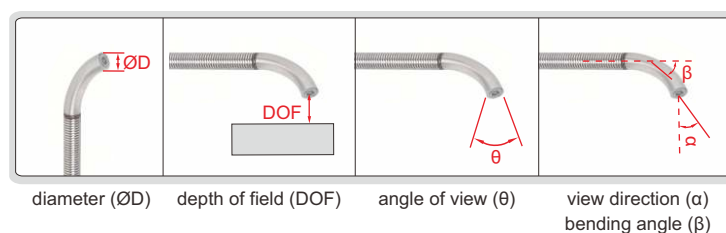
BENDING SPRING LENS TUBE

Code	Lens tube		Lens						
	diameter (ØD)	length (L)	pixel	illumination	angle of view (θ)	depth of field (DOF)	view direction (α)	bending angle (β)	dust/waterproof
ISV-Y3010W	3.0mm	1000mm	0.16M	rear optical fiber	120°	8~150mm	0°	75° (can be customized)	IP65
ISV-Y5010W	5.0mm		1M			8~150mm			
ISV-Y7010W	7.0mm		1M			12~200mm			

VIDEOSCOPE

REAR FIBER ILLUMINATION

5" IPS HD display

SD card
video output
charger port

manual joystick

cable
(optional)

rechargeable battery

power indicator
charger port

lens with adjustable
rear fiber illumination
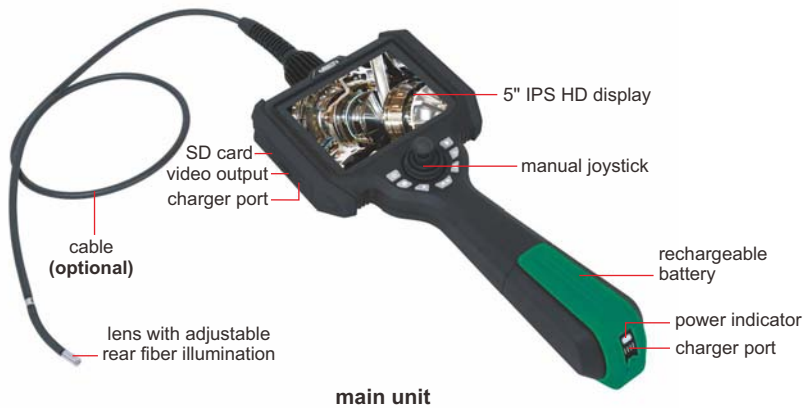
main unit

changeable lens cable

tripod (included)

ISV-L-HOOK (optional)

ISV-L-MAGNET (optional)

MAIN UNIT (WITHOUT CABLE)

Code	ISV-L
Display	5" high definition LCD
Resolution	1024×720
Function	take pictures, take videos
File format	picture: JPG, video: MP4
Image process	image zoom (1X, 2X, 3X, 4X)
Image control	freeze, flip over, playback and analog ruler
Memory	memory card
Output	USB, HDMI
Power supply	rechargeable lithium battery (working time ≥ 4hours) AC/DC adapter (for continuous working)
Weight	1000g

VIDEO

ISV-L-CLAMP (optional)

OPERATION ENVIRONMENT

Main unit	-10~50°C, no preheat
Operation temperature	-20~70°C
Storage temperature	-20~60°C
Relative humidity	maximum 90%, no condensation

STANDARD DELIEVERY

Main unit	1 pc
32G SD card	1 pc
Card reader	1 pc
USB cable	1 pc
Tripod	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Cable	please refer to details
WIFI output	ISV-L-WIFI (must be installed in factory, only for Android OS)
Temperature alarm	ISV-L-HTALARM (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm)
Hook	ISV-L-HOOK (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm)
Magnet	ISV-L-MAGNET (must be installed in factory, for Ø3.9mm, Ø4.5mm and Ø6.0mm)
Clamp	ISV-L-CLAMP

ØD
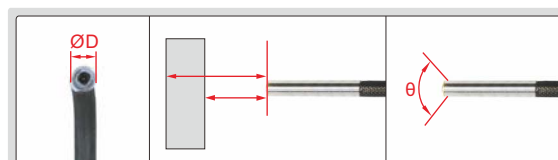
diameter (ØD)   depth of field (DOF)   angle of view (θ)

ONE-DIRECTION CABLE (NO BENDING), FRONT VIEW

Code	Cable		Lens							
	length	type	view direction	diameter (ØD)	depth of field (DOF)	angle of view (θ)	illumination	pixel	resolution	dust/waterproof
ISV-L09505	0.5m	spring tube	front view	0.95mm	3~30mm	>120º	rear fiber	0.16M	400×400	IP65
ISV-L09510	1m	spring tube		0.95mm	3~30mm					
ISV-L1210	1m	spring tube		1.2mm	3~30mm					
ISV-L1510	1m	tungsten wire weaved cable		1.5mm	3~70mm					
ISV-L1515	1.5m	tungsten wire weaved cable		1.5mm	3~70mm					

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diameter (ØD)   depth of field (DOF)   angle of view (θ)   bend range (α)   bend in 2 directions

TWO-DIRECTION BENDING CABLE, FRONT VIEW

| Code | Cable | | | | Lens | | | | | | | |
	length	type	view direction	bend direction	diameter (ØD)	depth of field (DOF)	bend range (α)	angle of view (θ)	illumination	pixel	resolution	dust/ waterproof
ISV-L1810	1m	tungsten wire weaved cable	front view	two directions	1.8mm	3~30mm	±160º	>120º	rear fiber	0.16M	400×400	IP65
ISV-L2010	1m				2.0mm	3~30mm						
ISV-L2410	1m				2.4mm	3~70mm (**optional** 5~100mm)						
ISV-L2415	1.5m											
ISV-L2420	2m											

diameter (ØD)   depth of field (DOF)   angle of view (θ)   bend range (α)   bend in 4 directions

FOUR-DIRECTION BENDING CABLE, FRONT VIEW

| Code | Cable | | | | Lens | | | | | | | |
	length	type	view direction	bend direction	diameter (ØD)	depth of field (DOF)	bend range (α)	angle of view (θ)	illumination	pixel	resolution	dust/ waterproof
ISV-L2810	1m	tungsten wire weaved cable	front view	four directions	2.8mm	3~70mm (**optional** 5~100mm)	±160º	>120º	rear fiber	0.16M	400×400	IP65
ISV-L2815	1.5m											
ISV-L2820	2m											
ISV-L2830	3m											
ISV-L3910	1m				3.9mm	8~150mm (**optional** 3~70mm)				0.92M	1280×720	IP67
ISV-L3915	1.5m											
ISV-L3920	2m											
ISV-L3930	3m											
ISV-L3940	4m											
ISV-L3950	5m											
ISV-L6010	1m				6.0mm	12~200mm (**optional** 3~70mm, 8~150mm)				0.92M	1280×720	IP67
ISV-L6015	1.5m											
ISV-L6020	2m											
ISV-L6030	3m											
ISV-L6040	4m											
ISV-L6050	5m											
ISV-L6060	6m											
ISV-L6070	7m											

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diameter (ØD)　depth of field (DOF)　angle of view (θ)　bend range (α)　bend in 2 directions

TWO-DIRECTION BENDING CABLE, SIDE VIEW

Code	Cable		Lens									
	length	type	view direction	bend direction	diameter (ØD)	depth of field (DOF)	bend range (α)	angle of view (θ)	illumination	pixel	resolution	dust/ waterproof
ISV-L1810C	1m	tungsten wire weaved cable	side view	two directions	1.8mm	3~30mm	±160º	>120º	rear fiber	0.16M	400×400	IP65
ISV-L1815C	1.5m											

diameter (ØD)　depth of field (DOF)　angle of view (θ)　bend range (α)　bend in 4 directions

FOUR-DIRECTION BENDING CABLE, SIDE VIEW

Code	Cable		Lens									
	length	type	view direction	bend direction	diameter (ØD)	depth of field (DOF)	bend range (α)	angle of view (θ)	illumination	pixel	resolution	dust/ waterproof
ISV-L2810C	1m	tungsten wire weaved cable	side view	four directions	2.8mm	3~70mm	±160º	>120º	rear fiber	0.16M	400×400	IP65
ISV-L2815C	1.5m											
ISV-L2820C	2m											
ISV-L2830C	3m											
ISV-L4510C	1m				4.5mm	5~100mm (**optional** 8~150mm)				0.92M	960×720	IP67
ISV-L4515C	1.5m											
ISV-L4520C	2m											
ISV-L4530C	3m											
ISV-L6010C	1m				6.0mm	8~150mm (**optional** 5~100mm)						
ISV-L6015C	1.5m											
ISV-L6020C	2m											
ISV-L6030C	3m											
ISV-L6040C	4m											
ISV-L6050C	5m											

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FRONT AND SIDE VIEW VIDEOSCOPE

REAR FIBER ILLUMINATION

5" IPS HD display

SD card
video output
charger port

manual joystick

cable
(optional)

rechargeable
battery

power indicator
charger port

lens with adjustable
rear fiber illumination
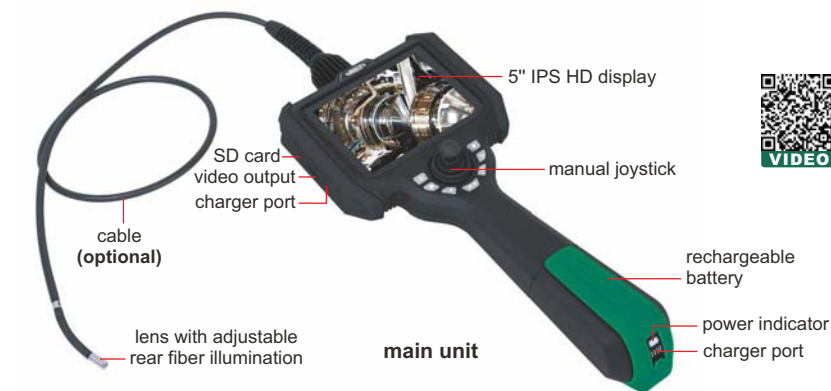
main unit

VIDEO

MAIN UNIT (WITHOUT CABLE)

Code	ISV-S
Display	5" high definition LCD
Resolution	1024×720
Function	take pictures, take videos
File format	picture: JPG, video: MP4
Image process	image zoom (1X, 2X, 3X, 4X)
Image control	freeze, flip over, playback and analog ruler
Memory	memory card
Output	USB, HDMI
Power supply	rechargeable lithium battery (working time ≥ 4hours) AC/DC adapter (for continuous working)
Weight	1000g

changeable lens cable

tripod (included)
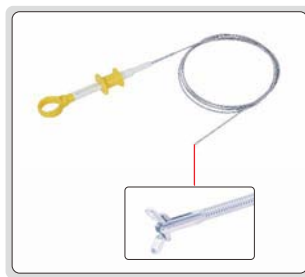
ISV-S-HOOK (**optional**)   **ISV-S-MAGNET** (**optional**)   **ISV-S-CLAMP** (**optional**)

STANDARD DELIEVERY

Main unit	1 pc
32G SD card	1 pc
Card reader	1 pc
USB cable	1 pc
Tripod	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Cable	please refer to details
WIFI output	ISV-S-WIFI (must be installed in factory, only for Android OS)
Temperature alarm	ISV-S-HTALARM (must be installed in factory)
Hook	ISV-S-HOOK (must be installed in factory)
Magnet	ISV-S-MAGNET (must be installed in factory)
Clamp	ISV-S-CLAMP

OPERATION ENVIRONMENT

Main unit	-10~50°C, no preheat
Operation temperature	-20~70°C
Storage temperature	-20~60°C
Relative humidity	maximum 90%, no condensation

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ØD

front view

side view

front view

side view

α   α
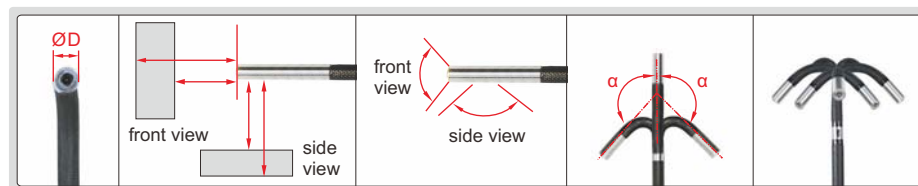
diameter (ØD)   depth of field (DOF)   angle of view (θ)   bend range (α)   bend in 4 directions

FOUR-DIRECTION BENDING CABLE, FRONT VIEW&SIDE VIEW

| Code	Cable				Lens							
	length	type	view direction	bend direction	diameter (ØD)	depth of field (DOF)	bend range (α)	angle of view (θ)	illumination	pixel	resolution	dust/waterproof
ISV-S6010	1m	tungsten wire weaved cable	front view and side view	four directions	6.0mm	front view: 12~200mm (**optional** 3~70mm) side view: 8~150mm (**optional** 3~70mm)	±160°	>120°	rear fiber	0.92M	1280×720	IP67
ISV-S6015	1.5m											
ISV-S6020	2m											
ISV-S6030	3m											
ISV-S6040	4m											
ISV-S6050	5m											

VIDEOSCOPES

REAR FIBER ILLUMINATION

5" IPS HD display

tungsten wire weaved cable length: 1.5m

SD card
video output
charger port

manual joystick

rechargeable battery

power indicator
charger port

lens with adjustable rear fiber illumination

ISV-K6015

VIDEO

changeable lens cable

ISV-K-CLAMP (optional)

ISV-K-HOOK (optional)   **ISV-K-MAGNET** (optional)

ØD

θ

α   α

diameter (ØD)   depth of field (DOF)   angle of view (θ)   bend range (α)   bend
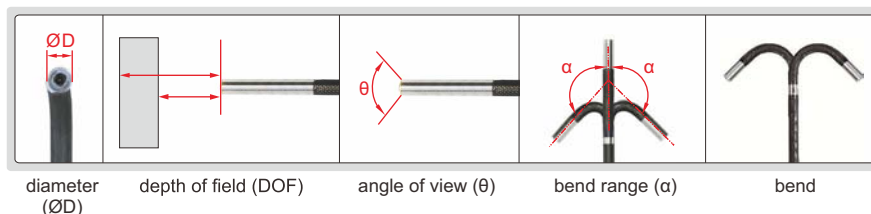
SPECIFICATION

Code		ISV-K1810	ISV-K2410	ISV-K2810	ISV-K3915	ISV-K6015
Lens	diameter (ØD)	1.8mm	2.4mm	2.8mm	3.9mm	6.0mm
	pixel	0.16M			0.92M	
	resolution	400×400			1280×720	
	depth of field	3-30mm	3-70mm	3-70mm	8-150mm	12-200mm
	bending direction	two directions	two directions	four directions	four directions	four directions
	bending range (α)	±160°				
	angle of view (θ)	120°				
	illumination	rear fiber				
	lens	sapphire glass lens				
	dust/waterproof	IP65			IP67	
	bend control	manual joystick				
Cable	length	1m	1m	1m	1.5m	1.5m
	type	tungsten wire weaved cable				
Main unit	display	5" high definition LCD				
	function	take pictures, take videos				
	file format	picture: JPG, video: MP4				
	image process	image zoom (1X, 2X, 3X, 4X)				
	image control	freeze, flip over, playback and analog ruler				
	memory	memory card				
	output	USB, HDMI				
	power supply	rechargeable lithium battery (working time ≥ 4 hours), AC/DC adapter (for continuous working)				
Weight		1000g				

STANDARD DELIEVERY

Main unit	1 pc
32G SD card	1 pc
Card reader	1 pc
USB cable	1 pc
Tripod	1 pc
AC/DC adapter	1 pc

OPERATION ENVIRONMENT

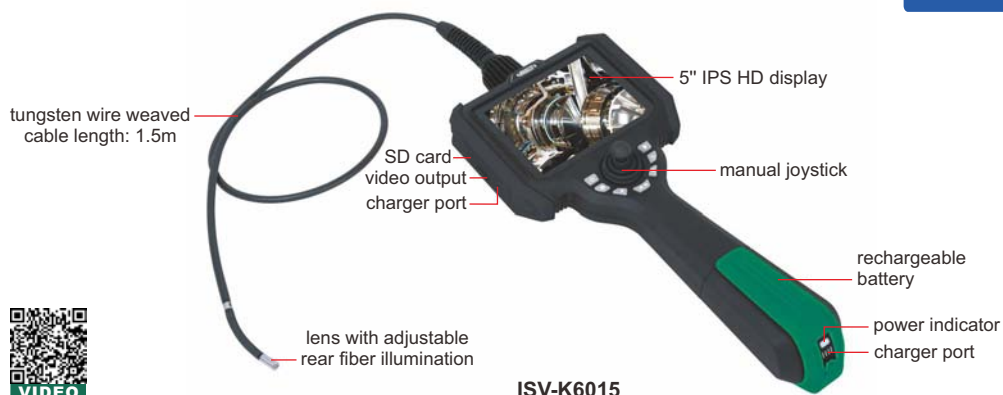|	
Main unit	-10~50°C, no preheat
Operation temperature	-20~70°C
Storage temperature	-20~60°C
Relative humidity	maximum 90%, no condensation

OPTIONAL ACCESSORY
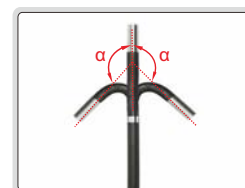
WIFI output	**ISV-K-WIFI** (must be installed in factory, only for Android OS)
Temperature alarm	**ISV-K-HTALARM** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**)
Hook	**ISV-K-HOOK** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**)
Magnet	**ISV-K-MAGNET** (must be installed in factory, for **ISV-K3915** and **ISV-K6015**)
Clamp	**ISV-K-CLAMP**

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VIDEO

the clamping range of mobile phone bracket L=56-95mm

mobile phone (optional)

charge port — video output

manual joystick to bend the lens in any direction

indicator light

cable length: 1m

lens with adjustable illumination
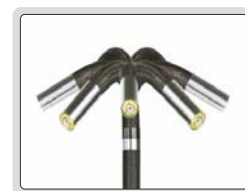

bending of lens up to 180°
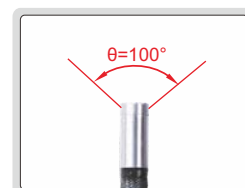
angle of view
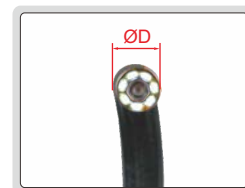
lens with LED

bend in any direction

■ For Android and IOS mobile phones

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SPECIFICATION

Diameter of lens (ØD)	6±0.2mm
Length of cable	1m
Resolution	960×720, 1280×720 (switchable)
Depth of field	20mm~∞
Angle of view (θ)	100°
Bending range (α)	0~180°
Illumination	LED with 3 levels control
Cable type	wear resistant
Interface	USB, Type-C
Mobile phone system	Android, IOS
Power supply	rechargeable battery (for 2 hours working)
Dimension (L×W×H)	195×57×105mm
Weight	450g

STANDARD DELIVERY

Main unit (with cable)	1 pc
Type-C cable	1 pc
Micro USB cable	1 pc
Iphone cable	1 pc
Charging cable	1 pc

VIDEOSCOPES (BASIC TYPE)

TUNGSTEN WIRE WEAVED CABLE BREAK AND WEAR RESISTANCE

3.5" IPS HD full-view display

video output
charger
SD card

tungsten wire weaved cable length: 1.5m

lens with adjustable LED illumination

ISV-S106

VIDEO

SPECIFICATION

Code		ISV-T105	ISV-S106
Lens	diameter (ØD)	6mm	
	pixel	1M	
	resolution	1280×720	
	depth of field	20~150mm	
	bending direction	360°	
	bending range (α)	0°~220°	
	angle of view (θ)	120°	
	illumination	7 pcs LED, with 6 levels control	
	illuminance	25000 Lux	
	lens	sapphire glass lens	
	dust/waterproof	IP67	
	bend control	manual joystick	
	temperature alarm	temperature sensor (**optional**)	
Cable	length	1m	1.5m
	type	tungsten wire weaved cable	
Main unit	display	3.5" IPS full-view display	
	display resolution	640×480	
	function	take pictures, take videos	
	file format	picture: JPG, video: MP4	
	image process	image zoom (1X, 2X, 3X, 4X, 5X)	
	memory	memory card (Maximum: 64G)	
	output	USB, HDMI, WIFI (**optional**)	
	dust/waterproof	IP65	
	power supply	rechargeable lithium battery (working time ≥ 3 hours; optional: additional battery, working time ≥ 9 hours) AC/DC adapter (for continuous working)	
Weight		1000g	

α

220° bending angle

θ=120°

120° view angle

ØD
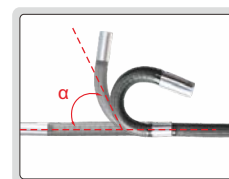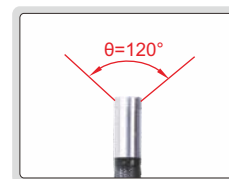
LED 6 levels control

360° bending direction

STANDARD DELIVERY

Main unit (with cable & lens)	1 pc
16G SD card	1 pc
Card reader	1 pc
USB cable	1 pc
Battery	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Additional battery	ISV-S106-BATTERY (must be installed in factory)
WIFI output	ISV-S106-WIFI
Temperature alarm	ISV-S106-HT-ALARM

MEMORY CABLE CAN
BE FIXED AT ANY SHAPE

IP67
WATERPROOF

lens with 8 pcs LED
adjustable illumination

ØD

VIDEO

memory cable

magnet pick up (included)   hook (included)   45° mirror (included)

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SPECIFICATION

Lens	**diameter (ØD)**	8mm
	pixel	0.92M
	resolution	1280x720
	depth of field	30~80mm
	angle of view	77°
	illumination	3 levels
	dust/waterproof	IP67
Cable	**length**	1180mm
	type	memory (can be set at any shape)
Main unit	**display**	5" IPS LCD
	function	take picture, take video
	file format	picture: JPG, video: MOV
	image process	image zoom (1.5X, 2X, 3X, 4X)
	memory	memory card (**optional**)
	output	Type-C
	power supply	rechargeable lithium battery (for 5 hours working)
	dimension	217×155×131mm
Weight		506g

STANDARD DELIVERY

Main unit	1 pc
45° mirror	1 pc
Hook	1 pc
Magnet pick up	1 pc

OPTIONAL ACCESSORY

32G memory card	**ISV-E40-CARD**
Card reader	**ISV-E40-READER**

OPERATION ENVIRONMENT

Operation temperature	-10~50°C
Storage temperature	-20~60°C
Operation humidity	15%~85%

VIDEOSCOPE (ECONOMIC TYPE)
CODE ISV-E30

MEMORY CABLE CAN BE FIXED AT ANY SHAPE

IP67 WATERPROOF

VIDEO

lens with adjustable LED illumination

memory cable length: 1m
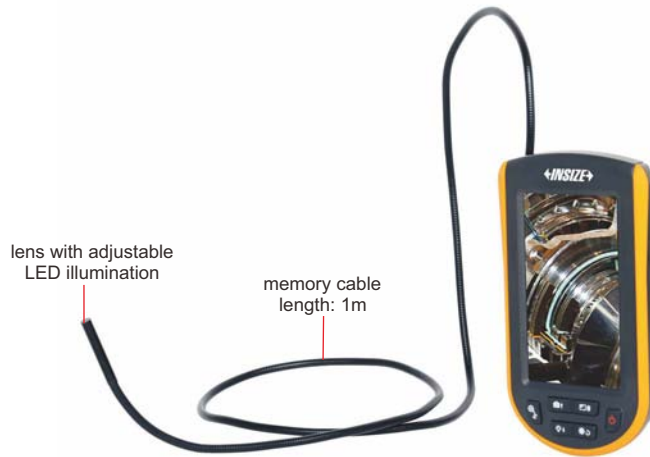
magnet pick up (included)

hook (included)

cable can be wrapped around the main unit

SPECIFICATION

Lens	diameter	5.2mm
	pixel	0.4M
	depth of field	30~80mm
	angle of view	72°
	illumination	8 levels
	dust/waterproof	IP67
Cable	length	1m
	type	memory (can be set at any shape)
Main unit	display	4.3" LCD
	function	take picture, take video
	file format	picture: JPG, video: AVI
	image zoom	2X
	memory card	memory card (**optional**)
	output	micro USB
	power supply	AA battery
	dimension	154×32.5×87.5mm
Weight		280g

STANDARD DELIVERY

Main unit	1 pc
Hook	1 pc
Magnet pick up	1 pc
AA battery	4 pcs

OPTIONAL ACCESSORY

32G memory card	**ISV-E40-CARD**
Card reader	**ISV-E40-READER**

OPERATION ENVIRONMENT

Operation temperature	-10~50°C
Storage temperature	-20~60°C
Operation humidity	15%~85%

MULTIPURPOSE VIDEOSCOPE

VIDEO

rigid cable (**optional**)

SD card   HDMI port

earphone port
USB port

charger port
cable port

7" LCD
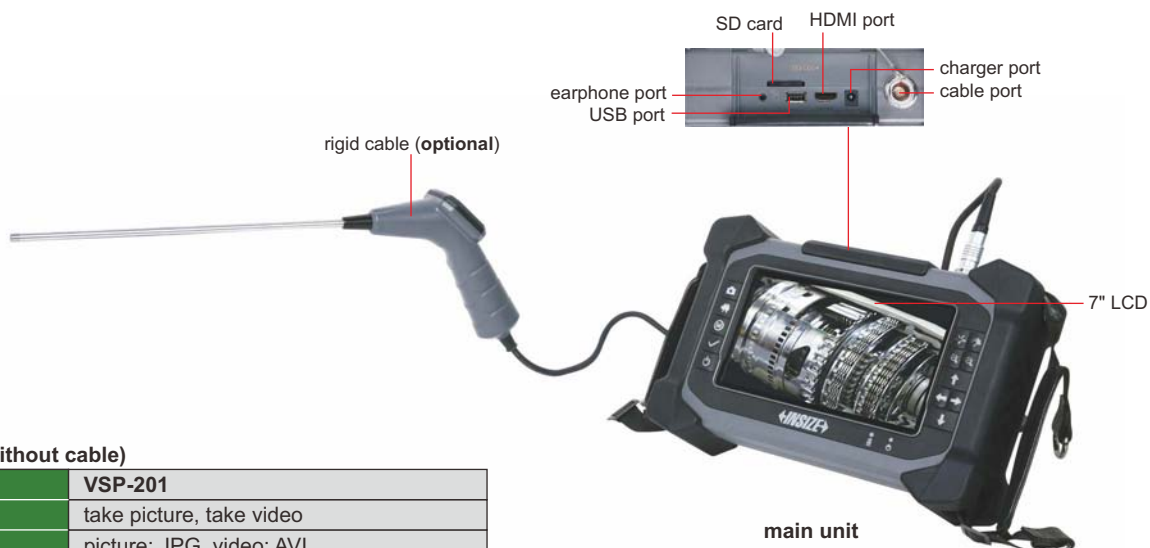
main unit

MAIN UNIT (without cable)

Code	VSP-201
Function	take picture, take video
File format	picture: JPG, video: AVI
Image process	brightness, contrast
Memory	64GB
Output	HDMI, USB
Power supply	rechargeable battery (for 4 hours working)
Dimension	260×170×65mm
Weight	1.2kg

8mm

15mm~∞

90°
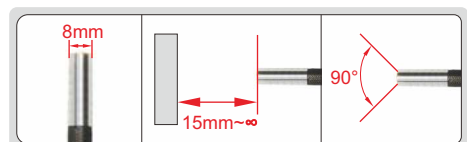
diameter (ØD)   focus distance (F)   angle of view (θ)
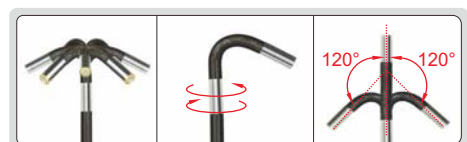
bend in any direction

360° swivel in clockwise and counter-clockwise

120°   120°

bend within 120°

manual joystick

take picture

FOUR-DIRECTION BENDING CABLE (FRONT VIEW)

Code		VSP-201D
Cable	length	3m
	type	tungsten wire weaved cable
Lens	diameter (ØD)	8mm
	focus distance (F)	15mm~∞
	angle of view (θ)	90°
	illumination	6 pcs LED
	pixel	1M
	resolution	1280×720
	dust/waterproof	IP67

decrease LED brightness

increase LED brightness

take video

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decrease LED brightness — increase LED brightness
take video — take picture

L

RIGID CABLE

Code		VSP-201H
Cable	length (L)	250mm
	type	stainless steel
Lens	diameter (ØD)	6.4mm
	focus distance (F)	15mm~∞
	angle of view (θ)	90°
	illumination	6 pcs LED
	pixel	1M
	resolution	1280×720
	dust/waterproof	IP64

6.4mm   15mm~∞   90°

diameter (ØD)   focus distance (F)   angle of view (θ)
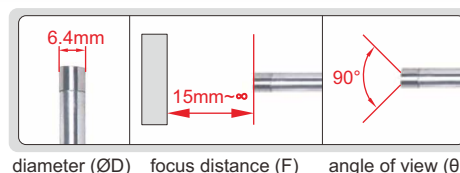
ROTATING LENS CABLE

Code		VSP-201R
Cable	length	30m
	type	high strength glass fibre
Lens	diameter (ØD)	40mm
	focus distance (F)	3mm~∞
	angle of view (θ)	100°
	illumination	12 pcs LED
	pixel	1M
	resolution	1280×720
	dust/waterproof	IP67
	lens control	motorized

indicator of cable working length (resolution: 0.01m)

support wheel (included)

rotating lens

±90°   ±180°   40mm   3mm~∞

±90° rotation in radial direction, ±180° rotation in axial direction

diameter (ØD)   focus distance (F)
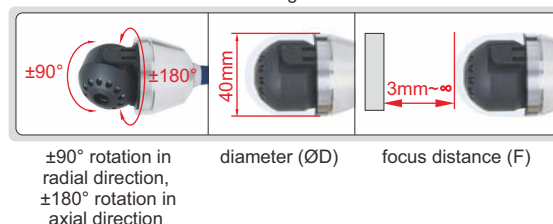
WIDE-ANGLE LENS CABLE

Code		VSP-201W
Cable	length	30m
	type	high strength glass fibre
Lens	diameter (ØD)	24mm
	focus distance (F)	25mm~∞
	angle of view (θ)	100°
	illumination	12 pcs LED
	pixel	1M
	resolution	1280×720
	dust/waterproof	IP67

indicator of cable working length (resolution: 0.01m)

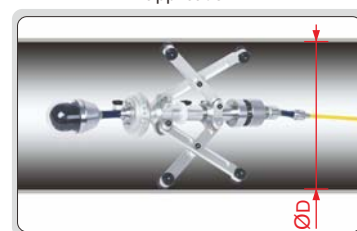support wheel (included)

wide-angle lens

100°   24mm   25mm~∞

angle of view (θ)   diameter (ØD)   focus distance (F)
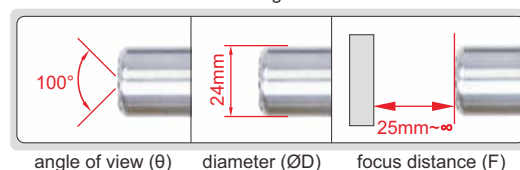
ADJUSTABLE SUPPORT

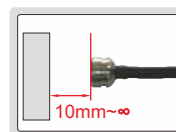| Code	Working diameter (ØD)	Remark
VSP-201-R200	60~200mm	for VSP-201R or VSP-201W

application

ØD

IP68
WATERPROOF

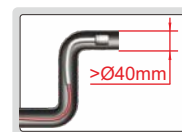**ATTENTION: RESISTANCE TO ACID AND ALKALI LIQUID (CONSULT IS NEEDED)**

VIDEO

- 3.5" LCD
- take picture
- take video
- power on/off
- cable length: 30m
- indicator of cable working length

lens with adjustable LED illumination

stand

vertical use   horizontal use

10mm~∞

focus distance

150º
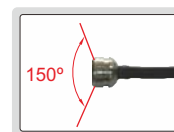
angle of view

>Ø40mm

can turn at least two times in the pipe (>Ø40mm)

Ø50mm centering ring (**optional**) fixed on the lens to center lens in the pipe

Ø100mm brush (included) fixed on the lens to clean the internal wall of pipes

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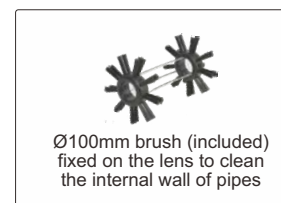
SPECIFICATION

Lens	**diameter**	28mm
	dust/waterproof	IP68
	pixel	0.3M
	resolution	640×480
	frame	30fps
Cable	**length**	30m
	dust/waterproof	IP68
	type	semi-rigid
Main unit	**function**	take picture and video
	file format	picture: JPG, video: ASF
	image process	mirror, rotate, zoom (1.5X, 2X)
	memory	4G SD card
	output	TV, USB
	power supply	4×AA batteries
Weight		5kg

STANDARD DELIVERY

Main unit	1 pc
Cable with lens	1 pc
Stand	1 pc
Indicator of cable working length	1 pc
4G SD card	1 pc
Ø100mm brush	1 pc
AA battery	4 pcs
AAA battery	2 pcs
Video output cable	1 pc
USB cable	1 pc

OPTIONAL ACCESSORY

Ø50mm centering ring	**ISV-VP280-R50**
Ø150mm brush	**ISV-VP280-B150**

RIGID BORESCOPES

ISV-1H4300

focus distance | view direction | angle of view

view direction α=30° or 70°

focus distance | angle of view
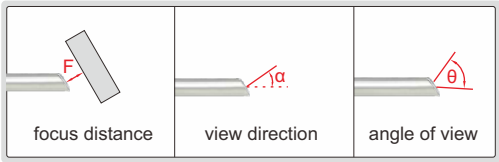
view direction α=90°
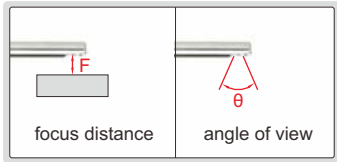
focus distance | angle of view
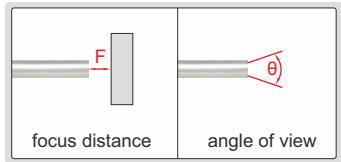
view direction 0°

- Focus distance: 2mm,
  depth of view: 5~100mm
- Dust/waterproof level: IP67
- Can be used in liquid with
  temperature -10°C~85°C

LED light handle
(**optional**)

adjustable LED light source
(**optional**)

camera and display
(**optional**)

SPECIFICATION

Code	Length (L)	View direction (α)	Diameter (ØD)	Angle of view (θ)
ISV-1H4170	174mm	0°	4mm	≥60°
ISV-1H4173	174mm	30°		
ISV-1H4177	174mm	70°		
ISV-1H4179	166mm	90°		
ISV-1H4300	302mm	0°		
ISV-1H4303	302mm	30°		
ISV-1H4307	302mm	70°		

OPTIONAL ACCESSORY

LED light handle	ISV-1HLED
Adjustable LED light source	ISV-1LED1
Camera and display	ISV-2CAM

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LED LIGHT HANDLE
CODE ISV-1HLED

- For rigid borescopes

battery (included)   charger (included)

SPECIFICATION

Power	3W
Battery	3.7V rechargeable battery (for 2 hours working)
Dimension	120×27×27mm
Weight	300g

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc
Charger	1 pc

ADJUSTABLE LED LIGHT SOURCE
CODE ISV-1LED1

- For rigid borescopes
- High LED illumination and brightness is adjustable
- For long time work with low noise

SPECIFICATION

Color temperature	5600K
Cooling	fan cooling
Power	AC110~220V, 50/60Hz
Dimension	400×300×112mm
Weight	7kg

STANDARD DELIVERY

Main unit	1 pc
1.8m optical fiber cable	1 pc

TAKE PICTURES AND VIDEOS   **AUTO FOCUS**

VIDEO

CAMERA (WITH DISPLAY)
CODE ISV-2CAM

13.3" LCD

USB port

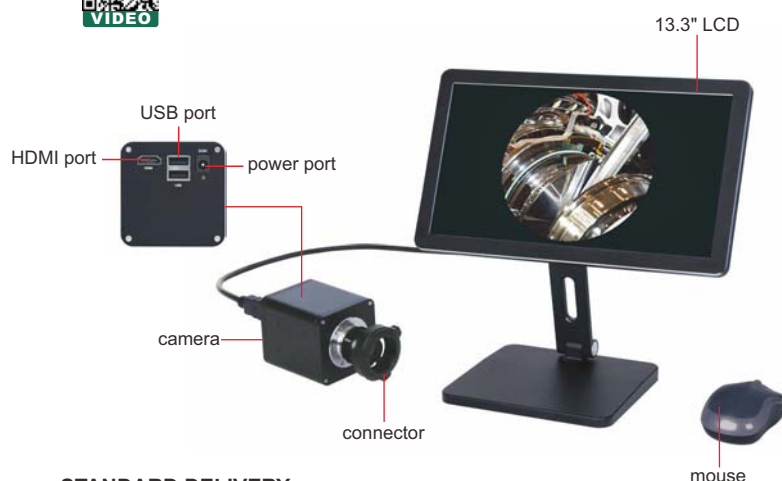HDMI port   power port

camera

connector

mouse
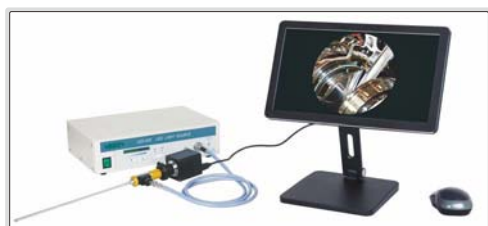
- For rigid borescopes
- 1080P high-definition image
- Auto-focus camera
- Take pictures and videos, saved to USB flash disk
- Automatic white balance and exposure
- Brightness, contrast ratio, gain are adjustable

SPECIFICATION

Sensor	1/2.8" CMOS
Pixel	2M
Resolution	1920×1080
Frame rate	60fps
Output	HDMI
Power supply	power adapter
Dimension (L×W×H)	350×100×430mm
Weight	2kg

STANDARD DELIVERY

Camera	1 pc
Connector	1 pc
13.3" LCD (with stand)	1 pc
16G USB flash disk	1 pc
Mouse	1 pc
HDMI cable	1 pc
Power adapter	2 pcs

16G USB flash disk (included)

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Coating Thickness Gages
Page 687-690

Coating Thickness Gages
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Surface Profile Gages
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Wet Film Gages
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Holiday Detectors
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Gloss Meters
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Colorimeters
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Pencil Hardness Testers
Page 699

Cross Cut Adhesion
Testers
Page 699

Digital Adhesion Testers
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Rotational Abrasion Testers
Page 701

Paint Film Flexibility
Testers
Page 701

Impact Testers
Page 702

COATING THICKNESS GAGE (HIGH PRECISION)
CODE ISO-8000FN

SUITABLE FOR THIN COATING BELOW 10μm

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES

calibration foils (included)

zero calibration plate (included)

stand (**optional**)

eddy current probe N2000 (**optional**)

eddy current probe N1500 (**optional**)

magnetic induction probe (included)

- Can measure thickness of thin coating below 10μm
- High repeatability
- Magnetic induction probe measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Eddy current probe measures the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- Maximum, minimum, average and variance values can be calculated automatically

VIDEO

SPECIFICATION

Probe	Magnetic induction probe (included)	Eddy current probe * (optional)	
Measuring range	0~500μm	0~1500μm	0~2000μm
Resolution	0.1μm (range<100μm) 1μm (100μm≤range≤500μm)	0.1μm (range<100μm) 1μm (100μm≤range<1000μm) 0.01mm (1.00mm≤range≤1.50mm)	0.1μm (range<100μm) 1μm (100μm≤range<1000μm) 0.01mm (1.00mm≤range≤2.00mm)
Accuracy	±(0.5+2%L)μm L is measuring thickness in μm		
Repeatability	≤(0.2+0.8%L)μm L is measuring thickness in μm	≤(0.2+1%L)μm L is measuring thickness in μm	
Measuring mode	single and continuous		
Measuring interval	single mode	1.5s	0.8s	
	continuous mode	0.4s	0.4s	
Calibration mode	zero calibration and multi-points calibration (1~5 points)		
Minimum substrate thickness	0.1mm	0.05mm	
Minimum measuring area	Ø7mm		Ø25mm
Minimum radius of curvature workpieces	convex surface	1.5mm		
	concave surface	10mm		
Unit	μm/mil		
Power supply	4×1.5V AAA batteries		
Dimension	148×76×26mm		
Weight	148g		

STANDARD DELIVERY

Main unit	1 pc
Magnetic induction probe	1 pc
Zero calibration plate	1 pc
Calibration foils (5.6μm, 11.6μm, 24.6μm, 50.0μm,100μm, 252μm, 390μm)	1 set
1.5V AAA battery	4 pcs

OPTIONAL ACCESSORY

Eddy current probe (with zero calibration plate)	ISO-8000FN-N1500 *
	ISO-8000FN-N2000
Stand	ISO-8000FN-STAND

*For precision measurement of thin coating below 10μm, please use the stand for eddy current probe

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COATING THICKNESS GAGE
CODE 9501-1200

POPULAR MODEL

BLUETOOTH

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES

DATA OUTPUT

VIDEO

eddy current probe NFE (**optional**) with zero calibration block

magnetic induction probe FE90 for bores and grooves (**optional**)

calibration foils (included)

magnetic induction probe FE10 for large range (**optional**)

zero calibration block for FE (included)

receiver (**optional**)

button for data transmission

magnetic induction probe FE (included)

- ■ Magnetic induction probe (FE) measures the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate.
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, copper, chrome, tin, plastic, powder, paint (not for nickel)
- ■ Eddy current probe (NFE) measures the thickness of non-conductive coating on non-magnetic metal substrate.
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- ■ Tolerance measurement
- ■ Data statistic, including average, variance, maximum and minimum values
- ■ Data can be sent to Excel by connecting to computers via bluetooth or cable of receiver
- ■ Support bluetooth printer
- ■ Automatic power off

SPECIFICATION

Probe type	FE (included) magnetic induction probe	NFE (optional) eddy current probe	FE90 (optional) magnetic induction probe for bores and grooves	FE10 (optional) magnetic induction probe for large range
Measuring range	0~1250µm	0~1250µm	0~1250µm	500~10000µm
Accuracy	±(3%L+1)µm (range≤1250µm) ±(3%L+10)µm (range>1250µm) L is measuring thickness in µm			
Resolution	0.1µm (range<100µm)			
	1µm (range≥100µm)			
Measuring mode	continuous and single			
Minimum substrate thickness	0.5mm	0.3mm	0.5mm	2mm
Minimum measuring area	Ø7mm	Ø5mm	Ø7mm	Ø40mm
Minimum curvature radius of convex workpiece	1.5mm	3mm	—	10mm
Memory	600			
Output	USB			
Power supply	2×1.5V AA batteries			
Dimension	135×77×32mm			
Weight	172g			

STANDARD DELIVERY

Main unit	1 pc
Magnetic induction probe (FE)	1 pc
Zero calibration block for FE probe	1 pc
Calibration foils (50/100/250/500/1000µm)	1 set
1.5V AA battery	2 pcs
Software and USB cable	1 pc

OPTIONAL ACCESSORY

Receiver	ISR-C300-RECEIVER
Cable of receiver	9501-1200-CABLE
Bluetooth printer	ISR-C002-PRINTER
Eddy current probe (NFE) with zero calibration block	9501-1200-NFE
Magnetic induction probe (FE90) for bores and grooves	9501-1200-FE90
Magnetic induction probe (FE10) for large range	9501-1200-FE10

FOR MAGNETIC AND NON-MAGNETIC SUBSTRATES

COATING THICKNESS GAGE (BASIC TYPE)
CODE ISO-1200FN

- Probe is suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- 3 measuring modes: Fe, NFe, Fe/NFe
- Store 9 measuring records
- Small and portable, easy for operation

ruby contact point

SPECIFICATION

Measuring range		0~2000µm
Resolution		0.1µm (range<100µm) 1µm (100µm≤range<1000µm) 0.01mm (1mm≤range≤2mm)
Accuracy		±(2µm+3%L) L is measuring thickness in µm
Measure interval		0.5s
Calibration mode		zero calibration
Measuring mode		Fe, NFe, Fe/NFe
Minimum substrate thickness	Fe	0.2mm
	NFe	0.05mm
Minimum measuring area		Ø25mm
Minimum radius of curvature workpieces	convex surface	5mm
	concave surface	25mm
Unit		µm/mil
Power supply		2×1.5V AAA batteries
Main unit dimension		101×62×28mm
Probe dimension		71×26×22mm
Weight		114g

Fe zero calibration plate (included)

NFe zero calibration plate (included)

standard foil (included)

STANDARD DELIVERY

Main unit	1 pc
Fe zero calibration plate	1 pc
NFe zero calibration plate	1 pc
Standard foil (100µm)	1 pc
1.5V AAA battery	2 pcs

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COATING THICKNESS GAGE (BASIC TYPE)
CODE ISO-1000FN

- Probe is suitable for both magnetic and non-magnetic metal substrates
- Can measure the thickness of non-magnetic coating and
  non-metallic coating on magnetic metal substrate
  Substrate: iron, steel, magnetic stainless steel (not for non-magnetic stainless steel)
  Coating: zinc, aluminum, copper, chrome, tin, plastic, powder, paint (not for nickel)
- Can measure the thickness of non-conductive coating on non-magnetic metal substrate
  Substrate: copper, aluminum, zinc, non-magnetic stainless steel
  Coating: plastic, powder, paint, anodizing (not for chrome and zinc plating)
- 3 measuring modes: Fe, NFe, Fe/NFe
- Store 9 measuring records
- Small and portable, easy for operation

ruby contact point

SPECIFICATION

Measuring range	0~2000µm
Resolution	0.1µm (range<100µm) 1µm (100µm≤range<1000µm) 0.01mm (1mm≤range≤2mm)
Accuracy	±(2µm+3%L) L is measuring thickness in µm
Measure interval	0.5s
Calibration mode	zero calibration
Measuring mode	Fe, NFe, Fe/NFe
Minimum substrate thickness	Fe	0.2mm
	NFe	0.05mm
Minimum measuring area	Ø25mm
Minimum radius of curvature workpieces	convex surface	5mm
	concave surface	25mm
Unit	µm/mil
Power supply	2×1.5V AAA batteries
Dimension	101×62×28mm
Weight	79g

standard foil (included)

Fe zero calibration plate (included)

NFe zero calibration plate (included)

STANDARD DELIVERY

Main unit	1 pc
Fe zero calibration plate	1 pc
NFe zero calibration plate	1 pc
Standard foil (100µm)	1 pc
1.5V AAA battery	2 pcs

CALIBRATION FOILS FOR COATING THICKNESS GAGES

INSPECTION CERTIFICATE

- To calibrate or check the accuracy of coating thickness gages
- Increase the measurement accuracy after foil calibration
- Uniformity: ±0.3µm (≤50µm), ±0.6% (>50µm)
- Dimension: 45×30mm (thickness≤2000µm), 50×30mm (thickness>2000µm)
- Supplied with manufacturer inspection certificate

| Code	Thickness	Deviation*	Uniformity
9503-FL1	11.5µm	±5%	±0.3µm
9503-FL2	23µm	±5%	±0.3µm
9503-FL3	50.5µm	±5%	±0.6%
9503-FL4	102µm	±5%	±0.6%
9503-FL5	250µm	±5%	±0.6%
9503-FL6	495µm	±3%	±0.6%
9503-FL7	995µm	±2%	±0.6%
9503-FL8	1780µm	±5%	±0.6%
9503-FL9	3725µm	±4%	±0.6%
9503-FL10	7650µm	±2%	±0.6%

222310007
508.8µm±0.6%
20.0mil±0.6%

9503-FL6

*Deviation between the ordered thickness and the thickness marked
on the calibration foils when supplied

27

X RAY FLUORESCENCE SPECTROMETER
(RoHS DETECTOR/ALLOY COMPOSITION ANALYZER/COATING THICKNESS GAGE)
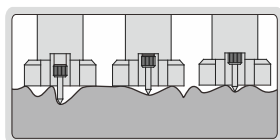## CODE XRF-B210

REFER TO PAGE
524~525 FOR DETAILS
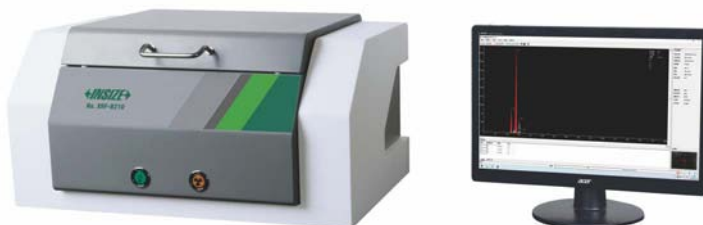
DATA OUTPUT	DISPLAY MAXIMUM, MINIMUM, DIFFERENCE VALUE BETWEEN MAXIMUM AND MINIMUM

DIGITAL SURFACE PROFILE GAGE

VIDEO

measure peak-to-valley height
of blast cleaned surfaces

Unit: mm

Ø16
35
Ø2
60°
Ø25
R0.05
90°

2844-10

- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will
  remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Button function: tolerance Go and No-Go display, data preset,
  measuring direction change, max./min./TIR measurement,
  inch/metric conversion, absolute/incremental measurement
- CR2032 battery
- Automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Optional accessory: data output cable
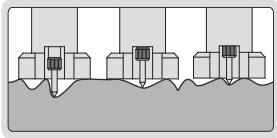 (code **7315-50M need receiver** page 5, **7302-40M** page 13)

set zero

zero set block
(included)

Code	Range	Digital indicator stroke	Digital indicator resolution	Accuracy
2844-10	0-12.7mm/0-0.5"	12.7mm/0.5"	0.001mm/0.00005"	±0.005mm

27

SURFACE PROFILE GAGE

measure peak-to-valley height of blast cleaned surfaces
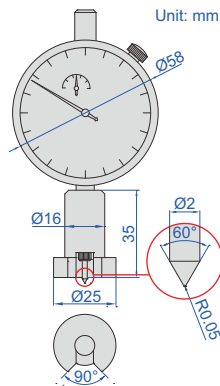
Unit: mm

2344-1

set zero

zero set block (included)

- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Stainless steel base

Code	Range	Dial indicator stroke	Dial indicator graduation	Accuracy
2344-1	0-1mm	1mm	0.001mm	±0.005mm

DIGITAL SURFACE PROFILE GAGE

DATA OUTPUT
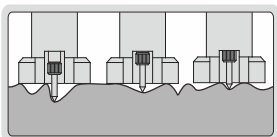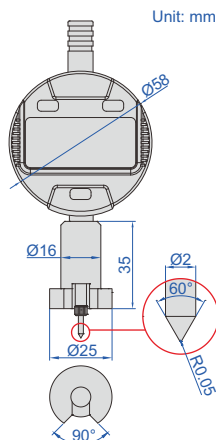
VIDEO

27

measure peak-to-valley height of blast cleaned surfaces

Unit: mm

2843-10

set zero

zero set block (included)

- Measure peak-to-valley height of blast cleaned surface.
  If the profile is too low, the adhesion of the coating to the surface will be reduced.
  If the profile is too high, there is the danger that the profile peaks will remain uncoated, allowing rust spots to occur.
- Meet ASTM D 4417-B
- Zero set block is included, set zero before measurement
- Button function: on/off, zero, mm/inch, absolute/incremental measurement
- CR2032 battery, automatic power off (time is adjustable)
- Data output
- Stainless steel base
- Optional accessory: data output cable
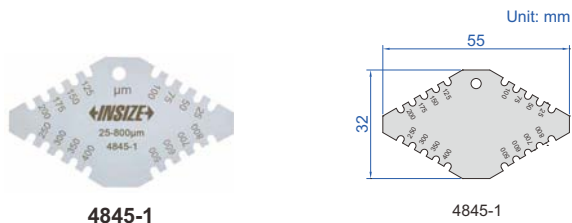 (code **7315-50M need receiver** page 5, **7302-40M** page 13)

Code	Range	Digital indicator stroke	Digital indicator resolution	Accuracy
2843-10	0-12.7mm/0-0.5"	12.7mm/0.5"	0.001mm/0.00005"	±0.005mm

WET FILM GAGES

Unit: mm

55

32

4845-1

4845-1

Unit: mm

74

65
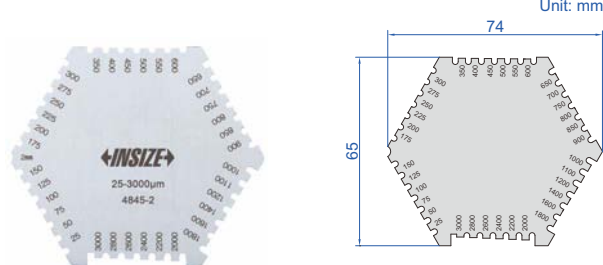
4845-2

4845-2

■ Made of stainless steel

Code	Range	Accuracy	Thickness
4845-1	25-800µm	±5µm	1.8mm
4845-2	25-3000µm	25-100µm: ±5µm 100µm-3000µm: ±5%	1mm

VIDEO

HOLIDAY DETECTOR
CODE 9511-HA30

strip brush (included)

■ Inspect anti-corrosion coating status of different thickness with adjustable pulse high-voltage, coating includes insulating paint, glass lining, rubber lining, glass fiber reinforced plastic, coal tar epoxy, etc.
■ When the brush with pulse high-voltage moves near the crack, pinhole or thin area on the coating surface, which results in gap gas breakdown and discharge spark, sound and light alarm will appear on the probe and the alarm sound can be heard with the headphone
■ LCD display with light-control backlight
■ Built-in rechargeable battery, easy to carry and suitable for outdoor inspection
■ Automatic power off

headphone (included)

flat brush (included)

SPECIFICATION

Measuring range	0.05~10mm (customization for inspecting coating thicker than 10mm is available)
Output voltage	0.6~30.0kV (stepless adjustable)
Resolution	0.1kV
Power	≤5W
Power supply	12V rechargeable Ni-MH battery
Dimension	220×130×88mm
Weight	2.5kg

STANDARD DELIVERY

Main unit	1 pc
Probe	1 pc
Strip brush*	1 pc
Flat brush	1 pc
Ground wire	1 pc
Ground rod	1 pc
Headphone	1 pc
AC/DC adapter	1 pc

*Arc brush and circular probe can be customized

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60° GLOSS METER (BASIC TYPE)
CODE 5702-DG6

- To test the gloss of coating, such as painting, varnish, printing ink, etc.
- To test the material surfaces, such as metal, granite, ceramic, plastic, paper, etc.
- According to ISO 2813, ISO 7668, ASTM D523, ASTM D2457, DIN 67530
- Automatic judgement after setting high and low limits
- Automatic power off

base with calibration block (included)

SPECIFICATION

Incidence angle	60°
Measuring range	0~200GU
Resolution	0.1GU
Accuracy	±1.5GU (range<120GU) ±1.5% (range≥120GU)
Repeatability	0.2GU (range<120GU) 0.2% (range≥120GU)
Zero error	0.1GU
Measuring area	20×10mm
Power supply	rechargeable battery
Data port	USB
Dimension	135×45×75mm
Weight	237g

software (included), test can be controlled from the software, display test data and report

STANDARD DELIVERY

Main unit	1 pc
Base with calibration block	1 pc
U disk	1 pc
AC/DC adapter	1 pc
USB data cable	1 pc
Cleaning cloth	1 pc

report

software

measurement data is sent to Excel

27

60° GLOSS METER
CODE ISQ-DG6

- To test the gloss of coating, such as painting, varnish, printing ink, etc.
- To test the material surfaces, such as metal, granite, ceramic, plastic, paper, etc.
- According to ISO 2813, ASTM D2457, ASTM D523
- Automatic power off

base with calibration block (included)

SPECIFICATION

Incidence angle	60°
Measuring range	0~150GU
Resolution	0.1GU
Accuracy	±1.2GU
Repeatability	0.4GU
Zero set error	0.2GU
Measuring area	20×10mm
Output	bluetooth
Power supply	1×1.5V AA battery
Dimension	123×38×65mm
Weight	300g

connect mobile phone via bluetooth (only Android system)

STANDARD DELIVERY

Main unit	1 pc
Base with calibration block	1 pc
Spare calibration block	1 pc

operate and output data by mobile phone

DATA OUTPUT	BLUETOOTH	CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES

20°/60°/85° GLOSS METER
CODE ISQ-DG8

VIDEO

base with calibration block
(included)

- To test the gloss of coating, such as painting, varnish, printing ink, etc.
- To test the material surfaces, such as metal, granite, ceramic, plastic, paper, etc.
- According to ISO 2813, ASTM D2457, ASTM D523
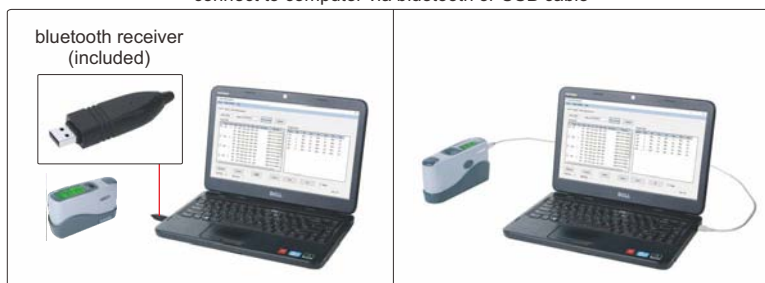- Memory of 10000 measurement results for browsing and output
- Automatic power off

software flash disk
(included)

connect to mobile phone via bluetooth
(only Android system)

connect to computer via bluetooth or USB cable

bluetooth receiver
(included)

operate and output data by mobile phone

SPECIFICATION

Incidence angle	20°	60°	85°
Measuring range	0~2000GU	0~1000GU	0~160GU
Resolution	0.1GU (range≤119.9GU)		
	1GU (range>119.9GU)		
Accuracy	±1.5GU (range≤119.9GU)		
	±1.5% (range>119.9GU)		
Repeatability	0.2GU (range≤119.9GU)		
	0.2% (range>119.9GU)		
Zero set error	0.2GU		
Measuring area	10×9mm	16×9mm	39×5mm
Output	USB and bluetooth		
Power supply	1×1.5V AA battery		
Dimension	155×48×75mm		
Weight	400g		
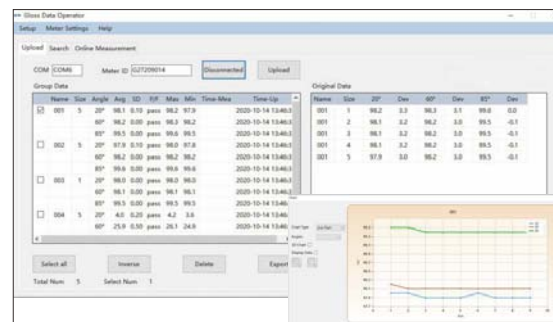
software (included), test can be controlled from the software,
display test data, output to Excel

STANDARD DELIVERY

Main unit	1 pc
Base with calibration block	1 pc
Software and USB cable	1 pc
Bluetooth receiver	1 pc

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SPECTROPHOTOMETER
CODE 9710-30

DATA OUTPUT | CONCAVE GRATING SPECTROPHOTOMETRIC | Ø8/4mm DUAL APERTURE | BLUETOOTH

- Concave grating spectrophotometric
- 3.5 inch TFT color LCD, capacitive touch screen, 256 image element double arrays CMOS image sensor
- D/8 geometrical optics, conforms with CIE No.15, ISO7724/1, ASTM E1164, DIN5033 Teil 7
- Use long life and low power consumption combined LED light source
- Camera locating function, switchable 8mm/4mm aperture, support both SCI and SCE at the same time
- Large capacity storage space, over 20,000 measurement data
- USB port and Bluetooth 4.0
- Two standard observer angles, a variety of illuminant, a variety of color indexes, conforms with a variety of standard colorimetric data
- Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission

VIDEO

software flash disk (included)

white and black calibration cavity (included)

printer (**optional**)

SPECIFICATION

Optical geometry	reflect: di: 8°, de: 8° (diffused illumination, 8-degree viewing angle)
Integrating sphere size	Ø48mm
Light source	combined LED light, UV light
Spectrophotometric mode	concave grating
Sensor	256 image element double array CMOS image sensor
Wavelength range	400~700nm
Wavelength interval	10nm
Semiband width	10nm
Measured reflectance range	0~200%
Measuring aperture	dual aperture: MAV: Ø8mm; SAV: Ø4mm
Specular component	SCI&SCE
Color space	CIE LAB, XYZ, Yxy, LCh, CIE LUV, hunter LAB
Color difference formula	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00v, ΔE (Hunter)
Other colorimetric index	WI (ASTM E313, CIE/ISO, AATCC, hunter), YI (ASTM D1925, ASTM 313), metamerism index MI, staining fastness, color fastness, colorstrength, opacity
Observer angle	2°/10°
Illuminant	A, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, Tl83, Tl84, U35
Displayed data	spectrogram/values, samples chromaticity values, color difference values/graph, PASS/FAIL result, color offset
Measuring time	2.6s
Repeatability	**spectral reflectance**	MAV/SCI, within 0.08% of standard deviation (400~700nm: 0.18%)
	colorimetric values	MAV/SCI: ΔE*≤0.03
Inter-instrument error	MAV/SCI: ΔE*≤0.15
Measurement mode	single measurement, average measurement
Data port	USB, bluetooth 4.0
Data storage	standard 1000 pcs, sample 28000 pcs
Illuminant life span	5 years, more than 3 million times measurements
Battery	Li-ion battery, 5000 measurements within 8 hours
Dimension	184×77×105mm
Weight	600g

measurement

reflectivity

software

report

measurement data is sent to Excel

software (included), test can be controlled from the software, display test data, report

STANDARD DELIVERY

Main unit	1 pc
White and black calibration cavity	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Printer	**9710-PRINTER**
Powder test box	**9710-POWDERBOX**
Universal test kit	**9710-TESTKIT**

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- Conforms with CIE No.15, ISO7724-1, ASTM E1164 and DIN5033 Teil7 standards
- Grating spectrophotometric, 3.5" IPS full color screen, dual optical path high precise CMOS array sensor
- Use long life and low power consumption combined LED light source, include UV and exclude UV measurement
- Camera locating function, switchable 11mm/6mm/1×3mm aperture
- Large capacity storage space, over 20000 measurement data
- Two standard observer angles, a variety of illuminant, a variety of color indexes, conforms with a variety of standard colorimetric data
- Measure sample spectra, accurate Lab data, can be used in color matching and accurate color transmission

VIDEO

SPECTROPHOTOMETER
CODE 5701-D40

| FOUR KINDS OF APERTURE | GRATING SPECTROPHOTOMETRIC |
| DATA OUTPUT | MATCHING COLOR CARD QUICKLY |

SPECIFICATION

|	
Optical geometry	D/8 (diffused illumination/8° direction reception), SCI+SCE (specular component included+specular component excluded)
Integrating sphere size	Ø40mm
Light source	LED (full band balanced LED)+UV
Spectrophotometric mode	grating
Sensor	dual optical path high precise CMOS array sensor
Wavelength range	400~700nm
Wavelength interval	10nm
Reflectance measurement range	0~200%
Reflectance resolution	0.01%
Display resolution	0.01
Illumination area/aperture	MAV: Ø11mm; SAV: Ø6mm, Ø3mm; MINI: 1×3mm
Color space	CIE-Lab, CIE-LCh, HunterLab, CIE Luv, XYZ, Yxy, RGB
Color difference formula	ΔE*ab, ΔE*cmc, ΔE*94, ΔE*00
Other colorimetric index	whiteness (ASTM E313-00, ASTM E313-73, CIE/ISO, AATCC, hunter, taube berger stensby), yellowness (ASTM D1925, ASTM 313-00, ASTM E313-73), blackness (My, dM), color fastness, tint (ASTM E313-73) color density CMYK (A, T, E, M), milm, munsell, opacity, color strength
Observer angle	2°/10°
Illuminant	A, B, C, D50, D55, D65, D75, F1, F2, F3, F4, F5, F6, F7, F8, F9, F10, F11, F12, CWF, U30, U35, DLF, NBF, Tl83, Tl84, Id50, Id65, LED-B1, LED-B2, LED-B3, LED-B4, LED-B5, LED-BH1, LED-RGB1, LED-V1, LED-V2
Measuring time	about 1.5s
Repeatability — spectral reflectance	within 0.08% of standard deviation
Repeatability — colorimetric values	ΔE*ab≤0.025 (after whiteboard correction, measuring the whiteboard 30 times at 5s interval)
Inter-instrument error	ΔE*ab≤0.25 (BCRA series II, average value of 12 color plates)
Data port	USB, bluetooth
Light source lifetime	10 years, more than 1 million times measurements
Battery	3.7V/3000mAh, rechargeable 8000 times continuous tests
Dimension	95×129×231mm
Weight	750g

measurement

software (included), test can be controlled from the software, display test data, report
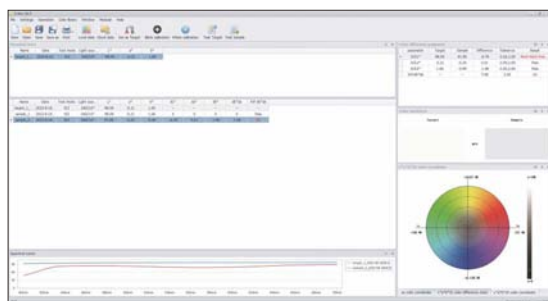
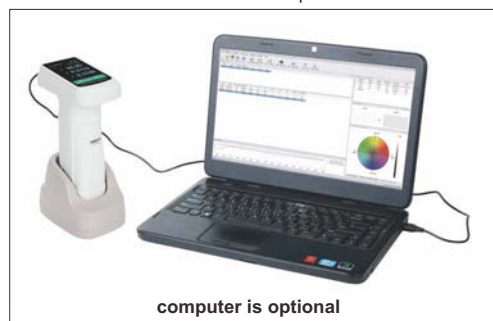software
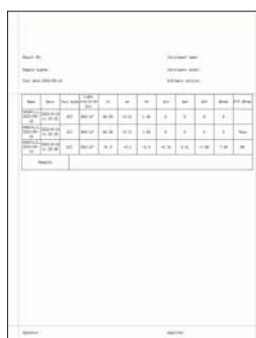
pure data report
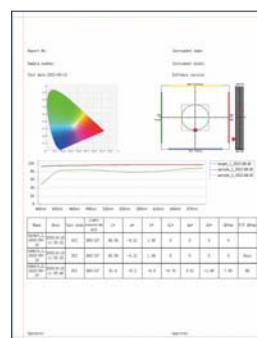
graphic report

connect to computer

white calibration cavity (included)

computer is optional

STANDARD DELIVERY

Main unit	1 pc
White calibration cavity	1 pc
Measuring aperture	3 pcs
USB cable	1 pc
USB disk	1 pc
AC/DC adapter	1 pc

COLORIMETER (BASIC TYPE)
CODE 5700-LS35

- Conforms with CIE 15, CIE S 005, ISO 7724-1 and ISO 13655 standards
- 3.5-inch IPS display and capacity touch panel
- Contains multiple color cards and can match the closest color code quickly
- QC testing function, can set color difference threshold
- Able to store 1000 colors and 1000 color comparison
- 3.7V/4000mAh battery, 10000 continuous measurements

white calibration cavity (included)

SPECIFICATION

Illumination geometry	D/8, specular component include (SCI)
Illumination light source	full spectrum LED light source
Measurement conditions	light source D65, field of view 10°
Measuring time	about 1s
Color space	CIE Lab, Luv, LCh, Yxy, CMYK, RGB, Hex
Color difference formula	ΔE*ab, ΔE*uv, ΔE*94, ΔE*cmc (2:1), ΔE*cmc (1:1), ΔE*00
Repeatability	standard deviation ΔE*ab is within 0.03 (measurement condition: the average value of 30 measurements on the whiteboard at an interval of 3s after calibration)
Charging interface	USB (Type-C)
Dimension	86×63×158mm
Weight	245g

VIDEO

STANDARD DELIVERY

Main unit	1 pc
White calibration cavity	1 pc
USB cable	1 pc
AC/DC adapter	1 pc
Cleaning cloth	1 pc
Locating plate	1 pc

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STANDARD COLOR PLATES
CODE 5704-CP01

- To calibrate color measuring instruments
- Made of ceramic
- Wear resistance, corrosion resistance, high optical stability
- Supplied with ISO17025 calibration certificate from National Institute of Metrology, China
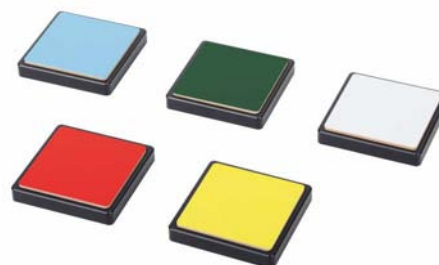
SPECIFICATION

Spectral reflectance factor	spectral reflectance factor in the wavelength range of 380nm to 780nm
Standard illuminant	A, D65, etc
Viewing angle	2°, 10°
Color space	CIE-Lab, XYZ, etc
Annual variation	Δx, Δy≤0.005
Dimension	50×50mm

STANDARD DELIVERY

Protective gloves	1 pair
Calibration certificate	1 pc

calibration certificate (included)

VIDEO

- For flat coating surfaces
- Conform to ASTM D3363, ISO 15184, BS3900-E19 and ECCA-T4/1

in use

PENCIL HARDNESS TESTER
CODE PHT-C751

SPECIFICATION

Pressure of pencil on coating	500g, 750g, 1000g (main unit is 500g, one weight is 750g, two weights are 1000g)
Angle between pencil and measured surface	45°
Dimension (L×W×H)	95×80×110mm
Weight	2kg

STANDARD DELIVERY

Main unit	1 pc
Weights	2 pcs
Leveling rod	1 pc
Level	1 pc
Pencil	12 pcs (4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H)
Pencil sharpener	1 pc

OPTIONAL ACCESSORY

Pencil (12 pcs: 4B-6H)	PHT-C751-P
400 grade abrasive paper	PHT-C751-S

level (included)

pencils (included)

leveling rod (included)

weights (included)

VIDEO

CROSS CUT ADHESION TESTER
CODE ISQ-PK100

- To test the adhesion of paint coating on metal, wood, plastic, etc.
- According to ISO 2409, ASTM D3359, DIN53151

3mm pitch blade (included)

2X magnifier (included)

2mm pitch blade (included)

1mm pitch blade (included)

brush (included)

SPECIFICATION

Blade		1mm pitch	2mm pitch	3mm pitch
Applied paint thickness	on hard substrate (like metal)	0~60µm	61~120µm	121~250µm
	on soft substrate (like wood, plaster)	–	0~120µm	121~250µm
Minimum substrate thickness	hard substrate (like metal)	0.25mm	0.25mm	0.25mm
	soft substrate (like wood, plaster)	–	10mm	10mm
Minimum size of test sample		150×100mm	150×100mm	150×100mm
Dimension		170×28×40mm		
Weight		430g		

STANDARD DELIVERY

Handle	1 pc
1mm pitch blade	1 pc
2mm pitch blade	1 pc
3mm pitch blade	1 pc
Test tape (ISQ-PK100-1)	1 pc
2X magnifier	1 pc
Brush	1 pc

step 1: make grid cutting on surface

step 2: paste and remove the tape
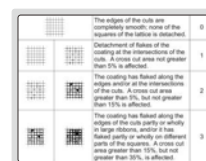
step 3: according to the shedding status, judge the adhesion grade

test tape (included)
ISQ-PK100-1

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DIGITAL ADHESION TESTER
CODE SPT-AD21

VIDEO

handle

pump

LCD

buttons

actuator handle

USB port

hose

actuator assembly

dolly quick coupling

Ø20mm dolly (included)

glue gun and glue (included)

- Pull-off test
- Built-in rechargeable lithium battery, no need external power source
- Portable design, can be used anywhere
- Standard USB interface, can directly transmit the stored data to computer, no need to install software
- Conforms to GB/T 5210, ASTM D4541/D7234, ISO 4624/16276-1
- Store all test results, includes maximum pull-off force, pull-off rate, dolly size and time
- Built in real-time clock, all saved data have corresponding date and time
- Selectable four different sizes dolly for different resolution and testing range
- No need conversion, the instrument can calculate pull-off force according to the dolly size
- Get the testing results from LCD directly
- Two units MPa and psi for selection and can be converted automatically

cutting tool (included) for Ø10mm, Ø14mm, Ø20mm dolly

27

SPECIFICATION

Range	0~20MPa
Dolly diameter	Ø20mm
Resolution	0.01MPa (1psi)
Accuracy	±1% full scale
Pull-off force	0.7~20MPa
Power	built-in rechargeable lithium battery
Dimension (LxWxH)	360x75x115mm
Weight	3kg

STANDARD DELIVERY

Main unit	1 pc
Ø20mm dolly	20 pcs
Cutting tool	1 pc
Charger	1 pc
USB cable	1 pc
Glue gun	1 pc
3M glue	1 pc

OPTIONAL ACCESSORY

Ø10mm dolly	SPT-AD21-10	10 pcs/package pull-off force: 2.8~80MPa
Ø14mm dolly	SPT-AD21-14	10 pcs/package pull-off force: 1.4~40MPa
Ø20mm dolly	SPT-AD21-20	10 pcs/package pull-off force: 0.7~20MPa
Ø50mm dolly	SPT-AD21-50 *	10 pcs/package pull-off force: 0.4~3.5MPa
Cutting tool	SPT-AD21-CUTTER1	for Ø10mm, Ø14mm, Ø20mm dolly
Cutting tool	SPT-AD21-CUTTER2 *	for Ø50mm dolly
Sleeve	SPT-AD21-SLEEVE *	for Ø50mm dolly
Glue	SPT-AD21-GLUE	3M DP420 epoxy glue/50ml

*Ø50mm dolly requires corresponding cutter and sleeve

ROTATIONAL ABRASION TESTER
CODE QMY-AP32

- To test flat paint film
- Comply with ISO 7784-2, ISO 9352, GB/T1768, ASTM D3884, ASTM D1175 standards

vacuum nozzle height adjustment

auxiliary weight mount

turntable

quick release mechanism

vacuum nozzle

digital display

VIDEO

SPECIFICATION

Plateform rotary speed	60±2 r/min, 72±2 r/min (selectable)
Load weight	500g, 750g, 1000g
Sample size	Ø100mm
Grinding wheel	external diameter (51.6±0.1)mm, thickness (12.7±0.1)mm
Counting range of plateform rotation	0~9999 times
Motor power	25W
Power supply	220V, 50Hz
Dimension	260×410×280mm
Weight	14kg

STANDARD DELIVERY

Main unit	1 pc
Vacuum cleaner	1 pc
1000g weight	2 pcs
750g weight	2 pcs
500g weight	2 pcs
TABER CS-10 grinding wheel	1 pair
Sandpaper	10 pcs
Glass plate	5 pcs

OPTIONAL ACCESSORY

TABER CS17 grinding wheel (1 pair)	QMY-AP32-CS17
Glass plate (Ø100mm with a 9mm center hole, 100 pcs/box)	QMY-AP32-GP
Aluminum plate (Ø100mm with a 9mm center hole, 100 pcs/box)	QMY-AP32-AP
180# emery cloth strip (100 pcs/box)	QMY-AP32-EC

PAINT FILM FLEXIBILITY TESTER
CODE PPF-BF62

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- To test the flexibility of paint and varnish
- Bend the coated test plates on the shaft rods with different diameter, the minimum shaft rod diameter that does not cause damage to the film is the film flexibility

VIDEO

SPECIFICATION

Shaft rod length	35mm
Shaft rod 1	Ø15mm
Shaft rod 2	Ø10mm
Shaft rod 3	Ø5mm
Shaft rod 4	Ø4mm
Shaft rod 5	cross section 3×10mm, radius of curved surface 1.5mm
Shaft rod 6	cross section 2×10mm, radius of curved surface 1.0mm
Shaft rod 7	cross section 1×10mm, radius of curved surface 0.5mm
Dimension	450×75×100mm
Weight	3.1kg

STANDARD DELIVERY

Main unit	1 pc
Test plate	1 box (500 pcs)
4X magnifier	1 pc

OPTIONAL ACCESSORY

Test plate (dimension: 120×25×0.28mm, 500 pcs/box)	PPF-BF62-TP

IMPACT TESTER
CODE THD-PF34

300g main weight
(included)

1000g main weight
(included)

2lb main weight
(included)

2lb additional
weight (included)

1000g additional
weight (included)

Ø16.3mm die base
(included)

Ø12.7mm indenter
(included)

Ø15.9mm indenter
(included)

■ For paint and varnish dry coating. To test the ability to resist cracking or peeling from the substrate when deformation is caused by weights impact under standard conditions
■ Indenter, base and weight can be replaced quickly
■ Conform to ISO 6272-2:2002, ASTM D 2794

SPCIFICATION

Impact height range	0-100cm (0-40inch)
Graduation	1cm
Impact depth	2.5cm
Weight	1000g (2 pcs), 300g (1 pc), 2lb (2 pcs)
Indenter diameter	Ø12.7mm (1/2 inch DIA), Ø15.9mm (5/8 inch DIA)
Die base diameter	Ø16.3mm

OPTIONAL ACCESSORY

Base plate (120×70×0.5mm, 180 pcs/box) *	THD-PF34-T

*Can be customized according to the needs of different thickness, size and processing

STANDARD DELIVERY

Main unit	1 pc
1000g main weight	1 pc
300g main weight	1 pc
2lb main weight	1 pc
1000g additional weight	1 pc
2lb additional weight	1 pc
Ø12.7mm indenter	1 pc
Ø15.9mm indenter	1 pc
Ø16.3mm die base	1 pc

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Light Transmittance Meters
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Digital Glass Thickness Meters
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ELECTROMAGNETIC ULTRASONIC THICKNESS GAGE
CODE EMU-S340

- No surface polishing required, can penetrate anti-corrosion coating and rust (maximum 4mm), no coupling agent required
- Normal temperature permanent magnetic probe and high temperature permanent magnetic probe are using weak permanent magnet, to replace the strong permanent magnet commonly used nowadays. Completely solve the problem that EMAT transducer suction force is too large and difficult to move, so that the manual inspection is more simple, convenient and safe
- Temperature compensation function, can input the actual temperature of high-temperature components to automatically compensate the speed of sound, making the thickness measurement value more accurate
- Measurement of non verticality up to ±25°, low verticality requirements for probe placement
- Scanning mode: A-scan format, B-scan image format display of thickness measurement values
- 50000 thickness values and 4000 A-scan or B-scan data can be stored
- Integrated high-brightness LEDs on the back for easy on-site illumination

color LCD

transducer **EMU-S50** (included)

Ød

USB port

SPECIFICATION

Measuring range	1.5~200mm (steel, stainless steel)
Resolution	0.02mm
Accuracy	±0.04mm+H/1000 (H≤50mm) ±0.2mm (50≥H≥100mm) ±0.3mm (100≥H≥200mm)
Working gap (the distance between the probe and the measured object)	normal temperature permanent magnetic probe≤4mm high temperature permanent magnetic probe≤2mm
Minimum required diameter	≥8mm
Non-perpendicularity	±25°
Excitation frequency	3.0MHz~3.9MHz
Material velocity	1000~9999m/s
Adjustment increments	1m/s
Gate function	automatic gate, manual single gate, manual double gate
Display	color LCD, 3.5 inch/320×480 pixel
Interface	USB2.0
Power supply	rechargeable lithium battery, working time≥8 hours
Dimension	195×90×40mm
Weight	820g

normal temperature permanent magnetic probe sweep support **EMU-S52 (optional)**

high temperature permanent magnetic probe **EMU-S51 (optional)**

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STANDARD DELIVERY

Main unit	1 pc
Transducer EMU-S50	1 pc
Calibration block **(diameter Ø36×wall thickness 10mm)**	1 pc
4G USB flash disk	1 pc
USB cable	1 pc

OPTIONAL ACCESSORY

High temperature permanent magnetic probe	**EMU-S51**
Normal temperature permanent magnetic probe sweep support	**EMU-S52**

SPECIFICATION OF TRANSDUCERS

Code	Magnetism	Magnetic force	Diameter (Ød)	Applicable temperature	Application
EMU-S50 (included)	weak permanent magnet	≤15N	Ø30mm	-10~60°C	general use
EMU-S51 (optional)	weak permanent magnet	≤20N	Ø45mm	-50~800°C	for high temperature

ULTRASONIC THICKNESS GAGE (ADVANCED TYPE)
CODE ISU-800D

PENETRATE COATING AND MEASURE THE THICKNESS OF SUBSTRATE

BLUETOOTH

REAL-TIME TEMPERATURE COMPENSATION

DATA OUTPUT

transducer **ISU-S15-P06** (included)

- Real-time temperature compensation eliminates the error caused by temperature variation
- Support both single element transducers and dual element transducers
- Measure the thickness of substrate through coating
- Measuring mode: standard mode (dual element transducer: P-E mode, single element transducer: I-E mode), penetrate coating mode (dual element transducer: I-E mode, single element transducer: E-E mode or auto mode)
- Measure method: single point, scanning, deviation
- Set upper and lower limits for alarm when out-of-tolerance
- Single point and 2 points calibration
- Keyboard lock function avoids parameter setting change caused by unintended press during measurement
- Memory 1000 measurement values
- Data can be transferred to PC by Bluetooth connection or Mini-USB cable

LCD

USB port

4.00mm calibration block

ISU-S15-P06 transducer (included)

Ød

VIDEO

transducer **ISU-S2M-P14** (optional)

transducer **ISU-G5M-P10** (optional)

transducer **ISU-G5M-P08** (optional)

transducer **ISU-G7M-P06** (optional)

transducer **ISU-G2M-P12** (optional)

transducer **ISU-H3M-P12** (optional)

delay block **ISU-S15-P06-CB** (optional)

delay block **ISU-S15-P06-CB1** (optional)

SPECIFICATION

Measuring range	refer to the specification of transducers
Resolution	0.01mm/0.001mm
Accuracy	refer to the specification of transducers
Data output	bluetooth and USB
Velocity	1~19999m/s
Power supply	3.7V rechargeable lithium battery
Dimension	157×78×37mm
Weight	260g

STANDARD DELIVERY

Main unit	1 pc
Transducer ISU-S15-P06	1 pc
Power adaptor	1 pc
USB cable	1 pc
Couplant	1 bottle

OPTIONAL ACCESSORY

Transducer	refer to the specification of transducers
Couplant (for ISU-H3M-P12)	ISU-HT5-COUPLANT
Thermal printer (with cable)	ISU-800D-PRINTER

SPECIFICATION OF TRANSDUCERS (ON STEEL)

Code	Type	Freq	Diameter (Ød)	Measuring range	Min. size of pipes (diameter x wall thickness)	Accuracy	Applicable temperature	Application
ISU-S15-P06 (included)	single element	15MHz	8mm	I-E: 0.9~28mm E-E: 0.15~14mm	Ø10x1.5mm Ø15x0.35mm	±0.02mm/0.3%H* (take the larger one)	-10~60°C	high precision or thin workpieces
ISU-S15-P06-CB (optional) **	–	–	5mm	I-E: 0.9~10mm E-E: 0.15~5mm	Ø10x1.2mm Ø15x0.35mm			high precision or irregular surface
ISU-S15-P06-CB1 (optional) **	–	–	8mm	I-E: 0.9~38mm E-E: 0.3~19mm	–			high precision or thick workpieces
ISU-S2M-P14 (optional)	single element	2MHz	19mm	I-E: 30~2000mm E-E: 30~1000mm	–	±0.5%H*	-10~310°C	ultra-thick workpieces
ISU-G5M-P10 (optional)	dual element	5MHz	13mm	0.8~300mm	Ø25x3mm	±0.04mm (range: <10mm) ±H/333mm* (range: ≥10mm)	-10~60°C	normal workpieces
ISU-G5M-P08 (optional)	dual element	5MHz	11mm	0.8~225mm	Ø20x1.2mm			curved surface and normal workpieces
ISU-G7M-P06 (optional)	dual element	7.5MHz	9mm	0.8~50mm	Ø15x1.2mm			curved surface and small workpieces
ISU-G2M-P12 (optional)	dual element	2MHz	17mm	3~700mm	Ø30x4mm	±0.05mm/0.5%H* (take the larger one)		castings and thick workpieces
ISU-H3M-P12 (optional)	dual element	3MHz	15mm	2~200mm	Ø25x3mm	±0.05mm/0.5%H* (take the larger one)	-10~310°C	workpieces with high temperature

*H is the measured thickness in mm
Delay blockers, suitable for transducer **ISU-S15-P06

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ULTRASONIC THICKNESS GAGE
CODE ISU-810D

PENETRATE COATING AND MEASURE THE THICKNESS OF SUBSTRATES   **WITH A AND B SCAN**   **DATA OUTPUT**

A scan   B scan

- Measure the thickness of substrate through coating
- Measuring mode: standard mode (dual element transducer: P-E),
  penetrate coating mode (dual element transducer: E-E)
- Displlay mode: real-time color A-scan waveform mode,
  real-time color B-scan waveform mode,
  thickness value mode, Min/Max capture mode,
  difference or reduction rate mode
- Can measure gray cast iron, ductile iron, PE, PVC pipe, fiberglass,
  3PE anticorrosive layer pipes, metal pipes, pressure vessels,
  shaped parts, wall thickness of small pipes etc
- Set the upper and lower limits, and the reading color will change
  when the limit is exceeded
- One-point calibration and two-point calibration
- Can compensate the non-linearity of the twin-crystal probe
  by automatic V path correction
- Can store 100000 thickness values and 1000 waveforms
- USB 2.0 port connected to computer for statistics
- Languages: Chinese, English, German, French, Japanese
- Power off: automatic/manual

USB port

LCD with backlight

transducer **ISU-810D-TC510** (included)

Ød

4.00mm block for calibration

VIDEO

coating
substrate
Echo-Echo mode (E-E)

substrate
Transmit-Echo mode (T-E)

SPECIFICATION

Measuring range	refer to the specification of transducers
Resolution	0.1/0.01mm
Accuracy	±0.05mm (H<10mm) ±(0.05%H+0.01)mm (H≥100mm) H is the thickness to be measured in mm
Display	320×240, color screen display
Measuring frequency	4Hz, 8Hz, 16Hz
Velocity	500~9999m/s
Applicable temperature	-20~50°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AA batteries
Dimension	153×76×37mm
Weight	280g (including batteries)

STANDARD DELIVERY

Main unit	1 pc
Transducer ISU-810D-TC510	1 pc
Battery (AA)	2 pcs
Couplant	1 bottle
USB cable	1 pc

transducer **ISU-810D-TC550** (**optional**)

transducer **ISU-810D-P04** (**optional**)

transducer **ISU-810D-P06** (**optional**)

transducer **ISU-810D-PT08** (**optional**)

transducer **ISU-810D-ZT12** (**optional**)

transducer **ISU-810D-GT12** (**optional**)

OPTIONAL ACCESSORY

Transducer	refer to the specification of transducers
Couplant (for ISU-810D-GT12)	**ISU-HT5-COUPLANT**

SPECIFICATION OF TRANSDUCERS

Code	Frequency	Diameter (Ød)	Measuring range	Applicable temperature	Application
ISU-810D-TC510 (included)	5MHz	13.5mm	1.2~400mm	-10~70°C	normal workpieces
ISU-810D-TC550 (optional)	5MHz	13.5mm	1~200mm	-10~70°C	fiberglass and organic material
ISU-810D-PT04 (optional)	10MHz	7mm	0.7~12mm	-10~70°C	small diameter workpieces
ISU-810D-PT06 (optional)	7.5MHz	8.7mm	0.8~30mm	-10~70°C	curved surface and small workpieces
ISU-810D-PT08 (optional)	5MHz	11mm	0.8~100mm	-10~60°C	normal workpieces
ISU-810D-ZT12 (optional)	2MHz	17mm	4~508mm	-10~70°C	cast iron (coarse grain) and thick workpieces
ISU-810D-GT12 (optional)	3MHz	15mm	2~80mm	-20~480°C	workpieces with high temperature

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ULTRASONIC THICKNESS GAGE
CODE ISU-720D
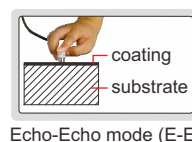
DATA OUTPUT | **WITH A AND B SCAN** | **PENETRATE NON-METALLIC COATING AND MEASURE THE THICKNESS OF METAL SUBSTRATES**

- Two measuring modes, Echo-Echo (E-E) and Transmit-Echo (T-E):
  – E-E is applicable for non-metallic coating (such as paint, plastic resin, etc.) on metal substrates, can penetrate coating and measure the thickness of substrates
  – T-E is to measure the thickness of material without coating, such as metal, plastic, glass, nylon, resin, ceramics, ice, etc.
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off

USB port
LCD with backlight
4.00mm block for calibration
transducer
ISU-T07 (included)
Ød

A scan
B scan

SPECIFICATION (ON STEEL)

Measuring range	refer to specification of transducers
Resolution	0.1/0.01mm
Accuracy	±0.04mm (H<10mm) ±(0.04+H/1000)mm (10≤H<100mm) ±H/333mm (H≥100mm) H is the thickness to be measured in mm
Frequency	refer to specification of transducers
Display	320×240, color screen display
Velocity	1000~9999m/s
Measuring frequency	2 times/second and 10 times/second
Operation temperature of main unit	-20~50°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AA batteries
Dimension	133×75×29mm
Weight	260g (including batteries)

STANDARD DELIVERY

Main unit	1 pc
Bicrystal transducer ISU-T07	1 pc
Battery (AA)	2 pcs
Couplant	1 bottle
USB cable	1 pc

coating
substrate
Echo-Echo mode (E-E)

substrate
Transmit-Echo mode (T-E)

VIDEO

transducer **ISU-T04** (**optional**)
transducer **ISU-T06** (**optional**)
transducer **ISU-T08** (**optional**)

transducer **ISU-T12** (**optional**)
transducer **ISU-T13** (**optional**)
transducer **ISU-T25** (**optional**)

OPTIONAL ACCESSORY

Transducer	ISU-T04, ISU-T06, ISU-T08, ISU-T12, ISU-T13, ISU-T25
Couplant (for ISU-T13)	ISU-HT5-COUPLANT

SPECIFICATION OF TRANSDUCERS (ON STEEL)

| Code	Mode	Frequency	Diameter (Ød)	Measuring range	Minimum size of pipes for measurement (diameter × wall thickness)	Applicable temperature	Application
ISU-T07 (included)	T-E E-E	5.0MHz	13.2mm	T-E mode: 1.5~200mm E-E mode: 3~25mm	T-E mode: Ø25×3mm	-20~60°C	general use
ISU-T04 (optional)	T-E	10.0MHz	6mm	0.7~20mm	Ø15×1mm	-20~60°C	for small tubes
ISU-T06 (optional)	T-E	7.5MHz	9mm	0.7~50mm	Ø15×1.2mm	-20~60°C	for thin workpieces
ISU-T08 (optional)	T-E	5.0MHz	11mm	0.8~300mm	Ø25×1.2mm	-20~60°C	general use
ISU-T12 (optional)	T-E	2.0MHz	17mm	2~400mm	Ø40×3mm	-20~60°C	for casting iron
ISU-T13 (optional)	T-E	5.0MHz	15mm	3~100mm	Ø25×2mm	0~350°C	for high temperature
ISU-T25 (optional)	T-E	1.0MHz	26mm	3~200mm	–	-20~60°C	for fiberglass and organic material

DATA OUTPUT

WITH A AND B SCAN

ULTRASONIC THICKNESS GAGE
(FOR THICK WORKPIECES MADE OF ORGANIC MATERIALS)
CODE ISU-710D

VIDEO

USB port

LCD with backlight

4.00mm block for calibration

Ød

- For thick workpieces made of organic materials
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off

A scan

B scan

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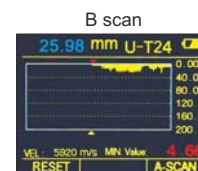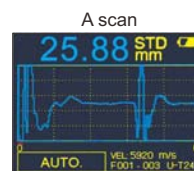
SPECIFICATION (ON STEEL)

Measuring range	20~590mm
Resolution	0.1/0.01mm
Accuracy	±(0.04+H/1000)mm (H<100mm) ±H/333mm (H≥100mm) H is the thickness to be measured in mm
Transducer	type	single element transducer
	frequency	1.0MHz
	diameter (Ød)	26mm
Display	320×240, color screen display
Velocity	1000~9999m/s
Measuring frequency	2 times/second and 10 times/second
Operation temperature	main unit: -20~50°C transducer: -20~60°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AA batteries
Dimension	133×75×29mm
Weight	260g (including batteries)

STANDARD DELIVERY

Main unit	1 pc
Transducer	1 pc
Battery (AA)	2 pcs
Couplant	1 bottle
USB cable	1 pc

INSIZE

ULTRASONIC THICKNESS GAGE (FOR THIN WORKPIECES)
CODE ISU-700D

DATA OUTPUT

WITH A AND B SCAN

VIDEO

USB port

LCD with backlight

4.00mm block for calibration

Ød

- For thin workpieces
- A scan, through the waveform, judges whether there are impurities, pores, cracks and so on inside, in order to avoid wrong measurement
- B scan, measures continuously, displays the thickness change on the screen
- Transducers can be automatically identified and zeroed
- Memory 10000 measurement values
- Data can be input to Excel and Word as keyboard signal
- Automatic or manual measurement
- When transducers are removed from workpieces, the measurement data are held on screen for easy viewing
- Set upper and lower limits for alarm when out-of-tolerance
- Automatic power off

A scan

B scan
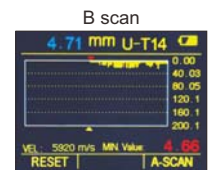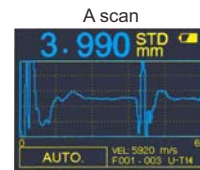
SPECIFICATION (ON STEEL)

Measuring range	Transmit-echo (T-E) mode: 1.5~20mm
	Echo-echo (E-E) mode: 0.2~10mm
Resolution	0.1/0.01/0.001mm
Accuracy	±0.04mm (H<10mm) ±(0.04+H/1000)mm (H≥10mm) H is the thickness to be measured in mm
Transducer	type	single element transducer
	frequency	15.0MHz
	diameter (Ød)	7.5mm
Display	320×240, color screen display
Velocity	1000~9999m/s
Measuring frequency	2 times/second and 10 times/second
Operation temperature	main unit: -20~50°C transducer: -20~60°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AA batteries
Dimension	133×75×29mm
Weight	260g (including batteries)

transducer protective sleeve (included)

STANDARD DELIVERY

Main unit	1 pc
Transducer	1 pc
Transducer protective sleeve	1 pc
Battery (AA)	2 pcs
Couplant	1 bottle
USB cable	1 pc

VIDEO

DATA OUTPUT

INSPECTION CERTIFICATE

ULTRASONIC THICKNESS GAGE (THROUGH COATING)
CODE ISU-300D

- Two measuring modes, Echo-Echo (E-E) and Transmit-Echo (T-E):
  – E-E is applicable for non-metallic coating (such as paint, plastic resin, etc.) on metal substrates, can penetrate coating and measure the thickness of substrates
  – T-E is to measure the thickness of material without coating, such as metal, plastic, glass, nylon, resin, ceramics, ice, etc.
- Tolerance measurement
- Average calculation of maximum 9 readings
- Data can be input to Excel and Word as keyboard signal

4.00mm block for calibration

LCD with backlight

USB port

transducer **ISU-T07** (included)

Ød

SPECIFICATION (ON STEEL)

Measuring range	refer to specification of transducers
Resolution	0.1/0.01mm
Accuracy	±0.04mm (H<10mm) ±(0.04+H/1000)mm (10≤H<100mm) ±H/333mm (H≥100mm) H is the thickness to be measured in mm
Velocity	1000~9999m/s
Operation temperature of main unit	-20~50°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AAA batteries
Dimension	116×64×27mm
Weight	220g

Transmit-Echo mode (T-E) — substrate

Echo-Echo mode (E-E) — coating — substrate

transducer **ISU-T04** (**optional**)

transducer **ISU-T06** (**optional**)

transducer **ISU-T12** (**optional**)

transducer **ISU-T13** (**optional**)

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STANDARD DELIVERY

Main unit	1 pc
Transducer ISU-T07	1 pc
Battery (AAA)	2 pcs
Couplant (for ISU-T04, ISU-T06, ISU-T07, ISU-T12)	1 bottle
USB cable	1 pc

OPTIONAL ACCESSORY

Transducer	ISU-T04, ISU-T06, ISU-T12, ISU-T13
Couplant (for ISU-T13)	ISU-HT5-COUPLANT

SPECIFICATION OF TRANSDUCERS (ON STEEL)

Code	Mode	Frequency	Diameter (Ød)	Measuring range	Minimum size of pipes for measurement (diameter × wall thickness)	Applicable temperature	Application
ISU-T07 (included)	T-E E-E	5.0MHz	13.2mm	T-E mode: 1.5~200mm E-E mode: 3~25mm	T-E mode: Ø25×3mm	-20~60°C	general use
ISU-T04 (optional)	T-E	10.0MHz	6mm	0.7~20mm	Ø15×1mm	-20~60°C	for small tubes
ISU-T06 (optional)	T-E	7.5MHz	9mm	0.7~50mm	Ø15×1.2mm	-20~60°C	for thin workpieces
ISU-T12 (optional)	T-E	2.0MHz	17mm	2~400mm	Ø40×3mm	-20~60°C	for casting iron
ISU-T13 (optional)	T-E	5.0MHz	15mm	3~100mm	Ø25×2mm	0~350°C	for high temperature

ULTRASONIC THICKNESS GAGE
CODE ISU-250C

INSPECTION CERTIFICATE

DATA OUTPUT

VIDEO

- Measure the thickness from one side of objects, suitable for pipes, tanks, etc.
- Applicable material: metal, plastic, glass, nylon, resin, ceramic, ice
- Tolerance measurement
- Average calculation of 9 readings
- Data can be input to Excel and Word as keyboard signal

4.00mm block for calibration

LCD with backlight

USB port

Ød

transducer **ISU-T08** (included)

SPECIFICATION (ON STEEL)

Measuring range	refer to specification of transducers
Resolution	0.1/0.01mm
Accuracy	±0.04mm (H<10mm) ±(0.04+H/1000)mm (10≤H<100mm) ±H/333mm (H≥100mm) H is the thickness to be measured in mm
Velocity	1000-9999m/s
Operation temperature of main unit	-20~50°C
Output	USB
Measuring unit	mm/inch
Power supply	2×1.5V AAA batteries
Dimension	64×116×27mm
Weight	220g

STANDARD DELIVERY

Main unit	1 pc
Transducer ISU-T08	1 pc
Battery (AAA)	2 pcs
Couplant (for ISU-T04, ISU-T06, ISU-T08, ISU-T12)	1 bottle
USB cable	1 pc

OPTIONAL ACCESSORY

Transducer	ISU-T04, ISU-T06, ISU-T12, ISU-T13
Couplant (for ISU-T13)	ISU-HT5-COUPLANT

transducer **ISU-T06** (optional)

transducer **ISU-T13** (optional)

transducer **ISU-T04** (optional)

transducer **ISU-T12** (optional)

SPECIFICATION OF TRANSDUCERS (ON STEEL)

Code	Frequency	Diameter (Ød)	Measuring range	Minimum size of pipes for measurement (diameter × wall thickness)	Applicable temperature	Application
ISU-T08 (included)	5.0MHz	11mm	0.8~300mm	Ø25×1.2mm	-20~60°C	general use
ISU-T04 (optional)	10.0MHz	6mm	0.7~20mm	Ø15×1mm	-20~60°C	for small tubes
ISU-T06 (optional)	7.5MHz	9mm	0.7~50mm	Ø15×1.2mm	-20~60°C	for thin workpieces
ISU-T12 (optional)	2.0MHz	17mm	2~400mm	Ø40×3mm	-20~60°C	for casting iron
ISU-T13 (optional)	5.0MHz	15mm	3~100mm	Ø25×2mm	0~350°C	for high temperature

ATTENTION: NOT SUITABLE FOR CASTINGS AND ALUMINUM WORKPIECES

ULTRASONIC THICKNESS GAGE (BASIC TYPE)
CODE ISU-100D

INSPECTION CERTIFICATE

POPULAR MODEL

VIDEO

LCD with backlight

4.00mm block for calibration

Ød

- Measure the thickness from one side of objects, suitable for pipes, tanks, etc.
- Applicable material: steel, stainless steel, glass, copper, brass, polystyrene, titanium, etc.

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SPECIFICATION (ON STEEL)

Measuring range	0.8~300mm
Resolution	0.1/0.01mm
Accuracy	±0.05mm (H<10mm) ±(0.05+H/1000)mm (10≤H<100mm) ±H/333mm (H≥100mm) H is the thickness to be measured in mm
Transducer **frequency**	5MHz
Transducer **diameter (Ød)**	10.8mm
Minimum size of pipes	20×1.2mm (diameter×wall thickness)
Velocity	1000-9999m/s
Operation temperature	main unit: -20~50°C transducer: -20~60°C
Measuring unit	mm/inch
Power supply	2×AAA batteries
Dimension	114×64×28mm
Weight	200g

STANDARD DELIVERY

Main unit	1 pc
Transducer	1 pc
Couplant	1 bottle
Battery (AAA)	2 pcs

STANDARD TEST BLOCKS FOR ULTRASONIC THICKNESS GAGES

STEP WEDGE BLOCKS CAN BE CUSTOMIZED

INSPECTION CERTIFICATE

cylinder block

- Supplied with manufacturer inspection certificate
- Material of step wedge blocks can be customized

Cylinder block set (17 blocks are included) (mm)

Code	Material	Diameter	Thickness	Accuracy	QTY
ISU-ST	45#	20	0.5	±0.01	1 pc
	45#	20	1		1 pc
	45#	20	1.2		1 pc
	45#	20	1.5		1 pc
	45#	20	2		1 pc
	45#	20	3.3		1 pc
	45#	20	5.5		1 pc
	45#	20	7.7		1 pc
	45#	20	10		1 pc
	45#	20	15		1 pc
	45#	20	20	±0.02	1 pc
	45#	20	25		1 pc
	45#	20	50		1 pc
	45#	20	75		1 pc
	45#	20	100	±0.05	1 pc
	45#	20	150		1 pc
	45#	20	200		1 pc

round tube block

Round tube block set (2 blocks are included) (mm)

Code	Material	Outer diameter	Wall thickness	Accuracy	Length	QTY
ISU-SWT	45#	30	2	±0.02	40	1 pc
	45#	40	3	±0.02	40	1 pc

step wedge block
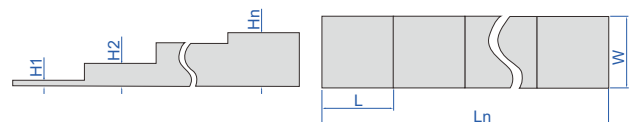
Step wedge blocks (mm)

Code	Material	QTY of steps (n)	Thickness							Accuracy	Width (W)	Length of each step (L)	Total length (Ln)
			H1	H2	H3	H4	H5	H6	H7				
ISU-S4A	45#	4	6.25	12.5	18.75	25	-	-	-	±0.02	20	20	80
ISU-S4B	45#	4	5	10	15	20	-	-	-	±0.02	20	20	80
ISU-S5A	45#	5	2.5	5	7.5	10	12.5	-	-	±0.02	20	20	100
ISU-S5B	45#	5	2	4	6	8	10	-	-	±0.02	20	20	100
ISU-S7A	45#	7	3	12.5	24	30	36	42	48	±0.02	40	40	280
ISU-S7B	45#	7	1	1.5	2	4	6	8	10	±0.02	40	40	280

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CONTACT/NON-CONTACT TACHOMETER
CODE 9225-405

- 2 measuring method, contact and non-contact
- Can measure rotary speed and line speed
- Automatically save the maximum value, minimum value and the last value, 500 data can be stored during continuous measurement
- Automatic power off

cone head (included)

cone cavity head (included)

reflection sticker (included)

wheel with 0.1m perimeter (included)

small cone head (included)

clamping sleeve (included)

SPECIFICATION

Measuring method		Non-contact	Contact
Measuring range	rotary speed	2.5~99999RPM	0.5~19999RPM
	line speed	—	0.05~500m/min
Resolution	rotary speed	0.1RPM (range 2.5~999.9RPM) 1RPM (range 1000~99999RPM)	0.1RPM (range 0.5~999.9RPM) 1RPM (range 1000~19999RPM)
	line speed	—	0.01m/min (range 0.05~99.99m/min) 0.1m/min (range 100~500m/min)
Accuracy	rotary speed	$\pm(0.05\%n+1d)$RPM n is rotary speed, d is resolution	$\pm(0.4\%n+1d)$RPM (n<300RPM) $\pm(0.05\%n+1d)$RPM (n≥300RPM) n is rotary speed, d is resolution
	line speed	—	$\pm(1\%+1d)$m/min d is resolution
Laser power		CLASS 3R, 3mW~4mW	—
Sampling time		0.6s (above 100RPM)	
Measuring distance		50~500mm	—
Operation temperature		0~40°C	
Power supply		3×AA batteries	
Dimension		206×71×36mm	
Weight		170g	

STANDARD DELIVERY

Main unit	1 pc
Reflection sticker	3 pcs
Wheel with 0.1m perimeter	1 pc
Clamping sleeve	1 pc
Cone head	1 pc
Small cone head	1 pc
Cone cavity head	1 pc
Battery (AA)	3 pcs

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NON-CONTACT TACHOMETER
CODE 9223-120

- Accurately measure the rotary speed without contact
- Automatically save the maximum value, minimum value and the last value, 500 data can be stored during continuous measurement

SPECIFICATION

Measuring range	2.5~99999RPM
Resolution	0.1RPM (range 2.5~999.9RPM) 1RPM (range 1000~99999RPM)
Accuracy	$\pm(0.05\%n+1d)$RPM n is rotary speed, d is resolution
Laser power	CLASS 3R, 3mW~4mW
Sampling time	0.6 second (above 100RPM)
Measuring distance	50~500mm
Operation temperature	0~40°C
Power supply	3×AA batteries
Dimension	180×71×29.9mm
Weight	145g

reflection sticker (included)

STANDARD DELIVERY

Main unit	1 pc
Reflection sticker	3 pcs
Battery (AA)	3 pcs

CONTACT TACHOMETER
CODE 9224-213

- Can measure rotary speed, line speed and line length
- Automatically save the maximum value, minimum value and the last value, 96 data can be stored during continuous measurement
- With backlight display

cone cavity head (included)

clamping sleeve (included)

cone head (included)

small cone head (included)

SPECIFICATION

Measuring range	rotary speed	0.5~19999RPM
	line speed	0.05~500m/min
	line length	0.05~99999m
Resolution	rotary speed	0.1RPM (range 0.5~999.9RPM) 1RPM (range 1000~19999RPM)
	line speed	0.01m/min (range 0.05~99.99m/min) 0.1m/min (range 100~500m/min)
	line length	0.02m
Accuracy	rotary speed	±(0.4%n+1d)RPM (n<300RPM) ±(0.05%n+1d)RPM (n≥300RPM) n is rotary speed, d is resolution
	line speed	±(1%+1d)m/min d is resolution
	line length	±(1%+1d)m d is resolution
Sampling time		0.8s (above 60RPM)
Operation temperature		0~40°C
Power supply		3×AA batteries
Dimension		171×71×35mm
Weight		162g

STANDARD DELIVERY

Main unit	1 pc
Wheel with 0.1m perimeter	1 pc
Clamping sleeve	1 pc
Cone head	1 pc
Small cone head	1 pc
Cone cavity head	1 pc
Battery (AA)	3 pcs

wheel with 0.1m perimeter (included)

DIGITAL LED TACHOMETER/STROBOSCOPE
CODE ISQ-TS120K

- Make cyclical motion (rotation, vibration, etc.) objects to appear slow-moving or stationary
- On-line inspection or observation for moving objects
- Measure the rotation or vibration speed and frequency
- Can be triggered from outside by moving objects, make LED flash frequency same as the rotation or vibration

SPECIFICATION

Flash frequency range		60~120000FPM (flash per minute), 1~2000Hz
Resolution	FPM	0.1FPM (<100000FPM), 1FPM (≥100000FPM)
	HZ	0.01Hz (<200Hz), 0.1Hz (≥200Hz)
Setting accuracy		±0.01%
Phase shift increment		3°
Flash pulse duration time		0.1~2.5°
LED light		3 pcs CREE 10W lamp
LED life		3~5 years
Trigger mode		internal and external
Power supply		built-in rechargeable battery or AC/DC adapter
Dimension		208×70×60mm
Weight		380g

STANDARD DELIVERY

Main unit	1 pc
AC/DC adapter	1 pc
Proximity trigger	1 pc

VIDEO

proximity trigger (included)

make LED flash frequency same as the rotation or vibration (power supply from AC/DC adapter when external trigger is used)
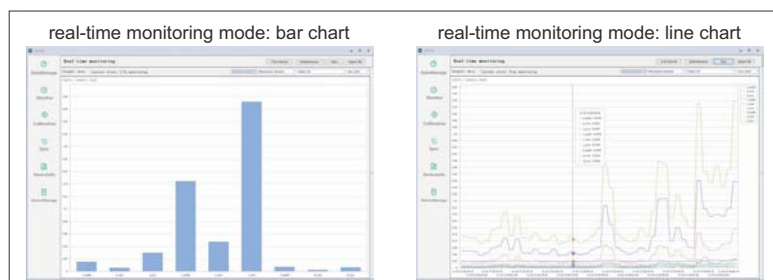
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real-time monitoring mode: bar chart real-time monitoring mode: line chart

software (included), monitor and collect data to PC software via USB cable,
data can sent to Excel

length 2m

acceleration sensor
magnetic base

- Can measure vibration frequency
- Can measure virtual value/peak value/peak-peak value of acceleration, velocity and displacement
- Suitable for factory inspection, status monitoring and fault diagnosis of mechanical equipments
  such as motors, pumps, fans, household appliances, compressors, smoke machines,
  generators, gearboxes, etc
- Software is included: on-line monitoring, data storage

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SPECIFICATION

Measuring parameter	acceleration (virtual/peak/peak-peak value) $a_{RMS,1}$, $a_{Peak,1}$, $a_{P-P,1}$, a_{Peak}, a_{P-P}	velocity (virtual/peak/peak-peak value) $V_{RMS,1}$, $V_{Peak,1}$, $V_{P-P,1}$, V_{Peak}, V_{P-P}	displacement (virtual/peak/peak-peak value) $d_{RMS,1}$, $d_{Peak,1}$, $d_{P-P,1}$, d_{Peak}, d_{P-P}
Measuring range	0.01~200m/s^2 (peak value)	0.1~200mm/s (virtual value)	0.01~2mm (peak-peak value)
Frequency range	10Hz~5kHz	10Hz~1kHz	10Hz~500Hz
Amplitude frequency reponse	±5%		
Amplitude linearity	±5%		
Frequency accuracy	±0.5%		
Cut-off frequency (second-order high-pass filtering)	8kHz sampling frequency: 3.16Hz、10.00Hz、31.60Hz、N/A (adjustable) 32kHz sampling frequency: 12.64Hz、40.00Hz、126.4Hz、N/A (adjustable)		
Display	1.96" 128×64 dot matrix OLED screen		
Language	Chinese, English, Portuguese		
Power	<80mA/5V		
Power supply	4×AAA batteries: 6.0V/1000mAh; AC/DC adapter: 5V/2A		
Operation condition	temperature: -10°C~50°C; humidity: 25%RH~90%RH, non-condensing; pressure: 65kPa~108kPa		
Dimension	172×69×26mm		
Weight	240g		

STANDARD DELIVERY

Main unit	1 pc
Software	1 pc
Accelerometer (including cable)	1 pc
Magnetic base	1 pc
M5 screw	1 pc
Battery (AAA)	4 pcs
AC/DC adapter	1 pc

VIBRATION PEN (THREE PARAMETERS)
CODE 0020-A199

SPECIFICATION

Parameter	acceleration	velocity	displacement
Measuring range	0.01~199.9m/s² (peak value)	0.01~199.9mm/s (virtual value)	0.001~1.999mm (peak~peak value)
Frequency	10Hz~1kHz	10Hz~1kHz	10Hz~500Hz
Frequency response	±5% (≥20Hz) -20%~+10% (<20Hz)		
Linearity	±(5%+2unit)		
Indeterminacy of sensitivity	≤3%		
Operation temperature	0°C~40°C/32°F~104°F		
Operation humidity	<85%		
Power supply	2×LR44 battery (for 10 hours working)		
Dimension	150x22x18mm		
Weight	55g		

■ Acceleration, velocity and displacement can be tested
■ Automatic power off

STANDARD DELIVERY

Main unit	1 pc
LR44 battery	2 pcs

VIBRATION PEN
CODE 9720-199

VIDEO

STANDARD DELIVERY

Main unit	1 pc
LR44 battery	2 pcs

SPECIFICATION

Measured parameter	speed
Measuring range	0.1~199.9mm/s
Frequency	10Hz~1KHz
Accuracy	±(5%±2)mm/s
Operation temperature	0°C~40°C
Operation humidity	<85%
Power supply	2×LR44 batteries (for 10 hours wroking)
Dimension	150x22x18mm
Weight	55g

■ Measure vibration of motors, fans, pumps, compressors and machine tools to prevent mechanical failure
■ Small size, light weight, low energy consumption, easy operation, easy to carry
■ One key control
■ Automatic power off

PORTABLE VIBRATION CALIBRATOR
CODE 0021-AS159

■ Quick, easy calibration and checking of vibration measurement, monitoring and recording system

SPECIFICATION

Frequency	159.2Hz±1%
Acceleration	10m/s²±3% (RMS)
Distortion	<5%
Transverse vibration	<5%
Warm-up time	<20s
Maximum load	70g
Mounting thread	M5×0.8mm
Operation temperature	0°C~40°C
Operation humidity	10%RH~90%RH, non-condensing
Power supply	rechargeable lithium battery, working time≥5h
Dimension	Ø54.5×147mm
Weight	620g

M5×0.8mm thread hole

on/off, the light for working status

STANDARD DELIVERY

Main unit	1 pc
Power adapter	1 pc

VIDEO

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LASER DISTANCE METERS

- High accuracy models: **9561-50B**, **9561-70B**
  Low accuracy models: **9561-50B-F**, **9561-70B-F**
- Large display with backlight
- Unit: m, ft, in, ft+in
- Distance, area, volume and height measurement
- Continuos measuring mode to track maximum and minimum value
- Memory of 30 measurement values
- Automatic power off: laser 30s, main unit 180s
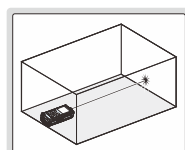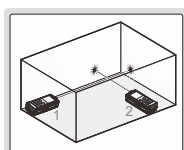
distance measurement   area measurement   volume measurement   height measurement
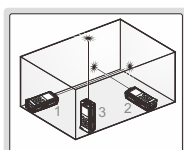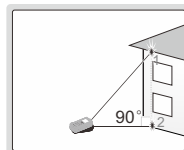
SPECIFICATION

Code	9561-50B	9561-70B	9561-50B-F	9561-70B-F
Measuring range	0.2~50m	0.2~70m	0.2~50m	0.2~70m
Resolution	0.001m, .001ft, 1/16"			
Accuracy	±(3+D/20)mm D: measured distance, unit: m		±(5+D/20)mm D: measured distance, unit: m	
Laser type	630~670nm, class II, <1mW			
Power supply	2×AAA batteries			
Dimension (L×W×H)	115×50×28mm			
Weight	95g			

9561-50B

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs

IP67
WATERPROOF

PEN-TYPE CONDUCTIVITY/TDS/SALINITY TESTER
CODE 0412-EB32

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- Can measure the conductivity, TDS and salinity
- Suitable for water quality testing, aquaculture, food processing, scientific research, etc.
- The same series of electrodes can be replaced with each other
- Automatic temperature compensation
- With the stabilizing and locking functions of the reading
- Can be used normally in any environment with the background light
- Auto power off
- Protection level: IP67
- Lightweight, easy to carry and operate

"platinum black needle" electrode (included)

IP67 waterproof

VIDEO

electrodes can be replaced

SPECIFICATION

Measuring range	conductivity 0~200.0µS/cm, 0~2000µS/cm, 0~20.00mS/cm
	TDS 0~100.0ppm, 0~1000ppm, 0~10.00ppt
	salinity 0~10.00ppt
	temperature 0~50°C
Resolution	conductivity 0.1µS/cm, 1µS/cm, 0.01mS/cm
	TDS 0.1ppm, 1ppm, 0.01ppt
	salinity 0.01ppt
	temperature 0.1°C
Accuracy	conductivity ±1%FS
	temperature ±0.5°C
Calibration mode	1~3 points
Power supply	4×1.5V AAA batteries
Dimension	178×40×40mm
Weight	133g

STANDARD DELIVERY

Main unit	1 pc
Standard solution	2 bottles
Test cup	2 pcs
1.5V AAA battery	4 pcs

PORTABLE CONDUCTIVITY/TDS METER
CODE 0411-0200

VIDEO

electrode holder — — electrode holder

LCD with backlight — — electrode

- Reading mode: auto-read and continuous-read
- Automatic/manual temperature compensation
- Auto-hold feature senses and locks the measurement endpoint
- Cell constant is settable
- 1 point calibration with standard recognition
- Data capacity up to 200 sets for each parameter
- IP65 dust/waterproof
- Auto power off

standard solution (included)

wristband (included)

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SPECIFICATION

Conductivity	range	0.00µS/cm~200mS/cm
	resolution	0.01µS/cm minimum
	electronic unit accuracy	±1.0%FS
	measurement accuracy	±1.5%FS
	reference temperature	25°C/77°F
	calibration point	1
	standard recognition	84µS/cm, 1413µS/cm, 12.88mS/cm
TDS	range	0.00mg/L~300g/L
	resolution	0.01mg/L minimum
	accuracy	±1.0%FS
Temperature	range	-5~110°C/23~230°F
	resolution	0.1°C/0.2°F
	accuracy	±0.4°C/±0.7°F
Input		electrode with 5-pin aviation connector
Power supply		rechargeable battery
Dimension		80×225×35mm
Weight		400g

STANDARD DELIVERY

Main unit	1 pc
Electrode	1 pc
Electrode holder	2 pcs
Wristband	1 pc
Silicone rubber case	1 pc
AC/DC adapter and charging cable	1 pc
Standard solution	1 bottle

IP67
WATERPROOF

VIDEO

PEN-TYPE pH TESTER
CODE 0432-HB22

pH "bulb type"
electrode (included)

- 3 types of pH electrodes: bulb type, plane type and puncture type
- Suitable for water quality testing, sewage treatment, food and cosmetics testing, agriculture and scientific research, etc.
- Can measure the ORP, the same series of electrodes can be replaced with each other
- Automatic temperature compensation
- Alarm function: the red backlight displays alarm mode
- With the stabilizing and locking functions of the reading
- Protection level: IP67
- Can be used normally in any environment with three colors of backlight
- Auto power off
- Lightweight, easy to carry and operate

ORP "platinum needle"
electrode (**optional**)

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pH "plane type" electrode
(**optional**)

pH "puncture type"
electrode (**optional**)

SPECIFICATION

Measuring range	-2.00~16.00pH
	temperature 0~50°C
	ORP -1000mV~+1000mV
Resolution	0.01pH
	temperature 0.1°C
	ORP 1mV
Accuracy	±0.02pH
	temperature ±0.5°C
	ORP ±0.2%FS
Calibration mode	1~3 points
Standard solution	USA (pH buffers: 4.00, 7.00, 10.01) NIST (pH buffers: 4.01, 6.86, 9.18)
Power supply	4×1.5V AAA batteries
Dimension	178×40×40mm
Weight	133g

STANDARD DELIVERY

Main unit	1 pc
Standard solution	3 bottles (USA)
Test cup	3 pcs
KCl powder	1 bottle
1.5V AAA battery	4 pcs

OPTIONAL ACCESSORY

pH plane type electrode	0432-HB-F
pH puncture type electrode	0432-HB-P
ORP electrode	0432-HB-O

PORTABLE pH METER
CODE 0431-0018

VIDEO

IP65
WATERPROOF

electrode holder

electrode holder

LCD with backlight

electrode

wristband (included)

KCl powder (included)

standard solution (included)

- Reading mode: auto-read and continuous-read
- Automatic/manual temperature compensation
- Auto-hold feature senses and locks the measurement endpoint
- 1 or 2 points calibration with standard recognition
- Data capacity up to 200 sets for each parameter
- IP65 dust/waterproof
- Auto power off

SPECIFICATION

pH	**range**	-2.00~18.00pH
	resolution	0.01pH
	electronic unit accuracy	±0.01pH
	measurement accuracy	±0.02pH
	calibration point	1 or 2
	standard recognition	NIST pH buffers: 4.01, 7.00, 10.01
Voltage	**range**	-1999~1999mV
	resolution	1mV
	accuracy	±0.1%FS
Temperature	**range**	-5~110°C/23~230°F
	resolution	0.1°C/0.2°F
	accuracy	±0.4°C/±0.7°F
Inputs		pH electrode: BNC (Q9)
		temp. probe: 4-pin aviation connector
Power supply		rechargeable battery
Dimension		80×225×35mm
Weight		400g

STANDARD DELIVERY

Main unit	1 pc
Electrode	1 pc
Electrode holder	2 pcs
Wristband	1 pc
Silicone rubber case	1 pc
AC/DC adapter and charging cable	1 pc
Standard solution	3 bottles
KCl powder	1 bottle

ONLINE REFRACTIVITY SENSORS

IP67
WATERPROOF

- Based on the principle of light refraction and total reflection, measure the concentration of coolant, sugar liquid and other liquids in real time
- High measuring accuracy and wide measuring range
- Automatic temperature compensation
- Screw thread, flange, chuck and other installation methods can be customized
- Use sapphire prism, high hardness and wear-resistant
- Resistance to dirty, easy to clean
- Protection level of probe part: IP67

VIDEO

SPECIFICATION

Code	5806-ZX10	5806-ZX20
Type	flat-top	round-top
Measuring range	Brix 0.00~90.00%	
	refractivity 1.33299~1.51782	
	temperature 0~60°C	
Accuracy	Brix ±0.20%	
	refractivity ±0.00030	
	temperature ±0.5°C	
Resolution	Brix 0.01%	
	refractivity 0.00001	
	temperature 0.1°C	
Measuring mode	immersion	
Pressure resistance	≤1MPa	
Measuring speed	1 time/5s	
Output (customizable)	analog output: (4~20)mA for Brix (0.00~90.00)%	
	digital output: RS485	
Power supply	DC 24V±10%, working current <100mA	
Dimension	Ø88×109mm	Ø88×133mm
Weight	827g	882g

5806-ZX10   **5806-ZX20**

ultrasonic cleaning probe (**optional**)
cross flow tank (included)
online refractivity sensor
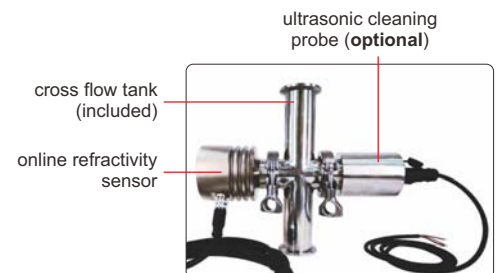
STANDARD DELIVERY

Main unit	1 pc
Cross flow tank	1 pc
Clamp	4 pcs
Polytef gasket	6 pcs
Connector	2 pcs
Wall piece	1 pc

OPTIONAL ACCESSORY

Ultrasonic cleaning probe	5806-ZX-UCP
High pressure water/air cleaning device	5806-ZX-HPC
Automatic brush cleaning system	5806-ZX-AC

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SUITABLE FOR WATER BASED COOLANT

DIGITAL REFRACTOMETER
CODE ISQ-DRM31

- Quickly measure the concentration of coolant, sugar solution, juice and drinks
- Two measurement modes:
  single measurement and automatic average multiple measurement
- Two units: brix and refractive index
- Refer to the refraction factor of coolant, for example:
  the refraction factor of grinding emulsion is 2.1,
  the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%
- Automatic power off

VIDEO

SPECIFICATION

Measuring range	0~50% (1.3330~1.4200RI)
Accuracy	±0.2% (±0.0003RI)
Resolution	0.1% (0.0001RI)
Power supply	1×AAA battery
Dimension	121×58×25mm
Weight	90g

STANDARD DELIVERY

Main unit	1 pc
Dropper	1 pc
Battery (AAA)	1 pc

dropper (included)
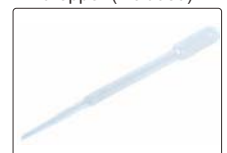
MINI DIGITAL REFRACTOMETER
CODE 5801-A55

- Quickly measure the concentration of coolant
- Automatic temperature compensation
- Brix and refractive index can be displayed
- Refer to the refraction coefficient of coolant, for example: the refraction coefficient of grinding emulsion is 2.1, the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%
- Automatic power off

SPECIFICATION

Measuring range	0~50% (1.3330~1.4200RI)
Accuracy	±0.2% (±0.0003RI)
Resolution	0.1% (0.0001RI)
Power supply	built-in 3.7V rechargeable lithium battery
Dimension	147×46×27mm
Weight	115g (including battery)

STANDARD DELIVERY

Main unit	1 pc
Dropper	1 pc

dropper (included)

PORTABLE REFRACTOMETER
CODE ISQ-RM30

- Quickly measure the concentration of coolant
- Refer to the refraction factor of coolant, for example: the refraction factor of grinding emulsion is 2.1, the reading value is 6%, so the actual concentration is (2.1×6%)=12.6%

calibration screw
eyepiece
lens and cover plate

VIDEO

SPECIFICATION

Measuring range	0~32%
Graduation	0.2%
Dimension	27×40×160mm
Weight	175g
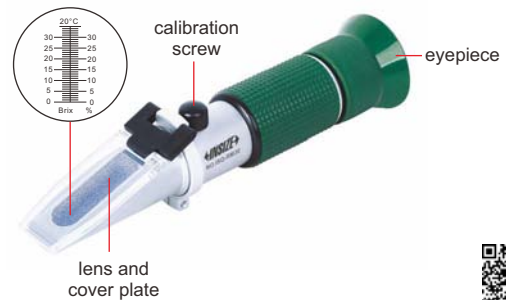
PORTABLE REFRACTOMETER FOR AUTOMOTIVE LIQUID
CODE 5802-A510

- Measure the freezing point of the antifreeze and the concentration of urea in diesel exhaust fluid
- Measure the specific gravity of battery fluid

calibration screw
eyepiece
lens and cover plate
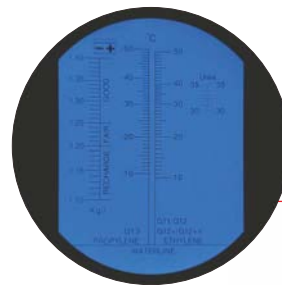
SPECIFICATION

Measuring object	ethylene glycol	propylene glycol	urea	battery fluid
Measuring range	-50~0°C	-50~0°C	30~35%	1.10~1.40kg/l
Accuracy	±5°C	±5°C	±1%	±0.02kg/l
Resolution	1°C	1°C	1%	0.01kg/l
Dimension	27×40×160mm			
Weight	172g			

PORTABLE REFRACTOMETER FOR DIESEL EXHAUST FLUID
CODE 5803-B40

- Measure the concentration of urea in diesel exhaust fluid
- Wide measuring range

calibration screw

eyepiece

lens and cover plate

SPECIFICATION

Measuring range	0~40%
Accuracy	±0.2% (20°C)
Resolution	0.2%
Dimension	27×40×160mm
Weight	170g
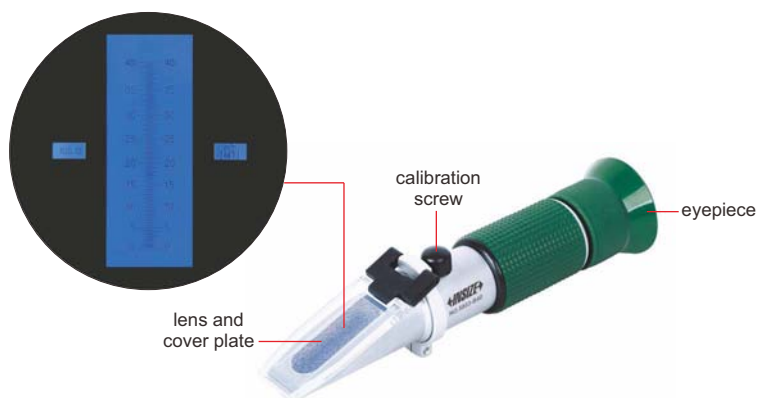
DIGITAL STOPWATCH
CODE DSW-A010

- Split time, total time and continuous time can be displayed
- 10 groups of results can be read out from memory after resetting
- Scroll back and forth to read out the memory digits
- The fastest, slowest and average time can be displayed
- Able to record the split times (00-199)

SPECIFICATION

Measuring range		0~9 hours, 59 minutes, 59.99 seconds
Resolution		0.01s
Accuracy		±0.5s
Function	memory	10 groups
	timer	up to 10 hours
	time	12-hour or 24-hour time display, alarm can be set
Power supply		LR44 battery
Screen dimension		33.6×13.6mm
Dimension		76×63×16mm (metal case)

STANDARD DELIVERY

Main unit	1 pc
String	1 pc

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STROKE COUNTER
CODE 7600-6

- Accumulate and record the number of mechanical movements
- Rotate back to zero

Unit: mm

92   32

48

SPECIFICATION

Code	Number of digits	Range
7600-6	6	0-999999

DIGITAL MOISTURE METER
CODE 9341-50

- Suitable for wood, smooth cement, hard gypsum, mixed mortar, brick, etc.
- Measure moisture, temperature and relative humidity
- Temperature type: ambient, dew point, wet bulb
- Maximum and minimum modes
- Automatic power off

cover (included)

SPECIFICATION

Measuring depth		0~50mm
Measuring range	moisture	0~60%
	temperature	-10~50°C/14~122°F
	relative humidity	0~100%RH
Accuracy	moisture	±2%
	temperature	±2%
	relative humidity	±5%RH
Resolution	moisture	0.1%
	temperature	0.1°C/0.1°F
	relative humidity	0.1%RH
Sampling time		0.5s for moisture
		1s for temperature and relative humidity
Power supply		2×AAA batteries
Dimension		130×56×29mm
Weight		206g

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs

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INDUCTIVE MOISTURE METER
CODE 0120-IM24

- Suitable for wood, gypsum and cement
- MAX/MIN/HOLD mode
- Alarm function
- Low battery indication
- Auto power off

SPECIFICATION

Measuring range	0~100%
Resolution	1%
Accuracy	±4%
Detection depth	20~40mm
Sampling time	0.5s
Battery	9V
Dimension	185×55×38mm
Weight	193g

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

DIFFERENTIAL PRESSURE MANOMETER
CODE 0140-DP05
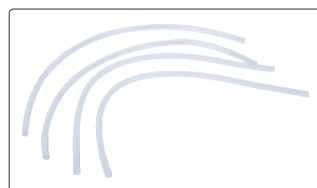
soft tubes (included)

- Offset and differential measurement
- Record maximum/minimum/average value with relative timestamp
- Built-in USB interface for data transmission
- Unit: psi, inH$_2$O, bar, mbar, kPa, inHg, mmHg, oz/in^2, ftH$_2$O, cmH$_2$O, kg/cm^2
- Zero adjust
- Data hold
- Display with backlight
- Low battery indication
- Automatic power off
- Safety rating: CAT III 600V
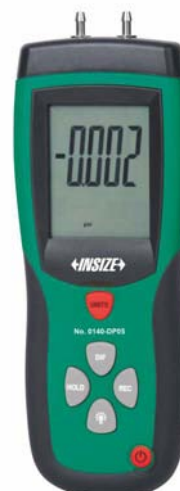
SPECIFICATION
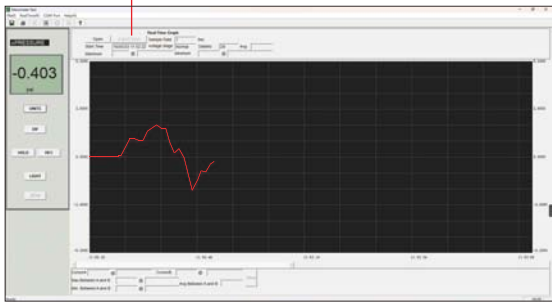
Pressure range	-5~5psi										
Maximum pressure	20psi										
Unit	psi	inH$_2$O	bar	mbar	kPa	inHg	mmHg	oz/in^2	ftH$_2$O	cmH$_2$O	kg/cm^2
Range	5	138.3	0.344	344.7	34.47	10.18	258.5	80	11.53	351.5	0.351
Resolution	0.001	0.1	0.001	0.1	0.01	0.01	0.1	0.01	0.01	0.1	0.001
Accuracy	±0.3%FSO (25°C)										
Repeatability	±0.2% (Max. ±0.5%FSO)										
Linearity/hysteresis	±0.29%FSO										
Response time	0.5s typical										
Operation temperature	0°C~50°C										
Power supply	1×9V 6F22 battery or AC/DC adapter										
Dimension (LxWxH)	165×90×40mm										
Weight	350g										

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STANDARD DELIVERY
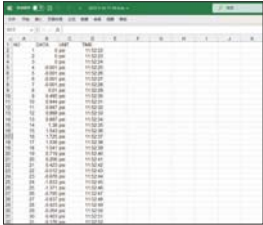
Main unit	1 pc
AC/DC adapter	1 pc
9V battery	1 pc
Software flash disk	1 pc
USB cable	1 pc
Soft tubes	4 pcs

software (included), connect to PC via USB cable

export data

display realtime value and curve

export data to Excel

ANEMOMETER
CODE 0110-1125

App measurement   App record

- Measure air velocity and temperature
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for Apple and Android

SPECIFICATION

	Unit	Measuring range	Resolution	Accuracy
Air velocity	m/s	1.1~25.0	0.01	±(3%+0.3)
	km/h	4~90	0.1	±(3%+1)
	ft/min	220~4920	1	±(3%+40)
	MPH	2.5~56.0	0.1	±(3%+0.4)
	knots	2.2~48.0	0.1	
Air temperature	°C	0~50	0.1	±2
	°F	32~122	0.1	±4
Sensors	air velocity sensor, NTC-type precision thermistor			
Sampling time	0.5s			
Operation altitude	max 2000m			
Operation environment	0~50°C, 0~80%RH			
Storage environment	-10~60°C, 0~80%RH			
Auto power off	10 minutes			
Data port	bluetooth 4.0			
Power supply	9V			
Dimension	213×54×36mm			
Weight	172g			

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

BOURDON TUBE PRESSURE GAGES (LIQUID FILLED)

CAN BE CUSTOMIZED

- Stainless steel case and bezel, copper alloy internals
- Shock-proof and pulse-proof
- Suitable for pneumatic systems, hydraulic systems and compressed air systems

Dial size	Ø63mm		
Process connection	1/4BSP	1/4ZG	1/4NPT
Connector location	bottom	bottom	bottom
Range (0~10bar/0~150psi)	5201-63B2Y10	5201-63Z2Y10	5201-63N2Y10

SPECIFICATION

Accuracy class	1.6
Ambient temperature	-20~60°C
Medium temperature	≤60°C

5201-63B2Y10

SOUND LEVEL METER (PROFESSIONAL TYPE)
CODE 0011-FA25

software (included), monitor and collect data to PC software via USB cable,
data can sent to Excel

real-time monitoring mode: bar chart	real-time monitoring mode: line chart

microphone

preamplifier
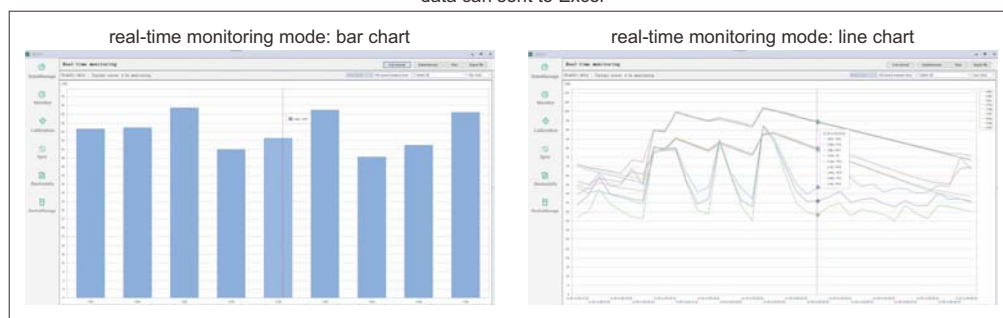
- Integral function: 1s~24h (adjustable)
- Wide frequency range, large dynamic range, low background noise
- Parallel time weight and frequency weight
- Single range without shifting
- Software is included: on-line monitoring, data storage

VIDEO

SPECIFICATION

Accuracy	IEC 61672-1:2013 class 2
Microphone	1/2 inch prepolarized condenser microphone
Measuring range	25dB (A)~141dB (A); 35dB (C)~141dB (C); 50dB (Z)~141dB (Z) other frequency linear ranges: 31.5Hz: 26dB (A)~101dB (A); 12.5kHz: 25dB (A)~136dB (A)
Frequency	20Hz~12.5kHz
Self-generated electrical noise	<17dB (A), <23dB (C), <33dB (Z)
Frequency weighting	parallel A, C, Z weightings
Time weighting	parallel F (Fast), S (Slow), I (Impulse) weightings
Measuring function	Lp, Leq,t, Leq,T, Lmax, Lmin, Lpeak, SEL
Integral time	1s-24h (adjustable)
Start mode	button/clock/limit/interval
Power setting	power on or off regularly
Data storage	4MB FLash RAM 4 sets of parameter templates, 128 measurement point names; 64 calibration records
Language	Chinese, English, Portuguese
Power	<80mA/5V
Power supply	4×AAA batteries (for 10 hours working) AC/DC adapter: 5V/2A
Operation condition	temperature: -10°C~50°C humidity: 25%RH~90%RH, non-condensing pressure: 65kPa~108kPa
Dimension	230×69×26mm
Weight	180g

STANDARD DELIVERY

Main unit	1 pc
Software	1 pc
Windscreen	1 pc
Battery (AAA)	4 pcs
AC/DC adapter	1 pc

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DIGITAL SOUND LEVEL METER (ADVANCED TYPE)
CODE 9353-413

- Automatic range conversion
- Over range indicator
- Maximum mode
- Data hold
- AC signal output: 0.707Vrms, impedance approx.100Ω
  DC signal output: 20mV/dB, impedance approx.1kΩ

SPECIFICATION

Measuring range	40dB~130dB (ref.20µPa)
Frequency	20Hz~12.5kHz
Resolution	0.1dB
Accuracy	IEC 61672-1:2013 class 2
Frequency weighting	A weighting
Response time	fast (125ms), slow (1s)
Microphone	pre polarization condenser microphone
Refercner direction	axial direction of condenser microphone
Power supply	4×1.5V AAA batteries
Dimension	210×68×27mm
Weight	240g

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	4 pcs
Precision screwdriver	1 pc

SOUND LEVEL METER (BASIC TYPE)
CODE 0010-A35

App measurement   App record

- Auto range selection
- Over range indication
- Display backlight
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for
  Apple and Android

SPECIFICATION

Frequency	31.5Hz~8KHz
Measuring range	35dB~130dB
Accuracy	±3.0dB (ref 94dB@1kHz)
Resolution	0.1dB
Frequency weighting	A and C
Display update	2 times/sec
Microphone	1/2 inch electret condenser microphone
Power supply	9V battery
Operation temperature and humidity	0°C~40°C/32°F~104°F, 10%RH~90%RH
Dimension	185×54×36mm
Weight	184g

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc
Windscreen	1 pc

DIGITAL SOUND LEVEL METER
CODE 9351-130

DATA OUTPUT

- Automatically select best range: 30~80dB, 40~90dB, 50~100dB, 60~110dB, 70~120dB, 80~130dB
- Over range indicator
- Real time, average, maximum modes
- Memory 16000 measurement values
- AC signal output: 0.707 Vrms at FS, impedance approx. 600Ω
  DC signal output: 10mV/dB, impedance approx.100Ω
- Automatic power off

SPECIFICATION

Measuring range	30~130dB
Accuracy	±2dB
Resolution	0.1dB
Sampling time	0.5s for digital, 0.05s for analogue
Response time	fast: 125ms, slow: 1s
Frequency	30Hz~8KHz
Frequency weighting	A/C
Microphone	electret condenser type
Output	RS232, AC/DC
Power supply	6×AAA batteries
Dimension	265×80×69mm
Weight	317g

STANDARD DELIVERY

Main unit	1 pc
Software and RS232 cable	1 pc
Output connector	1 pc
Battery (AAA)	6 pcs

software flash disk (included)

VIDEO
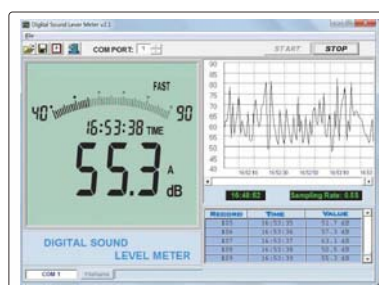
software (included), display measurement values and graph, save and output data

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LIGHT METER
CODE 0131-A120

- Photosensor can rotate 90° clockwise and 180° counterclockwise
- Build-in calibration filters ensure the accuracy when working in different colors
- Data hold function
- Lux/FC unit switch
- Low battery alarm

rotate 90° clockwise

rotate 180° counterclockwise

SPECIFICATION

Measuring range	0.1~199.9Lux	1~1999Lux	10~19990Lux	100~199900Lux
Resolution	0.1Lux	1Lux	10Lux	100Lux
Measuring range	0.01~19.99FC	0.1~199.9FC	1~1999FC	10~19990FC
Resolution	0.01FC	0.1FC	1FC	10FC
Accuracy	±(4%+10d), range<20000Lux/2000FC ±(5%+10d), range≥20000Lux/2000FC (d is resolution, calibrated with standard incandescent lamp at color temperature 2856K)			
Repeatability	±2%			
Sampling time	0.5s			
Operation environment	0~40°C, 0~70%RH			
Storage environment	-10~50°C, 0~80%RH			
Battery	9V			
Dimension	185×68×38mm			
Weight	130g			

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

LIGHT METER (BASIC TYPE)
CODE 0130-L110

- Suitable for measuring illuminance in various occasions
- Data hold function
- Fast switching of measuring range, easy to operate

SPECIFICATION

Measuring range	1~1999Lux	10~19990Lux	100~100000Lux
Resolution	1Lux	10Lux	100Lux
Accuracy	±(4%+10d), range<10000Lux ±(5%+10d), range≥10000Lux (d is resolution, calibrated with standard incandescent lamp at color temperature 2856K)		
Repeatability	±2%		
Sampling time	0.5s		
Operation environment	0~40°C, 0~70%RH		
Storage environment	-10~50°C, 0~80%RH		
Battery	9V		
Photodetector dimension	105×58×28mm		
Main unit dimension	130×72×30mm		
Weight	170g		

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

UV LIGHT METER
CODE 0132-UV199

- Self-recognize probes
- Real-time value, maximum value, minimum value, average value, time, energy value are displayed at the same time

VIDEO

MAIN UNIT SPECIFICATION

Display	240×160 LCD
Power supply	4 AAA alkaline batteries
Dimension	148×76×26mm
Weight	194g

STANDARD DELIVERY

Main unit	1 pc
Probe 0132-UVA1	1 pc
Battery	4 pcs

probe
0132-UVA1
(included)

PROBE SPECIFICATION

Probe code	0132-UVA1 (included)	0132-UVC0 (optional)	0132-UVCWP1 (optional)
Application	general purpose low power UVA intensity and energy measurement	intensity and energy measurement of 254nm UV sterilization mercury lamp	intensity and energy measurement of 254nm UV sterilization mercury lamp
Spectral response	λp=365nm 315nm-400nm	λp=254nm 230nm-280nm	
Power measuring range	0~200000µW/cm²		
Resolution	0.1µW/cm²		
Energy measuring range	0-9999999µJ/cm²		
Measuring accuracy	±10%		
Record time	0-99999s		
Sampling speed	6 times/second		
Measuring unit	µW/cm² (default), mW/cm², W/m²		
Test hole diameter	Ø10mm		
Probe size	39×32×15mm	Ø39×15mm	Ø50×20mm
Waterproof depth	—	—	1m

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Probe code	0132-UVCLED0 (optional)	0132-UVB0 (optional)	0132-UVA0 (optional)
Application	measurement of 260nm-285nm UV LED sterilization lamp	general purpose UVB intensity and energy measurement	intensity and energy measurement of light source of high pressure mercury lamp in UV curing industry
Spectral response	280nm-315nm *	λp=310nm * * 280nm-315nm	λp=365nm 315nm-400nm
Power measuring range	0~200000µW/cm²		0~2000mW/cm²
Resolution	0.1µW/cm²		0.1mW/cm²
Energy measuring range	0-9999999µJ/cm²		
Measuring accuracy	±10%		
Record time	0-99999s		
Sampling speed	6 times/second		2048 times/second
Measuring unit	µW/cm² (default), mW/cm², W/m²		mW/cm² (default), W/m²
Test hole diameter	Ø10mm		
Probe size	Ø39×15mm		39×32×15mm

*Wide spectral range, avoid using in strong light
**Suitable for measuring UVB light source with wavelength 297nm, 308nm, and 313nm

Probe code	0132-UVALED0 (optional)	0132-UVALED1 (optional)	0132-UVALED3 (optional)
Application	intensity and energy measurement of area light source of UV LED in UV curing industry	intensity and energy measurement of point light source of UV LED in UV curing industry	general purpose UVA+UVV LED intensity and energy measurement, low power measuring range
Spectral response	calibrated with 395nm UV LED 340nm-420nm		
Power measuring range	0~20000mW/cm²		0~200000µW/cm²
Resolution	1mW/cm²		0.1µW/cm²
Energy measuring range	0-9999999µJ/cm²		
Measuring accuracy	±10%		
Record time	0-99999s		
Sampling speed	2048 times/second		6 times/second
Measuring unit	mW/cm² (default), W/cm², W/m²		µW/cm² (default), mW/cm², W/m²
Test hole diameter	Ø10mm	Ø1mm	Ø10mm
Probe size	39×32×15mm		

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SINGLE GAS DETECTORS

IP65 WATERPROOF

- Detect combustible gas (EX, including CH_4, C_3H_8, H_2, etc), O_2, CO or H_2S, support more than 30 types of gas sensors, customization for detecting toxic gases (such as NO, NH_3, PH_3, etc) available
- Adjustable alarm level, alarm mode: sound, light, vibration
- Adjustable calibration level
- Sampling method: natural diffusion
- High concentration protection for sensor
- Up to 500 alarm records storage capacity
- Self-test on startup
- Display with backlight
- Language: English, Chinese
- Low battery indication
- Explosion proof level: Ex ib IIB T3 Gb

calibration cap (included)

VIDEO

SPECIFICATION

Code	0611-SG01	0611-SG02	0611-SG03	0611-SG04
Gas	combustible gas/EX	O_2	CO	H_2S
Range	0-100%LEL	0-30%vol	0-1000ppm	0-100ppm
Resolution	1%LEL	0.1%vol	1ppm	1ppm
Accuray	±5%FS			
Response time	T_{90}<60s			
Operation environment	temperature: -10°C~55°C; humidity: <95%RH, no condensation			
Sensor lifetime	2 years (depending on working environment)			
Power supply	3.7V rechargeable Li-ion battery, working time>8h			
Dimension (LxWxH)	124×60×46mm			
Weight	205g			

0611-SG01

STANDARD DELIVERY

Main unit	1 pc
Calibration cap	1 pc
AC/DC adapter and charging cable	1 pc

MULTI GAS DETECTOR
CODE 0612-MG04

DATA OUTPUT   **IP66 WATERPROOF**

software flash disk (included)

charging cable (included)

calibration cap (included)

VIDEO

charging and data transmission interface on the back

- Detect combustible gas (EX, including CH_4, C_3H_8, H_2, etc), oxygen (O_2), carbon monoxide (CO) and hydrogen sulfide (H_2S), optional configuration includes other toxic gases such as NO, NH_3, PH_3, etc; support more than 30 types of gas sensors, flexible sensor combination and customization available
- Adjustable alarm level, alarm mode: sound, light, vibration and screen display
- Adjustable calibration level
- Sampling method: natural diffusion
- High concentration protection for sensor
- Data transmission via charging interface
- Up to 1000 alarm records storage capacity
- Self-test on startup
- Display with backlight
- Language: English, Chinese and Spanish (Portuguese and Russian customizable)
- Low battery indication
- Explosion proof level: Ex ib IIC T4 Gb

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SPECIFICATION

Gas	combustible gas (EX)	O_2	CO	H_2S
Range	0-100%LEL	0-30%vol	0-1000ppm	0-100ppm
Resolution	1%LEL	0.1%vol	1ppm	1ppm
Accuray	±5%FS			
Response time	T_{90}<60s			
Operation environment	temperature: -10°C~50°C; humidity: <95%RH, no condensation			
Sensor lifetime	2 years (depending on working environment)			
Power supply	3.7V rechargeable Li-ion battery, working time>8h			
Dimension (LxWxH)	150×72×48mm			
Weight	310g			

STANDARD DELIVERY

Main unit	1 pc
Calibration cap	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

software (included), connect to PC via USB cable, display test data and export record
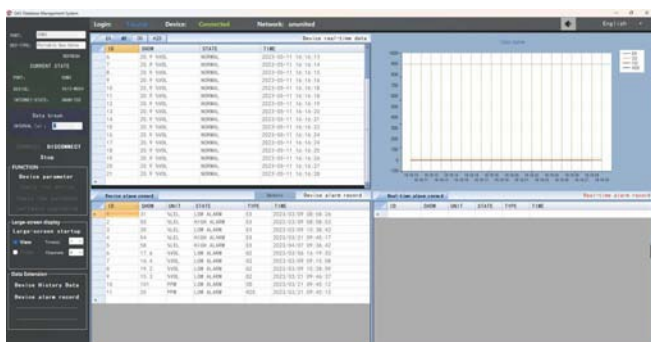
display real-time data and alarm record
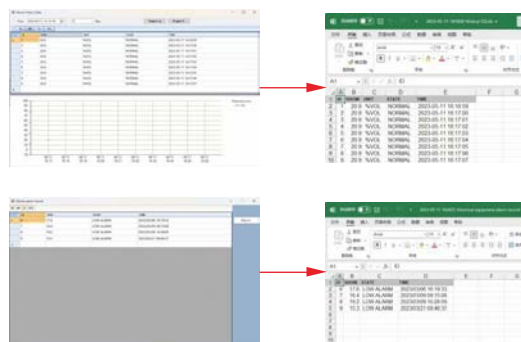
export history data and alarm record

TESLAMETERS (GAUSSMETERS)

caption: magnetic shielding cavity (**optional**)

caption: axial probe (**optional**)

- Measure magnetic induction of DC magnetic field
- Directly display the N/S polarity of the measured magnetic field
- One-key zero function: eliminate the influence of zero drift before measurement
- Maximum value hold: record the maximum value of the changing magnetic field
- Unit switch between mT or G (1mT=10G)
- Auto ranging
- Built-in USB interface for data transmission
- Display with backlight
- Auto power off

radial probe (included)

0501-MA01

SPECIFICATION

Code	0501-MA01	0501-MA05
Range	2000mT	
Resolution	0.01mT (0~200mT) 0.1mT (200~2000mT)	
Accuray	±1.0%	±2.0% (≤1000mT) ±5.0% (1000mT~2000mT)
Temperature coefficient	±0.1%/K	
Zero drift	±0.5mT/h	
Interface	USB	
Power supply	3×1.5V AA batteries or USB	
Dimension (L×W×H)	165×90×40mm	
Weight	350g	

STANDARD DELIVERY

Main unit	1 pc
Radial probe	1 pc
Battery (AA)	3 pcs

OPTIONAL ACCESSORY

Axial probe	0501-PA
Magnetic shielding cavity	0501-SHIELD

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LASER BELT TENSION METER
CODE 5900-HZ18

- Laser sensor, direct measurement, easy to use
- Two sensors: internal and external, external sensor is suitable for measurement in narrow spaces
- Automatic power off

VIDEO

SPECIFICATION

Measuring range	10~800Hz
Input parameter range	maximum free belt length: 99.99m maximum belt weight: 9.999kg/m
Accuracy	±5%
Unit	N, lbf
Measuring distance	3~20mm
Operation temperature	10~50°C
Power supply	4×1.5V AAA batteries
Dimension	main unit	178×72×34mm
	external sensor	124×21×12mm
Weight	180g

STANDARD DELIVERY

Main unit	1 pc
External sensor	1 pc

caption: external sensor

caption: internal sensor

LIGHT TRANSMITTANCE METER
CODE 5804-LT21

VIDEO

fixed base (included)

- Suitable for light transmittance testing of various "regular transmission materials", such as building glasses, auto glasses, transparent films, plastic products, etc.
- With the design of parallel optical path of the light source and condensed light of the receiver, it can measure up to 100mm thickness
- Can measure the high transparent materials such as K9 glasses
- Two measuring modes, fixed base and handheld
- Conforming to CIE photopic luminosity function

regular transmission	diffused transmission
parallel light	parallel light
regular transmission	diffused transmission

when the light penetrates a flat and evenly textured transparent material, the light does not change its direction
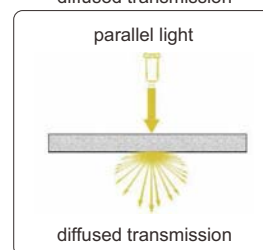
when the light penetrates a material with a rough surface or uneven texture, the light spreads out

SPECIFICATION

Optical source	380nm~760nm, conforming to CIE photopic luminosity function
Measuring range	0.001%~99.8%
Accuracy	±1%
Resolution	0.001% (0%~10%) , 0.01% (10%~100%)
Thickness to be measured	<100mm
Diameter to be measured	>10mm
Power supply	4×1.5V AAA batteries
Dimension	75×140×25mm
Weight	634g

STANDARD DELIVERY

Main unit	1 pc
Transmitter	1 pc (connect to main unit)
Receiver	1 pc (connect to main unit)
Fixed base	1 pc
1.5V AAA battery	4 pcs

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DIGITAL GLASS THICKNESS METER
CODE 5805-GT22

VIDEO

- Laser reflection principle to measure the thickness of glass and internal air layer. Especially suitable for building laminated glasses, hollow glass windows, etc.
- To test the thickness of single layer glasses, multi-layer glasses, two glasses with one cavity, three glasses with two cavities, laminated glasses, laminated insulating glasses, etc.

SPECIFICATION

Measuring range	glass thickness (0~70mm), air layer (0~45mm)
Accuracy	±0.1mm (measuring range≤63mm), ±0.2mm (measuring range>63mm)
Resolution	0.01mm
Display	LCD
Power supply	4×1.5V AAA batteries
Dimension	130×72×33mm
Weight	330g

STANDARD DELIVERY

Main unit	1 pc
Cross screwdriver	1 pc
1.5V AAA battery	4 pcs

DC Resistance Testers
Page 738

DC Power Supplies
Page 739

Digital Multimeters
Page 739-743

Digital AC/DC Clamp Meters
Page 744

Voltage Testers
Page 745

DC RESISTANCE TESTER
CODE 9651-RM20

VIDEO

- Maximum reading: 220000
- Basic accuracy: 0.05%
- 3.5 inch LCD screen
- Temperature compensation function
- Short-circuit zeroing calibration
- Bad contact detection
- Comparator: pass or fail judge
- Keyboard lock function

temperature probe (included)

test clip (included)

RS232 communication cable (included)

SPECIFICATION

Function	Range	Resolution	Accuracy ("d" is the least reading)
Slow test	20mΩ	0.001mΩ	±(0.1%+3d)
	200mΩ/2Ω/20Ω/200Ω/2kΩ/20kΩ/200kΩ	0.001mΩ/0.00001Ω/0.0001Ω/0.001Ω/0.00001kΩ/0.0001kΩ/0.001kΩ	±(0.05%+2d)
	2MΩ	0.0001MΩ	±(0.1%+5d)
Medium test	20mΩ	0.001mΩ	±(0.2%+5d)
	200mΩ/2Ω/20Ω/200Ω/2kΩ/20kΩ/200kΩ	0.001mΩ/0.00001Ω/0.0001Ω/0.001Ω/0.00001kΩ/0.0001kΩ/0.001kΩ	±(0.1%+3d)
	2MΩ	0.0001MΩ	±(0.2%+5d)
Fast test	20mΩ	0.01mΩ	±(0.8%+5d)
	200mΩ/2Ω/20Ω/200Ω/2kΩ/20kΩ/200kΩ	0.01mΩ/0.0001Ω/0.001Ω/0.01Ω/0.0001kΩ/0.001kΩ/0.01kΩ	±(0.5%+5d)
	2MΩ	0.001MΩ	±(0.8%+5d)
Range mode	auto range, manual range and nominal range		
Test speed	slow: 3t/s, medium: 18t/s, fast: 60t/s		
Trigger	internal trigger, manual trigger, external trigger		
Interface	handler interface, RS232 interface, RS485 interface, USB interface and temperature compensation interface		
Power supply	AC: 100V~240V, 50Hz/60Hz		
Dimension (L×W×H)	307×264×107mm		
Weight	2.5kg		

STANDARD DELIVERY

Main unit	1 pc
RS232 communication cable	1 pc
Temperature probe	1 pc
Test clip	1 pc
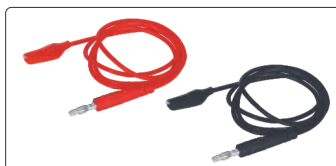
DC POWER SUPPLY
CODE 9911-PS305

test leads (included)

SPECIFICATION

Voltage	range	30V
	setting resolution	10mV
	setting accuracy	≤0.1%+10mV
	readback resolution	10mV
	readback accuracy	≤0.1%+10mV
	load regulation	≤0.1%+5mV
	line regulation	≤0.01%+5mV
	ripple	10mVrms
Current	range	5A
	setting resolution	1mA
	setting accuracy	≤0.2%+10mA
	readback resolution	1mA
	readback accuracy	≤0.2%+10mA
	load regulation	≤0.2%+3mA
	line regulation	≤0.2%+3mA
	ripple	8mArms
OVP		0~33V
OCP		0~5.5A
Work condition		temperature: 0~40°C, humidity: ≤80%RH
Storage condition		temperature: -20~60°C, humidity: ≤80%RH
Cool system		fan cool
Power supply		AC 220V±10%, 50Hz/60Hz
Dimension (L×W×H)		230×80×150mm
Weight		1.45kg

- Four-digit LED display
- Output power display
- Output switch control
- 10mV/1mA high accuracy and resolution
- Panel locking function to prevent misoperation
- USB interface for power supply
- OVP/OCP protection
- 3 shortcut keys for presetting

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STANDARD DELIVERY

Main unit	1 pc
Test lead	2 pcs

- Auto/manual ranging
- Maximum mode
- Data hold
- NCV detection
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

PEN-TYPE DIGITAL MULTIMETER
CODE 9241-ML200

STANDARD DELIVERY

Main unit	1 pc
Test lead	1 pc
Clip	2 pcs
Battery (AAA)	2 pcs

clips (included)

test lead (included)

SPECIFICATION

Function	Range	Resolution	Accuracy
DC Voltage	200mV/2V/20V/200V/600V	0.1mV/1mV/10mV/0.1V/1V	±(0.7%+2)
AC Voltage	200mV/2V/20V/200V	0.1mV/1mV/10mV/0.1V	±(0.8%+3)
	600V	1V	±(1.0%+3)
DC Current	20mA/200mA	10µA/0.1mA	±(1.5%+3)
AC Current	20mA/200mA	10µA/0.1mA	±(2.0%+3)
Resistance	200Ω	0.1Ω	±(1.0%+3)
	2kΩ/20kΩ/200kΩ/2MΩ	1Ω/10Ω/0.1kΩ/1kΩ	±(1.0%+1)
	20MΩ	10kΩ	±(1.0%+5)
Logic level test	<1.5V (green LED on); 1.5~3.5V (green & red LED off); >3.5V (red LED on)		
Diode	open circuit voltage 1.5V		
Continuity buzzer	<50Ω		
Power supply	2×1.5V AAA batteries		

DIGITAL MULTIMETER
CODE 9216-F520

test leads (included)

temperature probe and
adapter (included)

- 2000 counts digital display
- Auto ranging (except 200mV AC)
- Data hold
- Max hold
- Display with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

SPECIFICATION

Function	Range	Resolution	Accuracy ("d" is the least reading)
DC Voltage	200mV	0.1mV	±(0.5%+2d)
	2V/20V/200V	0.001V/0.01V/0.1V	±(1.0%+2d)
	600V	1V	±(1.2%+2d)
AC Voltage (50~60Hz)	200mV	0.1mV	±(1.5%+30d)
	2V	0.001V	±(1.2%+3d)
	20V/200V	0.01V/0.1V	±(1.5%+3d)
	600V	1V	±(2.0%+4d)
DC Current	200µA	0.1µA	±(1.0%+3d)
	2000µA/20mA/200mA	1µA/0.01mA/0.1mA	±(1.5%+3d)
	10A	0.01A	±(2.5%+5d)
AC Current (50~60Hz)	200µA	0.1µA	±(1.5%+5d)
	2000µA/20mA/200mA	1µA/0.01mA/0.1mA	±(1.8%+5d)
	10A	0.01A	±(3.0%+7d)
Resistance	200Ω	0.1Ω	±(1.2%+4d)
	2kΩ	0.001kΩ	±(1.0%+2d)
	20kΩ/200kΩ/2MΩ	0.01kΩ/0.1kΩ/0.001MΩ	±(1.2%+2d)
	20MΩ	0.01MΩ	±(2.0%+3d)
Temperature (type-K)	-50°C to 1000°C	1°C	±(3.0%+5°C)
	-58°F to 1832°F	1°F	±(3.0%+8°F)
Diode test	test current: 0.3mA typical	1mV	±(10%+5d)
Continuity check	less than 100Ω		
Power supply	9V battery		
Dimension (L×W×H)	150×70×48mm		
Weight	255g		

STANDARD DELIVERY

Main unit	1 pc
Thermocouple adapter	1 pc
Temperature probe	1 pc
9V battery	1 pc
Test lead	2 pcs

MINI DIGITAL MULTIMETER (BASIC TYPE)
CODE 9242-ML100A

- Portable size with protective case
- 1999 counts digital display
- Data hold
- Display with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT II 600V

test leads (included)

POPULAR MODEL

VIDEO

SPECIFICATION

Function	Range	Resolution	Accuracy ("d" is the least reading)
DC Voltage	200.0mV	0.1mV	±(0.7%+3d)
	2000mV	1mV	±(0.5%+2d)
	20.00V/200.0V/600V	0.01V/0.1V/1V	±(0.7%+3d)
AC Voltage (40~400Hz)	200.0V/600V	0.1V/1V	±(1.2%+3d)
DC Current	200.0µA/200.0mA	0.1µA/0.1mA	±(1.0%+2d)
	10.00A	0.01A	±(1.2%+5d)
Resistance	200.0Ω	0.1Ω	±(1.0%+2d)
	2000Ω/20.00kΩ/200.0kΩ	1Ω/0.01kΩ/0.1kΩ	±(0.8%+2d)
	20.00MΩ	0.01MΩ	±(1.2%+3d)
Battery test	1.5V/9V/12V battery check		
Diode test	open circuit voltage: 2.1V DC		
Continuity test	<50Ω		
Power supply	2×1.5V AAA batteries		
Dimension (LxWxH)	134×77×47mm		
Weight	206g		

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs
Test lead	2 pcs

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SMART DIGITAL MULTIMETER
CODE 9247-190

VIDEO

test leads (included)

STANDARD DELIVERY

Main unit	1 pc
Test lead	2 pcs
Battery (CR2032)	2 pcs

- Automatically identify test modes for AC voltage/DC voltage/resistance/continuity
- NCV detection and judge the strength by light and buzzer
- Self-calibration when power on to ensure accuracy
- LIVE firewire recognition
- Display with backlight
- True RMS measurement
- Data hold
- Low battery indication
- Auto power off
- Safety rating: CAT III 600V

SPECIFICATION

Function	Range	Resolution	Accuracy
DC Voltage	60mV/600mV/6V/60V/600V	0.01mV/0.1mV/0.001V/0.01V/0.1V	±(0.5%+3)
AC Voltage	60mV/600mV/6V/60V/600V	0.01mV/0.1mV/0.001V/0.01V/0.1V	±(1.0%+3)
DC Current	6000µA/60mA/600mA	1µA/0.01mA/0.1mA	±(1.2%+5)
AC Current	6000µA/60mA/600mA	1µA/0.01mA/0.1mA	±(1.5%+5)
Resistance	600Ω/6kΩ/60kΩ/600kΩ	0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ	±(1.0%+5)
	6MΩ/60MΩ	0.001MΩ/0.01MΩ	±(1.5%+3)
Capacitance	6nF/60nF/600nF/6µF/60µF/600µF	0.001nF/0.01nF/0.1nF/0.001µF/0.01µF/0.1µF	±(4.0%+5)
	6mF/60mF	0.001mF/0.01mF	±(5.0%+5)
Frequency	10Hz/100Hz/1000Hz/10kHz/100kHz/1000kHz	0.001Hz/0.01Hz/0.1Hz/0.001kHz/0.01kHz/0.1kHz	±(1.0%+5)
	10MHz	0.001MHz	±(3.0%+5)
Duty cycle	1~99%	0.1%	±(3.0%+5)
Diode measurement	open circuit voltage 2.0V		
Continuity measurement	<50Ω		
Power	2×3V CR2032 batteries		
Dimension (L×W×H)	133×68×18mm		
Weight	178g		

DIGITAL MULTIMETER (WITH JACK INDICATOR LIGHT)
CODE 9246-180

- Jack indicator light: jacks flash green to indicate the corresponding jacks for test leads
- NCV detection and judge the strength by light and buzzer
- Self-calibration when power on to ensure accuracy
- LIVE firewire recognition
- Double color backlight (orange backlight prompts high voltage or current: the orange backlight automatically lights up when voltage is higher than 80V or the current is higher than 1A)
- Large range capacitance meter 100mF
- True RMS measurement
- Battery test function
- Max/Min mode
- Data hold
- Low battery indication
- Auto power off
- Safety rating: CAT III 1000V, CAT IV 600V

test leads (included)

STANDARD DELIVERY

Main unit	1 pc
Test lead	2 pcs
Battery (AA)	2 pcs

SPECIFICATION

Function	Range	Resolution	Accuracy
DC Voltage	600mV/6V/60V/600V/1000V	0.1mV/0.001V/0.01V/0.1V/1V	±(0.5%+3)
AC Voltage	6V/60V/600V/750V	0.001V/0.01V/0.1V/1V	±(0.8%+5)
DC Current	60µA/60mA/600mA/10A	0.01µA/0.01mA/0.1mA/0.01A	±(1.2%+3)
AC Current	60mA/600mA/10A	0.01mA/0.1mA/0.01A	±(1.5%+3)
Resistance	600Ω/6kΩ/60kΩ/600kΩ	0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ	±(1.0%+3)
	6MΩ/60MΩ	0.001MΩ/0.01MΩ	±(1.5%+3)
Capacitance	10nF/100nF/1000nF/10µF/100µF/1000µF	0.001nF/0.01nF/0.1nF/0.001µF/0.01µF/0.1µF	±(4.0%+5)
	10mF/100mF	0.001mF/0.01mF	±(5.0%+5)
Frequency	10Hz/100Hz/1000Hz/10kHz/100kHz/1000kHz	0.001Hz/0.01Hz/0.1Hz/0.001kHz/0.01kHz/0.1kHz	±(1.0%+3)
	10MHz	0.001MHz	±(3.0%+3)
Duty cycle	1~99%	0.1%	±(3.0%+3)
Diode measurement	forward DC current 2.5mA, reverse DC voltage 3.0V		
Continuity measurement	<30Ω		
Power	2x1.5V AA batteries		
Dimension (L×W×H)	188×88×50mm		
Weight	424g		

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BLUETOOTH DIGITAL MULTIMETER
CODE 9219-KV220

data acquisition app
(included)
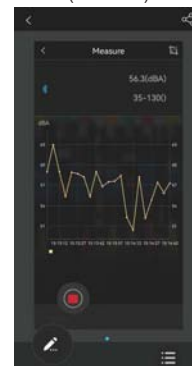
- Built-in bluetooth
- Mobile app included
- 9999 counts digital display
- True RMS measurement
- Display with backlight
- Relative measurement mode
- Auto/manual ranging
- Auto power off
- Data hold
- NCV detection
- Low battery indication
- Safety rating: CAT III 600V
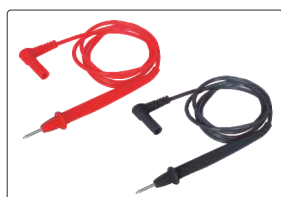
test leads (included)
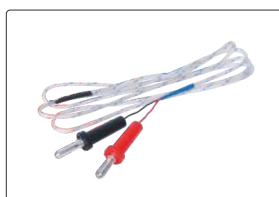
temperature probe (included)

STANDARD DELIVERY

Main unit	1 pc
Test lead	2 pcs
Temperature probe	1 pc
Battery (AAA)	3 pcs

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SPECIFICATION

Function	Range	Resolution	Accuracy ("d" is the resolution)
DC Voltage	9.999mV/99.99mV	0.001mV/0.01mV	±(0.7%+8d)
	999.9mV/9.999V/99.99V/999.9V	0.1mV/0.001V/0.01V/0.1V	±(0.5%+3d)
AC Voltage (40~400Hz)	9.999mV/99.99mV	0.001mV/0.01mV	±(1.0%+3d)
	999.9mV/9.999V/99.99V/999.9V	0.1mV/0.001V/0.01V/0.1V	±(0.8%+3d)
DC Current	999.9µA	0.1µA	±(0.8%+3d)
	999.9mA/9.999A	0.1mA/0.001A	±(1.0%+3d)
AC Current (40~400Hz)	999.9µA	0.1µA	±(1.0%+3d)
	999.9mA/9.999A	0.1mA/0.001A	±(1.2%+3d)
Resistance	999.9Ω/9.999kΩ/99.99kΩ/999.9kΩ	0.1Ω/0.001kΩ/0.01kΩ/0.1kΩ	±(0.8%+2d)
	9.999MΩ	0.001MΩ	±(1.5%+3d)
	99.99MΩ	0.01MΩ	±(2.0%+5d)
Capacitance	9.999nF	0.001nF	±(4.0%+10d)
	9.999nF/99.99nF/999.9nF/9.999µF/99.99µF/999.9µF	0.001nF/0.01nF/0.1nF/0.001µF/0.01µF/0.1µF	±(4.0%+5d)
	9.999mF	0.001mF	±(10.0%)
Frequency	99.99Hz~9.999MHz	0.01Hz~0.001MHz	±(0.1%+5d)
Temperature	-40~1000°C -40~0°C	1°C	±4°C
	>0~100°C	1°C	±(1.0%+5d)
	>100~1000°C	1°C	±(2.0%+5d)
	-40~1832°F -40~32°F	1°F	±5°F
	>32~212°F	1°F	±(1.5%+5d)
	>212~1832°F	1°F	±(2.5%+5d)
Duty cycle	0.1%~99.9%	0.1%	±(3%+5d)
Diode test	open circuit voltage 3.3V, test current 1.5mA		
Continuity check	<30Ω		
Power supply	3x1.5V AAA batteries		
Dimension (L×W×H)	187×88×56mm		
Weight	400g		

DIGITAL AC/DC CLAMP METER
CODE 9315-CF210
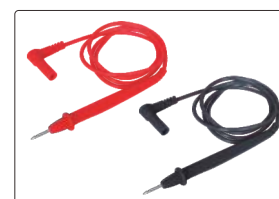
test leads (included)

- 4000 counts display
- 28mm jaw opening
- NCV detection with light and sound alarm
- True RMS measurement
- Auto ranging
- REL (zero) function
- Data hold
- Polarity indication
- LCD screen with backlight
- Low battery indication
- Auto power off
- Safety rating: CAT III 300V/CAT II 600V

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STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs
Test lead	2 pcs

SPECIFICATION

Function	Range	Resolution	Accuracy ("d" is the least reading)
DC Current	40.00A/400.0A	0.01A/0.1A	±(2.0%+5d)
AC Current *	40.00A/400.0A	0.01A/0.1A	±(2.0%+5d)
DC Voltage	400.0mV	0.1mV	±(0.7%+3d)
	4.000V/40.00V/400.0V/600V	0.001V/0.01V/0.1V/1V	±(0.5%+2d)
AC Voltage*	4.000V	0.001V	±(1.0%+5d)
	40.00V/400.0V/600V	0.01V/0.1V/1V	±(0.8%+5d)
AC Voltage frequency	10Hz~60kHz	0.01Hz~0.01kHz	±(0.5%+2d)
Resistance	400.0Ω	0.1Ω	±(1.0%+2d)
	4.000kΩ/40.00kΩ/400.0kΩ	0.001kΩ/0.01kΩ/0.1kΩ	±(0.8%+2d)
	4MΩ/40MΩ	0.001MΩ/0.01MΩ	±(2.5%+5d)
Capacitance	40.00nF/400.0nF/4.000µF/ 40.00µF/400.0µF	0.01nF/0.1nF/0.001µF/ 0.01µF/0.1µF	±(4.0%+5d)
	4.000mF/40.00mF	0.001mF/0.01mF	±10.0%
Frequency	10Hz~10MHz	0.01Hz~0.01MHz	±(0.1%+4d)
Duty cycle	0.1%~99.0%	0.1%	±(3.0%+5d)
Diode test	open circuit voltage: 4V		
Continuity check	<30Ω		
Power supply	2×1.5V AAA batteries		
Dimension (L×W×H)	215×75×37mm		
Weight	235g		

* AC voltage/current frequency response: 45Hz~400Hz, true RMS display

AC PHASE AND VOLTAGE DETECTOR
CODE 9723-400

- Non-contact detection of phase sequence, high and low voltage, wire distinction
- Low battery indication
- Auto power off
- Flashlight

SPECIFICATION

Phase sequence detection	screen shows clockwise or counterclockwise
High and low voltage detection	beep: slow~fast backlight: green~red analog bar: low~high
Wire distinction	green backlight indicates neutral wire red backlight indicates live wire
Power supply	2×1.5V AAA batteries
Dimension	157×27×23mm
Weight	32g

VIDEO

DIGITAL VOLTAGE TESTER
CODE 9721-250

- Direct AC test (contact): 12-250V
  two way display: voltage displays on LCD screen and neon lamp lights up (when voltage>80V)
- Induction AC test (non-contact): 12-250V
  to detect power source or recognize the phase line, ground line and break point
- Direct DC test (contact): 6-36V
  instant sense and display
- Work without battery
- Tester tip: CRV material

SPECIFICATION

Range	AC: 12-250V; DC: 6-36V
Neon lamp life	30000 times
Dimension	133×21×19mm
Weight	22g

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VOLTAGE TESTER
CODE 9722-250

- Tester tip: CRV material

SPECIFICATION

Range	AC: 100-250V
Neon lamp life	30000 times
Dimension	145×Ø15mm
Weight	21g

Infrared Thermal Imaging Cameras
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Infrared Thermometers
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Dual-Cavity Blackbody Radiation Sources
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Infrared And Penetration Thermometers
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Data Loggers For Temperature And Humidity
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Thermohygrometers
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Large Screen Temperature And Humidity Meters
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Temperature And Humidity Data Loggers
Page 756-757

Portable Medium Temperature Dry Block Calibrators
Page 757

INFRARED THERMAL IMAGING CAMERA (BASIC TYPE)
CODE 9132-T400

NON-CONTACT TEMPERATURE MEASUREMENT

DATA OUTPUT

IP54 WATERPROOF

VIDEO

- IR/visible/laser indicator
- Trigger button for photo taking
- 2-meter drop test, IP54 protection

STANDARD DELIVERY

Main unit	1 pc
Power supply adapter	1 pc
TYPE-C cable	1 pc
16G TF card	1 pc

front view

SPECIFICATION

IR image	**IR resolution**	120×90@17µm
	detector type	VOx/7.5~14µm
	frame rate	25Hz/9Hz
	thermal sensitivity/NETD	60mk
	focal length	2.28mm/F1.13
	field of view (FOV)	50°×38°
	spatial resolution (IFOV)	7.6mrad
	focus	focus-free
Visible camera	**visible camera resolution**	320×240, focus-free
	flashlight	yes
Image display	**display**	2.4 inch IPS technology TFT display
	display resolution	320×240
	image model	IR/visible/picture-in-picture
	color palettes	6: white hot, iron red, hot iron, arctic, rainbow 1, rainbow 2
Temperature measurement	**temperature range**	-20~150°C, 100~400°C (auto switching)
	accuracy	±2°C or ±3%, whichever is greater (target temp ≥0°C, ambient temp is 15~30°C)
	measurement spot	center spot
	measurement area	3 (incl. max & min temp)
	auto max & min spot tracking	yes
	alarm	full screen max & min spot alarm
Image storage	**storage media**	TF card (16G)
	IR image format	full radiometric (JPG) (120 x 90)
	visible image	yes, 320x240
Connections & communications	**USB**	TYPE-C, TF card slot
	tripod interface	yes
	mobile APP	yes
	PC IR analysis software	yes
Power system	**battery type**	rechargeable li ion battery
	battery operation time	>5 hours
	charging time	internal charge, ≤2.5 hours
Environmental parameters	**operation temperature**	-10~50°C
	storage temperature	-40~70°C
	protection	IP54, 2-meter drop test
	certification	CE/ROHS/FCC
	dimension (LxWxH)	194×61.5×76mm
	weight	350g

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INFRARED THERMAL IMAGING CAMERA
CODE 0231-IC650

DATA OUTPUT

IP54 WATERPROOF

VIDEO

laser

visible light camera

infrared camera

lowest temperature point

average temperature value

central point temperature

highest temperature point
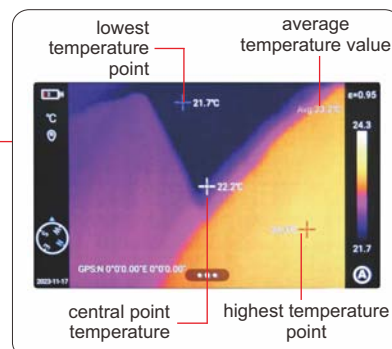
- Suitable for electric power, metallurgy, petrochemical, scientific research and teaching, manufacturing, rail transit, building testing, electronic equipment overhaul, mechanical equipment maintenance, etc.
- Four image presentation: IR, VIS, MIF, PIP
- Real-time image can be photographed and video recorded
- Software is included: image browsing, image parameter editing, infrared image analysis, batch report generation, video editing, etc.
- WIFI real-time sharing, one-click connection to mobile device

STANDARD DELIVERY

Main unit	1 pc
64G SD card	1 pc
Lithium-ion battery	2 pcs
Desktop charger	1 pc
Power adapter	1 pc
Software	1 pc

SPECIFICATION

Imaging and optics	detector type	unrefrigerated vanadium oxide/7.5μm~14μm
	infrared resolution	256×192@12μm
	super resolution	upgrade to 512×384
	thermal sensitivity/NETD	<45mK
	infrared frame rate	30Hz/9Hz
	focal length	10.5mm
	field of view	25°×19°
	spatial resolution (IFOV)	1.7mrad
	minimum object distance	0.1m
	distance to spot size (D:S)	588:1
	focusing mode	manual/automatic/continuous autofocus
	digital zoom	1.1X~8X
	shot recognition	auto
	laser ranging	indication/ranging: 0.1m~40m
Measurement and analysis	measurement range	support auto-switching: -40°C~150°C, 0°C~650°C
	measurement accuracy	±2°C or ±2%, whichever is greater
	analyzed target	spot×5, line×5, area×5
	tracking/alarm	full screen maximum, minimum and average temperature tracking; the maxium, minimum and average temperature tracking of analyzed target; full screen temperature threshold alarm (image, voice and flash)
	temperature measuring parameter	emissivity, reflected temperature, target distance, humidity, atmospheric transmittance, optical transmittance, dew point
	other	isothermals, smart stroke, intelligently calculate the area

Image display	display screen	4.3", 800×480 pixel touch screen LCD
	digital camera	5MP
	image mode	IR, VIS, MIF, PIP
	image adjustment	level span mode: automatic, semi-automatic, manual
	color palettes	white hot, iron red, arctic, rainbow 2, hot iron, rainbow 1, fulgurite, medical, tint, black hot, blue hot, sepia, green hot, ice and fire, amber, customized
Function	recording function	photo and video (infrared & visible light)
	cloud service	available
	other	customized physical button, intelligent diagnosis, OTA update
Storage and transmission	storage	local storage (64GB) and external 64GB SD
	image storage	JPG with temperature information
	video storage	MP4 (without temperature information), can be used to record audio synchronously; irgd (with temperature information), up to 30Hz for temperature analysis
	external interface	TYPE-C, SD card slot
	WIFI	can be connected to the mobile terminal for image and real-time video transmission
	bluetooth	bluetooth 5.0, support image transmission (only for Android)
Power system	battery type	lithium-ion rechargeable battery, working time≥5 hours
	charging mode	TYPE-C charging; PC/portable charger; capable of charging while using
	charging time	90% of full charge in 2.5 hours
Environmental parameter	operation temperature	-20°C~50°C
	storage temperature	-40°C~60°C
	protection	IP54, 2-meter drop test
	certification	CE, FCC, ROHS
Physical parameter	hardware	illuminator, microphone, speaker, electronic compass, GPS
	dimension	292×125×125mm
	weight	1.15kg

INFRARED THERMOMETER (BASIC TYPE)
CODE 0222-C520

- Unit: °C, °F
- Automatic data hold
- MAX/MIN/AVG/DIF mode
- High and low alarm
- Adjustable emissivity
- Low battery display
- Over range indicator
- Automatic power off

SPECIFICATION

Temperature range	-50°C~500°C/-58°F~932°F
Temperature accuracy	±3.0°C (at -50°C~0°C), ±2.0°C or ±2% (at 0°C~500°C) ±5.4°F (at -58°F~32°F), ±4.0°F or ±2% (at 32°F~932°F)
Temperature resolution	0.1°C/0.2°F
Distance to spot size (D:S)	12:1
Emissivity	0.10~1.00 (adjustable)
Repeatability	±0.5°C or ±0.5%; ±1.0°F or ±0.5%
Response time	≤500ms (95% of reading)
Spectral response	8μm~14μm
Diode laser	output<1mW, wavelength 630nm~670nm, class 2 laser product
Power supply	2×AAA batteries, working time≥6h
Automatic power off	about in 15 seconds
Operation environment	temperature: 0°C~50°C/32°F~122°F; humidity: <90%RH (non-condensing)
Storage environment	temperature: -20°C~60°C/-4°F~140°F; humidity: <90%RH (non-condensing)
Dimension	148×85×46mm
Weight	160g

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs

◆INSIZE◆

INFRARED THERMOMETER (STANDARD TYPE)
CODE 0213-A500

- Unit: °C, °F
- Dual laser sighting
- Negativity display
- Automatic power off
- Automatic data hold
- Over range indicator
- Max/Min display

SPECIFICATION

Temperature range	-20°C~380°C/-4°F~716°F
Temperature accuracy	±2.5°C (at -20°C~20°C), ±2% or ±2.0°C (at 20°C~380°C) ±4.5°F (at -4°F~68°F), ±2% or ±3.6°F (at 68°F~716°F)
Temperature resolution	0.1°C/0.1°F
Distance to spot size (D:S)	12:1
Emissivity	0.95 (fixed)
Repeatability	±1°C/1.8°F
Response time	150ms
Spectral response	8~14µm
Diode laser	output<1mW, wavelength 630~670nm class 2 laser product
Operation temperature	0°C~50°C/32°F~122°F
Operation humidity	10%RH~90%RH
Storage temperature	-10°C~60°C/14°F~140°F
Storage humidity	<80%RH
Power supply	1×9V battery
Dimension	137×73×38mm
Weight	135g

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

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INFRARED THERMOMETER (ADVANCED TYPE)
CODE 0215-A900

- Ambient temperature, dew point temperature and humidity detection
- Unit: °C, °F
- Circular laser sighting
- Display backlight
- Automatic power off
- Automatic data hold
- Adjustable emissivity
- High and low alarm

temperature and humidity sensor

laser aperture

infrared sensor

SPECIFICATION

Infrared sensor	temperature range	-30°C~800°C/-22°F~1472°F
	temperature resolution	0.1°C 0.1°F (-22°F~1000°F), other range 1°F
	temperature accuracy	±3.0°C (at -30°C~20°C) ±(1% of reading +1)°C (at 20°C~450°C) ±(2% of reading)°C (at 450°C~800°C)
	distance to spot size (D:S)	20:1
	emissivity	adjustable 0.10~1.00
	response time	<150ms
	spectral response	8~14µm
	diode laser	output<1mW, wavelength 630~670nm class 2 laser product
Temperature and humidity sensor	ambient temperature range	0°C~50°C/32°F~122°F
	dew point temperature range	0°C~50°C/32°F~122°F
	temperature resolution	0.1°C/0.1°F
	temperature accuracy	±1.0°C/±1.8°F
	humidity range	0%RH~100%RH
	humidity resolution	0.1%RH
	humidity accuracy	±5%RH (20%RH~80%RH), other range ±7%RH
Automatic power off		about in 10 seconds
Power supply		1×9V battery
Dimension		170×45×85mm
Weight		196g

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

750
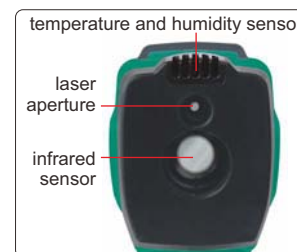
DUAL-CAVITY BLACKBODY RADIATION SOURCE
CODE PIC-D155

VIDEO

high temperature cavity
diameter: Ø50mm

low temperature
cavity diameter:
Ø65mm

power switch of low
temperature cavity

power switch of high
temperature cavity

0.1 level temperature control meter

SPECIFICATION

Temperature range	low range: -15°C~100°C; high range: 50°C~500°C
Resolution	0.01°C (at -15°C~100°C), 0.1°C (at 100°C~500°C)
Stability	≤(0.1°C or 0.1%|t|, whichever is greater)/10min*
Uniformity	≤(0.15°C or 0.15%|t|, whichever is greater)*
Emissivity	>0.995
Cavity size	low range: Ø65mm; high range: Ø50mm
Cavity depth	low range: 110mm; high range: 160mm
Cool down time	30 minutes from ambient to -15°C
Heat up time	60 minutes from ambient to 500°C
Power supply	220V/50Hz
Power	850W
Dimension	380×295×320mm
Weight	17.1kg

*|t| is the absolute temperature value of blackbody radiation source

- Large target sizes of 50mm and 65mm for calibrating of infrared thermometers and infrared thermal imagers
- Contain two independent blackbody cavities
- The emissivity of blackbody radiation is better than 0.995
- 0.1 level temperature control meter with high accuracy
- Multi-point temperature correction function

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STANDARD DELIVERY

Main unit	1 pc

INFRARED AND PENETRATION THERMOMETER
CODE 0321-IT42

IP65
WATERPROOF

- Can measure the surface and inside temperature of objects
- Low battery display
- Display backlight
- High and low alarm
- Automatic data hold (infrared system)
- Automatic power off (infrared system)
- Unit: °C/°F

SPECIFICATION

Infrared system	temperature range	-15°C~280°C/5°F~536°F
	temperature resolution	0.1°C/0.1°F
	temperature accuracy	±3.0°C (at -15°C~20°C), other range ±(1%+1.0)°C ±5.4°F (at 5°F~68°F), other range ±(1%+1.8)°F
	distance to spot size (D:S)	4:1
	emissivity	0.95 (fixed)
	spectral response	8~14μm
Penetration system	temperature range	-40°C~200°C/-40°F~392°F
	temperature resolution	0.1°C/0.1°F
	temperature accuracy	±2.0°C (at -40°C~0°C), other range ±(1%+1.0)°C ±3.6°F (at -40°F~32°F), other range ±(1%+1.8)°F
Repeatability		<1.0°C
Measurement response time		<500ms
Power supply		2×1.5V AAA batteries
Dimension		140×39×24mm
Weight		140g

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	2 pcs

DATA LOGGER FOR TEMPERATURE AND HUMIDITY (BUILT-IN SENSOR)
CODE 0311-3070

IP54
WATERPROOF

DATA OUTPUT

VIDEO

- Signal acquisition, display, storage, analysis function
- Low power consumption
- Built-in high-precision temperature and humidity sensor
- Software is included

stand (included)

humidity sensor

communication port

temperature sensor

power port
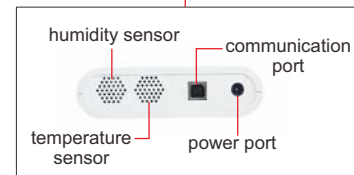
SPECIFICATION

Temperature range	-30°C~70°C/-22°F~158°F
Temperature accuracy	±0.3°C (at 23°C±2°C), other range ±0.5°C ±0.6°F (at 73.4°F±3.6°F), other range ±0.9°F
Temperature resolution	0.1°C/0.2°F
Humidity range	0%RH~100%RH
Humidity accuracy	±3%RH (at 10%RH~85%RH), other range ±5%RH
Humidity resolution	0.1%RH
Memory capacity	10918
Alarm	function: alarm when over high or low limit method: display+buzz+backlight
Sampling interval	2s, 5s, 10s, 30s, 60s, 255s (adjustable)
Logging interval	2 seconds~24 hours (adjustable)
Start with delay	1~120 seconds (adjustable)
Start mode	start immediately/delay start/timing start
End mode	Full/FIFO/preset/timing end
Timing start/end	random start/end with format YYMMDD HHMMSS
Interface	USB
Time battery	CR2032
Power supply	3.6V lithium battery (ER14505) or 5~24V DC
Dimension	123×117×33mm
Weight	260g

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STANDARD DELIVERY

Main unit	1 pc
Software and USB cable	1 pc
Power adapter	1 pc
Time battery	1 pc
Lithium battery	1 pc

software (included), record and download data to PC software via USB cable
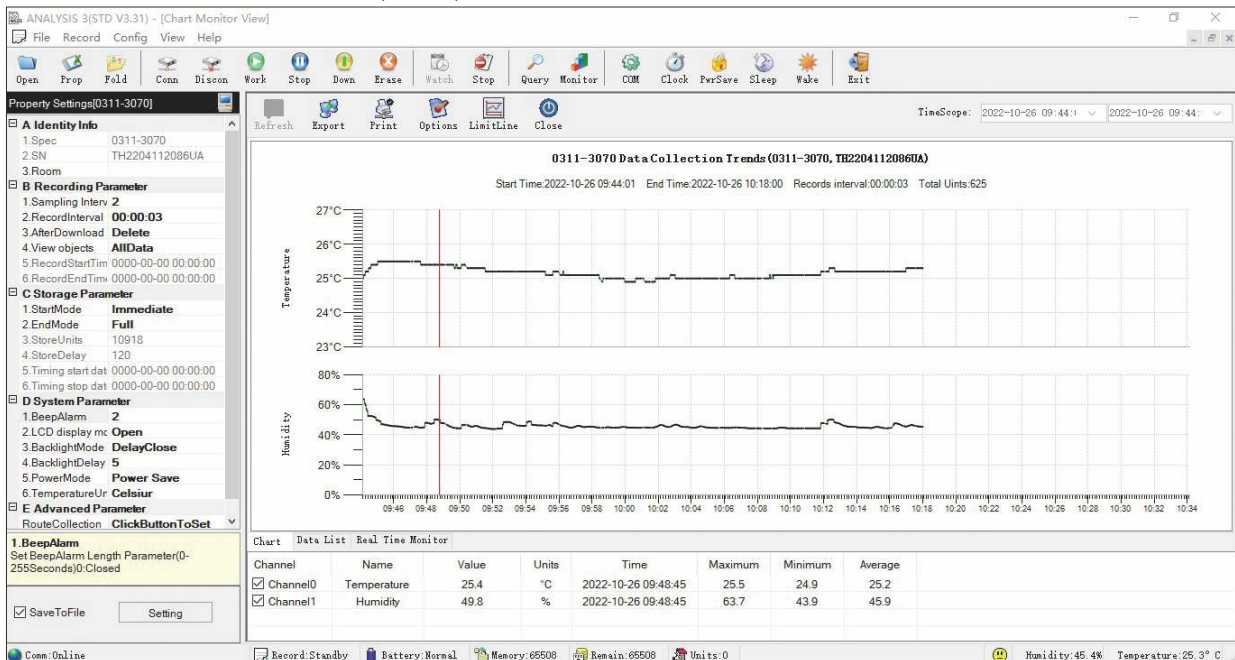
IP50
DUSTPROOF

DIGITAL THERMOHYGROMETER (PROFESSIONAL TYPE)
CODE 9362-TH27

- Measure humidity, ambient temperature and dew-point temperature
- Max/Min/Average mode
- Alarm function
- IP50 protection grade

SPECIFICATION

Sensor model	NTC thermistor/humidity capacitance/digital sensor
Temperature range	-20°C~70°C/-4°F~158°F
Temperature accuracy	±0.5°C/±0.9°F
Temperature resolution	0.1°C/0.2°F (minimum adjustable unit is 0.2°F in setting mode)
Humidity range	0~100%RH
Humidity accuracy	±5%RH
Humidity resolution	0.1%RH
Sampling interval	5s
Battery	1.5V AAA
Dimension	95×107×18mm
Weight	105g

STANDARD DELIVERY

Main unit	1 pc
Battery (AAA)	1 pc

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THERMOHYGROMETER (EXTERNAL SENSOR)
CODE 0313-TH48

- External sensor, 3m cable
- Time/temperature/humidity display
- Temperature and humidity upper and lower limit alarm function
- Unit: °C/°F
- Low battery alarm

SPECIFICATION

Temperature range	-40°C~80°C/-40°F~176°F
Temperature accuracy	±0.5°C (at -20°C~60°C), ±1.0°C (at 60°C~80°C), ±2°C (at -40°C~-20°C), ±2°F(at -20°F~176°F), ±3°F (at -40°F~-20°F)
Temperature resolution	0.1°C (at -20°C~80°C), other range 1°C 0.1°F (at -20°F~100°F), other range 1°F
Humidity range	0%RH~99.9%RH
Humidity accuracy	±5%RH (at 10°C~60°C), other range ±7% ±5%RH (at 50°F~140°F), other range ±7%
Humidity resolution	0.1%RH
Sensitivity attenuation value	temperature: <0.1°C/year (<0.2°F/year) humidity: <1%RH/year
Sampling interval	5 seconds
Power supply	built-in rechargeable lithium battery (USB 5V charging) working time at least one month
Dimension	88×88×21mm
Weight	174g

STANDARD DELIVERY

Main unit	1 pc
USB charging cable	1 pc

K-TYPE THERMOCOUPLE THERMOMETER (ECONOMIC TYPE)
CODE 0320-K230

- Contact K-type thermocouple
- Unit: °C/°F
- Data hold function
- Low battery display
- Display backlight

SPECIFICATION

Temperature range	-50°C~200°C/-58°F~392°F
Temperature accuracy	±2.0°C/±3.6°F
Temperature resolution	0.1°C (at -50°C~199.9°C), 1°C (at -50°C~200°C) 0.1°F (at -58°F~199.9°F), 1°F (at -58°F~392°F)
Sampling rate	2.5 times/sec
Power supply	3×3V CR2450 batteries (for 300 hours working)
Operation voltage	6.8V~10V
Dimension	149×76×34mm
Weight	220g

STANDARD DELIVERY

Main unit	1 pc
Thermocouple (K-type)	1 pc
CR2450 battery	3 pcs

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THERMOHYGROMETER
CODE 0310-H26

App measurement   App record

- Measure humidity, ambient temperature, dew point temperature and wet dulb temperature
- Min/Max, data hold function
- Bluetooth 4.0
- Auto power off
- Supplied with APP for Apple and Android
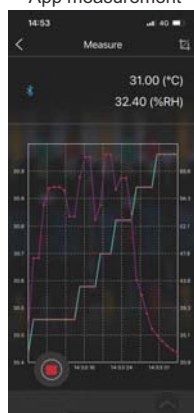
SPECIFICATION

Function	Measuring range	Resolution	Accuracy
Ambient temperature	0°C~50°C 32°F~122°F	0.1°C/0.1°F	±1.0°C/±1.8°F
Wet dulb temperature	0°C~50°C 32°F~122°F		
Dew point temperature	0°C~50°C 32°F~122°F		
Humidity	0%RH~80%RH	0.1%RH	±5.0%RH
Auto power off	30 minutes		
Data port	Bluetooth 4.0		
Power supply	9V battery		
Dimension	204×54×36mm		
Weight	172g		

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

- Environment comfort display: COMFORT, WET, DRY
- Time/temperature/humidity display
- Highest/lowest temperature and humidity memory function
- Alarm clock function
- Unit: °C, °F

THERMOHYGROMETER (ECONOMIC TYPE)
CODE 0312-TH50

SPECIFICATION

Temperature range	0°C~50°C/32°F~122°F
Temperature accuracy	±1.0°C (at 5°C~40°C), other range ±1.5°C ±1.8°F (at 41°F~104°F), other range ±2.7°F
Temperature resolution	0.1°C/0.1°F
Humidity range	10%RH~90%RH
Humidity accuracy	±5%RH (at 40%RH~80%RH), other range ±8%RH
Humidity resolution	1%RH
Power supply	1×AAA 1.5V battery
Dimension	108×60×15mm
Weight	74g

STANDARD DELIVERY

Main unit	1 pc
Battery	1 pc

LARGE SCREEN TEMPERATURES AND HUMIDITY METERS

light

integrated sensor

ring

buzzer

buzzer switch (no buzzer switch for **0314-H323A/0314-H323B**)

setting button

0314-H533A

0314-H533B

separated sensor

- High definition LED large screen display: temperature, humidity, time
- Exceeding limit alarm: buzzer alarm, digit/light flash alarm
- Installation method: wall mounted or ring type

STANDARD DELIVERY

Main unit (including sensor)	1 pc

SPECIFICATION

Code	0314-H323A	0314-H323B	0314-H423A	0314-H423B	0314-H533A	0314-H533B	0314-H643A	0314-H643B
Dimension	300×200×36mm		400×265×36mm		500×300×36mm		600×400×36mm	
Sensor type	integrated	separated	integrated	separated	integrated	separated	integrated	separated
Power consumption	5W		5W		9W		10W	
Weight	1.3kg		2kg		3kg		4kg	
Sensor	integrated: plastic probe case (not dustproof, not waterproof) separated: metal probe case (dustproof, waterproof), cable length 1m (can be customized, within 20m)							
Temperature range	integrated: -20°C~60°C; separated: -40°C~85°C							
Temperature resolution	integrated: 0.1°C (at 0°C~60°C), other range 1°C separated: 0.1°C (at 0°C~85°C), other range 1°C							
Temperature accuracy	integrated: ±0.5°C (at 0°C~60°C), other range ±2°C separated: ±0.5°C (at 0°C~85°C), other range ±2°C							
Humidity range	5%RH~95%RH							
Humidity resolution	0.1%RH							
Humidity accuracy	±3%RH (@25°C)							
Long-term stability	temperature≤0.1°C/year; humidity≤1%RH/year							
Repeatability	temperature≤0.1°C; humidity≤0.5%RH							
Sampling speed	1s							
Response time	3 minutes to reach 90% of the final value							
Time accuracy	±15s/month (@25°C±2°C)							
Power supply	AC100~240V (50/60Hz)							
Power cable length	1m (can be customized, 2m/5m)							
Operation condition	temperature: -20°C~60°C; humidity: 5%~95% (non-condensing)							

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TEMPERATURE AND HUMIDITY DATA LOGGER
CODE THL-A01

12 wiring terminals, 24 test channels

7" industrial grade touch-screen display

WIFI antenna

power switch
power supply (12V/2A)
RS232 interface

sensor wiring mode

backup interface

USB interface (insert a USB flash disk to export data)
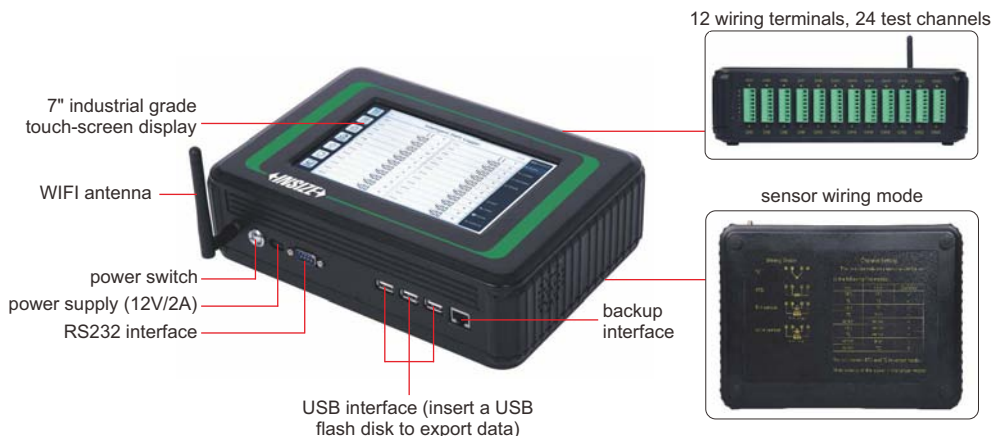
- Suitable for testing the temperature field, humidity field, uniformity and volatility of various temperature (humidity) environment experimental equipment, industrial furnaces and verification furnaces
- 24 channels can be independently configured as thermocouple, platinum resistance, humidity sensor and analog input mode
- Each channel provides an accuracy advantage over 0.15°C thermocouple for cold-end compensation
- Support voltage, resistance, temperature, humidity and other data formats display, storage and output
- Support Wireless Network, RS232 communication mode: Wireless Network can remotely browse real-time data and download stored data, RS232 communication protocol based on RSCII code for encoding and reading data
- Built-in 8G large capacity memory, data can be exported via USB port

SPECIFICATION OF TEMPERATURE AND HUMIDITY DATA LOGGER

	Type (electrical signal)	Range	Resolution	Accuracy
Temperature	PT100	-200 ~950°C	0.001°C	0.05°C at 0°C
				0.08°C at 300°C
				0.12°C at 600°C
	K	-200°C~1300°C	0.01°C	0.5°C
	J	-200°C~900°C		0.5°C
	T	-200°C~400°C		0.5°C
	E	-200°C~1000°C		0.5°C
	N	-200°C~1300°C		0.5°C
	B	250°C~1820°C		0.8°C at 1000°C
	R	0°C~1768°C		0.7°C at 1000°C
	S	0°C~1768°C		0.9°C at 1000°C
Humidity	–	0%RH~100%RH	0.01%RH	0.1%RH
Voltage	range: 100mV	-10mV~100mV	0.1µV	0.01% of reading+0.008% of full scall
	range: 1V	0V~1V	0.1mV	0.01% of reading+0.008% of full scall
Resistance	range: 400Ω	0Ω~400Ω	0.1mΩ	0.004% of reading+0.004% of full scall
Sampling mode	24-channel synchronous sampling			
Sampling speed	0.2s/24 channel			
Memory	8G			
Output	USB, wireless, RS232			
Operation environment	temperature: 5°C~35°C			
	humidity: 0%RH~85%RH (non-condensing)			
Storage environment	temperature: 5°C~35°C			
	humidity: 0%RH~85%RH (non-condensing)			
Power supply	power adapter			
Dimension	250×180×75mm			
Weight	1.7kg			

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K-type thermocouple (**optional**)

humidity sensor (**optional**)

platinum resistance PT100
(**optional**)

STANDARD DELIVERY

Main unit	1 pc
Power adapter	1 pc
16G USB flash disk	1 pc

OPTIONAL ACCESSORY

Platinum resistance PT100	THL-A01-PT100
K-type thermocouple	THL-A01-K
Humidity sensor	THL-A01-H

SPECIFICATION OF SENSOR (OPTIONAL)

Product	Code	Range	Accuracy
platinum resistance PT100	**THL-A01-PT100**	-80~300°C	class A: ±(0.150°C+0.002·|t|)
K-type thermocouple	**THL-A01-K**	300~1000°C	class 1: ±1.5°C (at 300°C~375°C), ±0.004·t (at 375°C~1000°C)
humidity sensor	**THL-A01-H**	0%RH~100%RH	0.8%RH (at 23°C)

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PORTABLE MEDIUM TEMPERATURE DRY BLOCK CALIBRATOR
CODE DBC-M660

VIDEO

soaking block (included),
can be customized

soaking block

- Used for temperature calibration in industrial or laboratory
- Unit: °C, °F
- Language: English, Chinese
- Overheat protection
- Multi-point temperature correction function
- Automatic tuning of temperature control parameters
- Segmented PID control, one-button heating,
  full-automatic temperature control
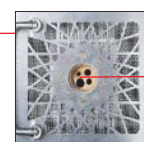
SPECIFICATION

Temperature range	50°C~660°C	
Horizontal temperature field	≤0.2°C	
Vertical temperature field	within 40mm from the bottom of the well	≤0.5°C (at 50°C~300°C)
		≤1.0°C (at 300°C~660°C)
Temperature fluctuation	±0.15°C	
Temperature resolution	0.01°C	
Control method	touch screen	
Soaking block	insertion aperture: Ø4.5mm, Ø6.5mm, Ø8mm, Ø10mm (can be customized)	
Well depth	170mm	
Power	600W	
Power supply	220V/50Hz	
Dimension	285×170×335mm	
Weight	9.4kg	

real-time display of curve
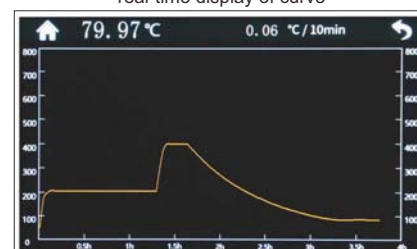
STANDARD DELIVERY

Main unit	1 pc
Soaking block	1 pc

Roundness/Cylindricity Testers
Page 759-760

Roundness Measuring Machines
Page 761-762

Precision Air Floating Rotary Tables
Page 763

Surface Profile Measuring Machines
Page 764-771

Roughness Measuring Machines
Page 772-773

Roughness Testers
Page 774-784

Surface Roughness Specimens
Page 784-785

Surface Roughness Reference Specimens
Page 786

VIDEO

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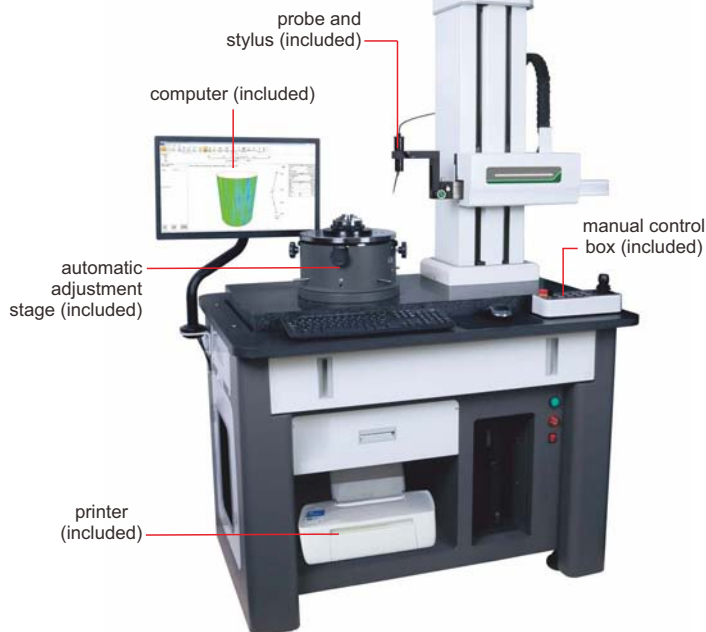
ROUNDNESS/CYLINDRICITY TESTER
CODE RCT-300

probe and stylus (included)

computer (included)

automatic adjustment stage (included)

manual control box (included)

printer (included)

- Automatic centering and leveling
- Evaluation items
  - Cylindricity module: cylindricity, radial full run, coaxiality, taper, radius
  - Roundness module: roundness, concentricity, radial single jump, wall thickness difference
  - Straightness module: straightness, parallelism, squareness
  - Single section flatness module: single section flatness, axial single hop, perpendicularity, parallelism
  - Multi-section flatness module: multi-section flatness, parallelism, axial full runout, perpendicularity
  - Commutator module: monolithic bounce, immediate bounce, interval difference
- Analytical ability
  - Cylindricity function: 2-10 sections, 3 evaluation methods
  - Reference benchmarks for cylindricity evaluation: LSCY, MZCY, MICY, MCCY, OSCY
  - Reference circle for roundness evaluation: LSC, MZC, MIC, MCC
  - Measurement band: 1-15upr, 1-50upr, 1-150upr, 1-250upr, 1-500upr, 15-100upr, 15-500upr, 2-15upr, 1-1500upr, custom
  - Notched measurement

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SPECIFICATION

Probe	measuring range	±500µm
	resolution	1:262144
	linear accuracy	0.1%
Ruby stylus	size	Ø2x10mm
	direction	two directions
	adjustable angle	±45°
X axis	travel	165mm
	excess range	25mm
	drive mode	motor
	moving speed	0.1~50mm/s
Z axis	measuring range	480mm
	straightness	0.3µm/100mm
	movement speed	0.1~10mm/s
	movement mode	motor
Detector	acquisition device	circular grating
	circumferential sampling points	14400
Granite stage		900×500mm
Rotary stage	rotation accuracy	(0.025+6H/10000)µm, H is the measuring height in mm
	rotation speed	6rpm, 8rpm, 10rpm
	max. measuring diameter	300mm
	max. workpiece diameter (rotation diameter)	450mm
Automatic adjustment stage	workbench diameter	280mm
	adjustment range of center	±3mm
	adjustment range of level	±1°
	weight capacity	30kg
Precision chuck	external grip diameter	Ø1~Ø81mm
	internal grip diameter	Ø31~Ø70mm
Air filter	pressure range	0~0.8MPa
	oil mist removal accuracy	0.01µm
	export oil mist concentration	0.5mg/m³
Dimension (LxWxH)		1680×862×1685mm
Power supply		220±10%V, 50Hz
Power		500W
Weight		350kg

To be continued

air filter (included)

standard block (included)

column adjusting rod (included)

precision chuck (included)

STANDARD DELIVERY

Main unit	1 pc
Probe (with ruby stylus)	1 pc each
Standard block	1 pc
Column adjusting rod	1 set
Precision chuck	1 pc
Automatic adjustment stage	1 pc
Roundness cylindricity acquisition and analysis system	1 set
Air filter	1 set
Computer	1 pc
Printer	1 pc
Installation tools	1 set
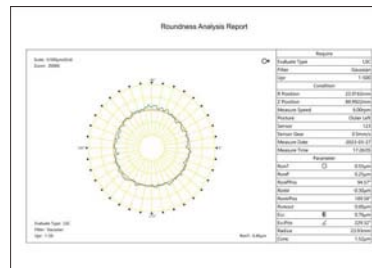
roundness analysis

cylindricity analysis

OPTIONAL ACCESSORY

Probes	see below details
Precision chucks	see below details
Dryer	**ISC-DRY**
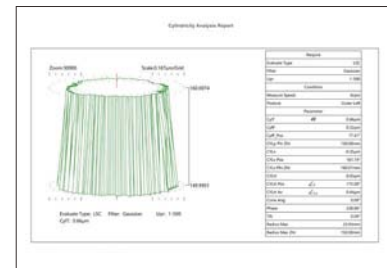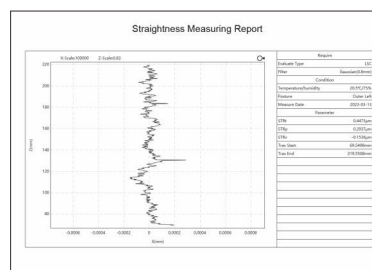
straightness analysis

planeness analysis

SPECIFICATION OF PROBES

Code	Diameter (ØD)	Remark
RCT-RA260-T1	2mm	included
RCT-RA260-T2	0.5mm	**optional**
RCT-RA260-T3	1mm	**optional**
RCT-RA260-T4	4mm	**optional**
RCT-RA260-T5	8mm	**optional**

SPECIFICATION OF PRECISION CHUCKS

(mm)

Code	A	B	C	D	E	F	G	Clamping range		Remark
								external grip dia.	internal grip dia.	
RCT-RA260-C1	M5x0.8	16	100	118	8	28	13	Ø0.8~63	Ø23~58	**optional**
RCT-RA260-C2	M6x1.0	20	116	143	10.5	37	15	Ø1~81	Ø31~70	included
RCT-RA260-C3	M6x1.0	26	140	168	10	39	19	Ø1~100	Ø36~90	**optional**

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ROUNDNESS MEASURING MACHINE
CODE RCT-RA260

VIDEO

computer (included)

probe and stylus (included)

precision chuck (included)

adjustable 3D stage (included)

rotary stage (included)

printer (included)

air filter (included)

- Air-floating spindle
- Can measure roundness, coaxiality, concentricity, flatness, radial runout, axial runout, parallelism and perpendicularity
- Spectrum analysis, automatic gap/burr removal, waveform analysis
- 4 roundness evaluation methods: smallest area method, least square method, smallest circumscribed circle method, largest inscribed circle method
- Measuring filer: 1-15upr, 1-50upr, 1-150upr, 1-250upr, 1-500upr, 15-100upr, 15-500upr, 2-15upr
- Filter form: gauss (ISO standard)
- Software is included, for measurement, analysis, data output, etc.

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SPECIFICATION

Probe	**measuring range**	±300µm
	resolution	0.001µm
	linear accuracy	0.25%
Ruby stylus	**size**	Ø2x10mm
	direction	two directions
	adjustable angle	±45°
X axis	**travel**	165mm
	excess range	25mm
	drive mode	by hand
Z axis	**drive mode**	motor
	travel	320mm
	movement speed	0.5~10mm/s
Rotary stage	**rotation accuracy**	(0.025+6H/10000)µm for H≤20mm, H is the measuring height in mm
	rotation speed	6rpm
	max. measuring diameter	260mm
	max. workpiece diameter (rotation diameter)	400mm
Rotary axis	**radial rotation accuracy**	±0.0125µm
	axial runout accuracy	±0.05µm
Adjustable 3D stage	**diameter**	180mm
	adjustment range of center	±3mm
	adjustment range of level	±2°
	weight capacity	20kg
Granite stage		700×500mm
Precision chuck	**external grip diameter**	Ø1~Ø81mm
	internal grip diameter	Ø31~Ø70mm
Air filter	**pressure range**	0~0.8MPa
	oil mist removalaccuracy	0.01µm
	export oil mist concentration	0.5mg/m³
Dimension (LxWxH)		1300×795×1715mm
Power supply		220±10%V, 50Hz
Power		500W
Weight		320kg

To be continued
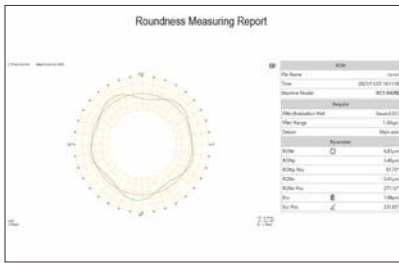
measurement
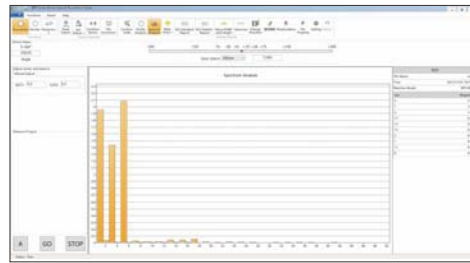
spectrum analysis

STANDARD DELIVERY

Main unit	1 pc
Probe (with ruby stylus)	1 pc each
Standard block	1 pc
Precision chuck	1 pc
Adjustable 3D stage	1 pc
Rotary stage	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Air filter	1 set
Installation tools	1 set

standard block (included)

OPTIONAL ACCESSORY

Probes	refer to details
Precision chucks	refer to details
Dryer	ISC-DRY

SPECIFICATION OF PROBES

Code	Diameter (ØD)	Remark
RCT-RA260-T1	2mm	included
RCT-RA260-T2	0.5mm	optional
RCT-RA260-T3	1mm	optional
RCT-RA260-T4	4mm	optional
RCT-RA260-T5	8mm	optional

SPECIFICATION OF PRECISION CHUCKS

(mm)

Code	A	B	C	D	E	F	G	Clamping range		Remark
								external grip dia.	internal grip dia.	
RCT-RA260-C1	M5x0.8	16	100	118	8	28	13	Ø0.8~63	Ø23~58	optional
RCT-RA260-C2	M6x1.0	20	116	143	10.5	37	15	Ø1~81	Ø31~70	included
RCT-RA260-C3	M6x1.0	26	140	168	10	39	19	Ø1~100	Ø36~90	optional

6875-320

18-M8↧16   4-Ø11 ⌴Ø18↧15   Unit: mm

ØD
W
L   H

air filter (included)

- Manual rotation
- Optional accessory:
  high precision digital indicators (code **2133** series),
  hydraulic universal magnetic stands (code **6274** series)

Code	Stage size ØD	Max. RPM	Air supply pressure	Max. load	Radial stiffness	Axial stiffness	Radial runout	Axial runout	L×W×H
6875-320	320mm	500rpm	5-6bar	100kg	250N/µm	500N/µm	<0.3µm	<0.3µm	272x272x161mm
6875-400	400mm	500rpm	5-6bar	100kg	250N/µm	500N/µm	<0.3µm	<0.3µm	272x272x161mm
6875-500	500mm	500rpm	5-6bar	100kg	250N/µm	500N/µm	<0.3µm	<0.3µm	272x272x191mm

Standard glass hemisphere (optional)

Code	Roundness
6875-BALL *	0.05µm

*To check the accuracy of rotary table

6875-BALL

application

Clamp for glass hemisphere (optional)

Code
6875-CLAMP

6875-CLAMP

SURFACE PROFILE MEASURING MACHINE
CODE SPM-1000

- Software is included, for surface profile measurement and data output
- Probe compensation
- Output as format txt, csv, etc.
- Large range design, the leverage ratio is 1:2.2, maintain the original accuracy of the sensor
- The overall structure of the Z-axis sensor does not have any elastic components, ensuring the measuring force is constant regardless the position of probe

standard probe (height 32mm, included)

computer (included)

stage (included)

printer (included)

calibration

VIDEO
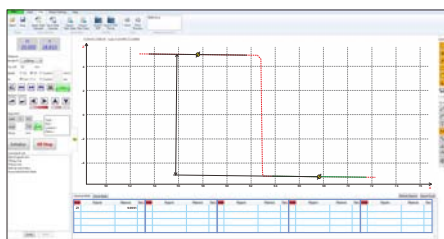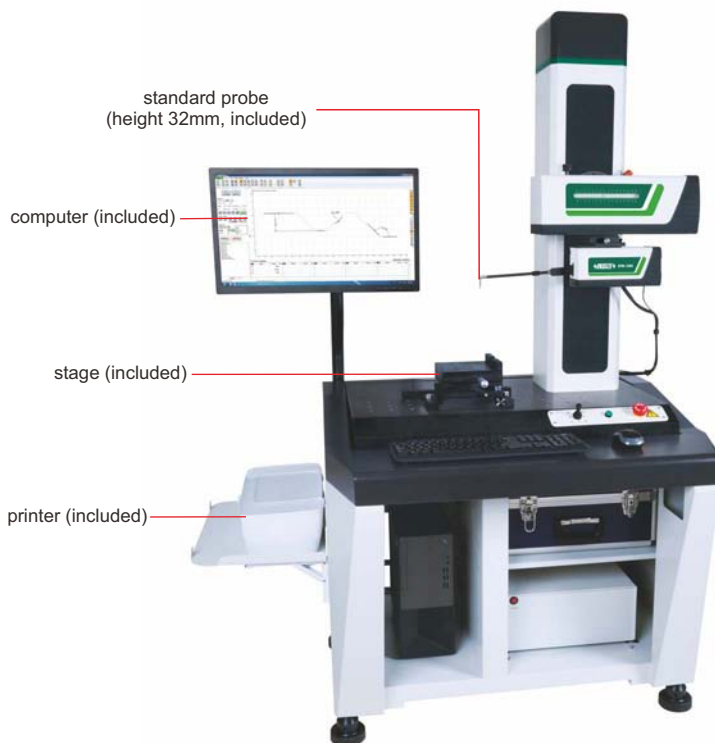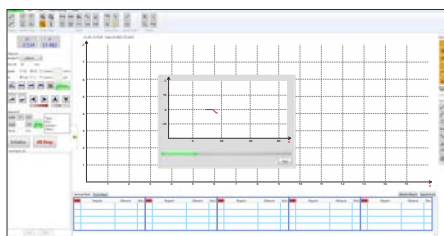
contour scanning
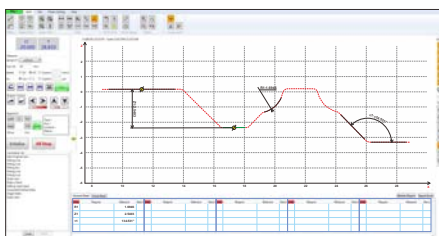
dimension measurement
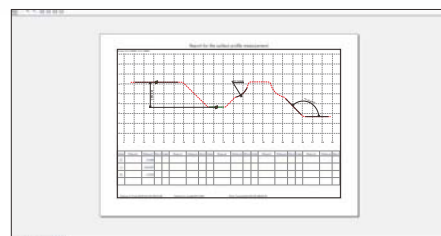
data output

SPECIFICATION

X axis measuring range	140mm
X axis resolution	0.2µm
X axis straightness	0.8µm/100mm
X axis moving speed	0.1~10mm/s
Z axis measuring range	±20mm
Z axis resolution	0.05µm
Z axis moving speed	0.5~10mm/s
Linear accuracy	±(1.5+|0.2H|)µm, H is measuring height in mm
Angular measuring accuracy	±2′
Arc measuring accuracy	±(2+R/8)µm, R is 2~10mm standard ball
Radius of probe tip	25µm
Moving direction	backward
Measuring force	6.86~9.8mN
Measuring unit	mm/inch
Traceable angle	72° (upward), 87° (downward)
Drive mode	motor
Travel of Z axis	430mm
Dimension (L×W×H)	1200×700×1780mm
Power supply	220±5%V, 50Hz
Weight	320kg
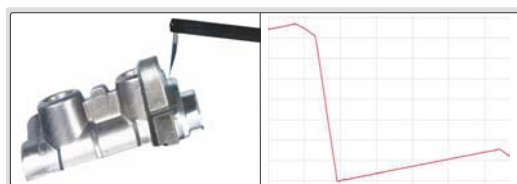
standard balls (included)

standard blocks (included)

standard shaft (included)

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STANDARD DELIVERY

Main unit	1 pc
Standard probe and arm	1 pc of each
Standard block	2 pcs
Standard ball	2 pcs
Standard shaft	1 pc
Stage	1 pc
Vise	1 pc
Measuring arm	1 pc
Computer	1 pc
Measurement software	1 pc
Printer	1 pc
Installation tools	1 set
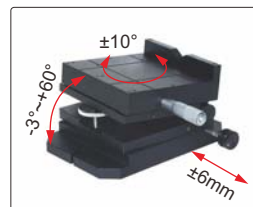
stage (included)
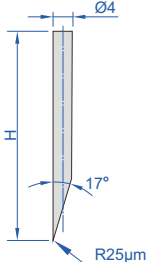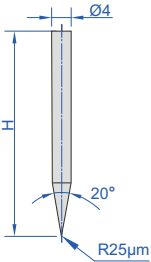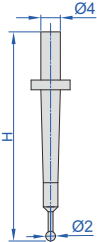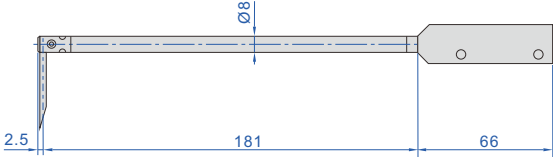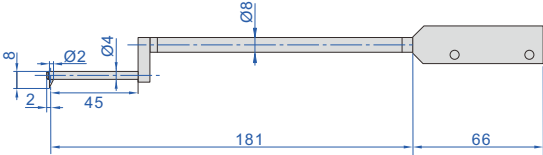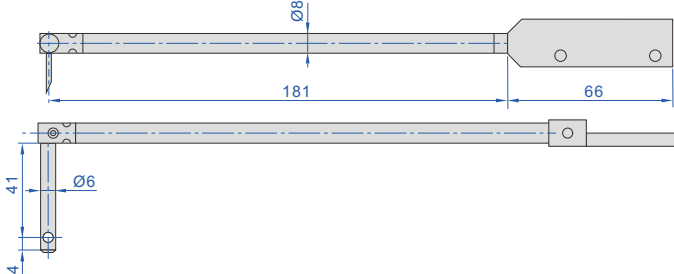
vise (included)

OPTIONAL ACCESSORY

Probe	refer to details

SPECIFICATION OF PROFILE PROBES

Unit: mm

chisel stylus	cone stylus	ball stylus
code **SPM-1000-T01** (H=32mm, included) code **SPM-1000-T02** (H=48mm, **optional**) code **SPM-1000-T03** (H=68mm, **optional**)	code **SPM-1000-Z01** (H=32mm, **optional**) code **SPM-1000-Z02** (H=48mm, **optional**) code **SPM-1000-Z03** (H=68mm, **optional**)	code **SPM-1000-R01** (H=32mm, **optional**) code **SPM-1000-R02** (H=48mm, **optional**) code **SPM-1000-R03** (H=68mm, **optional**)

standard arm, code SPM-1000-SP (included)**, stylus is not included**

probe for small holes, code SPM-1000-SBP (optional), stylus is included

measure the contour of holes with diameter>Ø8mm

transverse probe, code SPM-1000-LP (optional), stylus is included

measure the contour of holes in radial direction

ROUGHNESS AND PROFILE MEASURING MACHINE
CODE SPM-2000

VIDEO

CAD profile comparison

profile probe (included)

computer (included)

roughness probe arm and stylus (included)

stage (included)

printer (included)

- Software is included, for measurement and data output
- Profile sensor with low noise
- Wide range roughness sensor without skid
- Meet ISO1997, ISO1984, BS1988, DIN1990, ASME1995, JIS1982, JIS1994 standards
- 65 roughness parameters

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	140mm
X axis resolution	0.2μm
X axis traverse speed	0.05~15mm/s
Z axis measuring range	50mm
Z axis resolution	0.05μm
Z axis traverse speed	0.2~15mm/s
Straightness	0.5μm/100mm
Linear accuracy	±(0.8+|0.15H|)μm, H is measuring height in mm
Angular measuring accuracy	±1′
Arc measuring accuracy	±(1.5+R/12)μm, R is 2~10mm standard ball
Measuring unit	μm/μin
Measuring speed	0.05~1mm/s
Traceable angle	72° (upward), 88° (downward)
Travel of Z axis	430mm
Power supply	220±5%V, 50Hz
Dimension (L×W×H)	1400×850×1780mm
Weight	350kg

±15°
-10°~+60°
±6mm

stage (included)

ROUGHNESS MEASUREMENT SPECIFICATION

Roughness parameters	Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs , PΔq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr
Waviness parameters	Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr
Primary profile parameters	Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr
Measuring range	±420μm
Resolution	0.001μm
Linear accuracy	≤±(5nm+2.8%)
Probe radius/angle	5μm/90°
Cut off	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	μm
Measuring speed	0.05~0.25mm/s

vise (included)

standard shaft (included)

standard blocks (included)

standard balls (included)

STANDARD DELIVERY

Main unit	1 pc
Calibration block	1 set
Roughness probe arm	1 pc
Roughness stylus	1 pc
Profile probe arm	1 pc
Profile chisel stylus	1 pc
Stage	1 set
Vise	1 set
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

OPTIONAL ACCESSORY

Probe	refer to details

SPECIFICATION OF ROUGHNESS PROBE

standard probe, code SPM-2000-P (included)**, stylus is included**

Unit: mm

Ø1   Ø3   12   90°   R5µm   91

small roughness probe, code SPM-2000-P1 (optional), stylus is included

Unit: mm

Ø1   Ø3   12   60°   R2µm   91

SPECIFICATION OF PROFILE PROBES

Unit: mm

chisel stylus

Ø4   H   17°   R25µm

code **SPM-1000-T01** (H=32mm, included)
code **SPM-1000-T02** (H=48mm, **optional**)
code **SPM-1000-T03** (H=68mm, **optional**)

cone stylus

Ø4   H   20°   R25µm
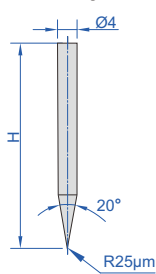
code **SPM-1000-Z01** (H=32mm, **optional**)
code **SPM-1000-Z02** (H=48mm, **optional**)
code **SPM-1000-Z03** (H=68mm, **optional**)

ball stylus
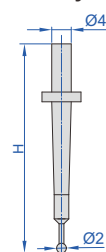
Ø4   H   Ø2

code **SPM-1000-R01** (H=32mm, **optional**)
code **SPM-1000-R02** (H=48mm, **optional**)
code **SPM-1000-R03** (H=68mm, **optional**)

standard arm, code SPM-1000-SP (included)**, stylus is not included**

Ø8   2.5   181   66

probe for small holes, code SPM-1000-SBP (optional), stylus is included

Ø8   Ø4   Ø2   8   2   45   181   66

measure the contour of holes with diameter>Ø8mm

transverse probe, code SPM-1000-LP (optional), stylus is included

Ø8   181   66   41   Ø6   4
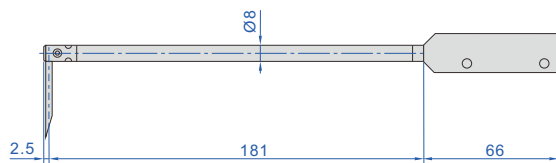
measure the contour of holes in radial direction

ROUGHNESS AND PROFILE MEASURING MACHINE (ONE PROBE TYPE)
CODE SPM-5000

- Roughness, waviness, and profile analysis can be achieved with just one measurement
- Can measure all roughness and waviness parameters
- Can be used for automatic measurement system
- Air flotation and shockproof system to reduce measurement deviation
- Free to edit measurement reports

column

probe (included)

computer (included)

manual control box (included)

stage (included)

printer (included)

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	100mm
X axis resolution	0.2µm
X axis traverse speed	0.05~50mm/s
X axis linear accuracy	±(0.8+|0.015L|)µm, L is measuring length in mm
Z axis measuring range	±10mm
Z axis resolution	0.01µm
Z axis traverse speed	0.2~50mm/s
Z axis linear accuracy	±(0.5+|0.08H|)µm, H is measuring height in mm
Angular measuring accuracy	±1′
Arc measuring accuracy	±(1+R/12)µm, R is 2~10mm standard ball
Straightness	0.3µm/100mm,
Measuring unit	mm/inch
Travel of Z axis	320mm
Power supply	220±5%V, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Weight	500kg

standard balls (included)

standard shaft (included)

±15°

~-10°~+60°

±6mm

stage (included)

vise (included)

ROUGHNESS MEASUREMENT SPECIFICATION

Roughness parameters	Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax, Rsmmin, Rsmsd, Rs, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa, Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rpc, Rmr
Waviness parameters	Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr, Wpsd, Wpmin
Original profile parameters	Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta
Motif parameters	Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw
Measuring range	±10mm
Resolution	0.01µm
Linear accuracy	≤±(4nm+2.5%)
Probe radius/angle	5µm/90°
Cut off	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	µm
Measuring speed	0.1~2mm/s

standard blocks (included)

STANDARD DELIVERY

Main unit (including workbench, controller, driver, sensor)	1 pc
Calibration block	1 set
Probe arm	1 pc
Stylus	1 pc
Air flotation and shockproof system	1 set
Stage	1 set
Vise	1 set
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

OPTIONAL ACCESSORY

Probe	refer to details

SPECIFICATION OF STANDARD PROBE   Unit: mm

standard stylus , code SPM-5000-R1 (included)

SPECIFICATION OF PROFILE PROBES   Unit: mm

31
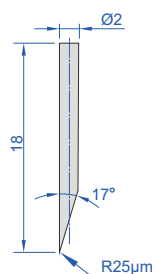
chisel stylus	standard arm, code SPM-5000-P1 (included), **stylus is not included**
code **SPM-5000-T01** (**optional**)	
cone stylus	profile arm, code SPM-5000-P2 (**optional**), **stylus is not included**
code **SPM-5000-Z01** (**optional**)	
ball stylus	profile arm, code SPM-5000-P3 (**optional**), **stylus is not included**
code **SPM-5000-S01** (ØS=1mm, **optional**) code **SPM-5000-S02** (ØS=2mm, **optional**)	
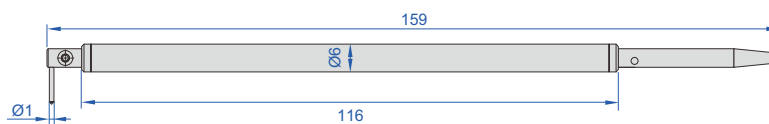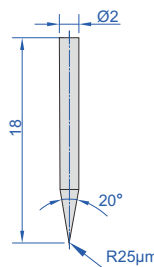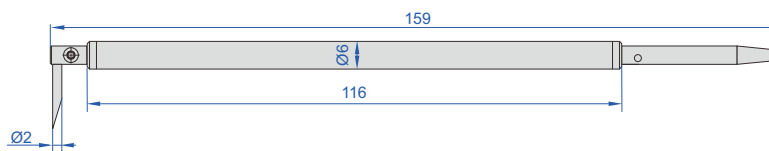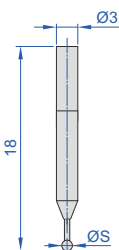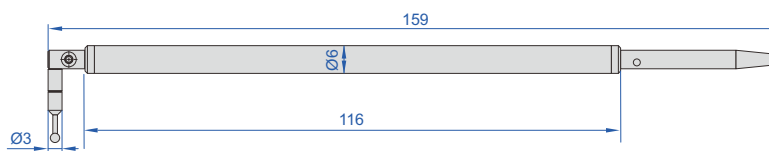
BIDIRECTIONAL ROUGHNESS AND PROFILE MEASURING MACHINE
CODE SPM-6000

VIDEO

- Intelligent tracking control system, real-time scanning measurement
- Bidirectional probe measurement
- Constant measuring force
- Can be used to measure absolute diameters
- Real time variable speed measurement, high-speed measurement can also ensure accuracy
- The trajectory of the probe is vertical, with more realistic Z-axis coordinate point and large range
- The profile data point cloud spacing is consisten, enabling high accuracy measurement

PROFILE MEASUREMENT SPECIFICATION

X axis measuring range	325mm
X axis resolution	0.01µm
X axis traverse speed	0.1~10mm/s
X axis straightness	0.5µm/100mm
X axis linear accuracy	±(1.5+|0.15L|)µm, L is measuring length in mm
X axis measuring speed	0.1~2mm/s
Z axis measuring range	325mm
Z axis resolution	0.05µm
Z axis traverse speed	0.1~10mm/s
Z axis straightness	0.5µm/100mm
Z axis linear accuracy	±(1.5+|0.15H|)µm, H is measuring height in mm
Z axis measuring speed	0.1~2mm/s
Angular measuring accuracy	±2′
Arc measuring accuracy	±(2+R/8)µm
Measuring unit	mm/inch
Traceable angle	72° (upward), 89° (downward)
Power supply	220±5%V, 50Hz
Dimension (L×W×H)	1700×820×1900mm
Weight	500kg

ROUGHNESS MEASUREMENT SPECIFICATION

Roughness parameters	Ra, Ramax, Ramin, Rasd, Rp, Rpmax, Rpmin, Rpsd, Rv, Rvmax, Rvmin, Rvsd, Rz, Rzmax, Rzmin, Rzsd, R3z, Rc, Rcmax, Rcmin, Rcsd, Rt, Rq, Rqmax, Rqmin, Rdsd, Rsk, Rskmax, Rskmin, Rsksd, Rku, Rkumax, Rkumin, Rkusd, Rsm, Rsmmax,Rsmmin, Rsmsd, Rs, RΔa, RΔamax, RΔamin, RΔasd, RΔq, RΔqmax, RΔqmin, RΔqsd, Rk, Rpk, Rvk, Mr1, Mr2, Rλa,Rλamax, Rλamin, Rλasd, Rλq, Rλqmax, Rλqmin, Rλqsd, Rδc, Rpc, Rmr
Waviness parameters	Wa, Wamax, Wamin, Wasd, Wsa, Wca, Wa08, Wc, Wcmax, Wcmin, Wcsd, Wt, Wz, Wzmax, Wzmin, Wzsd, Wp, Wpmax, Wv, Wvmax, Wvmin, Wvsd, Wq, Wqmax, Wqmin, Wqsd, Wsm, Wsmmax, Wsmmin, Wsmsd, Wsk, Wskmax, Wskmin, Wsksd, Wku, Wkumax, Wkumin, Wkusd, WΔq, WΔqmax, WΔqmin, WΔqsd, Wδc, Wmr, Wpsd, Wpmin
Original profile parameters	Pa, Pt, Pp, Pc, Pv, Pz, Pq, Psm, Psk, Pku, RzJ, Rpq, Rvq, Rmq, Pmr, PΔq, Avh, Hmax, Hmin, Area, Pδc, Tilta
Motif parameters	Ncrx, R, Rx, AR, Nr, Cpm, Sr, Sar, W, Wx, Aw, Wte, Nw, Sw, Saw
Resolution	0.01µm
Linear accuracy	≤±(20nm+5%)
Probe radius/angle	5µm/90°
Cut off	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	µm
Measuring speed	0.1~2mm/s

standard balls (included)

standard shaft (included)

STANDARD DELIVERY

Main unit (including workbench, controller, driver, sensor)	1 set
Calibration block	1 set
Profile arm	1 pc
Bidirectional profile stylus	1 pc
Roughness arm	1 pc
Unidirectional roughness stylus	1 pc
Stage	1 pc
Vise	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

vise (included)
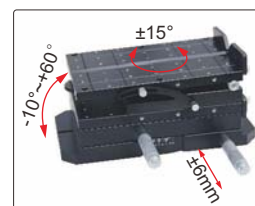
±15°
-10°~+60°
±6mm
stage (included)

standard blocks (included)

APPLICATION EXAMPLES
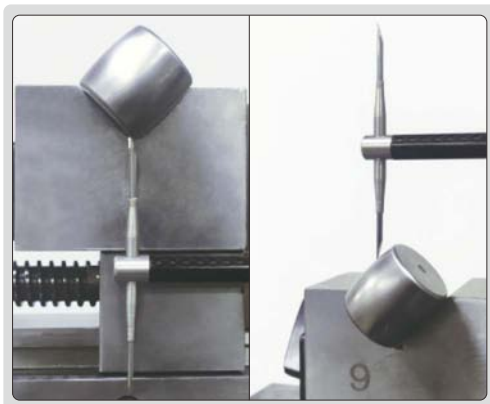
roller bearing
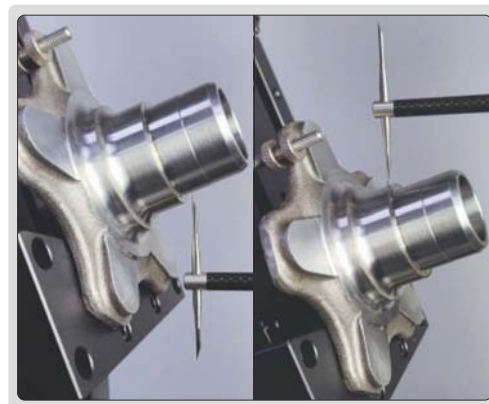
hub bearing
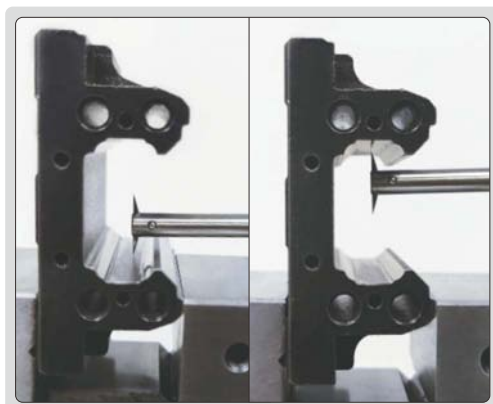
slider
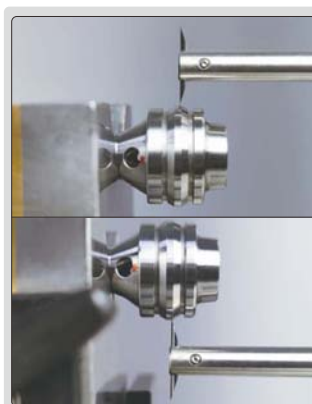
valve spool
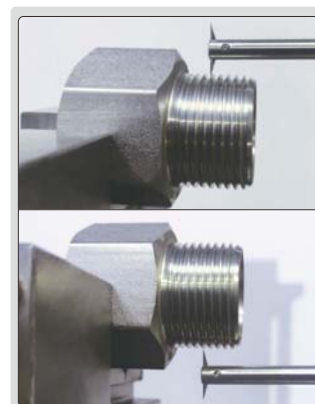
thread

SPECIFICATION OF PROBES

bidirectional spherical stylus
code **SPM-6000-R01 (optional)**

Ø2
18
Ø1

unidirectional roughness stylus
code **SPM-6000-S01** (included)

12
Ø1
90° R5µm

bidirectional roughness stylus
code **SPM-6000-S02 (optional)**

16
Ø1
90° R5µm
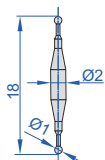
bidirectional chisel stylus
code **SPM-6000-T01** (H=16mm, included)
code **SPM-6000-T02** (H=24mm, **optional**)
code **SPM-6000-T03** (H=30mm, **optional**)

H
Ø2
17°
R25µm
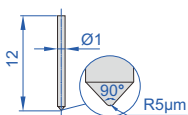
bidirectional cone stylus
code **SPM-6000-Z01** (H=12mm, Ød=2mm, **optional**)
code **SPM-6000-Z02** (H=24mm, Ød=2mm, **optional**)
code **SPM-6000-Z03** (H=10mm, Ød=1mm, **optional**)

H
Ød
20°
R25µm
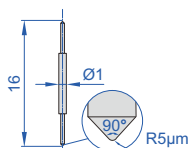
profile arm,
code **SPM-6000-ARM1**
(included)

Ø2   Ø8
158.5   142
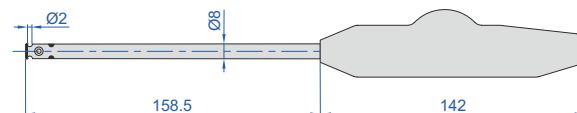
roughness arm,
code **SPM-6000-ARM2**
(included)

Ø1   Ø6   Ø8
43.5
158.5   142

31
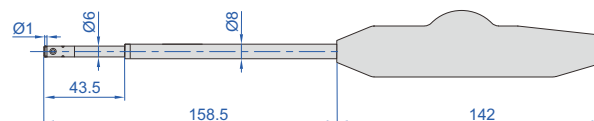
ROUGHNESS MEASURING MACHINE
CODE SPM-4000

VIDEO

- Skidless probe
- Hundreds of parameters can be evaluated, such as roughness profile, waviness profile, primary profile, etc.
- Software is included, for measurement and data output

STANDARD DELIVERY

Main unit	1 pc
Roughness probe (with stylus)	1 pc
Calibration block	1 pc
Stage	1 pc
Vise	1 pc
Computer	1 pc
Software	1 set
Printer	1 pc
Installation tools	1 set

roughness probe
with stylus (included)

computer
(included)

vise (included)

stage (included)

printer
(included)
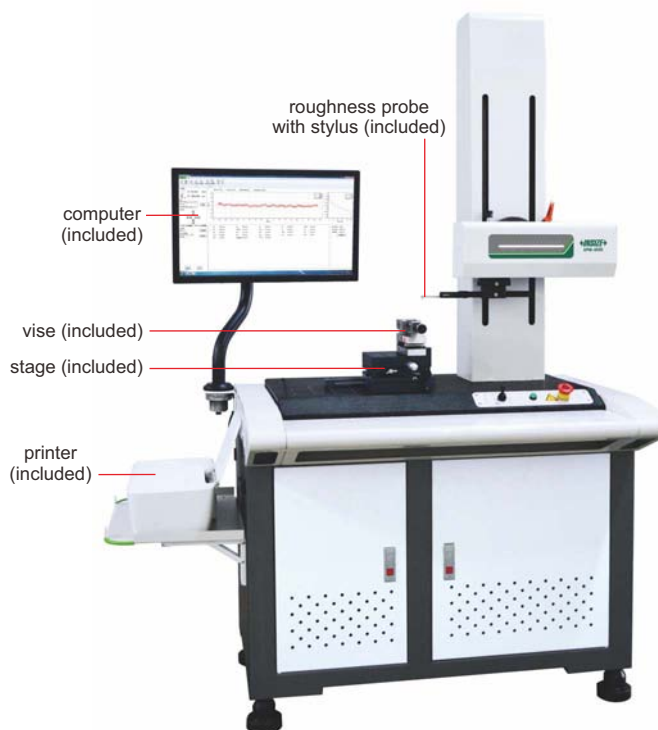
To be continued

Continued from previous page
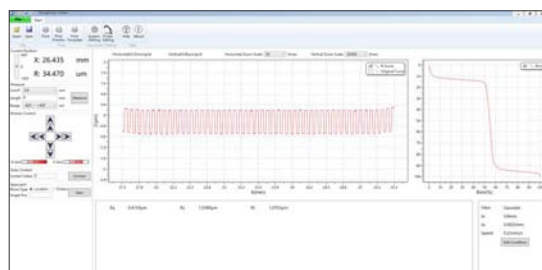
calibration
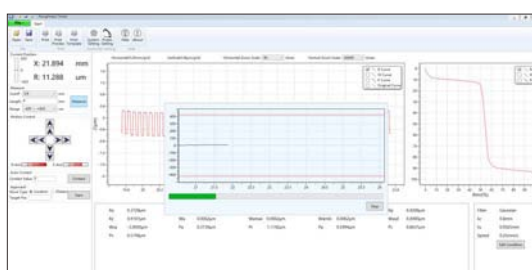
measurement

parameter measurement
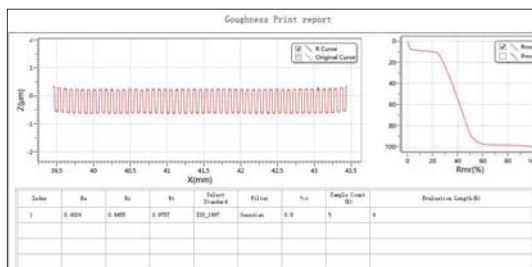
data output

SPECIFICATION

Roughness parameters	Ra, Rp, Rv, Rz, Rz (JIS), R3z, Rz (DIN), Rzj, Rmax, Rc, Rt, Rq, Rsk, Rku, Rsm, Rs, RΔq, Rk, Rpk, Rvk, Mr1, Mr2, Rmr
Waviness parameters	Wa, Wt, Wp, Wv, Wz, Wq, Wsm, Wsk, Wku, Wmr
Primary profile parameters	Pa, Pt, Pp, Pv, Pz, Pq, Psm, Psk, Pku, Pmr
X axis measuring range	100mm
X axis resolution	0.2µm
X axis straightness	0.5µm/100mm
X axis moving speed	0.1~10mm/s
Z axis measuring range	±420µm
Z axis resolution	0.001µm
Z axis linear accuracy	≤±(7nm+3.5%)
Z axis moving speed	0.5~10mm/s
Z axis repeatability	1δ≤2nm
Radius/angle of stylus	5µm/90°
Cut off length	0.025/0.08/0.25/0.8/2.5/8mm
Number of cut-offs	2~7
Measuring unit	µm
Drive mode	motor
Travel of Z axis	320mm
Dimension (LxWxH)	1200×700×1780mm
Power supply	220±5%V, 50Hz
Weight	320kg

calibration block (included)

vise (included)
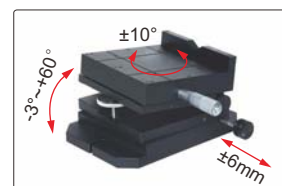
stage (included)

OPTIONAL ACCESSORY

Small roughness probe	refer to details

SPECIFICATION OF ROUGHNESS PROBE

Unit: mm

standard probe, code SPM-4000-P (included)

Ø1 Ø3 12 61 90° R5µm

small roughness probe, code SPM-4000-P1 (optional)

Ø1 Ø3 12 61 60° R2µm

ROUGHNESS TESTER (COMPACT TYPE)
CODE ISR-C200

INSIZE PLUS
MADE IN EUROPE

BLUETOOTH **DATA OUTPUT** **PROBE CAN BE CHANGED**

OLED display

bluetooth connection status indicator

probe

VIDEO

- The product is light, reliable and durable
- 13 roughness parameters
- Can be operated by mobile phones (only Android system) or computers
- Measurement results can be exported in Excel and PDF format
- Memory of 18000 measurements with only parameters or 30 measurements with graph
- Automatic power off

probe can be set at 90°,
for transverse measurement

probe cover (included)

adjustable stand (included)
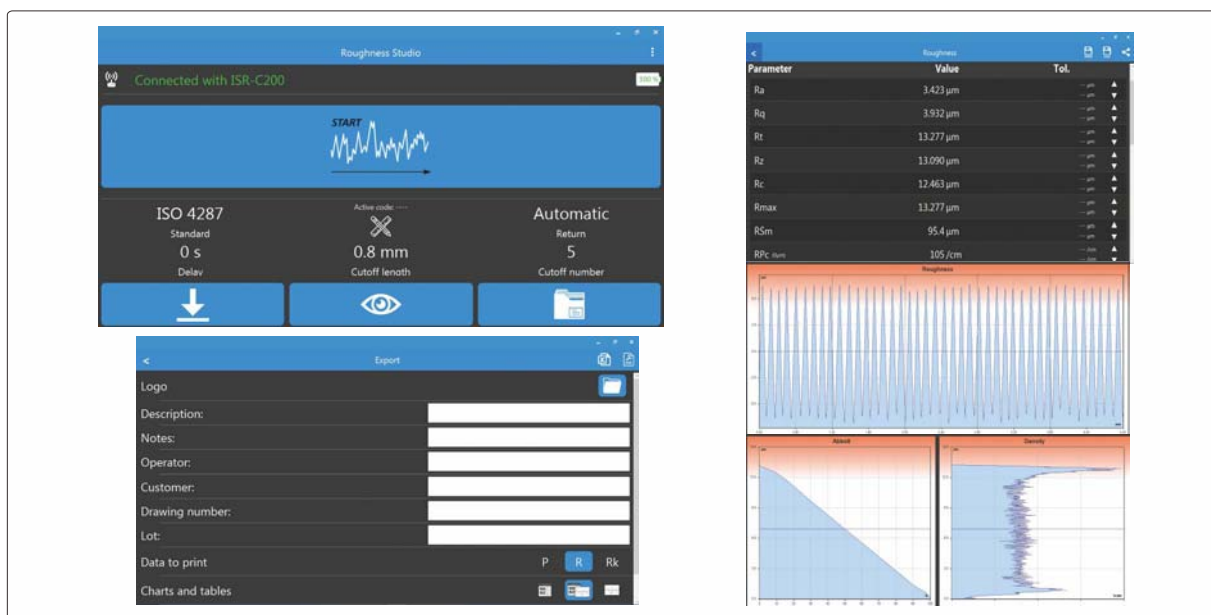
measuring software (included), connect to mobile phones via bluetooth (only Android system) to control roughness tester, or connect to computers via USB cable or bluetooth to control roughness tester, display roughness values and curve, results can be exported in Excel and PDF format

magnetic stand adapter (included)

Ø8mm

can be installed on magnetic stands

dial test indicator holder (**optional**)

Unit: mm

stem hole Ø8

A
9
9

50   A   A-A

can be installed on height gages
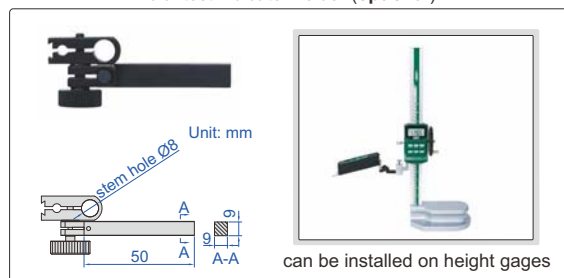
SPECIFICATION

Parameters		Ra, Rq, Rt, Rz, Rc, Rmax, RSm, Rpc, Pt, R, AR, Rx, Ppc
Range	X axis	17.5mm
	Z axis	250µm
Accuracy		±(5%+0.025)µm
Resolution (Ra)		0.001µm
Probe	type	inductive
	stylus radius/angle	2µm/90°
	stylus material	diamond
Measuring unit		µm/µin
Cut off		0.25/0.8/2.5mm
Number of cut-off		1~5
Moving speed		0.5mm/s, 1mm/s
Memory		18000 measurements with only parameters, 30 measurements with graph
Power		built-in rechargeable battery
Dimension (L×W×H)		160×34×33.5mm
Weight		200g

STANDARD DELIVERY

Main unit	1 pc
Standard probe	1 pc
Calibration block	1 pc
Adjustable stand	1 pc
Probe cover	1 pc
Magnetic stand adapter	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Dial test indicator holder	6293-6
Groove probe	ISR-C200-SB21
Small hole probe	ISR-C200-SB31
Deep groove probe	ISR-C200-SB121
Extension rod	ISR-C200-ER50
Extension rod	ISR-C200-ER100

SPECIFICATION OF PROBES

Unit: mm

standard probe (included)

16
5.5
4

transverse measurement

transverse measurement

measurement for plane surfaces, also transverse measurement for plane surfaces, cylinders and grooves

groove probe (optional), code ISR-C200-SB21

16
6
1.75

width>4

depth≤5

measure plane surfaces and grooves

small hole probe (optional), code ISR-C200-SB31

22
3.5
1.75

hole diameter>Ø4, depth<20

measure holes with diameter>Ø4mm and depth<20mm

deep groove probe (optional), code ISR-C200-SB121

16
21
4

depth<20

measure grooves with depth<20mm

extension rod (optional), code ISR-C200-ER50

50

for long holes

extension rod (optional), code ISR-C200-ER100

100

for long holes

ROUGHNESS TESTER
CODE ISR-C002

BLUETOOTH **DATA OUTPUT** **CAN BE OPERATED BY MOBILE PHONES OR COMPUTERS**

VIDEO

- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Support bluetooth printer
- 21 roughness parameters
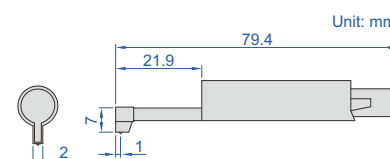- Display roughness value, profile and curve
- Memory of maximum 100 results
- Automatic power off

software flash disk (included)

31

screen display

Roughness
Ra= 1.586 um
Rz= 9.741 um
Rq= 1.990 um

measurement result

$: ±40.0um [0.00~0.80mm]

roughness profile

C(Rt)	Rmr	0 Rmr 100%
5%	0.9%	
10%	1.6%	
15%	2.5%	
20%	2.8%	
C(Rt)100%		
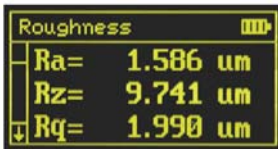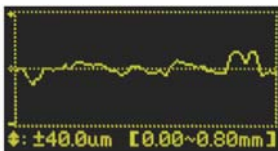
Rmr analysis

probe cover (included)

put the small workpieces directly under the probe for measurement

adjustable stand (included)

operate roughness tester by mobile phones

connect to mobile phones via bluetooth (only Android system), display roughness values, profile and curve

operate roughness tester by computers

connect to computers via USB cable (software is included), display roughness values, profile and curve

data can be sent to Excel by connecting to computer via bluetooth or SPC cable

via bluetooth

receiver (**optional**)

via SPC cable

SPC cable (**optional**)

receiver (**optional**)

bluetooth printer (**optional**)

To be continued

light duty test stand (**optional**)

the maximum workpiece
height is 220mm

heavy duty test stand (**optional**)

the maximum workpiece
height is 310mm

Unit: mm
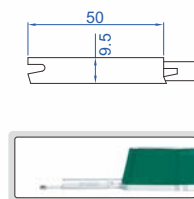
extension rod (optional), code ISR-C002-ER	transverse rod (optional), code ISR-C002-TR
50 / 9.5	
tiny hole probe (optional), code ISR-C002-SBP	**deep groove probe (optional), code ISR-C002-DGP**
1.6 11 1 diameter>Ø2	22 10 2.5 width>3 depth≤10
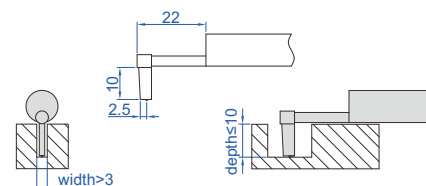
deep groove probe (optional), code ISR-C002-DGP1

21.5 44 15 13 1.2 width>3 depth<15
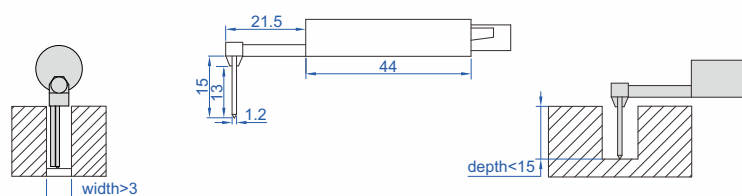
SPECIFICATION

Parameters	Ra, Rz, Rq, Rv, Rp, RS, R3z, R3y, Rt, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry (JIS), Rmax
Range	320µm (-160µm~160µm)
Accuracy	±10%
Resolution (Ra)	0.001µm
Probe type	inductive
stylus radius/angle	5µm/90°
stylus material	diamond
Measuring force	4mN
Measuring unit	µm/µin
Cut off	0.25/0.8/2.5mm
Number of cut-off	1 to 5
Moving speed	0.5mm/s, 1mm/s
Memory	100 measurement results
Output	bluetooth and USB
Power	built-in rechargeable battery
Dimension (L×W×H)	141×55×40mm
Weight	400g

STANDARD DELIVERY

Main unit	1 pc
Standard probe	1 pc
Calibration block and support	1 pc of each
Adjustable stand	1 pc
Probe cover	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Extension rod	ISR-C002-ER
Transverse rod	ISR-C002-TR
Tiny hole probe	ISR-C002-SBP
Deep groove probe	ISR-C002-DGP
Deep groove probe	ISR-C002-DGP1*
Light duty test stand	ISR-C002-STAND1
Heavy duty test stand	ISR-C002-STAND
Bluetooth printer	ISR-C002-PRINTER
Receiver	ISR-C300-RECEIVER
SPC cable	ISR-C300-SPC

*Need to be delivered with roughness tester **ISR-C002**

ROUGHNESS TESTER (SEPARABLE TYPE)
CODE ISR-C300

BLUETOOTH   **TOUCH SCREEN**   **CAN BE OPERATED BY COMPUTERS OR MOBILE PHONES**
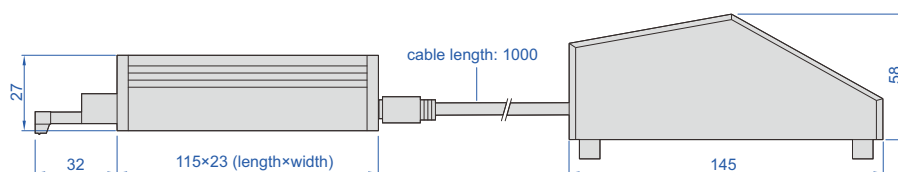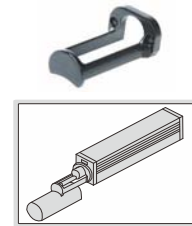
DATA OUTPUT

POPULAR MODEL

- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Support bluetooth printer
- 22 roughness parameters
- Meet ISO, DIN, ANSI, JIS standards
- Display roughness values, profile and curve
- Memory of maximum 100 data and waveform
- Built-in lithium battery, working time more than 50 hours
- Touch screen
- Automatic power off

31

Unit: mm

79.4
21.9
7
2
1

cable length: 1000
27
32
115×23 (length×width)
158
52

roughness tester screen display

measurement result

roughness profile

Rmr analysis

VIDEO
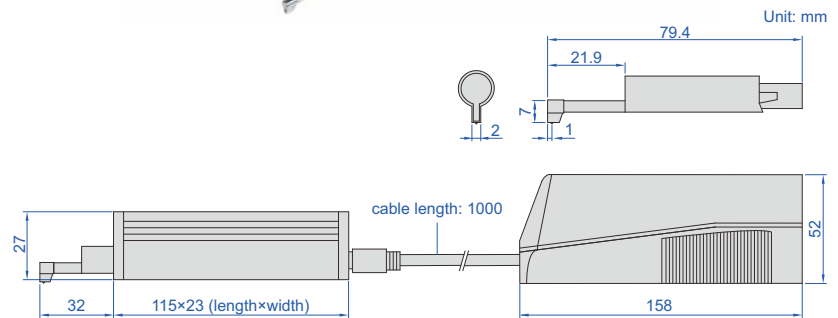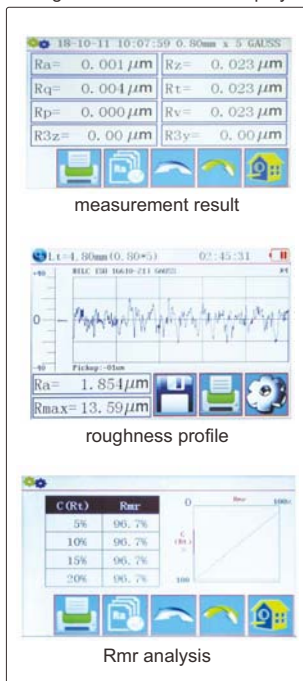
software flash disk (included)

probe and main unit can be combined together

operate roughness tester by mobile phones

connect to mobile phones via bluetooth (only Android system), display roughness values, profile and curve

operate roughness tester by computers

connect to computers via USB cable (software is included), display roughness values, profile and curve
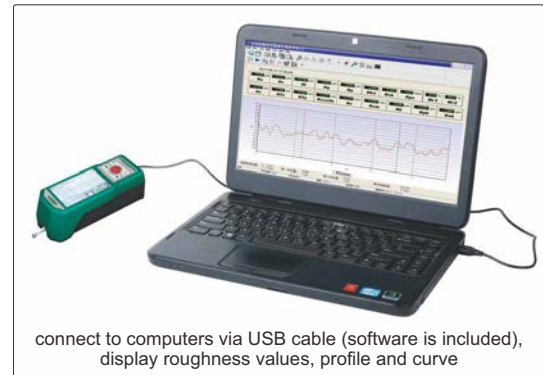
Continued from pevious page

data can be sent to Excel by connecting to computer via bluetooth or SPC cable

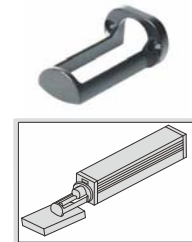| via bluetooth	via SPC cable
receiver (**optional**)	SPC cable (**optional**) receiver (**optional**)
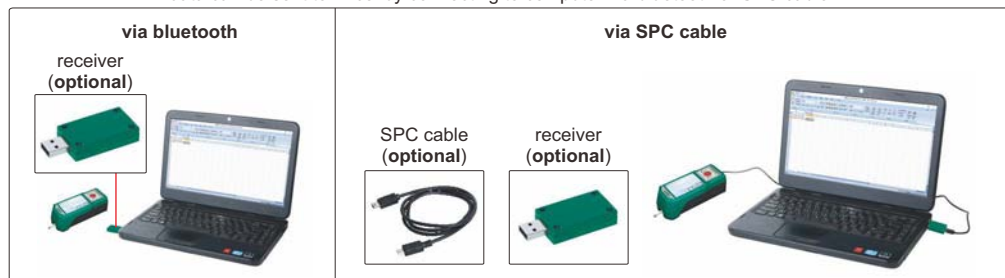
bluetooth printer (**optional**)

probe support (**optional**)
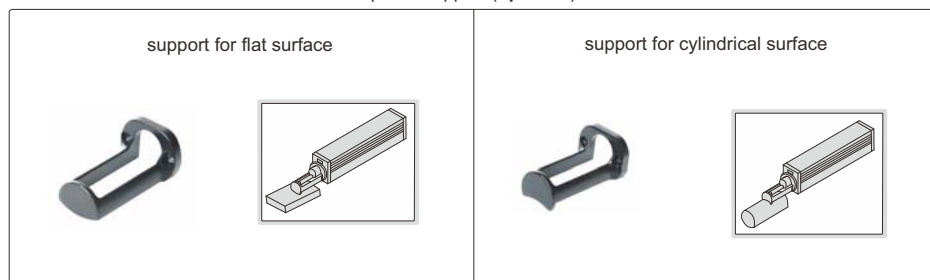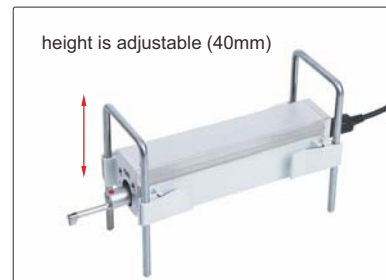
support for flat surface	support for cylindrical surface

adjustable stand (included)

height is adjustable (40mm)

magnetic stand adapter (included)

Ø8mm

can be installed on magnetic stands

height gage adapter (**optional**)

9×9mm

can be installed on height gages

NOTE: Please check whether the adapter can fit your height gages. When using **INSIZE** height gages, please use the dial test indicator holder of height gages

light duty test stand (**optional**)

the maximum workpiece height is 220mm

heavy duty test stand (**optional**)

the maximum workpiece height is 310mm

31

optional probes

Unit: mm

extension rod (optional), code ISR-C002-ER

50
9.5
probe   extension rod

small hole probe (optional), code ISR-C002-PROBE

4.2
23
diameter>Ø5

tiny hole probe (optional), code ISR-C002-SBP

1.6
11
1
diameter>Ø2

2µm/60° probe (optional), code ISR-C300-P2UM (When Ra<0.5µm, the accuracy with this probe is better)

79.4
21.9
7
1
60°
R0.002

deep groove probe (optional), code ISR-C002-DGP

22
10
2.5
width>3
depth≤10

deep groove probe (optional), code ISR-C002-DGP1

21.5
44
15
13
1.2
width>3
depth<15

SPECIFICATION

Parameters		Ra, Rz, Rq, Rv, Rp, Rs, R3z, R3y, Rt, Rc, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry, Rmax
Range	X axis	17.5mm
	Z axis	320µm (-160µm~160µm)
Accuracy		±10%
Resolution (Ra)		0.001µm
Probe	type	inductive
	stylus radius/angle	5µm/90°
	stylus material	diamond
Measuring force		4mN
Measuring unit		µm/µin
Cut off		0.25/0.8/2.5mm
Number of cut-offs		1~5
Moving speed		0.135mm/s, 0.5mm/s, 1mm/s
Memory		100 measurement results
Output		USB and bluetooth
Power		built-in rechargeable battery
Dimension (L×W×H)		158×64×52mm
Weight		400g

STANDARD DELIVERY

Main unit	1 pc
Standard probe	1 pc
Calibration block and support	1 pc of each
Connecting cable (long and short)	1 pc of each
Magnetic stand adapter	1 pc
Adjustable stand	1 pc
Touch pen	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Extension rod	ISR-C002-ER
Small hole probe	ISR-C002-PROBE
Tiny hole probe	ISR-C002-SBP
Deep groove probe	ISR-C002-DGP
Deep groove probe	ISR-C002-DGP1*
2µm/60° probe	ISR-C300-P2UM
Bluetooth printer	ISR-C002-PRINTER
Height gage adapter	ISR-C300-LB1
Receiver	ISR-C300-RECEIVER
SPC cable	ISR-C300-SPC
Support for flat surface	ISR-C300-COVER1
Support for cylindrical surface	ISR-C300-COVER2
Light duty test stand	ISR-C002-STAND1
Heavy duty test stand	ISR-C002-STAND

*Need to be delivered with roughness tester **ISR-C300**

31

| DATA OUTPUT | BLUETOOTH | TOUCH SCREEN | CAN BE OPERATED BY MOBILE PHONES OR COMPUTERS |

built-in printer

touch screen

adjustable stand

height is adjustable (40mm)

VIDEO

- Roughness tester can be operated by mobile phones (only Android system) or computers
- Data can be sent to Excel by connecting to computers via bluetooth or SPC cable
- Built-in printer can print measurement results and graphics
- 22 roughness parameters
- Meet ISO, DIN, ANSI, JIS standards
- Display roughness values, profile and curve
- Memory of maximum 100 data and waveform
- Built-in lithium battery, working time more than 50 hours
- Automatic power off

Unit: mm
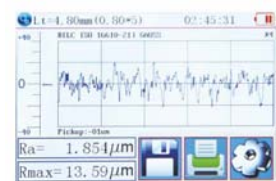
79.4
21.9
7
2
1

roughness tester screen display

measurement result

roughness profile

Rmr analysis

27
32
115×23 (length×width)
cable length: 1000
58
145
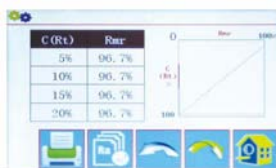
operate roughness tester by mobile phones

operate roughness tester by computers

connect to mobile phones via bluetooth
(only Android system),
display roughness values, profile and curve

connect to computers via USB cable (software is included),
display roughness values, profile and curve

To be continued

Continued from pevious page
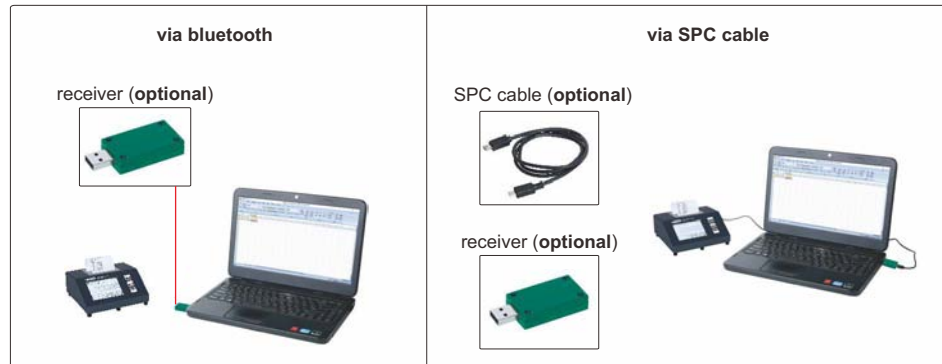
probe support (**optional**)

support for cylindrical surface

support for flat surface

data can be sent to Excel by connecting to computer via bluetooth or SPC cable

via bluetooth	via SPC cable
receiver (**optional**)	SPC cable (**optional**)
	receiver (**optional**)

height gage adapter (**optional**)

9×9mm

can be installed on height gages

NOTE: Please check whether the adapter can fit your height gages. When using **INSIZE** height gages, please use the dial test indicator holder of height gages

magnetic stand adapter (included)

Ø8mm

can be installed on magnetic stands

optional probes

Unit: mm

extension rod (optional), code ISR-C002-ER

50

9.5

probe   extension rod

small hole probe (optional), code ISR-C002-PROBE

23

4.2

diameter>Ø5

tiny hole probe (optional), code ISR-C002-SBP

11

1.6

1

diameter>Ø2

2μm/60° probe (optional), code ISR-C300-P2UM (When Ra<0.5μm, the accuracy with this probe is better)

79.4

21.9

7

1

60°

R0.002

deep groove probe (optional), code ISR-C002-DGP

22

10

2.5

width>3

depth≤10

deep groove probe (optional), code ISR-C002-DGP1

21.5

44

15

13

1.2

width>3

depth<15

To be continued

light duty test stand (**optional**)

the maximum workpiece height is 220mm

heavy duty test stand (**optional**)

the maximum workpiece height is 310mm

31

SPECIFICATION

Parameters		Ra, Rz, Rq, Rv, Rp, Rs, R3z, R3y, Rt, Rc, Rz (JIS), Rk, Rku, Rsm, Rpc, Rpk, Rvk, Rsk, Mr1, Mr2, Ry, Rmax
Range	X axis	17.5mm
	Z axis	640μm (-320μm~320μm)
Accuracy		±10%
Resolution (Ra)		0.001μm
Probe	type	inductive
	stylus radius/angle	5μm/90°
	stylus material	diamond
Measuring force		4mN
Measuring unit		μm/μin
Cut off		0.25/0.8/2.5mm
Number of cut-offs		1~5
Traverse speed		0.135mm/s, 0.5mm/s, 1mm/s
Memory		100 measurement results
Output		bluetooth and USB
Power		built-in rechargeable battery
Dimension (L×W×H)		155×145×58mm
Weight		1000g

STANDARD DELIVERY

Main unit	1 pc
Standard probe	1 pc
Calibration block and support	1 pc of each
Magnetic stand adapter	1 pc
Adjustable stand	1 pc
Touch pen	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Extension rod	ISR-C002-ER
Small hole probe	ISR-C002-PROBE
Tiny hole probe	ISR-C002-SBP
2μm/60° probe	ISR-C300-P2UM
Deep groove probe	ISR-C002-DGP
Deep groove probe	ISR-C002-DGP1 *
Height gage adapter	ISR-C300-LB1
Receiver	ISR-C300-RECEIVER
SPC cable	ISR-C300-SPC
Support for flat surface	ISR-C300-COVER1
Support for cylindrical surface	ISR-C300-COVER2
Light duty test stand	ISR-C002-STAND1
Heavy duty test stand	ISR-C002-STAND

*Need to be delivered with roughness tester **ISR-T120**

ROUGHNESS TESTER (BASIC TYPE)
CODE ISR-C003

- Unit: µm, µin
- Automatic power off

SPECIFICATION

Parameters	Ra, Rz, Rq, Rt
Range	Ra, Rq: 0.05~15µm Rz, Rt: 0.1~50µm
Accuracy	±10%
Resolution (Ra)	0.01µm
Probe — type	piezoelectric
Probe — stylus radius/angle	10µm/90°
Probe — stylus material	diamond
Measuring force	5mN
Measuring unit	µm/µin
Cut off	0.25/0.8/2.5mm
Evaluation length	1.25mm for cut off 0.25mm 4mm for cut off 0.8mm 5mm for cut off 2.5mm
Moving speed	0.75mm/s
Power	built-in rechargeable battery
Dimension (L×W×H)	106×70×24mm
Weight	200g

31

VIDEO

No. ISR-C003

STANDARD DELIVERY

Main unit	1 pc
Calibration block	1 pc
AC/DC adapter	1 pc

fixture for small shafts (**optional**)

application

calibration block (included)

OPTIONAL ACCESSORY

Fixture for small shafts	ISR-C003-FIXTURE

SURFACE ROUGHNESS SPECIMEN SET
CODE ISR-CS130-W

◆INSIZE◆ *PLUS*
MADE IN EUROPE

- For checking, identifying and specifying the roughness by symbol
- Rust-proof, made of pure Nickel

Machining method	Roughness (Ra) *	Roughness (Rz) *	Quantity
Flat lapping	0.05, 0.1, 0.2µm 2, 4, 8µin	0.55, 1, 1.6µm	3 pcs
Reaming	0.4, 0.8, 1.6µm 16, 32, 63µin	3, 6, 10µm	3 pcs
Plain grinding	0.05, 0.1, 0.2, 0.4, 0.8, 1.6µm 2, 4, 8, 16, 32, 63µin	0.55, 1, 1.6, 3, 6, 10µm	6 pcs
Horizontal milling	0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm 16, 32, 63, 125, 250, 500µin	2.5, 4, 8, 16, 32, 50µm	6 pcs
Vertical milling	0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm 16, 32, 63, 125, 250, 500µin	2.5, 4, 8, 16, 32, 50µm	6 pcs
Turning	0.4, 0.8, 1.6, 3.2, 6.3, 12.5µm 16, 32, 63, 125, 250, 500µin	2.5, 4, 8, 16, 32, 50µm	6 pcs

* The actual value is the value to be calibrated

SURFACE ROUGHNESS SPECIMENS

- For checking, identifying and specifying the roughness by symbol
- Rust-proof, made of pure Nickel

ISR-CS315

Code	Machining method		Roughness (Ra) *	Roughness (Rz) *	Quantity
ISR-CS315	surface grinding		0.025, 0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2μm	0.29, 0.55, 0.91, 1.74, 2.6, 4.65, 7.87, 15.6μm	8 pcs
ISR-CS316	cylindrical grinding		0.025, 0.05, 0.1, 0.2, 0.4, 0.8, 1.6, 3.2μm	0.3, 0.53, 0.88, 1.56, 2.64, 4.4, 7.71, 15.3μm	8 pcs
ISR-CS317	flat lapping	criss-cross	0.025, 0.05, 0.1, 0.2μm	0.4, 0.6, 0.74, 1.26μm	4 pcs
		parallel	0.025, 0.05, 0.1, 0.2μm	0.34, 0.56, 1.12, 1.5μm	4 pcs
ISR-CS318	cylindrical lapping		0.025, 0.05, 0.1, 0.2μm	0.46, 0.54, 0.63, 1.23μm	4 pcs
	superfinishing		0.025, 0.05, 0.1, 0.2μm	0.36, 0.7, 1, 1.4μm	4 pcs
ISR-CS319	face turning		0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	1.92, 3.2, 6.15, 12.5, 23.7, 48.7, 102, 185μm	8 pcs
ISR-CS320	cylindrical turning		0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	1.7, 3.2, 6.1, 12.2, 23.7, 47.5, 95, 190μm	8 pcs
ISR-CS321	end milling		0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	1.92, 3.82, 6.45, 12.2, 25.2, 49.8, 92.6, 191μm	8 pcs
ISR-CS322	reaming		0.4, 0.8, 1.6, 3.2μm	1.7, 3.2, 6.4, 12.8μm	4 pcs
	drilling		1.6, 3.2, 6.3, 12.5μm	7.5, 15.5, 31, 60μm	4 pcs
ISR-CS323	horizontal milling		0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	1.8, 3.68, 6.63, 12.8, 25.6, 53, 97.5, 197μm	8 pcs
ISR-CS325	shaping (planing)		0.8, 1.6, 3.2, 6.3, 12.5, 25, 50, 100μm	3.84, 6.7, 12.2, 25.2, 48.7, 99.9, 190, 361μm	8 pcs
ISR-CS326	linishing (belt sanding)		0.1, 0.2, 0.4, 0.8, 1.6, 3.2μm	0.9, 1.55, 3.37, 7.42, 18.5, 31μm	6 pcs
ISR-CS328	vertical grinding		0.2, 0.4, 0.8, 1.6, 3.2, 6.3μm	1.1, 3.5, 6.15, 8.78, 22.19, 40.8μm	6 pcs
ISR-CS329	grit blasting		3.2, 10.5, 18, 25μm	19.2, 63, 108, 150μm	4 pcs
	shot blasting		3.2, 8, 13, 18μm	19.2, 48, 78, 108μm	4 pcs
ISR-CS331	spark erosion (EDM)		0.4, 0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	2.5, 4.5, 7.2, 14.2, 24.7, 51.2, 105, 196μm	8 pcs
ISR-CS333	hand filing		0.4, 0.8, 1.6, 3.2, 6.3μm	3, 5.6, 12.4, 22.5, 61μm	5 pcs
ISR-CS334	castings		0.8, 1.6, 3.2, 6.3, 12.5, 25, 50μm	3.2, 8, 16, 32, 56, 112, 225μm	7 pcs
ISR-CS335	honing		0.05, 0.1, 0.2, 0.4, 0.8, 1.6μm	0.31, 0.56, 1, 2, 4.2, 9μm	6 pcs
ISR-CS336	polishing		0.0125, 0.025, 0.05, 0.1, 0.2μm	0.29, 0.35, 0.67, 0.72, 1.52μm	5 pcs

* The actual value is the value to be calibrated

SHOT AND GRIT BLASTING SURFACE ROUGHNESS SPECIMENS

- To check the roughness of steel surfaces which have been blast cleaned before painting
- Meets ISO 8503/1
- Rust-proof, made of pure Nickel
- Each piece contains 4 parts

ISR-CS017

Code	Machining method	Roughness (Ra) *	Roughness (Rz) *
ISR-CS017	shot blasting	3.2, 8, 13, 18μm	19.2, 48, 78, 108μm
ISR-CS018	grit blasting	3.2, 10.5, 18, 25μm	19.2, 63, 108, 150μm

* The actual value is the value to be calibrated

SURFACE ROUGHNESS REFERENCE SPECIMENS

INSIZE PLUS
MADE IN EUROPE

MEASURING ACCURACY OF ROUGHNESS TESTERS CAN BE IMPROVED,
IF THE CALIBRATION IS MADE ON A REFERENCE SPECIMEN WITH THE
ROUGHNESS VALUE CLOSE TO THE WORKPIECE TO BE MEASURED

ISR-RS529X

- To calibrate roughness testers
- Meets ISO 5436-1: 2000
- Rust proof, made of pure Nickel
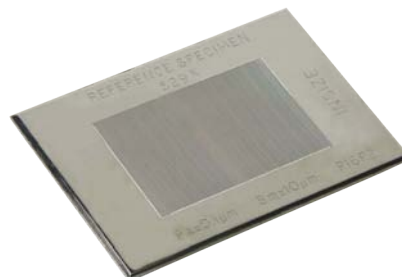
Code	Roughness (Ra)
ISR-RS525X	6.25µm *
ISR-RS526X	3.15µm *
ISR-RS527X	3.0µm *
ISR-RS528X	0.5µm *
ISR-RS529X	0.1µm *
ISR-RS530X	1.0µm *
ISR-RS531X	0.3µm *

*The actual value may be slightly different

SURFACE ROUGHNESS REFERENCE SPECIMENS

MEASURING ACCURACY OF ROUGHNESS TESTERS CAN BE IMPROVED,
IF THE CALIBRATION IS MADE ON A REFERENCE SPECIMEN WITH THE
ROUGHNESS VALUE CLOSE TO THE WORKPIECE TO BE MEASURED

ISR-LS603

- To calibrate roughness testers
- Made of glass

Code	Roughness (Ra)	Deviation *	Uniformity
ISR-LS601	0.1µm	-20% ~ +10%	3%
ISR-LS602	0.2µm	±10%	3%
ISR-LS603	0.4µm	±10%	3%
ISR-LS604	0.8µm	±10%	3%
ISR-LS605	1.6µm	±10%	3%
ISR-LS606	3.2µm	±10%	2%
ISR-LS607	6.4µm	±10%	2%

*Deviation between the actual value when supply and the nominal value

31

Rockwell Hardness Testers
Page 789-803

Micro-Vickers Hardness Testers
Page 804-809

Vickers Hardness Testers
Page 810-813

Brinell Hardness Testers
Page 814-815

Brinell Indentation Measuring Systems
Page 816

Brinell/Rockwell/Vickers Hardness Testers
Page 817

Brackets
Page 818

Leeb Hardness Testers
Page 819-828

Magnetic Rockwell Hardness Testers
Page 829-830

Magnetic Brinell/Rockwell Hardness Testers
Page 830-831

Portable Rockwell Hardness Testers
Page 831

Pin Brinell Hardness Testers
Page 832

Hydraulic Brinell Hardness Testers
Page 833

Chain Type Hydraulic Brinell
Hardness Testers
Page 833

Aluminum Hardness Testers
Page 834-835

Aluminum Hardness Testers
Page 835

Shore Durometers
Page 836-839

Fruit Hardness Testers
Page 839
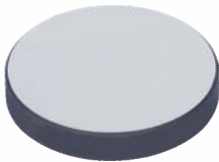
Hardness Test Blocks
Page 840-841

Concrete Strength Testers
Page 842

AUTOMATIC DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS
CODE HDT-CRS200

| BUILT-IN BLUETOOTH | AUTOMATIC OPERATION | FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS) | TOUCH SCREEN | HIGH ACCURACY | HIGH EFFICIENCY | INSPECTION CERTIFICATE |

VIDEO

8" touch screen

- test scale
- standard selection
- load dwell time
- converted scale
- hardness value correction
- setting
- program setting
- testing display chart

- indenter move up and down
- stage
- start
- emergency stop
- control up and down movement of the indenter
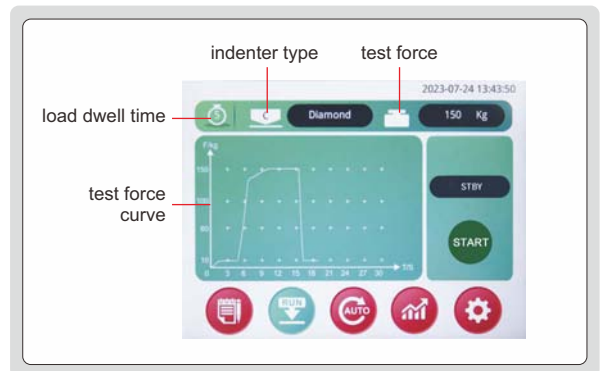
- One click operation can obtain measurement results, enabling large-scale hardness measurement of workpieces
- CNC system, close-loop electronic control system applies test force
- Touch screen operation and display
- Cantilevered structure, achieving full automation of hardness measurement
- The big flat stage is convenient for testing and can work in conjunction with robotic arms and automation equipment to step up online hardness testing and achieve completely unmanned testing
- Bluetooth, RS232 data transmission to computer, data management using hardness management software
- According to ISO 6508, ASTM E18, JIS Z2245

test interface

- indenter type
- test force
- load dwell time
- test force curve

test result display interface

- test scale
- converted scale
- standard selection
- indentation depth
- test result

chart interface
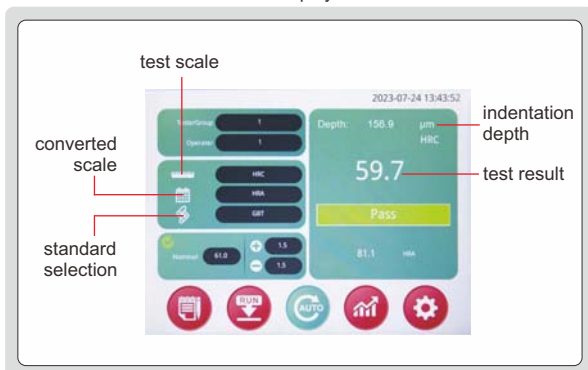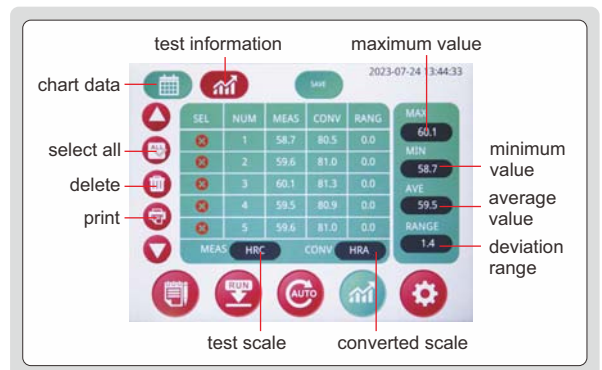
- test information
- maximum value
- chart data
- select all
- delete
- print
- minimum value
- average value
- deviation range
- test scale
- converted scale

Ø58mm flat anvil
(included)

V-type anvil
(included)

bluetooth printer
(included)

SPECIFICATION

Measurement range		Rockwell: 20~88HRA, 20~100HRB, 20~70HRC Superficial RockWell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T
Hardness scale	with indenter included	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP,HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Preliminary test force		Superficial Rockwell: 29.4N (3kgf) Rockwell: 98N (10kgf)
Test force		Superficial Rockwell: 147N (15kg), 294N (30kg),441N (45kg) Rockwell: 588N (60kg), 980N (100kg),1471N (150kg)
Test force accuracy		±1%
Operational mode		automatic
Load control		automatic (load/dwell/unload)
Resolution		0.05HR
Load dwell time		0~99 second
Max. workpiece height		300mm
Max. testing width		200mm (from the center of indenter to the wall of main body)
Output		bluetooth printer, RS232
Power supply		220V, 50/60HZ
Dimension		555×400×1250mm
Weight		130kg

STANDARD DELIVERY

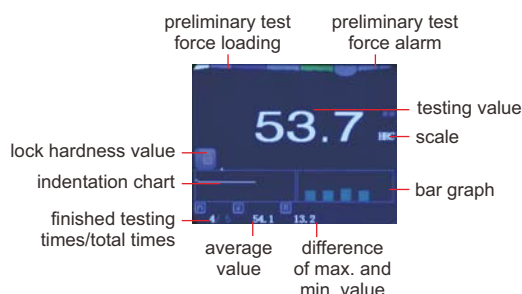|	
Main unit	1 pc
Diamond indenter	1 pc
Ø1.588mm carbide ball indenter	1 pc
Ø58mm flat anvil	1 pc
V-type anvil	1 pc
Hardness test block HRB20~30	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRBW80~100	1 pc
Hardness test block HR30N60~85	1 pc
Hardness test block HR30TW70~85	1 pc
Bluetooth printer	1 pc
Hardness analysis software	1 pc

OPTIONAL ACCESSORY

Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRB80~100	HDT-B-HRB
Hardness test block HR15N78~88	HDT-B-HR15N2
Hardness test block HR30N55~73	HDT-B-HR30N2
Hardness test block HR30T73~82	HDT-B-HR30T
Desk	HDT-DESK1

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DATA OUTPUT

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

MOTORIZED DIGITAL ROCKWELL HARDNESS TESTERS (DOLPHIN-NOSE TYPE)

INSPECTION CERTIFICATE

VIDEO

LCD touch screen

operator
workpiece radius
scale
dwell time
testing value

data and time
workpiece name
low and high limits
conversion
loading indicator

46.3   0.0

calibration   reset

indenter

stage

handlewheel

emergency stop

USB flash disk (included)
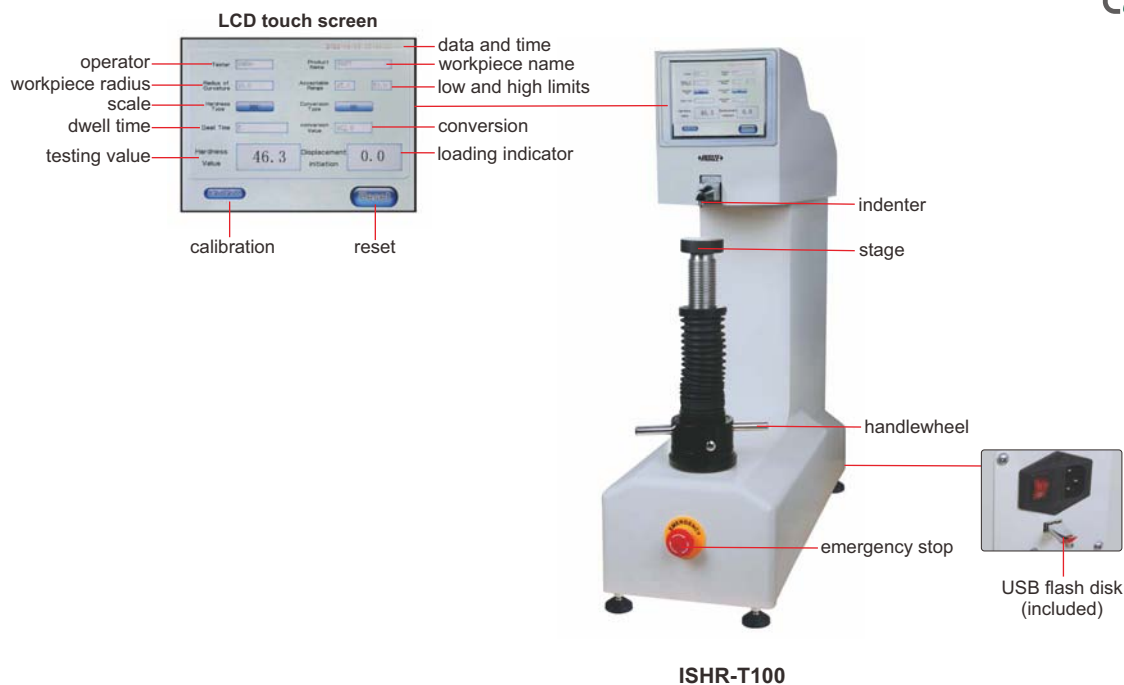
ISHR-T100

Ø63mm flat anvil (included)

Ø150mm flat anvil (included)

level (included)

touch pen (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

desk (**optional**)

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

- Dolphin-nose indenter to reach interior of pipe and groove
- Automatic testing after preliminary test force is loaded by hand
- LCD touch screen, easy operation
- Convert to other Rockwell scales, HV or HB automatically
- Tolerance testing
- Insert USB disk, save the testing results as Excel
- Self-compensation of the hardness value for curved workpiece
- Force loading by electric motor (without weights)
- The test force is selected automatically according to hardness scale
- According to ISO 6508

measure interior of pipes and grooves, the minimum internal diameter is 35mm

To be continued

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SPECIFICATION

Code		ISHR-T100	ISHR-T200	ISHR-T300
Type		Rockwell	Superficial Rockwell	Rockwell and Superficial Rockwell
Hardness scale	with standard indenter	HRA, HRB, HRC, HRD, HRF, HRG	HR15N, HR30N, HR45N, HR15T, HR30T, HR45T	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV	HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Preliminary test force		98N/10kgf for Rockwell	29.4N/3kgf for Superficial Rockwell	98N/10kgf for Rockwell 29.4N/3kgf for Superficial Rockwell
Test force		588N (60kg), 980N (100kg), 1471N (150kg)	147.1N (15kg), 294.2N (30kg), 441.3N (45kg)	147.1N (15kg), 294.2N (30kg), 441.3N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)
Stage elevation		manual		
Load control		automatic (load/dwell/unload)		
Load dwell time		0~99 second		
Resolution		0.1HR		
Output		USB		
Max. workpiece height		300mm		
Max. testing width		250mm (from the center of indenter to the wall of main body)		
Power supply		220V, 50/60Hz		
Dimension		720×260×840mm		
Weight		80kg		

STANDARD DELIVERY

Code	ISHR-T100	ISHR-T200	ISHR-T300
Main unit	1 pc	1 pc	1 pc
Ø63mm flat anvil	1 pc	1 pc	1 pc
Ø150mm flat anvil	1 pc	1 pc	1 pc
V-type anvil	1 pc	1 pc	1 pc
Diamond indenter	1 pc	1 pc	1 pc
Ø1.5875mm carbide ball indenter	1 pc	1 pc	1 pc
Hardness test block HRB88~95	1 pc	—	1 pc
Hardness test block HRC60~65	1 pc	—	1 pc
Hardness test block HRC20~30	1 pc	—	1 pc
Hardness test block 78~88HR15N	—	1 pc	1 pc
Hardness test block 55~73HR30N	—	1 pc	1 pc
Hardness test block 57~69HR30T	—	1 pc	1 pc
USB disk	1 pc	1 pc	1 pc
Level	1 pc	1 pc	1 pc
Touch pen	1 pc	1 pc	1 pc
Anti-dust cover	1 pc	1 pc	1 pc

OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 78~88HR15N	HDT-B-HR15N2
Hardness test block 55~73HR30N	HDT-B-HR30N2
Hardness test block 73~82HR30T	HDT-B-HR30T
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

MOTORIZED DIGITAL ROCKWELL/SUPERFICIAL ROCKWELL HARDNESS TESTERS

POPULAR MODEL

INSPECTION CERTIFICATE

FORCE LOADING BY ELECTRIC MOTOR (WITHOUT WEIGHTS)

TOUCH SCREEN

BUILT-IN BLUETOOTH

VIDEO

Ø58mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included)

bluetooth printer (included)

8" touch screen

test scales
standard selection
setting
testing display chart
load dwell time
converted scales
hardness value correction
program setting

indenter
stage
handlewheel

the back

power
RS232 interface
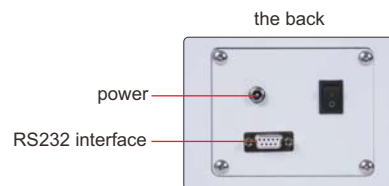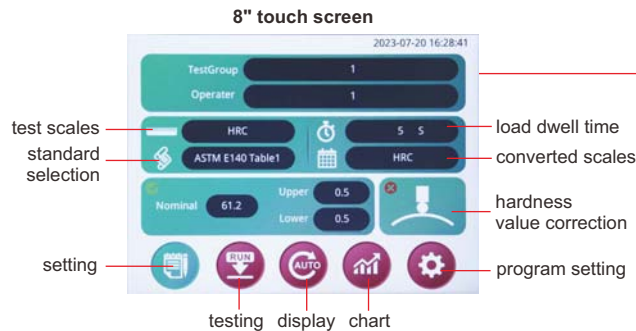
HDT-RT151

- Electronic loading test force, high accuracy of force value, and stable measurement value
- Touch screen operation and display, simple operation interface
- 15 types of Rockwell hardness scales can be tested
- Convertible to various hardness standards such as HB and HV
- 500 sets of storage
- With correction function, the hardness value can be corrected based on the size of the cylinders
- According to ISO 6508

test interface

indenter type test force
load dwell time
test force curve

test result display interface

test scale
converted scale
standard selection
test result
converted scale

chart interface

test information maximum value
chart data
select all
delete
print
test scale
converted scale
minimum value
average value
deviation range

To be continued

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SPECIFICATION

Code		HDT-RT151	HDT-RT152	HDT-RT153
Type		Rockwell	Superficial Rockwell	Rockwell and Superficial Rockwell
Measurement range		20~88HRA, 20~100HRB, 20~70HRC	70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T	Rockwell: 20~88HRA, 20~100HRB, 20~70HRC; Superficial RockWell: 70~91HR15N, 42~80HR30N, 42~70HR45N, 73~93HR15T, 43~82HR30T, 12~72HR45T
Hardness scale	with indenter included	HRA, HRB, HRC, HRD, HRF, HRG	HR15N, HR30N, HR45N, HR15T, HR30T, HR45T	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
	with optional indenter	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV	HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y	HRE, HRH, HRK, HRL, HRM, HRP, HRR, HRS, HRV, HR15W, HR30W, HR45W, HR15X, HR30X, HR45X, HR15Y, HR30Y, HR45Y
Preliminary test force		98N/10kgf for Rockwell	29.4N/3kgf for Superficial Rockwell	98N/10kgf for Rockwell 29.4N/3kgf for Superficial Rockwell
Test force		588N (60kg), 980N (100kg), 1471N (150kg)	147N (15kg), 294N (30kg), 441N (45kg)	147N (15kg), 294N (30kg), 441N (45kg), 588N (60kg), 980N (100kg), 1471N (150kg)
Stage elevation		manual		
Load control		automatic (load/dwell/unload)		
Load dwell time		2~60 second		
Resolution		0.1HR		
Max. workpiece height		230mm		
Max. testing width		170mm		
Power supply		100~240V, 50/60Hz		
Dimension		475×200×700mm		
Weight		70kg		

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STANDARD DELIVERY

Code	HDT-RT151	HDT-RT152	HDT-RT153
Main unit	1 pc	1 pc	1 pc
Diamond indenter	1 pc	1 pc	1 pc
Ø1.5875mm carbide ball indenter	1 pc	1 pc	1 pc
Ø58mm flat anvil	1 pc	1 pc	1 pc
Ø150mm flat anvil	1 pc	1 pc	1 pc
V-type anvil	1 pc	1 pc	1 pc
Hardness test block HRC20~30	1 pc	—	1 pc
Hardness test block HRC40~50	1 pc	—	—
Hardness test block HRC60~70	1 pc	—	1 pc
Hardness test block HRBW80~100	1 pc	—	1 pc
Hardness test block HRA80~90	1 pc	—	—
Hardness test block HR15N80~90	—	1 pc	—
Hardness test block HR30N60~85	—	1 pc	1 pc
Hardness test block HR30TW70~85	—	1 pc	1 pc
Bluetooth printer	1 pc	1 pc	1 pc
Anti-dust cover	1 pc	1 pc	1 pc

OPTIONAL ACCESSORY

Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRB80~100	HDT-B-HRB
Hardness test block HR15N78~88	HDT-B-HR15N2
Hardness test block HR30N55~73	HDT-B-HR30N2
Hardness test block HR30T73~82	HDT-B-HR30T

INSPECTION CERTIFICATE

DATA OUTPUT

VIDEO

preliminary test force loading
preliminary test force alarm
testing value
scale
lock hardness value
indentation chart
bar graph
finished testing times/total times
average value
difference of max. and min. value

charger port
USB port
transmission button

indenter
stage
test force handwheel

start button
load dwell time adjustment

software flash disk (included)

- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Display unit is automatic power off
- According to ISO 6508
- Keyboard signal, can be transmitted to Excel

Ø60mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

wireless printer (**optional**)

desk (**optional**)

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD HRF, HRG (with standard indenters)
	HRE, HRH, HRK (with optional indenter)
Preliminary test force	98N
Test force	588N, 980N, 1471N
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~99 second
Resolution	0.1HR
Output	wireless and USB
Memory	500
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply of the display unit	built-in rechargeable battery
Power supply	220V, 50/60Hz
Dimension	520×160×700mm
Weight	60kg

STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

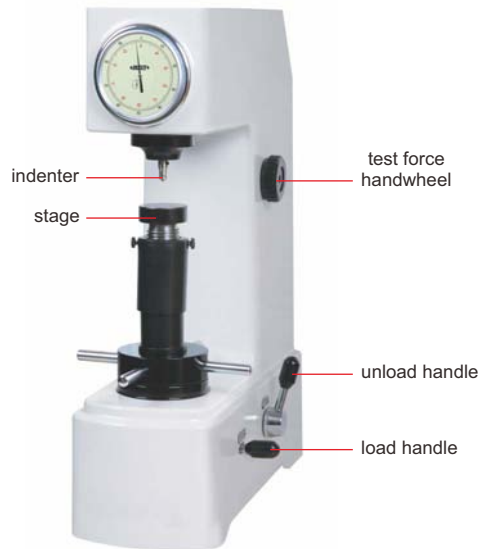| Wireless printer	ISH-DS-PRINTER
Ø3.175mm carbide ball indenter	ISH-EHK-INDENTER
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

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MANUAL DIGITAL ROCKWELL HARDNESS TESTER
CODE ISH-RD200

DATA OUTPUT

INSPECTION CERTIFICATE
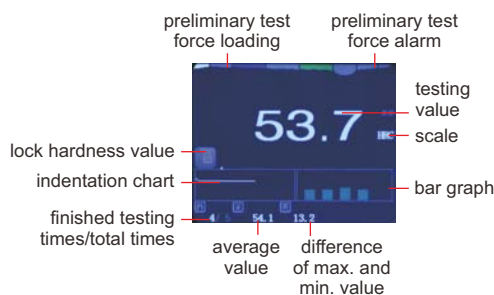
VIDEO

preliminary test force loading

preliminary test force alarm

testing value

scale

lock hardness value

indentation chart

bar graph

finished testing times/total times

average value

difference of max. and min. value

charger port

USB port

transmission button

indenter

stage

test force handwheel

load/unload handle

software flash disk (included)

- Tolerance testing
- Set testing times (2~10) to have average value and the difference of max. and min. value
- Convert to other Rockwell scales, HV or HB
- Memory of 500 testing values for browsing and output
- Testing value can be sent to wireless printer automatically
- Calibration function compensates the testing value for high accuracy
- The hardness value of soft materials like plastic is not stable, the lock function can obtain the value automatically
- Automatic power off
- According to ISO 6508
- Keyboard signal, can be transmitted to Excel

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Ø60mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

wireless printer (**optional**)

desk (**optional**)

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD HRF, HRG (with standard indenters)
	HRE, HRH, HRK (with optional indenter)
Preliminary test force	98N
Test force	588N, 980N, 1471N
Stage elevation	manual
Load control	manual
Resolution	0.1HR
Output	wireless and USB
Memory	500
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply	built-in rechargeable battery
Dimension	520×160×700mm
Weight	60kg

STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Wireless printer	ISH-DS-PRINTER
Ø3.175mm carbide ball indenter	ISH-EHK-INDENTER
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

MOTORIZED HIGH ROCKWELL HARDNESS TESTER
CODE HDT-RM421

INSPECTION CERTIFICATE

VIDEO

indenter

test force handwheel

stage

dwell time adjustment

emergency stop

■ According to ISO 6508

level (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

Ø150mm flat anvil (included)

Ø58mm flat anvil (included)

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N (10kg)
Test force	588N (60kg), 980N (100kg), 1471N (150kg)
Display	analogue
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Min. reading	0.5HR
Max. workpiece height	400mm
Max. testing width	160mm (form the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	540×300×1030mm
Weight	140kg

STANDARD DELIVERY

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Ø1.5875mm steel ball	5 pcs
Level	1 pc
Hardness test block HRA80~84	1 pc
Hardness test block HRB88~100	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRA80~84	**HDT-B-HRA**
Hardness test block HRB88~100	**HDT-B-HRB**
Hardness test block HRC20~30	**HDT-B-HRC1**
Hardness test block HRC35~55	**HDT-B-HRC2**
Hardness test block HRC60~70	**HDT-B-HRC3**
Small V-type anvil	**HDT-RW160-SV**

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MANUAL HIGH ROCKWELL HARDNESS TESTER
CODE HDT-RH411

INSPECTION CERTIFICATE

VIDEO

indenter

test force handwheel

stage

load/unload handle

level (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

Ø150mm flat anvil (included)

Ø58mm flat anvil (included)

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

■ According to ISO 6508

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N (10kg)
Test force	588N (60kg), 980N (100kg), 1471N (150kg)
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	400mm
Max. testing width	160mm (form the center of indenter to the wall of main body)
Dimension	540×300×1030mm
Weight	140kg

STANDARD DELIVERY

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Ø1.5875mm steel ball	5 pcs
Level	1 pc
Hardness test block HRA80~84	1 pc
Hardness test block HRB88~100	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV

INSPECTION CERTIFICATE

VIDEO

indenter

stage

test force handwheel

start button

load dwell time adjustment

■ According to ISO 6508

Ø60mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

desk (**optional**)

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SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~99 second
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	520×160×700mm
Weight	60kg

STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

MOTORIZED ROCKWELL HARDNESS TESTER (BASIC TYPE)
CODE HDT-RA151

INSPECTION CERTIFICATE

indenter

stage

test force
handwheel

dwell time
adjustment

emergency
stop

VIDEO

■ According to ISO 6508

| Ø58mm flat anvil (included) | Ø150mm flat anvil (included) | V-type anvil (included) for cylinders with diameter Ø4~60mm | level (included) | small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm | desk (**optional**) |

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	128mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	500×225×640mm
Weight	65kg

STANDARD DELIVERY

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Level	1 pc
Hardness test block HRA80~88	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV
Desk	HDT-DESK

MANUAL ROCKWELL HARDNESS TESTER
CODE ISH-R150

INSPECTION CERTIFICATE

VIDEO

indenter

stage

test force handwheel

load/unload handle

■ According to ISO 6508

Ø60mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

desk (**optional**)

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N
Test force	588N, 980N, 1471N
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	165mm (from the center of indenter to the wall of main body)
Dimension	520×160×700mm
Weight	60kg

STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

MANUAL ROCKWELL HARDNESS TESTER (BASIC TYPE)
CODE HDT-RW160

INSPECTION CERTIFICATE

POPULAR MODEL

indenter

stage

test force handwheel

unload handle

load handle

VIDEO

- According to ISO 6508

Ø58mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

level (included)

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

desk (**optional**)

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	98N (10kg)
Test force	588N (60kg), 980N (100kg), 1471N (150kg)
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	170mm
Max. testing width	135mm (from the center of indenter to the wall of main body)
Dimension	466×238×630mm
Weight	70kg

STANDARD DELIVERY

Main unit	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm steel ball indenter	1 pc
Ø1.5875mm steel ball	5 pcs
Level	1 pc
Hardness test block HRA80~88	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC35~55	1 pc
Hardness test block HRC60~70	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRA80~84	HDT-B-HRA
Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block HRC35~55	HDT-B-HRC2
Hardness test block HRC60~70	HDT-B-HRC3
Small V-type anvil	HDT-RW160-SV
Desk	HDT-DESK

MANUAL ROCKWELL AND SUPERFICIAL ROCKWELL HARDNESS TESTER
CODE HDT-RSR100
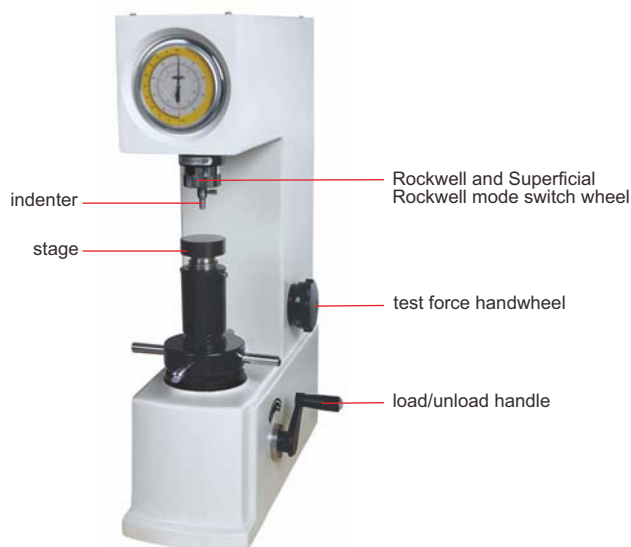
INSPECTION CERTIFICATE

VIDEO

indenter — Rockwell and Superficial Rockwell mode switch wheel

stage

test force handwheel

load/unload handle

Ø60mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included) for cylinders with diameter Ø4~60mm

small V-type anvil (**optional**) for cylinders with diameter Ø2~4mm

desk (**optional**)

■ According to ISO 6508

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Preliminary test force	29.4N/3kgf for Superficial Rockwell 98N/10kgf for Rockwell
Test force	147N/15kgf, 294N/30kgf, 441N/45kgf, 588N/60kgf, 980N/100kgf, 1471N/150kgf
Display	analogue
Stage elevation	manual
Load control	manual
Min. reading	0.5HR
Max. workpiece height	160mm
Max. testing width	140mm (from the center of indenter to the wall of main body)
Dimension	460×240×660mm
Weight	75kg

STANDARD DELIVERY

Main unit	1 pc
Ø60mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HR15N	1 pc
Hardness test block HR30N	1 pc
Hardness test block HR30T	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 78~88HR15N	HDT-B-HR15N2
Hardness test block 55~73HR30N	HDT-B-HR30N2
Hardness test block 57~69HR30T	HDT-B-HR30T
Small V-type anvil	ISH-SMALLANVIL
Desk	HDT-DESK

DIGITAL MICRO-VICKERS HARDNESS TESTER (BASIC TYPE)
CODE HDT-MVE1300

MOTOR DRIVEN TURRET
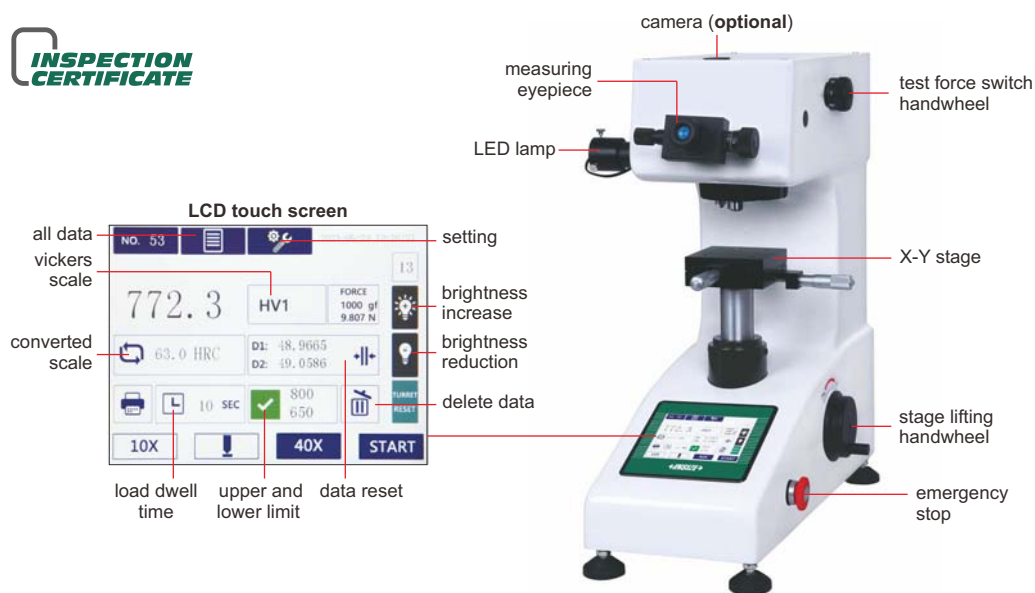
TOUCH SCREEN

INSPECTION CERTIFICATE

camera (**optional**)

measuring eyepiece

test force switch handwheel

LED lamp

X-Y stage

LCD touch screen

all data

vickers scale

setting

converted scale

brightness increase

brightness reduction

delete data

stage lifting handwheel

load dwell time | upper and lower limit | data reset
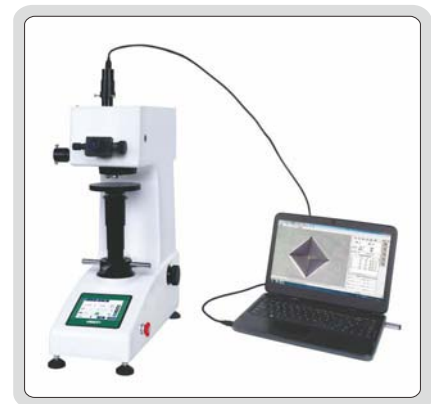
emergency stop

step: 1

measure indentation diagonal lengthes by measuring microscope

step: 2

input the indentation diagonal lengthes, the hardness value is shown on screen automatically

32

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

cylinder holder (included)

slice holder (included)

vice (included)

desk (**optional**)

camera (**optional**)

camera and measuring system (**optional**)

SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.5µm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	100X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimension: 100×100mm, travel range: 25×25mm
Power supply	220V, 50/60Hz
Dimension	510×290×570mm
Weight	40kg

VIDEO

STANDARD DELIVERY

Main unit	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Slice holder	1 pc
Vice	1 pc
Cylinder holder	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Camera	HDT-MVH-CM
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW
Desk	HDT-DESK

DIGITAL MICRO-VICKERS HARDNESS TESTER (STANDARD TYPE)
CODE HDT-MVH1100

INSPECTION CERTIFICATE

PRESS INPUT BUTTON TO HAVE DIRECT READING OF HARDNESS

TOUCH SCREEN

MOTOR DRIVEN TURRET

LCD touch screen

- all data
- vickers scale
- converted scale
- print
- load dwell time
- upper and lower limit
- data reset

NO. 53

772.3 HV1 FORCE 1000 gf 9.807 N

63.0 HRC D1: 48.9665 D2: 49.0586

800 650

10X 40X START

10 SEC

- setting
- brightness increase
- brightness reduction
- delete data

VIDEO

camera (**optional**)

electronic measuring eyepiece

LED lamp

built-in printer

test force switch handwheel

input button (to have direct reading of hardness)

X-Y stage

load/unload handle

emergency stop

cylinder holder (included)

vice (included)

slice holder (included)

camera (**optional**)

camera and measuring system (**optional**)

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.025µm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	10X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimension: 100×100mm, travel range: 25×25mm
Data output	built-in printer
Power supply	220V, 50/60Hz
Dimension	510×290×570mm
Weight	40kg

STANDARD DELIVERY

Main unit	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Slice holder	1 pc
Vice	1 pc
Cylinder holder	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Camera	HDT-MVH-CM
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

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DUAL TOUCH SCREEN DIGITAL MICRO-VICKERS HARDNESS TESTER (ADVANCED TYPE)
CODE HDT-DMV90

VIDEO

MOTOR DRIVEN TURRET

AUTOMATIC MEASUREMENT

INSPECTION CERTIFICATE

test force switch handwheel

built-in camera

vickers hardness measurement system (included)

electronic measuring eyepiece

LCD touch screen

all data

vickers scale

setting

converted scale

brightness increase

brightness reduction

print

delete data

X-Y stage

built-in printer

touch screen

load dwell time

upper and lower limit

diagonal data reset

stage lifting handwheel

emergency stop

vickers hardness measurement system (included)

tool bar

function bar

indentation

cylinder holder (included)

vice (included)

slice holder (included)

desk (**optional**)

- Dual touch screen control, high-definition image measurement and analysis
- One click start, automatic pressing and automatic measurement
- The host and vickers hardness measurement system can be operated independently
- Automatic switch between the indenter and objective lens
- Data storage and average value calculation
- Can connect with wired and wireless networks to transmit data
- According to ISO 6507

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SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.01μm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	100X (for measurement or observation), 400X (for measurement)
Max. workpiece height	90mm
Max. testing width	95mm (from the center of indenter to the wall of main body)
X-Y stage	dimensions: 100×100mm, travel range: 25×25mm
Data output	built-in printer, USB
Power supply	220V, 50/60HZ
Dimension	500×420×480mm
Weight	42kg

STANDARD DELIVERY

Main unit	1 pc
Vickers hardness measurement system	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Wireless keyboard	1 pc
Wireless mouse	1 pc
Vice	1 pc
Slice holder	1 pc
Cylinder holder	1 pc
Auti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Desk	HDT-DESK
OFFICE software	7313-OFFICE

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AUTOMATIC MICRO-VICKERS HARDNESS TESTER
CODE HDT-AMV338

MOTOR DRIVEN TURRET **AUTOMATIC MEASUREMENT** **Z-AXIS AUTOFOCUS**

INSPECTION CERTIFICATE

VIDEO

- built-in camera
- test force switch handwheel
- electronic measuring eyepiece
- vickers hardness measurement system (included)
- automatic X-Y stage
- emergency stop
- drive box
- operating lever
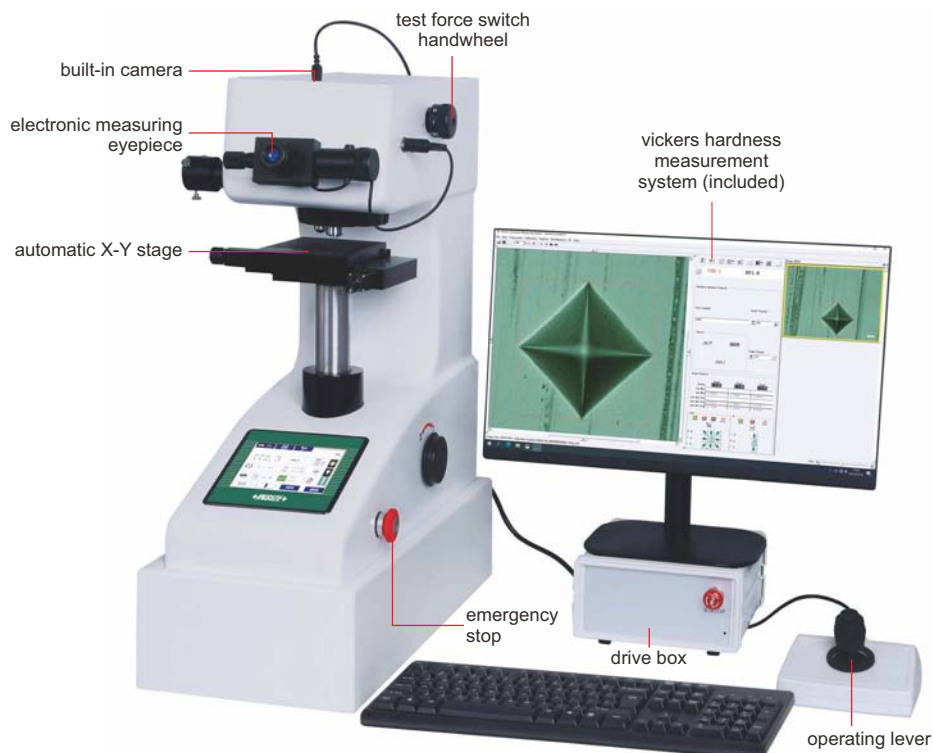
automatic X-Y stage

cylinder holder (included)   vice (included)   slice holder (included)   desk (**optional**)

- ■ Suitable for micro-hardness determination of various metals and non-metal materials, effective depth and heat affected area measurement, especially suitable for measuring workpieces hardness gradient distribution curve and surface hardness after heat treatment, effective hardening layer depth
- ■ Automatic switch between the indenter and objective lens
- ■ Z-axis automatic focus, X, Y axis automatic movement, can be for multi-point continuous measurement
- ■ Automatic moving table by built-in step motor, high positioning accuracy, good repeatability, fast moving speed, high efficiency
- ■ Automatic moving table bidirectional movement, equipped with safety devices to avoid misoperation
- ■ The software can control the hardness tester hardware operation, two-way communication with each other
- ■ The image acquisition device has fast reaction speed, high automatic measurement accuracy and good repeatability
- ■ The system can automatically generate Word or Excel test report, and the report template can be modified
- ■ According to ISO 6507

vickers hardness measurement system (included)

tool bar   function bar

indentation   machine control
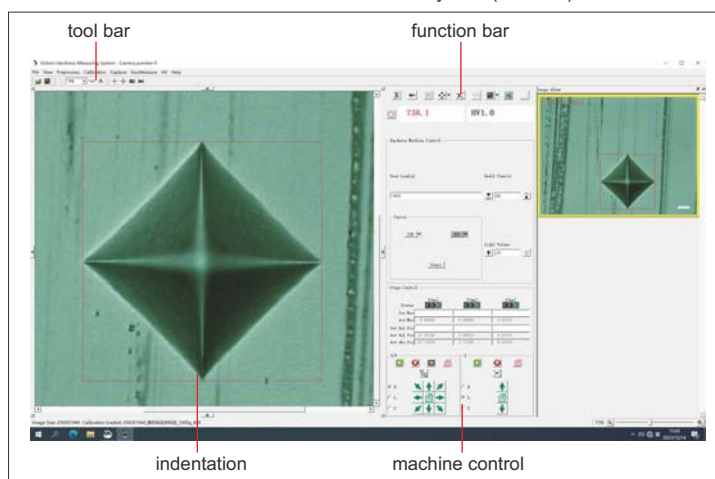
AUTOMATIC MEASUREMENT, CONTROL SYSTEM

Hardness tester control	1. automatic turret, automatic loading, automatic measurement 2. automatic display of test force, load dwell time, illumination brightness
Control antomatic X-Y stage	software system controls automatic X-Y stage movement
Measurement mode	1. automatic mode: automatic loading, automatic measurement, automatic display of measurement results 2. manual measurement mode can be selected
Automatic measurement	about 0.3sec of one indentation
Measurement repeatability	±1% (700HV/500gf)
The smallest indentation that can be measured	about 5μm (automatic measurement)
Data output format/ edit functions	1. inspection reports can be customized according to customer requirements 2. the depth of hardened layer is shown in table form 3. output various measurement data, hardness table, hardening layer depth, maximum value, average value, minimum value, image with hardness value

AUTOMATIC X-Y STAGE

Drive motor	step motor
Drive control	movement control by software, speed is adjustable
Dimension	110×110mm
Maximum travel distance	50×50mm
Minimum travel distance	1μm
Movement speed	1~10mm/sec, speed can be adjusted
Displacement repetition accuracy	within 1μm

SPECIFICATION

Test force	0.098N (10gf), 0.245N (25gf), 0.49N (50gf), 0.98N (100gf), 1.96N (200gf), 2.94N (300gf), 4.9N (500gf), 9.8N (1kgf)
Vickers scales	HV0.01, HV0.025, HV0.05, HV0.1, HV0.2, HV0.3, HV0.5, HV1
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T
Range	5~3000HV
Length measurement resolution	0.01μm
Objective/indenter switch	motor driven turret
Stage lifting	manual
Focus mode	Z-axis autofocus
Load control	automatic (load/dwell/unload)
Load dwell time	1~60 second
Objective	10X, 40X
Eyepiece	10X
Total magnification	100X (for measurement or observation), 400X (for measurement)
Max. workpiece height	80mm
Max. testing width	110mm (from the center of indenter to the wall of main body)
Pixel	5M
Communication interface	RS232
Power supply	220V, 50/60HZ
Dimension	520×290×680mm
Weight	42kg

STANDARD DELIVERY

Main unit	1 pc
10X, 40X objective	1 pc of each
Micro vickers indenter	1 pc
Hardness test block 400~500HV0.2	1 pc
Hardness test block 700~750HV1	1 pc
Automatic X-Y stage drive box	1 pc
Vicekers hardness measurement system	1 pc
Computer	1 pc
Vice	1 pc
Slice holder	1 pc
Cylinder holder	1 pc
Auti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block 400~500HV0.2	HDT-B-HV02C
Hardness test block 700~750HV1	HDT-B-HV1F
Desk	HDT-DESK
OFFICE software	7313-OFFICE

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DIGITAL VICKERS HARDNESS TESTERS (BASIC TYPE)

INSPECTION CERTIFICATE

MOTOR DRIVEN TURRET

TOUCH SCREEN

VIDEO

camera (**optional**)

measuring eyepiece

LED lamp

stage

test force switch handwheel

emergency stop

LCD touch screen

all data

vickers scale

converted scale

setting

brightness increase

brightness reduction

delete data

load dwell time

upper and lower limit

data reset

HDT-VE56

step: 1	step: 2
measure indentation diagonal lengthes by measuring microscope	input the indentation diagonal lengthes, the hardness value is shown on screen automatically

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

camera and measuring system (**optional**)

Ø58mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included)

desk (**optional**)

camera (**optional**)

To be continued

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vickers hardness measurement system (**optional**)
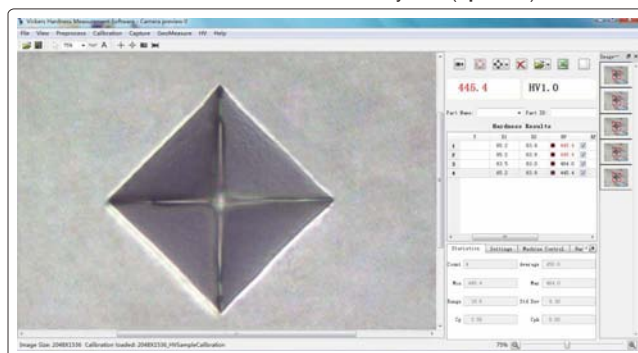
SPECIFICATION

Code	HDT-VE03	HDT-VE14	HDT-VE35	HDT-VE56
Test force	0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf	0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf	1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf	1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf
Vickers scales	HV0.3, HV0.5, HV1, HV2, HV3, HV5	HV0.3, HV0.5, HV1, HV3, HV5, HV10	HV1, HV3, HV5, HV10, HV20, HV30	HV1, HV5, HV10, HV20, HV30, HV50
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T			
Range	8~3000HV			
Length measurement resolution	0.5μm			
Objective/indenter switch	motor driven turret			
Stage lifting	manual			
Load control	automatic (load/dwell/unload)			
Load dwell time	1~60 second			
Objective	10X, 20X			
Eyepiece	10X			
Total magnification	100X (for measurement or observation), 200X (for measurement)			
Max. workpiece height	175mm			
Max. testing width	135mm (form the center of indenter to the wall of main body)			
Power supply	220V, 50/60HZ			
Dimension	580×320×660mm			
Weight	55kg			

STANDARD DELIVERY

Main unit	1 pc
10X, 20X objective	1 pc of each
Vickers indenter	1 pc
Hardness test block 400~500HV10	1 pc
Hardness test block 700~750HV50	1 pc
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block 400~500HV10	HDT-B-HV10D
Hardness test block 700~750HV50	HDT-B-HV50G
Desk	HDT-DESK
Vickers hardness tester camera	HDT-MVH-CM1
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

![INSIZE]

DIGITAL VICKERS HARDNESS TESTERS (STANDARD TYPE)

MOTOR DRIVEN TURRET

PRESS INPUT BUTTON TO HAVE DIRECT READING OF HARDNESS

TOUCH SCREEN

VIDEO

INSPECTION CERTIFICATE

camera (**optional**)

electronic measuring eyepiece

LED lamp

input button (to have direct reading of hardness)

built-in printer

stage

test force switch handwheel

emergency stop

LCD touch screen

all data

vickers scale

converted scale

print

setting

brightness increase

brightness reduction

delete data

load dwell time

upper and lower limit

data reset
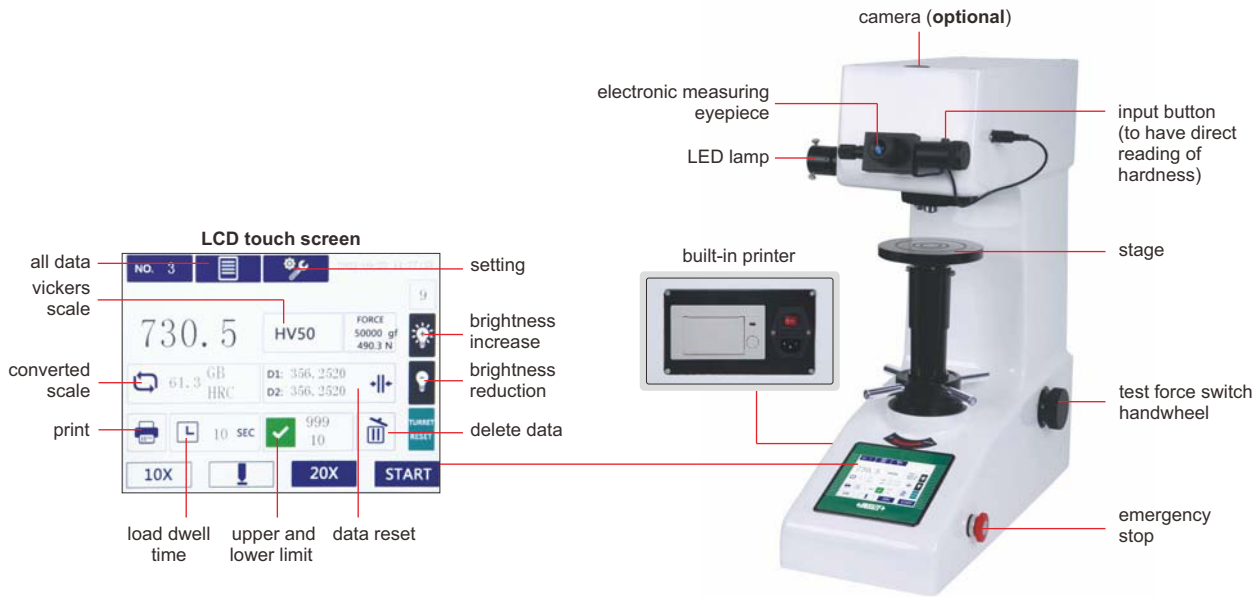
HDT-VH51

- Touch screen color LCD display
- Data storage and average value calculation
- Automatic switch between the indenter and objective lens
- According to ISO 6507

camera and measuring system (**optional**)

Ø58mm flat anvil (included)

Ø150mm flat anvil (included)

V-type anvil (included)

desk (**optional**)

camera (**optional**)

vickers hardness measurement system (**optional**)
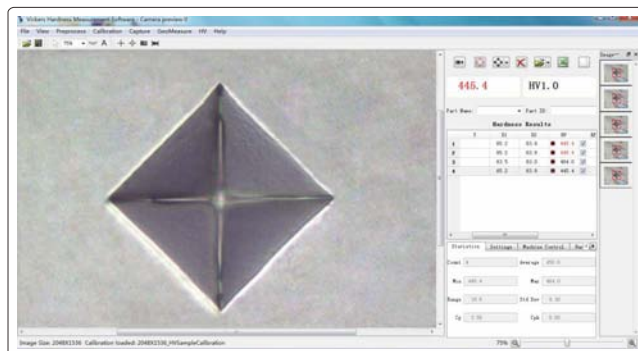
SPECIFICATION

Code	HDT-VH05	HDT-VH11	HDT-VH31	HDT-VH51
Test force	0.3kgf, 0.5kgf, 1kgf, 2kgf, 3kgf, 5kgf	0.3kgf, 0.5kgf, 1kgf, 3kgf, 5kgf, 10kgf	1kgf, 3kgf, 5kgf, 10kgf, 20kgf, 30kgf	1kgf, 5kgf, 10kgf, 20kgf, 30kgf, 50kgf
Vickers scales	HV0.3, HV0.5, HV1, HV2, HV3, HV5	HV0.3, HV0.5, HV1, HV3, HV5, HV10	Hv1, HV3, HV5, HV10, HV20, Hv30	Hv1, HV5, HV10, HV20, HV30, Hv50
Converted scales	HRA, HRB, HRC, HRD, HRF, HV, HK, HBW, HR15N, HR30N, HR45N, HR15T, HR30T, HR45T			
Range	8~3000HV			
Length measurement resolution	0.125μm			
Objective/indenter switch	motor driven turret			
Stage lifting	manual			
Load control	automatic (load/dwell/unload)			
Load dwell time	1~60 second			
Objective	10X, 20X			
Eyepiece	10X			
Total magnification	100X (for measurement or observation), 200X (for measurement)			
Max. workpiece height	175mm			
Max. testing width	135mm (form the center of indenter to the wall of main body)			
Output	built-in printer			
Power supply	220V, 50/60HZ			
Dimension	580×320×660mm			
Weight	55kg			

STANDARD DELIVERY

Main unit	1 pc
10X, 20X objective	1 pc of each
Vickers indenter	1 pc
Hardness test block	2 pcs
Ø58mm flat anvil	1 pc
Ø150mm flat anvil	1 pc
V-type anvil	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block	page 840~841
Desk	HDT-DESK
Vickers hardness tester camera	HDT-MVH-CM1
Measuring system (manual)	HDT-MVH-SW
Measuring system (automatic)	HDT-MVH-AW

MOTORIZED DIGITAL BRINELL HARDNESS TESTER (BASIC TYPE)
CODE HDT-MBE320

INSPECTION CERTIFICATE

TOUCH SCREEN

FORCE LOADING BY ELECTRIC MOTOR (WITHUOT WEIGHT)

LCD touch screen

- brinell hardness value
- converted scale
- load dwell time
- upper and lower limit
- brinell scale
- reset
- delete data

- indenter
- stage
- handwheel
- emergency button
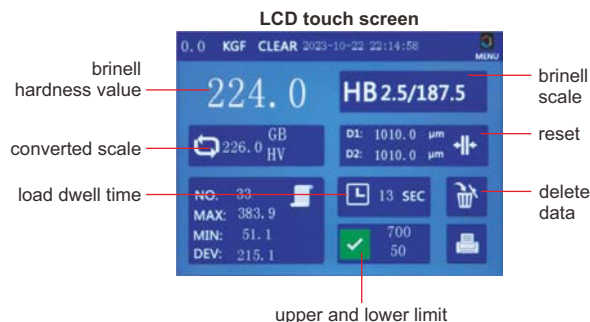
step: 1

measure indentation diameter by measuring microscope

step: 2

input the diameters, the hardness value is shown on screen automatically

- Touch screen color LCD display
- Measure indentation diameter by measuring microscope, then input the diameters, the hardness value is shown on screen automatically
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506

VIDEO

Ø78mm flat anvil (included)

Ø200mm flat anvil (included)

V-type anvil (included)

desk (**optional**)

measuring microscope (included)

SPECIFICATION

Test force		62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf
Brinell scale		HBW2.5/62.5, HBW2.5/187.5, HBW5/62.5, HBW5/125, HBW5/250, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000
Range		8~650HBW
Hardness resolution		0.1HBW
Stage elevation		manual
Load control		automatic (load/dwell/unload)
Load dwell time		0~60 second
Measuring microscope	magnification	20X
	resolution	0.01mm
Max. workpiece height		230mm
Max. testing width		140mm (form the center of indenter to the wall of main body)
Power supply		220V, 50/60Hz
Dimension		510×210×750mm
Weight		130kg

STANDARD DELIVERY

Main unit	1 pc
Ø78mm flat anvil	1 pc
Ø200mm flat anvil	1 pc
V-type anvil	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Ø10mm carbide ball indenter	1 pc
Hardness test block 100~200HBW2.5/187.5	1 pc
Hardness test block 90~200HBW10/1000	1 pc
Hardness test block 100~200HBW10/3000	1 pc
Measuring microscope	1 pc

OPTIONAL ACCESSORY

Hardness test block 100~200HBW2.5/187.5	HDT-B-HB25A1
Hardness test block 90~200HBW10/1000	HDT-B-HB10C1
Hardness test block 100~200HBW10/3000	HDT-B-HB10A1
Desk	HDT-DESK

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MOTORIZED DIGITAL BRINELL HARDNESS TESTERS (STANDARD TYPE)

TOUCH SCREEN

FORCE LOADING BY ELECTRIC MOTOR (WITHUOT WEIGHT)

INSPECTION CERTIFICATE

LCD touch screen

- brinell hardness value
- converted scale
- load dwell time
- upper and lower limit
- brinell scale
- reset
- delete data
- print

VIDEO

- electronic measuring eyepiece
- indenter
- stage
- handwheel
- built-in printer
- emergency button

- Ø78mm flat anvil (included)
- Ø200mm flat anvil (included)
- V-type anvil (included)
- desk (**optional**)

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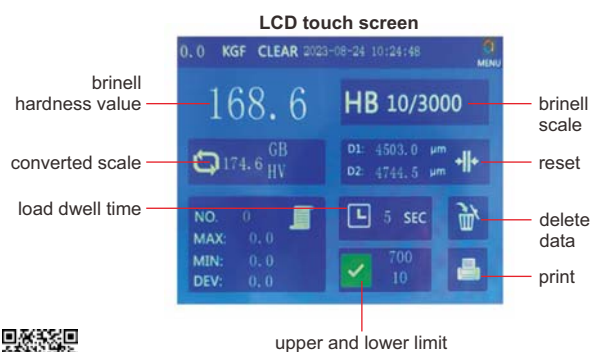
- Touch screen color LCD display
- Measure the indentation with microscope, automatically calculate the hardness value and display it on the screen
- Electric loading test force, without weights
- Casting case, structurally stable and not deformed
- According to ISO 6506

SPECIFICATION

Code	HDT-MB610	HDT-MB710
Turret rotation	manual	automatic
Test force	62.5kgf, 100kgf, 125kgf, 187.5kgf, 250kgf, 500kgf, 750kgf, 1000kgf, 1500kgf, 3000kgf	
Brinell scale	HBW2.5/62.5, HBW2.5/187.5, HBW5/125, HBW5/750, HBW10/100, HBW10/250, HBW10/500, HBW10/1000, HBW10/1500, HBW10/3000	
Range	8~650HBW	
Hardness resolution	0.1HBW	
Stage elevation	manual	
Load control	automatic (load/dwell/unload)	
Load dwell time	0~60 second	
Measuring microscope — magnification	20X	
Measuring microscope — resolution	0.1µm	
Max. workpiece height	200mm	
Max. testing width	135mm (form the center of indenter to the wall of main body)	
Data output	built-in printer, RS232	
Power supply	220V, 50/60Hz	
Dimension	510×210×750mm	
Weight	130kg	

STANDARD DELIVERY

Main unit	1 pc
Ø78mm flat anvil	1 pc
Ø200mm flat anvil	1 pc
V-type anvil	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Ø10mm carbide ball indenter	1 pc
Hardness test block 100~200HBW2.5/187.5	1 pc
Hardness test block 90~200HBW10/1000	1 pc
Hardness test block 100~200HBW10/3000	1 pc

OPTIONAL ACCESSORY

Hardness test block 100~200HBW2.5/187.5	HDT-B-HB25A1
Hardness test block 90~200HBW10/1000	HDT-B-HB10C1
Hardness test block 100~200HBW10/3000	HDT-B-HB10A1
Desk	HDT-DESK

BRINELL INDENTATION MEASURING SYSTEM
CODE ISHB-MSA

application

software flash disk
(included)

software (included)

result and scale

diameter of indentation

result list

picture

indentation

- Connected to computer USB port
- Automatically measure the indentation
- Result saved to Excel automatically
- Tolerance testing
- Calibration with standard hardness blocks or standard indentation blocks

SPECIFICATION

Applicable Brinell indenter		Ø10mm, Ø7.26mm, Ø5mm, Ø4mm, Ø2.5mm
Hardness range		16~650HB
Range of indentation diameter		Ø0.6~6mm
Test force		62.5, 100, 125, 187.5, 250, 500, 750, 1000, 1500, 3000kgf
Hardness resolution		1HB
Diameter measuring resolution		0.001mm
Diameter measuring accuracy	Ø10mm ball indneter	±0.4% (indentation diameter)
	Ø5mm ball indneter	±0.8% (indentation diameter)
	Ø2.5mm ball indneter	±1.2% (indentation diameter)
Camera	sensor	1/3.2" CMOS
	pixel	2M (resolution 1600×1200)
	view filed	8×6mm
Dimension		170×54×54mm
Weight		385g

standard blocks for Ø5mm and
Ø10mm indenters (included)

STANDARD DELIVERY

Main unit	1 pc
Software	1 pc
Ø5mm standard indentation block	1 pc
Ø10mm standard indentation block	1 pc

OPTIONAL ACCESSORY

Ø2.5mm standard indentation block	ISHB-MSA-BLOCK25

BRINELL/ROCKWELL/VICKERS HARDNESS TESTER
CODE ISH-BRV

Ø60mm flat anvil for Rockwell (included)

Ø150mm flat anvil for Rockwell (included)

Ø60mm flat anvil for Vickers and Brinell (included)

V-type anvil for Rockwell (included), for cylinders with diameter Ø4~60mm

V-type anvil for Vickers and Brinell (included)

small V-type anvil for Rockwell (**optional**), for cylinders with diameter Ø2~4mm

desk (**optional**)

VIDEO

projection screen with scale for reading Rockwell hardness

graduation 0.01mm

microscope for Vickers and Brinell 15X eyepiece

objective 2.5X/5X

slider

load/unload handle

stage

test force handwheel

select hardness scale

■ According to ISO 6506, ISO 6507, ISO 6508

SPECIFICATION

Rockwell test load	98N preload, 588, 980, 1471N total load
Min. Rockwell reading	0.5HR
Brinell test load	306, 613, 1839N
Vickers test load	294N
Stage elevation	manual
Load control	manual
Magnification of microscope	37.5X/75X
Max. workpiece height	180mm
Max. testing width	200mm (from the center of indenter to the wall of main body)
Power supply	220V, 50/60Hz
Dimension	546×300×767mm
Weight	90kg

STANDARD DELIVERY

Main unit	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Diamond Rockwell indenter	1 pc
Ø5mm Brinell indenter	1 pc
Ø2.5mm Brinell indenter	1 pc
Vickers indenter	1 pc
Ø60mm flat anvil for Rockwell	1 pc
Ø150mm flat anvil for Rockwell	1 pc
V-type anvil for Rockwell	1 pc
Ø60mm flat anvil for Vickers and Brinell	1 pc
V-type anvil for Vickers and Brinell	1 pc
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block 400~500HV30	1 pc
Hardness test block 180~300HBW2.5/187.5	1 pc
Anti-dust cover	1 pc

OPTIONAL ACCESSORY

Hardness test block HRB88~100	HDT-B-HRB
Hardness test block HRC60~70	HDT-B-HRC3
Hardness test block HRC20~30	HDT-B-HRC1
Hardness test block 400-500HV30	HDT-B-HV30D
Hardness test block 200-3000HBW2.5/187.5	HDT-B-HB25A2
Small V-type anvil for Rockwell	ISH-SMALLANVIL
Desk	HDT-DESK

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BALANCING BRACKET
CODE ISH-BL01

counterweight

application example

- Suitable for hardness measurement of long strip specimens
- By adjusting the counterweight, to ensure that the indenter is perpendicular to the specimen

SPECIFICATION

Sample diameter	<50mm
Test bench type	V-type anvil
Dimension	600×100×100mm
Weight	5kg

JACK LIFTING BRACKET
CODE ISH-ST02

application example

- No need to hold the sample, fixing the sample can reduce measurement error

SPECIFICATION

Sample diameter	<50mm
Test bench type	V-type anvil
Adjusting the height	200mm (customizable)
Dimension	250×250×400mm
Weight	11kg

PORTABLE LEEB HARDNESS TESTER
APPLICABLE MATERIAL AND HARDNESS RANGE OF IMPACT DEVICE D

Material	HLD	HV	HB	HRC	HRB	HS	Tensile strength (MPa)
Steel & cast steel	300-900	81-955	81-654	20-68	38-100	32-100	375-2639
Tool steel	300-840	80-898		20-67			
Stainless steel	300-800	85-802	85-655		46-101		
Cast iron	360-650		93-334				
Cast aluminum alloy	170-570		19-164		23-84		
Brass	200-550		40-173		13-95		
Bronze	300-700		60-290				
Copper	200-690		45-315				

BLUETOOTH

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

PORTABLE LEEB HARDNESS TESTERS

HDT-CB320
(wired probe is included)

HDT-WL320
(wireless probe is included)

- Can use wired probes or wireless probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large 2.4" LCD display with backlight
- With a magnet on the back, the main unit can be attached on steel surfaces
- According to ASTM A956 and DIN 50156

hardness test block D (included)

small support ring (included)

connect to PC, upload the data to PC, print and send to Excel (software is included)

connect to bluetooth printer (**optional**)

To be continued

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SPECIFICATION

Code	HDT-CB320	HDT-WL320
Probe included	wired probe D	wireless probe D
Optional probes	wired (DC/C/D/D+15/DL/E/G), wireless (DC/C/D/DL/G)	
Resolution	1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HRA/0.1HS/1MPa	
Accuracy	±6HLD (when HLD=800)	
Output	USB	
Measuring range	HL 170-960/HRC 1.3-74.7/HRB 1.2-139.7/HB 28-1027/HV 45-1221 HS 4.0-112.1/HRA 1.3-88.5/MPa 118-3315N/mm²	
Applicable materials	1. steel/cast steel 2. alloy steel 3. stainless steel 4. gray pig iron 5. nodular cast iron 6. cast aluminum 7. brass 8. bronze 9. copper 10. forging steel 11. rolling steel	
Statistics	average/max./min./s.value	
Memory	999 data	
Working environment	-10°C~45°C	
Power supply	2xAA battery	
Dimension	145×68×28mm	
Weight	158g	

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STANDARD DELIVERY

Code	HDT-CB320	HDT-WL320
Main unit	1 pc	1 pc
Wired probe D	1 pc	—
Wireless probe D	—	1 pc
Hardness test block D	1 pc	1 pc
Small support ring	1 pc	1 pc
Cleaning brush	1 pc	1 pc

OPTIONAL ACCESSORY

Wired probe	DC	HDT-CB320-DC
	C	HDT-CB320-C
	D	HDT-CB320-D
	D+15	HDT-CB320-D15
	DL	HDT-CB320-DL
	E	HDT-CB320-E
	G	HDT-CB320-G
Wireless probe	DC	HDT-WL320-DCW
	C	HDT-WL320-CW
	D	HDT-WL320-DW
	DL	HDT-WL320-DLW
	G	HDT-WL320-GW
Hardness test block D **		HDT-B-HLD3
Hardness test block G *		HDT-B-HLG2
Printer		ISH-LP200-PRINTER
Support rings		page 829

* Hardness test block G (**HDT-B-HLG2**) is for probe G
(**HDT-CB320-G** or **HDT-WL320-GW**)
** Hardness test block D (**HDT-B-HLD3**) is for all other probes

wired probes (**optional**)
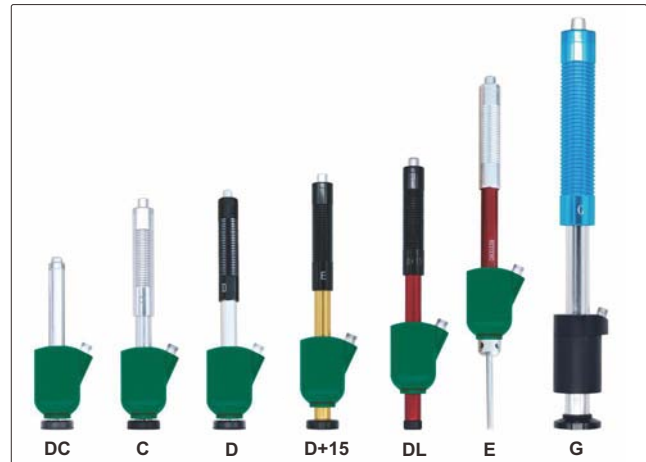
DC   C   D   D+15   DL   E   G

wireless probes (**optional**)

DC   C   D   DL   G
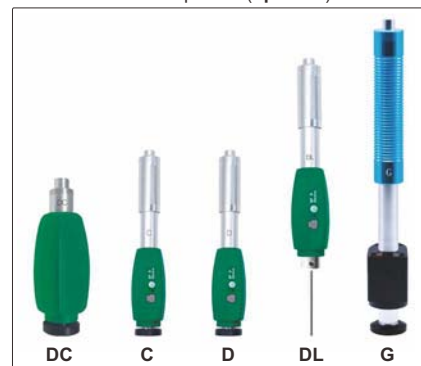
APPLICABLE WORKPIECE

Probes		DC	C	D	D+15	DL	E	G
Application		inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	very hard material	casting or forging workpiece
Maximum roughness of workpiece (Ra)		2µm	0.4µm	2µm	2µm	2µm	2µm	7µm
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	5kg	5kg	15kg
	on solid support	2.5kg	0.5kg	2kg	2kg	2kg	2.5kg	5kg
	coupled on plate	0.05-2kg	0.02kg	0.05-2kg	0.1kg	0.1kg	0.1-2kg	0.5kg
Minimum thickness of workpiece		3mm	1mm	3mm	3mm	3mm	3mm	10mm

PORTABLE LEEB HARDNESS TESTER
CODE ISH-PHB

INSPECTION CERTIFICATE

VIDEO

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- Based on Leeb (HLD), converted to Vickers (HV),
  Brinell (HB), Rockwell (HRC and HRB),
  Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via bluetooth
- Automatic power off, according to ASTM A 956

hardness test block D (included)

small support ring (included)

wireless printer (**optional**)

SPECIFICATION

Min. reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HLD (when HLD=800)
Display	Leeb (HLD), converted hardness, material, impact direction, test times, average value, date
Output	bluetooth
Applicable workpiece	minimum weight — 5kg
	minimum weight — 2kg (on solid support)
	minimum weight — 0.1kg (coupled on plate)
	minimum thickness: 5mm
	minimum radius of curved surface: 30mm
	maximum roughness (Ra): 1.6µm
Power supply	3×AAA batteries
Dimension	150×84×28mm
Weight	200g

STANDARD DELIVERY

Main unit	1 pc
Impact device D	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc

OPTIONAL ACCESSORY

Wireless printer	**ISH-DS-PRINTER**
Couplant	**ISH-COUPLANT**
Support rings	page 829
Hardness test block D	**HDT-B-HLD3**

PORTABLE LEEB HARDNESS TESTER (BUILT-IN BLUETOOTH)
CODE ISH-PHB-B

BUILT-IN BLUETOOTH   **DATA OUTPUT**

INSPECTION CERTIFICATE

- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Memory of 99 measurement values for browsing
- Set measurement times (1~9) to have average value
- Connected with printer via wireless module
- Automatic power off
- According to ASTM A 956
- Wired data transmission (keyboard signal): USB cable connect to computer, press transmission button to send data
- Wireless data transmission (keyboard signal): built-in Bluetooth module connect to computer or mobile phone, press transmission button to send data

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hardness test block D (included)

small support ring (included)

wireless printer (**optional**)

VIDEO

transmission button

SPECIFICATION

Min. reading	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HLD (when HLD=800)
Display	Leeb (HLD), converted hardness, material, impact direction, test times, average value, date
Output	bluetooth, USB
Applicable workpiece	minimum weight	5kg
		2kg (on solid support)
		0.1kg (coupled on plate)
	minimum thickness: 5mm	
	minimum radius of curved surface: 30mm	
	maximum roughness (Ra): 1.6μm	
Power supply	3×AAA batteries
Dimension	150×84×28mm
Weight	200g

STANDARD DELIVERY

Main unit	1 pc
Impact device D	1 pc
Hardness test block D	1 pc
USB cable	1 pc
Small support ring	1 pc
Cleaning brush	1 pc

OPTIONAL ACCESSORY

Wireless printer	ISH-DS-PRINTER
Couplant	ISH-COUPLANT
Support rings	page 829
Hardness test block D	HDT-B-HLD3

connected to computer by USB cable, upload the data in real time

connected to computer by bluetooth module, upload the data in real time

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

PORTABLE LEEB HARDNESS TESTER
CODE ISH-SPHA

- Based on Leeb (HL), converted to Vickers (HV), Brinell (HB), Rockwell (HRC and HRB), Shore (HS) and tensile strength (MPa)
- Connected with printer via bluetooth
- Connected with computer via USB port
- Up to 800 test results can be saved
- Tolerance testing
- Touch screen operation, large display with backlight
- Language: English, Chinese, Italian, German, French and Portuguese
- Automatic power off
- According to ASTM A 956

software flash disk (included)

hardness test block D (included)

small support ring (included)

printer (included)

SPECIFICATION

Min. reading	1HL, 1HV, 1HB, 0.1HRC, 0.1HRB, 1HS, 1MPa
Accuracy	±6HL (when HL=800)
Display	Leeb (HL), converted hardness, material, impact direction, test times, average value, deviation, time
Output	bluetooth and USB
Power supply	built-in rechargeable battery
Dimension	135×83×24mm
Weight	350g

STANDARD DELIVERY

Main unit	1 pc
Impact device D	1 pc
Printer	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc
Pen for touch screen	1 pc

OPTIONAL ACCESSORY

Impact device DC	ISH-SPHA-DC
Impact device C	ISH-SPHA-C
Impact device D+15	ISH-SPHA-D15
Impact device DL	ISH-SPHA-DL
Impact device G	ISH-SPHA-G
Hardness test block D✱	HDT-B-HLD3
Hardness test block G✱	HDT-B-HLG2
Couplant	ISH-COUPLANT
Support rings	page 829

✱ Hardness test block G (**HDT-B-HLG2**) is for impact device G (**ISH-SPHA-G**).
Hardness test block D (**HDT-B-HLD3**) is for all other impact devices.
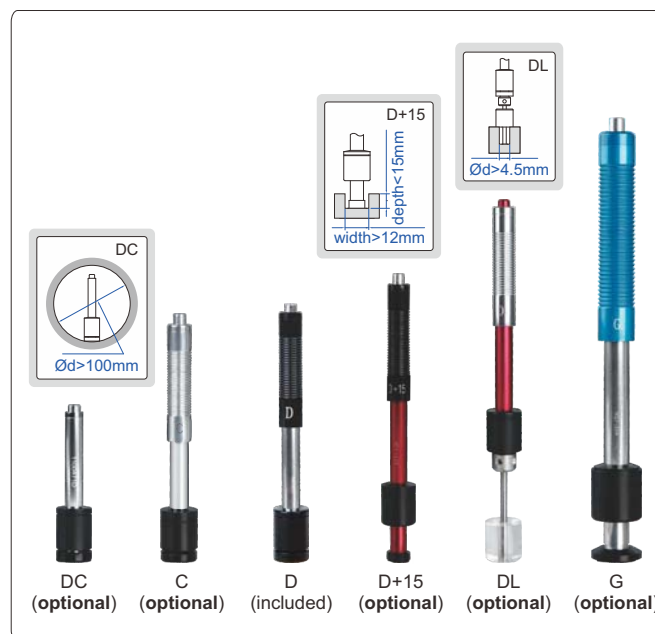
DL

Ød>4.5mm

D+15

depth<15mm

width>12mm

DC

Ød>100mm

| DC (**optional**) | C (**optional**) | D (**included**) | D+15 (**optional**) | DL (**optional**) | G (**optional**) |

APPLICABLE WORKPIECE

Impact device		DC	C	D	D+15	DL	G
Application		inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)		1.6µm	0.4µm	1.6µm	1.6µm	1.6µm	7µm
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	2kg	2kg	5kg
	coupled on plate	0.1kg	0.02kg	0.1kg	0.1kg	0.1kg	0.5kg
Minimum thickness of workpiece		5mm	1mm	5mm	5mm	5mm	10mm

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PORTABLE LEEB HARDNESS TESTERS (BASIC TYPE)

INSPECTION CERTIFICATE

POPULAR MODEL

- Can change probes
- Dual-coil probe for high accuracy
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature: -10°C~45°C
- According to ASTM A956, GB/T 17394

hardness test block D (included)

small support ring (included)

bluetooth printer (included in **HDT-LP200B**)

HDT-LP200

SPECIFICATION

Code	HDT-LP200	HDT-LP200B
Printer	not included	included
Resolution	1HLD/1HV/1HB/0.1HRC/0.1HRB/0.1HSD/1σb	
Accuracy	±6HLD (when HLD=800)	
Measuring range	HL 170-960/HRC 17-70/HRB 13-109/HB 20-655/HV 80-940/HSD 32-99.5/σb(rm) 255-2639N/mm²	
Power supply	2xAA battery	
Dimension	135×77×32mm	
Weight	240g	

VIDEO

large font display   statistics display

STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
Impact device D	1 pc
Bluetooth printer (included in HDT-LP200B)	1 pc

OPTIONAL ACCESSORY

Impact device DC	HDT-LP200-DC
Impact device C	HDT-LP200-C
Impact device D+15	HDT-LP200-D15
Impact device DL	HDT-LP200-DL
Impact device G	HDT-LP200-G
Hardness test block D**	HDT-B-HLD3
Hardness test block G*	HDT-B-HLG2
Support rings	page 829

* Hardness test block G (**HDT-B-HLG2**) is for impact device G (**HDT-LP200-G**)

** Hardness test block D (**HDT-B-HLD3**) is for all other impact devices

| DC (**optional**) | C (**optional**) | D (included) | D+15 (**optional**) | DL (**optional**) | G (**optional**) |

APPLICABLE WORKPIECE

Impact device			DC	C	D	D+15	DL	G
Application			inner wall of small space	small or thin workpiece, coating layer	general use	deep groove	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)			2µm	0.4µm	2µm	2µm	2µm	7µm
Minimum weight of workpiece	direct measurement		5kg	1.5kg	5kg	5kg	5kg	15kg
	on solid support		2kg	0.5kg	2kg	2kg	2kg	5kg
	coupled on plate		0.05kg	0.02kg	0.05kg	0.1kg	0.05kg	0.5kg
Minimum thickness of workpiece			3mm	1mm	3mm	3mm	3mm	10mm
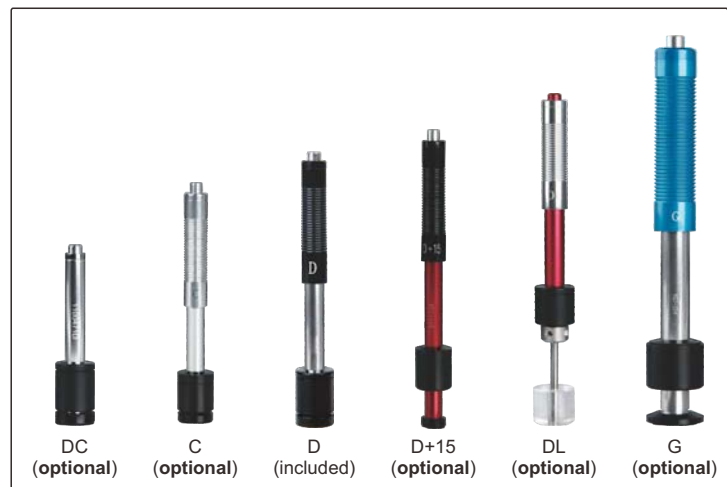
PORTABLE LEEB HARDNESS TESTER (WITH WIRELESS PROBE)
CODE HDT-WP201

INSPECTION CERTIFICATE

- Bluetooth digital probe
- Universal testing angle, no need to set impact direction
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRB), Shore (HSD) and tensile strength (σb)
- Dual value display, shows both Leeb and converted hardness
- Large LCD display with backlight
- Can choose large font display and statistics display
- Automatically calculate maximum, minimum and average value
- Save 300 data
- Operation temperature: -10°C~45°C
- According to ASTM A956, DIN 50156 GB/T 17394

hardness test block D (included)

small support ring (included)

bluetooth printer (**optional**)

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SPECIFICATION

Resolution	1HLD/1HV/1HB/0.1HRC/0.1HRB/ 0.1HSD/1σb
Accuracy	±6HLD (when HLD=800)
Measuring range	HL 170-960/HRC 17-69/HRB 13-101.7/ HB 20-655/HV 80-940/HSD 32-99.5/ σb (rm) 255-2180N/mm²
Power supply	2xAA battery
Dimension	135×77×32mm
Weight	240g
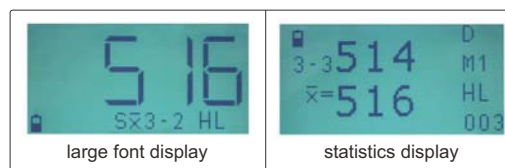
VIDEO

large font display

statistics display

STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
Impact device D	1 pc

OPTIONAL ACCESSORY

Impact device DC	HDT-WL320-DCW
Impact device C	HDT-WL320-CW
Impact device DL	HDT-WL320-DLW
Impact device G	HDT-WL320-GW
Hardness test block D	HDT-B-HLD3
Bluetooth printer	ISH-LP200-PRINTER
Support rings	page 829
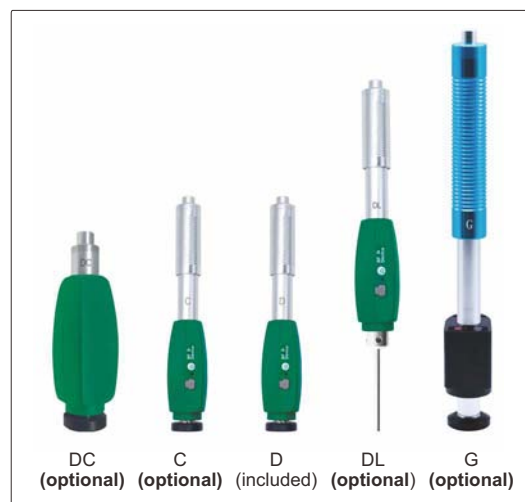
DC (optional) C (optional) D (included) DL (optional) G (optional)

APPLICABLE WORKPIECE

Impact device		DC	C	D	DL	G
Application		inner wall of small space	small or thin workpiece, coating layer	general use	narrow slot or small hole	casting or forging workpiece
Maximum roughness of workpiece (Ra)		2µm	0.4µm	2µm	2µm	7µm
Minimum weight of workpiece	direct measurement	5kg	1.5kg	5kg	5kg	15kg
	on solid support	2kg	0.5kg	2kg	2kg	5kg
	coupled on plate	0.05kg	0.02kg	0.05kg	0.05kg	0.5kg
Minimum thickness of workpiece		3mm	1mm	3mm	3mm	10mm

PEN-TYPE LEEB HARDNESS TESTER (ADVANCED TYPE)
CODE HDT-L410

DATA OUTPUT | HIGH ACCURACY | DL PROBE IS OPTIONAL

INSPECTION CERTIFICATE

VIDEO

software flash disk (included)

hardness test block D (included)

wireless printer (**optional**)

small support ring (included)

DL probe can be installed (**optional**)

- Metal housing
- HD TFT 320×320 display
- Impact device D
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Four display modes
- Automatic direction correction
- Tolerance testing
- Automatic power off, automatic calculation of statistics
- Dual value display, shows both Leeb and other conversion values
- 31 files can be saved, each containing 100 measurement data
- Connected to PC software via USB or Bluetooth 2.0
- Connected with printer via Bluetooth
- Operation temperature: -20°C~70°C
- According to ASTM A956, DIN 50156, GB/T 17394
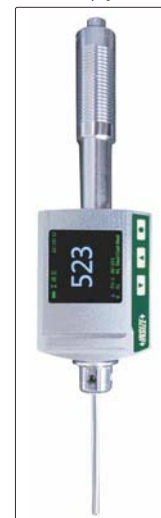
32

dynamic ring display

bluetooth mode

impact device
hardness scale
material
test value
min. value
max. value
impact direction

statistic display

hardness scale
test value
max. value
min. value
average
standard deviation

can choose large font display

print
battery
tolerance
max. value
average
impact direction
impact device
hardness scale
mean time
material
current time
test value
min. value
standard deviation
file No. memory No.
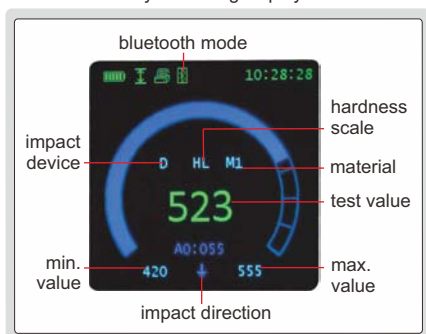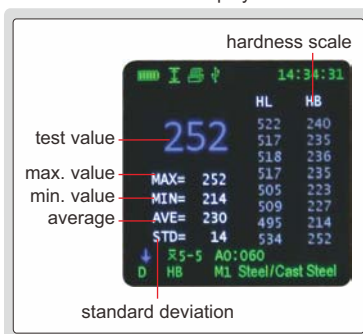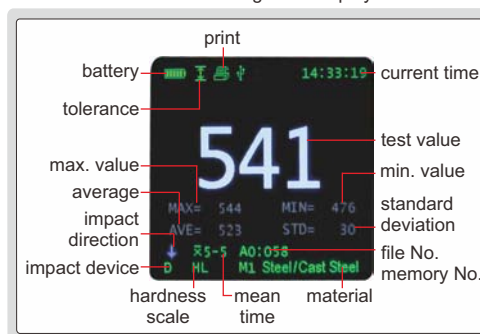
software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable or Bluetooth
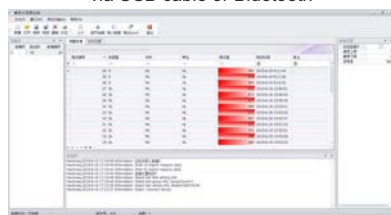
send the stored data to EXCEL

histogram display

upper tolerance
lower tolerance
test value
cartogram
max. value
min. value
average
standard deviation
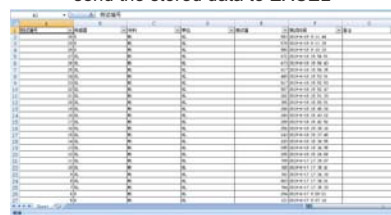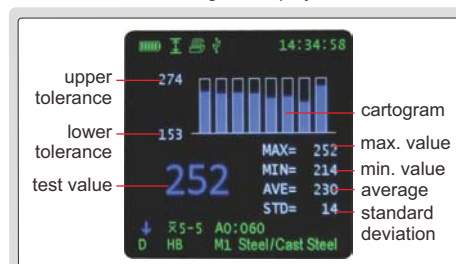
SPECIFICATION

Resolution	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM
Accuracy	±4HLD (when HLD=800)
Output	USB and bluetooth
Applicable workpiece	minimum weight
	minimum thickness: 5mm
	minimum radius of curved surface: 30mm
	maximum roughness (Ra): 2µm
Power supply	built-in 3.7V rechargeable battery
Dimension	148×44×22mm
Weight	115g

minimum weight	5kg (direct measurement)
	2kg (on solid support)
	0.05kg (coupled on plate)

STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc

OPTIONAL ACCESSORY

Printer	HDT-L410-PRINTER
Support rings	page 829
Hardness test block D	HDT-B-HLD3
DL probe	HDT-L410-DL

DATA OUTPUT

DL PROBE IS OPTIONAL

INSPECTION CERTIFICATE

PEN-TYPE LEEB HARDNESS TESTER (STANDARD TYPE)
CODE HDT-B430

DL probe can be installed (**optional**)

software flash disk (included)

hardness test block D (included)

small support ring (included)

wireless printer (**optional**)

VIDEO

- Impact device D is included
- High contrast OLED display
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (σb)
- Dual value display, shows both Leeb and other conversion values
- No need to set the testing direction
- 31 files can be saved, each containing 100 measurement data
- Automatically calculate maximum, minimum, average value
- Connected to PC software via USB or Bluetooth
- Connected with printer via Bluetooth
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156 GB/T, 17394

standard display

battery limit
material
probe
hardness scale
test value file No. mean times

big character display

test value
battery mean times hardness scale
storage on

average display

material
hardness scale
limit
average memory No.
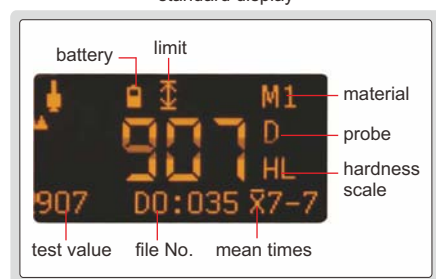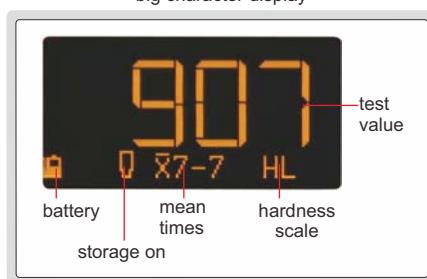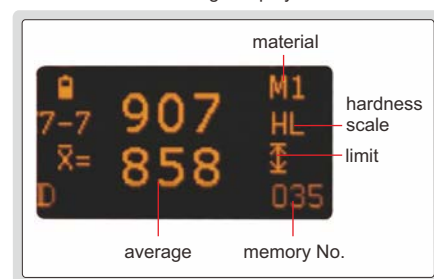
statistical parameter display
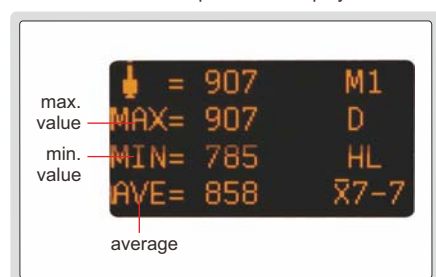
max. value
min. value
average

software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable or Bluetooth
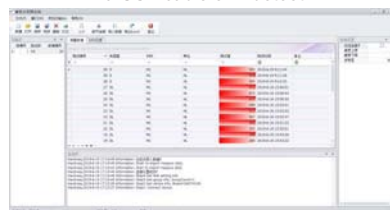
send the stored data to EXCEL
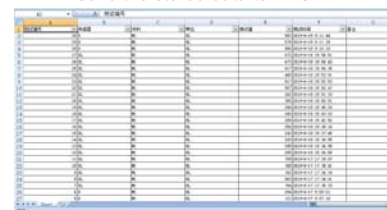
SPECIFICATION

Resolution	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HSD, 16b
Accuracy	±6HLD (when HLD=800)
Measuring range	HLD170-960, HRC17-70, HRB13-109, HB20-655, HV80-940 HSD32-99.5, HRA30-88, σb (rm) 255-2180N/mm²
Applicable workpiece	minimum weight	5kg (direct measurement)
		2kg (on solid support)
		0.05kg (coupled on plate)
	minimum thickness: 5mm	
	minimum radius of curved surface: 30mm	
	maximum roughness (Ra): 2μm	
Output	USB and bluetooth
Power supply	built-in 3.7V rechargeable battery
Dimension	148×44×28mm
Weight	110g

STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Small support ring	1 pc
Cleaning brush	1 pc
AC/DC adapter	1 pc
Software flash disk and USB cable	1 pc

OPTIONAL ACCESSORY

Printer	ISH-LP200-PRINTER
Support rings	page 829
Hardness test block D	HDT-B-HLD3
DL probe	HDT-L410-DL

PEN-TYPE LEEB HARDNESS TESTER (BASIC TYPE)
CODE HDT-L411

DATA OUTPUT

INSPECTION CERTIFICATE

software flash disk (included)

hardness test block D (included)

small support ring (included)

VIDEO

can choose large font display

test value

memory sign

hardness scale

material

mean time

software (included), upload the memory to PC, print and send to EXCEL

upload the memory to PC software via USB cable

send the stored data to EXCEL

- Impact device D
- Universal testing angle, no need to set impact direction
- Dual-coil probe, high accuracy
- Based on Leeb (HLD), converted to Vickers (HV), Brinell (HB), Rockwell (HRC, HRA and HRB), Shore (HS) and tensile strength (SGM)
- Dual value display, shows both Leeb and converted hardness
- High contrast digital LCD display
- Can choose large font display
- Automatically calculate maximum, minimum, average value
- Connected to PC via USB
- Save 999 data
- Operation temperature: -20°C~45°C
- According to ASTM A956, DIN 50156, GB/T 17394

SPECIFICATION

Resolution	1HLD, 1HV, 1HB, 0.1HRC, 0.1HRB, 0.1HRA, 0.1HS, 1SGM
Accuracy	±6HLD (when HLD=800)
Output	USB
Measuring range	HL100-960, HRC1-74.7, HRB1.2-140, HB28-1027, HV45-1230, HS4-112, HRA7-88.5, SGM (rm) 118-3315N/mm²
Applicable workpiece	minimum weight	5kg (direct measurement)
		2kg (on solid support)
		0.05kg (coupled on plate)
	minimum thickness: 5mm	
	minimum radius of curved surface: 30mm	
	maximum roughness (Ra): 2µm	
Power supply	1xAAA battery
Dimension	148×45×21mm
Weight	105g
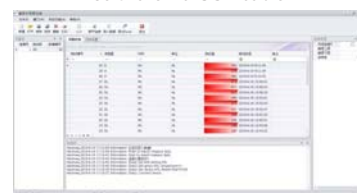
STANDARD DELIVERY

Main unit	1 pc
Hardness test block D	1 pc
Cleaning brush	1 pc
AAA battery	1 pc
Small support ring	1 pc
Software flash disk and USB cable	1 pc

OPTIONAL ACCESSORY

Support rings	page 829
Hardness test block D	HDT-B-HLD3

VIDEO

SUPPORT RING SET FOR PORTABLE LEEB HARDNESS TESTER
CODE ISH-PH-SP9

type A

type B

type C

type D

type E
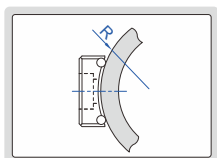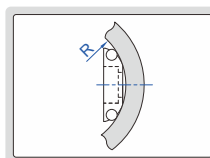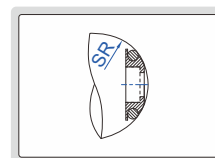
SPECIFICATION

Type	Applicable workpieces	Range (mm)	Quantity
A	cylindrical outside surface	R10-15	3 pcs
		R14.5-30	
		R25-50	
B	cylindrical inside surface	R11-13	3 pcs
		R12.5-17	
		R16.5-30	
C	spherical inside surface	SR11-13	3 pcs
		SR12.5-17	
		SR16.5-30	
D	spherical outside surface	SR10-15	2 pcs
		SR14.5-30	
E	cylindrical outside surface	R>10	1 pc
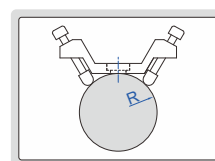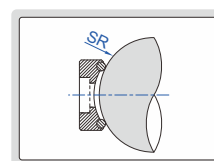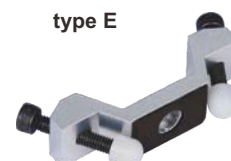
DIGITAL MAGNETIC ROCKWELL HARDNESS TESTER
CODE ISHR-D121

flat anvil for test block
(included)

VIDEO

- Apply to large and heavy steel or iron workpieces
- With statistic function, display average, maximum and minimum values
- Convert to HV, HB and tensile strength
- According to ISO 6508, ASTM E18

lifting handle

load/unload handwheel

LCD

operation panel

magnetic force switch

indenter

SPECIFICATION

Hardness scale	HRA, HRB, HRC
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	0.1HR
Flat workpiece requirement	length>190mm, width>60mm, thickness>5mm
Cylinder or tube workpiece requirement	length>200mm, diameter>Ø50mm, wall thickness>8mm
Power supply	3×AA batteries
Dimension	245×105×230mm
Weight	5.3kg

STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc

32

MAGNETIC ROCKWELL HARDNESS TESTER
CODE ISHR-M111

- Apply to large and heavy steel or iron workpieces
- According to ISO 6508, ASTM E18

VIDEO

flat anvil for test block
(included)

supports for cylinder or
tube workpieces (included)

magnifier with LED
(included)

lifting handle

load/unload handwheel

reading scale

magnetic force switch

test force indicator

indenter

32
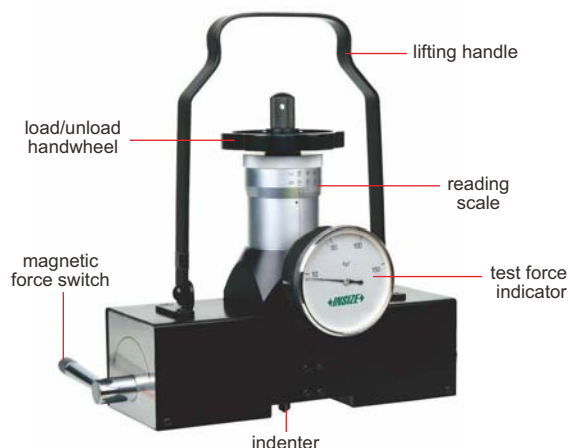
SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	1HR
Flat workpiece requirement	length>180mm, width>60mm, thickness>5mm
Cylinder or tube workpiece requirement	length>180mm, diameter>Ø50mm, wall thickness>8mm
Dimension	220×70×220mm
Weight	4.7kg

STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	2 pcs
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc
Flat anvil	1 pc
Support	4 pcs
Magnifier with LED	1 pc

MAGNETIC BRINELL/ROCKWELL HARDNESS TESTER
CODE ISHR-B141

VIDEO

lifting handle

load/unload handwheel

reading scale

magnetic force switch

test force indicator

indenter

flat anvil for test block
(included)

supports for cylinder or
tube workpieces (included)

magnifier with LED
(included)

measuring microscope
(included)
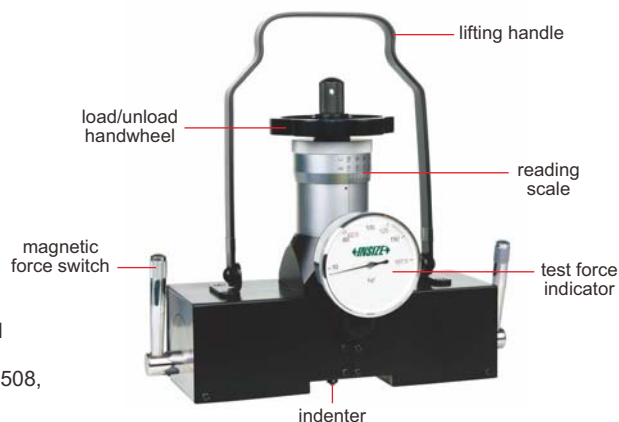
- Apply to large steel or iron workpieces
- According to ISO 6508, ASTM E18

SPECIFICATION

Rockwell scale	HRA, HRB, HRC, HRD, HRF, HRG
Brinell measuring range	20~650HBW
Rockwell test force	10kg preload, 60kg, 100kg, 150kg total load
Brinell test force	62.5kg, 125kg, 187.5kg
Load control	manual
Min. Rockwell reading	1HR
Measuring microscope	40X, graduation 0.01mm
Flat workpiece requirement	length>180mm, width>60mm, thickness>5mm
Cylinder and tube workpiece requirement	length>180mm, diameter>Ø50mm, thickness>8mm
Dimension	220×70×220mm
Weight	4.7kg

STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
Support	4 pcs
Diamond Rockwell indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Ø2.5mm Brinell indenter	1 pc
Hardness test block HRB85~95	1 pc
Hardness test block HRC60~70	1 pc
Hardness test block HRC20~30	1 pc
Brinell test block	1 pc
Measuring microscope	1 pc
Magnifier with LED	1 pc

PORTABLE BRINELL AND ROCKWELL HARDNESS TESTER
CODE ISBR-H181

VIDEO

- Apply to huge or medium-size workpieces
- According to ISO 6506, ISO 6508, ASTM E10, ASTM E18

flat anvil (included)

V-type anvil (included)

measuring microscope (included)

handle   indenter   test force indicator

load/unload handwheel

reading scale

C clamp
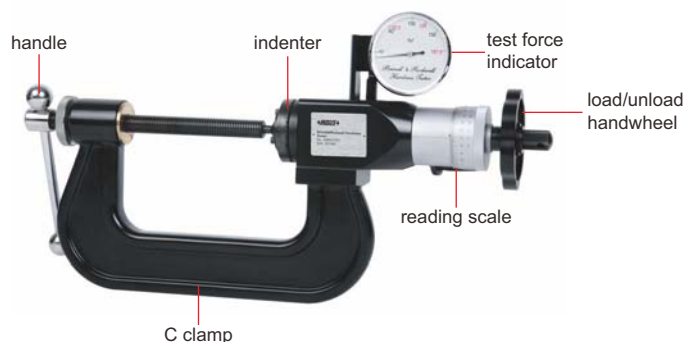
SPECIFICATION

Rockwell hardness scale	HRA, HRB, HRC
Brinell test range	16~650HBW
Rockwell preliminary test force	10kgf
Rockwell total test force	60kgf, 100kgf, 150kgf
Brinell test force	62.5kgf, 125kgf, 187.5kgf
Load control	manual
Min. reading	rockwell 0.5HR brinell 0.005mm (indentation diameter)
Max. workpiece thickness	75mm
Max. testing width	100mm (from the center of indenter to the main body)
Dimension	510×380×180mm
Weight	2.3kg

STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	1 pc
Ø2.5mm carbide ball indenter	1 pc
Ø5mm carbide ball indenter	1 pc
Hardness test block HRBW88~95	1 pc
Hardness test block HRC20~30	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block 200~300HBW2.5/187.5	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Measuring microscope	1 pc

32

PORTABLE ROCKWELL HARDNESS TESTER
CODE ISHR-P151

VIDEO

anvil extension for thin workpieces (included)

reading scale

indenter   magnifier   load/unload handwheel

test force indicator

handle

flat anvil (included)

V-type anvil (included)

base (included)
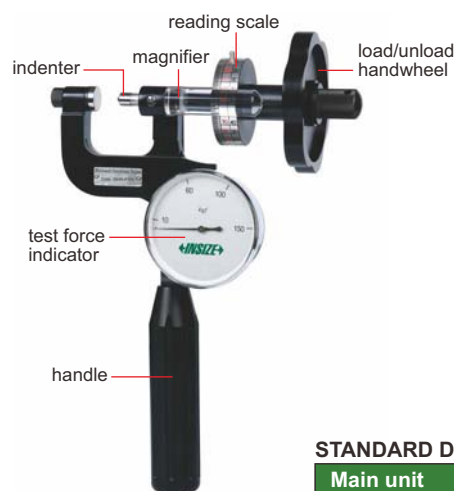
- According to ISO 6508, ASTM E18

SPECIFICATION

Hardness scale	HRA, HRB, HRC, HRD, HRF, HRG
Preliminary test force	10kg
Test force	60kg, 100kg, 150kg
Load control	manual
Min. reading	1HR
Max. workpiece thickness	25mm
Max. testing width	25mm (from the center of indenter to the main body)
Dimension	240×70×160mm
Weight (with base)	2.5kg

STANDARD DELIVERY

Main unit	1 pc
Diamond indenter	1 pc
Ø1.5875mm carbide ball indenter	2 pcs
Hardness test block HRB88~95	1 pc
Hardness test block HRC60~65	1 pc
Hardness test block HRC20~30	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Base	1 pc
Anvil extension	1 pc
Magnifier	2 pcs

PIN BRINELL HARDNESS TESTER
CODE ISHB-P101

VIDEO

- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter
- Static and impact test modes
- According to ISO and ASTM standard
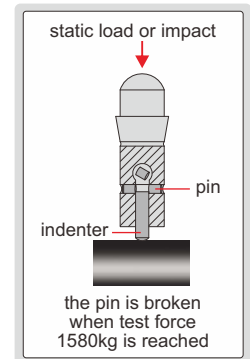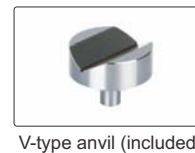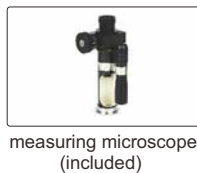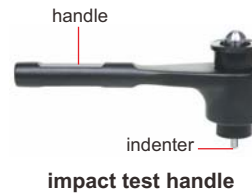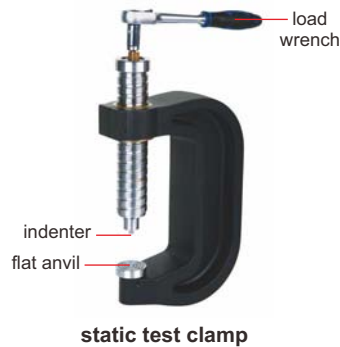
load wrench

indenter
flat anvil

static test clamp

handle

indenter

impact test handle

static load or impact

pin

indenter

the pin is broken when test force 1580kg is reached

static test   impact test

measuring microscope (included)

pins (included)

V-type anvil (included)

32

SPECIFICATION

Measuring range	100~350HBW (with Ø7.26mm indenter, included) 350~650HBW (with Ø4mm indenter, **optional**)
Test force	1580kg
Accuracy	static test: ±3% impact test: ±5%
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height of static test	150mm
Max. testing width of static test	80mm (from the center of indenter to the clamp)
Dimension	195×60×350mm
Weight	4.2kg

STANDARD DELIVERY

Static test clamp	1 pc
Impact test handle	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Ø7.26mm indenter	1 pc
Hardness test block	1 pc
Pin	250 pcs
Measuring microscope	1 pc

OPTIONAL ACCESSORY

Ø4mm indenter	ISHB-P101-INDENTER
Pin (250 pcs)	ISHB-P101-PIN

HAMMER IMPACT BRINELL HARDNESS TESTER
CODE HDT-PB350

handle

indenter

hammer impact to apply test force

pins (included)

measuring microscope (included)

test force

pin

indenter

workpiece

the pin is broken when test force 1580kg is reached

- Measure Brinell hardness of large and heavy workpieces
- 1580kg test force and Ø7.26mm ball indenter, equal to 3000kg test force and Ø10mm ball indenter

VIDEO

SPECIFICATION

Measuring range	100~350HBW (with Ø7.26mm indenter, included) 350~650HBW (with Ø4mm indenter, **optional**)
Test force	1580kg
Accuracy	±5%HBW
Repeatability	±5%HBW
Measuring microscope	20X, graduation 0.01mm
Dimension	200×50×100mm
Weight	0.8kg

STANDARD DELIVERY

Main unit	1 pc
Ø7.26mm indenter	1 pc
Hardness test block	1 pc
Pin	250 pcs
Pin removal tool	1 pc
Measuring microscope	1 pc

OPTIONAL ACCESSORY

Ø4mm indenter	ISHB-P101-INDENTER
Pin (250 pcs)	ISHB-P101-PIN

HYDRAULIC BRINELL HARDNESS TESTER
CODE ISHB-H131

V-type anvil
(included)

spherical anvil
(included)

measuring microscope
(included)

VIDEO

■ According to ISO 6506, ASTM E10

SPECIFICATION

Measuring range	16~650HBW
Test force	3000kg
Indenter	Ø10mm carbide ball
Measuring microscope	20X, graduation 0.01mm
Max. workpiece height	350mm
Max. testing width	90mm (from the center of indenter to the column)
Dimension	270×225×570mm
Weight	13.8kg

STANDARD DELIVERY

Main unit	1 pc
Flat anvil	1 pc
V-type anvil	1 pc
Spherical anvil	1 pc
Ø10mm carbide ball	2 pcs
Brinell test block	2 pcs
Measuring microscope	1 pc

load
handle

test force
indicator

unload
switch

height
adjustment

hydraulic
cylinder

indenter

flat anvil

32

VIDEO
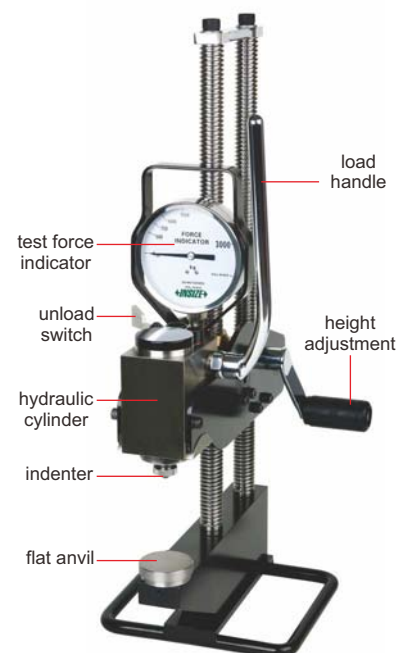
CHAIN TYPE HYDRAULIC BRINELL HARDNESS TESTER
CODE ISHB-C161

■ To measure the hardness of cylinders or tubes
■ According to ISO 6506, ASTM E10

SPECIFICATION

Measuring range	32~650HBW
Workpiece diameter range	Ø150~Ø500mm
Test force	3000kg
Indenter	Ø10mm carbide ball
Measuring microscope	20X, graduation 0.01mm
Dimension	270×225×570mm
Weight	14.5kg

STANDARD DELIVERY

Main unit	1 pc
1.5m chain	1 pc
Ø10mm carbide ball	2 pcs
Brinell test block	2 pcs
Measuring microscope	1 pc

position adjustment

load handle

test force
indicator

indenter

chain (included)
length: 1.5m
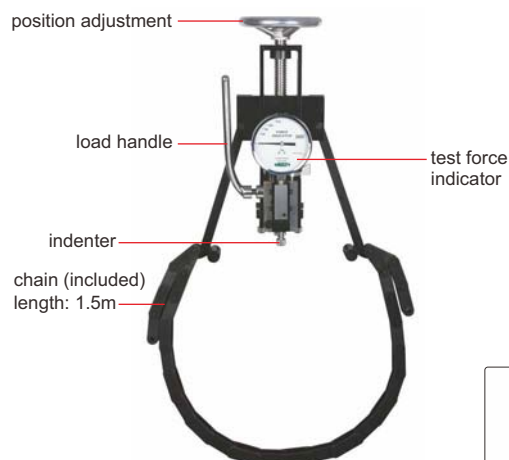
measuring microscope
(included)

ALUMINUM HARDNESS TESTERS

reading dial

indenter

anvil

ISHW-L20B

VIDEO

- To measure the hardness of soft metal such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-84 (2000)

SPECIFICATION

Code	ISHW-L20	ISHW-L20A	ISHW-L20B	ISHW-B70	ISHW-B75	ISHW-B92
Application	for aluminum alloy general use	for aluminum alloy thick workpiece	for aluminum alloy small tube	for hard aluminum alloy and hard brass	for soft brass and copper	for soft steel and cold-rolled steel
Thickness requirement of flat workpiece	0.6~6mm	0.6~13mm	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Internal diameter requirement of tube workpiece	>Ø10mm	>Ø10mm	>Ø6mm	>Ø10mm	>Ø10mm	>Ø10mm
Wall thickness requirement of tube workpiece	0.6~6mm	6~13mm (internal diameter Ø10~23.3mm) 0.6~6mm (internal diameter >Ø23.3mm)	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Hardness range	0~20HW					
Min. reading	1HW					
Accuracy	±0.5HW (at 5~17HW)					
Dimension	205×30×85mm					
Weight	500g					

STANDARD DELIVERY

Main unit	1 pc
Spare indenter	1 pc
Hardness test block	1 pc
Wrench	1 pc

ALUMINUM HARDNESS TESTERS (BASIC TYPE)

- To measure the hardness of soft metal such as aluminum alloy, copper, brass, soft steel, etc.
- According to ASTM B647-10 (2016)

VIDEO

STANDARD DELIVERY

Main unit	1 pc
Spare indenter	1 pc
Hardness test block	1 pc
Wrench	1 pc

reading dial

indenter

anvil

ISHW-H10

32

SPECIFICATION

Code	ISHW-H10	ISHW-H11	ISHW-H12	ISHW-H13	ISHW-H14	ISHW-H15
Application	for aluminum alloy general use	for aluminum alloy thick workpiece	for aluminum alloy small tube	for hard aluminum alloy and hard brass	for soft brass and copper	for soft steel and cold-rolled steel
Thickness requirement of flat workpiece	0.6~6mm	0.6~13mm	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Internal diameter requirement of tube workpiece	>Ø10mm	>Ø10mm	>Ø6mm	>Ø10mm	>Ø10mm	>Ø10mm
Wall thickness requirement of tube workpiece	0.6~6mm	6~13mm (internal diameter Ø10~23.3mm 0.6~6mm (internal diameter>Ø23.3mm)	0.6~8mm	0.6~6mm	0.6~6mm	0.6~6mm
Hardness range	0~20HW					
Min. reading	1HW					
Accuracy	±0.5HW (at 5~17HW)					
Dimension	205×30×95mm					
Weight	500g					

ALUMINUM HARDNESS TESTER
CODE ISHB-B300

- To measure the hardness of workpieces made of pure aluminum, aluminum alloy, fiber reinforced plastic, hard plastic, etc.
- According to ASTM B648-00, ASTM D2853-07

VIDEO

SPECIFICATION

Hardness range	0~100HBa (equal to 25~150HBW)
Min. reading	1HBa
Accuracy	±2HBa (at 42~52HBa) ±1HBa (at 84~88HBa)
Min. workpiece thickness	0.8mm
Dimension	142×65×90mm
Weight	500g

reading dial

indenter

support

STANDARD DELIVERY

Main unit	1 pc
Spare indenter	2 pcs
Hardness test block	2 pcs
Wrench	1 pc

DIGITAL SHORE DUROMETERS

VIDEO

35°
Ø17.86mm
Ø0.79mm
blunt taper indenter
ISH-DSA

30°
Ø17.86mm
SR0.1mm
sharp point indenter
ISH-DSD

Ø2.38mm
Ø17.86mm
SR1.19mm
ball indenter
ISH-DSOO

- According to ISO868, ISO7619, ASTM D 2240
- Average and peak (max.) mode
- Dwell time is adjustable
- Tolerance testing
- 500 memories
- Wireless connection to printer
- Handhold use or work with test stand (code **ISH-DS-STANDA**)
- Automatic power off

software flash disk
(included)

calibration block
(included)

printer (**optional**)

SPECIFICATION

Code	ISH-DSA	ISH-DSD	ISH-DSOO
Unit	Shore A	Shore D	Shore OO
Test material	soft plastic, soft rubber, etc.	hard plastic, hard rubber, etc.	very soft plastic, rubber, sponge, textile, etc.
Measuring range	0~100HA*	0~100HD *	0~100HOO
Resolution	0.1HA	0.1HD	0.1HOO
Accuracy	±1HA	±1HD	±1HOO
Indenter protrusion	2.5mm		
Output	wireless and USB		
Power supply	built-in rechargeable battery		
Dimension	153×50×29mm		
Weight	170g		

* Use **ISH-DSD** when measuring result is higher than 90HA
Use **ISH-DSA** when measuring result is lower than 20HD

STANDARD DELIVERY

Main unit	1 pc
Calibration block	1 pc
Software and USB cable	1 pc
AC/DC adapter	1 pc

OPTIONAL ACCESSORY

Printer	ISH-DS-PRINTER
Test stand	ISH-DS-STANDA

TEST STAND FOR DIGITAL SHORE DUROMETERS
CODE ISH-DS-STANDA

- For digital shore durometers (code **ISH-DSA**, **ISH-DSD** and **ISH-DSOO**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- Weight block A (included) is for **ISH-DSA**, weight block D (**optional**) is for **ISH-DSD**, remove weight block for **ISH-DSOO**

weight block D
(**optional**)
for **ISH-DSD**

load handle

weight block A

lifting screw

column

durometer is optional

stage

SPECIFICATION

Stage diameter	Ø115mm
Max. workpiece height	45mm
Max. testing width	63mm (from test point to the column)
Dimension	Ø195×370mm
Weight	5.61kg

STANDARD DELIVERY

Test stand	1 pc
Weight block A (for ISH-DSA)	1 pc

OPTIONAL ACCESSORY

Weight block D (for ISH-DSD)	ISH-DS-W4

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SHORE DUROMETERS

INSIZE PLUS
MADE IN EUROPE

VIDEO

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Handhold use or work with test stand (code **ISH-OS2**)

peak value indicator

35°
Ø0.79mm
blunt taper indenter

Ø18.00mm

ISH-S30A

30°
SR0.1mm
sharp point indenter

Ø18.00mm
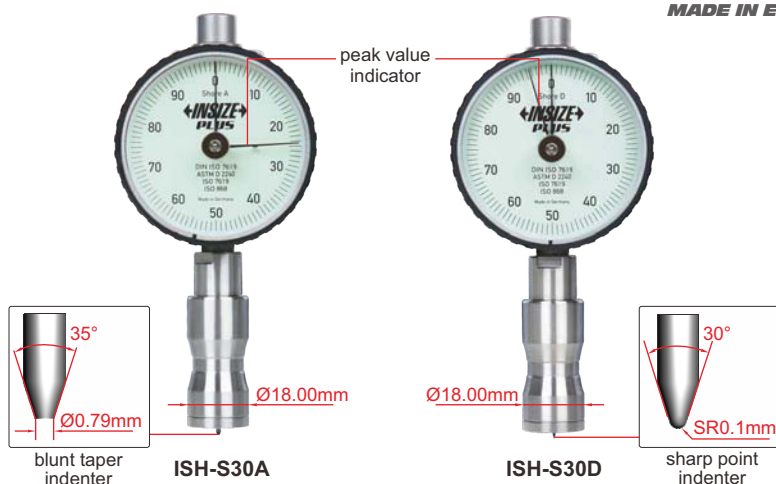
ISH-S30D

SPECIFICATION

Code	ISH-S30A	ISH-S30D
Scale	Shore A	Shore D
Test material	soft plastic, soft rubber, etc.	hard plastic, hard rubber, etc.
Measuring range *	0~100HA	0~100HD
Graduation	1HA	1HD
Accuracy	±0.5HA	±0.5HD
Indenter protrusion	2.5mm	
Weight	184g	

* Use **ISH-S30D** when measuring result is higher than 90HA
Use **ISH-S30A** when measuring result is lower than 20HD

TEST STAND FOR SHORE DUROMETERS
CODE ISH-OS2

INSIZE PLUS
MADE IN EUROPE

- For shore durometers (code **ISH-S30A** and **ISH-S30D**)
- Perform repeatable hardness measurement due to fewer possibilities of human error or measurement variations
- Special structure for stable loading
- 1kg weight block (included) is for **ISH-S30A**, 4kg weight block **(optional)** is for **ISH-S30D**

SPECIFICATION

Stage diameter	Ø98mm
Max. workpiece height	180mm
Max. testing width	115mm (from test point to the column)
Dimension	Ø200×500mm
Weight	18kg

STANDARD DELIVERY

Test stand	1 pc
1kg weight block (for ISH-S30A)	1 pc
Calibration block	1 pc

OPTIONAL ACCESSORY

4kg weight block (for ISH-S30D)	ISH-OS2-W4

column
1kg weight block
load handle
durometer is optional
stage

calibration block (included)

4kg weight block (**optional**) for **ISH-S30D**
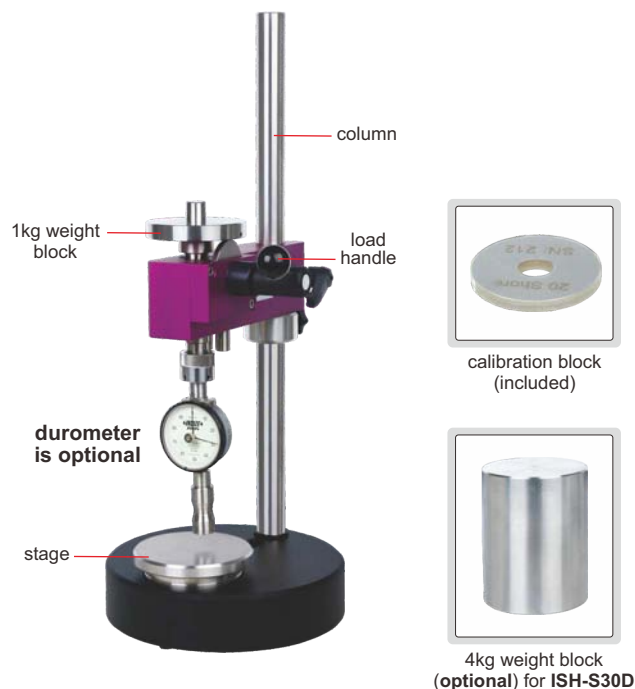
SHORE DUROMETERS

calibration block (**optional**)

- According to ISO868, ISO7619, ASTM D 2240
- With peak value indicator
- Optional accessory: test stand **ISH-STAC** and **ISH-STD**

peak value indicator

ISH-SAM — blunt taper indenter
35° Ø18.10mm Ø0.79mm

ISH-SDM — sharp point indenter
30° Ø18.10mm SR0.1mm
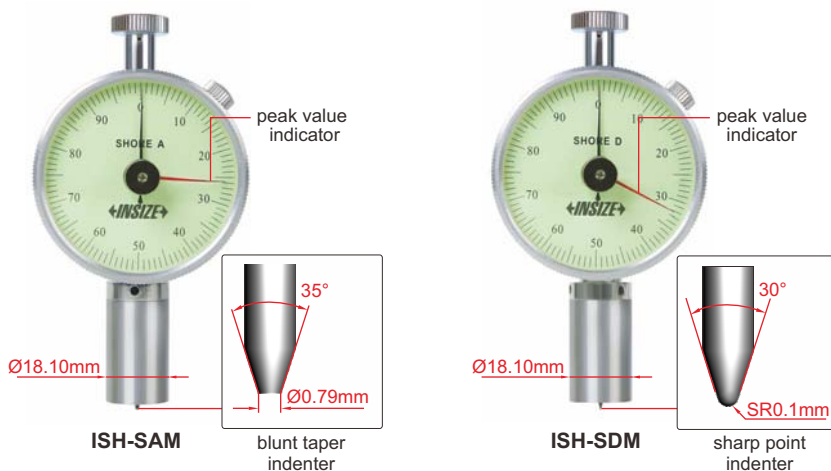
SPECIFICATION

Code	ISH-SAM	ISH-SDM
Scale	Shore A	Shore D
Application	nature rubber, soft elastomer, etc.	hard rubber, plastic, hard elastomer, etc.
Measuring range *	10~90HA	20~90HD
Graduation	1HA	1HD
Indenter protrusion	2.5mm	
Dimension	115×60×25mm	
Weight	160g	

* Use **ISH-SDM** when measuring result is higher than 90HA
Use **ISH-SAM** when measuring result is lower than 20HD

OPTIONAL ACCESSORY

Calibration block	ISH-DS-BLOCK

TEST STANDS FOR SHORE DUROMETERS

VIDEO

weight block

durometer
is optional

durometer
is optional

weight block

ISH-STAC

ISH-STD

■ For shore durometers
(code **ISH-SAM** and **ISH-SDM**)
■ Perform repeatable hardness
measurement due to fewer possibilities
of human error or measurement variations
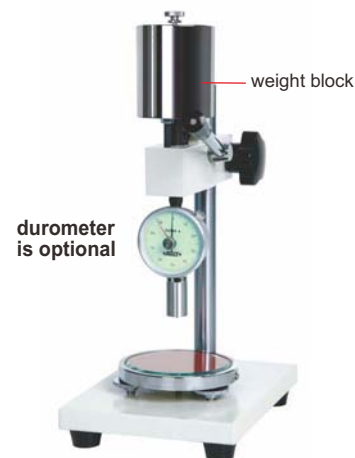
SPECIFICATION

Code	ISH-STAC	ISH-STD
Applicable durometer	ISH-SAM	ISH-SDM
Stage diameter	Ø100mm	Ø100mm
Max. workpiece height	75mm	75mm
Max. testing width	65mm (from test point to the column)	65mm (from test point to the column)
Weight block	1kg	5kg

FRUIT HARDNESS TESTER

■ Measure the hardness of apples, pears, strawberries and grapes, etc.
■ The degree of ripeness can be judged by measuring the hardness of the fruit

Ø3.5mm

10mm

9643-4

SPECIFICATION

Code	Range	Graduation	Accuracy	Probe diameter	Probe depth	Dimension	Weight
9643-4	0.5-4kg/cm² $(0.5\text{-}4\times10^5\text{Pa})$	0.02kg/cm² $(0.02\times10^5\text{Pa})$	±2%	Ø3.5mm	10mm	151×55×30mm	0.2kg

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HARDNESS TEST BLOCKS

INSPECTION CERTIFICATE
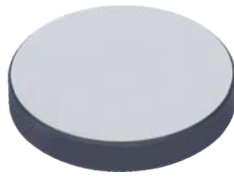
Rockwell   Vickers   Brinell   Leeb

Micro-Vickers   Knoop   Ultrasonic   Shore

- Supplied with manufacturer inspection certificate

Rockwell hardness test blocks

Code	Type	Hardness
HDT-B-HRA	HRA	80-84
HDT-B-HRB	HRB	88-100
HDT-B-HRC1	HRC	20-30
HDT-B-HRC2	HRC	35-55
HDT-B-HRC3	HRC	60-70
HDT-B-HRD1	HRD	40-47
HDT-B-HRD2	HRD	55-63
HDT-B-HRD3	HRD	70-75
HDT-B-HRE	HRE	107-114
HDT-B-HRF	HRF	105-114
HDT-B-HRG1	HRG	57-82
HDT-B-HRG2	HRG	80-94

Rockwell superficial hardness test blocks

Code	Type	Hardness
HDT-B-HR15N1	HR15N	70-77
HDT-B-HR15N2	HR15N	78-88
HDT-B-HR15N3	HR15N	89-91
HDT-B-HR30N1	HR30N	42-54
HDT-B-HR30N2	HR30N	55-73
HDT-B-HR30N3	HR30N	74-80
HDT-B-HR45N1	HR45N	20-31
HDT-B-HR45N2	HR45N	32-61
HDT-B-HR45N3	HR45N	63-70
HDT-B-HR15T	HR15T	88-93
HDT-B-HR30T	HR30T	73-82
HDT-B-HR45T	HR45T	58-72

Leeb hardness test blocks

Code	Type	Hardness
HDT-B-HLD1	HLD	490-570
HDT-B-HLD2	HLD	590-670
HDT-B-HLD3	HLD	750-830
HDT-B-HLG1	HLG	460-540
HDT-B-HLG2	HLG	550-630

Vickers hardness test blocks

Code	Type	Hardness
HDT-B-HV5A	HV5	175-200
HDT-B-HV5B	HV5	200-300
HDT-B-HV5C	HV5	300-400
HDT-B-HV5D	HV5	400-500
HDT-B-HV5E	HV5	500-600
HDT-B-HV5F	HV5	600-700
HDT-B-HV5G	HV5	700-750
HDT-B-HV10A	HV10	175-200
HDT-B-HV10B	HV10	200-300
HDT-B-HV10C	HV10	300-400
HDT-B-HV10D	HV10	400-500
HDT-B-HV10E	HV10	500-600
HDT-B-HV10F	HV10	600-700
HDT-B-HV10G	HV10	700-750
HDT-B-HV30A	HV30	175-200
HDT-B-HV30B	HV30	200-300
HDT-B-HV30C	HV30	300-400
HDT-B-HV30D	HV30	400-500
HDT-B-HV30E	HV30	500-600
HDT-B-HV30F	HV30	600-700
HDT-B-HV30G	HV30	700-750
HDT-B-HV50A	HV50	175-200
HDT-B-HV50B	HV50	200-300
HDT-B-HV50C	HV50	300-400
HDT-B-HV50D	HV50	400-500
HDT-B-HV50E	HV50	500-600
HDT-B-HV50F	HV50	600-700
HDT-B-HV50G	HV50	700-750
HDT-B-HV100A	HV100	175-200
HDT-B-HV100B	HV100	200-300
HDT-B-HV100C	HV100	300-400
HDT-B-HV100D	HV100	400-500
HDT-B-HV100E	HV100	500-600
HDT-B-HV100F	HV100	600-700
HDT-B-HV100G	HV100	700-750

Micro-Vickers hardness test blocks

Code	Type	Hardness
HDT-B-HV005A	HV0.05	200-300
HDT-B-HV005B	HV0.05	300-400
HDT-B-HV005C	HV0.05	400-500
HDT-B-HV005D	HV0.05	500-600
HDT-B-HV005E	HV0.05	600-700
HDT-B-HV005F	HV0.05	700-750
HDT-B-HV01A	HV0.1	200-300
HDT-B-HV01B	HV0.1	300-400
HDT-B-HV01C	HV0.1	400-500
HDT-B-HV01D	HV0.1	500-600
HDT-B-HV01E	HV0.1	600-700
HDT-B-HV01F	HV0.1	700-750
HDT-B-HV02A	HV0.2	200-300
HDT-B-HV02B	HV0.2	300-400
HDT-B-HV02C	HV0.2	400-500
HDT-B-HV02D	HV0.2	500-600
HDT-B-HV02E	HV0.2	600-700
HDT-B-HV02F	HV0.2	700-750
HDT-B-HV03A	HV0.3	200-300
HDT-B-HV03B	HV0.3	300-400
HDT-B-HV03C	HV0.3	400-500
HDT-B-HV03D	HV0.3	500-600
HDT-B-HV03E	HV0.3	600-700
HDT-B-HV03F	HV0.3	700-750
HDT-B-HV05A	HV0.5	200-300
HDT-B-HV05B	HV0.5	300-400
HDT-B-HV05C	HV0.5	400-500
HDT-B-HV05D	HV0.5	500-600
HDT-B-HV05E	HV0.5	600-700
HDT-B-HV05F	HV0.5	700-750
HDT-B-HV1A	HV1	200-300
HDT-B-HV1B	HV1	300-400
HDT-B-HV1C	HV1	400-500
HDT-B-HV1D	HV1	500-600
HDT-B-HV1E	HV1	600-700
HDT-B-HV1F	HV1	700-750

Knoop hardness test blocks

Code	Type	Hardness
HDT-B-HK005A	HK0.05	200-300
HDT-B-HK005B	HK0.05	400-500
HDT-B-HK005C	HK0.05	700-800
HDT-B-HK01A	HK0.1	200-300
HDT-B-HK01B	HK0.1	400-500
HDT-B-HK01C	HK0.1	700-800
HDT-B-HK02A	HK0.2	200-300
HDT-B-HK02B	HK0.2	400-500
HDT-B-HK02C	HK0.2	700-800
HDT-B-HK03A	HK0.3	200-300
HDT-B-HK03B	HK0.3	400-500
HDT-B-HK03C	HK0.3	700-800
HDT-B-HK05A	HK0.5	200-300
HDT-B-HK05B	HK0.5	400-500
HDT-B-HK05C	HK0.5	700-800
HDT-B-HK1A	HK1	200-300
HDT-B-HK1B	HK1	400-500
HDT-B-HK1C	HK1	700-800

Brinell hardness test blocks

Code	Type	Hardness
HDT-B-HB10A1	HBW10/3000	100-200
HDT-B-HB10A2	HBW10/3000	200-300
HDT-B-HB10A3	HBW10/3000	300-400
HDT-B-HB10A4	HBW10/3000	400-500
HDT-B-HB10A5	HBW10/3000	500-600
HDT-B-HB10A6	HBW10/3000	600-650
HDT-B-HB10B1	HBW10/1500	100-200
HDT-B-HB10B2	HBW10/1500	200-300
HDT-B-HB10B3	HBW10/1500	300-400
HDT-B-HB10B4	HBW10/1500	400-500
HDT-B-HB10B5	HBW10/1500	500-600
HDT-B-HB10B6	HBW10/1500	600-650
HDT-B-HB10C1	HBW10/1000	90-200
HDT-B-HB10C2	HBW10/1000	200-300
HDT-B-HB10C3	HBW10/1000	300-400
HDT-B-HB10C4	HBW10/1000	400-450
HDT-B-HB10D1	HBW10/500	90-200
HDT-B-HB10D2	HBW10/500	200-300
HDT-B-HB10D3	HBW10/500	300-400
HDT-B-HB10D4	HBW10/500	400-450
HDT-B-HB25A1	HBW2.5/187.5	100-200
HDT-B-HB25A2	HBW2.5/187.5	200-300
HDT-B-HB25A3	HBW2.5/187.5	300-400
HDT-B-HB25A4	HBW2.5/187.5	400-500
HDT-B-HB25A5	HBW2.5/187.5	500-600
HDT-B-HB25A6	HBW2.5/187.5	600-650
HDT-B-HB25B1	HBW2.5/62.5	90-200
HDT-B-HB25B2	HBW2.5/62.5	200-300
HDT-B-HB25B3	HBW2.5/62.5	300-400
HDT-B-HB25B4	HBW2.5/62.5	400-450
HDT-B-HB5A1	HBW5/750	100-200
HDT-B-HB5A2	HBW5/750	200-300
HDT-B-HB5A3	HBW5/750	300-400
HDT-B-HB5A4	HBW5/750	400-500
HDT-B-HB5A5	HBW5/750	500-600
HDT-B-HB5A6	HBW5/750	600-650
HDT-B-HB5B1	HBW5/250	90-200
HDT-B-HB5B2	HBW5/250	200-300
HDT-B-HB5B3	HBW5/250	300-400
HDT-B-HB5B4	HBW5/250	400-450

Shore hardness test blocks

Code	Type	Hardness*
HDT-B-SA	SA	6 pcs/set (30, 40, 50, 60, 70, 80)
HDT-B-SD	SD	3 pcs/set (15, 30, 90)

*The actual value may be slightly different when delivered

Ultrasonic hardness test blocks

Code	Type	Hardness
HDT-B-HRCU1	HRC	20-30
HDT-B-HRCU2	HRC	35-55
HDT-B-HRCU3	HRC	60-70
HDT-B-HV5U1	HV5	200-300
HDT-B-HV5U2	HV5	400-500
HDT-B-HV5U3	HV5	700-750
HDT-B-HB10U1	HBW10/1000	90-200
HDT-B-HB10U2	HBW10/3000	200-300
HDT-B-HB10U3	HBW10/3000	400-500

CONCRETE STRENGTH TESTERS

DATA OUTPUT

VIDEO

CST-D101

CST-D102

rebound body

digital display unit

CST-D102 seperable

- Measure the strength of general building components, bridges and various concrete components (slabs, beams, columns, bridges, etc.)
- Angle, test surface, pumping, carbonization depth and other parameters can be customized according to the requirements
- The rebound body can be used for 2000 times
- USB data transmission
- The software can automatically generate the test report, and the strength curve can be customized and stored in the tester
- Storage and reading of 1000 test data
- According to JGJ/T23-2011, the curve of rebound meter can be customized to calculate the compressive strength of concrete

analog scale   battery display

test parameters

measurement grouping   rebound data   tolerance alarm   strength
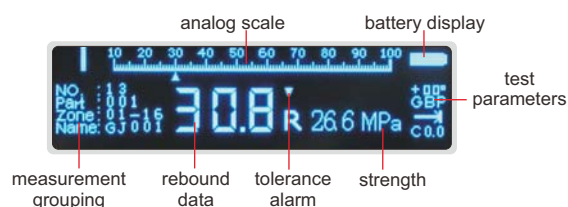
SPECIFICATION

Code	CST-D101	CST-D102
Display	OLED display	
Range	10-70N/mm²	
Accuracy	±1R	
Parameter	MPa, N/mm², Kgf/mm²	
Impact energy	2.207J, for testing common buildings or bridge structures	
Output	USB	
Structure	one body, non-seperable	separable, the digital display unit can be reused
Memory	1000 data	
Operation temperature	-40°C~60°C	
Power supply	built-in rechargeable battery	
Dimension	280×75×60mm	
Weight	1.1kg	

software flash disk (included)

sander (included)

STANDARD DELIVERY

Main unit	1 pc
Sander	1 pc
Power adapter	1 pc
Software and USB cable	1 pc

OPTIONAL ACCESSORY

Rebound body (for CST-D102)	CST-D102-REBOUND
Digital display unit (for CST-D102)	CST-D102-DISPLAY
Calibration block	CST-D-BLOCK

calibration block (**optional**)

software (included) for uploading and storing data, printing and importing/exporting strength curves

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Cutting Machines
Page 844-846

Grinders And Polishers
Page 847-850

Mounting Presses
Page 851-853

Metallurgical Microscopes
Page 853
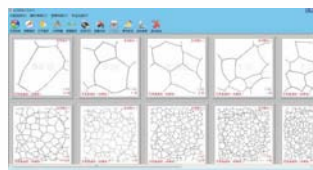
Metallurgical Analysis Softwares
Page 853

Cutting Machine Accessories
Page 854-855

Mounting Press Accessories
Page 855-857

Grinder And Polisher Accessories
Page 857

AUTOMATIC CUTTING MACHINE (ADVANCED TYPE)
CODE MLP-HCM102

VIDEO

electromagnetic lock

water cleaning gun

sliding door

coolant switch
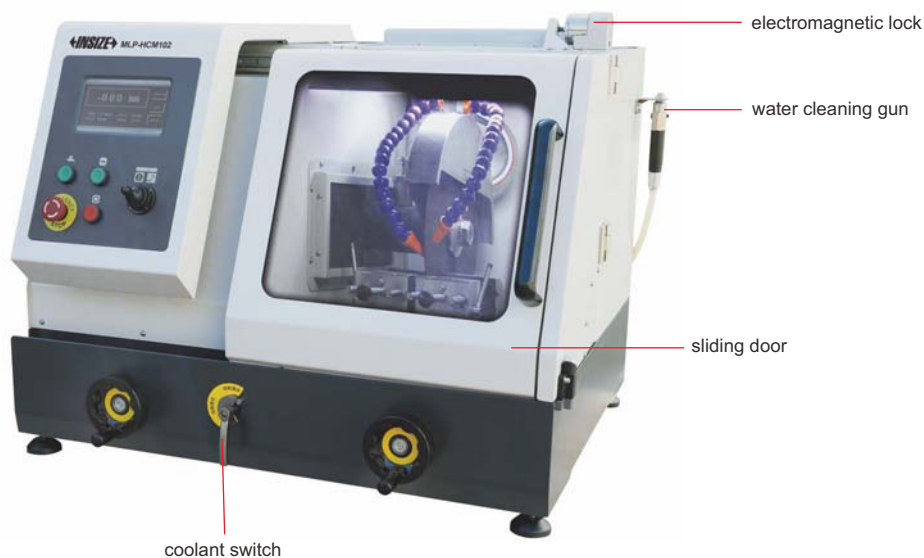
- Suitable for cylinder workpieces (diameter≤100mm) and rectangular samples (height≤70mm, width≤100mm)
- Cooling system avoids overheating and destroying sample structure
- Three cutting modes (manual, pulse, continuous cutting), the cutting feed speed and cutting stroke can be programed

SPECIFICATION

Maximum cutting diameter	Ø100mm
Cutting blade	Ø350×2.5×Ø32mm
Rotation speed	2200r/min
Spindle travel	145mm
Table travel	300mm
Illumination	LED ceiling light
Noise	≤85dB
Cooling tank	60L
Removable baffle	contain
Table dimension	330×280mm
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	900×860×620mm
Weight	285kg

STANDARD DELIVERY

Main unit	1 pc
Cutting blade	5 pcs
Cutting blade chuck	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø350×2.5×Ø32mm, 40 pcs/box)	MLP-50Z4
	MLP-60Y4 *
Cutting blade chuck (for Ø32mm cutting blade)	MLP-HCM102-CHUCK

* Special cutting blade for high hardness

coolant (included)

cutting blade **MLP-50Z4**
(included)
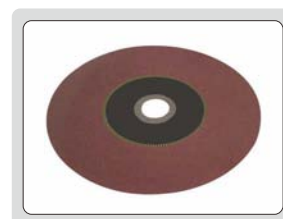
cutting blade **MLP-60Y4**
(**optional**)

CUTTING MACHINE (STANDARD TYPE)
CODE MLP-CM60

VIDEO

illumination

cutter handle

stainless steel fixture

safety switch

MLP-CM60

start   stop

cleaning switch

emergency button

water tank

- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure
- With safety switch, the machine will automatically stop when the cover is opened

SPECIFICATION

Maximum cutting diameter	Ø60mm
Cutting blade	Ø250×1.5×Ø25.4mm
Rotation speed	2800r/min
Motor power	2.2kW
Power supply	AC 380V, 50Hz
Dimension	830×620×450mm
Weight	82kg

STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø250×1.5×Ø25.4mm, 60 pcs/box)	MLP-CM60-CUT2
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	MLP-50Z2 *
Cutting blade chuck (for Ø32mm cutting blade)	MLP-CM60-CHUCK

* When use **MLP-50Z2**, please purchase **MLP-CM60-CHUCK**

cutting blade **MLP-CM60-CUT2**
(included)

coolant (**optional**)

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CUTTING MACHINE (BASIC TYPE)
CODE MLP-CM86

VIDEO

handle

motor

chuck

power switch

light switch   start

stop

water pump
switch

MLP-CM86

- For metal and non-metal materials
- Cooling device avoids overheating and destroying sample structure

SPECIFICATION

Maximum cutting diameter	Ø80mm
Cutting blade	Ø250×2×Ø32mm
Rotation speed	2800r/min
Power	3kW
Power supply	AC 380V, 50Hz
Dimension	690×790×670mm

STANDARD DELIVERY

Main unit	1 pc
Cutting blade	2 pcs
Coolant	1 barrel (4L)
Water tank	1 pc

OPTIONAL ACCESSORY

Coolant (4L, 1:20 diluted with water)	MLP-OL3
Cutting blade (Ø250×2×Ø32mm, 50 pcs/box)	MLP-60Y2*
	MLP-50Z2
Cutting blade chuck (for Ø32mm cutting blade)	MLP-CM86-CHUCK

*Special cutting blade for high hardness

coolant (included)

cutting blade **MLP-50Z2**
(included)
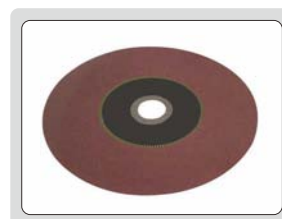
cutting blade **MLP-60Y2**
(**optional**)

GRINDER AND POLISHER (ADVANCED TYPE)
CODE MLP-GP305

VIDEO

manual grinding wheel

silicon carbide paper (included)

polishing cloth (included)

anti-stick disc (included)

magnetic pad (included)
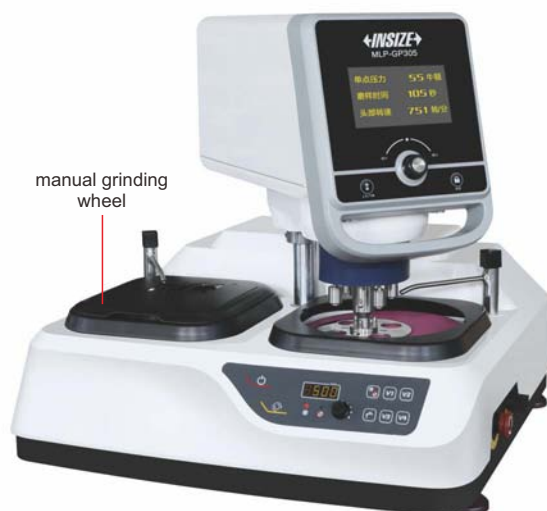
- Replaceable double wheels, rotation direction can be selected
- Multi sample holder, pneumatic single point loading, automatic abrasive distribution
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished

SPECIFICATION

Wheel diameter	Ø250mm (customizable Ø300mm)
Wheel rotation speed	50~1000r/min (stepless adjustable), 150r/min, 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation number	6
Operation time	0~995s
Sample diameter	Ø30mm (customizable Ø22mm, Ø25mm, Ø30mm, Ø40mm, Ø45mm, Ø50mm)
Air pressure	0.6~0.9MPa
Power supply	AC220V, 50Hz
Input power	1.1kW
Dimension	758×785×680mm
Weight	125kg

STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	20 pcs each (240, 250, 400, 800, 1200), 100 pcs in total
Polishing cloth	3 pcs each (velvet silk, woolen fabric), 6 pcs in total
Polishing agent	1 pc (W2.5, 500ml)
Spray polish agent	1 pc (W2.5, 350ml)
Magnetic pad	2 pcs (Ø250mm)
Anti-stick disc	3 pcs (Ø250mm)

OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZG□□ *	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	MLP-CT7	15 pcs/box, long velvet silk material
	MLP-CT27	15 pcs/box, woolen fabric
Diamond polishing liquid	MLP-DLA□□ *	500ml, select granularity (μm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Spray polish agent	MLP-DSA□□ *	350ml, select granularity (μm): W40, W28, W20, W14, W10, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD2	Ø250mm
Anti-stick disc	MLP-DC2	Ø250mm

*□□ is granularity specification, for example, code **MLP-DLA40** stands for 40μm

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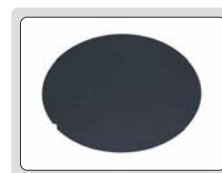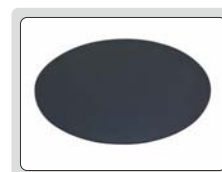
GRINDER AND POLISHER (ADVANCED TYPE)
CODE MLP-GP260

VIDEO

cooling water pipe

- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Can hold up to 4 samples (6 holes are optional and can hold up to 6 samples)
- Smooth rotation, low noise
- Adjustable speed
- Water cooling device and abrasive cleaning nozzle prevent samples from overheating and destroying structure
- Wheel rotation direction can be selected
- Replaceable wheel

SPECIFICATION

Wheel diameter	Ø250mm
Wheel rotation speed	50~999r/min (stepless adjustable), 150 or 300r/min (two fixed speeds)
Wheel rotation direction	clockwise or counterclockwise
Grinding head speed	50~150r/min (stepless adjustable)
Pressure range	5~60N
Operation time	5~995s
Sample diameter	Ø30mm (can be customized)
Air pressure	0.6~0.9MPa
Power supply	AC 220V, 50Hz
Input power	1.1kW
Dimension	594×795×687mm
Weight	98kg

silicon carbide paper
(**optional**)
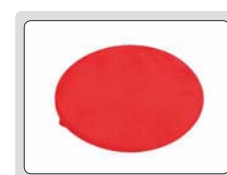
STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	6 pcs (200, 600, 1000)
Polishing cloth	4 pcs

polishing cloth (**optional**)

OPTIONAL ACCESSORY

Silicon carbide paper	**MLP-SZG**□□ *	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	**MLP-CT7**	15 pcs/box, long velvet silk material
Diamond polishing liquid	**MLP-DLA**□□ *	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25

* □□ is granularity specification, for example, code **MLP-DLA40** stands for 40µm

GRINDERS AND POLISHERS (STANDARD TYPE)

VIDEO

- ABS case and stainless steel parts, anti-corrosion, easy to clean
- Replaceable double wheel, wheel can be controlled independently, rotation direction can be selected
- Smooth rotation, low noise
- Four fixed speeds/stepless adjustable speed
- Water cooling device, prevent samples from overheating and destroying structure
- Metallographic samples can be roughly ground, finely ground, roughly polished and finely polished

cooling water pipe

MLP-GP280

silicon carbide paper (**optional**)

polishing cloth (**optional**)
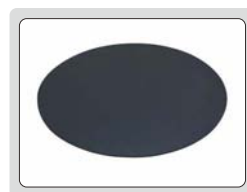
magnetic pad (**optional**)

anti-stick disc (**optional**)

SPECIFICATION

Code	MLP-GP270	MLP-GP280
Wheel diameter	Ø203mm	Ø250mm
Wheel rotation speed	0-1400r/min (stepless adjustable)	0-1000r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise	
Fixed speed	150r/min, 300r/min, 600r/min, 1000r/min	
Power supply	AC 220V, 50Hz	
Input power	1.5kW	
Dimension	758×785×310mm	
Weight	50kg	

STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	3 pcs
Polishing agent	1 pc

OPTIONAL ACCESSORY

Silicon carbide paper	MLP-SZD□□* (for MLP-GP270)	50 pcs/box, select granularity, Ø200mm with adhesive: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
	MLP-SZG□□* (for MLP-GP280)	50 pcs/box, select granularity, Ø250mm with adhesive: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	MLP-CT6 (for MLP-GP270)	15 pcs/box, Ø200mm with adhesive, long velvet silk material
	MLP-CT7 (for MLP-GP280)	15 pcs/box, Ø250mm with adhesive, long velvet silk material
Diamond polishing liquid	MLP-DLA□□*	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	MLP-AD1 (for MLP-GP270)	Ø200mm
	MLP-AD2 (for MLP-GP280)	Ø250mm
Anti-stick disc	MLP-DC1 (for MLP-GP280)	Ø200mm
	MLP-DC2 (for MLP-GP280)	Ø250mm

* □□ is granularity specification, for example, code **MLP-DLA40** stands for 40µm

GRINDER AND POLISHER (BASIC TYPE)
CODE MLP-GP314

VIDEO

cooling water pipe

- Double wheels, rotation direction can be selected
- Smooth rotation, low noise
- Water cooling device, prevent samples from overheating and destroying structure
- Replaceable silicon carbide paper and polishing cloth for grinding and polishing process

silicon carbide paper (included)
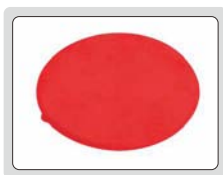
polishing cloth (included)
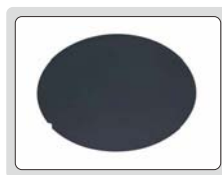
anti-stick disc (**optional**)
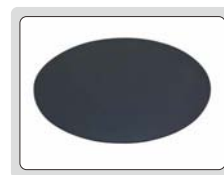
magnetic pad (**optional**)

SPECIFICATION

Wheel diameter	Ø203mm
Wheel rotation speed	0~1400r/min (stepless adjustable)
Wheel rotation direction	clockwise or counterclockwise
Power supply	AC 220V, 50Hz
Input power	0.75kW
Dimension	755×700×310mm
Weight	50kg

STANDARD DELIVERY

Main unit	1 pc
Silicon carbide paper	5 pcs each (240, 400, 800, 1200), 20 pcs in total
Polishing cloth	4 pcs
Polishing agent	1 pc (W2.5, 500ml)

OPTIONAL ACCESSORY

Silicon carbide paper	**MLP-SZD**□□ *	50 pcs/box, select granularity: 120, 180, 240, 400, 600, 800, 1000, 1200, 1500, 2000
Polishing cloth	**MLP-CT6**	15 pcs/box, long velvet silk material
Diamond polishing liquid	**MLP-DLA**□□ *	500ml, select granularity (µm): W40, W28, W20, W14, W9, W7, W5, W3.5, W2.5, W1.5, W1.0, W0.5, W0.25
Magnetic pad	**MLP-AD1**	Ø203mm
Anti-stick disc	**MLP-DC1**	Ø203mm

***□□** is granularity specification, for example, code **MLP-DLA40** stands for 40µm

MOUNTING PRESSES (ADVANCED TYPE)

MLP-MP43

MLP-MP53

- Built-in heating and cooling structure reduces the mounting time to 6 minutes
- The programmed control system reserves 10 customized preparation schemes to meet different mounting requirements
- The thickness of the middle mold is up to 15mm, and 2 samples can be mounted at the same time at one station
- Can accurately control the pressure size, adjustment range: 1~20MPa

hot mounting resin (included)

SPECIFICATION

Code	MLP-MP43	MLP-MP53
Station number	1	2
Power	1100W+heating power *	1200W+heating power×2
Mounting diameter	Ø30mm (customizable Ø25, Ø40, Ø50mm)	
System pressure	1~20MPa, optional increase or decrease 1MPa	
Pressure mode	automatic electro-hydraulic	
Cooling mode	automatic water cooling **	
Heating range	90~200°C	
Holding time	0~10min	
Cooling temperature/time	40~90°C/0~10min	
Power supply	AC 220V, 50Hz	
Dimension	530×485×463mm	671×485×463mm
Weight	44kg	77kg

*Heating power of mounting sleeve: 1800W (mounting diameter≤31.8mm), 2400W (mounting diameter≥38.1mm)
**Cooling water pressure should not be higher than 1MPa, must be filtered through 40μm filter

STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc
Filter	1 pc
Vacuum cleaner tip	1 pc

OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3

MOUNTING PRESS (STANDARD TYPE)
CODE MLP-MP30

- Automatic heating, pressuring, cooling and pressure relief
- Water cooling system

hot mounting resin (**optional**)

SPECIFICATION

Diameter of workpiece	Ø30mm
Heating temperature range	100~200°C
Delay range	0~999s
Hold time	0~999s
Cooling temperature	20~90°C
Heating power	600W
Power supply	AC 220V, 50Hz
Dimension	350×450×470mm
Weight	45kg

STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (250g)
Funnel	1 pc

OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3

MOUNTING PRESS (BASIC TYPE)
CODE MLP-MP62

- Suitable for tiny, difficult to handle or irregular metallographic and petrographic samples
- The sample preparation program has three modes: bakelite powder, electric jade powder and user-defined
- The sample preparation program controls the sample preparation time and realizes unattended sample preparation

hot mounting resin (included)

SPECIFICATION

Mounting diameter	Ø30mm (customizable Ø22mm, Ø45mm)
Heating range	room temperature~200°C
Timing range	0~30min
Power	≤800W
Power supply	AC220V, 50Hz
Dimension	440×253×310mm
Weight	32kg

STANDARD DELIVERY

Main unit	1 pc
Hot mounting resin	1 bottle (60g)
Funnel	1 pc

OPTIONAL ACCESSORY

Hot mounting resin (black, 4kg)	MLP-DR3

VACUUM MOUNTING PRESS
CODE MLP-MP25

- Suitable for epoxy resins and cold mosaic compound of polyester castable
- High efficiency, simple and reliable

cold mounting compound
(**optional**)

SPECIFICATION

Maximum vacuum	-58kPa
Vacuum chamber size	Ø260×125mm
Transposition speed	5r/min
Input power	6W
Power supply	220/110V
Dimension	460×400×403mm
Weight	30kg

STANDARD DELIVERY

Main unit	1 pc
Vacuum pump	1 pc
Ø25mm mold	1 pc
Ø30mm mold	1 pc
Ø40mm mold	1 pc
Ø50mm mold	1 pc
Epoxy resin (400g)	1 pc
Curing agent (200g)	1 pc
Waxed paper tray	10 pcs

OPTIONAL ACCESSORY

Cold mounting compound	MLP-CM1, MLP-CM6
Epoxy resin	MLP-CM3, MLP-CM4

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METALLURGICAL MICROSCOPES

5102-M600

5108-M3000

5103-M1000

METALLURGICAL ANALYSIS SOFTWARE AND CAMERA
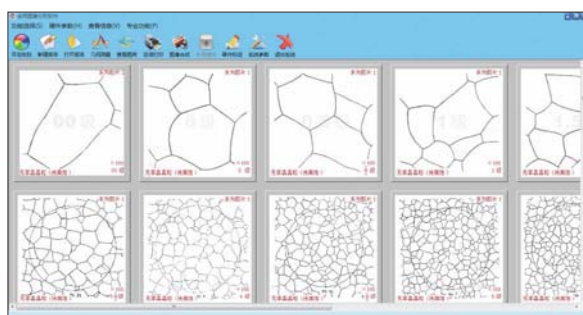
ISM-MAS100

DIAMOND BLADES

- Specially for precision cutting of carbide, ceramic materials, optical glass and other brittle metal materials

Code	Description	Specification (mm)
MLP-DQ1	1. saw blade is made of edge electroplating	Ø100×0.4×12.7
MLP-DQ2	2. used for small workpieces made of crystal, ceramic, glass and alloy materials	Ø150×0.5×12.7
MLP-DQ3	1. saw blade is made of edge sintering technology	Ø100×0.5×20
MLP-DQ4	2. used for hard alloy, ceramic, optical glass and other brittle metal materials	Ø200×1×32

CUTTING BLADES

MLP-50Z1
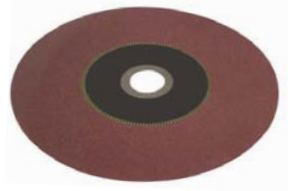
MLP-60Y1

Code	Application	Cutting blade size	Package (pcs/box)
MLP-10R1	1. light non-ferrous metal 2. high toughness metal (Ti) 3. HV hardness value: 0~250	Ø250×1.5×32mm	60
MLP-10R2		Ø250×2×32mm	50
MLP-10R3		Ø300×2×32mm	50
MLP-10R4		Ø350×2.5×32mm	40
MLP-20R1	1. soft ferrous metal 2. HV hardness value: 50~300	Ø250×1.5×32mm	60
MLP-20R2		Ø250×2×32mm	50
MLP-20R3		Ø300×2×32mm	50
MLP-20R4		Ø350×2.5×32mm	40
MLP-30R1	1. medium soft ferrous metal 2. HV hardness value: 120~500	Ø250×1.5×32mm	60
MLP-30R2		Ø250×2×32mm	50
MLP-30R3		Ø300×2×32mm	50
MLP-30R4		Ø350×2.5×32mm	40
MLP-40Z1	1. medium hardness ferrous metal 2. HV hardness value: 180~600	Ø250×1.5×32mm	60
MLP-40Z2		Ø250×2×32mm	50
MLP-40Z3		Ø300×2×32mm	50
MLP-40Z4		Ø350×2.5×32mm	40
MLP-50Z1	1. hard ferrous metal 2. HV harndess value: 180~700	Ø250×1.5×32mm	60
MLP-50Z2		Ø250×2×32mm	50
MLP-50Z3		Ø300×2×32mm	50
MLP-50Z4		Ø350×2.5×32mm	40
MLP-50Z5		Ø400×3×32mm	25
MLP-50Z6		Ø450×3.2×32mm	25
MLP-50Z7		Ø509×4×38.1mm	10
MLP-50Z8		Ø610×4×38.1mm	10
MLP-60Y1	1. high hardness ferrous metal 2. HV harndess value: 250~900	Ø250×1.5×32mm	60
MLP-60Y2		Ø250×2×32mm	50
MLP-60Y3		Ø300×2×32mm	50
MLP-60Y4		Ø350×2.5×32mm	40

- Cutting surfaces are bright and smooth without burning

CUTTING COOLANT

- Free of mineral oil and sodium nitrite, suitable for all kinds of metallographic cutting machines
- Harmless to human health and environment

Code	Description	Specification
MLP-OL1	1. fully synthetic concentrate, used for various types of cutting machines, specially for built-in cooling circulatory system models 2. concentrate, dilute 1:20 with water 3. replace regularly, recommended once a month	1L
MLP-OL2		2L
MLP-OL3		4L
MLP-OL4		6L
MLP-OL5		10L
MLP-OL6	1. oily mixture, use directly 2. cut water sensitive materials at low speed (high speed cutting machine is prohibited) 3. replace regularly, recommended once a month	1L
MLP-OL7		4L

HOT MOUNTING RESIN

- Suitable for small sample preparation

Code	Color	Description	Package (barrel)
MLP-DR1	black	for common sample preparation, fast grinding speed	0.5kg
MLP-DR2			1kg
MLP-DR3			4kg
MLP-DR4	black	edge protection type, low shrinkage, sample binding, high hardness, good wear resistance, slow grinding speed	0.5kg
MLP-DR5			1kg
MLP-DR6			4kg
MLP-DR7	black	carbon phenolic polymer, used in highly conductive fields, medium grinding speed	0.5kg
MLP-DR8			1kg
MLP-DR9	red	for common sample preparation, fast grinding speed	0.5kg
MLP-DR10			1kg
MLP-DR11	white	for common sample preparation, fast grinding speed	0.5kg
MLP-DR12			1kg
MLP-DR13			4kg
MLP-DR14	green	for common sample preparation, fast grinding speed	0.5kg
MLP-DR15			1kg
MLP-DR16			4kg
MLP-DR17	transparent	transparent, soluble, for sample with size, position, depth and other requirements	0.5kg
MLP-DR18			1kg
MLP-DR19			4kg

COLD MOUNTING CONSUMABLES

cold mounting resin   curing agent

Code	Description	Package
MLP-CM1	1. cold mounting compound, fast speed/good transparency/low viscosity/high strength 2. for metal processing without heating, pressure and mounting press 3. curing time: 25°C, 25min 4. usage: cold mounting resin 3:curing agent 2	1. cold mounting resin 1000g 2. curing agent 800ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs 5. stirring rod 40 pcs, spoon 1 pc
MLP-CM2	1. epoxy resin, low viscosity, good permeability, completely transparent 2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples 3. curing time: 25°C, 5~6h 4. usage: resin liquid 2:curing agent 1	1. resin liquid1000ml 2. curing agent 500ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs 5. stirring rod 40 pcs
MLP-CM3	1. fast epoxy, fast curing products, completely transparent 2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples 3. curing time: 25°C, 1h 4. usage: resin liquid 2:curing agent 1	1. resin liquid1000ml 2. curing agent 500ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs 5. stirring rod 40 pcs
MLP-CM4	1. low viscosity epoxy, good permeability, completely transparent 2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples 3. curing time: 25°C, 3~4h 4. usage: resin liquid 2:curing agent 1	1. resin liquid1000ml 2. curing agent 500ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs 5. stirring rod 40 pcs
MLP-CM5	1. low heat release epoxy, small, shrink, completely transparent 2. for samples which can not be heated or mounting pressed, like PCB, SMT and other micro-slice samples 3. curing time: 25°C, 20~24h 4. usage: resin liquid 3:curing agent 1	1. resin liquid 1000ml, 2. curing agent 300ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs, 5. stirring rod 40 pcs
MLP-CM6	1. cold mounting compound, fast speed/ceramics white/low viscosity/high strength 2. for metal processing without heating, pressure and mounting press 3. curing time: 25°C, 25min 4. usage: cold mounting resin 3:curing agent 2	1. cold mounting resin 1000g 2. curing agent 800ml 3. Ø30mm cold mounting mold 1 pc 4. plastic cup 20 pcs 5. stirring rod 40 pcs, spoon 1 pc

COLD MOUNTING MOLDS

Code	Description	Specification (mm)
MLP-QM1	round soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø20×18
MLP-QM2		Ø25×18
MLP-QM3		Ø30×18
MLP-QM4		Ø40×23
MLP-QM5		Ø50×23
MLP-QM6	square soft mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	55×20×22
MLP-QM7		70×40×22
MLP-QM8	round hard mold, for cold embedding of epoxy resin, cold mounting resin on metallographic slice specimens	Ø25×23
MLP-QM9		Ø30×27
MLP-QM10		Ø32×27
MLP-QM11		Ø40×29

MOUNTING DISCHARGING AGENT

Code	Description	Specifications
MLP-RA	for hot mounting press and cold mounting mold discharging	200ml/bottle

SLICE CLIPS

MLP-QP1   **MLP-QP2**

Code	Description	Specifications
MLP-QP1	stainless steel roll slice clip, for hot and cold mounting fixing	100 pieces/pack
MLP-QP2	PET roll slice clip, for hot and cold mounting fixing	100 pieces/pack

DIAMOND POLISHING LIQUID

- For surface grinding and polishing of metallographic, lithographic, ferrous and non-ferrous metals, ceramics, composite materials, gems, instruments, optical glass of high finish
- Compared with ordinary polishing agent, under the same grinding and polishing quality, consumption is saved 30%, time is saved 60%

Code	Description	Granularity (μm)	Package/Bottle
MLP-DLA□□ *	1. single crystal, water-based, ethylene glycol-based polishing lubricant formulation 2. for general metallographic preparation	40, 30, 28, 20, 14, 10, 9, 7, 6, 5, 3.5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLB□□ *	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for grinding and polishing of soft and ductile materials	30, 20, 15, 14, 9, 7, 6, 5, 3, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLC□□ *	1. single crystal, water-based, propylene glycol-based polishing lubricant formulation 2. for ultra-precision polishing	0.05	500ml
MLP-DLD□□ *	1. single crystal, oil-based, solvent-based polishing lubricant formulation 2. for grinding and polishing of soft materials and materials which cannot touch water	20, 14, 9, 7, 5, 3.5, 2.5, 1.5, 1.0, 0.5, 0.25	500ml
MLP-DLE□□ *	1. polycrystalline, water-based, propylene glycol based polishing lubricant formula 2. for grinding and polishing of different materials and hardness components	9, 6, 3, 1.0, 0.5, 0.25	500ml
MLP-DLF□□ *	1. polycrystalline, water-based, denatured ethanol based polishing lubricant formula 2. for grinding and polishing of materials which cannot touch water	9, 6, 3, 1.0, 0.5, 0.25	500ml

***□□** is granularity specification, for example, code **MLP-DLA40** stands for diamond polishing liquid 40μm granularity

Universal Testing Machines
Page 859-865

High And Low Temperature Test Chambers For Electronic Universal Testing Machines
Page 860

Impact Testing Machines
Page 866-867

Impact Specimen Notch Broaching Machines
Page 867

Universal Push And Pull Testing Machines
Page 868

Digital Spring Testers
Page 869

Force Gages
Page 870-874

Test Stands For Force Gages
Page 875-877

Dial Tension Gages
Page 877

Spindle Tension Meters
Page 878

ELECTRONIC UNIVERSAL TESTING MACHINES

computer and software (included)

flat jaws (included)

V-shaped jaws (included)
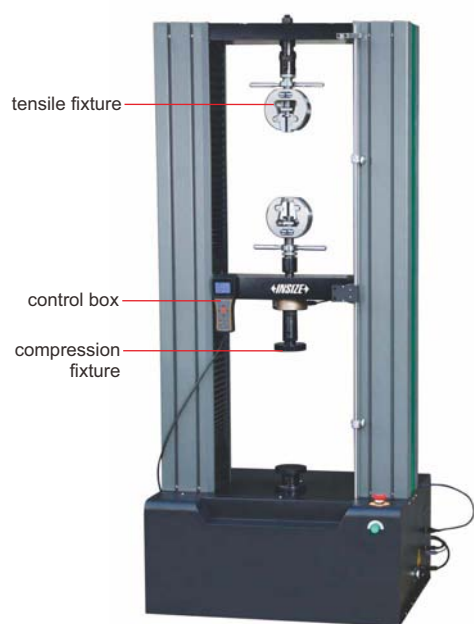
UTM-E50

- For tensile, compression, bend, shear, peel, tear tests of metal and non-metal materials

STANDARD DELIVERY

Main unit	1 pc
Control box	1 pc
Computer	1 pc
Measuring software	1 pc
Printer	1 pc
Wedge tension fixture (including flat jaws and V-shaped jaws) **	1 set
Compression fixture	1 set
Extensometer (only for UTM-E100, UTM-E300)	1 pc

**UTM-E10 does not have V-shaped jaws

OPTIONAL ACCESSORY

Extensometer	page 865
Fixtures	page 862~863

SPECIFICATION

Code	UTM-E10	UTM-E50	UTM-E100	UTM-E300
Max. test force	10kN	50kN	100kN	300kN
Accuracy class	0.5 class			
Test force measurement range	0.2%~100%FS			
Test force measurement accuracy	±0.5% of indicating value			
Resolution of test force measurement	1/300000 of Max. test force (same resolution all the way)			
Deformation measurement range	0.2%~100%FS			
Deformation measurement accuracy	±0.5% of indicating value			
Deformation measurement resolution	1/200000 of Max. deformation, up to 1/300000			
Large deformation measurement range	10~800mm			
Large deformation measurement accuracy	±1% of indicating value			
Large deformation measurement resolution	8µm			
Displacement accuracy	±0.5% of indicating value			
Displacement resolution	0.01mm			
Force control speed adjustment range	0.005~5%FS/s			
Force control speed control accuracy	±2% of the set value (speed<0.05%FS/s) ±0.5% of the set value (speed≥0.05%FS/s)			
Deformation speed adjustment range	0.005~5%FS/s			
Deformation speed control accuracy	±2% of the set value (speed<0.05%FS/s) ±0.5% of the set value (speed≥0.05%FS/s)			
Beam displacement speed adjustment range	0.001~500mm/min			
Beam displacement speed control accuracy	±1% of the set value (speed<0.5mm/min) ±0.2% of the set value (speed≥0.5mm/min)			
Crosshead travel *	1030mm	970mm	1250mm	1000mm
Effective compression travel *	800mm	700mm	700mm	600mm
Horizontal test space *	400mm	440mm	600mm	550mm
Power supply	220V, 50Hz, 0.4kW~1kW		380V, 50Hz, 2kW~5kW	
Dimension	715×500×1680mm	820×620×1880mm	1070×855×2180mm	1070×920×2550mm
Weight	230kg	350kg	1000kg	1500kg

*Can be customized according to test requirements

tensile fixture

control box

compression fixture

HIGH AND LOW TEMPERATURE TEST CHAMBERS
FOR ELECTRONIC UNIVERSAL TESTING MACHINES

electronic universal testing machine is optional

UTT-M63-E50

- For **UTM-E□□□** electronic universal testing machines
- For tensile, compression, bend, shear tests
  in high and low temperature environment

SPECIFICATION

Code	for UTM-E10	UTT-M03-E10	UTT-M33-E10	UTT-M63-E10
	for UTM-E50	UTT-M03-E50	UTT-M33-E50	UTT-M63-E50
	for UTM-E100	UTT-M03-E100	UTT-M33-E100	UTT-M63-E100
Temperature range		(room temperature+10)~300°C	-30~300°C	-60~300°C
Temperature accuracy *		±1°C		
Temperature fluctuation*		±0.5°C		
Temperature uniformity*		≤2°C		
Temperature resolution		0.1°C		
Cooling system		no	cormpressor or liquid nitrogen	
Cooling time (room temperature@25°C)			1~2°C/min (no-load)	
Warming up time		1~3°C/min (no-load)		
Temperature control		PID automatic temperature control		
Heating system		magnesium powder heating tube		
Aperture size		Ø50mm		
Chamber dimension**		240×430×530mm (suitable for electronic universal testing machines with column spacing of 400mm and above)		
Power supply		AC 220V, 60Hz		
Total power		1.8kW	2.2kW	2.8kW

*The applicable range of temperature accuracy, uniformity and fluctuation is Ø100×200mm

Customized according to **UTM-E□□□ electronic universal testing machine and customer requirements

ELECTRONIC UNIVERSAL TESTING MACHINES

computer and software (included)

VIDEO

control box
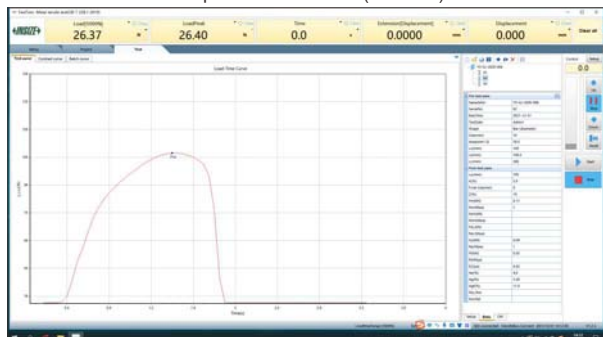
tensile fixture

UTM-S5KA

■ For tensile, peel, tear tests of metal and non-metal materials

STANDARD DELIVERY

Main unit	1 pc
Control box	1 pc
Computer	1 pc
Measuring software	1 pc
Printer	1 pc
Tensile fixture	1 set

OPTIONAL ACCESSORY

Extensometer	page 865
Fixtures	page 862~863

SPECIFICATION

Code	UTM-S200A	UTM-S500A	UTM-S1KA	UTM-S2KA	UTM-S5KA
Max. test force	200N	500N	1kN	2kN	5kN
Accuracy class	0.5 class				
Test force measurement range	0.4%~100%FS				
Test force measurement accuracy	±0.5% of indicating value				
Resolution of test force measurement	1/300000 of Max. test force (same resolution all the way)				
Deformation measurement range	0.2%~100%FS				
Deformation measurement accuracy	±0.5% of indicating value				
Deformation measurement resolution	1/200000 of Max. deformation, up to 1/300000				
Large deformation measurement range	10~800mm				
Large deformation measurement accuracy	±1% of indicating value				
Large deformation measurement resolution	8µm				
Displacement accuracy	±0.5% of indicating value				
Displacement resolution	0.01mm				
Force control speed adjustment range	0.005~5%FS/s				
Force control speed control accuracy	±2% of the set value (speed<0.05%FS/s) ±0.5% of the set value (speed≥0.05%FS/s)				
Deformation speed adjustment range	0.005~5%FS/s				
Deformation speed control accuracy	±2% of the set value (speed<0.05%FS/s) ±0.5% of the set value (speed≥0.05%FS/s)				
Beam displacement speed adjustment range	0.001~500mm/min				
Beam displacement speed control accuracy	±1% of the set value (speed<0.5mm/min) ±0.2% of the set value (speed≥0.5mm/min)				
Crosshead travel *	900mm				
Effective compression travel *	630mm				
Power supply	220V, 50Hz, 0.4kW~1kW				
Dimension	510×510×1580mm				
Weight	150kg				

*Can be customized according to test requirements

FIXTURES FOR ELECTRONIC UNIVERSAL TESTING MACHINES

CUSTOM-MADE

- Used with **UTM-E** series and **UTM-S** series electronic universal testing machines

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UTM-F001	UTM-F002	UTM-F003
■ Wedge tensile fixture ■ For tensile testing of non-metallic materials and thin metal specimens	■ Hydraulic tensile fixture ■ For tensile testing of metallic materials, round bar specimens	■ 10kN wedge tensile fixture ■ For tensile testing of metal specimens
UTM-F004	**UTM-F005**	**UTM-F006**
■ Pneumatic tensile fixture ■ For tensile testing of non-metallic material specimens	■ Insulation profile longitudinal shearing fixture ■ Longitudinal shear test for insulation type materials	■ Insulation profile transverse tensile fixture ■ For transverse tensile testing of insulation-type materials
UTM-F007	**UTM-F008**	**UTM-F009**
■ Filament winding fixture ■ For tensile testing of data wires, textile fabric wires, plastic wires	■ Filament opposite fixture ■ For tensile testing of wire specimens	■ Pneumatic threadlet tensile fixture ■ For tensile testing of non-metallic wire specimens
UTM-F010	**UTM-F011**	**UTM-F012**
■ Steel wire tensile fixture ■ For tensile testing of fine steel wires and iron wires	■ Threadlet winding fixture ■ For tensile testing of filamentary metal specimens	■ Fabric belt winding tensile fixture ■ For tensile testing of non-metallic material specimens
UTM-F013	**UTM-F014**	**UTM-F015**
■ Film tensile fixture ■ For tensile testing of paper, film and non-metallic materials	■ Film tensile fixture ■ For tensile testing of paper, film and non-metallic materials	■ Thin film opposite fixture ■ For tensile testing of paper, film and non-metallic materials

To be continued

UTM-F016

- Thin plate opposite fixture
- For tensile testing of thin plates of non-metallic materials

UTM-F017

- Annule tensile fixture
- For tensile testing of non-metallic annular material specimens

UTM-F018

- Adhesive tensile shearing fixture
- For tensile shear testing of different adhesive specimens

UTM-F019

- Surface bonding strength fixture
- Tensile testing for adhesive properties

UTM-F020

- Leverage tensile fixture
- For tensile testing of rubber, silicone and other elastomers

UTM-F021

- Rubber tensile fixture
- Specialized for tensile testing of rubber material specimens

UTM-F022

- 90° rubber peel fixture
- Peel test for adhesion of rubber materials

UTM-F023

- PCB plate 90° peel fixture
- Peel-off test for adhesion of sticky materials on PCBs

UTM-F024

- Plastic bending fixture
- Specialized for flexural testing of plastic specimens

UTM-F025

- Three-point bending fixture
- For bending test of various material specimens

UTM-F026

- Waving fxiture
- For tensile testing of non-metallic specimens

UTM-F027

- Butt fixture
- For tensile testing of different materials

UTM-F028

- Shear fixture
- For shear testing of different materials

UTM-F029

- Ceramic shearing fixture
- Specialized for shear testing of ceramic materials

UTM-F030

- Compressive fixture
- For compression testing of different materials

UTM-F031

- Puncture fixture
- For film puncture testing

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HYDRAULIC UNIVERSAL TESTING MACHINES

VIDEO

controller

tensile jaws
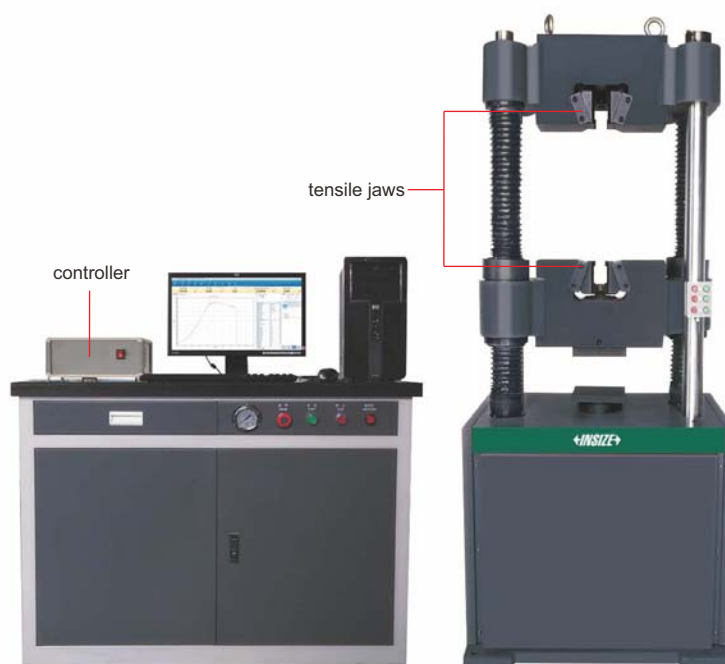
UTM-H300B

■ For tensile, compression, bend, shear tests of metal and non-metal materials

SPECIFICATION

Code		UTM-H300B	UTM-H600B	UTM-H1000B	UTM-H2000B	UTM-H3000B
Max. test force		300kN	600kN	1000kN	2000kN	3000kN
Accuracy		±1%				
Test force measurement range		2%~100%FS				
Resolution of test force measurement		1/300000 of Max. test force (same resolution all the way)				
Deformation measurement device		extensoment				
Deformation measurement range		1%~100%FS				
Deformation measurement accuracy		±1%				
Deformation measurement resolution		1/300000				
Displacement accuracy		±1%				
Displacement resolution		0.01mm				
Displacement travel		200mm				
Max tensile space (including piston stroke)		600mm	600mm	680mm	600mm	900mm
Max compression space (including piston stroke)		500mm	500mm	560mm	500mm	800mm
Transmission mode		chain drive				
Safety protection device		software protection and mechanical limit protection				
Control function		special software, closed-loop of stress, strain and velocity				
Clamping range of round sample		Ø10~32mm	Ø13~40mm	Ø13~60mm	Ø20~70mm	Ø25~80mm
Clamping range of flat sample		0~15mm	0~15mm*	0~20mm**	0~40mm	0~80mm
Upper and lower pressure plate size		Ø188mm	Ø188mm	Ø208mm	Ø208mm	Ø208mm
Bending branch roll width		140mm				
Total power		2.5kW	3.0kW	3.0kW	3.75kW	5.5kW
Power supply		380V, 50Hz				
Dimension (mm)	host	800×620×1900	820×650×2000	940×780×2250	1100×760×3000	1250×930×3550
	oil source	1140×600×855				
Weight		2T	2.2T	3T	7.5T	12.6T

*Customizable 0~30mm   **Customizable 0~40mm

computer and software (included)
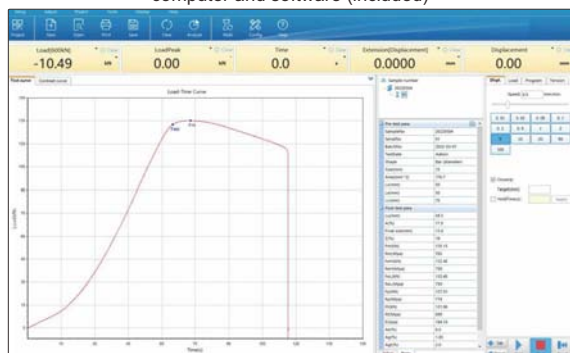
STANDARD DELIVERY

Main unit	1 pc
Electro hydraulic servo oil source	1 pc
Electro hydraulic servo valve	1 pc
High pressure oil pump	1 pc
Oil pressure sensor	1 pc
Control box	1 pc
Extensometer	1 pc
Computer	1 pc
Measuring software	1 set
Printer	1 pc
Tensile fixture	1 set
Compression fixture	1 set

acrylic safety shield (**optional**)   steel wire safety shield (**optional**)

OPTIONAL ACCESSORY

Acrylic safety shield	UTM-H-COVER1
Steel wire safety shield	UTM-H-COVER2

EXTENSOMETERS

■ Used with universal testing machines

SPECIFICATION

Code	Gage length	Deformation
UTM-EX25-5	25mm	5mm
UTM-EX25-10	25mm	10mm
UTM-EX25-25	25mm	25mm
UTM-EX50-5	50mm	5mm
UTM-EX50-10	50mm	10mm
UTM-EX50-25	50mm	25mm
UTM-EX100-5	100mm	5mm
UTM-EX100-10	100mm	10mm
UTM-EX100-25	100mm	25mm
UTM-EX200-5	200mm	5mm
UTM-EX200-10	200mm	10mm
UTM-EX200-25	200mm	25mm
UTM-EX-B	large deformation, customized according to the workpieces	

fixing pin   fixing hole

connection cable
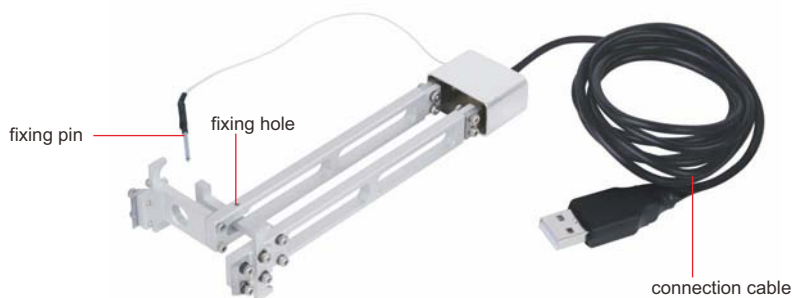
UTM-EX50-10

SEMI-AUTOMATIC IMPACT TESTING MACHINES

VIDEO

150J pendulum (included)

safety cover (included)

dial
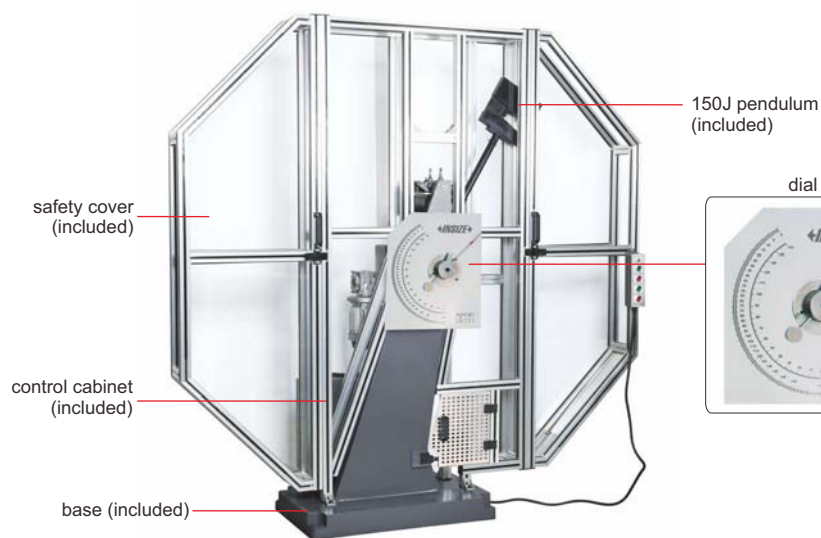
pendulum (included)

span aligner (included)

control cabinet (included)

base (included)

ITM-S150J
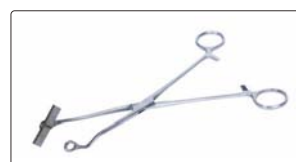
tongs (included)

- According to ISO148
- For testing the anti-impact performance of metal materials under dynamic load
- High-precision bearings, small bearing friction, the impact absorption rate of empty pendulum is less than 0.3%
- Alloy steel impact blade, hardness HRC60
- PLC controller with built-in energy loss correction program
- Supplied with safety cover
- Supplied with software for data storage, automatic processing, etc.
- Data can be stored in Excel format, output and printed
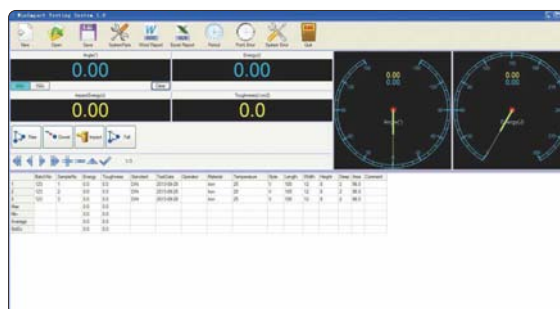
software (included)

SPECIFICATION

Code	ITM-S150J	ITM-S300J	ITM-S450J	ITM-S600J	ITM-S750J
Impact energy	150J	300J	450J	600J	750J
Dial range	0~150J	0~300J	0~450J	0~600J	0~750J
Dial graduation	1J	2J	3J	4J	5J
Pendulum moment	M=80.3848N·m	M=160.7695N·m	M=241.1543N·m	M=321.5390N·m	M=401.9238N·m
Pendulum preparing angle	150°				
Distance between pendulum shaft center and specimen center	750mm				
Impact speed	5.24m/s				
Span of specimen seat	40mm				
End face radius of specimen seat	R (1.0~1.5)mm				
Radius of impact blade	R (2.0~2.5)mm				
Inclination angle of support surface of specimen seat	11°±1°				
Angle of impact blade	30°±1°				
Thickness of impact blade	16mm				
Range of measuring angle	0~360°				
Angle resolution	≤0.06°				
Specimen size	10×10×55mm				
Power supply	AC 380V, 50Hz				
Base size	800×500mm			960×650mm	
Power	400W			1.5kW	
Dimension of main body	2050×690×2015mm			2100×835×2200mm	
Weight	450kg			900kg	

Continued from previous page

STANDARD DELIVERY

Main unit		1 pc
Dial		1 pc
Control cabinet		1 pc
Pendulum	ITM-S150J	150J pendulum
	ITM-S300J	300J pendulum and 150J pendulum
	ITM-S450J	450J pendulum and 150J pendulum
	ITM-S600J	600J pendulum and 150J pendulum
	ITM-S750J	750J pendulum and 150J pendulum
Simply supported beam fixture (including jaws, anvil)		1 set
Computer		1 set
Printer		1 pc
Software		1 set
Span aligner		1 pc
Tongs		1 pc
Safety cover		1 set

OPTIONAL ACCESSORY

Workbench	7911-15
150J pendulum	ITM-S-PE150J
300J pendulum	ITM-S-PE300J
450J pendulum	ITM-S-PE450J
600J pendulum	ITM-S-PE600J
750J pendulum	ITM-S-PE750J
ASTM standard impact blade	ITM-S-ASTM-IB
Sample recovery device	ITM-S-RD
Digital display screen	ITM-S-DDS

VIDEO

IMPACT SPECIMEN NOTCH BROACHING MACHINE (DOUBLE BROACHES)
CODE ITM-U32

- Conforms with ISO 148, ISO 83 and EN 10045 standards
- One-time broaching forming, hydraulic transmission, special internal lubrication device to avoid damage of the broaches
- Dual-station broach, two specimen notches can be processed at the same time

raised broaches

lowered broaches

SPECIFICATION

Broach stroke	350mm (V2, U2, U3 broaches) 400mm (U5 broach)
Specimen size (T×W×L)	10×10×55mm
Broaching speed	0.35-2.5m/min
Driving method	hydraulic
Power supply	380V, 50Hz, 0.4kW
Dimension	660×400×1200mm
Weight	200kg

ITM-U32

STANDARD DELIVERY

Main unit	1 pc
Broach	U2 and V2

OPTIONAL ACCESSORY

U3 broach	ITM-U32-U3
U5 broach	ITM-U32-U5

UNIVERSAL PUSH AND PULL TESTING MACHINES

ISF-U202

- Set force, set positioning and set deformation testing modes
- Protective functions of built-in mechanical limit, overload auto stop and emergency stop
- Dual-speed preset, high-speed approximation and low-speed acquisition
- Automatic back to start location after the test
- Can save 10 sets of test value and 3 sets of curve, test reports can be printed by built-in printer
- Display peak value, real-time value and process curve simultaneously
- Auto calibration of displacement zero
- Unit: lbf, N, kgf, ozf
- Auto power off (the time can be set)

SPECIFICATION

Code	ISF-U055	ISF-U101	ISF-U202
Max. test force	500N	1000N	2000N
Resolution of force	0.05N	0.1N	0.2N
Test force measurement range	1%~100%FS		
Test force measurement accuracy	±1%FS (test force<10%FS) ±0.5%FS (test force≥10%FS)		
Range of adjustable speed	0.5~500mm/min		
Speed accuracy	±2%FS (speed<10%FS) ±1%FS (speed≥10%FS)		
Displacement resolution	0.001mm		
Displacement travel	300mm	450mm	450mm
Displacement accuracy	±0.4mm		
Unit	lbf, N, kgf, ozf		
Pressure plate size	Ø80mm		
Power supply	AC 220V, 50/60Hz		
Dimension	420×250×700mm	365×305×915mm	365×305×915mm
Weight	29.4kg	40kg	40kg

STANDARD DELIVERY

Main unit	1 pc
Adapter	2 pcs

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VIDEO

34

- Peak hold and automatic release function
- Set upper and lower limits,
  red and green indicator and buzzer alarm
- Automatic conversion of three units: N, kgf, lbf
- Built in printer
- Automatic power off

ISF-S10   ISF-S500   ISF-S1000

SPECIFICATION

Code	ISF-S10	ISF-S20	ISF-S30	ISF-S50	ISF-S100	ISF-S200
Maximum load	10N	20N	30N	50N	100N	200N
Resolution	0.001N	0.002N	0.01N	0.01N	0.02N	0.05N
Range of digital scale	65mm	65mm	65mm	95mm	95mm	95mm
Resolution of digital scale	0.01mm	0.01mm	0.01mm	0.01mm	0.01mm	0.01mm
Disk diameter	Ø30mm	Ø30mm	Ø30mm	Ø49mm	Ø49mm	Ø49mm
Maximum free length of spring	65mm	65mm	65mm	95mm	95mm	95mm
Measuring range of force	5%~100% (maximum load)					
Accuracy of force	±1% (maximum load)					
Data output	RS232					
Power supply	220V, 50/60Hz					
Dimension	300×235×600mm	300×235×600mm	300×235×600mm	300×235×620mm	300×235×620mm	300×235×620mm
Weight	13.2kg	13.2kg	13.2kg	17.3kg	19.1kg	19.1kg

Code	ISF-S300	ISF-S500	ISF-S1000	ISF-S2000	ISF-S5000
Maximum load	300N	500N	1000N	2000N	5000N
Resolution	0.1N	0.1N	0.2N	0.5N	1N
Range of digital scale	95mm	95mm	150mm	150mm	150mm
Resolution of digital scale	0.01mm	0.01mm	0.01mm	0.01mm	0.01mm
Disk diameter	Ø49mm	Ø49mm	Ø108mm	Ø108mm	Ø108mm
Maximum free length of spring	95mm	95mm	200mm	200mm	200mm
Measuring range of force	5%~100% (maximum load)				
Accuracy of force	±1% (maximum load)				
Data output	RS232				
Power supply	220V, 50/60Hz				
Dimension	300×235×620mm	300×235×620mm	490×300×920mm	490×300×920mm	490×300×920mm
Weight	19.1kg	20.8kg	47.5kg	47.5kg	47.5kg

STANDARD DELIVERY

Main unit	1 pc

DIGITAL FORCE GAGES (HIGH ACCURACY)

DATA OUTPUT

INSPECTION CERTIFICATE

software flash disk (included)

printer (**optional**)

ISF-DF100A
type A

ISF-DF5KA
type B

ISF-DF10KC
type C

- Type A and B can be used for tension and pressure tests, type C is only used for pressure tests
- Peak (max.) and tracking mode
- Units for type A: mN, N, gf, kgf, ozf, lbf,
  type B: N, kgf, lbf, kN, MPa,
  type C: N, kgf, lbf, kN, tf, MPa
- Tolerance testing
- 1000 memories
- Automatic power off
- Metal case, touch buttons
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm
- Keyboard signal, can be transmitted to Excel

VIDEO

accessory for type B (included)

flat push tip   adapter   pull clamps

accessory for type A (included)

flat push tip   V-type push tip

knife-edge push tip   point push tip   pull clamp   extension rod
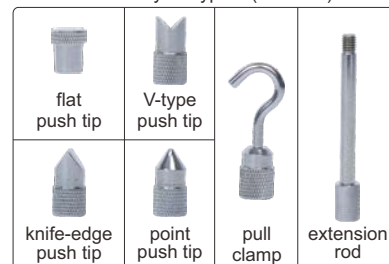
SPECIFICATION

Code	ISF-DF5A	ISF-DF10A	ISF-DF20A	ISF-DF50A	ISF-DF100A	ISF-DF200A	ISF-DF500A	ISF-DF1KA
Type	A (internal sensor)							
Load capacity (N)	5	10	20	50	100	200	500	1000
Resolution (N)	0.0005	0.001	0.005	0.005	0.01	0.05	0.05	0.1
Accuracy	±0.2% (of load capacity)							
Power supply	built-in rechargeable battery							

Code	ISF-DF1KB	ISF-DF2KA	ISF-DF5KA	ISF-DF10KA	ISF-DF20KA
Type	B (external sensor)				
Load capacity (N)	1000	2000	5000	10000	20000
Resolution (N)	0.1	0.5	0.5	1	5
Accuracy	±0.2% (of load capacity)				
Power supply	built-in rechargeable battery				

Code	ISF-DF10KC	ISF-DF20KC	ISF-DF50KC	ISF-DF100KC	ISF-DF200KC
Type	C (external sensor)				
Load capacity (kN)	10	20	50	100	200
Resolution (kN)	0.001	0.005	0.005	0.01	0.05
Accuracy	±0.2% (of load capacity)				
Power supply	built-in rechargeable battery				

STANDARD DELIVERY

Main unit		1 pc
AC/DC adapter		1 pc
Software and USB cable		1 pc
Push/pull accessory	type A	6 pcs (flat push tip, V-type push tip, knife-edge push tip, point push tip, pull clamp, extension rod)
	type B	4 pcs (flat push tip, adapter, pull clamps)

OPTIONAL ACCESSORY

Printer	ISF-DF-PRINTER
Test stand	ISF-MT1K

FORCE GAGE HANDLES
CODE ISF-DFAT1

346mm

135mm

40mm

25mm
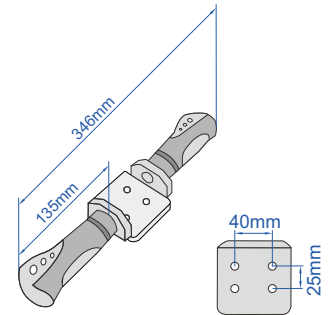
- For digital force gages (code **ISF-DF□□□**)
- Push and pull test
- Maximum range 1000N

pull test with two handles

push test with single handle

STANDARD DELIVERY

Handle	2 pcs
Base	1 pc

SOFT PROBES FOR HUMAN BODY

ISF-DFAT2-C1
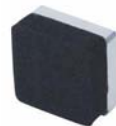
ISF-DFAT2-C2

ISF-DFAT2-C3

ISF-DFAT2-C4

- To measure muscle force
- For press test with digital force gages (code **ISF-DF□□□**)
  and force gage handles (code **ISF-DFAT1**)
- Maximum range 1000N

application

Code	Specification
ISF-DFAT2-C1	rectangle, 90×25mm, M6
ISF-DFAT2-C2	square, 25×25mm, M6
ISF-DFAT2-C3	arc-shaped, 90×25mm, R80mm, M6
ISF-DFAT2-C4	M6

DIGITAL FORCE GAGES

DATA OUTPUT

INSPECTION CERTIFICATE

VIDEO

printer (**optional**)

software flash disk
(included)

ISF-1DF100

accessory (included)

| flat push tip | V-type push tip |
| knife-edge push tip | point push tip | pull clamp | extension rod |

- Push and pull test
- Units: N, gf, kgf, ozf, lbf
- 500 memories
- Automatic power off
- Metal case
- LCD display with backlight
- The display flips over when the bottom faces up
- Overload alarm
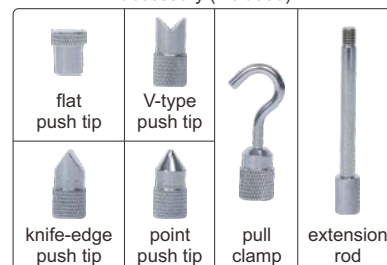
SPECIFICATION

Code	ISF-1DF10	ISF-1DF50	ISF-1DF100	ISF-1DF500	ISF-1DF1000
Load capacity (N)	10	50	100	500	1000
Resolution (N)	0.01	0.01	0.1	0.1	1
Accuracy	±0.3% (of load capacity)				
Measuring mode	tracking, peak (max.), tolerance testing				
Power supply	built-in rechargeable battery				
Dimension	150×73×33mm				
Weight	450g				

STANDARD DELIVERY

Main unit	1 pc
AC/DC adapter	1 pc
Software and USB cable	1 pc
Push/pull accessory	6 pcs (flat push tip, V-type push tip, knife-edge push tip, point push tip, pull clamp, extension rod)

OPTIONAL ACCESSORY

Printer	ISF-DF-PRINTER
Test stand	ISF-MT1K

TEST STAND FOR DIGITAL FORCE GAGES
CODE ISF-MT1K

- For digital force gages (code **ISF-1DF□□□** and **ISF-DF□□□**)
- To be used in vertical and horizontal orientation

SPECIFICATION

Load capacity	1000N
Travel	200mm (3mm vertical movement per revolution of handwheel)
Dimension	196×250×446mm
Weight	13kg

OPTIONAL ACCESSORY

Digital scale (range: 200mm, resolution: 0.01mm/0.0005")	ISF-MT1K-SCALE

force gage is optional

VIDEO

digital scale (**optional**)

horizontal orientation test

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FORCE GAGES

ISF-F500

- Push and pull test
- Peak (max.) or tracking mode

accessory (included)

flat push tip	V-type push tip	pull clamp	extension rod
knife-edge push tip	point push tip		

SPECIFICATION

Code		ISF-F10	ISF-F20	ISF-F30	ISF-F50	ISF-F100	ISF-F200	ISF-F300	ISF-F500
Capacity	N	10	20	30	50	100	200	300	500
	kgf	1	2	3	5	10	20	30	50
Graduation	N	0.05	0.1	0.2	0.25	0.5	1	2	2.5
Accuracy		±1% (of load capacity)							

STANDARD DELIVERY

Main unit	1 pc
Push tip	4 pcs (flat, V-type, knife-edge, point)
Pull clamp	1 pc
Extension rod	1 pc

OPTIONAL ACCESSORY

Test stand	ISF-MT500

TEST STAND FOR FORCE GAGE
CODE ISF-MT500

- For force gages (code **ISF-F□□□**)
- To be used in vertical and horizontal orientation

force gage is optional

SPECIFICATION

Load capacity	500N
Travel	150mm (3mm vertical movement per revolution of handwheel)
Dimension	160×240×460mm
Weight	12kg

horizontal orientation test

PUSH TIPS AND PULL CLAMPS FOR FORCE GAGES

■ For force gages (code **ISF-DF□□□**, **ISF-1DF□□□** and **ISF-F□□□**)

Unit: mm

ISF-P02

ISF-P03

ISF-P04

ISF-P05

ISF-P06

ISF-P07

ISF-P08

ISF-P09

ISF-P10

ISF-P11

ISF-P15

ISF-P16

ISF-P17
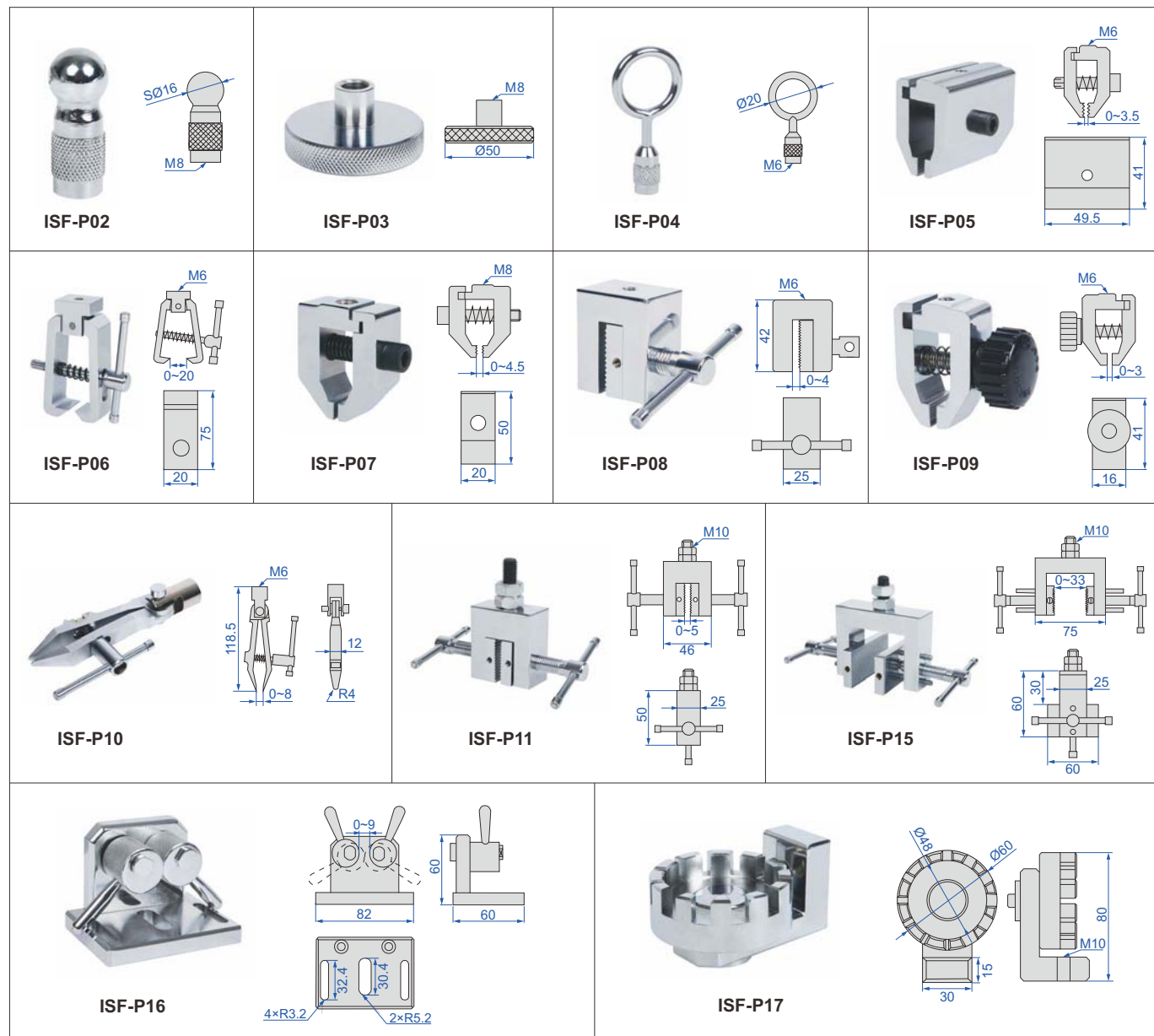
Push tips

Code	Max. load	Diameter	Weight
ISF-P02	5000N	16mm	33g
ISF-P03	3000N	50mm	17g

Pull ring

Code	Max. load	Diameter	Weight
ISF-P04	500N	16mm	158g

Special pull clamps

Code	Max. load	Opening size	Application	Weight
ISF-P16	2400N	0~9mm	for wire pull test	803g
ISF-P17	5000N	1.8~8.4mm	for wire terminal pull test	620g

Pull clamps

Code	Max. load	Jaw opening	Jaw width	Weight
ISF-P05	1100N	0~3.5mm	49.5mm	241g
ISF-P06	1000N	0~20mm	20mm	217g
ISF-P07	500N	0~4.5mm	20mm	190g
ISF-P08	500N	0~4mm	25mm	274g
ISF-P09	140N	0~3mm	16mm	87g
ISF-P10	230N	0~8mm	4mm	173g
ISF-P11	1500N	0~5mm	25mm	484g
ISF-P15	2000N	0~33mm	60mm	742g

MOTORIZED VERTICAL TEST STAND
CODE ISF-RV61

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digital force gage
is optional

- For digital force gages (code **ISF-1DF□□□** and **ISF-DF□□□**)
- Push and pull test
- Automatic and manual test
- Programmable automatic operation (automatic cycle)
- Four operation modes: displacement cycle (D cycle), force cycle
  (F cycle), demo (teaching & playback) mode and positioning mode
- Alarm indications: stroke overrange alarm, force overrange alarm,
  motor block alarm

SPECIFICATION

Load capacity	650N (250lbf, 65kg)
Max. travel	220mm
Resolution of displacement	0.01mm
Accuracy of displacement	±0.3mm
Range of adjustable speed	30~720mm/min
Resolution of speed	1mm/min
Accuracy of speed	±2%
Data output	USB, RS232
Work temperature and relative humidity	10~40°C, 10%~80%RH
Power supply	100~230V
Dimension	340×180×630mm
Weight	15.5kg

STANDARD DELIVERY

Test stand	1 pc
AC/DC adapter	1 pc
MD8 cable (for force gages)	1 pc
Software and USB cable	1 pc

MOTORIZED HORIZONTAL TEST STAND
CODE ISF-RH62

digital force gage
is optional

- For digital force gages (code **ISF-1DF□□□** and **ISF-DF□□□**)
- Push and pull test
- Automatic and manual test
- Programmable automatic operation (automatic cycle)
- Four operation modes: displacement cycle (D cycle), force cycle
  (F cycle), demo (teaching & playback) mode and positioning mode
- Alarm indications: stroke overrange alarm, force overrange alarm,
  motor block alarm

SPECIFICATION

Load capacity	650N (250lbf, 65kg)
Max. travel	220mm
Resolution of displacement	0.01mm
Accuracy of displacement	±0.3mm
Range of adjustable speed	30~720mm/min
Resolution of speed	1mm/min
Accuracy of speed	±2%
Data output	USB, RS232
Work temperature and relative humidity	10~40°C, 10%~80%RH
Power supply	100~230V
Dimension	671×120×278mm
Weight	13kg

STANDARD DELIVERY

Test stand	1 pc
AC/DC adapter	1 pc
MD8 cable (for force gages)	1 pc
Software and USB cable	1 pc

MANUAL VERTICAL TEST STANDS FOR FORCE GAGES

■ For press test with force gages

VIDEO

34

force gage
is optional

SPECIFICATION

Code	ISF-V10A	ISF-V10D
Apply to	dial force gages (code ISF-F□□□)	digital force gages (code ISF-1DF□□□ and ISF-DF□□□)
Load capacity	500N	
Maximum workpiece height	280mm	
Travel	70mm	
Dimension	152×235×425mm	
Weight	10.7kg	

ISF-V10A

MANUAL HORIZONTAL TEST STANDS FOR FORCE GAGES

■ For pull test with force gages

VIDEO

force gage
is optional

SPECIFICATION

Code	ISF-H20A	ISF-H20D
Apply to	dial force gages (code ISF-F□□□)	digital force gages (code ISF-1DF□□□ and ISF-DF□□□)
Load capacity	500N	
Travel	60mm	
Dimension	450×185×170mm	
Weight	9kg	

ISF-H20A

MANUAL HORIZONTAL TEST STAND FOR FORCE GAGES
CODE ISF-MH2

■ For force gages (code ISF-F□□□, ISF-DF□□□ and ISF-1DF□□□)
■ Push and pull test

VIDEO

force gage
is optional

SPECIFICATION

Load capacity	1000N
Travel	250mm (1.5mm horizontal movement per revolution of handwheel)
Dimension	542×189×278mm
Weight	21.5kg

MANUAL STRIPPING FORCE TEST STANDS

force gage is optional

stripping angle 45°

ISF-P30A

■ For stripping force test with force gages

SPECIFICATION

Code	ISF-P30A	ISF-P30D
Apply to	dial force gages (code **ISF-F□□□**)	digital force gages (code **ISF-1DF□□□** and **ISF-DF□□□**)
Load capacity	500N	
Horizontal travel	170mm	
Dimension	420×215×480mm	
Weight	22kg	

DIAL TENSION GAGES

1mm

29mm

3mm

ISF-TG3

■ Clockwise and counter-clockwise use
■ For electronic and precision mechanical industry, such as test the contact pressure of relay, adjust the tension or compression of spring
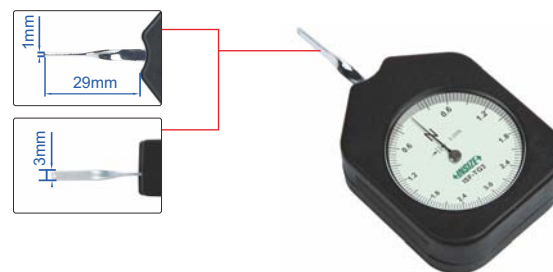
SPECIFICATION (Unit: N)

Code	ISF-TGD1	ISF-TGD3	ISF-TGD5	ISF-TG1	ISF-TG1D5	ISF-TG3	ISF-TG5
Range (N)	0.01~0.1	0.03~0.3	0.05~0.5	0.1~1	0.15~1.5	0.3~3	0.5~5
Graduation (N)	0.002	0.005	0.01	0.02	0.025	0.05	0.1
Accuracy	±2% (full scale)						
Dimension (L×W×H)	90×47×19mm						
Weight	60g						

SPECIFICATION (Unit: gf)

Code	ISF-TG10	ISF-TG30	ISF-TG50	ISF-TG100	ISF-TG150	ISF-TG300	ISF-TG500
Range (gf)	1~10	3~30	5~50	10~100	15~150	30~300	50~500
Graduation (gf)	0.2	0.5	1	2	2.5	5	10
Accuracy	±2% (full scale)						
Dimension (L×W×H)	90×47×19mm						
Weight	60g						

SPINDLE TENSION METERS

VIDEO

Unit: mm

7 · 11 · 45°
10 · 15 · 45°
17 · 23 · 45°

36
42
Ø70

60
Ø70

50
Ø84

Ø68
Ø68
Ø68
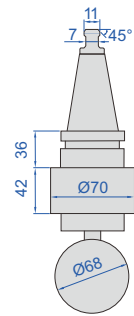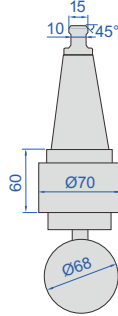
RFS-BT30
RFS-BT40
RFS-BT50

RFS-BT40

Unit: mm

Ø74
200

Ø68
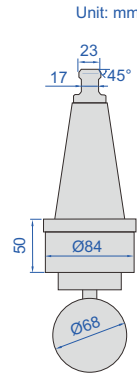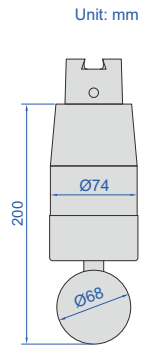
RFS-HSK□□□

RFS-HSK63A

- Hydraulic mechanical structure, high stability
- To detect the tension of locking device

RFS-BT□□□ SPECIFICATION

Code	Dial range*	Accuracy	Applicable tension of spindle	Rivet** angle
RFS-BT30	0~60kg/cm²	±0.96kg/cm²	200~500kgf	45°
RFS-BT40	0~150kg/cm²	±2.4kg/cm²	500~1100kgf	
RFS-BT50	0~250kg/cm²	±4kg/cm²	1500~2200kgf	

RFS-HSK□□□ SPECIFICATION

Code	Dial range*	Accuracy	Applicable tension of spindle
RFS-HSK20A	0~120kg/cm²	±1.92kg/cm²	50~100kgf
RFS-HSK20C			
RFS-HSK20E			
RFS-HSK25A	0~150kg/cm²	±2.4kg/cm²	250~500kgf
RFS-HSK25C			
RFS-HSK25E			
RFS-HSK32A	0~500kg/cm²	±8kg/cm²	350~600kgf
RFS-HSK32B			
RFS-HSK32C			
RFS-HSK32D			
RFS-HSK32E			
RFS-HSK32F			
RFS-HSK40A	0~680kg/cm²	±10.9kg/cm²	750~1500kgf
RFS-HSK40B			
RFS-HSK40C			
RFS-HSK40D			
RFS-HSK40E			
RFS-HSK40F			
RFS-HSK50A	0~1100kg/cm²	±17.6kg/cm²	1000~2000kgf
RFS-HSK50B			
RFS-HSK50C			
RFS-HSK50D			
RFS-HSK50E			
RFS-HSK50F			

Code	Dial range*	Accuracy	Applicable tension of spindle
RFS-HSK63A	0~1800kg/cm²	±28.8kg/cm²	1500~3000kgf
RFS-HSK63B			
RFS-HSK63C			
RFS-HSK63D			
RFS-HSK63E			
RFS-HSK63F			
RFS-HSK80A	0~2800kg/cm²	±44.8kg/cm²	2000~4000kgf
RFS-HSK80B			
RFS-HSK80C			
RFS-HSK80D			
RFS-HSK80E			
RFS-HSK80F			
RFS-HSK100A	0~7000kg/cm²	±112kg/cm²	6000~9000kgf
RFS-HSK100B			
RFS-HSK100C			
RFS-HSK100D			
RFS-HSK100E			
RFS-HSK100F			
RFS-HSK160A	0~11500kg/cm²	±184kg/cm²	10000~16000kgf
RFS-HSK160B			
RFS-HSK160C			
RFS-HSK160D			
RFS-HSK160E			
RFS-HSK160F			

*The actual tension of spindle (kgf) is 10X of dial reading
**Can be customized for 60° and 90°

Digital Torque Testers
Page 880

Bottle Cap Torque Testers
Page 880

Digital Torque Testers
Page 881-882

Torque Wrench Test Stands
Page 883

Torque Screwdrivers
Page 883-885

Intelligent Electric Screwdrivers
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Torque Wrenches
Page 887-899

Torque Adapters
Page 900

Torque Multipliers
Page 901-903

DIGITAL TORQUE TESTERS

DATA OUTPUT

VIDEO

two display modes

digit mode   graph mode
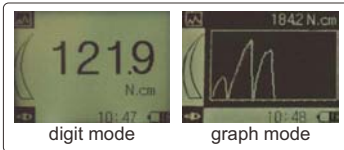
software flash disk (included)

- External sensor
- Metal case, touch buttons
- Clockwise and counter-clockwise operation
- Test mode: track, peak, first peak, preset tolerance
- Unit: N.m, N.cm, kgf.cm, lbf.in, lbf.ft
- Set tolerance with judgement
- 1000 memories
- LCD display with backlight, can automatically turn 180°
- Overload alarm
- Automatic power off

test mode
analog reading display
connection prompt
touch buttons
test value
unit
battery power

IST-DTT5

external sensor

SPECIFICATION

Code	IST-DTT1	IST-DTT5	IST-DTT10
Load capacity	0.05~1N.m	0.25~5N.m	0.5~10N.m
Resolution	0.0001N.m	0.0005N.m	0.001N.m
Max. clamping diameter	Ø10mm	Ø10mm	Ø13mm
Sampling frequency	2000 times per second		
Accuracy	±0.3% (of load capacity)		
Output	USB, RS232, alarm signal		
Power supply	built-in rechargeable battery		
Dimension	145x73x34mm		
Weight	1.4kg		

STANDARD DELIVERY

Main unit	1 pc
External sensor	1 pc
AC/DC adapter	1 pc
Software and USB cable	1 pc

OPTIONAL ACCESSORY

Printer	ISF-DF-PRINTER
RS232 cable	IST-DTT-CABLE

printer (**optional**)

DIGITAL BOTTLE CAP TORQUE TESTERS

DATA OUTPUT

VIDEO

- Measure the opening and tightening torque of bottle caps
- Unit: N.m, N.cm, kgf.cm, lbf.in, lbf.ft
- 1500 memories
- Wireless connection to printer
- Automatic power off
- LCD display with backlight
- Overload alarm
- With calibration function

IST-DCT20

two display modes

digit mode

graph mode

software flash disk (included)

printer (**optional**)

SPECIFICATION

Code	IST-DCT2	IST-DCT5	IST-DCT10	IST-DCT20
Load capacity	2N.m	5N.m	10N.m	20N.m
Resolution	0.0002N.m	0.0005N.m	0.001N.m	0.002N.m
Clamping range	Ø19.5~190mm			
Accuracy	±0.5% (of load capacity)			
Measuring mode	tracking, peak (max.), first peak, double peak, tolerance testing			
Output	wireless and USB			
Power supply	built-in rechargeable battery			
Dimension	200×197×142mm			
Weight	2.5kg			

STANDARD DELIVERY

Main unit	1 pc
AC/DC adapter	1 pc
Software and USB cable	1 pc

OPTIONAL ACCESSORY

Printer	ISH-DS-PRINTER

DIGITAL TORQUE TESTERS

square socket
LED alarm
LCD display
buttons
buzzer
reset

IST-04TT350 type A

hex driver
LED alarm
LCD display
buttons
buzzer
reset

IST-04TT815 type B

- Test torque wrenches, torque screwdrivers and other torque tools
- Clockwise operation
- Peak, track and first peak working modes
- Tolerance testing
- LED indicator for target torque alarm:
  – Green LED light on when the value is within tolerance;
  – Red LED light on when the value is above the high tolerance
- Power off automatically in 2 minutes without any operations

VIDEO

adaptor
(type A included)

SPECIFICATION

Code	IST-04TT5	IST-04TT28	IST-04TT68	IST-04TT350	IST-04TT815	IST-04TT1000	IST-04TT2000
Type	A				B		
Range	0.5~5N.m	2.8~28N.m	6.8~68N.m	35~350N.m	81.5~815N.m	100~1000N.m	200~2000N.m
Accuracy	±1% (clockwise)						
Resolution	0.001N.m	0.01N.m	0.01N.m	0.1N.m	0.1N.m	1N.m	1N.m
Unit	N.m, in.lb, ft.lb, kg.cm				N.m, ft.lb		
Square socket/hex driver	1/4"	3/8"	3/8"	1/2"	27mm	27mm	27mm
Adaptor	no	3/8" to 1/4"	3/8" to 1/4"	1/2" to 3/8" 3/8" to 1/4"	no		
Power supply	DC						
Weight	0.75kg	0.75kg	1.1kg	1.1kg	5.1kg	5.1kg	5.1kg

STANDARD DELIVERY

Main unit	1 pc
AC/DC adapter	1 pc
Adaptor	refer to details

DIGITAL TORQUE TESTERS

ATTENTION: NOT SUITABLE FOR ELECTRIC WRENCHES, IMPACT WRENCHES OR PNEUMATIC WRENCHES

VIDEO

red alarm LED

green alarm LED   power

yellow alarm LED

LCD display

buzzer
reset
buttons

connection cable

transducer

IST-TT550

- With external sensor, to test torque wrenches, torque screwdrivers and other torque tools
- Clockwise and counter-clockwise operation
- Peak, track and first peak working modes
- Unit: N.m, in.lb, ft.lb, kg.cm
- Tolerance testing
- LED indicator for target torque alarm:
  – Yellow LED light on when the value is below the low tolerance; green LED light on when the value is within tolerance; red LED light on when the value is above the high tolerance
  – The buzzer alarms when the maximum torque value is captured in the first peak mode
- Automatic power off

extension cable (included)

adaptor (included)

with 3 mounting holes on the bottom

SPECIFICATION

Code	IST-TT05	IST-TT5	IST-TT30	IST-TT50	IST-TT220	IST-TT550	IST-TT1000	IST-TT2200
Range	0.1~0.5N.m	0.5~5N.m	3~30N.m	5~50N.m	22~220N.m	55~550N.m	100~1000N.m	220~2200N.m
Accuracy	±1% (clockwise and counter-clockwise)							
Resolution	0.0001N.m	0.0001N.m	0.001N.m	0.001N.m	0.01N.m	0.01N.m	0.1N.m	0.1N.m
Square socket (L)	1/4"	1/4"	3/8"	3/8"	1/2"	3/4"	1"	1"
Power supply	DC							
Adaptor	no	no	3/8" to 1/4"	3/8" to 1/4"	1/2" to 3/8" 3/8" to 1/4"	3/4" to 1/2" 1/2" to 3/8"	1" to 3/4" 3/4" to 1/2" 1/2" to 3/8"	1" to 3/4" 3/4" to 1/2"
Transducer dimension	63×63 ×65mm	63×63 ×65mm	89×89 ×75mm	89×89 ×75mm	109×109 ×83mm	140×140 ×107mm	160×160 ×126mm	160×160 ×126mm
Weight	0.75kg	0.75kg	1.1kg	1.1kg	1.4kg	2.9kg	5.0kg	5.1kg

STANDARD DELIVERY

Main unit	1 pc
Transducer with 1.5m cable	1 pc
Extension cable (1.2m)	1 pc
AC/DC adapter	1 pc
Adaptor	refer to details

TORQUE WRENCH TEST STANDS

application example

adaptor

IST-06TS350

- Rotate the wheel to apply force. Rotary speed is adjustable
- Easy operation due to the gear box
- Used with digital torque testers (**IST-TT** series)

VIDEO

SPECIFICATION

Code	IST-06TS350	IST-06TS1100	IST-06TS2000
Max. torque value	350N.m	1100N.m	2000N.m
Arm length	197~686mm	380~1350mm	420~1690mm
Dimension	860×290×590mm	1760×350×590mm	2090×350×590mm
Weight	32.5kg	76kg	80kg

Can be customized according to test requirements

digital torque tester (**optional**)

OPTIONAL ACCESSORY

Digital torque tester	IST-TT series
Adaptor	IST-06TS-BLOCK1 (necessary for **IST-TT05**, **IST-TT5**, **IST-TT30**, **IST-TT50** and **IST-TT220**)
	IST-06TS-BLOCK2 (necessary for **IST-TT550**, **IST-TT1000** and **IST-TT2200**)

DIGITAL TORQUE SCREWDRIVERS

INSPECTION CERTIFICATE

phillips screwdriver bits
(included)

hex screwdriver bits
(included)

- Clockwise and counter-clockwise operation
- Unit: cN.m, in.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations

quick release clamp

calibration port

buttons

LCD display

red alarm LED

with 1/4" hex socket

buzzer

green alarm LED

IST-SD200

VIDEO

SPECIFICATION

Code		IST-SD50	IST-SD200	IST-SD400
Range		10~50cN.m	40~200cN.m	80~400cN.m
Accuracy	clockwise	±3%	±2.5%	±2.5%
	counter-clockwise	±4%	±3.5%	±3.5%
Resolution		0.1cN.m	0.1cN.m	0.1cN.m
Size of hex socket (L)		1/4"	1/4"	1/4"
Power supply		1×AAA battery		
Length		193mm	203mm	203mm
Weight		190g	200g	200g
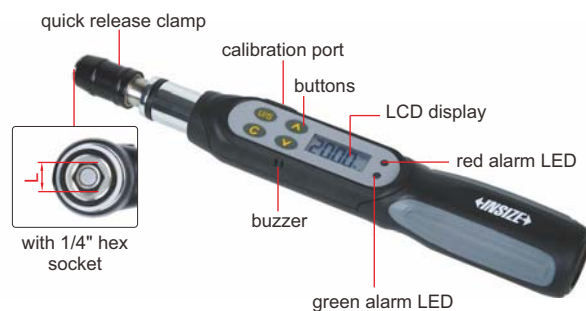
STANDARD DELIVERY

Torque screwdriver	1 pc
Phillips screwdriver bits	1 pc
Hex screwdriver bits	1 pc

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

BLUETOOTH DIGITAL TORQUE SCREWDRIVERS (KEYBOARD SIGNAL)

BUILT-IN BLUETOOTH

INSPECTION CERTIFICATE

VIDEO

green alarm LED
red alarm LED
LCD display
buttons
buzzer

with 1/4" hex socket

IST-3SD50

wrench
green alarm LED
red alarm LED
LCD display
buttons
buzzer

with 1/4" hex socket

IST-3SD200
IST-3SD400

Torque screwdrivers:
- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – LED lights up in sequence and the buzzer sounds when target torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off in 2 minutes automatically

Data transmission:
- Built-in Bluetooth module, which can be connected with computers (with Bluetooth function), mobile phones, tablets and other devices
- Keyboard signal, can be transmitted to Excel
- Transmission distance is 10 meters (no obstacles, no electromagnetic interference)
- Bluetooth connection and disconnection are respectively shown by indicator lights

SPECIFICATION

Code		IST-3SD50	IST-3SD200	IST-3SD400
Range		0.1~0.5N.m	0.4~2N.m	0.8~4N.m
Accuracy	clockwise	±3%	±2.5%	±2.5%
	counter-clockwise	±4%	±3.5%	±3.5%
Resolution		0.001N.m	0.001N.m	0.001N.m
Size of hex socket (L)		1/4"	1/4"	1/4"
Power supply		2×AAA batteries		
Length		193mm	193mm	193mm
Weight		304g	304g	383g

hex screwdriver bits (included)

phillips screwdriver bits (included)

STANDARD DELIVERY

Torque screwdriver	1 pc
Phillips screwdriver bits	1 pc
Hex screwdriver bits	1 pc
Wrench (only for IST-3SD200, IST-3SD400)	1 pc

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

TORQUE SCREWDRIVERS

1/4" square socket,
for T-bar wrench
(for **IST-MG250**,
IST-MG360, **IST-MG600**)

hex socket

lock ring for
torque setting

1/4"

1/4"

T-bar wrench
(for **IST-MG250**, **IST-MG360**, **IST-MG600**)

IST-MG100

SPECIFICATION

Code	IST-MG100	IST-MG250	IST-MG360	IST-MG600
Range (clockwise)	20~100cN.m	50~250cN.m	60~360cN.m	1.0~6.0N.m
Graduation	2cN.m	5cN.m	5cN.m	0.1N.m
Head	1/4" hex socket			
Accuracy	±6%			
Length	172mm			
Weight	0.26kg			

STANDARD DELIVERY

Torque screwdriver	1 pc
T-bar wrench (for IST-MG250, IST-MG360, IST-MG600)	1 pc

VIDEO

INTELLIGENT ELECTRIC SCREWDRIVERS

control box

OK

3   2.98

connection
cable

electric
screwdriver
port

network port   RS485 port

power port   I/O port   RS232 port

switch

electric
screwdriver

bits

HES-H022

- Unit: kfg.cm, N.m, mN.m, 0.01kgf.cm, lbf.in
- Up to 8 preset values can form a task link
- Clockwise and counter-clockwise operation
- Non-slip grip handle
- Built-in overload protection function

Continued from previous page

SPECIFICATION

Code		HES-H022	HES-H055	HES-H107
Range		0.2~1.5kgf.cm	0.5~5kgf.cm	1~7kgf.cm
		0.02~0.15N.m	0.05~0.5N.m	0.1~0.7N.m
Accuracy		±5%		
Speed		30~2000rpm		30~1000rpm
Bits model		tail deficient type		
Dimension	electric screwdriver	30×42×204mm		
	control box	147×60×201mm		
Weight	electric screwdriver	250g		
	control box	1280g		
Power		AC 220V		

features

dual communication (**optional**)

RS232/485

the actual torque value of each tightening can be saved and uploaded to MES (**optional**)

MES

voice to report the result

check the vertical angle (**optional**)

8 preset tighten tasks (preset target torque)

5-step control
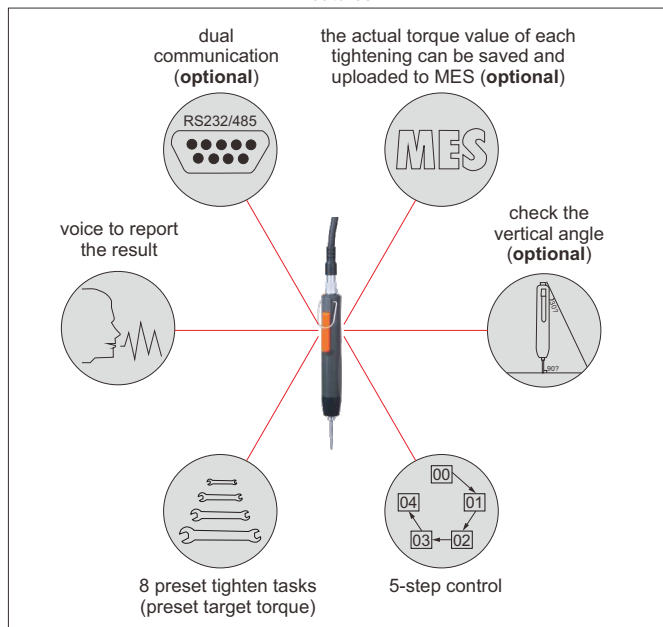
STANDARD DELIVERY

Electric screwdriver (with bits and connection cable)	1 pc
Control box	1 pc
AC adapter	1 pc
Software and USB disk	1 pc
RS232 connection cable	1 pc

OPTIONAL ACCESSORY

RS232 connection cable	HES-H-CABLE-232
RS485 connection cable	HES-H-CABLE-485
Bits	HES-H-BITS
I/O control function	HES-H-SOFT-T
Network transmission function	HES-H-SOFT-T
Upload to MES	HES-H-SOFT-M
Vertical angle detection function	HES-H-SOFT-C
QR code scanner	HES-H-S
Mechanical arm	HES-H-X

operation system on control box (included)

I/O control (**optional**)

data storage
parameter settings
alarm items
electric screwdriver parameters
results
unit
actual torque value
actual number of turns
tighten number of screws
task linkbutton
run task link automatically
8 preset tasks

main interface

I/O control (**optional**)

loosen parameters
tighten parameters
save settings
5 steps
real-time task

task interface

SMALL RANGE DIGITAL TORQUE WRENCH

INSPECTION CERTIFICATE

- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when target torque value is 90%~100% of target torque
  – Red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With overload record
  (once the torque reaches 110% of the maximum range)

clockwise/counter-clockwise switch
calibration port
buttons
LCD display
red alarm LED
buzzer
green alarm LED
square driver
L
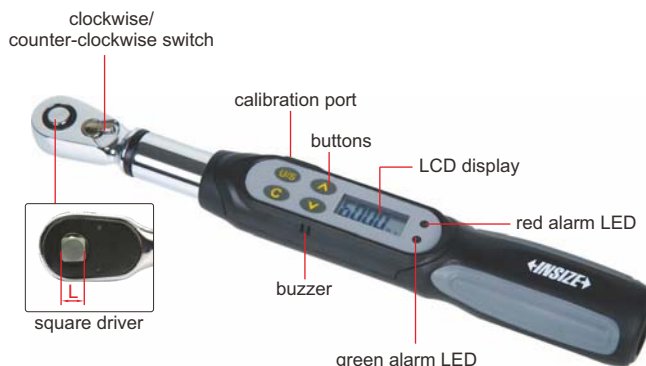
IST-WP6

SPECIFICATION

Code		IST-WP6
Range		1.2~6N.m
Accuracy	clockwise	±3%
	counter-clockwise	±4%
Resolution		0.001N.m
Square driver (L)		1/4"
Power supply		1×AAA battery
Length		260mm
Weight		430g

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

SHORT HANDLE DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off in 5 minutes automatically
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)

clockwise/counter-clockwise switch
red alarm LED
green alarm LED
calibration port
buzzer
buttons
LCD display
square driver
L

IST-WS60

SPECIFICATION

Code		IST-WS12	IST-WS20	IST-WS30	IST-WS30A	IST-WS60	IST-WS85
Range		2.4~12N.m	4~20N.m	6~30N.m	6~30N.m	12~60N.m	17~85N.m
Accuracy	clockwise	±3%					
	counter-clockwise	±4%					
Resolution		0.01N.m	0.01N.m	0.01N.m	0.01N.m	0.01N.m	0.1N.m
Square driver (L)		1/4"	1/4"	1/4"	3/8"	3/8"	3/8"
Power supply		2×AAA batteries					
Length		215mm	215mm	215mm	215mm	225mm	271mm
Weight		750g	750g	750g	830g	917g	1000g

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%
ONLY FOR RANGE 6~850N.m

clockwise/counter-clockwise setting
calibration port
LCD display
buzzer
red alarm LED
green alarm LED
buttons

IST-W135A
type A

clockwise/counter-clockwise setting
L
square driver

L
square driver

calibration port
buzzer
LCD display
buttons

IST-W1200A
type B

- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working mode
- Target torque value can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  – Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off automatically in 5 minutes without any operations
- Non-slip grip handle
- With damp record
- With overload record (once the torque reaches 110% of the maximum range)

SPECIFICATION

Code	Type	Range	Accuracy	Resolution	Square driver (L)	Power supply	Length	Weight
IST-W30A	A	6~30N.m	clockwise: ±2% counter-clock wise: ±3%	0.01N.m	1/4"	2×AA batteries, for 110 hours working	390mm	830g
IST-W135A		27~135N.m		0.1N.m	3/8"		415mm	950g
IST-W200A		40~200N.m		0.1N.m	1/2"		530mm	1.4kg
IST-W340A		68~340N.m		0.1N.m	1/2"		650mm	1.6kg
IST-W500A*	B	100~500N.m	clockwise: ±2.5% counter-clock wise: ±3.5%	0.1N.m	3/4"		1285mm	7kg
IST-W850A		170~850N.m		0.1N.m	3/4"		1295mm	6kg
IST-W1200A		240~1200N.m		1N.m	1"		1920mm	13kg
IST-W1500A		300~1500N.m		1N.m	1"		1920mm	13kg
IST-W2000A		400~2000N.m		1N.m	1"		1920mm	14kg

OPTIONAL ACCESSORY

Calibration cable	IST-W-CABLE

*The accuracy of this code is not optional

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

INTERCHANGEABLE HEAD DIGITAL TORQUE WRENCHES

INSPECTION CERTIFICATE

socket size

B

A

buzzer

LCD display

calibration port

buttons

green alarm LED

red alarm LED

IST-2W135A

ratchet head (included)

D

square driver

- Clockwise and counter-clockwise operation
- Unit: N.m, in.lb, ft.lb, kg.cm, degree
- Peak and track working modes
- Target torque value can be set, with audible and visible alarm:
  - Green LED light on and buzzer sounds when torque value is 90%~100% of target torque
  - Both green and red LED light on and buzzer sounds when target torque value is reached
- Power off in 5 minutes automatically without any operations
- Non-slip grip handle
- With damp record
- With overload record
  (once the torque reaches 110% of the maximum range)

torque correction

L2   L1

torque value needs to be corrected if L2
is different when head is changed
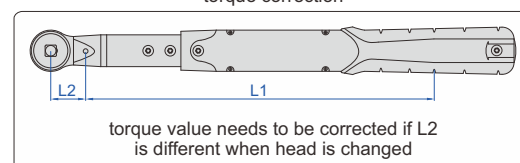
SPECIFICATION

Code		IST-2W30A	IST-2W135A	IST-2W200A	IST-2W340A	IST-2W410A
Range		6~30N.m	27~135N.m	40~200N.m	68~340N.m	82~410N.m
Accuracy	clockwise	±2%				
	counter-clockwise	±3%				
Resolution		0.01N.m	0.1N.m	0.1N.m	0.1N.m	0.1N.m
Socket size (A×B)		12×9mm	12×9mm	18×14mm	18×14mm	18×14mm
Arm length (L1)		272.7mm	287.7mm	381.2mm	501.2mm	501.2mm
Power supply		2xAA batteries, for 110 hours working				
Weight		1400g	1570g	2170g	2320g	2320g

STANDARD DELIVERY

Torque wrench	1 pc
Ratchet head	1 pc

OPTIONAL ACCESSORY

Calibration cable	IST-W-CABLE
Interchangeable head	refer to details

RATCHET HEAD (INCLUDED) SPECIFICATION

Code of torque wrench	IST-2W30A	IST-2W135A	IST-2W200A	IST-2W340A	IST-2W410A
Square driver (D)	1/4"	3/8"	1/2"	1/2"	3/4"
Length (L2)	29mm	29mm	40mm	40mm	40mm

RATCHET HEAD (optional)

Code	Square driver (D)	Applicable wrenches
IST-2W-R1	1/4"	IST-2W30A
IST-2W-R2	3/8"	IST-2W135A
IST-2W-R3	1/2"	IST-2W135A
IST-2W-R4	1/2"	IST-2W200A IST-2W340A IST-2W410A

ADJUSTABLE SPANNER HEAD (optional)

Code	Open size	Applicable wrenches
IST-2W-A1	5~27mm	IST-2W30A IST-2W135A
IST-2W-A2	5-30mm	IST-2W200A IST-2W410A
IST-2W-A3	10-41mm	IST-2W340A IST-2W410A

OPEN END HEAD (optional)

Code	Open size	Applicable wrenches
IST-2W-K7	7mm	
IST-2W-K8	8mm	
IST-2W-K9	9mm	
IST-2W-K10	10mm	
IST-2W-K11	11mm	
IST-2W-K12	12mm	
IST-2W-K13	13mm	IST-2W30A IST-2W135A
IST-2W-K14	14mm	
IST-2W-K15	15mm	
IST-2W-K16	16mm	
IST-2W-K17	17mm	
IST-2W-K18	18mm	
IST-2W-K19	19mm	
IST-2W-K13A	13mm	
IST-2W-K14A	14mm	
IST-2W-K15A	15mm	
IST-2W-K16A	16mm	
IST-2W-K17A	17mm	IST-2W200A IST-2W340A IST-2W410A
IST-2W-K18A	18mm	
IST-2W-K19A	19mm	
IST-2W-K21A	21mm	
IST-2W-K22A	22mm	
IST-2W-K24A	24mm	
IST-2W-K27A	27mm	

BOX END HEAD (optional)

Code	Open size	Applicable wrenches
IST-2W-M7	7mm	
IST-2W-M8	8mm	
IST-2W-M10	10mm	
IST-2W-M11	11mm	
IST-2W-M12	12mm	
IST-2W-M13	13mm	
IST-2W-M14	14mm	IST-2W30A IST-2W135A
IST-2W-M15	15mm	
IST-2W-M16	16mm	
IST-2W-M17	17mm	
IST-2W-M18	18mm	
IST-2W-M19	19mm	
IST-2W-M21	21mm	
IST-2W-M22	22mm	
IST-2W-M13A	13mm	
IST-2W-M14A	14mm	
IST-2W-M15A	15mm	
IST-2W-M16A	16mm	IST-2W200A IST-2W340A
IST-2W-M17A	17mm	
IST-2W-M18A	18mm	
IST-2W-M19A	19mm	
IST-2W-M21A	21mm	

35

QUALITY INSPECTION TORQUE WRENCHES

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%
ONLY FOR RANGE 6~340N.m

MEASURE THE TORQUE
OF TIGHTENED BOLTS

INSPECTION
CERTIFICATE

VIDEO

clockwise/counter-clockwise setting

LCD display

buzzer

calibration port

red alarm LED

green alarm LED

buttons

square driver

L

IST-4W135A
type A

clockwise/counter-clockwise setting

L

square driver

calibration port

buzzer

LCD display

buttons

IST-4W1200A
type B

- Retighten the tightened bolts to measure the torque, read the torque value when the looseness is detected
- Two measuring modes:
  M1: automatical detecting mode, for normal bolts. Retighten the tightened bolts, the torque value is displayed on screen when the wrench automatically detects the looseness, both green and red LED light on and buzzer sounds
  M2: manual detecting mode, for long bolts. Retighten the tightened bolts, read the torque value when the looseness is detected by hand
- Unit: N.m, in.lb, ft.lb, kg.cm
- Peak and track working mode (only for M2 measuring mode)
- Clockwise and count-clockwise operation
- Memory of 50 results
- Power off in 15 minutes automatically
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

SPECIFICATION

Code	Type	Range	Accuracy	Resolution	Square driver (L)	Power supply	Length	Weight
IST-4W30A	A	6~30N.m	clockwise: ±2% counter-clockwise: ±3%	0.01N.m	1/4"	2×AA batteries, for 110 hours working	390mm	760g
IST-4W135A		27~135N.m		0.1N.m	3/8"		415mm	940g
IST-4W200A		40~200N.m		0.1N.m	1/2"		530mm	1340g
IST-4W340A		68~340N.m		0.1N.m	1/2"		650mm	1540g
IST-4W850A	B	170~850N.m	clockwise: ±2.5% counter-clockwise: ±3.5%	0.1N.m	3/4"		1220mm	6000g
IST-4W1200A		240~1200N.m		1N.m	1"		1800mm	9100g
IST-4W1500A		300~1500N.m		1N.m	1"		1800mm	9100g
IST-4W2000A		400~2000N.m		1N.m	1"		1800mm	10500g

OPTIONAL ACCESSORY

Calibration cable	IST-W-CABLE

TWO-WAY WIRELESS DIGITAL TORQUE WRENCHES

OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

TRANSMISSION DISTANCE
IS 300 METERS

INSPECTION CERTIFICATE

clockwise/counter-clockwise switch

LCD display

buzzer

calibration port

transmission button

red alarm LED

green alarm LED

square driver

L

IST-13W135A

two-way receiver

VIDEO

Torque wrench:
- The test results can be transmitted wirelessly to the computer and PLC
- Unit: N.m, in.lb, ft.lb, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  – Green LED light on and buzzer sounds when torque value is 80%~99.5% of target torque
  – Both green and red LED light on and buzzer sounds when torque value is over 99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With damp record
- With overload record
  (once the torque reaches 110% of the maximum range)

Two-way receiver:
- A two-way receiver can be connected with up to 10 wrenches at the same time, and the maximum transmission distance is 300 meters

Software:
- In Windows10 system version 1709 or above
- Two operation mode:
  – Data transmission mode: wrench transmits actual torque value to software after operation
  – Program guidance mode: firstly set process on software (set sequence of tightening, select wrench and set torque values and tolerances). Then software shows which wrench the operator should use (indicator light of the selected wrench is on) and shows the target torque value, and serial number of the screw to be tightened (shows on the wrench); After the operation is finished, the actual torque value is sent to software.
- Can select whether the wrench only sends qualified data after operation (in accordance with the tolerance)
- Two data transmission modes: automatic or press button to send
- When the wrench is disconnected, data is stored in the wrench and automatically sent to computer after wireless connection
- The data in software can be printed or sent to Excel

TWO-WAY RECEIVER SPECIFICATION

Code	IST-13WREC	IST-13WREC-PLC
Signal output to	computer	PLC
Working frequency	ISM433MHz (432.0~433.8MHz, adjustable)	
Power supply	power adapter, 24V, 0.5A	
Dimension	200×108×31mm	
Weight	500g	

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE
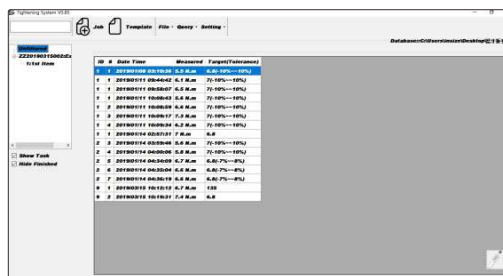
data transmission mode
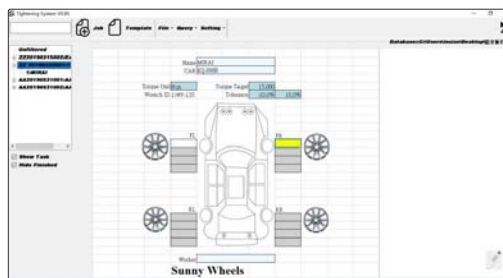
program guidance mode

SPECIFICATION

Code	Range	Accuracy	Unit	Resolution	Square driver (L)	Working frequency	Power supply	Length	Weight
IST-13W30A	6~30N.m	clockwise: ±2% counter-clockwise: ±3%	N-m/ft-lb/ in-lb/kg-cm	0.01N.m	1/4"	ISM433MHz (432.0~433.8MHz, adjustable)	2×AA batteries	390mm	760g
IST-13W60A	12~60N.m			0.01N.m	3/8"			390mm	940g
IST-13W135A	27~135N.m			0.1N.m	3/8"			415mm	940g
IST-13W200A	40~200N.m			0.1N.m	1/2"			530mm	1340g
IST-13W340A	68~340N.m			0.1N.m	1/2"			650mm	1540g
IST-13W1200A	240~1200N.m	clockwise: ±2.5% counter-clockwise: ±3.5%	N-m/ft-lb	1N.m	1"			1800mm	9000g
IST-13W1500A	300~1500N.m			1N.m	1"			1800mm	9000g
IST-13W2000A	400~2000N.m			1N.m	1"			1800mm	10500g

BLUETOOTH DIGITAL TORQUE WRENCHES (KEYBOARD SIGNAL)

TYPE B OPTIONAL ACCURACY:
CLOCKWISE: ±1%
COUNTER-CLOCKWISE: ±2%

BUILT-IN BLUETOOTH

INSPECTION CERTIFICATE

VIDEO

clockwise/counter-clockwise switch
alarm LED
buzzer
square driver
transmission button

IST-15W12A
type A

clockwise/counter-clockwise switch
buzzer
transmission button
alarm LED
square driver

IST-15W135A
type B
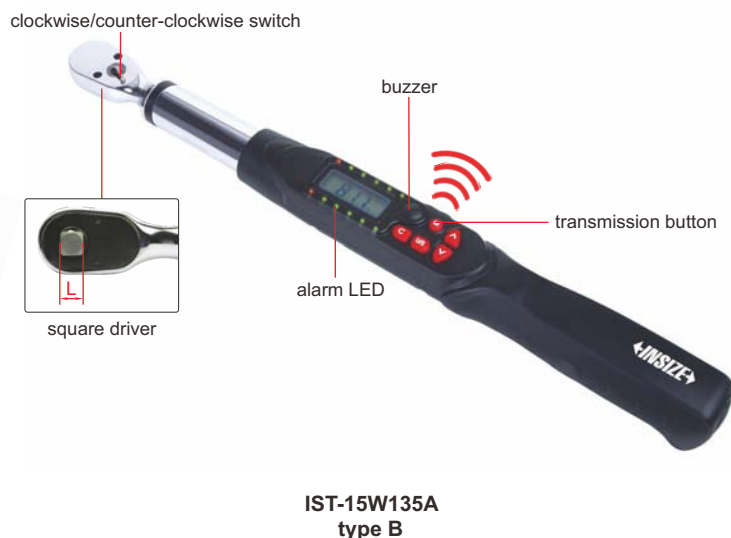
Torque wrenches:
- Unit: in.lb, ft.lb, N.m, kg.cm
- Clockwise and counter-clockwise operation
- Peak and track working mode
- Can set tolerance with judgement in peak working mode
- 9 target torque values can be set, with audible and visible alarm:
  LED lights up in sequence, and the buzzer gets louder and louder when
  torque value is 80%~99.5% of target torque
- Power off in 2 minutes automatically
- Non-slip grip handle
- With overload record (once the torque reaches 110% of the maximum range)

Data transmission:
- Built-in Bluetooth 4.0 module, which can be connected with computers
  (with Bluetooth function), mobile phones, tablets and other devices
- Keyboard signal, can be transmitted to Excel, Word, TXT
- Transmission distance is 10 meters (no obstacles, no electromagnetic
  interference)
- Bluetooth connection and disconnection are respectively shown by
  indicator lights

Excel

transmission distance is 10 meters
(no obstacles, no electromagnetic interference)

SPECIFICATION

Code		IST-15W06A	IST-15W12A	IST-15W20A	IST-15W30A	IST-15W135A	IST-15W200A	IST-15W340A
Type		A (short handle)			B (long handle)			
Range		1.2~6N.m	2.4~12N.m	4~20N.m	6~30N.m	27~135N.m	40~200N.m	68~340N.m
Accuracy	clockwise	±2%						
	counter-clockwise	±3%						
Tolerance setting range		-20%~+20% (target torque value)						
Resolution		0.001N.m	0.01N.m	0.01N.m	0.01N.m	0.1N.m	0.1N.m	0.1N.m
Square driver (L)		1/4"	1/4"	1/4"	1/4"	3/8"	1/2"	1/2"
Power supply		2xAAA batteries			2xAA batteries			
Length		215mm	215mm	215mm	390mm	415mm	530mm	650mm
Weight		750g	750g	750g	760g	940g	1340g	1540g

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

INTERCHANGEABLE HEAD TORQUE WRENCHES

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

torque set lock ring

socket size

torque value

IST-11WM200

- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable

SPECIFICATION

Code	Range (clockwise)	Accuracy	Graduation	Socket size (A×B)	Length	Weight
IST-11WM12	2.5~12N.m	±6% (<10N.m) ±4% (≥10N.m)	0.05N.m	12×9mm	284mm	580g
IST-11WM30	6.0~30N.m	±6% (<10N.m) ±4% (≥10N.m)	0.1N.m	12×9mm	303mm	720g
IST-11WM60	10~60N.m	±4%	0.5N.m	12×9mm	372mm	860g
IST-11WM125	25~125N.m	±4%	0.5N.m	12×9mm	427mm	940g
IST-11WM200	40~200N.m	±4%	1N.m	18×14mm	460mm	1060g
IST-11WM335	65~335N.m	±4%	1N.m	18×14mm	520mm	1200g
IST-11WM500	100~500N.m	±4%	2.5N.m	32×24mm	855mm	5000g
IST-11WM800	160~800N.m	±4%	4N.m	32×24mm	1055mm	5900g
IST-11WM1000	200~1000N.m	±4%	5N.m	32×24mm	1055mm	5900g
IST-11WM1500	300~1500N.m	±4%	5N.m	36×27mm	1249mm	9000g
IST-11WM2000	400~2000N.m	±4%	10N.m	36×27mm	1249mm	9000g
IST-11WM3000	600~3000N.m	±4%	15N.m	36×27mm	1249mm	10300g

RATCHET HEAD (optional)

Code	Square driver	Applicable wrenches
IST-11WM-R1	1/4"	IST-11WM12 IST-11WM30
IST-11WM-R2	3/8"	IST-11WM12 IST-11WM30 IST-11WM60 IST-11WM125
IST-11WM-R3	1/2"	IST-11WM200 IST-11WM335
IST-11WM-R4 *	3/4"	IST-11WM200 IST-11WM335
IST-11WM-R5	3/4"	IST-11WM500 IST-11WM800 IST-11WM1000
IST-11WM-R6	1"	IST-11WM1500 IST-11WM2000 IST-11WM3000

HOOK HEAD (optional)

Hook head	customized according to customer requirements

OPEN END HEAD (optional)

Code	Open size	Applicable wrenches
IST-11WM-K8	8mm	IST-11WM12 IST-11WM30 IST-11WM60 IST-11WM125
IST-11WM-K10	10mm	
IST-11WM-K13	13mm	
IST-11WM-K14	14mm	
IST-11WM-K15	15mm	
IST-11WM-K17	17mm	
IST-11WM-K19*	19mm	
IST-11WM-K13A	13mm	IST-11WM200 IST-11WM335
IST-11WM-K14A	14mm	
IST-11WM-K15A	15mm	
IST-11WM-K17A	17mm	
IST-11WM-K19A	19mm	
IST-11WM-K22A	22mm	
IST-11WM-K24A	24mm	
IST-11WM-K27A*	27mm	
IST-11WM-K30A*	30mm	
IST-11WM-K32A*	32mm	
IST-11WM-K22B	22mm	IST-11WM500 IST-11WM800 IST-11WM1000
IST-11WM-K24B	24mm	
IST-11WM-K27B	27mm	
IST-11WM-K28B	28mm	
IST-11WM-K30B	30mm	
IST-11WM-K32B	32mm	
IST-11WM-K33B*	33mm	
IST-11WM-K36B*	36mm	
IST-11WM-K38B*	38mm	
IST-11WM-K40B*	40mm	
IST-11WM-K30C	30mm	IST-11WM1500 IST-11WM2000 IST-11WM3000
IST-11WM-K32C	32mm	
IST-11WM-K34C	34mm	
IST-11WM-K36C	36mm	
IST-11WM-K38C	38mm	
IST-11WM-K41C	41mm	
IST-11WM-K45C	45mm	
IST-11WM-K50C*	50mm	
IST-11WM-K55C*	55mm	
IST-11WM-K60C*	60mm	

BOX END HEAD (optional)

Code	Open size	Applicable wrenches
IST-11WM-M8	8mm	IST-11WM12 IST-11WM30 IST-11WM60 IST-11WM125
IST-11WM-M10	10mm	
IST-11WM-M13	13mm	
IST-11WM-M14	14mm	
IST-11WM-M15	15mm	
IST-11WM-M17	17mm	
IST-11WM-M19	19mm	
IST-11WM-M13A	13mm	IST-11WM200 IST-11WM335
IST-11WM-M14A	14mm	
IST-11WM-M15A	15mm	
IST-11WM-M17A	17mm	
IST-11WM-M19A	19mm	
IST-11WM-M22A	22mm	
IST-11WM-M24A	24mm	
IST-11WM-M27A	27mm	
IST-11WM-M30A	30mm	
IST-11WM-M32A	32mm	
IST-11WM-M22B	22mm	IST-11WM500 IST-11WM800 IST-11WM1000
IST-11WM-M24B	24mm	
IST-11WM-K27B	27mm	
IST-11WM-M28B	28mm	
IST-11WM-M30B	30mm	
IST-11WM-M32B	32mm	
IST-11WM-M33B	33mm	
IST-11WM-M36B*	36mm	
IST-11WM-M38B*	38mm	
IST-11WM-M40B	40mm	
IST-11WM-M30C	30mm	IST-11WM1500 IST-11WM2000 IST-11WM3000
IST-11WM-M32C	32mm	
IST-11WM-M34C	34mm	
IST-11WM-M36C	36mm	
IST-11WM-M38C	38mm	
IST-11WM-M41C	41mm	
IST-11WM-M45C	45mm	
IST-11WM-M50C	50mm	
IST-11WM-M55C*	55mm	
IST-11WM-M60C*	60mm	

*Torque value needs to be corrected for these heads

TORQUE WRENCHES
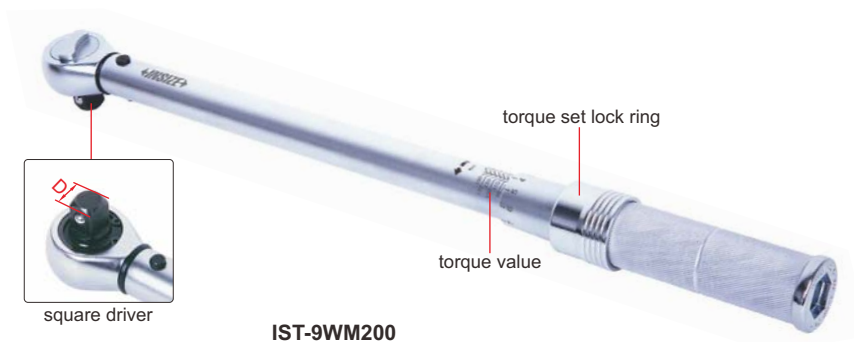
INSPECTION CERTIFICATE

torque set lock ring

torque value

square driver

IST-9WM200

- According to DIN ISO 6789, ASME B107.300
- All-metal construction, sturdy and durable

SPECIFICATION

Code	IST-9WM12	IST-9WM20	IST-9WM30	IST-9WM60	IST-9WM100
Range (clockwise)	2.5~12N.m	4~20N.m	6~30N.m	10~60N.m	20~100N.m
Accuracy	±6% (<10N.m) ±4% (≥10N.m)	±6% (<10N.m) ±4% (≥10N.m)	±6% (<10N.m) ±4% (≥10N.m)	±4%	±4%
Graduation	0.1N.m	0.1N.m	0.2N.m	0.5N.m	0.5N.m
Square driver (D)	1/4"	1/4"	3/8"	3/8"	1/2"
Length	290mm	290mm	318mm	388mm	443mm
Weight	680g	680g	820g	960g	1040g

Code	IST-9WM125	IST-9WM200	IST-9WM335	IST-9WM500	IST-9WM800
Range (clockwise)	25~125N.m	40~200N.m	65~335N.m	100~500N.m	160~800N.m
Accuracy	±4%	±4%	±4%	±4%	±4%
Graduation	0.5N.m	1N.m	1N.m	2.5N.m	4N.m
Square driver (D)	1/2"	1/2"	1/2"	3/4"	3/4"
Length	443mm	468mm	528mm	855mm	1055mm
Weight	1040g	1160g	1300g	5000g	5900g

Code	IST-9WM1000	IST-9WM1500	IST-9WM2000	IST-9WM3000
Range (clockwise)	200~1000N.m	300~1500N.m	400~2000N.m	600~3000N.m
Accuracy	±4%	±4%	±4%	±4%
Graduation	5N.m	5N.m	10N.m	15N.m
Square driver (D)	3/4"	1"	1"	1"
Length	1055mm	1260mm	1260mm	1260mm
Weight	5900g	9200g	9200g	10500g

INTERCHANGEABLE HEAD MECHANICAL TORQUE WRENCHES
(DIGITAL SETTING)

INSPECTION
CERTIFICATE

display pre-set torque value
(not real time torque)

VIDEO

B

A

socket size

IST-25WM60

torque
adjustment device

- Unit: N.m, in.lb, ft.lb, kg.cm
- Mechanical "click" torque
  wrench, the pre-set torque
  value is shown on the display

SPECIFICATION

Code	IST-25WM60	IST-25WM100	IST-25WM140	IST-25WM200	IST-25WM300
Range (clockwise)	12~60N.m	20~100N.m	28~140N.m	40~200N.m	60~300N.m
Accuracy	±3%	±3%	±3%	±3%	±3%
Resolution	0.1N.m	0.1N.m	0.1N.m	0.1N.m	0.1N.m
Socket size (A×B)	12×9mm	12×9mm	18×14mm	18×14mm	18×14mm
Length	408mm	431mm	492mm	510mm	568mm
Weight	1.3kg	1.4kg	1.45kg	1.5kg	1.7kg

RATCHET HEAD (optional)

Code	Square driver	Applicable wrenches
IST-11WM-R1	1/4"	IST-25WM60 IST-25WM100
IST-11WM-R2	3/8"	IST-25WM60 IST-25WM100
IST-11WM-R3	1/2"	IST-25WM140 IST-25WM200 IST-25WM300
IST-11WM-R4*	3/4"	IST-25WM140 IST-25WM200 IST-25WM300

BOX END HEAD (optional)

Code	Open size	Applicable wrenches
IST-11WM-M8	8mm	IST-25WM60 IST-25WM100
IST-11WM-M10	10mm	
IST-11WM-M13	13mm	
IST-11WM-M14	14mm	
IST-11WM-M15	15mm	
IST-11WM-M17	17mm	
IST-11WM-M19	19mm	
IST-11WM-M13A	13mm	IST-25WM140 IST-25WM200
IST-11WM-M14A	14mm	
IST-11WM-M15A	15mm	
IST-11WM-M17A	17mm	
IST-11WM-M19A	19mm	
IST-11WM-M22A	22mm	
IST-11WM-M24A	24mm	
IST-11WM-M27A	27mm	
IST-11WM-M30A	30mm	
IST-11WM-M32A	32mm	

HOOK HEAD (optional)

Hook head	customized according to customer requirements

Continued from previous page

OPEN END HEAD (optional)

Code	Open size	Applicable wrenches
IST-11WM-K6	6mm	IST-25WM60 IST-25WM100
IST-11WM-K7	7mm	
IST-11WM-K8	8mm	
IST-11WM-K9	9mm	
IST-11WM-K10	10mm	
IST-11WM-K11	11mm	
IST-11WM-K12	12mm	
IST-11WM-K13	13mm	
IST-11WM-K14	14mm	
IST-11WM-K15	15mm	
IST-11WM-K16	16mm	
IST-11WM-K17	17mm	
IST-11WM-K18*	18mm	
IST-11WM-K19*	19mm	
IST-11WM-K13A	13mm	IST-25WM140 IST-25WM200 IST-25WM300
IST-11WM-K14A	14mm	
IST-11WM-K15A	15mm	
IST-11WM-K16A	16mm	
IST-11WM-K17A	17mm	
IST-11WM-K18A	18mm	
IST-11WM-K19A	19mm	
IST-11WM-K20A	20mm	
IST-11WM-K21A	21mm	
IST-11WM-K22A	22mm	
IST-11WM-K23A	23mm	
IST-11WM-K24A	24mm	
IST-11WM-K27A*	27mm	
IST-11WM-K30A*	30mm	
IST-11WM-K32A*	32mm	

*Torque value needs to be corrected for these heads

MECHANICAL TORQUE WRENCHES (DIGITAL SETTING)

ATTENTION: DISPLAY PRE-SET TORQUE VALUE (NOT REAL TIME TORQUE)

ATTENTION: CLOCKWISE OPERATION ONLY

INSPECTION CERTIFICATE

display pre-set torque value (not real time torque)

VIDEO

square driver

IST-19WM100

torque adjustment device

- Unit: N.m, in.lb, ft.lb, kg.cm
- Mechanical "click" torque wrench, the pre-set torque value is shown on the display

SPECIFICATION

Code	IST-19WM60	IST-19WM100	IST-19WM140	IST-19WM200	IST-19WM300
Range (clockwise)	12~60N.m	20~100N.m	28~140N.m	40~200N.m	60~300N.m
Accuracy	±3%	±3%	±3%	±3%	±3%
Resolution	0.1N.m	0.1N.m	0.1N.m	0.1N.m	0.1N.m
Square driver (D)	3/8"	3/8"	1/2"	1/2"	1/2"
Length	382mm	450mm	481mm	520mm	585mm
Weight	1.3kg	1.4kg	1.45kg	1.6kg	1.8kg

ATTENTION: CLOCKWISE OPERATION ONLY

PRESET TORQUE WRENCHES

- Torque is preset, to prevent adjustment by mistake during use
- The torque is set at the factory before delivery. Customers can also set the torque with torque adjustment tool (**IST-PW-TOOL**, **optional**) and digital torque testers (**IST-TT□□□**, **optional**)
- Clockwise operation only

square driver

IST-PW60

torque adjustment tool
(**optional**)

SPECIFICATION

Code	IST-PW12	IST-PW20	IST-PW30	IST-PW60	IST-PW125	IST-PW200
Adjustable range*	2.5~12N.m 22~105in.lb	4~20N.m 36~175in.lb	6~30N.m 55~265in.lb	10~60N.m 8~44ft.lb	25~125N.m 20~90ft.lb	40~200N.m 30~145ft.lb
Accuracy	±3%	±3%	±3%	±3%	±3%	±3%
Square driver (D)	1/4"	1/4"	3/8"	3/8"	3/8"	1/2"
Length	184mm	184mm	214mm	255mm	366mm	457mm
Weight	450g	450g	500g	560g	790g	1200g

Code	IST-PW340	IST-PW500	IST-PW650	IST-PW800	IST-PW1000A	IST-PW1000B
Adjustable range*	65~340N.m 50~250ft.lb	100~500N.m 75~365ft.lb	150~650N.m 110~475ft.lb	160~800N.m 120~585ft.lb	200~1000N.m 150~735ft.lb	200~1000N.m 150~735ft.lb
Accuracy	±3%	±3%	±4%	±4%	±4%	±4%
Square driver (D)	1/2"	3/4"	3/4"	3/4"	3/4"	1"
Length	691mm	910mm	910mm	1037mm	1265mm	1265mm
Weight	1960g	2800g	2800g	5000g	6000g	6000g

OPTIONAL ACCESSORY

Torque adjustment tool	IST-PW-TOOL

*Adjust to a fixed torque value according to customer requirements before delivery

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DIAL TORQUE WRENCHES

dial with metric and inch scales

peak value indicator

INSPECTION CERTIFICATE

square driver

IST-DW70

- Clockwise and counter-clockwise operation
- According to DIN ISO 6789, ASME B107.300

SPECIFICATION

Code	IST-DW1D8	IST-DW3D5	IST-DW9	IST-DW18	IST-DW35	IST-DW70	IST-DW140	IST-DW240	IST-DW350	IST-DW480
Range	0.36~1.8N.m 3~16in.lb	0.7~3.5N.m 6~30in.lb	1.8~9N.m 15~75in.lb	3.6~18N.m 30~150in.lb	7~35N.m 60~300in.lb	14~70N.m 120~600in.lb	28~140N.m 20~100ft.lb	48~240N.m 35~175ft.lb	70~350N.m 50~250ft.lb	96~480N.m 70~350ft.lb
Accuracy	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%	±3%
Graduation	0.02N.m 0.2in.lb	0.05N.m 0.5in.lb	0.1N.m 1in.lb	0.2N.m 2in.lb	0.5N.m 5in.lb	1N.m 10in.lb	2N.m 1ft.lb	3N.m 2.5ft.lb	2.5N.m 2.5ft.lb	6N.m 5ft.lb
Square driver (D)	1/4"	1/4"	1/4"	3/8"	3/8"	3/8"	1/2"	1/2"	1/2"	3/4"
Length	254mm	254mm	254mm	254mm	254mm	378mm	546mm	546mm	546mm	708mm
Weight	480g	480g	480g	480g	480g	820g	1300g	1300g	1300g	4030g

DIGITAL TORQUE ADAPTERS (WITH ANGLE DETECTION)

INSPECTION CERTIFICATE

working with mechanical wrenches

- Clockwise and counter-clockwise operation
- After reaching the desired torque, turn the wrench at a angle to apply extra torque
- Unit: N.m, in.lb, ft.lb, kg.cm, degree
- Peak and track working modes
- Target torque or angle value can be set, with audible and visible alarm:
  - Green LED light on and buzzer sounds when torque or angle value is 80%~100% of target torque or angle
  - Both green and red LED light on and buzzer sounds when target torque or angle value is reached
- Power off in 2 minutes automatically
- Memory 50 measurement values for browsing
- With overload record (once the torque reaches 110% of the maximum range)

red alarm LED
square socket
LCD display
buzzer
square socket
square driver
green alarm LED
buttons
calibration port

IST-5W135A

VIDEO

SPECIFICATION

Code		IST-5W30A	IST-5W135A	IST-5W200A	IST-5W340A
Range	torque	6~30N.m	27~135N.m	40~200N.m	68~340N.m
	angle	0~999°			
Accuracy	clockwise	±3%			
	counter-clockwise	±4%			
	angle	±2° (rotate at 90°)			
Resolution	torque	0.01N.m	0.1N.m	0.1N.m	0.1N.m
	angle	1°			
Square driver (L)		1/4"	3/8"	1/2"	1/2"
Power supply		2xAAA batteries			
Dimension		Ø85×60mm	Ø85×75mm	Ø85×80mm	Ø85×80mm
Weight		150g	220g	240g	240g

OPTIONAL ACCESSORY

Calibration cable	IST-SD-CABLE

DIGITAL ANGLE METER
CODE 2177-121

TORQUE MULTIPLIERS

input drive square socket

anti-bounce reversing dowel

output square driver

Z type (bevel type) reaction arm

IST-TM2000

input drive square socket

anti-bounce reversing dowel

L type (plate type) reaction arm

forced cylinder

output square driver

IST-TM3500P

A

B

D

C

bevel type

A

B

C

plate type

application
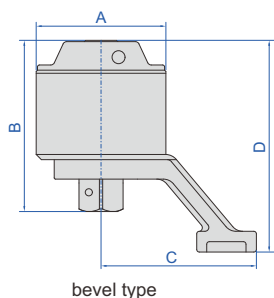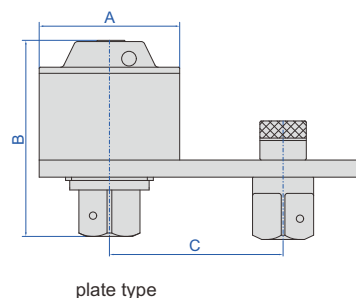
torque wrench

■ Input to output accuracy: ±5%
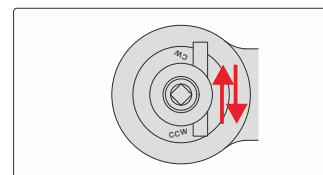
after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier

Z TYPE (BEVEL TYPE) TORQUE MULTIPLIER

Code	Capacity	Torque ratio	Square socket	Square driver	Dimension (A×B×C×D)	For bolt	For nut	Weight
IST-TM1000	1000N.m	1:4	1/2"	1"	82×98.5×97×122.4mm	M20~30	S30~46	2.1kg
IST-TM2000	2000N.m	1:13	1/2"	1"	82×120×105×147mm	M22~35	S32~55	3.15kg
IST-TM3500	3500N.m	1:16	1/2"	1"	98×131×120×163mm	M30~45	S46~70	4.9kg
IST-TM5500	5500N.m	1:20.5	1/2"	1 1/2"	115×163.5×137×199mm	M38~52	S55~80	8.1kg
IST-TM7500	7500N.m	1:23	1/2"	1 1/2"	127×173×146×215mm	M42~60	S65~90	10.6kg
IST-TM10000	10000N.m	1:28	1/2"	1 1/2"	141×170×164×238mm	M52~72	S80~105	14kg

L TYPE (PLATE TYPE) TORQUE MULTIPLIER

Code	Capacity	Torque ratio	Square socket	Square driver	Dimension (A×B×C)	For bolt	For nut	Weight
IST-TM1000P	1000N.m	1:4	1/2"	1"	82×91×(76.7~127.3)mm	M20~30	S30~46	2.4kg
IST-TM2000P	2000N.m	1:13	1/2"	1"	82×120×(92.7~129.3)mm	M22~35	S32~55	3.5kg
IST-TM3500P	3500N.m	1:16	1/2"	1"	98×128×(102.7~145.3)mm	M30~45	S46~70	5.0kg
IST-TM5500P	5500N.m	1:20.5	1/2"	1 1/2"	115×157×(134.05~165.95)mm	M38~52	S55~80	8.7kg
IST-TM7500P	7500N.m	1:23	1/2"	1 1/2"	127×168×(139.05~190.95)mm	M42~60	S65~90	11.7kg
IST-TM10000P	10000N.m	1:28	1/2"	1 1/2"	141×186×(144.05~215.95)mm	M52~72	S80~105	15.2kg
IST-TM15000P	15000N.m	1:50	3/4"	2 1/2"	156×246×(155.25~244.75)mm	M60~85	S80~120	24.1kg
IST-TM20000P	20000N.m	1:76	3/4"	2 1/2"	170×264×(163.75~276.25)mm	M72~100	S105~145	27.8kg

SPLINE-TYPE TORQUE MULTIPLIERS

after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier

input drive square socket

anti-bounce reversing dowel

output square driver

IST-ST2000

application

torque wrench
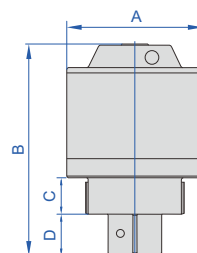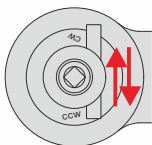
■ High efficiency gear set with small input torque and large output torque
■ Can be installed directly on the workpieces or through different options to form different installation types
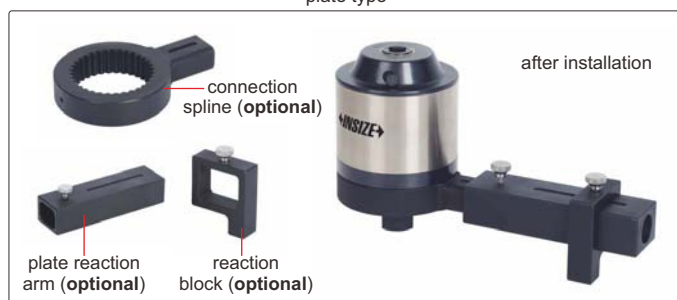
plate type

connection spline (**optional**)

after installation

plate reaction arm (**optional**)

reaction block (**optional**)

bevel type

connection spline (**optional**)

after installation

bevel reaction arm (**optional**)

SPECIFICATION

Code	Type	Capacity	Accuracy	Torque ratio	Square socket	Square driver	Dimension (A×B×C×D)	For bolt	For nut	Weight
IST-ST2000	plate	2000N.m	±5%	1:13.3	1/2"	1"	82×135×18×26mm	M22~35	S32~55	3.2kg
	bevel			1:12						
IST-ST3500	plate	3500N.m		1:16	1/2"	1"	98×150×25×26mm	M30~45	S46~70	4.8kg
	bevel			1:15						
IST-ST5500	plate	5500N.m		1:21.5	1/2"	1 1/2"	115×180×29×39mm	M38~52	S55~80	7.8kg
	bevel			1:18.5						
IST-ST7500	plate	7500N.m		1:24	1/2"	1 1/2"	127×198×34×39mm	M42~60	S65~90	10.8kg
	bevel			1:20						
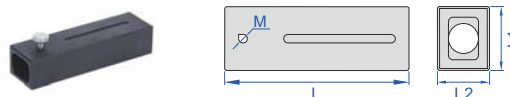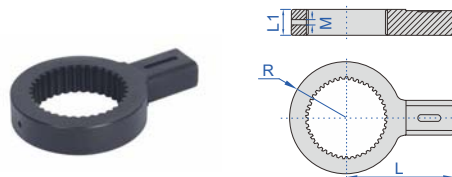
CONNECTION SPLINE (optional)

Code	Dimension (mm)			
	R	L	L1	M
IST-ST2000-C1	41	78	18	5
IST-ST3500-C2	49	95	23	5
IST-ST5500-C3	58	112	28.5	6
IST-ST7500-C4	63.5	123.5	29	6

PLATE REACTION ARM (optional)

Code	Dimension (mm)			
	L	L1	L2	M
IST-ST2000-P1	120	38	25.5	4
IST-ST3500-P2	145	42	32	5
IST-ST5500-P3	150	53	45	6
IST-ST7500-P4	175	60	49	8

To be continued
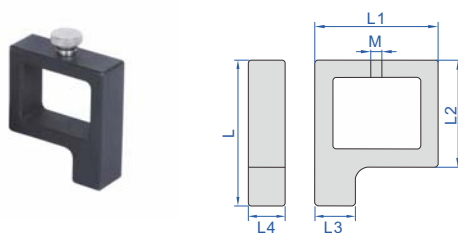
REACTION BLOCK (optional)

Code	Dimension (mm)					
	L	L1	L2	L3	L4	M
IST-ST2000-R1	53.5	52	39.5	15	18	4
IST-ST3500-R2	66	58	48	18	20	5
IST-ST5500-R3	94.5	73	65	22	25	6
IST-ST7500-R4	98	83	72	28	25	8
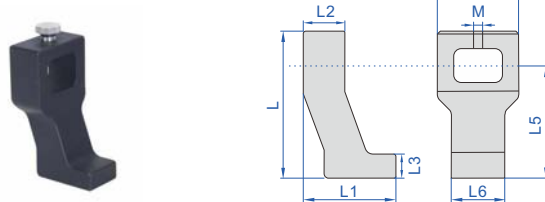
BEVEL REACTION ARM (optional)

Code	Dimension (mm)							
	L	L1	L2	L3	L4	L5	L6	M
IST-ST2000-B1	85	51	18	14	44	60	25	4
IST-ST3500-B2	87.5	52	20	15	50	67	30	5
IST-ST5500-B3	110	70	30	16	59	86	35	6
IST-ST7500-B4	123	78	35	20	68	94	45	6

TWO-USE TORQUE MULTIPLIERS

input drive square socket

anti-bounce reversing dowel

output square driver

IST-DT2000

plate type

bevel type

after tightening, toggle the anti-bounce reversing dowel, turn the wrench in the anticlockwise direction, then remove the wrench from torque multiplier

application

torque wrench

- High efficiency gear set with small input torque and large output torque
- The reaction arm can adjust the position of the applied force according to the operation conditions
- Plate reaction arm and bevel reaction arm are included

plate type

before installation

plate reaction arm (included)

after installation

bevel type

before installation

bevel reaction arm (included)

after installation
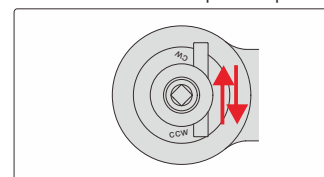
SPECIFICATION

Code	Type	Capacity	Accuracy	Torque ratio	Square socket	Square driver	Dimension (A×B×C×D)	For bolt	For nut	Weight
IST-DT2000	plate	2000N.m	±5%	1:13.3	1/2"	1"	82×120×160×21mm	M22~35	S32~55	4.1kg
	bevel			1:12			82×120×93×52mm			
IST-DT3500	plate	3500N.m		1:16	1/2"	1"	98×133×152×26mm	M30~45	S46~70	6.4kg
	bevel			1:15			98×133×117×56mm			
IST-DT5500	plate	5500N.m		1:21.5	1/2"	1 1/2"	115×165×210×39.5mm	M38~52	S55~80	11.4kg
	bevel			1:18.5			115×165×134×72mm			
IST-DT7500	plate	7500N.m		1:24	1/2"	1 1/2"	127×174×243×38mm	M42~60	S65~90	16kg
	bevel			1:20			127×174×146×80mm			

Electronic Balances
Page 905-909

Explosion Proof Electronic Balances
Page 909

Weighing Scales
Page 910/912

Counting Scales
Page 911

Electronic Pocket Scales
Page 911-912

Platform Scales
Page 913

Floor Scales
Page 914

Electronic Crane Scales
Page 915-917

Moisture Analyzers
Page 918

Weights
Page 919-920

ELECTRONIC BALANCES (0.1mg)

DATA OUTPUT

VIDEO

printer (**optional**)

calibration weight
(included in **8310-120M**,
8310-210M and **8310-320M**)

8310-320A

Unit: mm

310
200
170
205
Ød
105
190
250
295
50
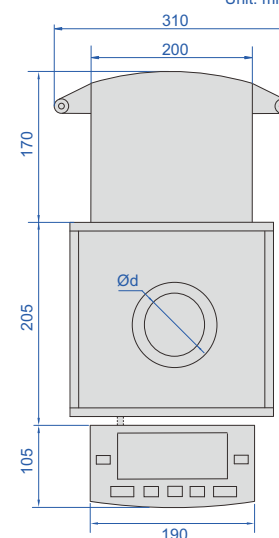
- Rear electromagnetic sensor
- Separated display unit and weighing unit, reduce vibration error
- Digital processing technology improves reading stability and response speed for micro sample addition, sample weight and balance reading is consistent
- Unit: g, oz, ct, lb
- Weighing, counting, taring, percentage
- Data output
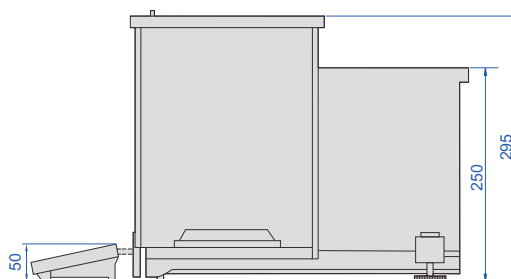
SPECIFICATION

Code	8310-120M	8310-210M	8310-320M	8310-120A	8310-210A	8310-320A
Calibration	external calibration			internal calibration		
Maximum weighing	120g	210g	320g	120g	210g	320g
Minimum weighing	10mg	10mg	10mg	10mg	10mg	10mg
Resolution (d)	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg	0.1mg
Verification interval (e)	1mg	1mg	1mg	1mg	1mg	1mg
Accuracy (m is load)	m≤50g: ±0.5mg; 50g<m≤200g: ±1mg; m>200g: ±1.5mg			m≤50g: ±0.5mg; 50g<m≤200g: ±1mg; m>200g: ±1.5mg		
Repeatability	±0.1mg					
Linearity	±0.1mg					
Stabilization time	2.5s					
Weighing pan size (Ød)	Ø90mm					
Output	RS232					
Operation temperature	10~30°C					
Operation humidity	20~85% RH					
Power supply	power adapter (12V/2A)					
Dimension (L×W×H)	480×310×320mm					
Weight	6kg					

OPTIONAL ACCESSORY

RS232 cable	8304-CABLE *
Printer	8303-PRINTER

*Used to connect with computers

ELECTRONIC BALANCES (0.1mg)

DATA OUTPUT

8304-120

calibration weight
(included)

printer (**optional**)

- Electromagnetic sensor
- Unit: g, ct, oz, lb
- Weighing, counting, taring
- Data output

Unit: mm
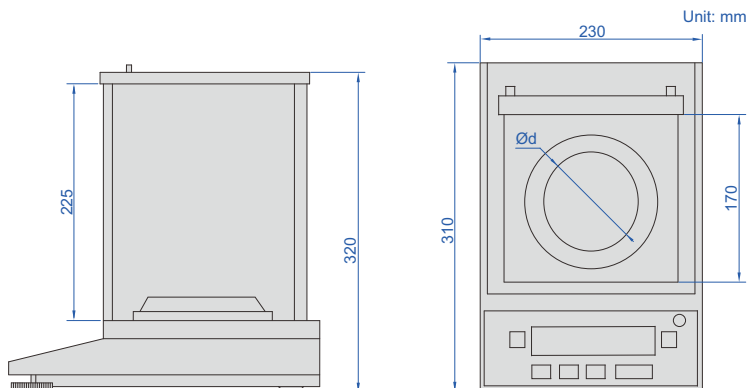
SPECIFICATION

Code	8304-120	8304-220
Maximum weighing	120g	220g
Minimum weighing	10mg	10mg
Resolution (d)	0.1mg	0.1mg
Verification interval (e)	1mg	1mg
Accuracy (m is load)	m≤50g: ±0.5mg; 50g<m≤120g: ±1mg	m≤50g: ±0.5mg; 50g<m≤200g: ±1mg; m>200g: ±1.5mg
Weighing pan size (Ød)	Ø90mm	
Operation temperature	10~30°C	
Operation humidity	20~85% RH	
Power supply	power adapter (12V/2A)	
Dimension (L×W×H)	230×310×320mm	

OPTIONAL ACCESSORY

RS232 cable	8304-CABLE *
Printer	8303-PRINTER
Data output cable (keyboard format)	7302-8304 page 14

*Used to connect with computers

ELECTRONIC BALANCES (1mg)

8303-520

calibration weight (included)

- Aluminum alloy shell, wind shield, three side glass sliding doors
- Electromagnetic balance sensor
- Unit: g, ct, ozt, oz, gn, dwt, mg
- Weighing, counting, taring
- Data output
- With a hook at the bottom

Unit: mm
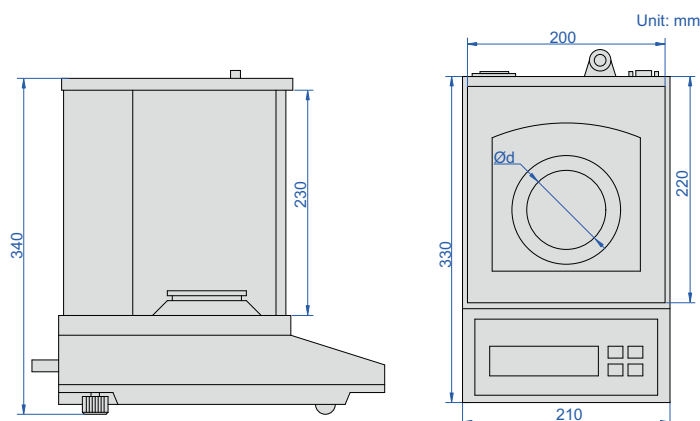
SPECIFICATION

Code	8303-220	8303-320	8303-520	8303-620	8303-1020
Maximum weighing	220g	320g	520g	620g	1020g
Minimum weighing	20mg	20mg	100mg	100mg	100mg
Resolution (d)	1mg	1mg	1mg	1mg	1mg
Verification interval (e)	10mg	10mg	10mg	10mg	10mg
Accuracy	load capacity≤500g: ±5mg; load capacity>500g: ±10mg				
Weighing pan size (Ød)	Ø80mm				Ø120mm
Operation temperature	15~30°C		18~23°C		
Operation humidity	40%~80% RH		50%~70% RH		
Power supply	220V, 50/60Hz				
Dimension (L×W×H)	330×210×340mm				

OPTIONAL ACCESSORY

RS232 cable	8301-CABLE *
Printer	8303-PRINTER

*Used to connect with computers

printer (**optional**)

ELECTRONIC BALANCES (0.01g)

DATA OUTPUT

VIDEO

8305-5000

Unit: mm

190   100

320   205

210

- LCD with back light
- Unit: g, ct, ozt, oz, GN, dwt, lb, kg
- Weighing, counting, taring

calibration weight
(included in **8305-2000**
and **8305-3000**)
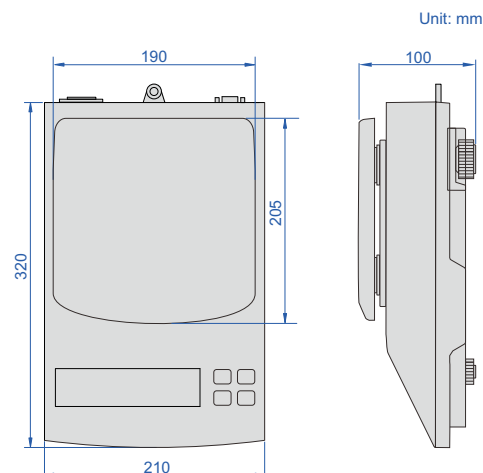
SPECIFICATION

Code	8305-2000	8305-3000	8305-5000	8305-6000
Maximum weighing	2kg	3kg	5kg	6kg
Minimum weighing	0.2g	0.2g	0.2g	0.2g
Resolution (d)	0.01g	0.01g	0.01g	0.01g
Verification interval (e)	0.1g	0.1g	0.1g	0.1g
Accuracy (m is load)	m≤0.5kg: ±0.05g; 0.5kg<m≤2kg: ±0.1g	m≤0.5kg: ±0.05g; 0.5kg<m≤2kg: ±0.1g m>2kg: ±0.15g	m≤0.5kg: ±0.05g; 0.5kg<m≤2kg: ±0.1g m>2kg: ±0.15g	m≤0.5kg: ±0.05g; 0.5kg<m≤2kg: ±0.1g m>2kg: ±0.15g
Weighing pan size	190×205mm			
Output	RS232			
Operation temperature	0~40°C			
Operation humidity	≤80% RH			
Power supply	220V, 50/60Hz			
Dimension (L×W×H)	320×210×100mm			

OPTIONAL ACCESSORY

RS232 cable	8301-CABLE*
Printer	**8303-PRINTER**
Data output cable (keyboard format)	**7302-8001** page 14
Wireless transmitter (need receiver)	**7315-8301** page 6

***Used to connect with computers

printer (**optional**)

DATA OUTPUT   Ex

EXPLOSION PROOF ELECTRONIC BALANCES

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting
- Unit: g, ct, oz, lb, ozt

8105-30KG

Unit: mm

SPECIFICATION

Code	8105-5KG	8105-30KG
Maximum weighing	5kg	30kg
Minimum weighing	0.5g	5g
Resolution (d)	0.01g	0.1g
Verification interval (e)	0.1g	1g
Accuracy (m is load)	m≤0.05kg: ±0.05g; 0.05kg≤m≤0.2kg: ±0.1g; 0.2kg≤m≤5kg: ±0.15g	m≤0.5kg: ±0.5g; 0.5kg≤m≤2kg: ±1.0g; m>2kg: ±1.5g
Dimension of pan	170×170mm	
Output	RS232	
Operation temperature	15~30°C	
Operation humidity	40%~80% RH	
Power	explosion-proof battery, DC7.4V/4.0Ah	
Dimension (L×W×H)	290×185×80mm	
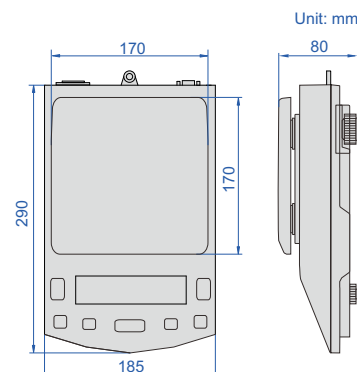
OPTIONAL ACCESSORY

RS232 cable	8105-CABLE*

*Used to connect with computers

DATA OUTPUT

ELECTRONIC BALANCES

- Automatic zero when power on
- Unit: g (gram), ct (carat), ozt (troy ounce)
- Weighing, counting, taring
- Overload alarm
- Data output

8301-3000

windshield (included in **8301-300**, **8301-600** and **8301-1200**)

calibration weight (included in **8301-300**, **8301-600** and **8301-1200**)

Unit: mm

SPECIFICATION

Code	8301-300	8301-600	8301-1200	8301-3000	8301-6000
Maximum weighing	300g	600g	1200g	3000g	6000g
Minimum weighing	0.2g	0.2g	0.2g	2g	2g
Resolution (d)	0.01g	0.01g	0.01g	0.1g	0.1g
Verification interval (e)	0.1g	0.1g	0.1g	1g	1g
Accuracy (m is load)	m≤50g: ±0.05g; 50g<m≤200g: ±0.1g; m>200g: ±0.15g			m≤500g: ±0.5g; 500g<m≤2000g: ±1g; m>2000g: ±1.5g	
Weighing pan size	Ø135mm			190×160mm	
Operation temperature	0~40°C				
Operation humidity	≤80% RH				
Power supply	220V, 50/60Hz				
Dimension (L×W×H)	215×196×62mm				
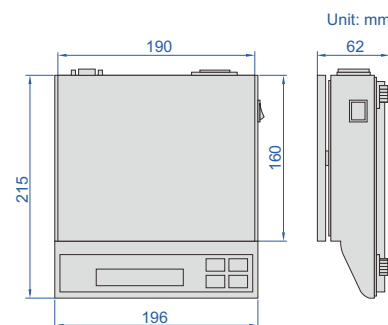
OPTIONAL ACCESSORY

RS232 cable	8301-CABLE
Data output cable (keyboard format)	7302-8001 page 14
Wireless transmitter (need receiver)	7315-8301 page 6

WEIGHING SCALES (OIML CERTIFICATE)

- LCD display, with backlight
- Zero-setting, subtracting tare value
- Overload alarm
- Automatic power off
- OIML certificate (No. 0200-NAWI-04601)

8002-30M

Unit: mm
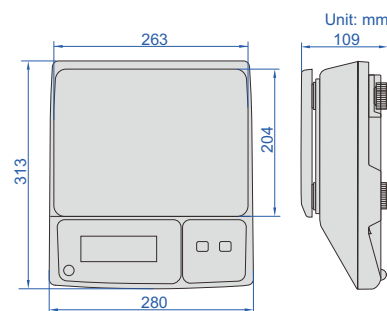
SPECIFICATION

Code	8002-6M	8002-15M	8002-30M	8002-6MD	8002-15MD	8002-30MD
Maximum weighing	3/6kg	6/15kg	15/30kg	3/6kg	6/15kg	15/30kg
Minimum weighing	20g	40g	100g	20g	40g	100g
Resolution (d)	1/2g	2/5g	5/10g	1/2g	2/5g	5/10g
Verification interval (e)	2g	5g	10g	2g	5g	10g
Accuracy (m is load)	m≤3kg: ±1g 3kg<m≤6kg: ±2g	m≤6kg: ±2g 6kg<m≤15kg: ±5g	m≤15kg: ±5g 15kg<m≤30kg: ±10g	m≤3kg: ±1g 3kg<m≤6kg: ±2g	m≤6kg: ±2g 6kg<m≤15kg: ±5g	m≤15kg: ±5g 15kg<m≤30kg: ±10g
Output	no			RS232		
Operation temperature	-10~40°C					
Power	rechargeable battery (6V/3.2Ah), power adapter (12V/500mA)					
Dimensions of pan	263×204mm					

WEIGHING SCALES (HIGH PRECISION)

printer (**optional**)

- LCD display, with backlight
- Zero-setting, subtracting tare value
- Overload alarm
- Automatic power off

8001-30

Unit: mm
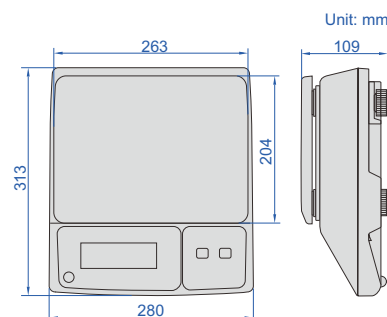
SPECIFICATION

Code	8001-6	8001-15	8001-30	8001-6D	8001-15D	8001-30D
Maximum weighing	6kg	15kg	30kg	6kg	15kg	30kg
Minimum weighing	4g	10g	20g	4g	10g	20g
Resolution (d)	0.2g	0.5g	1g	0.2g	0.5g	1g
Accuracy (m is load)	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g
Units	kg, lb			kg		
Output	no			RS232		
Operation temperature	-10~40°C					
Power	rechargeable battery (6V/3.2Ah), power adapter (12V/500mA)					
Dimensions of pan	263×204mm					

OPTIONAL ACCESSORY (for scales with RS232)

Printer	8001-PRINTER
Data output cable (keyboard format)	7302-8001 page 14

COUNTING SCALES

printer (**optional**)

Unit: mm

263
109
313
204
280

8101-30

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting, accumulation, checking alarm
- Overload alarm
- Units: kg, g, lb, tj, hj, lb-oz

SPECIFICATION

Code	8101-6	8101-15	8101-30	8101-6D	8101-15D	8101-30D
Maximum weighing	6kg	15kg	30kg	6kg	15kg	30kg
Minimum weighing	4g	10g	20g	4g	10g	20g
Resolution (d)	0.2g	0.5g	1g	0.2g	0.5g	1g
Accuracy (m is load)	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g	m≤1kg: ±1g 1kg<m≤4kg: ±2g m>4kg: ±3g	m≤2.5kg: ±2.5g 2.5kg<m≤10kg: ±5g m>10kg: ±7.5g	m≤5kg: ±5g 5kg<m≤20kg: ±10g m>20kg: ±15g
Output	no			RS232		
Operation temperature	-10~40°C					
Power	rechargeable battery (6V/3.2Ah), power adapter (12V/500mA)					
Dimensions of pan	263×204mm					

OPTIONAL ACCESSORY (for scales with RS232)

Printer	8001-PRINTER

**ATTENTION:
LOW ACCURACY**

ELECTRONIC POCKET SCALE (ECONOMIC TYPE)

8601-100

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting
- Overload alarm
- Automatic power off

SPECIFICATION

Code	8601-100
Maximum weighing	100g
Minimum weighing	0.1g
Resolution (d)	0.01g
Accuracy (m is load)	0.1g≤m≤1g: ±0.03g; 1g<m≤30g: ±0.05g 30g<m≤50g: ±0.07g; m>50g: ±0.14g
Units	g, oz, dwt, ozt
Dimension of pan	55×64mm
Dimension (L×W×H)	108×65×21mm
Operation temperature	-10~40°C
Power supply	2×AAA batteries

use of pan

ELECTRONIC POCKET SCALE (ECONOMIC TYPE)

36

- LCD display, with backlight
- Zero-setting, subtracting tare value, counting
- Overload alarm
- Automatic power off

8602-200

use of pan

SPECIFICATION

Code	8602-200
Maximum weighing	200g
Minimum weighing	0.2g
Resolution (d)	0.02g
Accuracy (m is load)	0.2g≤m≤2g: ±0.06g; 2g<m≤60g: ±0.1g 60g<m≤100g: ±0.14g; m>100g: ±0.28g
Units	g, oz, dwt, ozt
Dimension of pan	55×64mm
Dimension (L×W×H)	120×70×17mm
Operation temperature	-10~40°C
Power supply	2×CR2032 batteries

WEIGHING SCALES (ECONOMIC TYPE)

- Unit: g, oz, lb, tl

8003-3

SPECIFICATION

Code	8003-3	8003-6	8003-10
Maximum weighing	3kg	6kg	10kg
Minimum weighing	2g	10g	20g
Resolution (d)	0.1g	0.5g	1g
Accuracy	±0.5g	±2.5g	±5g
Weighing pan size	157×157mm		
Operation temperature	5~35°C		
Power supply	2×AAA batteries, power adapter		
Dimension (L×W)	160×225mm		

DATA OUTPUT

8501-AL150

printer (**optional**)

- LCD large screen display with LED backlight
- Weighing, overweight alarm, counting, keyboard lock, accumulating, auto zero and animal scale
- Unit: kg, g, lb, oz

Unit: mm

252
520
420
793
Ø38
111
152
45°
788
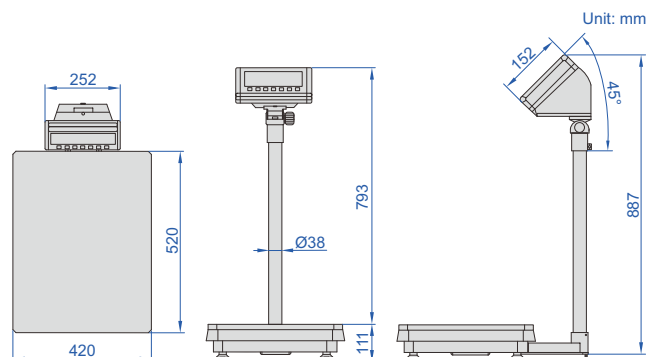
SPECIFICATION

Code	8501-AL60	8501-AL150	8501-AL300
Maximum weighing	60kg	150kg	300kg
Minimum weighing	100g	200g	400g
Resolution (d)	5g	10g	20g
Accuracy	±10g	±20g	±30g
Operation temperature	-10~40°C		
Material	platform: stainless steel, base: die-cast aluminum		
Dimension of platform	420×520mm		
Power	rechargeable lead acid battery (6V/4Ah)		
Output	RS232		
Weight	18.3kg		

OPTIONAL ACCESSORY

Printer	8001-PRINTER
Data output cable (keyboard format)	7302-8001 page 14

FLOOR SCALES

hole for hanging ring

indicator

foot (adjustable)

8401-1T1212

Unit: mm

hole for hanging ring

hole for hanging ring
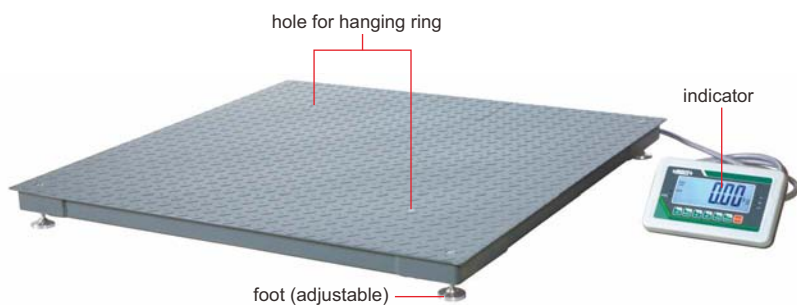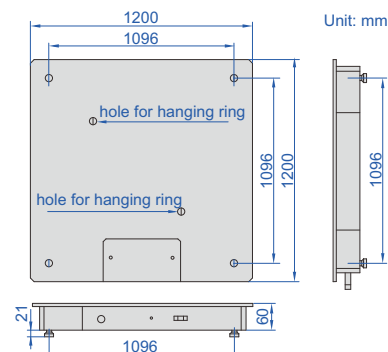
- LCD large screen display with automatic backlight
- Zero, overweight alarm, deduction, unit conversion, accumulating, animal scale, etc.
- Unit: kg, g, lb, oz
- OIML approved load cell

floor scale

frame — application of frame — frame
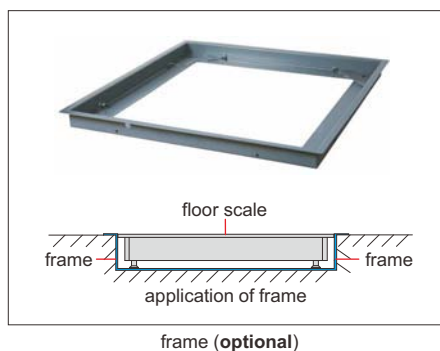
frame (**optional**)

stand (**optional**)

ramp   floor scale
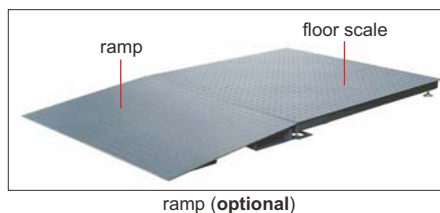
ramp (**optional**)

printer (**optional**)

SPECIFICATION

Code	8401-1T1212	8401-2T1212	8401-3T1212
Maximum weighing	1t	2t	3t
Minimum weighing	10kg	20kg	20kg
Resolution (d)	0.5kg	1kg	1kg
Verification interval (e)	0.5kg	1kg	1kg
Accuracy (m is load)	m≤250kg: ±0.25kg; 250kg<m≤1000kg: ±0.5kg	m≤500kg: ±0.5kg; 500kg<m≤2000kg: ±1kg; m>2000kg: ±1.5kg	
Load cell	4 pcs 350Ω		
Operation temperature	-10~40°C		
Material	mild steel		
Dimension of platform	1200×1200mm		
Power	rechargeable lead acid battery (6V/4Ah)		
Output	RS232		
Weight	140kg		

STANDARD DELIVERY

Main unit	1 pc
Indicator	1 pc
AC/DC adapter	1 pc
Stainless steel foot	4 pcs
Hanging ring	2 pcs

OPTIONAL ACCESSORY

Ramp	8401-1212-1
Frame	8401-1212-2
Stand	8401-STAND
Printer	8001-PRINTER

ELECTRONIC CRANE SCALES

IP65
WATERPROOF

Unit: mm

149   86

104   295

- Dust/waterproof level: IP65
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Automatic power off
- Overload alarm
- 360° safe rotary hook and shackle
- Aluminum alloy die casting case with high strength
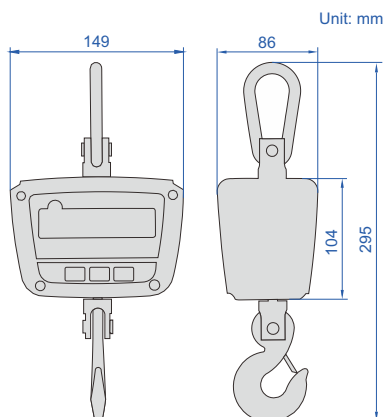
SPECIFICATION

Code	8201-50KG	8201-150KG	8201-300KG
Maximum weighing	50kg	150kg	300kg
Minimum weighing	0.4kg	1.0kg	2.0kg
Resolution (d)	0.02kg/0.01kg	0.05kg/0.02kg	0.10kg/0.05kg
Verification interval (e)	0.02kg	0.05kg	0.10kg
Accuracy	±0.02kg	±0.05kg	±0.10kg
Operation temperature	-10~40°C		
Operation humidity	30%~90% RH		
Overload alarm	100%F.S.+9e		
Maximum safe load	125%F.S.		
Limited overload	400%F.S.		
Power supply	rechargeable battery 6V/3Ah (for 40 hours working)		
Stable reading time	≤8s		

remote controller
(included)

8201-150KG

STANDARD DELIVERY

Main unit	1 pc
Remote controller	1 pc
Battery charger	1 pc

Unit: mm

65

295

148

ELECTRONIC CRANE SCALES (BASIC TYPE)

- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Automatic power off
- Overload alarm
- 360° safe rotary hook and shackle
- Plastic case
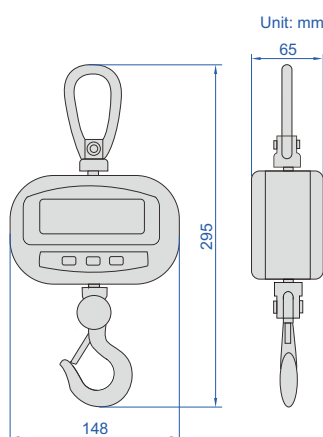
SPECIFICATION

Code	8202-50KG	8202-150KG	8202-300KG
Maximum weighing	50kg	150kg	300kg
Minimum weighing	0.4kg	1.0kg	2.0kg
Resolution (d)	0.02kg/0.01kg	0.05kg/0.02kg	0.10kg/0.05kg
Verification interval (e)	0.02kg	0.05kg	0.10kg
Accuracy	±0.02kg	±0.05kg	±0.10kg
Operation temperature	-10~40°C		
Operation humidity	30%~90% RH		
Overload alarm	100%F.S.+9e		
Maximum safe load	125%F.S.		
Limited overload	400%F.S.		
Power supply	4×1.5V AA batteries (for 40 hours working)		
Stable reading time	≤8s		

remote controller
(included)

8202-150KG

STANDARD DELIVERY

Main unit	1 pc
Remote controller	1 pc

ELECTRONIC CRANE SCALES

- Zeroing, taring, weighing
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Overload alarm
- Automatic power off
- Aluminum alloy die casting case with high strength
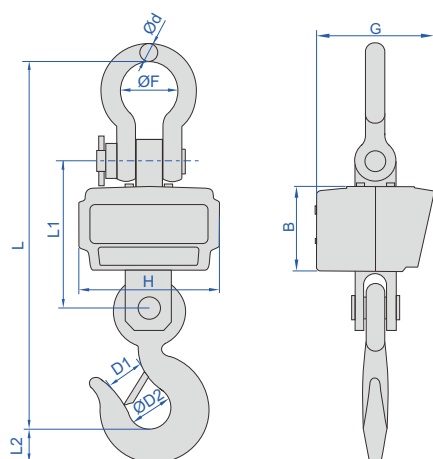
(mm)

Code	B	G	H	L	L1	L2	D1	ØD2	Ød	ØF
8204-CS06T	120	163	198	420	190	33	40	47	21	76
8204-CS1T	120	163	198	420	190	33	40	47	21	76
8204-CS2T	120	163	198	420	190	33	50	47	21	76
8204-CS3T	120	163	198	462	196	40	50	50	23	76
8204-CS5T	120	163	198	511	204	47	52	60	26	80
8204-CS10T	135	181	206	589	239	66	52	70	36	90
8204-CS15T	135	181	206	727	257	77	60	85	47	135

8204-CS3T

remote controller (included)

SPECIFICATION

Code	8204-CS06T	8204-CS1T	8204-CS2T	8204-CS3T
Maximum weighing	600kg	1000kg	2000kg	3000kg
Minimum weighing	4kg	10kg	20kg	20kg
Resolution (d)	0.2kg/0.1kg	0.5kg/0.2kg	1kg/0.5kg	1kg/0.5kg
Verification interval (e)	0.2kg	0.5kg	1kg	1kg
Accuracy (m is load)	m≤100kg: ±0.1kg; 50kg<m≤200kg: ±0.2kg; m>200kg: ±0.3kg	m≤250kg: ±0.25kg; 250kg<m≤1000kg: ±0.5kg	m≤500kg: ±0.5kg; 500kg<m≤2000kg: ±1kg	m≤500kg: ±0.5kg; 500kg<m≤2000kg: ±1kg; m>2000kg: ±1.5kg
Overload alarm	100%F.S.+9e			
Maximum safe load	150%F.S.			
Limited overload	400%F.S.			
Stable reading time	≤8s			
Power supply	rechargeable battery 6V/4Ah (for 40 hours working)			
Operation temperature	-10~40°C			
Operation humidity	≤85% RH			

Code	8204-CS5T	8204-CS10T	8204-CS15T
Maximum weighing	5000kg	10000kg	15000kg
Minimum weighing	40kg	100kg	100kg
Resolution (d)	2kg/1kg	5kg/2kg	5kg/2kg
Verification interval (e)	2kg	5kg	5kg
Accuracy (m is load)	m≤1000kg: ±1kg; 1000kg<m≤4000kg: ±2kg; m>4000kg: ±3kg	m≤2500kg: ±2.5kg; 2500kg<m≤10000kg: ±5kg	m≤2500kg: ±2.5kg; 2500kg<m≤10000kg: ±5kg; m>10000kg: ±7.5kg
Overload alarm	100%F.S.+9e		
Maximum safe load	150%F.S.		
Limited overload	400%F.S.		
Stable reading time	≤8s		
Power supply	rechargeable battery 6V/4Ah (for 40 hours working)		
Operation temperature	-10~40°C		
Operation humidity	≤85% RH		

To be continued

Continued from previous page

STANDARD DELIVERY

Main unit	1 pc
Remote controller	1 pc
Battery charger	1 pc

handheld display (**optional**)

large display (**optional**)

OPTIONAL ACCESSORY

Handheld display	**8204-INDICATOR** (must be supplied with scales together)
Large display	**8204-SCREEN** (must be supplied with scales together)

ELECTRONIC CRANE SCALES

Unit: mm

160   85
Ø13
265

- Zeroing, taring, weighing
- LED display, remote control
- Low voltage indicator
- Unit: kg, lb
- Overload alarm
- Automatic power off
- Aluminum alloy die casting case with high strength

8203-CW05T

remote controller (included)
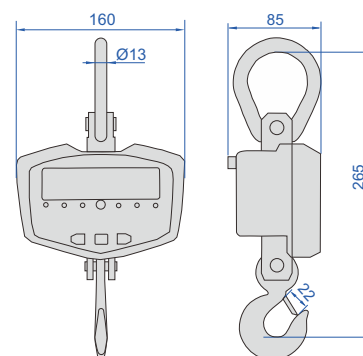
SPECIFICATION

Code	8203-CW03T	8203-CW05T	8203-CW1T
Maximum weighing	300kg	500kg	1000kg
Minimum weighing	2kg	4kg	10kg
Resolution (d)	0.1kg/0.05kg	0.2kg/0.1kg	0.5kg/0.2kg
Verification interval (e)	0.1kg	0.2kg	0.5kg
Accuracy (m is load)	m≤50kg: ±0.05kg; 50kg<m≤200kg: ±0.1kg; m>200kg: ±0.15kg	m≤100kg: ±0.1kg; 100kg<m≤400kg: ±0.2kg; m>400kg: ±0.3kg	m≤250kg: ±0.25kg; 250kg<m≤1000kg: ±0.5kg
Overload alarm	100%F.S.+9e		
Maximum safe load	150%F.S.		
Limited overload	400%F.S.		
Stable reading time	<10s		
Power supply	3×1.5V AA batteries		
Operation temperature	-10~40°C		
Operation humidity	30%~90% RH		

STANDARD DELIVERY

Main unit	1 pc
Remote controller	1 pc

MOISTURE ANALYZERS

DATA OUTPUT

VIDEO

halogen lamp

sample pan

windproof pan

calibration weight
(included)

8701-RM40

- LCD screen
- High sensitivity temperature and humidity sensor
- Ring halogen lamp heating evenly, shorten drying time

SPECIFICATION

Code		8701-RM20	8701-RM30	8701-RM40
Maximum weighing		120g	120g	120g
Resolution (d)		5mg	1mg	0.1mg
Accuracy for moisture	sample<10g	±10%	±0.5%	±0.2%
	sample≥10g	±5%	±0.3%	±0.1%
Operation temperature		13~25°C		
Verification interval		2.5s		
Warm-up time		20~30 minutes		
Weighing pan size		Ø90mm		
Heating source		halogen lamp (450W)		
Range for heating temperature		60~200°C		
Heating time setting		0~99 minutes		
Heating mode		standard heating, step heating, rapid heating		
Shutdown mode		automatic shutdown, manual shutdown, timed shutdown		
Output		RS232C		
Power supply		220V, 50/60Hz		
Dimension (L×W×H)		330×210×340mm		

STANDARD DELIEVERY

Main unit	1 pc
Weight	1 pc

OPTIONAL ACCESSORY

RS232 cable	8304-CABLE *
Printer	8303-PRINTER

*Used to connect with computers

INSPECTION CERTIFICATE

| 1kg | 200g | 500mg | 200mg | 100mg |

- Supplied with manufacturer inspection certificate

OIML R111-2004 TOLERANCE

Weight	E2	F1	F2	M1
1mg	0.006mg	0.020mg	0.06mg	0.20mg
2mg	0.006mg	0.020mg	0.06mg	0.20mg
5mg	0.006mg	0.020mg	0.06mg	0.20mg
10mg	0.008mg	0.025mg	0.08mg	0.25mg
20mg	0.010mg	0.03mg	0.10mg	0.3mg
50mg	0.012mg	0.04mg	0.12mg	0.4mg
100mg	0.016mg	0.05mg	0.16mg	0.5mg
200mg	0.020mg	0.06mg	0.20mg	0.6mg
500mg	0.025mg	0.08mg	0.25mg	0.8mg
1g	0.03mg	0.10mg	0.3mg	1.0mg
2g	0.04mg	0.12mg	0.4mg	1.2mg
5g	0.05mg	0.16mg	0.5mg	1.6mg
10g	0.06mg	0.20mg	0.6mg	2.0mg
20g	0.08mg	0.25mg	0.8mg	2.5mg
50g	0.10mg	0.3mg	1.0mg	3.0mg
100g	0.16mg	0.5mg	1.6mg	5.0mg
200g	0.3mg	1.0mg	3.0mg	10mg
500g	0.8mg	2.5mg	8.0mg	25mg
1kg	1.6mg	5.0mg	16mg	50mg
2kg	3.0mg	10mg	30mg	100mg
5kg	8.0mg	25mg	80mg	250mg
10kg	16mg	50mg	160mg	500mg
20kg	30mg	100mg	300mg	1000mg

CLASS SELECTION

Resolution of the weighing instruments	Required class of weights
0.001mg	E1
0.01mg	E2
0.1mg	E2/F1
1mg	F2
0.01g/0.1g	M1

Weight	Class and material						Shape
	E2 (non-magnetic stainless steel)	F1 (non-magnetic stainless steel)	F1 (304 stainless steel)	F2 (304 stainless steel)	M1 (304 stainless steel)	M1 (steel, chrome plated)	
1mg	8911-1MGE2	8911-1MGF1	8911-1MGF1S	8911-1MGF2	8911-1MGM1	—	sheet
2mg	8911-2MGE2	8911-2MGF1	8911-2MGF1S	8911-2MGF2	8911-2MGM1		
5mg	8911-5MGE2	8911-5MGF1	8911-5MGF1S	8911-5MGF2	8911-5MGM1		
10mg	8911-10MGE2	8911-10MGF1	8911-10MGF1S	8911-10MGF2	8911-10MGM1		
20mg	8911-20MGE2	8911-20MGF1	8911-20MGF1S	8911-20MGF2	8911-20MGM1		
50mg	8911-50MGE2	8911-50MGF1	8911-50MGF1S	8911-50MGF2	8911-50MGM1		
100mg	8911-100MGE2	8911-100MGF1	8911-100MGF1S	8911-100MGF2	8911-100MGM1		
200mg	8911-200MGE2	8911-200MGF1	8911-200MGF1S	8911-200MGF2	8911-200MGM1		
500mg	8911-500MGE2	8911-500MGF1	8911-500MGF1S	8911-500MGF2	8911-500MGM1		
1g	8911-1GE2	8911-1GF1	8911-1GF1S	8911-1GF2	8911-1GM1	—	cylinder
2g	8911-2GE2	8911-2GF1	8911-2GF1S	8911-2GF2	8911-2GM1		
5g	8911-5GE2	8911-5GF1	8911-5GF1S	8911-5GF2	8911-5GM1		
10g	8911-10GE2	8911-10GF1	8911-10GF1S	8911-10GF2	8911-10GM1	8911-10GM1C	
20g	8911-20GE2	8911-20GF1	8911-20GF1S	8911-20GF2	8911-20GM1	8911-20GM1C	
50g	8911-50GE2	8911-50GF1	8911-50GF1S	8911-50GF2	8911-50GM1	8911-50GM1C	
100g	8911-100GE2	8911-100GF1	8911-100GF1S	8911-100GF2	8911-100GM1	8911-100GM1C	
200g	8911-200GE2	8911-200GF1	8911-200GF1S	8911-200GF2	8911-200GM1	8911-200GM1C	
500g	8911-500GE2	8911-500GF1	8911-500GF1S	8911-500GF2	8911-500GM1	8911-500GM1C	
1kg	8911-1KGE2	8911-1KGF1	8911-1KGF1S	8911-1KGF2	8911-1KGM1	8911-1KGM1C	
2kg	8911-2KGE2	8911-2KGF1	8911-2KGF1S	8911-2KGF2	8911-2KGM1	8911-2KGM1C	
5kg	8911-5KGE2	8911-5KGF1	8911-5KGF1S	8911-5KGF2	8911-5KGM1	8911-5KGM1C	
10kg	8911-10KGE2	8911-10KGF1	8911-10KGF1S	8911-10KGF2	8911-10KGM1	8911-10KGM1C	
20kg	8911-20KGE2	8911-20KGF1	8911-20KGF1S	8911-20KGF2	8911-20KGM1	8911-20KGM1C	

WEIGHT SETS

- Supplied with manufacturer inspection certificate

8910-200GF1

CLASS AND MATERIAL

Specification	Code				
	E2 (non-magnetic stainless steel)	F1 (non-magnetic stainless steel)	F1 (304 stainless steel)	F2 (304 stainless steel)	M1 (304 stainless steel)
1mg~100g	8910-100GE2	8910-100GF1	8910-100GF1S	8910-100GF2	8910-100GM1
1mg~200g	8910-200GE2	8910-200GF1	8910-200GF1S	8910-200GF2	8910-200GM1
1mg~1kg	8910-1KGE2	8910-1KGF1	8910-1KGF1S	8910-1KGF2	8910-1KGM1
1mg~2kg	8910-2KGE2	8910-2KGF1	8910-2KGF1S	8910-2KGF2	8910-2KGM1
1mg~5kg	8910-5KGE2	8910-5KGF1	8910-5KGF1S	8910-5KGF2	8910-5KGM1

SPECIFICATION AND SHAPE

Weight	Specification				
	1mg~100g	1mg~200g	1mg~1kg	1mg~2kg	1mg~5kg
1mg	⬠	⬠	⬠	⬠	⬠
2mg	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*
5mg	⬠	⬠	⬠	⬠	⬠
10mg	⬠	⬠	⬠	⬠	⬠
20mg	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*
50mg	⬠	⬠	⬠	⬠	⬠
100mg	⬠	⬠	⬠	⬠	⬠
200mg	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*	⬠ ⬠*
500mg	⬠	⬠	⬠	⬠	⬠
1g	▮	▮	▮	▮	▮
2g	▮ ▮*	▮ ▮*	▮ ▮*	▮ ▮*	▮ ▮*
5g	▮	▮	▮	▮	▮
10g	▮	▮	▮	▮	▮
20g	▮ ▮*	▮ ▮*	▮ ▮*	▮ ▮*	▮ ▮*
50g	▮	▮	▮	▮	▮
100g	▮	▮	▮	▮	▮
200g		▮ ▮*	▮ ▮*	▮ ▮*	▮ ▮*
500g			▮	▮	▮
1kg			▮	▮	▮
2kg				▮ ▮*	▮ ▮*
5kg					▮
Quantity	21 pcs	23 pcs	25 pcs	27 pcs	28 pcs
Total range	1mg~211.11g	1mg~611.11g	1mg~2111.11g	1mg~6111.11g	1mg~11111.11g

⬠ sheet
▮ cylinder
⬠* sheet, with mark
▮* cylinder, with mark

Salt Spray Testers
Page 922

Temperature And Humidity Chambers
Page 923-925

SALT SPRAY TESTER
CODE SFT-S210R

- Using plastic precision nozzle and conical spray device, the salt spray drops evenly and rapidly, the nozzle has a long working life and does not crystallize
- The spraying time can be controlled internally without external time relay
- The flow rate of salt water and the pressure of compressed air are regulated by flow meter and pressure regulating valve to ensure uniform salt spray settlement
- Manual water adding system can automatically replenish when the water level is insufficient to ensure uninterrupted test

SPECIFICATION

Test condition	suitable for neutral and acid salt spray test
Chamber dimension (WxHxD)	900×500×600mm
Chamber volume	270L
Saline tank volume	25L
Chamber temperature	35±1°C
Saturated barrel temperature	47±1°C
Saline temperature	35±1°C
Heating mode	heat radiation
Spray mode	continuous, intermittent
Test fluid	neutral: purified water+sodium chloride (PH6.5~7.2)
Compressed air pressure	2~3kgf/cm²
Power supply	AC 220V, 1Ø, 50HZ, 2kW
Dimension (WxHxD)	1560×1250×910mm
Weight	118kg

STANDARD DELIVERY

Main unit	1 pc
Stick	1 group
Sodium chloride	2 bottles
10L salt water preparation measuring cup	1 pc
80ml standard cup	2 pcs
50ml metering cup	2 pcs

OPTIONAL ACCESSORY

Nozzle	SFT-S210R-NOZZLE
Brine Filter	SFT-S210R-FILTER

DESKTOP TEMPERTURE AND HUMIDITY CHAMBER
CODE THT-Z158

- Table design, quiet and small
- Equipped with operation system with 7-inch touch screen controller
- Intelligent refrigeration and dehumidification system, it can save 30~45% of electricity compared with traditional machines
- Output excel data report through USB port

SPECIFICATION

Chamber dimension (WxHxD)		300×350×300mm
Chamber volume		32L
Temperature range		-40~120°C
Humidity range		20~98%RH
Temperature/humidity uniformity		≤2°C, ±3%RH
Temperature/humidity fluctuation		±0.5°C, ±2.5%RH
Temperature/humidity stability		±0.3°C, 2.5%RH
Warm up time		1~3°C/min
Cooling time		0.7~1°C/min
Operation environment	**environment temperature**	5~35°C
	relative humidity	≤85%RH
Material	**case material**	cold rolled steel plate+varnish
	chamber material	SUS#304 stainless steel
	thermal insulation material	polyurethane foam
Cooling system		compressor
Protector		compressor overload protection switch, refrigerant high pressure protection switch, ceramic fuse, water plate of water shortage protection switch, electromagnetic switch, air burn protection switch, alarm
Power supply		AC220, 50/60HZ, 2kW
Dimension (WxHxD)		550×850×1050mm
Weight		185kg

STANDARD DELIVERY

Main unit	1 pc
Test hole	1 pc
Shelf	2 pcs

TEMPERATURE AND HUMIDITY CHAMBERS

VIDEO

THT-A101T

- The chamber is equipped with an independent operation system with 7-inch or 10.1-inch touch screen contuoller
- Intelligent refrigeration and dehumidification system, combined with energy-saving control algorithm, can adjust the refrigeration level and save energy. Compared with traditional machines, it can save 30~45% of electricity
- It can output excel data report through USB port

SPECIFICATION

Code	THT-A101T	THT-A102T	THT-A103T	THT-A104T	THT-A105T
Chamber dimension (WxHxD)	500×600×500mm	500×500×400mm	500×750×600mm	700×850×700mm	1000×1000×1000mm
Chamber volume	150L	100L	225L	416L	1000L
Temperature range	-40~150°C				
Humidity range	10~98%RH				
Temperature/humidity fluctuation	±0.5°C, ±2.5%RH				
Temperature/humidity uniformity	<2°C, 5%RH				
Temperature/humidity stability	0.2°C, 2%RH				
Temperature/humidity deviation	±2°C, 3%RH				
Warm up time	about 3°C/min				
Cooling time	about 1°C/min				
Material	case material	cold rolled steel plate+varnish			
	chamber material	SUS#304 stainless steel			
	thermal insulation material	rigid polyurethane foam			
Cooling system	compressor				
Protector	no fuse switch, compressor overpressure, overheat protection, overtemperature protection, overload protection, dry burning protection, water shortage protection, etc				
Power supply	AC220V, 50HZ, 4.5kW	AC220V, 50HZ, 2kW	AC380V, 3Ø, 50HZ, 4kW	AC380V, 3Ø, 50HZ, 3.5kW	AC380V, 3Ø, 50HZ, 3.5kW
Dimension (WxHxD)	800×1660 ×1400mm	750×1550 ×1170mm	850×1750 ×1200mm	950×1850 ×1400mm	1300×1950 ×1850mm
Weight	365kg	285kg	385kg	510kg	950kg

STANDARD DELIVERY

Main unit	1 pc
Test hole	1 pc
Shelf	2 pcs

PROGRAMMABLE TEMPERATURE AND HUMIDITY CHAMBER (PROFESSIONAL TYPE)
CODE HTT-A150

temperature and humidity control range diagram
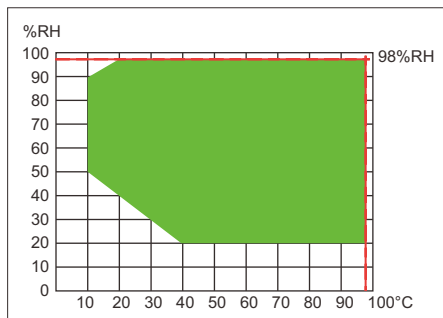
- The chamber is equipped with a standalone operation system and uses a 7-inch human-machine interface touch screen programmable controller
- Adopt advanced balanced temperature and humidity control system, dynamic PID and steam partial pressure control, HFC environmental refrigerant
- Remote control and data acquisition can be performed through the RS232 interface, and CSV data files can be directly exported to a USB flash drive

VIDEO

SPECIFICATION

Chamber dimension (WxHxD)		500×600×500mm
Chamber volume		150L
Temperature range		-40~150°C
Humidity range		20~98%RH
Temperature/humidity deviation		±2.0°C, ±2.5%RH
Temperature/humidity fluctuation		±0.5°C, ±2.0%RH
Temperature/humidity uniformity		±2.0°C, ±3.0%RH
Warm up time		2.0~3.0°C/min (empty)
Cooling time		1.0~1.5°C/min (empty)
Cooling system		compressor
Material	case material	double-sided galvanized steel plate+spray treatment
	chamber material	SUS#304 stainless steel
	thermal insulation	rigid polyurethane foam
Protector		total power supply phase sequence and out-of-phase protection, leakage protection, load short-circuit protection, adjustable over-temperature protection, humidification system water-deficit protection, compressor over-pressure protection, etc.
Power supply		AC380V, 50Hz, 5kW
Dimension (WxHxD)		765×1670×1575mm
Weight		370kg

STANDARD DELIVERY

Main unit	1 pc
Test hole	1 pc
Shelf	2 pcs

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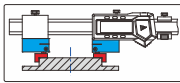
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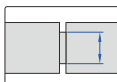
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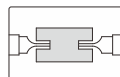
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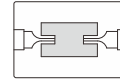
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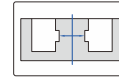
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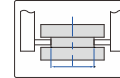
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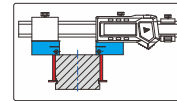
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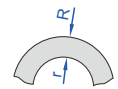
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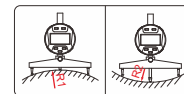
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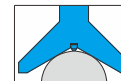
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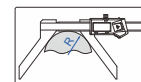
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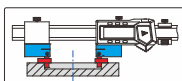
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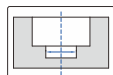
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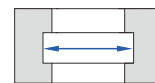
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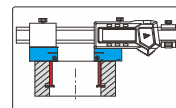
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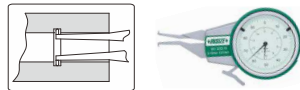
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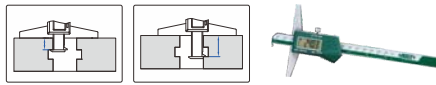
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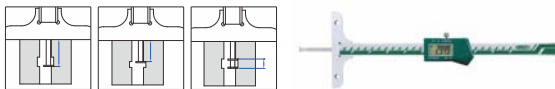
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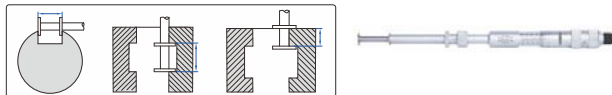
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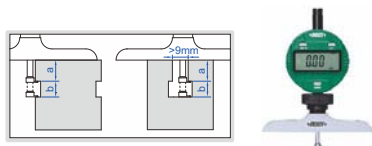
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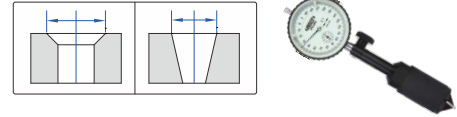
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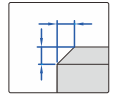
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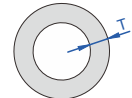
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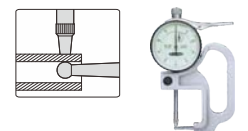
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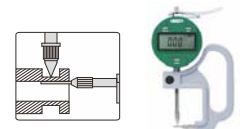
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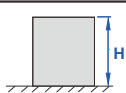
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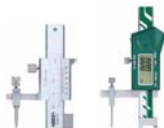
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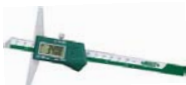
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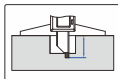
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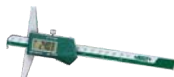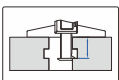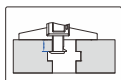
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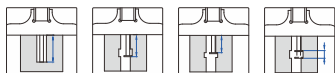
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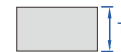
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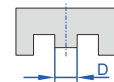
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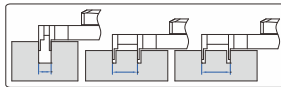
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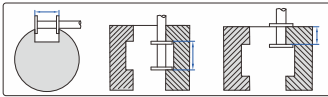
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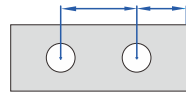
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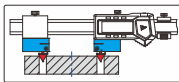
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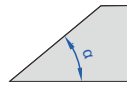
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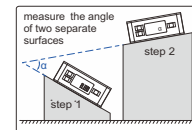
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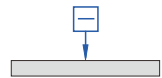
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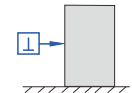
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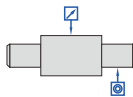
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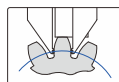
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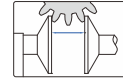
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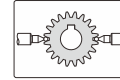
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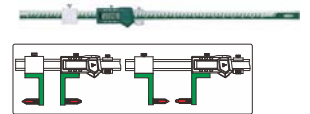
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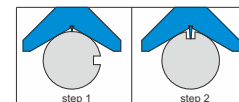
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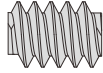
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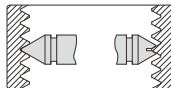
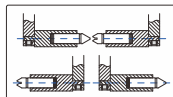**Thread Plug Gages**
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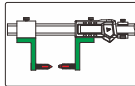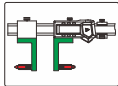
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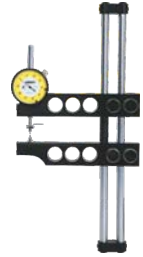
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