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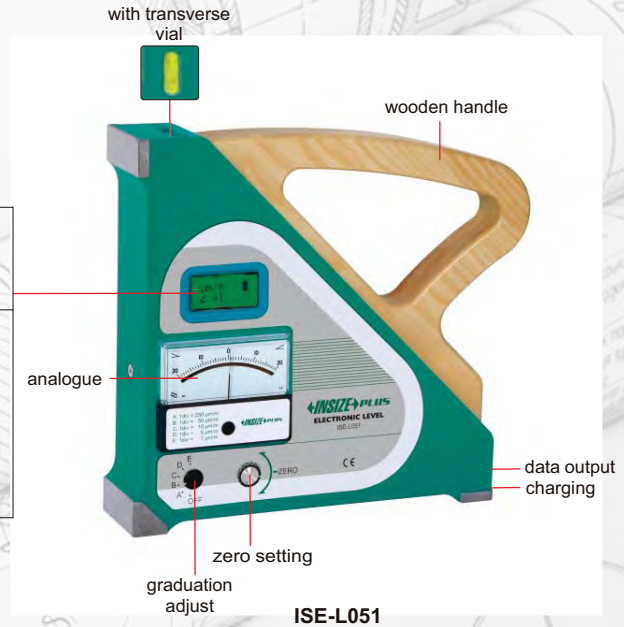
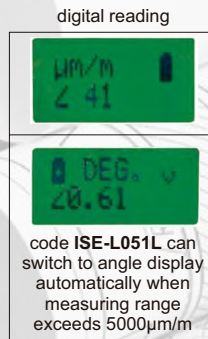
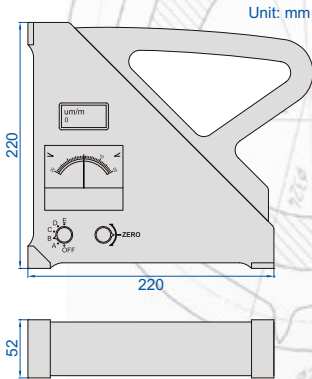
## ELECTRONIC LEVELS

**INSIZE PLUS**  
MADE IN EUROPE

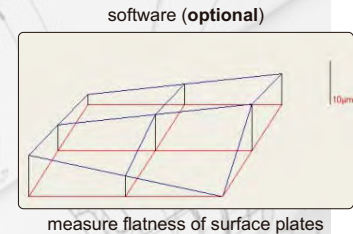
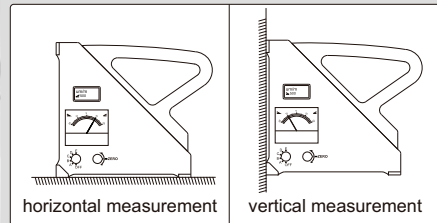
**INSPECTION  
CERTIFICATE**

**DATA  
OUTPUT**

**SHOCK  
PROOF**



- Shockproof
- Analogue and digital reading modes



### SPECIFICATION

Code	ISE-L051			ISE-L051L	
	Analogue graduation (adjustable)	250μm/m (=0.014°)	50μm/m (=10")	10μm/m (=2")	5μm/m (=1")
Analogue range	±5000μm/m	±1000μm/m	±200μm/m	±100μm/m	±20μm/m
Digital reading resolution	horizontal: 1μm/m (=0.2")			horizontal: 1μm/m (=0.2"), angle: 0.01°	
Digital reading range	horizontal: 5000μm/m			horizontal: 5000μm/m, angle: 0.3~85°	
Accuracy	horizontal: ±1%			horizontal: ±1%, angle: ±0.7%	
Zero setting range	±1500μm/m				
Response time	<3s				
Data output	RS232				
Power supply	rechargeable Li-ion battery, provides power for 10h continuous working				
Dimension	220×220×52mm				
Weight	4.4kg				

20

### STANDARD DELIVERY

Main unit	1 pc
AC/DC adapter	1 pc

### OPTIONAL ACCESSORY

Software and data output cable	ISE-L050-SOFTWARE
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DATA OUTPUT

DIGITAL LEVEL CODE ISE-2DT



color LCD and touch panel  
 direction of incline  
 absolute/incremental mode  
 angle of incline

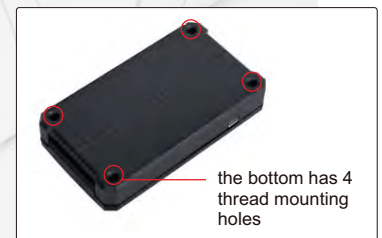
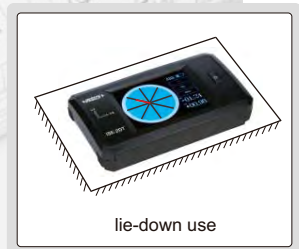


- Color LCD, touch panel
- X-Y axis measurement
- Set the tolerance and the display is shown in different colors



within the tolerance (green)      out of the tolerance (red)

- To show the incline with line or bubble



SPECIFICATION

Measuring range	±30°
Resolution	0.1°, 0.01°, 0.1mm/m
Accuracy	±0.03° (range 0~3°) ±0.05° (range >3°)
Power supply	rechargeable battery
Dimension	115×66×25mm
Weight	224g

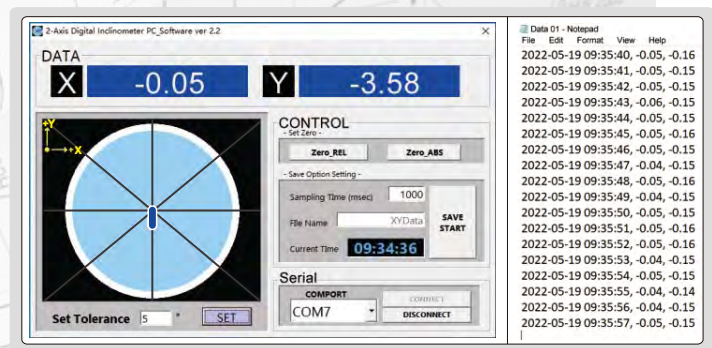
STANDARD DELIVERY

Main unit	1 pc
USB cable	1 pc

OPTIONAL ACCESSORY

Software	ISE-2DT-SOFTWARE
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PC software (optional), send data to txt



## DUAL AXIS DIGITAL LEVEL AND GYRO ANGLE METER



DATA OUTPUT

DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP

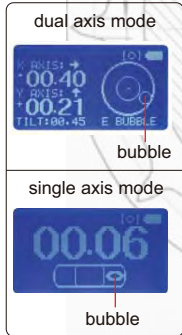
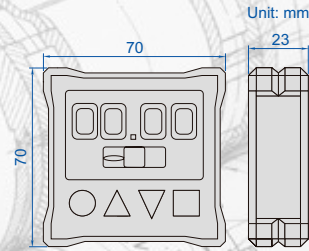
AUDIBLE ALARM WHEN OUT OF LIMIT

BACKLIGHT

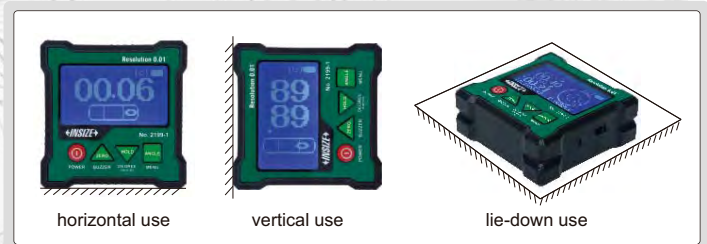
ATTENTION: HARD PLASTIC CASE



2199-1

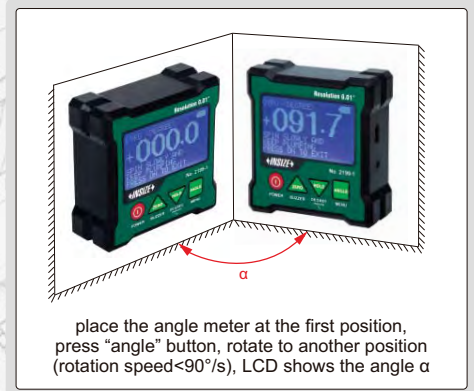


M4 threaded holes on the back for fixing



- Single axis/double axis level and slope meter, gyro technique can measure the angle between two planes in any direction
- Hard plastic case, with V-shaped grooves, four magnetic sides
- Display flips over when the bottom faces up
- Audible alarm when out of limit
- Buttons: POWER, ZERO, HOLD, display unit (°, mm/m, %), MENU
- Rechargeable Li-ion battery 3.7V, operation time is 40 hours
- Automatic power off in 30 minutes
- Data output
- Optional accessory: wired data transmission (code **2199-A01**), bluetooth (code **2199-A02**), transmission distance is 10 meters (under the condition of no obstruction and no electromagnetic interference)

measurement of angle between two planes in any direction (gyro technique)



Code	Range	Resolution	Accuracy
2199-1	single axis level: 4x90°	0.01°	at 0° and 20°: ±0.08°
	dual axis level: ±40°		at 20° and 70°: ±0.15°
	gyro angle meter: 360°	0.1°	±0.5°



connect to computer via wired data transmission



connect to mobile phone via bluetooth



bluetooth (optional)



wired data transmission (optional)



ABSOLUTE LEVEL

BACKLIGHT

BUZZER ALARM AT 0° AND 90°

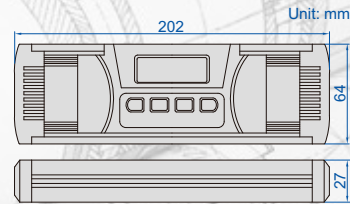
WORKING TEMPERATURE -5°C~50°C

IP67 WATERPROOF

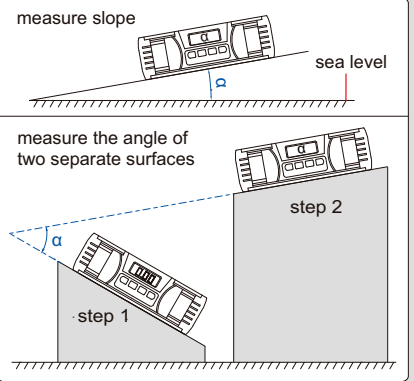


2175-360

## DIGITAL LEVEL AND SLOPE METER



- IP67 dust/waterproof
- Used as level and slope meter
- Aluminum frame, shock absorbing rubber end caps
- Magnetic bottom with V-groove for shafts
- The sea level is permanently set inside the chip, zero setting is not needed when batteries are replaced
- Buttons: ON/OFF, backlight/buzzer alarm, absolute and incremental measurement, unit (mm/m, %, °), HOLD (keep the reading)
- Three AAA batteries, automatic power off



Code	Range	Resolution	Accuracy
2175-360	0-360° (90°x4)	0.05° (=0.873mm/m)	at 0°: ±0.05°; at others: ±0.1°

ABSOLUTE LEVEL

BACKLIGHT

BUZZER ALARM AT 0° AND 90°

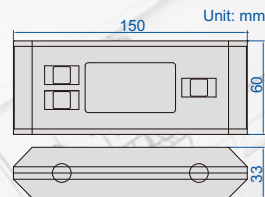
WORKING TEMPERATURE -5°C~50°C

IP54 WATERPROOF

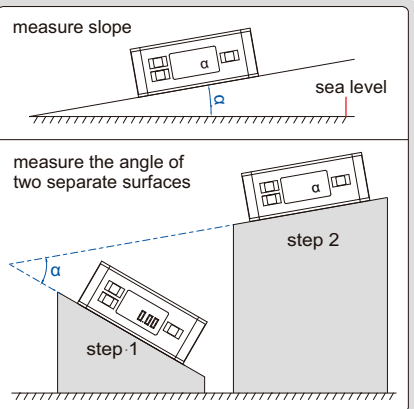


2179-360

## DIGITAL LEVEL AND SLOPE METER



- IP54 dust/waterproof
- Used as level and slope meter
- Aluminum frame
- Magnetic bottom with V-groove for shafts
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, absolute and incremental measurement, keep the reading, buzzer alarm, unit (mm/m, %, in/ft), conversion, backlight
- Two AAA batteries, automatic power off



Code	Range	Resolution	Accuracy
2179-360	0-360° (90°x4)	0.05° (=0.873mm/m)	at 0° and 90°: ±0.1°; at others: ±0.2°

## DIGITAL LEVEL AND SLOPE METER

MAGNETIC BOTTOM

WORKING TEMPERATURE  
-5°C~50°C

BACKLIGHT

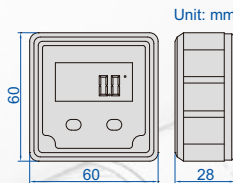
DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP

ABSOLUTE LEVEL

POPULAR MODEL



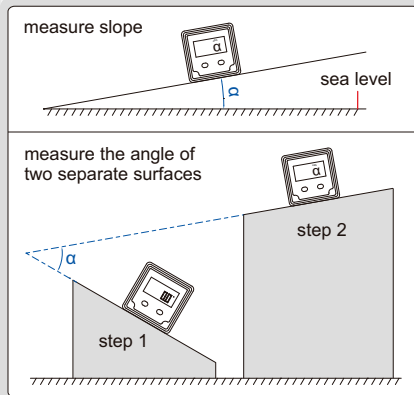
2170-1



Unit: mm

- Used as level and slope meter
- Aluminum frame
- Magnetic bottom
- The display flips over when the bottom faces up
- The backlight is on automatically when in use, and automatically off in 15 seconds after use
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, ZERO, absolute and incremental measurement
- One AAA battery, automatic power off in 5 minutes

Code	Range	Resolution	Accuracy
2170-1	4x90°	0.1° (=1.745mm/m)	at 0° and 90°: ±0.1°; at others: ±0.2°



## BLUETOOTH DIGITAL LEVEL AND SLOPE METER

BACKLIGHT

MAGNETIC BOTTOM

DISPLAY FLIPS OVER WHEN THE BOTTOM FACES UP

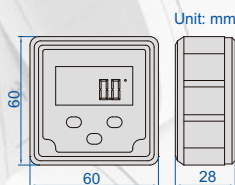
WORKING TEMPERATURE  
-5°C~50°C

ABSOLUTE LEVEL

- Used as level and slope meter
- Aluminum frame
- Magnetic bottom
- The display flips over when the bottom faces up
- The backlight is on automatically when in use, and automatically off in 15 seconds after use
- The sea level is permanently set inside the chip, zero setting is not needed when battery is replaced
- Buttons: ON/OFF, ZERO, HOLD, absolute and incremental measurement
- Built-in bluetooth, transmission distance is 15 meters (under the condition of no obstruction and no electromagnetic interference). Android and iPhone APP are included
- One AAA battery, automatic power off in 5 minutes

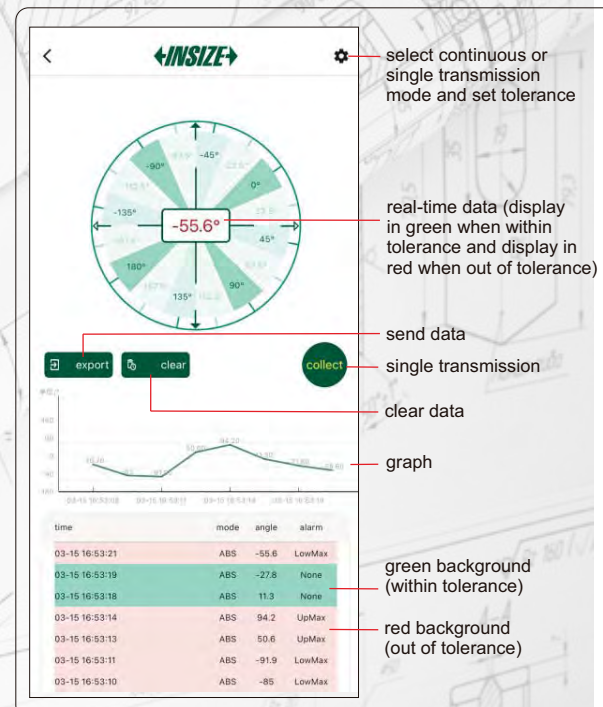
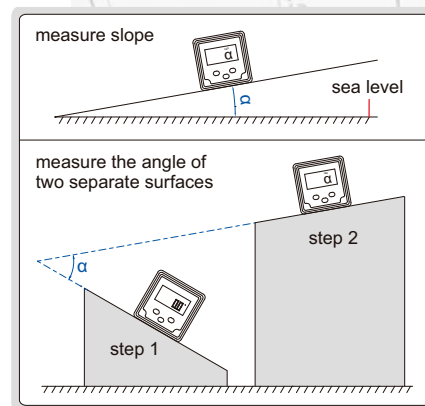


2198-2



Unit: mm

Android and iPhone APP (included), can choose real-time display (continuous transmission) or single transmission



Code	Range	Resolution	Accuracy
2198-2	4x90°	0.1° (=1.745mm/m)	at 0° and 90°: ±0.1°; at others: ±0.2°



NO NEED TO SET ZERO BEFORE USE

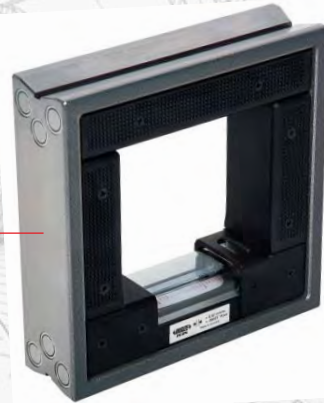
## FRAME LEVELS

**INSIZE PLUS**  
MADE IN EUROPE



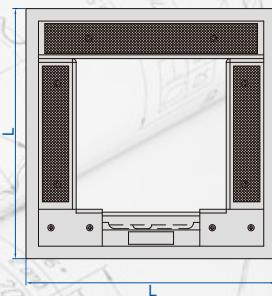
4906-150

magnet on the left side



4906-150M

- No need to set zero before use
- Three V-grooves for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial



Unit: mm

V-groove

V-groove

V-groove

150°  
42

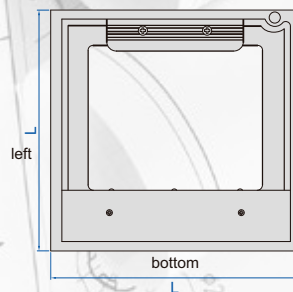
Code		Size (LxL)	Remark
Sensitivity 0.02mm/m (=0.001°)	Sensitivity 0.1mm/m (=0.0057°)		
4906-150	4906-B150	150x150mm	–
4906-200	4906-B200	200x200mm	–
4906-300	4906-B300	300x300mm	–
4906-150M	4906-B150M	150x150mm	with magnet
4906-200M	4906-B200M	200x200mm	with magnet
4906-300M	4906-B300M	300x300mm	with magnet



VIDEO

## FRAME LEVELS

- V-groove on bottom and left for shafts (shafts dia. 15~68mm)
- With transverse vial



Unit: mm

V-groove

V-groove

140°  
W



4902-200

Code		Size (LxL)	W
Sensitivity 0.02mm/m (=0.001°)	Sensitivity 0.05mm/m (=0.0029°)		
4902-150	4902-C150	150x150mm	40mm
4902-200	4902-C200	200x200mm	40mm
4902-300	4902-C300	300x300mm	45mm

## BLOCK LEVELS

**INSIZE PLUS**  
MADE IN EUROPE

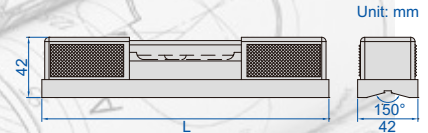
- No need to set zero before use
- V-groove on bottom for shafts (shafts dia. 19.3~115.9mm)
- With longitudinal vial



4905-200

NO NEED TO SET ZERO BEFORE USE

Code		Size (L)
Sensitivity 0.02mm/m (=0.001°)	Sensitivity 0.1mm/m (=0.0057°)	
4905-160	4905-B160	160mm
4905-200	4905-B200	200mm
4905-300	4905-B300	300mm
4905-500	4905-B500	500mm



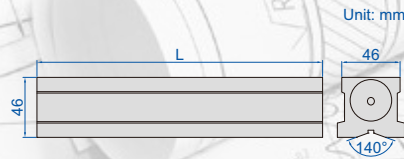
## BLOCK LEVELS

POPULAR MODEL



VIDEO

- V-groove on bottom for shafts (shafts dia. 15~68mm)
- With transverse vial



4903-200A

Code		Length (L)
Sensitivity 0.02mm/m (=0.001°)	Sensitivity 0.05mm/m (=0.0029°)	
4903-150A	4903-C150	150mm
4903-200A	4903-C200	200mm
4903-300A	4903-C300	300mm

## SHORT LEVEL

**INSIZE PLUS**  
MADE IN EUROPE

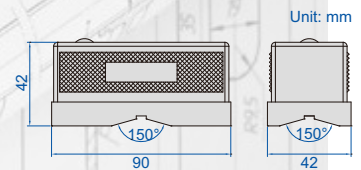
- No need to set zero before use
- Suitable for small spaces like crankshaft
- Longitudinal and transverse V-grooves on bottom for shafts (shafts dia. 19.3~115.9mm)
- With transverse vial



4907-90

NO NEED TO SET ZERO BEFORE USE

Code	Length	Sensitivity
4907-90	90mm	0.1mm/m (=0.0057°)



## MINI LEVEL

**INSIZE PLUS**  
MADE IN EUROPE

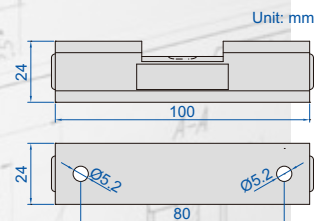
- No need to set zero before use
- With mounting holes (for M5 screws)



4908-100

NO NEED TO SET ZERO BEFORE USE

Code	Length	Sensitivity
4908-100	100mm	0.1mm/m (=0.0057°)



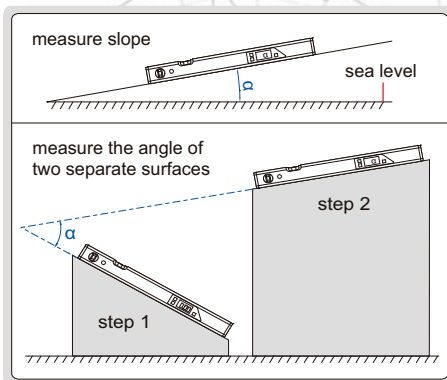


ABSOLUTE LEVEL

BACKLIGHT

WORKING TEMPERATURE  
0°C~50°C

## DIGITAL LEVELS AND SLOPE METERS



both angle and slope are displayed

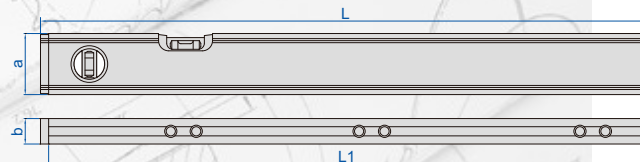


4910-400



4910-600

- With transverse and longitudinal vials
- Used as level and slope meter
- Aluminum frame, magnetic bottom
- The sea level is permanently set inside the chip, zero setting is not needed when batteries are replaced
- Buttons: ON/OFF, absolute and incremental measurement, keep the reading, buzzer alarm (not for 4910-400), unit (mm/m, %, in/ft), conversion (not for 4910-400), backlight
- The display flips over when the bottom faces up
- Two AAA batteries
- Automatic power off



(mm)

Code	Range	Resolution	Accuracy	Remark	L	L1	a	b
4910-400	0~360° (90°×4)	angle: 0.1°; slope: 1mm/m	±0.2°	both angle and slope are displayed	416	400	50	21
4910-600	0~360° (90°×4)	at 0° and 90°: 0.05° (=0.8725mm/m); at others: 0.1° (=1.745mm/m)	at 0° and 90°: ±0.1°; at others: ±0.2°	at 0° and 90° buzzer alarms	600	585	60	25

LIFETIME WARRANTY VIALS

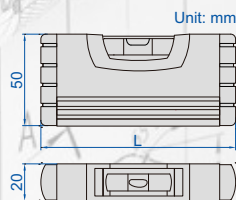
MAGNETIC BASE

## HANDY LEVEL



4912-100

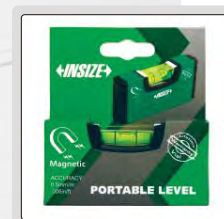
- Shockproof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C



magnetic base surface



packaging



Code	Size (L)	Accuracy
4912-100	100mm	0.5mm/m

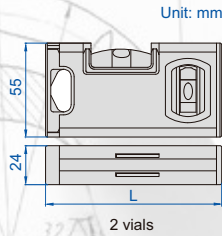
## HANDY LEVELS

MAGNETIC BASE

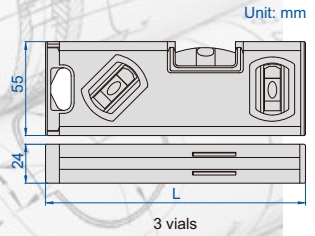
LIFETIME WARRANTY VIALS



4922-100



4922-150



Code	Size (L)	Accuracy	Number of vials
4922-100	100mm	0.5mm/m	2
4922-150	150mm	0.5mm/m	3
4922-200	200mm	0.5mm/m	3

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

## CASTING ALUMINUM LEVEL

MAGNETIC BASE

LIFETIME WARRANTY VIALS

magnetic bottom surface (milled)



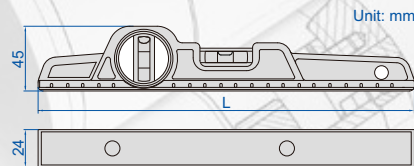
4913-250

packaging



- Shockproof horizontal and vertical vials
- Magnetic base
- Working temperature: -15°C~55°C
- Casting aluminum body

Code	Size (L)	Accuracy
4913-250	250mm	0.5mm/m



## ALUMINUM LEVEL

MAGNETIC BASE

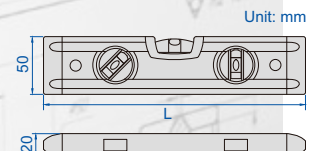
LIFETIME WARRANTY VIALS

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C



4921-230

Code	Size (L)	Accuracy
4921-230	230mm	0.5mm/m





LIFETIME WARRANTY VIALS

MAGNETIC BASE

## ALUMINUM LEVELS



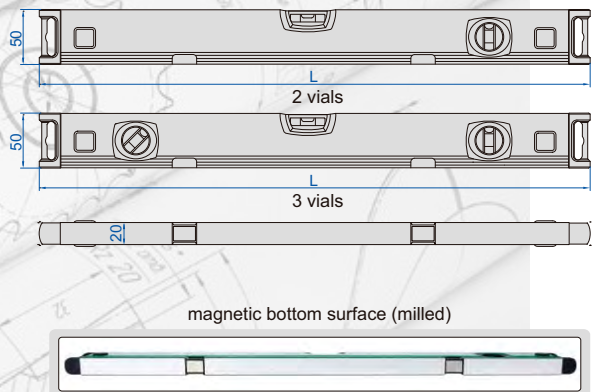
4914-600



4914-2000

Unit: mm

- Shockproof horizontal and vertical vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C



Code	Size (L)	Accuracy	Number of vials
4914-300	300mm	0.5mm/m	2
4914-600	600mm	0.5mm/m	2
4914-800	800mm	0.5mm/m	2
4914-1000	1000mm	0.5mm/m	2
4914-1200	1200mm	0.5mm/m	2
4914-2000	2000mm	0.5mm/m	3

LIFETIME WARRANTY VIALS

## ALUMINUM LEVELS

- Top and bottom working surfaces
- Shock-proof and UV-proof vials
- Die casting aluminum alloy frame
- Zero position of horizontal vial can be set
- One graduation of horizontal vial is 2% slope
- Working temperature: -15°C~55°C

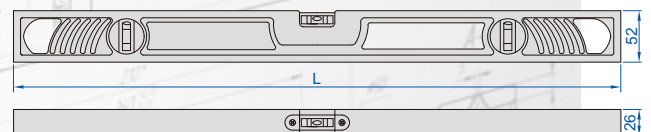


4911-600

bottom surface (non-magnetic, milled)



Unit: mm



Code	Size (L)	Accuracy
4911-600	600mm	0.5mm/m
4911-800	800mm	0.5mm/m

## ALUMINUM LEVELS (BASIC TYPE)

MAGNETIC BASE

LIFETIME WARRANTY VIALS



4918-300

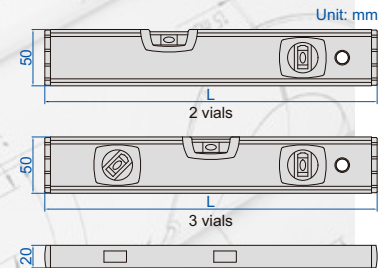


4918-2000

- Shock-proof and UV-proof vials
- Magnetic base
- Shock absorbing rubber end caps
- Working temperature: -15°C~55°C

Code	Size (L)	Accuracy	Number of vials
4918-300	300mm	1mm/m	2
4918-600	600mm	1mm/m	2
4918-800	800mm	1mm/m	2
4918-1000	1000mm	1mm/m	2
4918-1200	1200mm	1mm/m	2
4918-2000	2000mm	1mm/m	3

magnetic bottom surface



## ALUMINUM LEVEL WITH RULER

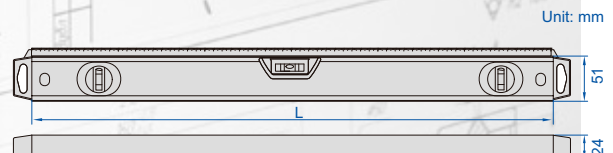
LIFETIME WARRANTY VIALS



4923-600

- Shockproof horizontal and vertical vials
- Non-magnetic milled base
- Shock absorbing rubber end caps
- Range of ruler: 0-60cm, graduation: 1mm
- Working temperature: -15°C~55°C

Code	Size (L)	Accuracy
4923-600	600mm	0.5mm/m





**IP54**  
WATERPROOF

AUDIBLE AND VISUAL  
ALARM WHEN OUT OF  $\pm 3^\circ$

## CROSS-LINE LASER LEVEL CODE 4917-30



- Red horizontal and vertical cross laser lines
- Self-leveling within  $\pm 3^\circ$ , self-leveling time within 4s, audible and visual alarm when out of  $\pm 3^\circ$
- Folding legs for angle and height adjustment
- Outdoor use with the detector (code: 4917-DETECTOR)



application examples



folding legs for angle and height adjustment



### SPECIFICATION

Laser line width	2 $\pm$ 0.5mm (within 5m)
Laser type	630~660nm, class II, <1mW
Beam angle	120 $\pm$ 0.5°
Self-leveling range	$\pm 3^\circ$
Working distance	indoor: 30m, outdoor: 50m with detector (optional)
Accuracy	0.2mm/m
Operation temperature	-10~40°C
Power supply	3 $\times$ AA batteries, for 3 hours working
Dimension	100 $\times$ 82 $\times$ 104mm
Weight	620g



stand  
(included with outdoor detector)

### OUTDOOR DETECTOR (OPTIONAL)

Detecting distance	horizontal 1~50m, vertical 1~30m
Detecting accuracy *	high accuracy $\pm 1.5$ mm, low accuracy $\pm 2.5$ mm
Power supply	9V battery
Dimension	168 $\times$ 58 $\times$ 30mm
Weight	140g (battery included)



outdoor detector (optional)

\* Use high accuracy detection mode within 15m,  
use low accuracy detection mode over 15m

### STANDARD DELIVERY

Main unit	1 pc
1/4" to 5/8" tripod adaptor	1 pc
Battery (AA)	3 pcs

### OPTIONAL ACCESSORY

Outdoor detector	4917-DETECTOR
------------------	---------------

# SELF-LEVELING ROTARY LASER CODE GRL-L340

INDICATOR FLASHING  
WHEN OUT OF  $\pm 5^\circ$

**IP65**  
WATERPROOF



VIDEO



detector (included)



remote controller (included)



bracket for C battery (included)



beam finder glasses (included)



tripod (included)

- Applicable fields: construction, decoration, pipeline and equipment installation
- Green laser beam rotates 360° horizontally or vertically
- Self-leveling range  $\pm 5^\circ$  on both X and Y planes
- Alarm when inclination is out of  $\pm 5^\circ$
- $\pm 5^\circ$  leveling range for manual mode on both X and Y planes
- 5 variable speeds 0-600rpm
- 6 scan modes
- Plumb up and plumb down dots
- Remote control for long distance
- Power supply: AC or DC

application examples



horizontal leveling

vertical leveling

working with detector

## SPECIFICATION

Working range	indoor 50m, outdoor 300m (with detector)	
Self leveling range	$\pm 5^\circ$	
Horizontal/vertical beam accuracy	$\pm 0.1\text{mm/m}$	
Main laser type	520~540nm, class 2, <1mW	
Auxiliary laser type	645~655nm, class 2, <1mW	
Rotating speed	0/60/120/300/600rpm	
Scanning range	0/10/45/90/180/360°	
Setting slope	X axis: $\pm 5^\circ$ , Y axis: $\pm 5^\circ$	
Operation temperature	-20~50°C	
Maximum remote control distance	20m	
Power supply	remote controller	2x1.5V AAA batteries
	main unit	NI-MH batteries or 4x1.5V C batteries
	detector	1x9V battery
Dimension	210x210x213mm	
Weight	2.5kg	

## STANDARD DELIVERY

Main unit (including NI-MH batteries)	1 pc
C battery and bracket	1 set
Detector	1 pc
Remote controller	1 pc
Beam finder glasses	1 pc
Laser target	1 pc
Power adapter	1 pc
AAA battery	2 pcs
9V battery	1 pc
Tripod	1 pc





**Linear Scales**  
Page 510-512/515



**Digital Readouts**  
Page 513-515



**Scales**  
Page 516-517



**Air Gages And Displays**  
Page 517-518



**Air Leakage Testers**  
Page 519



**Laser Scan Micrometers**  
Page 520-521



**Spectrometers**  
Page 522-526



**Tool Presetters**  
Page 527-529

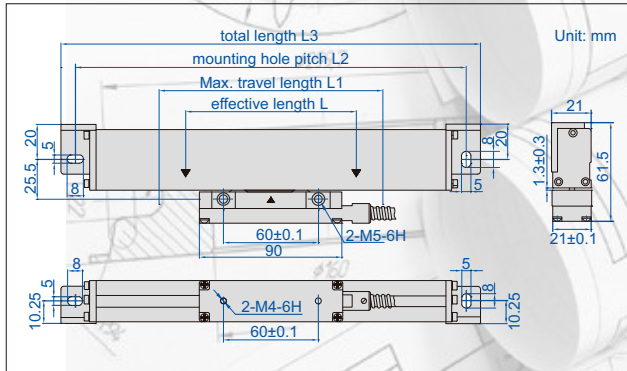
## LINEAR SCALES (TTL SIGNAL)



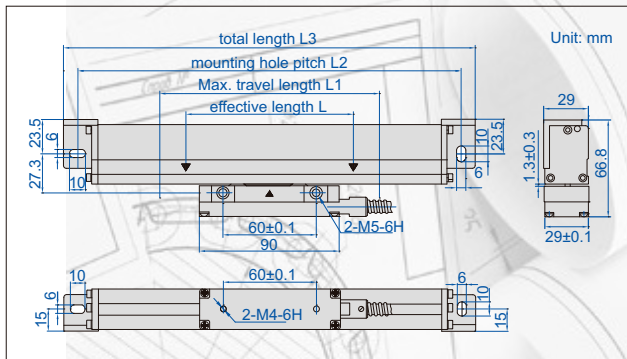
ISL-A1-300

- Optical TTL (Through-The-Lens) detection. These optical TTL linear scales use a transistor logic to transmit and record high-resolution distance measurements. They are the most accurate type of encoder and are paired with ISL-DR2/DR3 and ISL-LCD7 (digital readout)

### Series ISL-A1 and ISL-A5



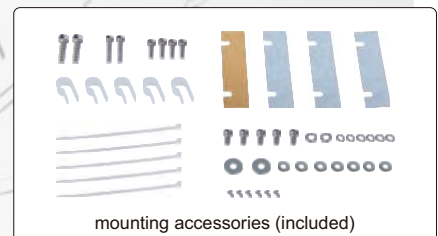
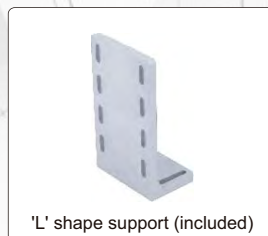
### Series ISL-B5



Effective length (L)	Code		
	Thin type		Thick type
	Series ISL-A1	Series ISL-A5	Series ISL-B5
50mm	ISL-A1-50	ISL-A5-50	ISL-B5-50
100mm	ISL-A1-100	ISL-A5-100	ISL-B5-100
150mm	ISL-A1-150	ISL-A5-150	ISL-B5-150
200mm	ISL-A1-200	ISL-A5-200	ISL-B5-200
250mm	ISL-A1-250	ISL-A5-250	ISL-B5-250
300mm	ISL-A1-300	ISL-A5-300	ISL-B5-300
350mm	ISL-A1-350	ISL-A5-350	ISL-B5-350
400mm	ISL-A1-400	ISL-A5-400	ISL-B5-400
450mm	ISL-A1-450	ISL-A5-450	ISL-B5-450
500mm	ISL-A1-500	ISL-A5-500	ISL-B5-500
550mm	ISL-A1-550	ISL-A5-550	ISL-B5-550
600mm	ISL-A1-600	ISL-A5-600	ISL-B5-600
650mm	ISL-A1-650	ISL-A5-650	ISL-B5-650
700mm	ISL-A1-700	ISL-A5-700	ISL-B5-700
750mm	ISL-A1-750	ISL-A5-750	ISL-B5-750
800mm	ISL-A1-800	ISL-A5-800	ISL-B5-800
850mm	ISL-A1-850	ISL-A5-850	ISL-B5-850
900mm	ISL-A1-900	ISL-A5-900	ISL-B5-900
950mm	ISL-A1-950	ISL-A5-950	ISL-B5-950
1000mm	ISL-A1-1000	ISL-A5-1000	ISL-B5-1000
1100mm			ISL-B5-1100
1200mm			ISL-B5-1200
1300mm			ISL-B5-1300
1400mm			ISL-B5-1400
1500mm			ISL-B5-1500
1600mm			ISL-B5-1600
1700mm			ISL-B5-1700
1800mm			ISL-B5-1800
1900mm			ISL-B5-1900
2000mm			ISL-B5-2000
2100mm			ISL-B5-2100
2200mm			ISL-B5-2200
2300mm			ISL-B5-2300
2400mm			ISL-B5-2400
2500mm			ISL-B5-2500
2600mm			ISL-B5-2600
2700mm			ISL-B5-2700
2800mm			ISL-B5-2800
2900mm			ISL-B5-2900
3000mm			ISL-B5-3000
3100mm			ISL-B5-3100
3200mm			ISL-B5-3200

### STANDARD DELIVERY

Main unit	1 pc
'L' shape support	1 pc
Anti-dust cover	1 pc
Plain base	1 pc (for L≥1500mm)
Mounting accessories	1 package





Continued from previous page



anti-dust cover (included)



plain base (included, for L≥1500mm)

**SPECIFICATION**

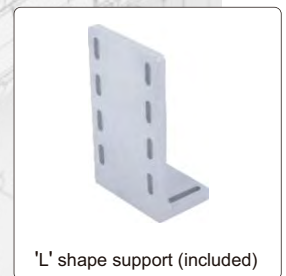
Code	Series ISL-A1		Series ISL-A5		Series ISL-B5	
L1 (mm)	L+30 (L≤900)	L+50 (L>900)	L+30 (L≤900)	L+50 (L>900)	L+30 (L≤900)	L+50 (L>900)
L2 (mm)	L+132 (L≤900)	L+152 (L>900)	L+132 (L≤900)	L+152 (L>900)	L+136 (L≤900)	L+156 (L>900)
L3 (mm)	L+148 (L≤900)	L+168 (L>900)	L+148 (L≤900)	L+168 (L>900)	L+154 (L≤900)	L+174 (L>900)
Resolution	1µm		5µm		5µm	
Max. response speed	50m/min		90m/min		60m/min	
Scale grating pitch	20µm					
Scale reference point pitch	50mm					
Accuracy	±(5+5L/1000)µm L is the effective length in mm					
Cable length	3.5m (L: 50-950mm), 5m (L: 1000-1500mm), 10m (L: 1600-3200mm)					
Output signal	TTL					
Socket	9PD					
Power supply	5±0.5V					

**LINEAR SCALES (RS422 SIGNAL)**

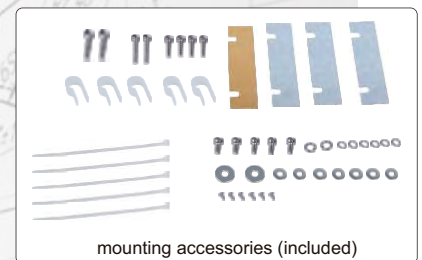
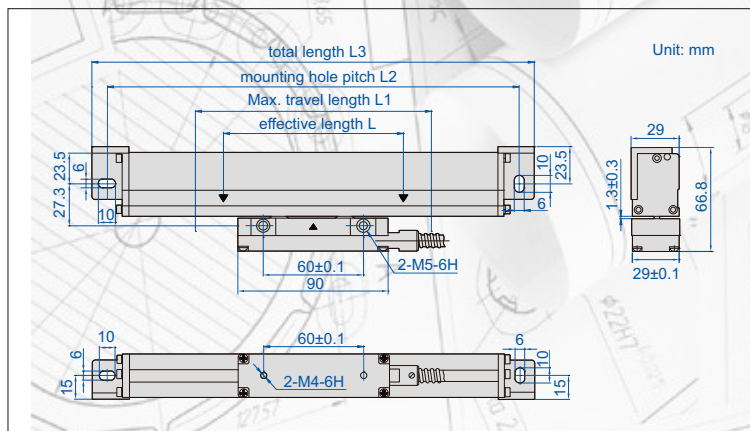


ISL-B5-450A

- Connected to digital display box or PLC



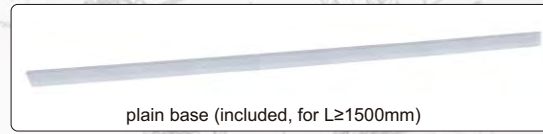
L' shape support (included)



mounting accessories (included)

To be continued

Continued from previous page



Effective length (L)	Code	
	Series ISL-B1	Series ISL-B5
50mm	ISL-B1-50A	ISL-B5-50A
100mm	ISL-B1-100A	ISL-B5-100A
150mm	ISL-B1-150A	ISL-B5-150A
200mm	ISL-B1-200A	ISL-B5-200A
250mm	ISL-B1-250A	ISL-B5-250A
300mm	ISL-B1-300A	ISL-B5-300A
350mm	ISL-B1-350A	ISL-B5-350A
400mm	ISL-B1-400A	ISL-B5-400A
450mm	ISL-B1-450A	ISL-B5-450A
500mm	ISL-B1-500A	ISL-B5-500A
550mm	ISL-B1-550A	ISL-B5-550A
600mm	ISL-B1-600A	ISL-B5-600A
650mm	ISL-B1-650A	ISL-B5-650A
700mm	ISL-B1-700A	ISL-B5-700A
750mm	ISL-B1-750A	ISL-B5-750A
800mm	ISL-B1-800A	ISL-B5-800A
850mm	ISL-B1-850A	ISL-B5-850A
900mm	ISL-B1-900A	ISL-B5-900A
950mm	ISL-B1-950A	ISL-B5-950A
1000mm	ISL-B1-1000A	ISL-B5-1000A

Effective length (L)	Code	
	Series ISL-B1	Series ISL-B5
1100mm	ISL-B1-1100A	ISL-B5-1100A
1200mm	ISL-B1-1200A	ISL-B5-1200A
1300mm	ISL-B1-1300A	ISL-B5-1300A
1400mm	ISL-B1-1400A	ISL-B5-1400A
1500mm	ISL-B1-1500A	ISL-B5-1500A
1600mm	ISL-B1-1600A	ISL-B5-1600A
1700mm	ISL-B1-1700A	ISL-B5-1700A
1800mm	ISL-B1-1800A	ISL-B5-1800A
1900mm	ISL-B1-1900A	ISL-B5-1900A
2000mm	ISL-B1-2000A	ISL-B5-2000A
2100mm	ISL-B1-2100A	ISL-B5-2100A
2200mm	ISL-B1-2200A	ISL-B5-2200A
2300mm	ISL-B1-2300A	ISL-B5-2300A
2400mm	ISL-B1-2400A	ISL-B5-2400A
2500mm	ISL-B1-2500A	ISL-B5-2500A
2600mm	ISL-B1-2600A	ISL-B5-2600A
2700mm	ISL-B1-2700A	ISL-B5-2700A
2800mm	ISL-B1-2800A	ISL-B5-2800A
2900mm	ISL-B1-2900A	ISL-B5-2900A
3000mm	ISL-B1-3000A	ISL-B5-3000A

### SPECIFICATION

Code	Series ISL-B1	Series ISL-B5
L1 (mm)	L+30 (L≤900), L+50 (L>900)	L+30 (L≤900), L+50 (L>900)
L2 (mm)	L+136 (L≤900), L+156 (L>900)	L+136 (L≤900), L+156 (L>900)
L3 (mm)	L+154 (L≤900), L+174 (L>900)	L+154 (L≤900), L+174 (L>900)
Resolution	1μm	5μm
Thickness	29mm	
Max. response speed	60m/min	
Scale grating pitch	20μm	
Scale reference point pitch	50mm	
Accuracy	±(5+5L/1000)μm, L is the effective length in mm	
Cable length	3.5m (L: 50-950mm), 5m (L: 1000-1900mm), 10m (L: 2000-3000mm)	
Output signal	RS422	
Socket	9 PD	
Power supply	5±0.25V	

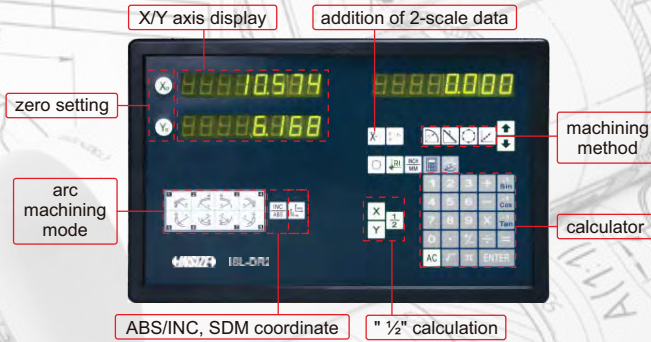
21

### STANDARD DELIVERY

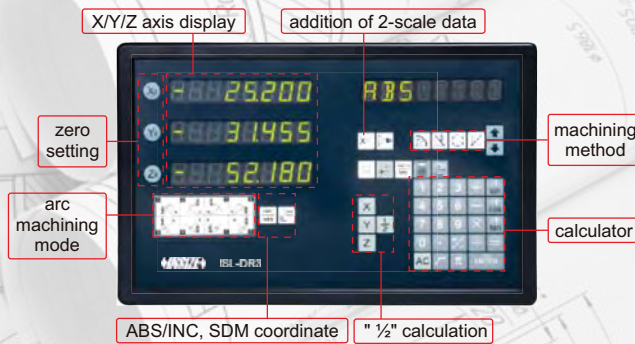
Main unit	1 pc
'L' shape support	1 pc
Anti-dust cover	1 pc
Plain base	1 pc (for L≥1500mm)
Mounting accessories	1 package



## DIGITAL READOUTS



ISL-DR2



ISL-DR3



software flash disk (included)

- For ISL-A1, ISL-A5, ISL-B1, ISL-B5 series linear scales

### SPECIFICATION

Code	ISL-DR2	ISL-DR3
Application	two-axis	three-axis
Scale input ports	2	3
Resolution	0.05µm, 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm	
Functions	addition of 2-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "1/2" calculation, detecting RI, bolt-hole circle machining, ramp circle machining	
Power supply	110/220V, 50/60Hz	
Dimension	295×185×45mm	
Weight	1.45kg	

### STANDARD DELIVERY

Main unit	1 pc
Mounting bracket	1 pc
Ground cable	1 pc
RS232C cable	1 pc
Software flash disk for RS232C	1 pc



mounting bracket (included)

## DIGITAL READOUTS CODE ISL-LCD7



- 7.57 inch LCD display
- Language: English, Simplified Chinese, Traditional Chinese
- Can be connected with **ISL-A1, ISL-A5, ISL-B1, ISL-B5** series linear scales



### SPECIFICATION

Application	three-axis: X/Y/Z
Scale input ports	3
Resolution	0.05μm, 0.1μm, 0.2μm, 0.5μm, 1μm, 2μm, 5μm, 10μm, 20μm, 50μm
Function	X/Y/Z addition of 3-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "%/2" calculation, detecting R1, bolt-hole circle machining, ramp circle machining, circular arc machining, oblique surface machining, automatic edge finding, discharge machining
Dimension	200×88×260mm
Weight	1.26kg

### STANDARD DELIVERY

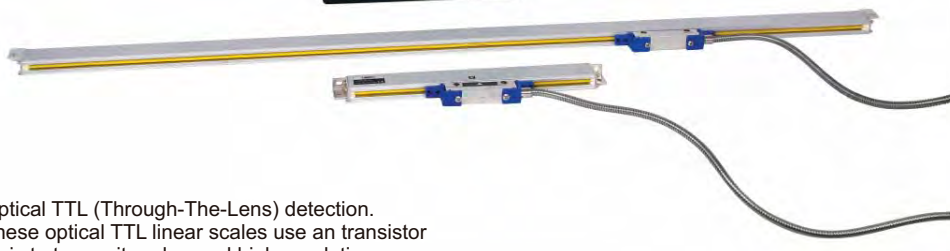
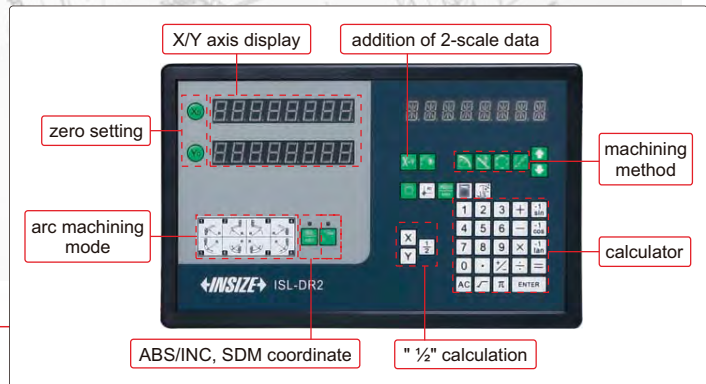
Main unit	1 pc
Mounting bracket	1 pc
Ground cable	1 pc
RS232C cable	1 pc
Software flash disk for RS232C	1 pc



## LINEAR SCALE AND READOUT SET FOR LATHE CODE ISL-SET1



software flash disk  
(included)



- Optical TTL (Through-The-Lens) detection. These optical TTL linear scales use an transistor logic to transmit and record high-resolution distance measurements



mounting bracket for readout (included)



'L' shape support for  
linear scale (included)



anti-dust cover for linear scale (included)

### READOUT SPECIFICATION

Application	two-axis
Scale input ports	2
Resolution	1 $\mu$ m
Functions	addition of 2-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/contraction coefficient setting, "1/2" calculation, detecting RI, bolt-hole circle machining, ramp circle machining
Power supply	110/220V, 50/60Hz
Dimension	295×185×45mm
Weight	1.45kg

### LINEAR SCALE SPECIFICATION

X-axis	200mm
Y-axis	1000mm
Max. response speed	50m/min
Scale grating pitch	20 $\mu$ m
Scale reference point pitch	50mm
Accuracy	$\pm(5+5L/1000)\mu$ m L is the effective length in mm
Cable length	200mm scale: 3.5m, 1000mm scale: 5m

### STANDARD DELIVERY

Readout box	1 pc
200mm linear scale	1 pc
1000mm linear scale	1 pc
Mounting bracket for readout	1 pc
Ground cable for readout	1 pc
RS232C cable for readout	1 pc
Software flash disk for RS232C of readout	1 pc
'L' shape support for linear scale	1 pc
Anti-dust cover for linear scale	1 pc
Mounting accessories for linear scale	1 package

**DIGITAL HORIZONTAL SCALES**

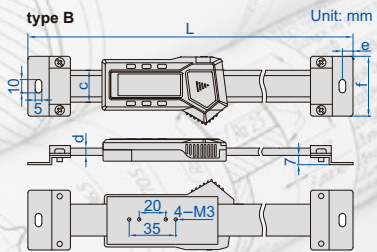
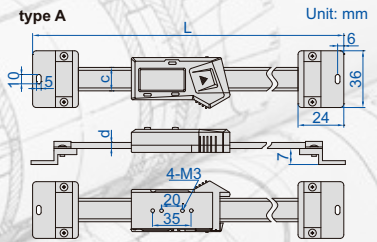
DATA OUTPUT



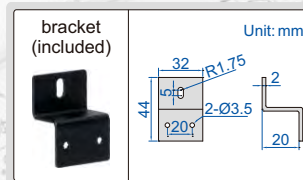
7101-300A



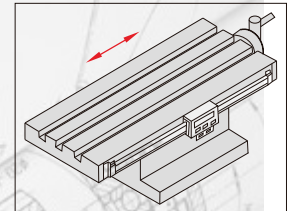
7101-400A



- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, zero, mm/inch, type B: on/off, zero, mm/inch, ABS, data preset
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back



example of application



With data interface  
(data output cable code 7315-21 need receiver page 4, 7302-21 page 12, 7305-21 page 8, optional)

Code	Range	Type	Accuracy	L	c	d
7101-100A	100mm	A	±0.02mm	215	16	4
7101-150A	150mm	A	±0.03mm	265	16	4
7101-200A	200mm	A	±0.03mm	315	16	4
7101-300A	300mm	A	±0.04mm	445	16	4

With data interface  
(data output cable code 7315-22 need receiver page 4, 7302-22 page 12, 7305-22 page 8, optional)

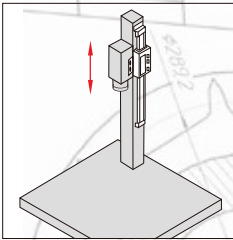
Code	Range	Type	Accuracy	L	c	d	e	f
7101-400A	400mm	B	±0.05mm	590	24	5.5	8	45
7101-500A	500mm	B	±0.05mm	690	24	5.5	8	45
7101-600A	600mm	B	±0.08mm	790	24	5.5	8	45
7101-800A	800mm	B	±0.10mm	990	24	5.5	8	45
7101-1000A	1000mm	B	±0.10mm	1240	31	10.5	10	60



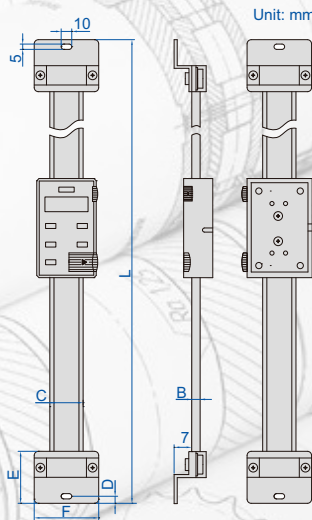
DATA  
OUTPUT

## DIGITAL VERTICAL SCALES

example of application



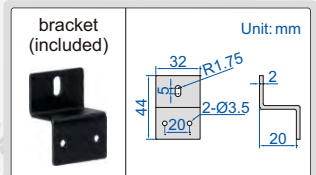
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons: on/off, zero, mm/inch, ABS/INC, data hold, TOL, set
- Battery LR44, data output
- Made of stainless steel
- Supplied with bracket to be mounted on the back
- Optional accessory: wireless data transmission (transmitter code **7315-1150** need receiver page 6), data output cable (code **7302-SPC7** page 13, keyboard format), data output cable (code **7305-1150** page 9, serial port format)



7102-300

(mm)

Code	Range	Accuracy	B	C	D	E	F	L
7102-100	100mm/4"	±0.02mm	4	20	6	24	40	245
7102-150	150mm/6"	±0.03mm	4	20	6	24	40	296
7102-200	200mm/8"	±0.03mm	4	20	6	24	40	345
7102-300	300mm/12"	±0.04mm	4	20	6	24	40	445
7102-400	400mm/16"	±0.05mm	4	20	6	24	40	545
7102-500	500mm/20"	±0.05mm	5.5	24	8	32	45	685
7102-600	600mm/24"	±0.08mm	5.5	24	8	32	45	785
7102-800	800mm/32"	±0.10mm	5.5	24	8	32	45	985
7102-1000	1000mm/40"	±0.10mm	10.5	31	9.5	40	60	1245



CUSTOM-MADE

## AIR GAGES CODE 9401-PB

air plug gage and  
standard rings



measure diameter of hole,  
range: Ø4~230mm

air ring gage and  
standard plain plug gages



measure diameter of shaft,  
range: Ø4~160mm

air snap gage and  
standard column gages



measure diameter of shaft,  
range: Ø15~160mm

air taper gage and  
standard gages



# AIR GAGE DISPLAY CODE 9408-QD100

DATA  
OUTPUT



- Can store 10 measuring programs, and the program can be switched quickly
- Data storage function, support manual and automatic storing, 1500 groups data can be stored



foot switch (optional)



RS485 cable (optional)



pressure regulating valve (optional)



air filter (optional)

## SPECIFICATION

LED quantity	101 pcs			
LED color	red, orange, green			
LED height	254mm			
Range, resolution and accuracy	range	resolution		accuracy
		LED	display	
	10µm	0.1µm	0.1µm	0.2µm
	20µm	0.2µm	0.1µm	0.4µm
50µm	0.5µm	0.1µm	1µm	
100µm	1µm	0.1µm	2µm	
Unit	mm, µm			
Air supply	dry and clean, 0.4~0.8MPa			
Data interface	RS485			
Operation temperature	-20~45°C			
Power supply	110~220V, 50/60Hz			
Dimension (L×W×H)	200×180×490mm			
Weight	4.5kg			

## STANDARD DELIVERY

Main unit	1 pc
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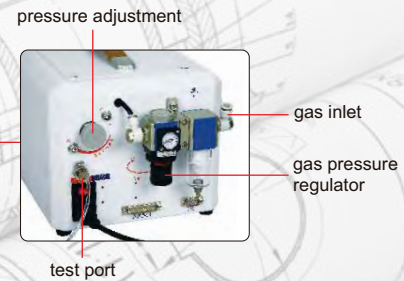
## OPTIONAL ACCESSORY

Air filter	9401-FILTER-A
Pressure regulating valve	9404-PRV
RS485 cable	9408-CB
Foot switch	9408-FS
Data output cable (keyboard format)	7302-9408



DATA  
OUTPUT

## AIR LEAKAGE TESTER CODE ALT-P150



- Smart operation system with touch screen, operation UI based on testing procedure
- High sensitivity pressure sensor and adjustment unit with software algorithm ensure high accuracy and stability
- Test pressure range: -100~1000kPa, positive and negative pressure mode with 8 basic test mode
- Up to 100 groups of subprogram, each can be edited separately, for individual or combination testing
- Built-in communication interface, MODBUS and TCP/IP communication protocol supported
- Pressure curve screenshot and history data can export to flash disk
- Accessories such as testing tooling and fixture, inflatable bypass, fast connector, standard leak can be customized for different products; optional electronic regulator enables multiple sets of pressure sequence testing
- Language: English, Chinese



standard leak (optional)



quick connector (optional)



scanner (optional)



tooling and fixture (optional)

### SPECIFICATION

Device type	direct pressure
Channel	single-channel (customizable dual-channel)
Pressure mode	positive and negative pressure
Range*	-60~150kPa
Resolution	0.1Pa
Accuracy	±0.2%FS
Pressure unit	kPa, Pa, kgf/cm <sup>2</sup> , psi, mmH <sub>2</sub> O, bar, mbar, mmHg
Flow unit	SCCM
Test medium	compressed air or specified gas, 0.4~0.8MPa
Tube caliber	gas inlet: 8mm, test port: 4mm
Pressure regulation	mechanical pressure regulator
Interface	USB, RS232, 25 PIN I/O interface, RJ45 (optional)
Operation environment	temperature: 0°C~50°C, humidity: ≤95%RH, no condensation
Power supply	AC 220V (±15%), 50Hz
Dimension (L×W×H)	340×225×187mm
Weight	7.3kg

\* Available range -80~0kPa, -80~600kPa, 0~200kPa, 10~700kPa; other ranges customizable

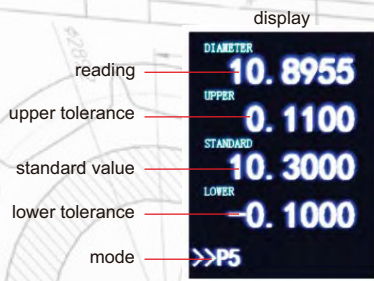
### STANDARD DELIVERY

Main unit	1 pc
Gas pressure regulator	1 pc

### OPTIONAL ACCESSORY

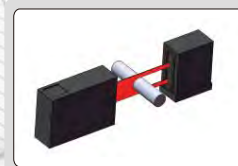
Tooling and fixture	customizable according to specific products
Software	ALT-P150-SW
Standard leak	ALT-P150-LK
Quick connector	ALT-P150-CO
Scanner (with scan software)	ALT-P150-SC

# LASER SCAN MICROMETERS

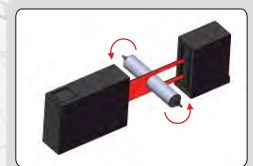


LDM-030

- Measure outer diameter, ellipticity, run-out, maximum diameter of tools, etc.
- Can be used for transparent or non transparent workpieces
- Tolerance measurement
- Online or offline measurement
- Connected with computer, PLC, control box



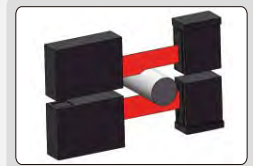
measure external diameter



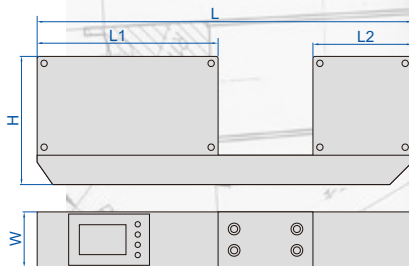
measure ellipticity and run-out



two-axis measurement



large size measurement



Dimension (mm)

Code	LDM-030	LDM-065
L	351	469
W	52	52
H	120	146
L1	170	203
L2	95	131



connect to control box (optional)



calibration gage (optional)

## SPECIFICATION

Code	LDM-030	LDM-065
Measuring range	0.1~30mm	0.5~65mm
Resolution	0.01/0.1/1/10/100µm selectable	
25°C accuracy	±(0.5+10%D)µm, D is measuring diameter in mm	
Repeatability	±(0.3+5%D)µm, D is measuring diameter in mm	
Laser wave length	650nm	
Measuring speed	800~3200times/s (adjustable)	
Operation temperature	0~50°C	
Operation humidity	35~85RH without condensation	
Output	dual channel RS485	
Alarm output	24V, 1A	
Power supply	DC24V, 2A	
Dimension (L×W×H)	351×52×120mm	469×52×146mm
Weight	5kg	8kg

## STANDARD DELIVERY

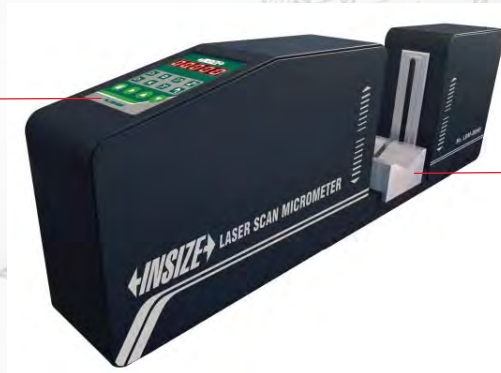
Main unit	1 pc
V-block	1 pc
AC/DC adapter	1 pc
RS485 cable	1 pc

## OPTIONAL ACCESSORY

Calibration gage	custom made
Control box	custom made



# LASER SCAN MICROMETER CODE LDM-D090

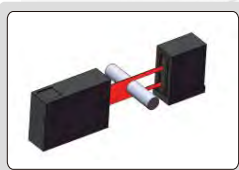


V-block (included)

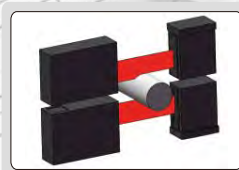


calibration gage (optional)

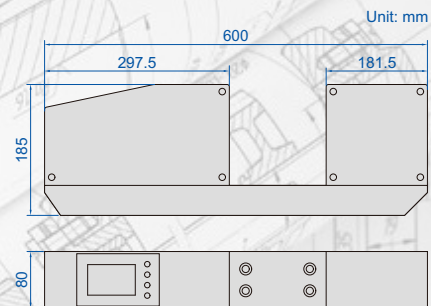
- Can measure the width and thickness of flat cables and tapes
- Can measure the outer diameter of cables, pipes and wires
- Laser scanning technology, large measurement range, high accuracy, high repeatability
- Connected with PLC and PC with RS485 interface
- Use high-precision F (θ) mirror, the swing of the measured object does not affect the measurement



measure external diameter



large size measurement



## SPECIFICATION

Measuring range	0.5~90mm
Resolution	1μm
25°C accuracy	±(5+20%D)μm, D is measuring diameter in mm
Repeatability	±(3+20%D)μm, D is measuring diameter in mm
Laser wave length	650nm
Measuring speed	600 times/s
Operation temperature	5~45°C
Operation humidity	≤80%RH without condensation
Output	RS485/MODBUS protocol
Alarm output	24V, 1A
Power supply	AC85V~220V (50~60Hz)
Dimension (L×W×H)	600×80×185mm
Weight	6.5kg

## STANDARD DELIVERY

Main unit	1 pc
V-block	1 pc
AC/DC adapter	1 pc
RS485 cable	1 pc

## OPTIONAL ACCESSORY

Calibration gage	custom made
------------------	-------------

## SPECTROMETER CODE OES-T350



**CUSTOMIZE**  
CAN CUSTOMIZE OTHER METAL MATRIX DETECTION,  
SUCH AS: Fe (004~009), Al, Cu, Zn, Ti, Ni, Pb, etc



printer (included)



filter element (included)



electrode brush (included)



single-phase AC voltage  
regulator (included)



pressure valve (included)



calibration sample (included)



gray iron control sample  
(optional)



15# carbon steel control  
sample (optional)

- The standard machine can do analysis Fe 001~003
- The full-spectrum technology covers the full range of element analysis, which can determine trace amounts of carbon (C), phosphorus (P), sulfur (S) and other elements
- The analysis speed is fast, and the element composition of all channels is measured within 20 seconds
- Paschen-Runge structure with full wavelength coverage, the most concise and stable optical system structure
- Perfect aberration correction, so that the spectrometer has excellent resolution, minimize the cross interference of different elements
- Argon-filled optical chamber, effectively reducing the attenuation of P and S rays in the far ultraviolet region
- The software has automatic spectrum correction technology, can store database, trace historical data, output and print reports
- Report format can be customized, data can be sent out

To be continued



Continued from previous page

#### SPECIFICATION

Optical system	optical structure	paschen-runge structure
	rowland circle of diameter	350mm
	wavelength range	160~510nm
	detector	multi high resolution CCD detectors
	pixel resolution	20pm
	full spectrum	cover the full range of element analysis
	light room temperature	34±0.5°C (be controlled automatically)
Spark source	type	digital arc and spark source/new plasma generator
	spark frequency	100~1000Hz
	plasma current	1~80A
	ignition voltage	>7000V
Spark stand		spray discharge electrode technology reduces argon consumption and improves argon use efficiency
		good heat dissipation, continuous excitation for 100 times, the temperature of the excitation table does not rise more than 5°C
Others	measurable elements	Fe base, Al base, Cu base, Zn base, etc
	operation temperature	10~30°C, 23±2°C is recommended
	operation humidity	20%~80%RH
	power	AC220V/50Hz
	power consumption	excitation: 300W, stand by: 40W
	argon quality	99.999% high purity argon, argon pressure≥4MPa
	argon consumption	5L/min during spark mode
	dimension (LxWxH)	700x660x340mm
weight	30kg	

#### STANDARD DELIVERY

Main unit	1 pc
Computer	1 pc
Software	1 pc
Printer	1 pc
Calibration sample	1 pc
Electrode brush	2 pcs
Filter element	2 pcs
Single-phase AC voltage regulator	1 pc
Pressure valve	1 pc

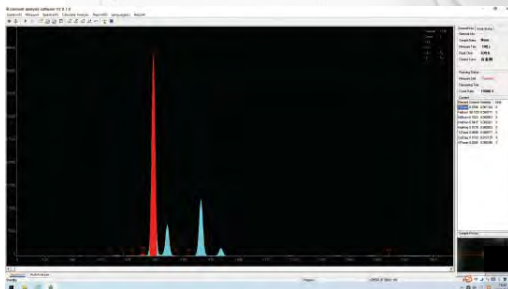
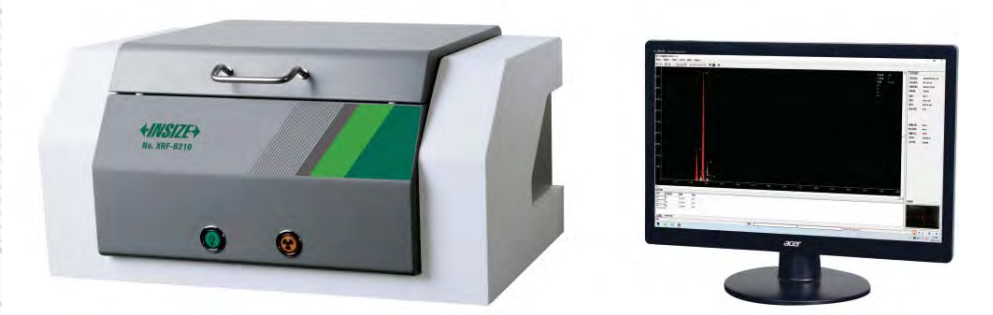
#### OPTIONAL ACCESSORY

Control sample	custom specifications
Argon cylinder	<b>OES-T350-ARGON</b>
Grinding prototype	code: <b>OES-T350-GRIND</b> for ferrous metal sample preparation
Small lathe	code: <b>OES-T350-LATHE</b> for non-ferrous metal sample preparation
Argon purifier	<b>OES-T350-PURIFIER</b>

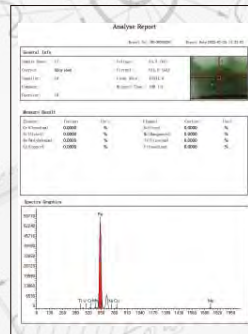
# X RAY FLUORESCENCE SPECTROMETER (RoHS DETECTOR/ALLOY COMPOSITION ANALYZER/COATING THICKNESS GAGE) CODE XRF-B210



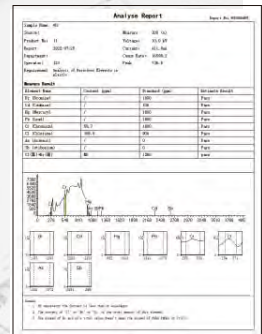
CALIBRATION CURVE CAN BE CUSTOMIZED  
ACCORDING TO CUSTOMER REQUIREMENTS



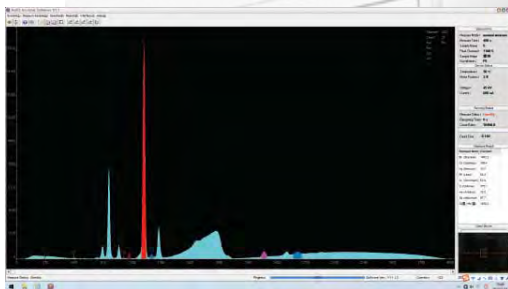
alloy composition analysis software (included)



alloy composition analysis report (included)



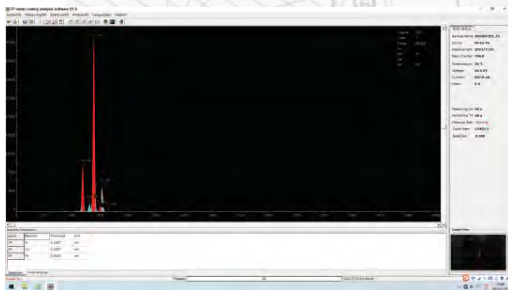
RoHS test report (included)



RoHS test software (included)



coating thickness test report (included)



coating thickness detection software (included)



Continued from previous page

- Used for RoHS detection, alloy element analysis, coating thickness measurement
- Using SI-PIN detector with electric cooling, small size, accurate data analysis and low maintenance cost
- Seven optical path correction and collimation system, automatically switch according to different samples
- Multiple radiation leakage prevention design
- The temperature monitoring technology ensures the safe and reliable operation of the X-ray source
- Dedicated software, standard window design, friendly interface, easy to operate
- Can display multiple spectrograms at the same time and print multiple report forms
- USB3.0 interface to ensure accurate, high-speed and efficient data transmission

#### SPECIFICATION

Detector	type	Si-PIN electrical refrigeration semiconductor detector	
	resolution	149±5 EV	
	amplifier circuit module	detect the sample characteristic X-ray, further enlarge the information collected by detection	
X ray excitation device	maximum output current	1mA	
	power	50W, air cooling	
High and low voltage power	maximum output voltage	50KV, built-in voltage overload protection	
	minimum output voltage	5KV	
Multi-channel pulse amplitude analyzer		maximum channel number: 4096	
Optical path filter module		reduce interference light path in the process of sending x-rays, guarantee the accuracy of the detector signal	
		Integrate the collimator with the filter	
Collimator automatic switching module		7 kinds, Ø0.5~Ø8mm	
Filter automatic switching module		5 kinds (free to choose and switch)	
RoHS analysis software	elemental analysis range	S~U	
	harmful element analysis	Cd, Pb, Hg, Br, Cr, Cl, As, Sb	
	test time	60~200s	
	detection limit	2PPM	
	content analysis range	2PPM~99.9%	
Alloy analysis software	elemental analysis range	Ti~U	
	detection limit	100PPM	
	content analysis range	100PPM~99.9%	
	repeatability	0.1%	
	stability	0.1%	
Metal coating analysis software	elemental analysis range	Ti~U	
	detection limit	0.01µm	
	analysis thickness	single layer thickness	0.01~30µm
		3 layer thickness	≤10µm
	repeatability	0.1µm (for outside coating less than 1µm)	
	stability	0.1µm (for outside coating less than 1µm)	
light spot	within 0.2mm		
Operation temperature		10~30°C	
Relative humidity		10%~90%	
Power		AC 220V±5V	
Dimension (L×W×H)		700×460×370mm	
Weight		49kg	

#### STANDARD DELIVERY

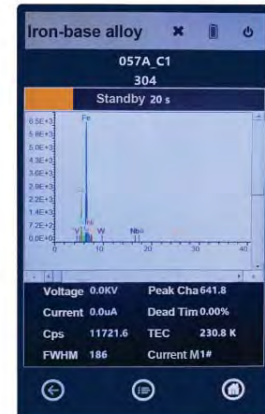
Main unit	1 pc
Standard sample	1 pc
Silver calibration	1 pc
Sample cup	2 pcs
Test film	50 pcs
Computer	1 pc
Printer	1 pc
Collimator (built-in)	7 pcs
Software	RoHS test software, alloy composition analysis software, coating thickness detection software

# HAND-HELD SPECTROMETER CODE HSM-A310

**IP54  
WATERPROOF**



test



analysis

- Fast and non-destructive test to identify alloy grade and composition
- For all kinds of high and low temperature alloy steel, stainless steel, tool steel, chromium/molybdenum steel, nickel alloy, cobalt alloy, nickel/cobalt heat resistant alloy, titanium alloy
- Multiple tests, it can automatically calculate maximum value, minimum value and standard deviation
- IP54 dust/waterproof



## SPECIFICATION

Excitation source	50KV/200μA; Ag target, integrated end window, micro X-ray tube and high voltage power supply, matching power ≥4W
Detector	Si-PIN, window area 25mm <sup>2</sup>
Elemental analysis range	Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Se, Zr, Nb, Mo, Rh, Pd, Ag, Cd, Sn, Sb, Hf, Ta, W, Re, Pb, Bi
Alloy analysis mode	1. automatically identify alloy grade 2. alloy material qualified test mode
Collimator filter	7 groups
Display	5-inch LCD touch screen
CPU	quad-core processor, 1.4GHz, 4G memory
Memory	built-in 64G, storage data, >500000 groups
Data transmission	built-in WIFI, U disk, bluetooth (support bluetooth printer)
Data export format	EXCEL, BMP, PDF, CSV
Battery	6800mAh lithium battery, for 8 hours working time
Air pressure compensation	built-in pressure measurement module for system compensation and correction
System	Win-IOT operation system
Work environment	temperature: 0~40°C, relative humidity: 10%~90%
Dimension	250x320x80mm
Weight	1.9kg

## STANDARD DELIVERY

Main unit	1 pc
Charger	1 pc
Battery	2 pcs
Test film	50 pcs
Sample cup	1 pc
Standard sample	1 pc
Protection support (including calibration silver)	1 pc
USB and cable	1 pc



standard sample (included)



protection support (included)



**TOOL PRESETTER (PROJECTOR TYPE)  
CODE TLP-P340**



projection screen Ø120mm with scale  
(protractor with 1° graduation, radius with 0.2,  
0.4, 0.8, 1.2, 1.5, 2, 2.5, 3mm graduation)



illumination



20X lens



BT50 spindle holder

spindle rotation  
hand wheel

X axis moving  
handle wheel

printer

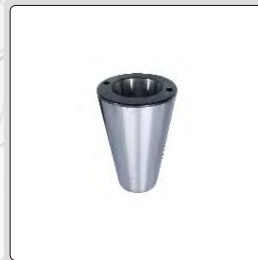
Z axis moving button  
(motor drive)

foot-switch

■ 99 data can be saved and printed



standard rod (included)



BT50/BT40 converter (optional)



BT50/BT30 converter (optional)

**SPECIFICATION**

Maximum tool diameter (X axis)		Ø300mm
Height measuring range (Z axis)		30~400mm
Accuracy	X axis	±6µm
	Z axis	±13µm
Resolution		0.5µm
Diameter of projection screen		Ø120mm
Lens	magnification	20X
	view filed	Ø6mm
Illumination		24V/20W
Spindle holder		BT50
Power supply		220V, 50/60HZ
Dimension (L×W×H)		940×520×870mm
Weight		90kg

**STANDARD DELIVERY**

Main unit	1 pc
BT50 spindle holder	1 pc
Standard rod	1 pc
Foot-switch	1 pc
Anti-dust cover	1 pc

**OPTIONAL ACCESSORY**

BT50/BT30 converter	TLP-P340-C1
BT30 rod	TLP-P340-R1
BT50/BT40 converter	TLP-P340-C2
BT40 rod	TLP-P340-R2

# TOOL PRESETTER CODE TLP-400E



rotate the handwheel to rotate tools



standard rod (included)



BT50/BT40 converter (optional)



BT50/BT30 converter (optional)

- Absolute linear scales, zero setting is not needed after power on and off

### SPECIFICATION

Maximum tool diameter (X axis)	Ø300mm
Height measuring range	60~400mm
Repeatability	0.005mm
Measuring accuracy	0.01mm
Linear scale resolution	0.001mm
Dial indicator graduation	0.001mm
Spindle holder	BT50
Power supply	110/220V, 50/60HZ
Dimension (L×W×H)	720x480x930mm
Weight	150kg

### STANDARD DELIVERY

Main unit	1 pc
BT50 spindle holder	1 pc
Standard rod	1 pc
Dial indicator	2 pcs
Wrench	1 set
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

BT50/BT30 converter	TLP-300H-C1
BT50/BT40 converter	TLP-300H-C2



## TOOL PRESETTER (BASIC TYPE) CODE TLP-300H



standard rod (included)



BT50/BT40 converter (optional)



BT50/BT30 converter (optional)

- Absolute linear scales, zero setting is not needed after power on and off

### SPECIFICATION

Maximum tool diameter (X axis)	Ø300mm
Height measuring range	60~300mm
Repeatability	0.005mm
Measuring accuracy	0.02mm
Linear scale resolution	0.005mm
Dial indicator graduation	0.01mm
Spindle holder	BT50
Power supply	110/220V, 50/60HZ
Dimension (L×W×H)	600x365x690mm
Weight	68kg

### STANDARD DELIVERY

Main unit	1 pc
BT50 spindle holder	1 pc
Standard rod	1 pc
Dial indicator	2 pcs
Wrench	1 set
Anti-dust cover	1 pc

### OPTIONAL ACCESSORY

BT50/BT30 converter	TLP-300H-C1
BT50/BT40 converter	TLP-300H-C2



**Digital Ultrasonic Flaw Detectors**  
Page 531-532



**Portable Magnetic Powder Flaw Detectors**  
Page 533



**UV Flaw Detection Lights**  
Page 534



**Penetration Standard Test Blocks**  
Page 534-535



**Black And White Densitometers**  
Page 535



## DIGITAL ULTRASONIC FLAW DETECTOR CODE UFD-T680



- The all-aluminum metal shell is strong and durable, and the electromagnetic shielding performance is very good
- Tempered glass panel, extremely hard, wear-resistant and scratch-resistant
- Full-digital multi-color high resolution (640×480 pixels) TFT LCD display
- 4 operation interface styles can be selected according to the environment
- Real-time screenshots of all pages and flaw detection reports, and save them as BMP pictures to U disk
- Export the flaw detection report as a PDF file
- Unique Fn multifunction key design
- There is no limit of the number and duration of video recording through U disk
- Memory of 500 channel files to store calibration setups and probe parameter
- Memory of 1000 wave report files to store A-Scan wave and settings
- Two fully independent gates offer a range of measurement options for signal height or distance using peak triggering
- Can choose to set the incoming wave alarm or lost wave alarm, accompanied by LED light display
- Selectable frequency ranges (automatically set by the instrument) to match probe for optimum performance
- The unique automatic gain adjustment and gain scanning function make flaw detection fast and accurate



straight-beam probe  
(included)



angle-beam probe  
(included)



USB disk  
(included)

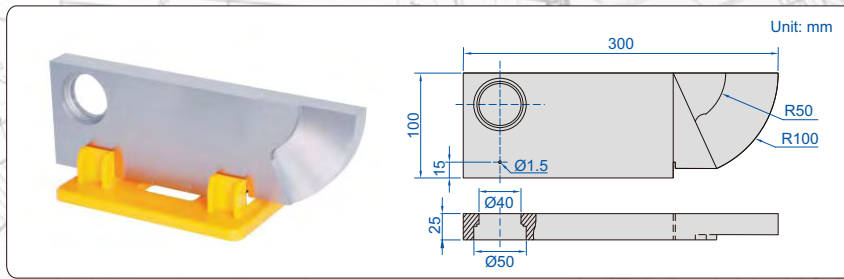


couplant (included)

### FUNCTIONS

<b>Flaw detection standard</b>	built-in common flaw detection standards, direct call, convenient and fast
<b>Auto calibration</b>	automatic calibration of probe zero offset, probe angle (K value) and material velocity
<b>Peak hold</b>	compare frozen peak waveforms to live A-Scans to easily interpret test result
<b>Flaw locating</b>	live display sound-path, projection (surface distance), depth, amplitude
<b>Flaw discrimination</b>	automatic flaw sizing using AVG or DAC, speeds reporting of defect acceptance or rejection
<b>Flaw sizing</b>	the equivalent dB value of defects or equivalent size of defects are displayed in real time
<b>Curved surface correction</b>	used for flaw detection of curved workpiece, it can display the circumferential position of defects in real time
<b>DAC/AVG</b>	the curve is automatically generated, and the sampling points can be compensated and corrected. The curve automatically floats with the gain, automatically expands with the detection distance, and automatically moves with the delay time. It can display the AVG curve of any aperture
<b>AWS D1.1</b>	choosing this standard can reduce manual calculations and improve detection efficiency
<b>Weld diagram</b>	support V type, T type, L type and other weld types, acoustic path navigation real-time display, weld and defect location real-time display, scaling, easy to locate defects
<b>Automatic rating</b>	select different AWS standards, automatically calculate the rating of defects and display
<b>Crack height</b>	the crack height is measured and calculated automatically by the diffracted wave at the end
<b>Gate magnify</b>	spreading of the gate range over the entire screen width
<b>Continuous record</b>	video recording and playback
<b>Echo coding</b>	display 1~9 echo display area in different colors, used to analyze the defect position
<b>Scan freeze</b>	display freeze holds waveform and test distance data
<b>Peak mark</b>	capture and mark the peak in real time
<b>B scan</b>	intuitively display the defect shape of the workpiece and the detection result is more intuitive

Continued from previous page



calibration block (optional)

### SPECIFICATION

Measuring range	0~15000mm
Working frequency	0.2~20MHz
Material velocity	100~20000m/s
Repetition frequency	20~2000Hz
Dynamic range	≥36dB
Vertical linearity	≤1.5%
Horizontal linearity	≤0.1%
Resolving power	>42dB
Sensitivity leavings	>65dB
Suppression	0~80%
Noise	≤10%
Probe selection	single crystal probe, dual crystal probe, penetrating probe, climbing probe
Pulse energy	100V, 200V, 250V, 300V, 350V, 400V, 450V, 500V (selectable)
Pulse width	30ns-510ns
Probe damping	50Ω, 150Ω, 250Ω, 500Ω (selectable)
Rectification	positive half wave, negative half wave, full wave, RF
Gates	two independent gates controllable over entire sweep range
Interface	USB 2.0
Operation temperature	-10~50°C
Relative humidity	20~95%RH
Power	build-in rechargeable battery
Size	263×170×61mm
Weight	1.92kg

### STANDARD DELIVERY

Main unit	1 pc
Single-element straight probe UFD-T60	1 pc
Single-element angle probe UFD-T61	1 pc
USB cable	1 pc
Couplant	1 bottle
Probe connecting cable	1 pc
USB disk	1 pc
Power adapter	1 pc

### OPTIONAL ACCESSORY

Calibration block	UFD-CSK1
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### SPECIFICATION OF PROBE

Code	Frequency	Size	Probe type	Transducer sensor angle
UFD-T60 (included)	2.5MHz	Ø20mm	single-element straight probe	90°
UFD-T61 (included)	4.0MHz	8x9mm	single-element angle probe	60°
UFD-T62 (optional)	5.0MHz	Ø10mm	dual-element straight probe	90°
UFD-T63 (optional)	5.0MHz	Ø10mm	single-element straight probe	90°
UFD-T64 (optional)	4.0MHz	8x9mm	single-element angle probe	45°
UFD-T65 (optional)	4.0MHz	8x9mm	single-element angle probe	70°

Note: Other types of the probes are available



# PORTABLE MAGNETIC POWDER FLAW DETECTORS



MPI-P110

- Conformity to standards JB/T7411-2012 ASTM E1444-05 ASTM E709 EN10228-1:1999 ISO 9934 ASTM E3024
- Multiple power supply modes available



DC battery pack 4400mAh (optional)



AC battery pack 6600mAh (optional)



A1 standard sensitivity test piece (optional)



45N lifting force test block (optional)



177N lifting force test block (optional)



magnetic pole slope angle A (optional)



magnetic pole slope angle B (optional)



bag (optional)

## SPECIFICATION

Code	MPI-P110	MPI-P220	MPI-P330
Magnetic field strength	>2KA/m		
Sensitivity	15/50 engraved groove clearly displayed on A1 standard sensitivity test piece		
Illumination	—	white light $\geq 2320$ Lux	UV lamp $\geq 5220\mu\text{W}/\text{cm}^2$
Duty cycle	>50% maximum excitation time 90 seconds		>30%
Lifting power	AC	$\geq 4.5$ kg (44N)	
	DC	$\geq 18.1$ kg (177N)	
Magnetic pole spacing	0-230mm		
Magnetic pole size	22×22mm		
Power supply	AC220V, 50Hz (DC battery pack or AC battery pack are optional)		
Operation temperature	-10~40°C		
Relative humidity	<80% (no condensation)		
Dimension (L×W×H)	235×50×195mm		
Weight	2.3kg		

## STANDARD DELIVERY

Main unit	1 pc
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## OPTIONAL ACCESSORY

DC battery pack 4400mAh	MPI-PDC440
AC battery pack 6600mAh	MPI-PAC660
A1 standard sensitivity test piece	MPI-PA1
45N lifting force test block	MPI-P45N
177N lifting force test block	MPI-P177N
Magnetic pole slope angle A	MPI-PMA
Magnetic pole slope angle B	MPI-PMB
Bag	MPI-PBG

## RECHARGEABLE UV FLAW DETECTION LIGHT CODE MPI-HF360

goggles (included)

- UV-B content is 0
- Without preheating, instant start, instant on/off, no need to wait
- Supplied with glass filter
- External surface temperature increase <8K (8°C) for continuous working



### STANDARD DELIVERY

Main unit	1 pc
Battery	2 pcs
Charger	1 pc
Goggles	1 pc

### SPECIFICATION

UV (light) Lux	about 6000 $\mu$ W/cm <sup>2</sup>
UV light power	UV LED-12VA
Covering area	diameter approximately 300mm (calibrated at 381mm distance)
FLUX error	$\pm$ 10% (at 0°C~40°C)
White light content	$\leq$ 20LUX
Lighting characteristics	center lighting
Wavelength	room temperature 25°C, 365nm $\pm$ 3nm (UVA)
Power supply	12V rechargeable lithium battery
Battery capacity	3500mAh
Charging time	3~4h
Battery life	UV LED 5~6h
Dimension	175 $\times$ 75 $\times$ 170mm
Weight	750g (including battery)

## UV FLAW DETECTION LIGHT CODE MPI-HD130



### STANDARD DELIVERY

Main unit	1 pc
Battery	2 pcs
Charger	1 pc



### SPECIFICATION

UV (light) Lux	6000~11000 $\mu$ W/cm <sup>2</sup>
UV light power	UV LED-3W
FLUX error	$\pm$ 10% (at 0°C~40°C)
Lighting characteristics	center lighting
Wavelength	room temperature 25°C, 365nm $\pm$ 3nm (UVA)
Power supply	3.7V rechargeable lithium battery
Battery capacity	2600mAh
Charging time	2h~3h
Battery life	UV LED 3h~4h
Dimension	180 $\times$ 47mm
Weight	260g (including battery)

- UV-B content is 0
- No need to wait, instantly reaches 100% power
- Supplied with glass filter
- External surface temperature increase <5K (5°C) for continuous working

## PENETRATION STANDARD TEST BLOCK CODE ISU-PB3



- Comply with ASME standard requirements
- The test block shows the number and clarity of lines of radiating cracks to determine the sensitivity level
- Suitable for verifying the sensitivity and operational accuracy of penetrants, as well as for testing the corrosion of stainless steel materials by penetrants

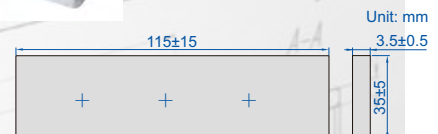


### SPECIFICATION

Type	JB/T6064 B3 type
Surface treatment	chrome plating
Material	stainless steel

### STANDARD DELIVERY

B3 test block	1 pc
B3 test block display image	1 pc

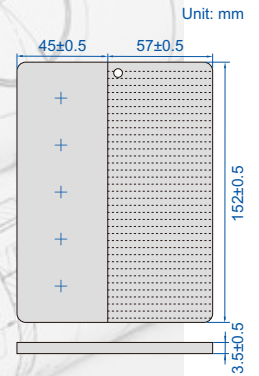






## PENETRATION STANDARD TEST BLOCK CODE ISU-PB5

- Meets NB/47013.5 and ASME standards
- This test block is a means of verifying the sensitivity and operational accuracy of the penetrant, and has a rough surface in the sandblasting area to verify the cleaning performance of the penetrant and the accuracy of the cleaning method. Its sensitivity is determined by the number of defects displayed and the diameter of each point in the radial domain. It is a functional standard test block



### SPECIFICATION

Type	JB/T6064 B5 type
Surface treatment	chrome plating
Material	stainless steel

### STANDARD DELIVERY

B5 test block	1 pc
B5 test block display image	1 pc

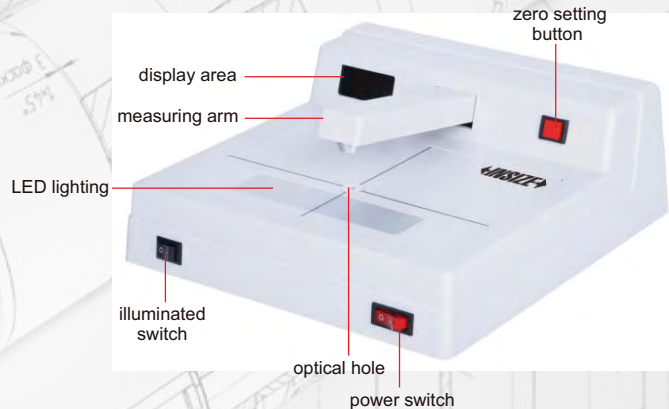
## BLACK AND WHITE DENSITOMETER CODE RXT-BM301



black and white density film  
(0.0~5.0, included)



- With accurate reading, good stability, easy to operate
- Small size, light weight, 27 LED lighting source, good shock resistance
- Comes with calibration software and standard black and white density film, allowing self calibration of instruments
- Suitable for industries such as non-destructive testing, photosensitive materials, printing, etc



### SPECIFICATION

Blackness range	D=0.00~5.00
Reading stability	±0.02
Accuracy	±0.02 (0.0<D≤2.0) ±1% (2.0<D≤4.0) ±0.05 (4.0<D≤5.0)
Optical aperture	Ø2mm
Sampling time	0.8s
Display form	three-digit display
Interface	RS232 (optional accessory USB cable)
Operation environment	0°C~40°C, relative humidity≤85%
Power supply	220V, 50/60Hz
Dimension	260×265×110mm
Weight	2.1kg

### STANDARD DELIVERY

Main unit	1 pc
Black and white density film (0.0~5.0)	1 pc
USB flash disk	1 pc
RS232 cable	1 pc

### OPTIONAL ACCESSORY

USB cable	RXT-BM301-CA
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