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
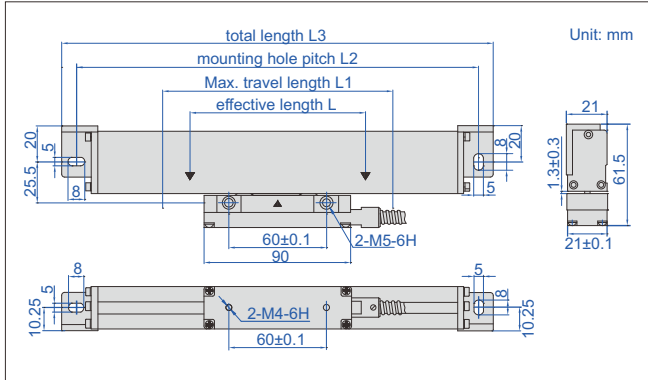
Tool Presetters
Page 527-529
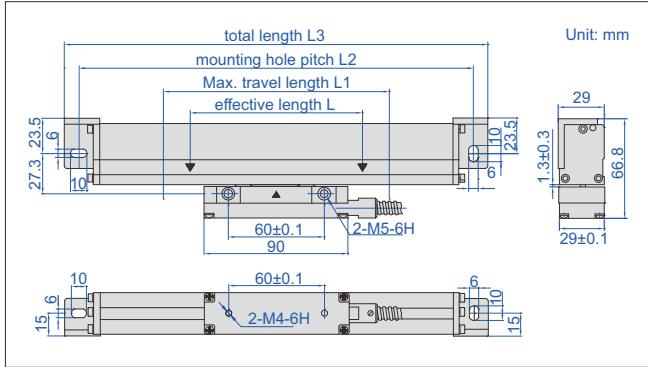
LINEAR SCALES (TTL SIGNAL)

ISL-A1-300

- Optical TTL (Through-The-Lens) detection.
  These optical TTL linear scales use an 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)
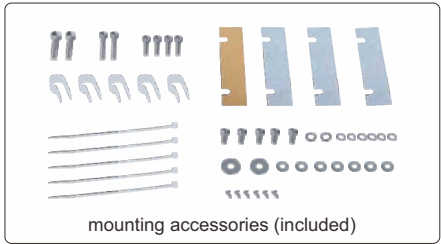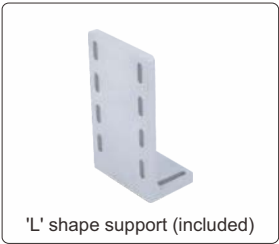
Series ISL-A1 and ISL-A5

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

'L' shape support (included)

mounting accessories (included)

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)

Unit: mm

total length L3
mounting hole pitch L2
Max. travel length L1
effective length L

27.3 23.5
6
10
10
23.5
6
29
1.3±0.3
66.8
60±0.1
90
2-M5-6H
29±0.1

10
6
15
60±0.1
2-M4-6H
6
10
15
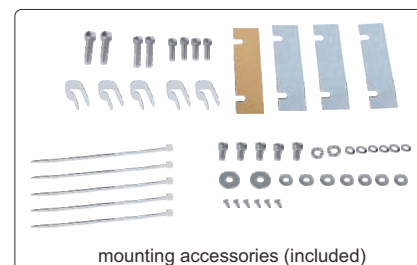
mounting accessories (included)

To be continued

anti-dust cover (included)

plain base (included, for L≥1500mm)

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

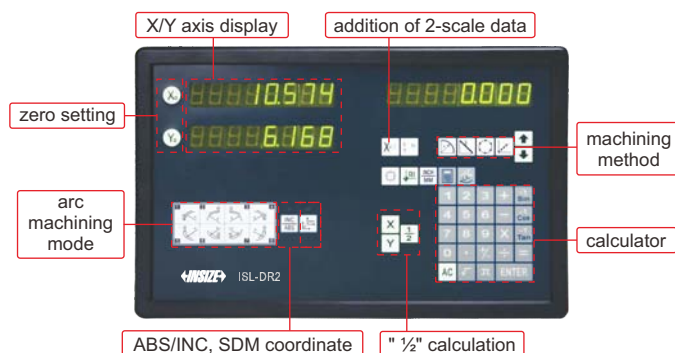| Effective length (L)	Code	
	Series ISL-B1	Series ISL-B5
1100mm	ISL-B1-1100A	ISL-B5-1100A
1200mm	ISL-B1-1200A	ISL-B5-1200A
1300mm	ISL-B1-1300A	ISL-B5-1300A
1400mm	ISL-B1-1400A	ISL-B5-1400A
1500mm	ISL-B1-1500A	ISL-B5-1500A
1600mm	ISL-B1-1600A	ISL-B5-1600A
1700mm	ISL-B1-1700A	ISL-B5-1700A
1800mm	ISL-B1-1800A	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

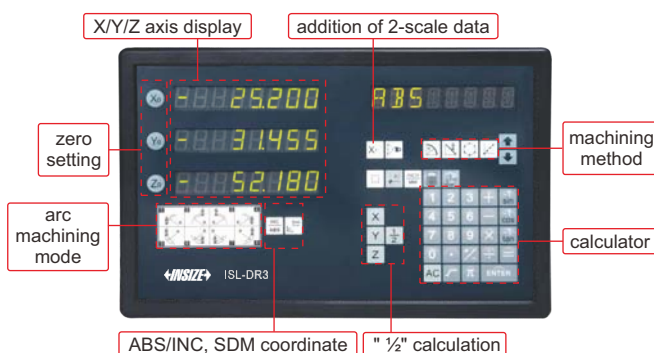| Code	Series ISL-B1	Series ISL-B5
L1 (mm)	L+30 (L≤900), L+50 (L>900)	L+30 (L≤900), L+50 (L>900)
L2 (mm)	L+136 (L≤900), L+156 (L>900)	L+136 (L≤900), L+156 (L>900)
L3 (mm)	L+154 (L≤900), L+174 (L>900)	L+154 (L≤900), L+174 (L>900)
Resolution	1µm	5µm
Thickness	29mm	
Max. response speed	60m/min	
Scale grating 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	

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

21

VIDEO

X/Y axis display

addition of 2-scale data

zero setting

machining method

arc machining mode

calculator

ISL-DR2

ABS/INC, SDM coordinate

" ½" calculation

ISL-DR2

X/Y/Z axis display

addition of 2-scale data

zero setting

machining method

arc machining mode

calculator

ISL-DR3

ABS/INC, SDM coordinate

" ½" calculation

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, "½" 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)

21
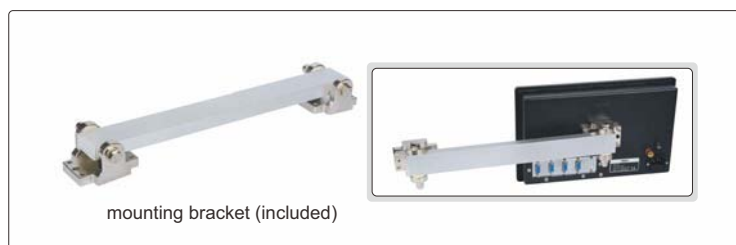
DIGITAL READOUTS
CODE ISL-LCD7

VIDEO

back

RS232 port

EDM port

X/Y/Z axis port

X/Y/Z
axis display

function select button

X/Y/Z
zero setting

"1/2" calculation
"PRE" preliminary

- 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

mounting bracket
(included)

SPECIFICATION

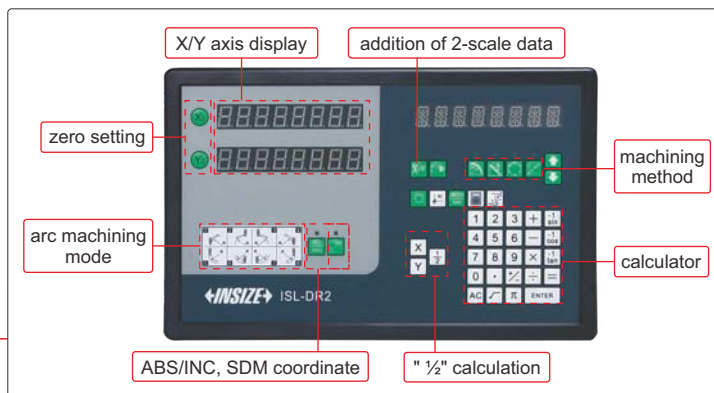| Application	three-axis: X/Y/Z
Scale input ports	3
Resolution	0.05µm, 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, 5µm, 10µm, 20µm, 50µm
Function	X/Y/Z addition of 3-scale data, linearity error compensation, smoothing, RS232C interface unit, BCD code out, zero setting, preset, resolution setting, counting direction setting, inch/mm conversion, ABS/INC conversion, expansion/sontraction coefficient setting, "½" calculation, detecting RI, 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)

X/Y axis display

addition of 2-scale data

zero setting

machining method

arc machining mode

calculator

INSIZE ISL-DR2

ABS/INC, SDM coordinate

" ½" calculation

▪ 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	1µm
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, "½" 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	20µm
Scale reference point pitch	50mm
Accuracy	±(5+5L/1000)µm 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

21

DIGITAL HORIZONTAL SCALES

DATA OUTPUT

7101-300A

type A — Unit: mm

7101-400A

type B — Unit: mm

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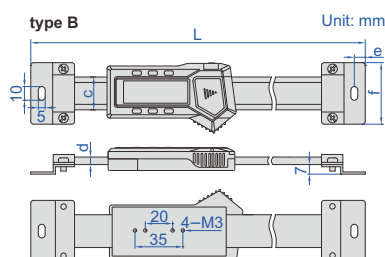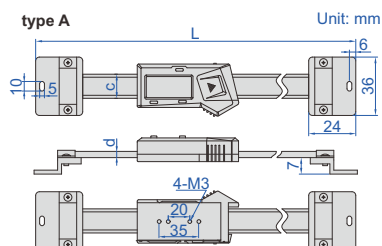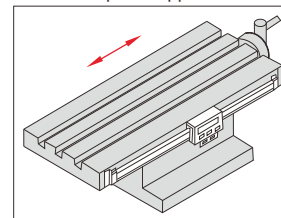
- Non waterproof
- Resolution: 0.01mm/0.0005"
- Buttons type A: on/off, zero, mm/inch,
  type B: on/off, zero, mm/inch, ABS, data preset
- Automatic power off, move the digital unit to turn on power
- Battery CR2032
- Data output
- Made of stainless steel
- Supplied with bracket to be mounted on the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

bracket (included) — Unit: mm
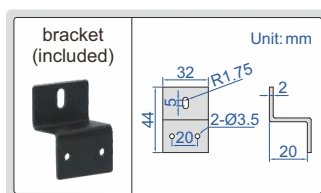
With data interface
(data output cable code 7315-21 need receiver page 4,
7302-21 page 12, **7305-21** page 8, **optional)** (mm)

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,
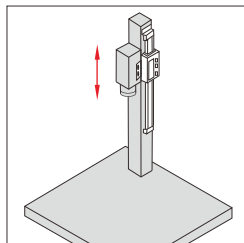**7302-22** page 12, **7305-22** page 8, **optional)** (mm)

| 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

21

DATA OUTPUT

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)

Unit: mm

(mm)
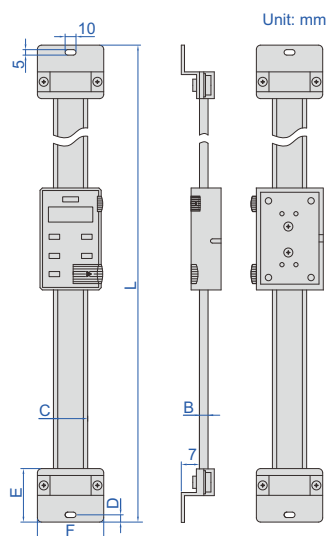
7102-300

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

bracket (included) — Unit: mm
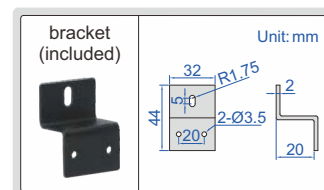
CUSTOM-MADE

AIR GAGES CODE 9401-PB

air plug gage and standard rings	air ring gage and standard plain plug gages	air snap gage and standard column gages	air taper gage and standard gages
measure diameter of hole, range: Ø4~230mm	measure diameter of shaft, range: Ø4~160mm	measure diameter of shaft, range: Ø15~160mm	

21

AIR GAGE DISPLAY
CODE 9408-QD100

DATA OUTPUT

back of display

RS485 port (connect to serial port of computer, data output)

connect to foot switch

air inlet

resolution

LED column

zero point

display

key panel

air outlet

rate regulating valve

Unit: mm

68 | 160
490 | 470
200 | 180

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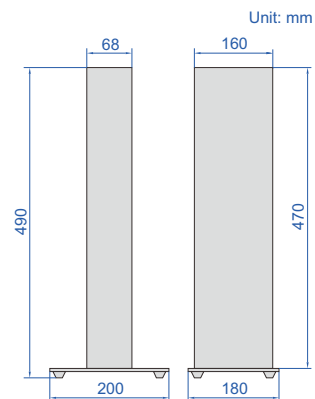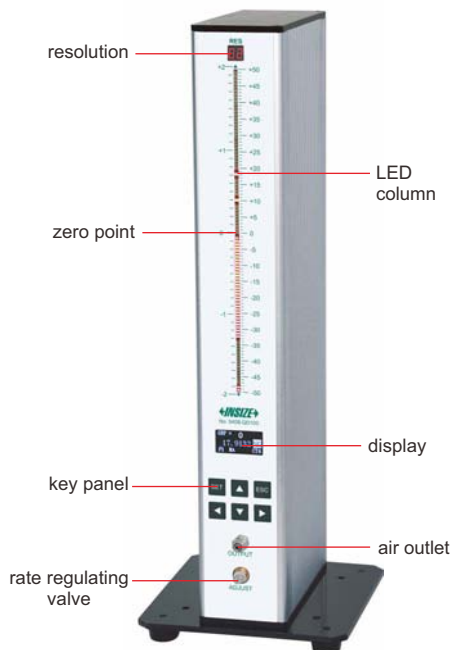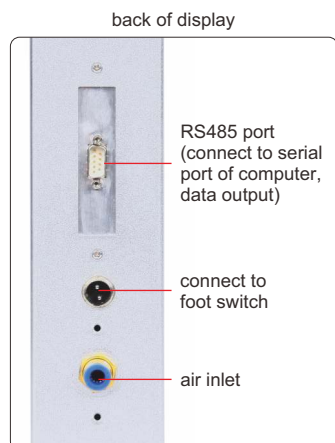
- Can store 10 measuring programs, and the program can be switched quickly
- Data storage function, support manual and automatic storing, 1500 groups data can be stored

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

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

AIR LEAKAGE TESTER
CODE ALT-P150

pressure adjustment

gas inlet

gas pressure regulator

test port
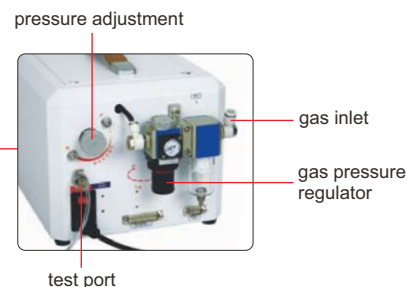
■ Smart operation system with touch screen, operation UI based on testing procedure
■ High sensitivity pressure sensor and adjustment unit with software algorithm ensure high accuracy and stability
■ Test pressure range: -100~1000kPa, positive and negative pressure mode with 8 basic test mode
■ Up to 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^2, psi, mmH$_2$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

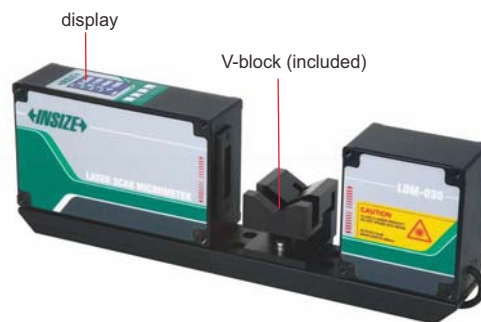### STANDARD DELIVERY

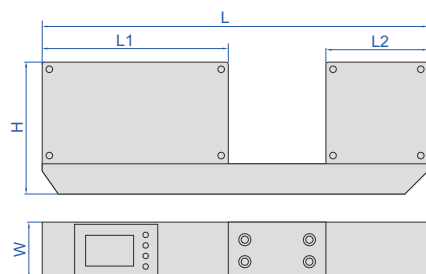|	
Main unit	1 pc
Gas pressure regulator	1 pc

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

21

LASER SCAN MICROMETERS

display

reading — **10.8955**
upper tolerance — **0.1100**
standard value — **10.3000**
lower tolerance — **-0.1000**
mode — **>>P5**

DIAMETER
UPPER
STANDARD
LOWER

display
V-block (included)

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

connect to control box (**optional**)

calibration gage (**optional**)

Dimension (mm)

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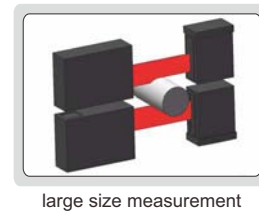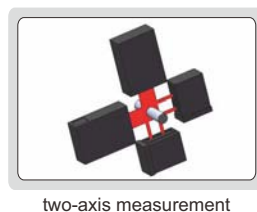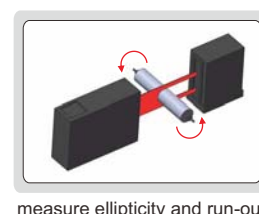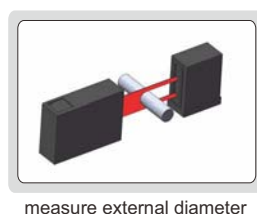
SPECIFICATION

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

21

VIDEO

digital display

key menu

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
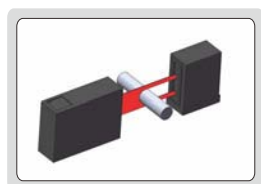
measure external diameter

large size measurement

Unit: mm

600

297.5　　181.5

185

80
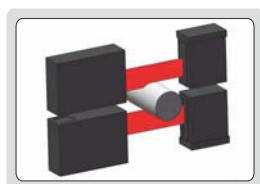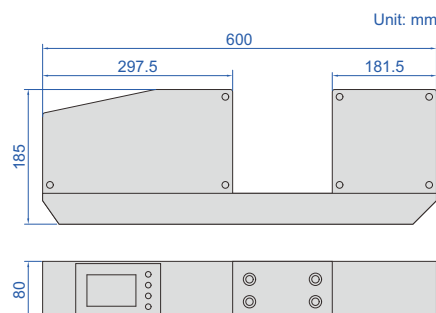
SPECIFICATION

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

21

OPTIONAL ACCESSORY

Calibration gage	custom made

SPECTROMETER
CODE OES-T350

VIDEO

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

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	**OES-T350-ARGON**
Grinding prototype	code: **OES-T350-GRIND** for ferrous metal sample preparation
Small lathe	code: **OES-T350-LATHE** for non-ferrous metal sample preparation
Argon purifier	**OES-T350-PURIFIER**

21

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

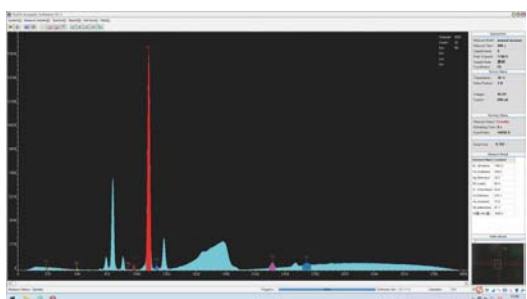**CALIBRATION CURVE CAN BE CUSTOMIZED ACCORDING TO CUSTOMER REQUIREMENTS**

alloy composition analysis software (included)
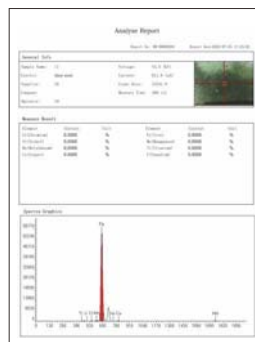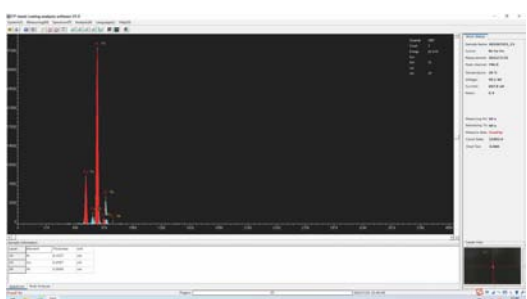

aloy composition analysis report (included)

RoHS test report (included)

RoHS test software (included)

coating thickness test report (included)

coating thickness detection software (included)

21

- 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
Softerware	RoHS test software, alloy composition analysis software, coating thickness detection software

21

IP54
WATERPROOF

HAND-HELD SPECTROMETER
CODE HSM-A310
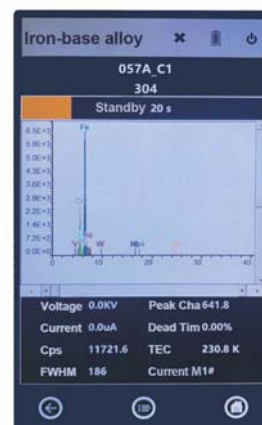
test

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

VIDEO

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 25mm²
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 processer, 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)

21

VIDEO

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

BT50 spindle holder

20X lens

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

21

TOOL PRESETTER
CODE TLP-400E

VIDEO

Z axis moving handlewheel

digital readout

Z axis quick moving knob

Z axis dial indicator

X axis dial indicator

X axis quick moving knob

BT50 spindle holder

X axis moving handwheel

rotate the handwheel

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

21

VIDEO

- Z axis moving handlewheel
- digital readout
- dial indicator
- BT50 spindle holder
- X axis moving handlewheel

hold and rotate the tools

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	60~300mm
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

21