

Ultra-High Precision Digital Laser Sensor LA-H Series



Ask SENPUM

+86-755-83330055

Fast Delivery Standard Models

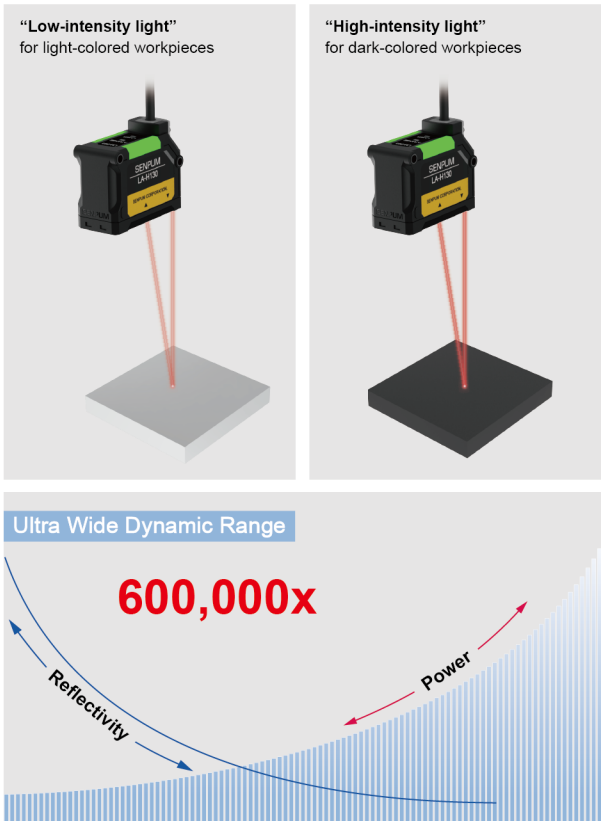


Most products are in stock. Upon receiving your order, we will arrange prompt shipment to minimize your downtime-related costs and losses.



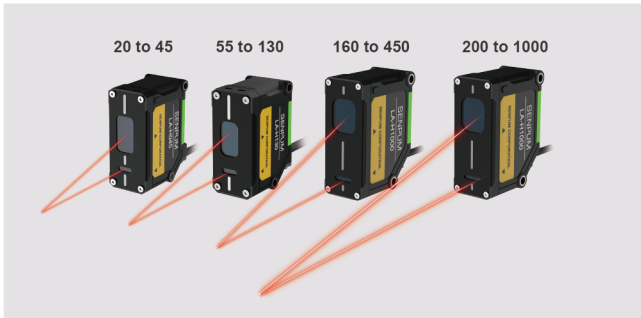
Latest light intensity control system for reliable detection of any color

Advanced technology that responds to 600,000 times the change in light intensity of the workpiece.



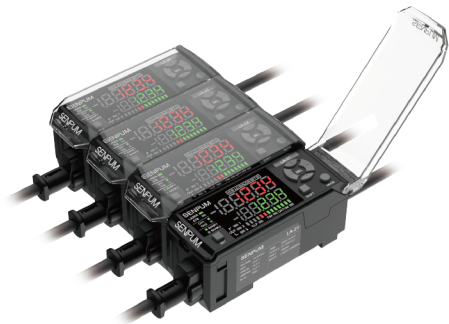
Four different sensing heads from long range to high precision detection

20 to 1000 mm detection distance to support various applications.



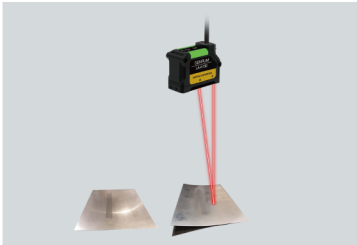
Anti-interference function

When connecting expansion units, interference is prevented between sensor heads connected to adjacent amplifiers.



- More Features
- Robust and durable
 - Detection status at a glance
 - Ultra-wide dynamic range
 - Protection class IP67

Applications



Detection of warping of sheet metal



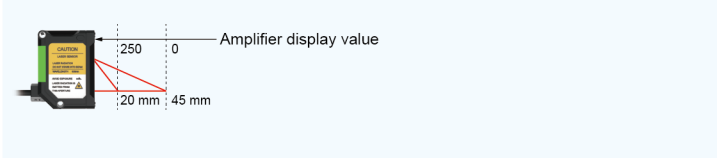
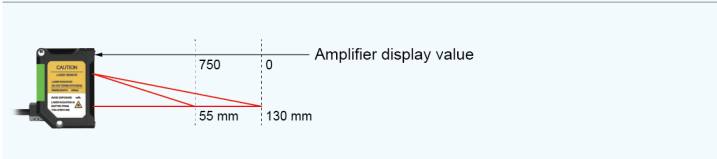
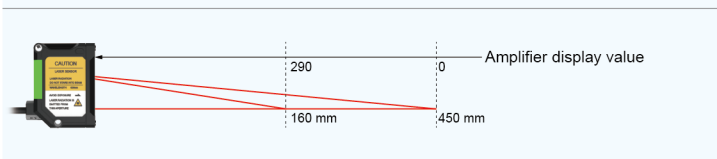
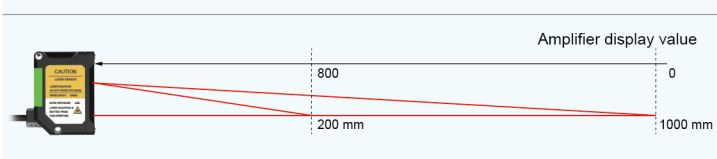
Detection of machined recesses in metal workpieces



Detection of the presence of weld nuts

Product List

Sensor Head

Appearance	Standard detection deviation	Measuring distance (mm)	Laser classification	Model
	0.5 mm	20 to 45	Class 2	LA-H45
			Class 1	LA-H45L
	1 mm	55 to 130	Class 2	LA-H130
			Class 1	LA-H130L
	3 mm	160 to 450	Class 2	LA-H450
			Class 1	LA-H450L
	20 mm (detection distance is 200 to 800 mm) 30 mm (detection distance is 800 to 1000 mm)	200 to 1000	Class 2	LA-H1000
			Class 1	LA-H1000L

Controller

Appearance	Type	Output method	Model
	DIN rail mounting	NPN	LA-21
		PNP	LA-21P
		NPN	LA-22
		PNP	LA-22P

Cable (connecting cable between sensor head and controller) (sold separately)

Appearance	Sensor side	Cable termination	Material	Cable length	Model
	M8 4-Pin Straight	Controller	Highly flexible drag chain type	2 m	OW-LAH2000
				5 m	OW-LAH5000
				10 m	OW-LAH10M
				20 m	OW-LAH20M

Laser Sensors

- LA2-ZB
- LA-ZB
- LO-Z
- LA-ZH
- LA-X
- LA-N
- LA-H
- LA2-S
- LA3-P
- LA-MR
- LA-T

- Fiber Optic Sensors
- Photoelectric Sensors
- Color Sensors

Laser Sensors

- Proximity Sensors
- Precision Contact Sensors
- Area Sensors/ Safety Light Curtains
- Laser Scanners
- Digital Contact Sensors
- Laser Displacement Sensors
- Laser Micrometers
- Confocal Displacement Sensors
- Barcode Readers
- AI Vision Sensors
- RFID
- Infrared Temperature Sensors
- Pressure Sensors
- Flow Sensors
- Magnetic Sensors
- Ultrasonic Sensors
- Magnetic Scales
- Static Eliminators



LA2-ZB

LA-ZB

LO-Z

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Ultrasonic Sensors

Magnetic Scales

Static Eliminators



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LA-H

Ultra-High Precision Digital Laser Sensor

Specifications

Sensor Head

Model		LA-H45	LA-H45L	LA-H130	LA-H130L	LA-H450	LA-H450L	LA-H1000	LA-H1000L
Detection distance (mm) (Amplifier display value)		20 to 45 (25.00 to 0.00)		55 to 130 (75.00 to 0.00)		160 to 450 (290.0 to 0.0)		200 to 1000 (800.0 to 0.0)	
Amplifier display range		25.90 to -3.40		76.80 to -9.80		295.0 to -50.0		810.0 to -175.0	
Light source	Type	Red laser (639 nm)							
	Laser type	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2	Class 1
	Output	400 uW	250 uW	400 uW	250 uW	600 uW	250 uW	600 uW	250 uW
Repeatability*1		0.01 mm		0.02 mm		0.3 mm			
Standard detection deviation		0.5 mm		1 mm		3 mm		20 mm (detection distance is 200 to 800 mm) 30 mm (detection distance is 800 to 1000 mm)	
Protection class		IP67							
Ambient temperature		-10 to +50 °C (no freezing)							
Relative humidity		35 to 85% RH (no condensation)							
Ambient light		Incandescent lamp: 7,500 lux; Sunlight: 10,000 lux							
Material		Housing: PBT; Indicator cover: PC; Lens cap: Glass; Cable: PVC							
Line length		160 mm							
Weight		Approx. 60 g		Approx. 80 g		Approx. 130 g			
Mounting bracket (sold separately)		OW-LAH001		OW-LAH002		OW-LAH003			

** This is data from SENPUM measurements of standard targets (white diffuse objects).

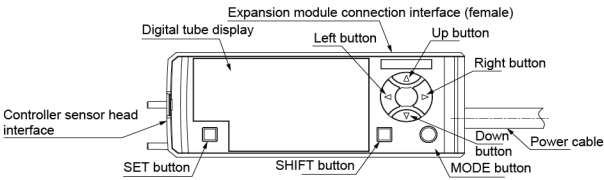
Controller

Model	NPN	LA-21	LA-22
	PNP	LA-21P	LA-22P
Main module/Expansion module		Main module	Expansion module
Mounting type		DIN rail mounting	
Sensing head compatibility		Available	
Display	Minimum display unit	LA-H45 / LA-H45L: 0.01 mm, LA-H130 / LA-H130L: 0.01 mm	
		LA-H450 / LA-H450L: 0.1 mm, LA-H1000 / LA-H1000L: 0.2 mm	
	Display range	LA-H45 / LA-H45L: 25.90 to -3.40, LA-H130 / LA-H130L: 76.80 to -9.80	
		LA-H450 / LA-H450L: 295.0 to -50.0, LA-H1000 / LA-H1000L: 810.0 to - 175	
Display rate		Approx. 10 times/sec	
Control input	Channel switching input	NPN: On at 0 V, OFF at 24 V PNP: On at 24 V, OFF at 0 V	
	Zero drift input		
	Launch stop input		
	Timer input		
Control output**	Judgment output	Open collector, 50 mA max (NPN/PNP; NO/NC, switchable)	
Power supply	Power voltage**	10 to 30 VDC including ripple (P-P) 10% Class 2 or less	Power supply through the main unit
	Power consumption (without load)	1950 mW or less (at 30 V, 65 mA max.)	1800 mW or less (at 30 V, 60 mA max.)
Ambient temperature		-10 to +50 °C (no freezing)	
Ambient humidity		35 to 85% RH (no condensation)	
Vibration resistance		10 to 55 Hz, Double amplitude 1.5 mm, 2 hours in each of the X, Y, and Z directions	
Material		Housing: polycarbonate; Pushbuttons: polyacetal; Cable: PVC	
Cable length		2 m	
Weight (including accessories)		Approx. 150 g	Approx. 140 g

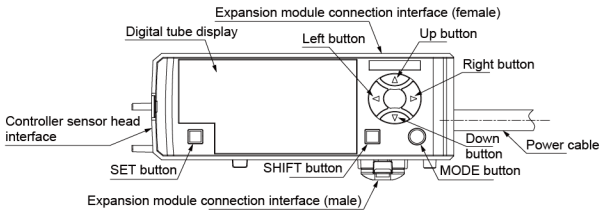
** When connecting extension devices, the following restrictions apply depending on the number of connected units. When connecting 2 to 8 units (including the main unit):
- Power supply voltage: 20 to 30 VDC
- Control output current: Maximum 20 mA

Control Panel Description

LA-21 / 21P

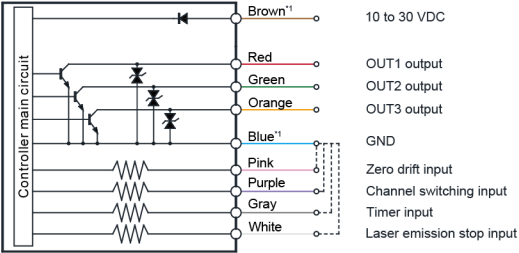


LA-22 / 22P



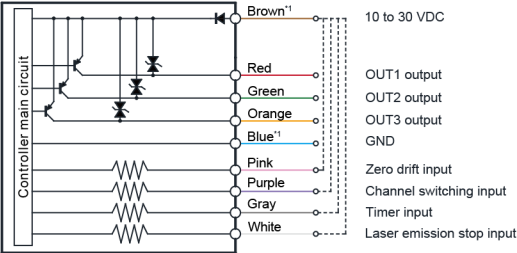
I/O Circuit Diagrams

NPN



*1 Main unit only.

PNP



*1 Main unit only.

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- LA3-P
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- Laser Micrometers
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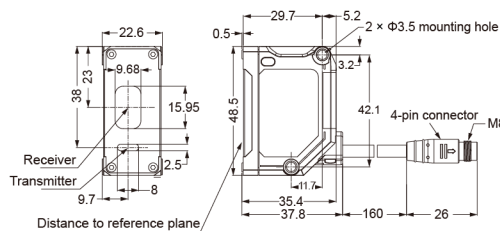
LA-H

Ultra-High Precision Digital Laser Sensor

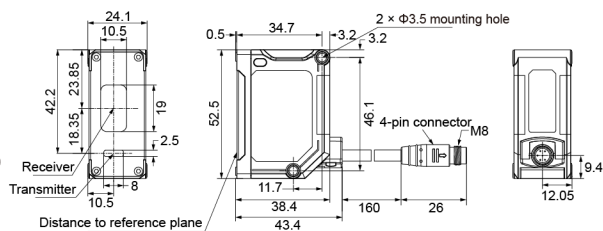
Dimensions

Unit: mm

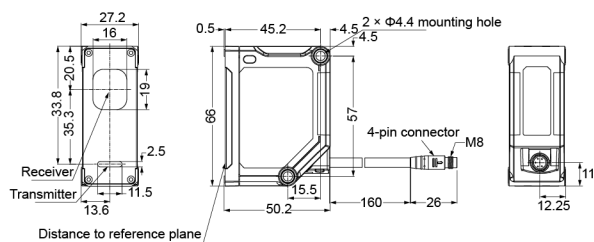
Sensor Head LA-H45/45L



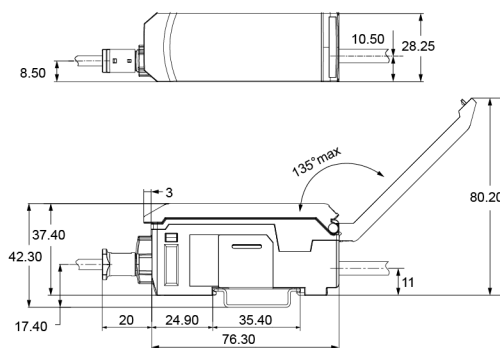
LA-H130/130L



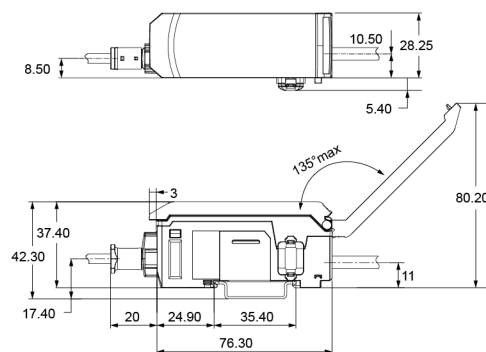
LA-H450/450L / LA-H1000/1000L



Controller LA-21 / 21P



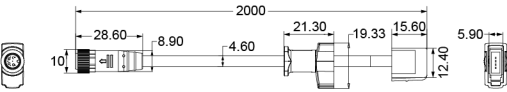
LA-22 / 22P



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Dimensions

Cable (sold separately)
OW-LAH2000 / OW-LAH5000 / OW-LAH10M / OW-LAH20M

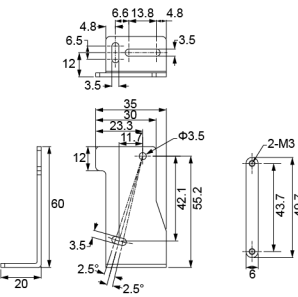


Pin definition

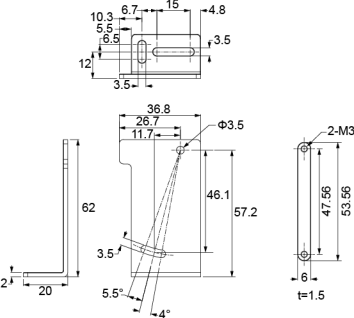


No.	Jacket color
①	Brown
②	Orange
③	Blue
④	Black

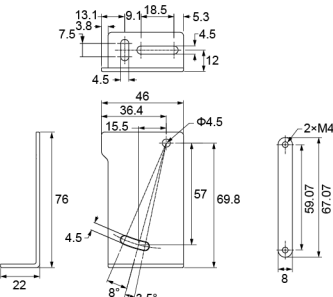
Mounting Bracket (sold separately)
OW-LAH001



OW-LAH002



OW-LAH003



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