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Think Automation and beyond...

IDEC



LH1D Series
Surface Mount Indicators

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IDEC CORPORATION

(100506)

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IDEC LED Spider



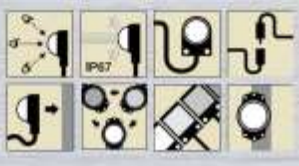
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New ø66 Jumbo Dome Ideal for Mounting on



ø66 Jumbo Dome Type





Color Variation

Amber	Green	Pure White	Red
Blue	White	Yellow	

Two- and three-color alternate illumination also available.

Excellent Visibility
From the front and the side.



IP67 Protection
Can be used in environments subject to washdown.



Cable Wiring
Integrated wiring ensures waterproof characteristics.



Connector Wiring
Connector types available for easy maintenance.
*Jumbo dome type only



Direct Surface Mounting
Requires only a small space behind the mounting surface, and can be installed without concern for other components behind.



Red/Green
Two-color alternate illumination available.



Three-color Alternate Illumination
Two combinations available: red, green and white; and red, green and pure white.
*Jumbo dome type only



Seven Colors
Amber, green, pure white, red, blue, white, and yellow



Legends
Marking film can be inserted into the flat type.
*Flat type only.



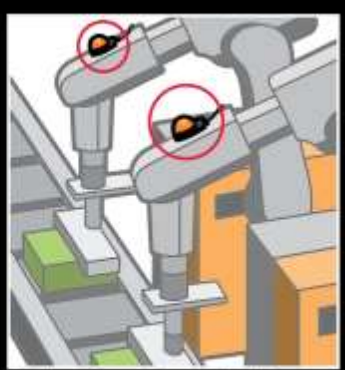
Slim Profile
Can be installed in small areas. Only 10.8 mm in height.
*Flat type only.



Direct Mounting on Aluminum Frames
Installation is improved by the increased number of mounting holes.
*Jumbo dome type only

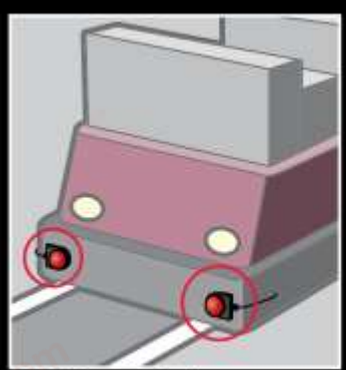


Application Examples



Robot Arm Status Indicator

Indicates the operating status of the motor.



AGV Status Indicator

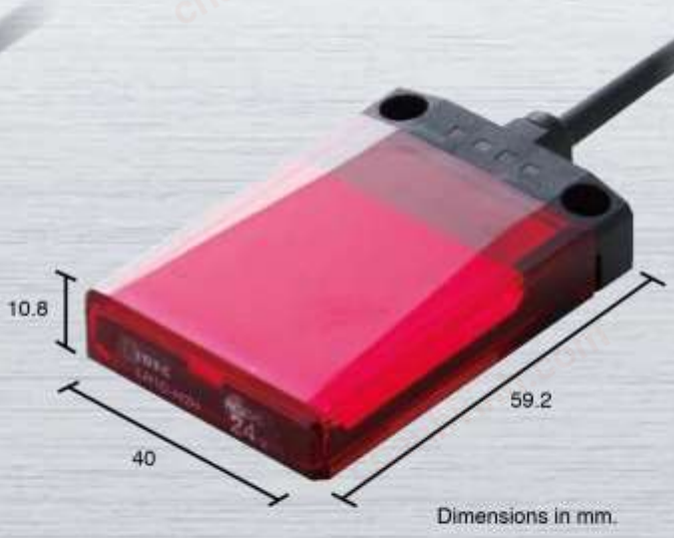
Can be used as a directional indicator on automatic guided vehicles.

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Indicators with Excellent Visibility. Large Equipment.

With increasing awareness on safety at production sites, equipment must be designed to be clearly visible and capable of delivering correct information.
With an innovative design, slim and stylish IDEC LED Spiders are ideal for various applications.

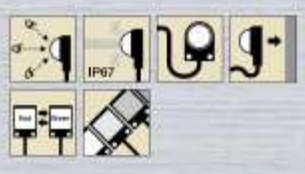




Dimensions in mm.

Dome Type





Color Variation

Amber	Green	Pure White	Red
Blue	White	Yellow	

Flat Type

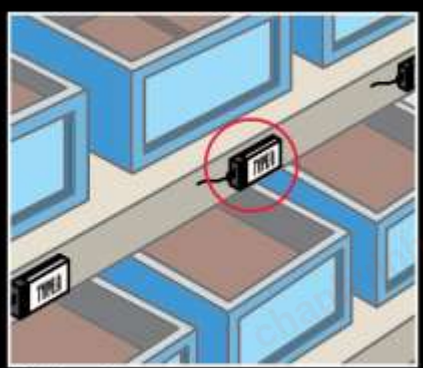




Color Variation

Amber	Green	Pure White	Red
Blue	White	Yellow	

Two-color alternate illumination also available.



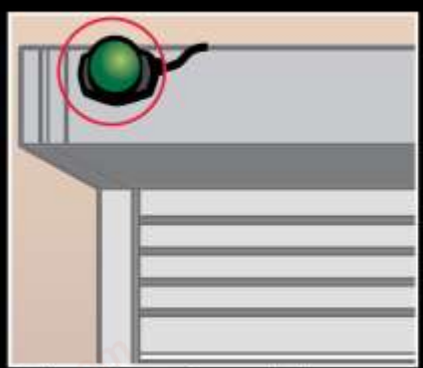
Picking System

Can be used to select picking locations.



Door Monitoring

Indicates whether a door can be opened or closed.



Roller Shutter Status Indicator

Indicates the operating status of a roller shutter.

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LH Series Surface Mount Indicators

Innovative indicators with IP67 protection and integrated cable wiring. Directly mountable on equipment and aluminum frames (jumbo dome types).



- Surface mount style does not affect the location of other components. Requires only a small space behind the mounting surface.
- Integrated cable wiring ensures waterproof characteristics. 1m, 3m, and 5m cables available. M12 connector cable (30 cm) available for jumbo dome type.

Standards	Marks	File No. or Organization
UL508 CSA C22.2 No.14	c UL us LISTED	UL/c-UL File No. E68961
EN60598-2-1	TÜV	TÜV SÜD
EN60598-2-1 EN60947-5-1	CE	EC Low Voltage Directive

- IP67 (IEC60529) rated. Can be used in environments subject to washdown.
- Slim design well suited for installation in small spaces.
- Excellent visibility from the front and from the side.
- Legends and symbols can be printed on marking film to customize flat type.
- Two-color alternate illumination available for all types. Three-color alternate illumination available with jumbo dome type.

Standards

- LH series surface mount indicators are approved by TÜV as class III lighting fixtures.

Type	Cable	Connector
Rated Insulation Voltage (Ui)	32V	
Rated Voltage	24V AC/DC	24V DC
Operating Voltage Range	24V AC/DC ±10%	24V DC ±10%
Rated Current	17 mA	
Maximum Current Draw	0.6W	

Specifications

- Use Class 2 power supply when using the LH1D as a UL compliant product.
- Use Class III circuit when using the LH1D as an EN compliant product.
- 24V AC, 50/60 Hz
- M12 connectors are available for jumbo dome types only.

Specifications

Applicable Standards	IEC60947-5-1, IEC60947-1 EN60947-5-1, EN60947-1 EN60598-2-1 UL508, CSA C22.2 No.14
Operating Temperature	–20 to +55°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
Storage Temperature	–30 to +80°C (no freezing)
Impulse Withstand Voltage (illuminating part)	800V
Insulation Resistance	Between live and dead parts: 100 MΩ minimum
Dielectric Strength	Between live and dead parts: 2000V, 50/60 Hz , 1 minute
Pollution Degree	3
Vibration Resistance	5 to 55 Hz, amplitude 0.5 mm
Shock Resistance	1000 m/s^2
Degree of Protection	IP67 (IEC60529) NEMA Type 4X Indoor Use Only (Note)
Housing Color	Black
LED Lamp Life	Approx. 50,000 hours (When used on complete DC at 25°C, brightness reduces to 50% of the initial intensity.)
Weight	140g (jumbo dome type, 1m cable) 50g (dome type, 1m cable) 50g (flat type, 1m cable)

Type		Jumbo Dome	Dome / Flat
Illumination Colors	Single Color	A (amber), G (green), PW (pure white), R (red), S (blue), W (white), Y (yellow)	
	Two-Color Alternate	A/G, A/W, A/PW, R/G, R/W, R/PW, G/W, G/PW	R/G
	Three-Color Alternate	R/G/W, R/G/PW	

Type		Jumbo Dome	Dome/Flat
Cable	Single Color	UL20276, 21 AWG, 3-core Cable outside diameter: ø4.9 mm Allowable cable bending radius: 30 mm	UL20276, 24AWG, 3-core Cable outside diameter: ø4.1 mm Allowable cable bending radius: 24.6 mm
	Two-Color Alternate		
	Three- Color Alternate	UL20276, 22AWG, 4-core Cable outside diameter: ø5.0 mm Allowable cable bending radius: 30 mm	
Connector		20AWG, 4-core Cable length: 0.3m Cable outside diameter: ø6.0 mm Allowable cable bending radius: 40 mm M12 one-touch connector	

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Note: Jumbo dome type is NEMA Type 1 under UL listing.

Jumbo Dome Type

Shape	Types		Ordering Type No.	Illumination Color
Jumbo Dome (ø66) One color 	Cable	1m	**LH1D-D3HQ4C10**①	Specify a color code in place of ① in the Type No. Color code: A, G, PW, R, S, W, Y
		3m	**LH1D-D3HQ4C30**①	
		5m	**LH1D-D3HQ4C50**①	
	Connector		**LH1D-D3HQ4CN1**①	
Jumbo Dome (ø66) 2-color alternate 	Cable	1m	**LH1D-D3HQ4C10**①②	Specify a color code in place of ①/② in the Type No. Color code: R/G, G/W, R/W, A/G, A/W, R/PW, G/PW, A/PW (Two-color alternate)
		3m	**LH1D-D3HQ4C30**①②	
		5m	**LH1D-D3HQ4C50**①②	
	Connector		**LH1D-D3HQ4CN1**①②	
Jumbo Dome (ø66) 3-color alternate 	Cable	1m	**LH1D-D3HQ4C10**①②③	Specify a color code in place of ①/②/③ in the Type No. Color code: R/G/W, R/G/PW (Three-color alternate)
		3m	**LH1D-D3HQ4C30**①②③	
		5m	**LH1D-D3HQ4C50**①②③	
	Connector		**LH1D-D3HQ4CN1**①②③	

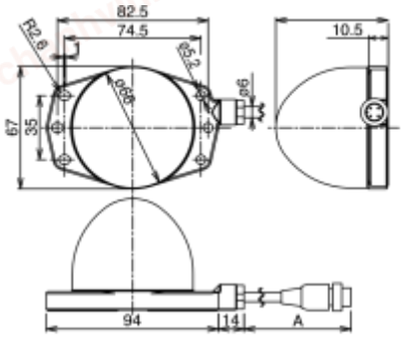
Types

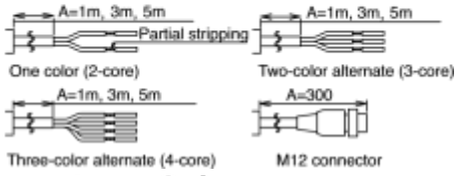
Package Quantity: 1

- Color code: A (amber), G (green), PW (pure white), R (red), S (blue), W (white), Y (yellow).
- For orange, specify “A ” (for amber).

Dimensions

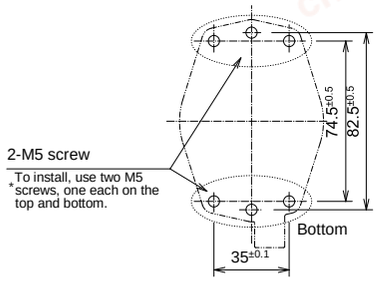
Top





61.5All

dimensions in mm.



Mounting Hole Layout

Lens Colors

	Illumination Color	Lens Color
One Color	Amber (A) Green (G) Pure White (PW) Red (R) Blue (S) White (W) Yellow (Y)	Amber Green White Red Blue White Yellow
Two-color Alternate	Red (R) / Green (G) Green (G) / White (W) Red (R) / White (W) Amber (A) / Green (G) Amber (A) / White (W) Red (R) / Pure White (PW) Green (G) / Pure White (PW) Amber (A) / Pure White (PW)	White White White White White White White White
Three-color Alternate	Red (R) / Green (G) / White (W) Red (R) / Green (G) / Pure White (PW)	White White

Internal Circuit

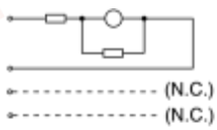
- **One-color Illumination**

LED module (color: ①)

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Cable color: White / Connector pin No. 4

Cable color: Brown / Connector pin No. 3
Cable color: Green / Connector pin No. 2
Connector pin No.1

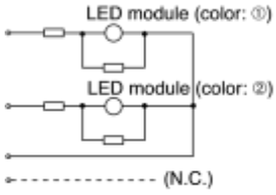


• Two-color Alternate Illumination

Cable color: White / Connector pin No. 4

Cable color: Green / Connector pin No. 2

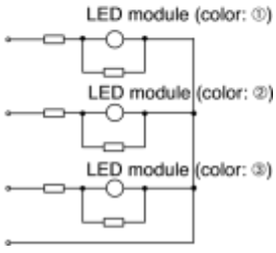
Cable color: Brown / Connector pin No. 3
Connector pin No. 1



• Three-color Alternate Illumination

Cable color: White / Connector pin No. 4

Cable color: Green / Connector pin No. 2



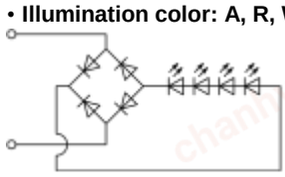
Note: For the schematic of the LED module, see "LED Module Internal Circuit" on the right.

Cable color: Yellow / Connector pin No. 1 Cable color: Brown / Connector pin No. 3

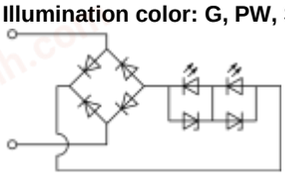
LED Module Internal Circuit

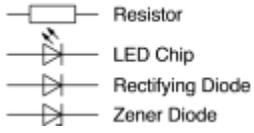
The schematic of the LED module internal circuit differ depending on the illumination color.

• Illumination color: A, R, W



• Illumination color: G, PW, S





LH Series Surface Mount Indicators

Dome Type

Types

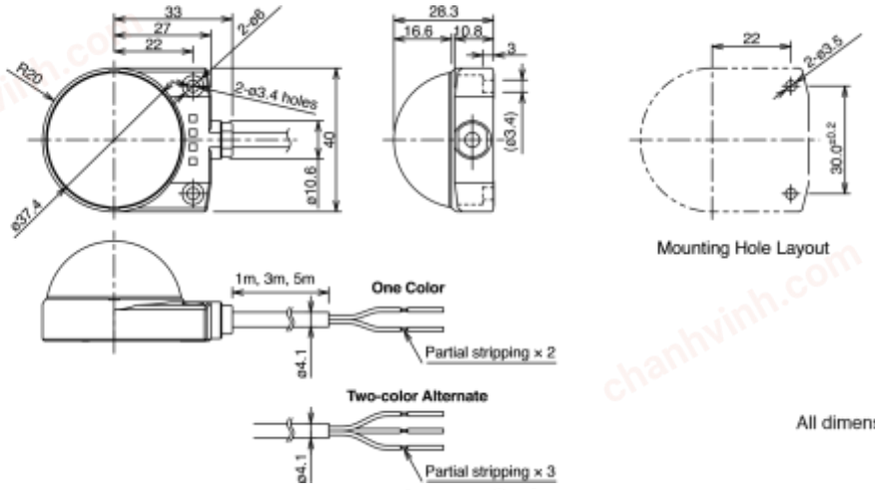
Package Quantity: 1

Shape	Cable	Ordering Type No.	Illumination Color
Dome ø37 One Color 	1m	**LH1D-D2HQ4C10①**	Specify a color code in place of ① in the Type No. A: amber G: green PW: pure white R: red S: blue W: white Y: yellow
	3m	**LH1D-D2HQ4C30①**	
	5m	**LH1D-D2HQ4C50①**	
Dome ø37 Red/Green 2-color alternate 	1m	**LH1D-D2HQ4C10RG**	R (red) / G (green) 2-color alternate illumination
	3m	**LH1D-D2HQ4C30RG**	
	5m	**LH1D-D2HQ4C50RG**	

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• For orange, specify “A” (for amber).

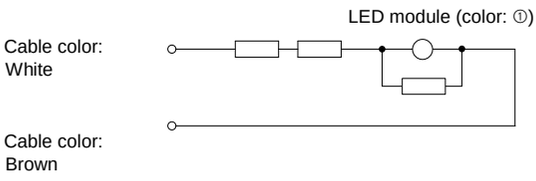
Dimensions



All dimensions in mm.

Internal Circuit

• One-color Illumination

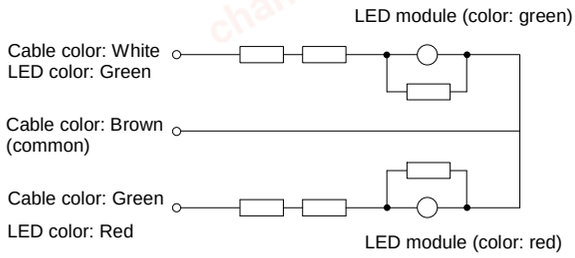


Lens Colors

Illumination Type	Illumination Color	Lens Color
One Color	Amber (A) Green (G) Pure White (PW) Red (R) Blue (S) White (W) Yellow (Y)	Amber Green Clear (Note) Red Blue Clear (Note) Yellow
Two-color Alternate	Red (R) / Green (G)	Clear (Note)

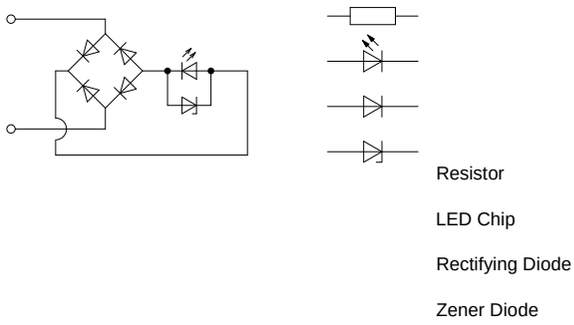
Note: Because lenses have a white diffusion cover inside, pure white, white, and red/green types appear white when the light is off.

• Two-color Alternate Illumination



Note: For the schematic of the LED module, see "LED Module Internal Circuit" on the right.

LED Module Internal Circuit



LH Series Surface Mount Indicators

Flat Type

Types

Package Quantity: 1

Shape	Cable	Ordering Type No.	Illumination Color
Flat  One Color	1m	**LH1D-H2HQ4C10①**	Specify a color code in place of ① in the Type No. A: amber G: green PW: pure white R: red S: blue W: white Y: yellow
	3m	**LH1D-H2HQ4C30①**	
	5m	**LH1D-H2HQ4C50①**	
Flat Red/Green	1m	**LH1D-H2HQ4C10RG**	R (red) / G (green) 2-color alternate illumination
	3m	**LH1D-H2HQ4C30RG**	

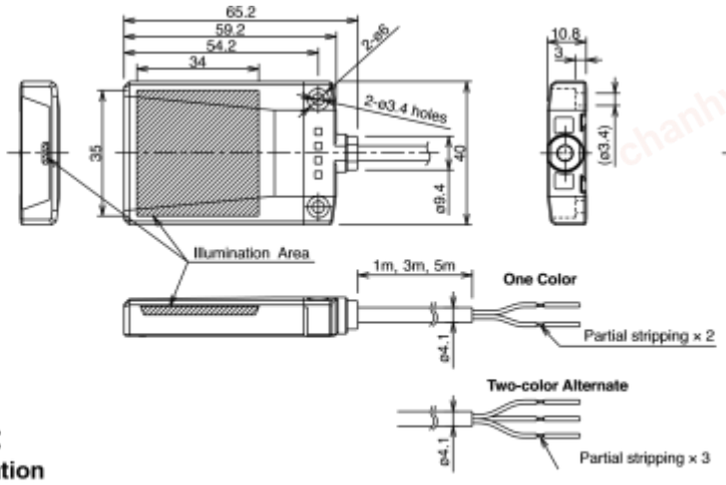
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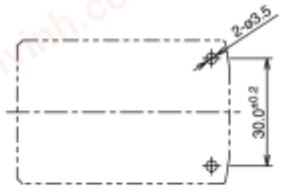
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2-color Alternate		5m	**LH1D-H2HQ4C50RG**	

• For orange, specify “A” (for amber).

Dimensions



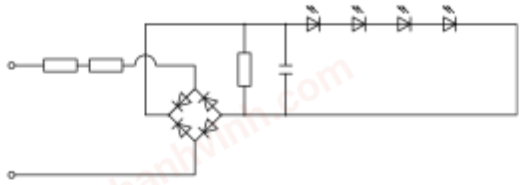


Mounting Hole Layout

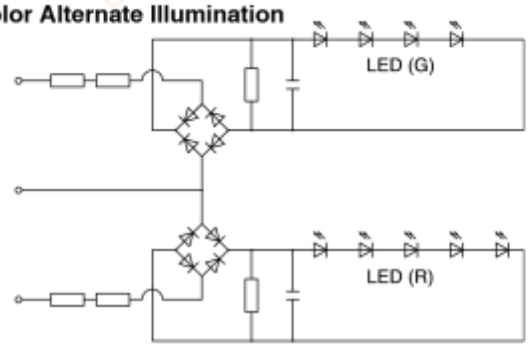
All dimensions in mm.

Internal Circuit

• One-color Illumination



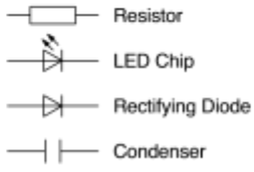
• Two-color Alternate Illumination



Green
LED color:
Red

Lens Colors

Illumination Type	Illumination Color	Lens Color
One Color	Amber (A)	Amber
	Green (G)	Green
	Pure White (PW)	Clear
	Red (R)	Red
	Blue (S)	Blue
	White (W)	Clear
	Yellow (Y)	Yellow
Two-color Alternate	Red/Green	Clear



Replacement Parts

Cable color:
White

Cable color:
Brown

Cable color:
White
LED color:
Green

Cable color:
Brown
(common)

Cable color:

(100506)

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Shape	Material	Ordering Type No.	Lens Color
Lens (flat type) 	Polyarylate	**LH9Z-1DLH2①**	For flat type. Specify a color code in place of ① in the Type No. A: amber C: clear G: green R: red S: blue Y: yellow Note: Use C (clear) lens for R / G (red/green alternate), W (white), or PW (pure white) illumination.

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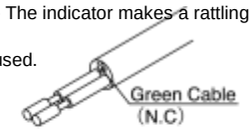
LH Series Surface Mount Indicators

Safety Precautions

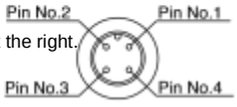
- Do not disassemble, repair, or modify the LH1D indicator, otherwise electric shock, damage, fire, or malfunction may occur.
- Do not pull out or push in the cable of the LH1D indicator, otherwise damage may occur. Provide a slack in the cable while wiring.
- The LH1D indicator is a general-purpose and industrial electronic device. Do not use the LH1D indicator for electronic equipment which may damage the human body or threaten life in case of malfunction or failure.

Operating Instructions

- LED elements may vary in colors and brightness.
- The LH1D indicator is vulnerable to static electricity. Take sufficient protection against static electricity and spikes.
- For one-color illumination of cable types, the green wire is cut short because it is not used. When cutting the cable for shorter wiring, cut the green wire short or make sure that the green wire is not used.

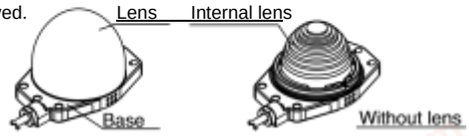


- The pin layout of connector type is shown at the right.



- Excessive shock to the LH1D may cause damage or failure, and the internal lens may fall off even if no detects are found externally. The internal lens may have fallen off when:
  · The illumination varies greatly when viewed from the side.
  · The indicator makes a rattling sound when shaken

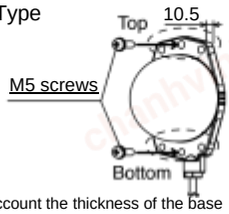
When any of the above is observed, contact IDEC.
Note: Do not remove the lens.
The specified degree of protection cannot be assured when the lens is removed.



Panel Mounting

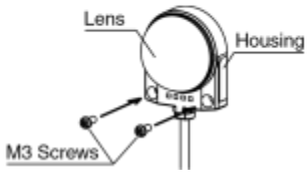
Using two M3 screws (M5 screws for jumbo dome types), install the LH1D indicator to a mounting surface. Tighten the screws to a torque of 0.6 N•m maximum (1.0 to 1.4 N•m for jumbo dome types). Mounting screws are not provided and must be supplied by the user.

- Jumbo Dome Type



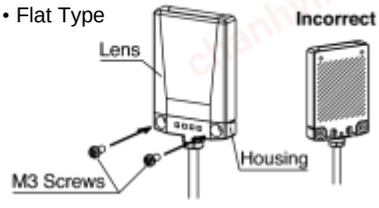
Note 1: Take into account the thickness of the base (10.5 mm), when selecting the length of the screws.

- Dome Type



Note: The dome lens is not removable. Do not attempt to remove the lens, otherwise damage will occur.

- Flat Type



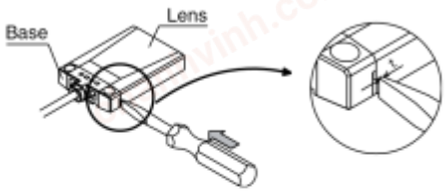
Note 1: Do not install the LH1D indicator by attaching only the lens, such as by taping down the lens. Otherwise internal components may come loose.
Note 2: Take appropriate anti-loosening measures such as spring washers and screw locks.
Note 3: Install the LH1D using two M5 screws, one each on the top and the bottom.
Note 2: Make sure that the back of the indicator is securely attached to the mounting surface, so that the lens cannot be easily removed.

Inserting Marking Film into Flat Type Lens

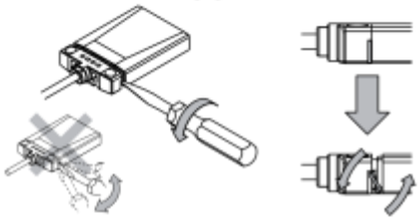
1. Insert a flat screwdriver into the groove between the base and lens.
4. Insert the edge of a marking film into the gap between the base and the dif-

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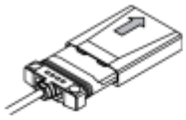
Do not use flat screwdrivers with a tip width of 1.0 mm or more.



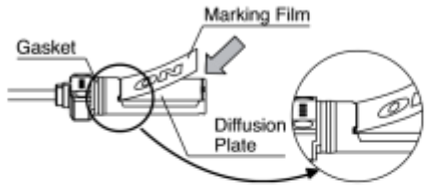
2. Twist the screwdriver and disengage the lens from the base.



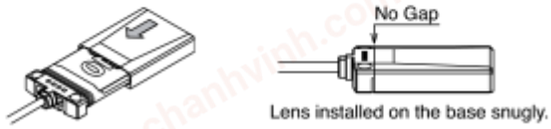
3. Remove the lens from the base.



fusion plate, and place the marking film on top of the diffusion plate.



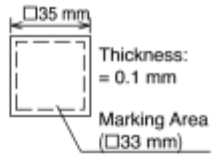
5. Install the lens. Ensure that the lens is installed snugly.



Note 1: Do not touch the gasket, as this may affect its waterproof characteristics.
Note 2: Do not touch the diffusion plate.

Markings

Legends and symbols can be printed on marking film for the flat lens. One 0.1mm-thick film can be installed. Marking film is not attached and must be supplied by the user.
Recommended marking film: Polyester



Specifications and other descriptions in this catalog are subject to change without notice.

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