

Waterproof

IP67 Lights (Waterproof Type)

HLDR-IP Series / HSL-PCL Series

HLDR-IP Series

Provides diffused light converged by a lens



HLDR-IP67-100RD



HLDR-IP67-100SW



HLDR-IP67-100UV2-365

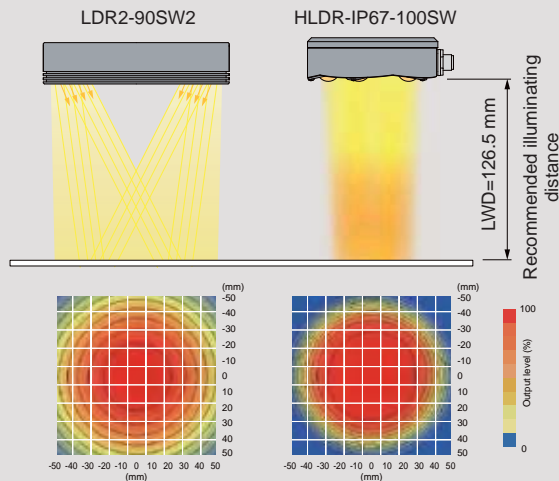
Applications

Fault inspection for metal parts, visual inspection for rubber parts, visual inspection for resin parts, adhesive application inspection for food containers (UV), etc.

Achieves Convergent Illumination

The HLDR-IP series features convergent Ring Lights that ensure brightness with a convergent lens.

Comparison of illumination between a Ring Light and the HLDR-IP series



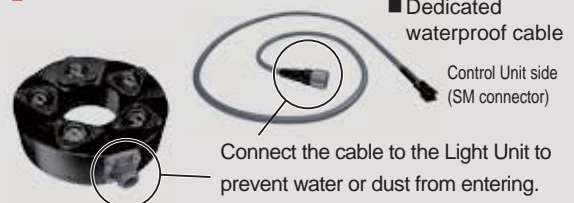
IP67 Compliant

It has a waterproof and rustproof structure for use in harsh environments. Optimal for sites where manufacturing lines must be cleaned, such as for food and chemicals.

Waterproof Ring Light HLDR-IP series

- Convergent Ring Light
- Emitted color: Red, white, UV (365 nm)
- IP67 compliant
- Uses an M12 connector

Uses an M12 connector



Custom Orders

Please contact your sales representative.

E.g.: Changed the illuminating angle

Customizable items

Creating a Light Unit with a changed converging distance



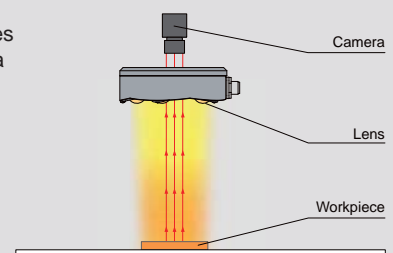
- External/internal diameter
- Wavelength/color
- Increase output
- Cable length
- Illuminating angle
- Format/material
- Connector format
- Installation/mounting

Etc.

Example Configuration

Convergent waterproof Ring Light that ensures brightness with a convergent lens.

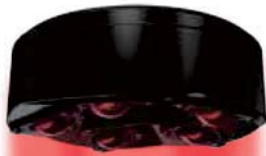
HLDR-IP67-100



Regarding Recommended Distance

The data included is for reference only. Actual values may vary.

Convergent illumination image



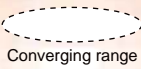
LWD
0 mm
* Bottom of housing as reference

Recommended distance
126.5 mm
±10 mm

116.5 mm

126.5 mm

136.5 mm



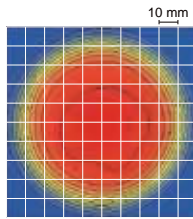
Converging range

- Red Approximately \varnothing 40 mm
- White Approximately \varnothing 35 mm
- Ultraviolet Approximately \varnothing 40 mm

LWD=116.5 mm

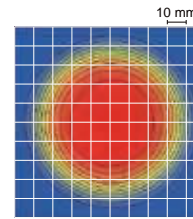
Illuminance
Approximately **59,000 lx**

Red



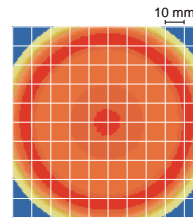
Illuminance
Approximately **138,000 lx**

White



Irradiance
20.4 mW/cm²

Ultraviolet



The values for red and white are measured values.
Results for individual products may vary.

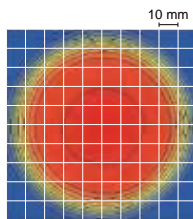
Values are simulated for UV.
Actual values may vary.

Output level (%)
100
50
0

LWD=126.5 mm

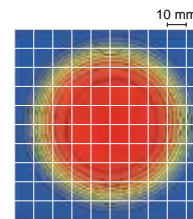
Illuminance
Approximately **53,000 lx**

Red



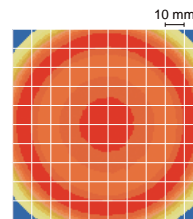
Illuminance
Approximately **124,000 lx**

White



Irradiance
18.6 mW/cm²

Ultraviolet



The values for red and white are measured values.
Results for individual products may vary.

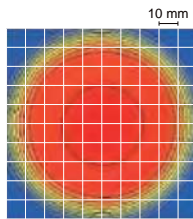
Values are simulated for UV.
Actual values may vary.

Output level (%)
100
50
0

LWD=136.5 mm

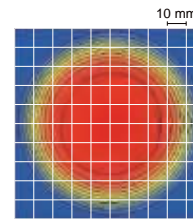
Illuminance
Approximately **47,000 lx**

Red



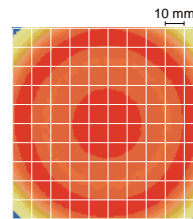
Illuminance
Approximately **113,000 lx**

White



Irradiance
16.8 mW/cm²

Ultraviolet



The values for red and white are measured values.
Results for individual products may vary.

Values are simulated for UV.
Actual values may vary.

Output level (%)
100
50
0

- Converged near LWD=126.5 mm.
- If the recommended range (126.5 mm±10 mm) is exceeded, the uniformity may change and the imaging may be affected.
- LWD is the distance from the Light Unit to the workpiece.

Safe to Use When Washing Manufacturing Lines

When washing manufacturing lines



Food, chemicals, etc.

For manufacturing lines that use water



Automotive parts, etc.

Direct Lighting	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Diffused Lighting	HPR2 LFR LKR FPR FPQ2
Direct Lighting	LDL2 LDLB HLDL2 HL
Diffused Lighting	TH2 (5 types) TH LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3
Coaxial Lighting	MSU MFU
Strobe Lighting	PF
Water-proof	HADR-IP/ HSL-PCL
Ultraviolet Lighting	UV2 UV LNSP-UV-FN
Intensely Infrared Control Lighting	IR2 IU
Spot Lighting, Etc.	HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFBR PFB3 PFB2
Convergent Lighting	LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK
Diffused Lighting	LNSD LND2 HLND LT LNV
Oblique-Angled Lighting	LNDG LNS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens



Imaging Example: Fluorescent Observation of Adhesive on Plastic Containers



Description	Application inspection for adhesive
Workpiece	Plastic containers
Conventional lighting	LED visible light lighting
New lighting	HLDR-IP67-100UV2-365
Result	Only detects the adhesive

Workpiece image



Plastic containers

LED visible light lighting



It was difficult to detect the application of the adhesive using visible light lighting.

HLDR-IP67-100UV2-365



Only the adhesive causes fluorescent scattering, allowing for an image of the application status.

Lineup

Model name	LED color	Power consumption	Peak wavelength / correlated color temperature	Options	Dedicated cables	Recommended Control Units	Weight
HLDR-IP67-100RD	Red	24 V / 18 W	627 nm	Band-pass filter Ultraviolet cutting filter Ultraviolet transmission filter	FCB-M12 Straight Cable ▶ P.128	PD3 PSB	420 g
HLDR-IP67-100SW	White		6,500 K				
HLDR-IP67-100UV2-365	Ultraviolet		365 nm				

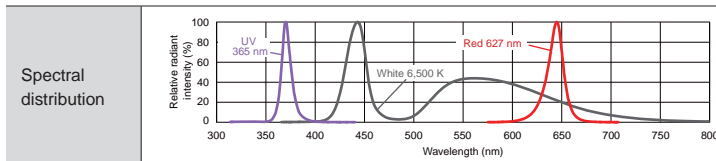
Dedicated Cables ▶ P.128

Control Unit Selection Guide ▶ P.251

List of Control Unit Specifications ▶ P.253

Please inquire if you would like to use in combination with a Strobe Control Unit (overdrive type).

LED Properties



Offers you the most suitable lens filter for each wavelength. For details about the lens filter, refer to P.299.

Be sure to read the "Instruction Guide" included with the product before use and follow the safety precautions upon use. The data included is for reference only. Actual values may vary.

Options



Transmits light with wavelength range of 290 nm to 365 nm. (Transmission of 90% min.)

Band-pass filter
F-BP324

Model name	Size
F-BP324	25 sizes (Refer to the pages on optional products.)

▶ P.299

Other various band-pass filters used for different wavelengths are available. For details, refer to the pages on optional lens filters.
▶ P.299



Blocks light with a wavelength of 420 nm or lower, transmits light with a longer wavelength.

Ultraviolet cutting filter
L42 series

Model name	Size
L42-25	M25.5 P0.5
L42-27	M27.0 P0.5
L42-30	M30.5 P0.5
L42-40	M40.5 P0.5
L42-46	M46.0 P0.75

▶ P.301



Transmits light in a wavelength range from approximately 280 to 380 nm centered on 340 nm.

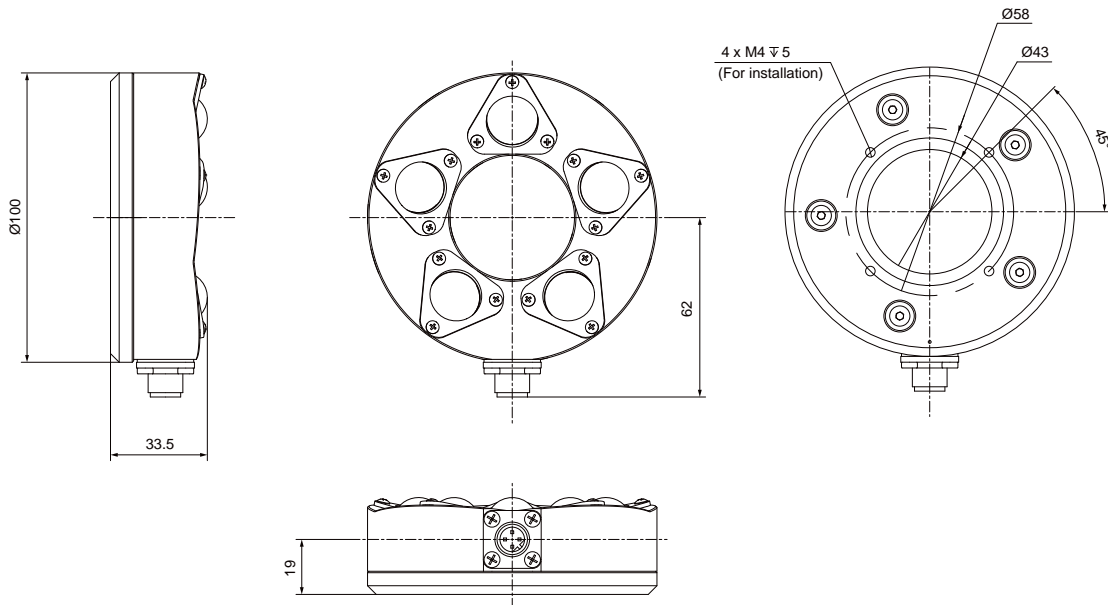
Ultraviolet transmission filter
U340 series

Model name	Size
U340-25	M25.5 P0.5
U340-27	M27.0 P0.5
U340-30	M30.5 P0.5
U340-40	M40.5 P0.5
U340-46	M46.0 P0.75

▶ P.301

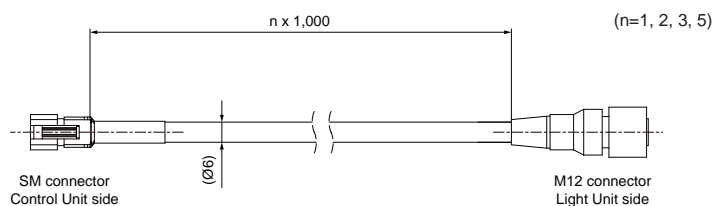
Dimensions (mm)

HHDR-IP67-100RD/SW/UV2-365



Dedicated Cable

Model name	Cable length	Weight
FCB-1-M12	1 m	70 g
FCB-2-M12	2 m	125 g
FCB-3-M12	3 m	180 g
FCB-5-M12	5 m	305 g



SM connectors are not waterproof.

Cable permitted bending radius: 40 mm

The above cable permitted bending radius is a reference value. Actual value may vary.

Regarding Case Materials

	LED Light (Common for all colors)	Dedicated cable
Case material	Body: aluminum alloy (black anodized) Screws: SUS Washers: SUS, elastomer (TPE) Connectors: PA resin Lens: silicone	Light Unit side connector: soft PBT Cable: PVC Control Unit side connector: nylon

Indicates the details for materials only regarding the external parts.

Note

"IP67" indicates the level of protection against foreign material entering electrical instruments

The 1st numeral "6" indicates the following level of protection:

- No dust inside the instrument. (dustproof)

The 2nd numeral "7" indicates the following level of protection:

- No damage when submerged in water at the rated pressure for the rated time. (watertight type)
- Can be submerged in water to a depth of 1 m (for instruments with a height of less than 850 mm) for 30 minutes.

Cautionary Information regarding Waterproofing

- After cleaning manufacturing lines, be sure to wipe away any moisture remaining on the lens. Imaging can be affected by moisture on the lens.
- Use water to wash away any cleaning agent adhered to this product.
- Use water to wash away any oils or chemicals adhered to this product.
- The Control Unit connectors (SM connectors) on dedicated cables are not waterproof.

Cautionary Information regarding UV Products

- Do not expose your eyes or skin to direct UV irradiation.
- When using an UV illumination, be sure to wear UV blocking eye wear and avoid looking at irradiating parts (emitting parts).
- Do not turn on UV-LED irradiating parts (emitting parts) if they are facing someone's eyes.
- Wear long sleeves and gloves to protect your skin from UV irradiation.
- Thoroughly educate all those involved near the product about the dangers of UV LEDs.



E.g.: UV blocking eye wear

Direct Lighting	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Diffused Lighting	HPR2 LFR LKR FPR FPQ2
Direct Lighting	LDL2 LDLB HLDL2 HL
Diffused Lighting	TH2 (5 types) TH LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3
Colimated Lighting	MSU MFU
Scrobe Lighting	PF
Water-proof	HHDR-IP/ HSL-PCL
Ultraviolet Lighting	UV2 UV LNSP-UV-FN
Intensely Infrared Control Lighting	IR2 IU
Spot Lighting, Etc.	HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFB3 PFB2
Convergent Lighting	LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK
Diffused Lighting	LNSD LND2 HLND LT LNV
Oblique/Angled Lighting	LNDG LNIS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens



HSL-PCL Series

High-Power Spot Lights



HSL-58RD-D300PCL



HSL-58SW-D300PCL



HSL-58BL-D300PCL



HSL-58GR-D300PCL



Note: These products are sold only outside Japan.

Features

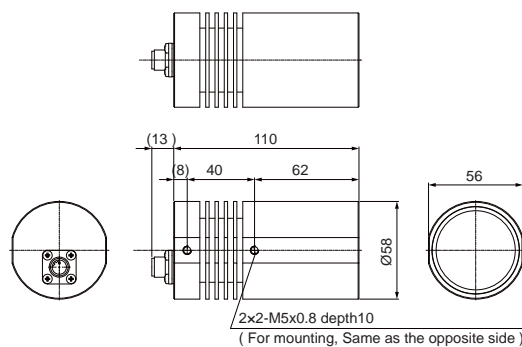
- For replacement of halogen
- Long lifetime
- Low power consumption
- High uniformity
- IP67 Compliant

Model name	LED color
HSL-58RD-D300PCL	Red
HSL-58SW-D300PCL	White
HSL-58BL-D300PCL	Blue
HSL-58GR-D300PCL	Green

Common Specifications

LED color	Red, White, Blue, Green
Peak wavelength	Red: 645 nm typ., Blue: 470 nm typ., Green: 520 nm typ.
Power consumption	2.8 W max.
Polarity & signal	1: (+), 2: no connection, 3: (-), 4: (R)
Housing material	Aluminum
Cooling method	Natural air cooling
Recommended LWD	2,000 mm or less
Operating temperature and humidity	Temperature: 0 to 40°C, Humidity: 20% to 85%RH (with no condensation)
Storage temperature and humidity	Temperature: -20 to 60°C, Humidity: 20% to 85%RH (with no condensation)
Weight	400 g

Dimensions (mm)



Recommended Controller

CC-PJ Series



Refer to P.291 for more details.

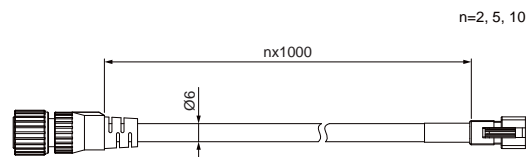
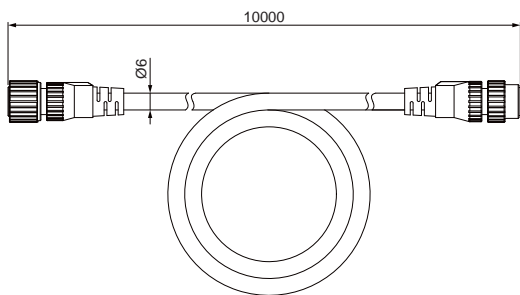
Features

- Constant-current analog controller
- Compact & space-saving
- 1-channel light output
- 100 different levels of light intensity
- 24 VDC input
- CE certified
- ON/OFF control and Strobe lighting via External control

HSL-PCL Cables

Dimensions (mm)

Extension cable



n=2, 5, 10

2 m	FCB-2-HSL-SM
5 m	FCB-5-HSL-SM
10 m	FCB-10-HSL-SM
10 m	FCB-EX10-HSL (Extension cable)

Direct Lighting	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Diffused Lighting	HPR2 LFR LKR FPR FPQ2
Direct Lighting	LDL2 LDLB HLDL2 HL TH2 (5 types) TH
Diffused Lighting	LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3
Coaxial Lighting	MSU MFU
Strobe Lighting	PF
Water-proof	HLLDR-IP/ HSL-PCL
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Lenses	Telecentric Lens Macro Lens