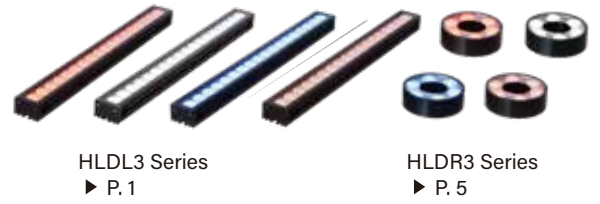


# High Power LED Lighting HLDL3/HLDR3 Series



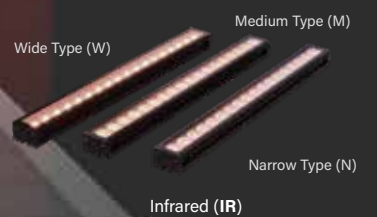
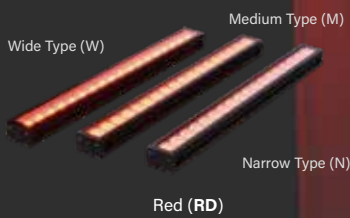
## The best-suited choice for long-distance illumination

Plentiful lineup expands possible applications



### Applications

Exterior inspection of large workpieces | Light source for robot picking | Light source for logistics bar code reading  
Measurement of pressed parts punch dimensions | Part sorting, inspection for model mixing | Inspection for unmounted parts



### Plentiful Lineup

Light emitting surface length 150 to 1,800 mm (150 mm units, 12 sizes)



LED color Red, White, Blue, Infrared



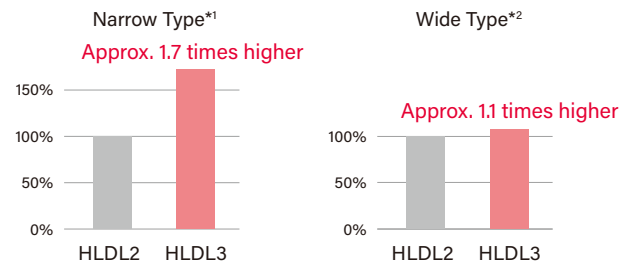
Light directivity Narrow Type, Medium Type, Wide Type



**Total of 144 models in the lineup!**

### Increased Brightness

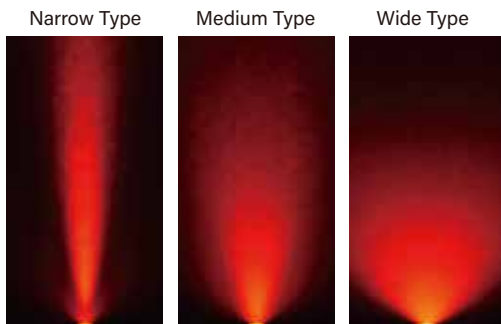
Comparison with conventional products (Size 300, White)



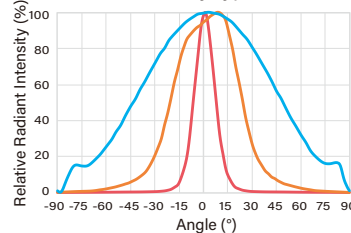
\*1 Comparison between HLDL3-300X28SW-DF-N and HLDL2-300X45SW-DF-N for LWD 1,000 mm.  
\*2 Comparison between HLDL3-300X28SW-DF-W and HLDL2-300X45SW-DF-W for LWD 300 mm.

### Three types of light directivity

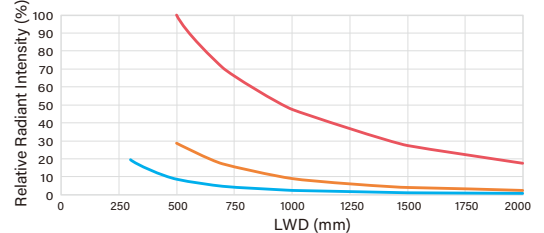
The data included are for reference only. Not a guarantee of product quality.



Relative radiant intensity distribution by type (white)



Comparative graph of relative irradiance by type HLDL3-450X28SW (white)



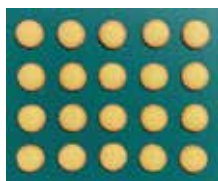
— Narrow Type — Medium Type — Wide Type

### Imaging Comparison (Light source for pastry picking)

\*The shutter speed is changed to suit imaging. The shutter speed can be adjusted to brighten imaging of dark images.

\*Field of view: 380 mm (H) x 317 mm (V)

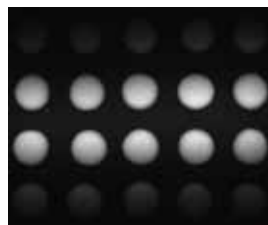
Workpiece image



Baked pastries

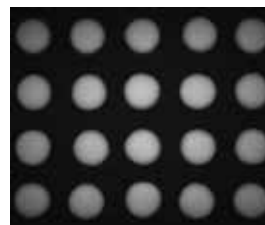
LWD 500 mm

**Narrow Type**  
HLDL3-450X28RD-DF-N



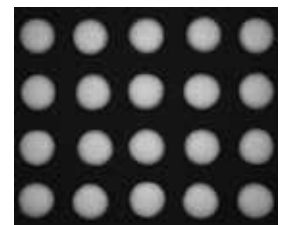
Shutter Speed: 180  $\mu$ s  
Only central part of FOV illuminated.

**Medium Type**  
HLDL3-450X28RD-DF-M



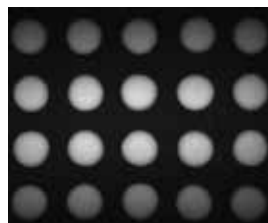
Shutter Speed: 550  $\mu$ s  
More widely illuminated than the narrow type, but still dark at the edge of FOV.

**Wide Type**  
HLDL3-450X28RD-DF-W

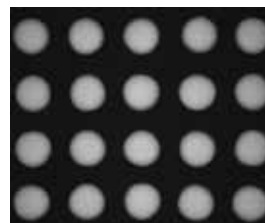


Shutter Speed: 2000  $\mu$ s  
Uniformly illuminated in the entire FOV.

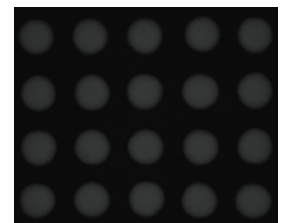
LWD 1,000 mm



Shutter Speed: 550  $\mu$ s  
More widely illuminated but still dark at the edge of FOV.

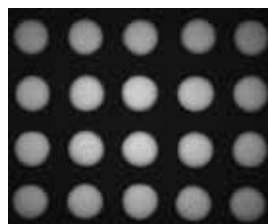


Shutter Speed: 2800  $\mu$ s  
Uniformly illuminated.



Shutter Speed: 2800  $\mu$ s  
Insufficient quantity of light.

LWD 2,000 mm



Shutter Speed: 900  $\mu$ s  
Uniformly illuminated in the entire FOV.



Shutter Speed: 900  $\mu$ s  
Insufficient quantity of light.



Shutter Speed: 900  $\mu$ s  
Insufficient quantity of light.

# Lineup Overview

Model Name Endings: -N: Narrow Type, -M: Medium Type, -W: Wide Type

Model Name*1	Input Voltage	Power consumption				Options	Extension Cables	Recommended Control Units	Weight									
		RD Red	SW White	BL Blue	IR Infrared													
HLDL3-150X28□□-DF-N	24 V	15 W				Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket	FCB**2 Straight Cable	PD3 PSB	350 g									
HLDL3-150X28□□-DF-M									350 g									
HLDL3-150X28□□-DF-W									370 g									
HLDL3-300X28□□-DF-N		30 W					Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket	FCB**2 Straight Cable	PD3 PSB	600 g								
HLDL3-300X28□□-DF-M										600 g								
HLDL3-300X28□□-DF-W										620 g								
HLDL3-450X28□□-DF-N		44 W						Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket	FRCB Robot Cable	PD3	910 g							
HLDL3-450X28□□-DF-M											910 g							
HLDL3-450X28□□-DF-W											940 g							
HLDL3-600X28□□-DF-N		59 W							Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket		PD3	1,200 g						
HLDL3-600X28□□-DF-M												1,200 g						
HLDL3-600X28□□-DF-W												1,240 g						
HLDL3-750X28□□-DF-N		74 W								Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket		PD3-10024-8 PSB4	1,510 g					
HLDL3-750X28□□-DF-M													1,510 g					
HLDL3-750X28□□-DF-W													1,560 g					
HLDL3-900X28□□-DF-N		88 W									Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket		PSB4	1,800 g				
HLDL3-900X28□□-DF-M														1,800 g				
HLDL3-900X28□□-DF-W														1,860 g				
HLDL3-1050X28□□-DF-N		103 W										Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket			2,110 g			
HLDL3-1050X28□□-DF-M															2,110 g			
HLDL3-1050X28□□-DF-W															2,180 g			
HLDL3-1200X28□□-DF-N		117 W											Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket			2,400 g		
HLDL3-1200X28□□-DF-M																2,400 g		
HLDL3-1200X28□□-DF-W																2,480 g		
HLDL3-1350X28□□-DF-N		132 W												Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket		PSB4	2,710 g	
HLDL3-1350X28□□-DF-M																	2,710 g	
HLDL3-1350X28□□-DF-W																	2,800 g	
HLDL3-1500X28□□-DF-N		147 W													Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket			3,000 g
HLDL3-1500X28□□-DF-M																		3,000 g
HLDL3-1500X28□□-DF-W																		3,100 g
HLDL3-1650X28□□-DF-N	161 W				Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket	FCB-EL2 Straight Cable × 2 pcs*3											3,310 g	
HLDL3-1650X28□□-DF-M																	3,310 g	
HLDL3-1650X28□□-DF-W																	3,420 g	
HLDL3-1800X28□□-DF-N	176 W					Diffusion Plate Polarizing Plate** <small>*4 Excluding infrared models.</small> Bracket											3,600 g	
HLDL3-1800X28□□-DF-M																	3,600 g	
HLDL3-1800X28□□-DF-W																	3,720 g	

\*1 □□ in the model name contains the LED color. (RD: Red, SW: White, BL: Blue, IR: Infrared)

\*2 Cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.

\*3 Use two extension cables of the same length. If the two extension cables are of different lengths, the different cable specs may lead to uneven light emission.

Note: Please inquire if you would like to use in combination with a strobe control unit (overdrive type)

# Common Specifications

Input voltage	DC24 V	Operating environment (indoors only)	Temperature: 0 to 40°C, humidity: 20 to 85% RH (with no condensation)
LED color	Red (625 nm), white (5700 K), blue (465 nm), infrared (860 nm)	Storage environment	Temperature: -20 to 60 °C, humidity: 20 to 85% RH (with no condensation)
Cable length	300 mm	Spectral distribution	
CE marking	Safety standard: Conforms to EN62471		
Case material	Aluminum alloy		
Cooling method	Natural air-cooling		
Applicable Environmental Standards	Conforms to RoHS Directives and REACH Regulation		

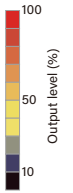
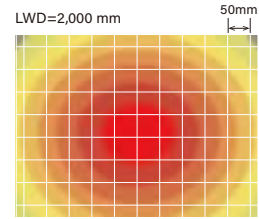
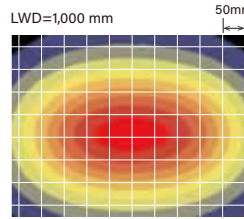
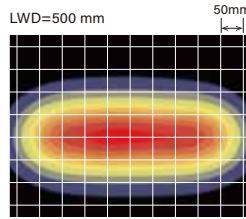
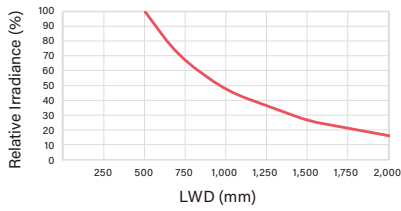
# Data: Relative irradiance graph/uniformity (representative example) The data included are for reference only. Actual values may vary.

## Relative Irradiance Graph\*1 (LWD Characteristics\*2)

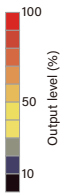
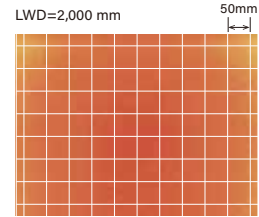
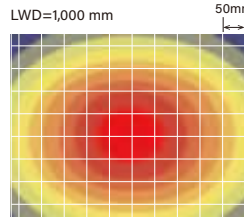
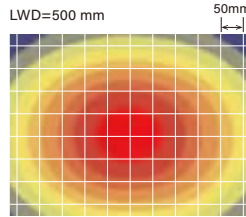
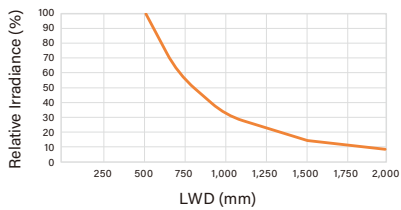
\*1 Irradiance on the optical axis \*2 From the Light Unit to the workpiece

## Uniformity (Relative Irradiance)

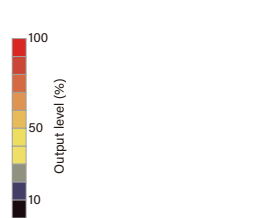
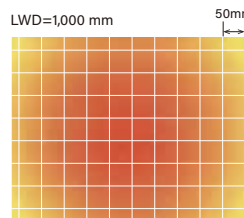
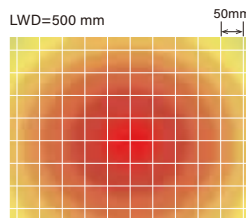
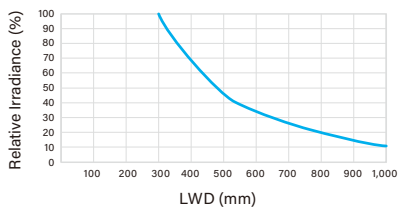
### HLDL3-450X28SW-DF-N (Narrow Type)



### HLDL3-450X28SW-DF-M (Medium Type)



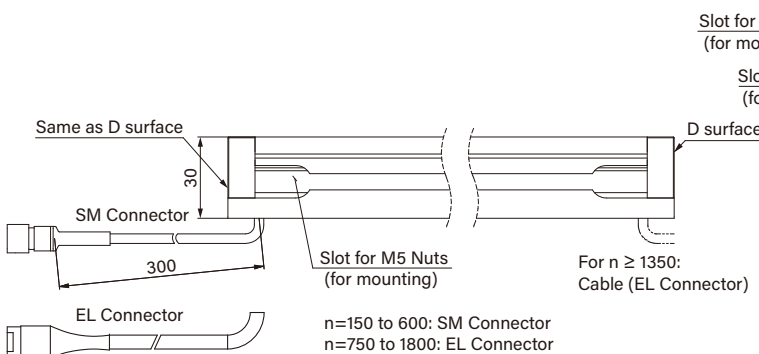
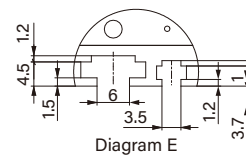
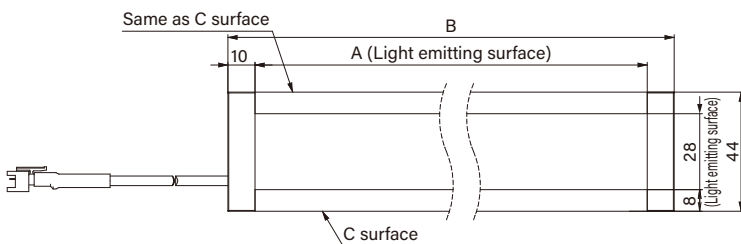
### HLDL3-450X28SW-DF-W (Wide Type)



## Dimensions (mm)

HLDL3-nX28□□-DF-N / -M / -W (common dimensions)

(n = 150 to 1800, □□ = RD, SW, BL, IR)



n	Size A	Size B
150	150	170
300	300	320
450	450	470
600	600	620
750	750	770
900	900	920
1050	1050	1070
1200	1200	1220
1350	1350	1370
1500	1500	1520
1650	1650	1670
1800	1800	1820

## Options

### Diffusion Plate

Prevents glare that arises when imaging glossy workpieces.

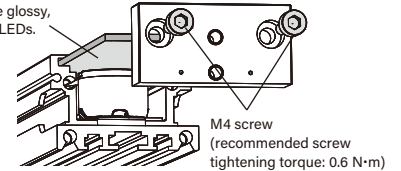
\*The light unit is shipped with a low-uniformity, high-transmittance diffusion plate installed.  
White wide-type light unit is shipped with the DF-HLDL3 Series diffusion plate installed.

Series Name	Uniformity	Transmittance
DF-HLDL3 Series	Medium	Medium
DF-HLDL3-HU Series	High	Low

DF-HLDL3 Series	DF-HLDL3-HU Series	Applicable Light Unit
DF-HLDL3-n	DF-HLDL3-n-HU	HLDL3-nX28 Series

\*n = 150 to 1800 (light emitting surface length)

A diffuser has a front and backside.  
Install the plate with the glossy, smooth side facing the LEDs.



### Polarizing Plate

The surface reflection of the workpiece can be removed when used in combination with a polarizing filter.

\*Remove the diffusion plate to mount the polarizing plate.

If you want to use both the polarizing plate and diffusion plate, contact us for custom orders.

PL-HLDL3-VE Series	PL-HLDL3-HO Series	Applicable Light Unit (excluding infrared models)
PL-HLDL3-n-VE	PL-HLDL3-n-HO	HLDL3-nX28 Series

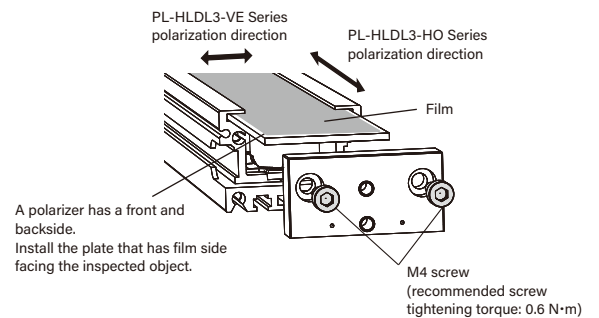
\*n = 150 to 1800 (light emitting surface length)

\*Longer polarizing plates have seams in the film.

For more details, please refer to the dimension drawings on our website.

Note: There may be some lifting between the film and resin plate due to environmental changes.  
However, this will not affect functionality and performance.

PL-HLDL3-VE Series polarization direction  
PL-HLDL3-HO Series polarization direction



A polarizer has a front and backside.  
Install the plate that has film side facing the inspected object.

### Bracket

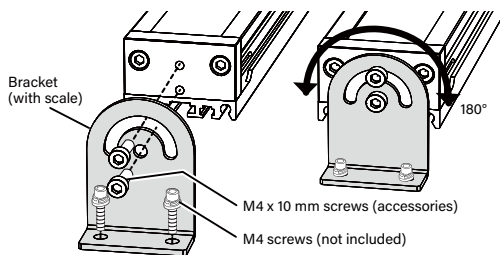
#### Installation Bracket

The illumination angle can be freely adjusted when fixing HLDL3 Series light units.

Model Name	Remarks
BK-HLDL3	Angle Adjustment Bracket (2 pcs) common for HLDL3 Series types

\*For a longer light unit, please give an additional support to central part.

\*This is not intended for use together with a mounting compatibility bracket.

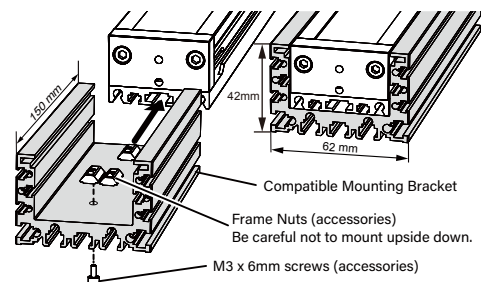


#### Mounting Compatibility Bracket

This bracket is used to install HLDL3 Series lighting (unit width: 44 mm) with the same method as HLDL2 Series lighting (unit width: 62 mm).

Model Name	Remarks
AD-HLDL3	HLDL2 Series Mounting Compatibility Bracket common for HLDL3 Series types

\*The height of the HLDL2 Series wide type is 26 mm. Using the HLDL3 wide type light unit with an HLDL3 bracket increases the height to 42 mm, so the light emitting surface will be closer to the workpiece.



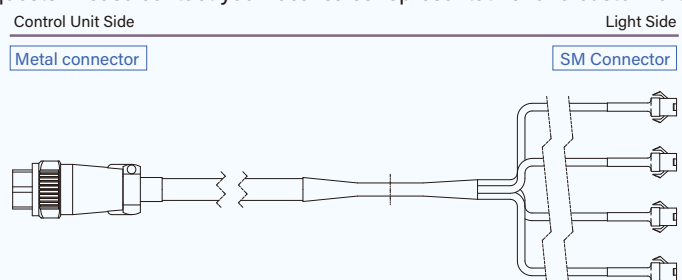
### Extension Cables (custom example)

Cables can be custom ordered according to customer requests. Please contact your local sales representative for a custom order.

Example: FCB-F-n-ME7-SM3-OC

4-branch cable which can connect a PSB4 power source and four HLDL3 light units (SM connectors).

Custom orders are available as needed for number of branches, connector type, length changes, and so on.

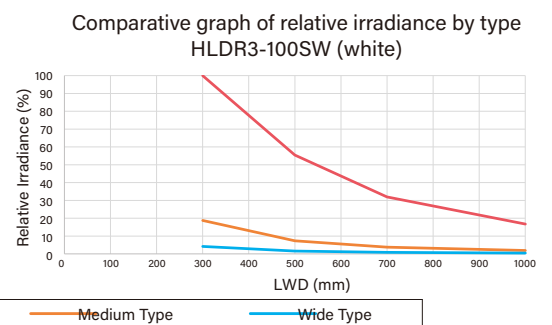
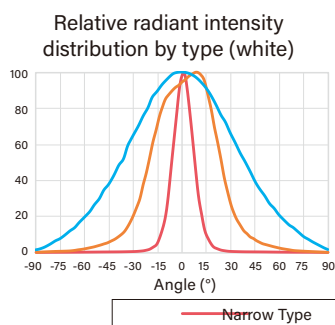
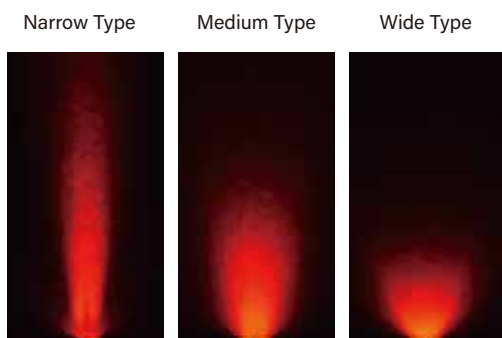


# HLDR3 series



## Three types of light directivity

The data included are for reference only. Not a guarantee of product quality.



# Imaging Comparison (External observation of textured metal part)

\*The shutter speed is changed to suit imaging. The shutter speed can be adjusted to brighten imaging of dark images.

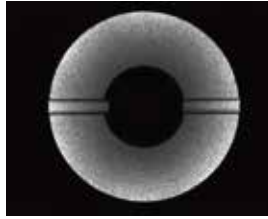
\*Field of view: 41 mm (H) x 33 mm (V)

**Narrow Type**  
HLDR3-100SW-DF-N

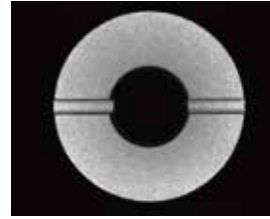
**Medium Type**  
HLDR3-100SW-DF-M

**Wide Type**  
HLDR3-100SW-DF-W

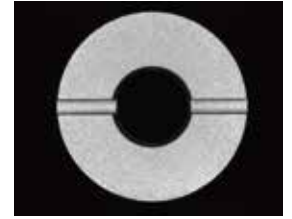
LWD 75 mm



Shutter Speed: 800  $\mu$ s  
Dark in the center.



Shutter Speed: 650  $\mu$ s  
More widely illuminated than the narrow type, but not sufficiently uniform.



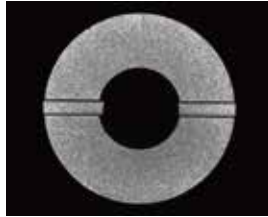
Shutter Speed: 2200  $\mu$ s  
Uniformly illuminated in the entire FOV.

Workpiece image

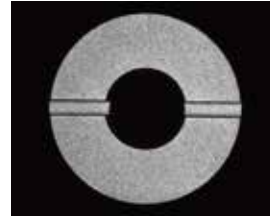


Textured metal part

LWD 150 mm



Shutter Speed: 180  $\mu$ s  
More widely illuminated.

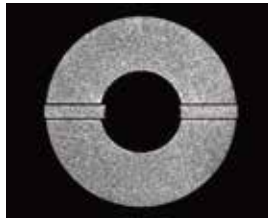


Shutter Speed: 280  $\mu$ s  
Uniformly illuminated in the entire FOV.



Shutter Speed: 280  $\mu$ s  
Insufficient quantity of light.

LWD 750 mm



Shutter Speed: 800  $\mu$ s  
Uniformly illuminated in the entire FOV.



Shutter Speed: 800  $\mu$ s  
Insufficient quantity of light.



Shutter Speed: 800  $\mu$ s  
Insufficient quantity of light.

## Data: Relative irradiance graph/uniformity (representative example)

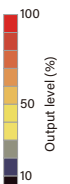
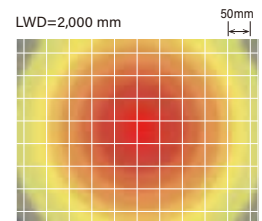
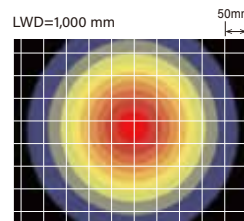
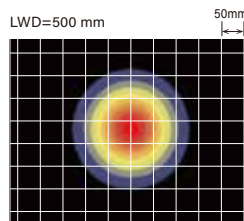
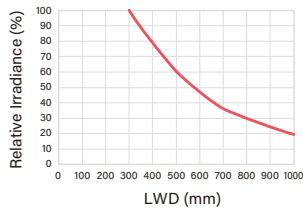
The data included are for reference only. Actual values may vary.

### Relative Irradiance Graph\*1 (LWD Characteristics\*2)

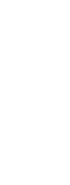
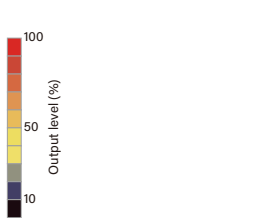
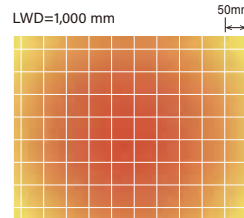
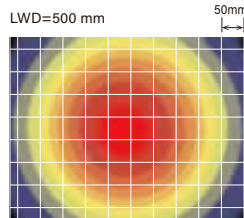
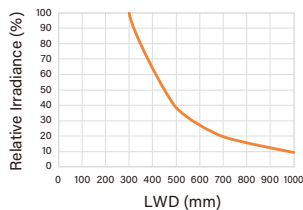
\*1 Irradiance on the optical axis \*2 From the Light Unit to the workpiece

### Uniformity (Relative Irradiance)

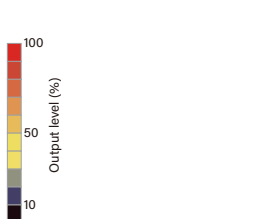
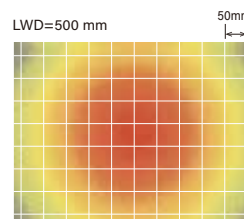
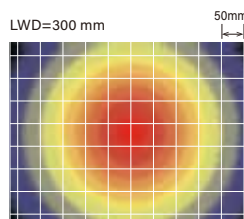
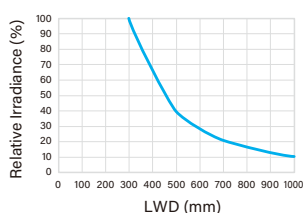
#### HLDR3-100SW-DF-N (Narrow Type)



#### HLDR3-100SW-DF-M (Medium Type)



#### HLDR3-100SW-DF-W (Wide Type)



## Lineup Overview

Model Name Endings: **-N**: Narrow Type, **-M**: Medium Type, **-W**: Wide Type

Model Name*1	Input Voltage	Power consumption				Options	Extension Cables	Recommended Control Units	Weight
		RD Red	SW White	BL Blue	IR Infrared				
HLDR3-100□□-DF-N	24 V	15 W				-	FCB*2 Straight Cable	<input type="checkbox"/> PD3 <input type="checkbox"/> PSB	340 g
HLDR3-100□□-DF-M							FCB-W*3 2-Branch Cable		340 g
HLDR3-100□□-DF-W							FCB-F 4-Branch Cable		310 g
						FRCB Robot Cable			

\*1 □□ in the model name contains the LED color. (RD: Red, SW: White, BL: Blue, IR: Infrared)

\*2 Cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.

\*3 Cables with a model name that ends with "-EL2" are not included.

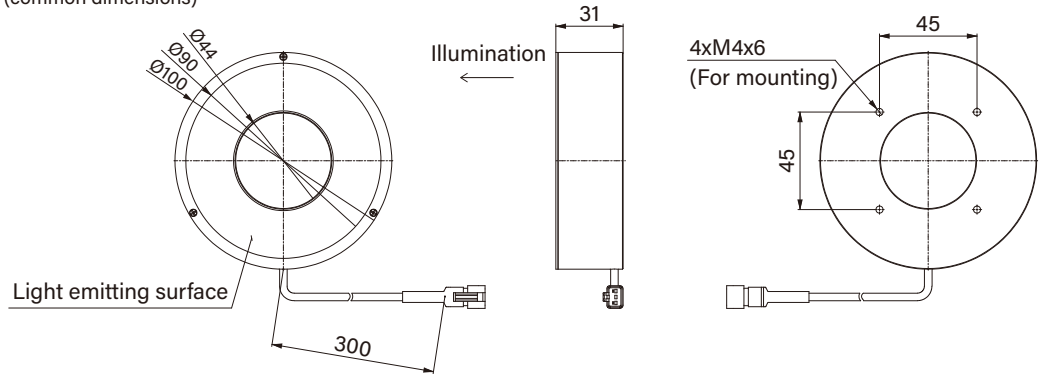
Note: Please inquire if you would like to use in combination with a strobe control unit (overdrive type)

## Common Specifications

Input voltage	DC24 V	Operating environment (indoors only)	Temperature: 0 to 40°C, humidity: 20 to 85% RH (with no condensation)
LED color	Red (625 nm), white (5700 K), blue (465 nm), infrared (860 nm)	Storage environment	Temperature: -20 to 60°C, humidity: 20 to 85% RH (with no condensation)
Cable length	300 mm	Spectral distribution	
CE marking	Safety standard: Conforms to EN62471		
Case material	Aluminum alloy		
Cooling method	Natural air-cooling		
Applicable Environmental Standards	Conforms to RoHS Directives and REACH Regulation		

## Dimensions (mm)

HLDR3-100□□-DF-N / -M / -W (common dimensions)  
(□□ = RD, SW, BL, IR)



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### Notes

- To ensure proper and safe use of the product, please read the Instruction Guide completely before using the product.
- The design and specifications of this product are subject to change without notification for product improvement.
- The workpiece imaging examples included in this brochure are intended to serve only as references to help you select a suitable Light Unit. Please verify the functionality and conditions required for your particular application before you make a final selection. The sample workpieces used in this brochure have been processed specifically for sample imaging. They are not intended to represent product quality and performance.