Strobe Lighting

High Power Strobe Lights
PF Series

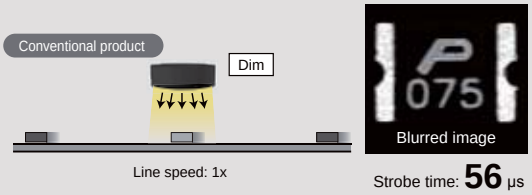
Extreme Power Strobe Lights

Applications Visual inspection for semiconductor, electronic components, metal parts, automobile components, printings, food, and medicines, etc.

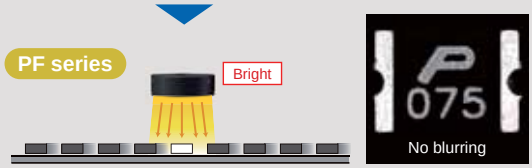
"Extreme Power" Strobe Lights

The High Power Strobe Lights PF series enables extreme power strobe lighting. The PF-series Light Units are dedicatedly designed for strobe lighting to achieve further large output power than that of the conventional products when used with the dedicated Control Units.
This makes them applicable to fast inspection lines and a wide range of applications improving productivity.

Comparison of images with the conventional product



Strobe time: **56** µs



Line speed: 14 x

Strobe time: 4 µs

Comparison between the LDR-PF-36SW and LDR2-32SW2 Light Units (conventional products).

Dedicated Control Units PF-A4048-2 and PF-A16048-4

Maximize performance of the High Power Strobe Light Units.

For more information on the Dedicated Control Units ▶ P.273

Wide Variety of Available Light Units

Ring, ring for diffused lighting, bar, dome, and coaxial types are available. Select one to meet your purpose of use.

The lineup includes 38 models with different formats, sizes, and LED colors.

Brightness comparable to xenon flash lamps

Achieved the same inspection speed made possible by xenon lamps.

15 W xenon flash lamp
Strobe time: 1.75 µs (measured value)

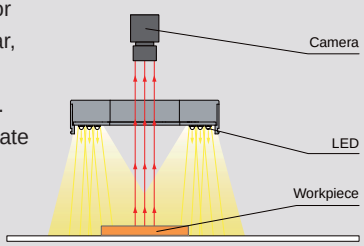
High Power Strobe Light Unit
Strobe time: 15 µs

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

Example Configuration

High Power Strobe Lights. Ring, ring for diffused lighting, bar, dome, and coaxial types are available. Select the appropriate type to meet your purpose.

LDR-PF-75



Various technical documents available.

PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs

Lineup

Ring type

Outer diameter	LED color
Ø36	White/ Red
Ø54	
Ø75	

Bar type

Emitting surface size		LED color
Emitting width 18mm	52x18	White/ Red
	102x18	
	152x18	
Emitting width 30mm	52x30	
	102x30	
	152x30	

Coaxial type

Emitting surface size	LED color
34x38	White/ Red
52x52	

Ring type for diffused lighting

Outer diameter	LED color
Ø91	White/ Red
Ø116	
Ø166	
Ø216	

Dome type

Outer diameter	LED color
Ø91	White/ Red
Ø116	
Ø166	
Ø216	

Dedicated Control Units to maximize the performance of the High Power Strobe Light Units

PF-A4048-2 (2 channel model)

Main features
- Light intensity: 512 levels
- Strobe time: 1 to 100 µs
- Lighting delay time: 0 to 100 µs
- Ethernet support, etc.

PF-A16048-4 (4 channel model)

Main features
- Light intensity: 512 levels
- Strobe time: 1 to 500 µs*
- Lighting delay time: 0 to 100 µs
- Ethernet support
- Trigger link function, etc.

* Refer to the specification table for details.

For more information on the Dedicated Control Units. ▶ P.273

Imaging Example: Imaging the Bottom Surface of Beverage Containers

Workpiece image

Beverage containers

HPR-PF-100SW

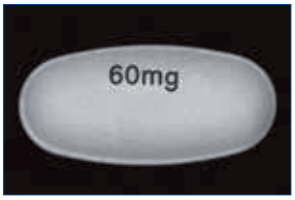
Condition of container bottom and text can be read.

Imaging Example: Imaging the Appearance of Tablets

Workpiece image

Tablets

HPD-PF-75SW



Surface condition of tablet and text can be read.

PF Series

Imaging Example: Imaging the Appearance of Drill Tips

Workpiece image

Drills

LDR-PF-54RD

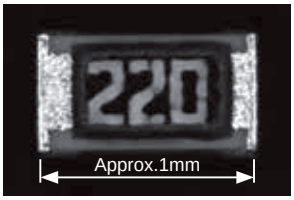
Captured image of a drill tip.

Imaging Example: Imaging the Appearance of Chip Components

Workpiece image

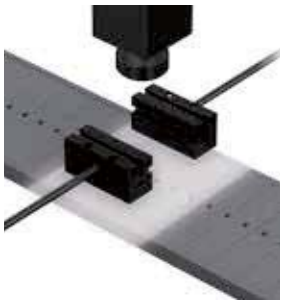
Chip components

LDR-PF-36SW



Captured image of an chip component.

Imaging Example: Imaging the Appearance of Electronic Components



Workpiece image

Electronic components

LDL-PF-52X18SW

Captured image of an electronic component.

Imaging Example: Imaging the Appearance of Paper Labels

Workpiece image

Beverage bottles

LDL-PF-102X18SW

Captured image of a paper label and barcode.

Various technical documents available. PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs

Data: Illuminance Graph and Uniformity (Representative Example)

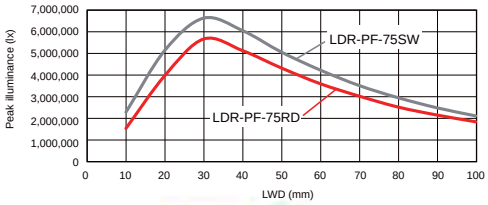
The data included is for reference only. Actual values may vary.

LDR-PF-75

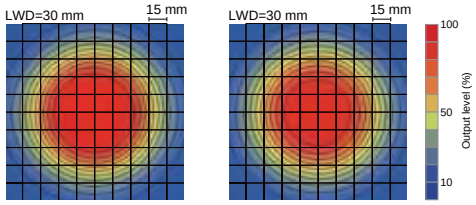
*1 *2

Illuminance graph (LWD characteristics)

*1 Illuminance on the optical axis
*2 Illuminating distance from the Light Unit to the workpiece



Uniformity (Relative irradiance)



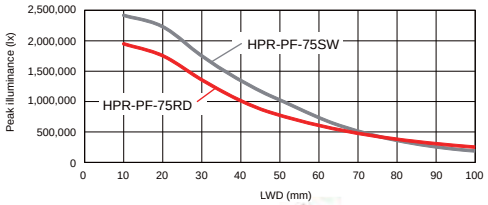
LDR-PF-75SW (White) LDR-PF-75RD (Red)

HPR-PF-75

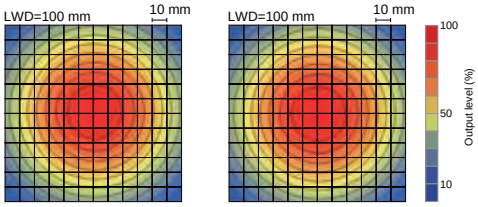
*1 *2

Illuminance graph (LWD characteristics)

*1 Illuminance on the optical axis
*2 Illuminating distance from the Light Unit to the workpiece



Uniformity (Relative irradiance)



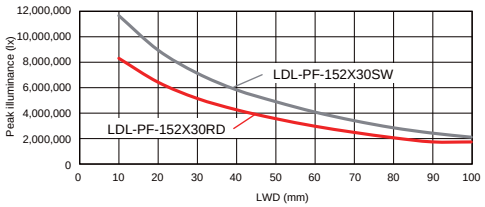
HPR-PF-75SW (White) HPR-PF-75RD (Red)

LDL-PF-152X30

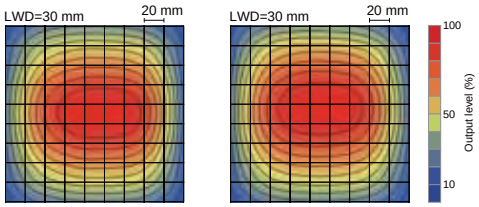
*1 *2

Illuminance graph (LWD characteristics)

*1 Illuminance on the optical axis
*2 Illuminating distance from the Light Unit to the workpiece



Uniformity (Relative irradiance)



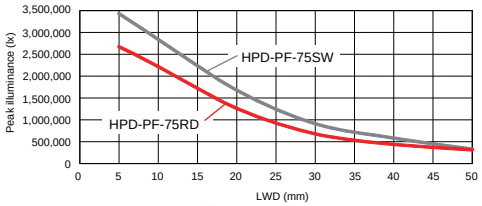
LDL-PF-152X30SW (White) LDL-PF-152X30RD (Red)

HPD-PF-75

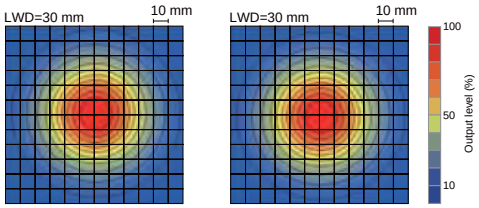
*1 *2

Illuminance graph (LWD characteristics)

*1 Illuminance on the optical axis
*2 Illuminating distance from the Light Unit to the workpiece



Uniformity (Relative irradiance)



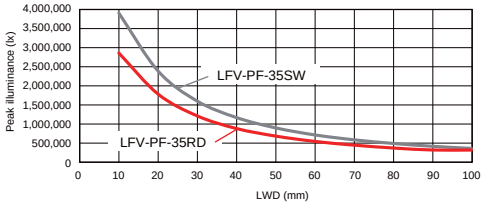
HPD-PF-75SW (White) HPD-PF-75RD (Red)

LFV-PF-35

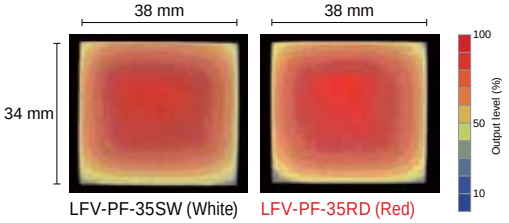
*1 *2

Illuminance graph (LWD characteristics)

*1 Illuminance on the optical axis
*2 Illuminating distance from the Light Unit to the workpiece



Uniformity (Relative radiance)



LFV-PF-35SW (White) LFV-PF-35RD (Red)

PF Series

Lineup

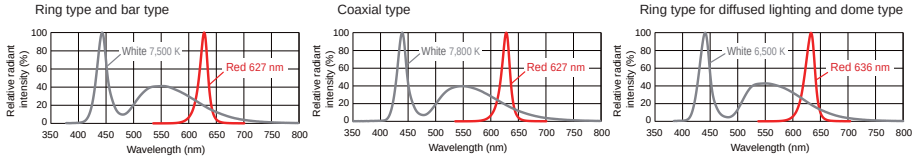
Format	Model name	LED color	Peak current	Peak wavelength / correlated color temperature	Options	Extension cables	Recommended Control Units	Weight
Ring type	LDR-PF-36SW	White	5.4 A	7,500 K	Diffusion plate Polarizing plate Adapter	FCB-PF Straight Cable (Dedicated cable) ▶ P.122		70 g
	LDR-PF-36RD	Red		627 nm				
	LDR-PF-54SW	White	10.8 A	7,500 K				110 g
	LDR-PF-54RD	Red		627 nm				
	LDR-PF-75SW	White	21.6 A	7,500 K				150 g
	LDR-PF-75RD	Red	18 A	627 nm				
Ring type for diffused lighting	HPR-PF-75SW	White	12 A	6,500 K	Bracket	FCB-PF Straight Cable (Dedicated cable) ▶ P.122		170 g
	HPR-PF-75RD	Red		636 nm				
	HPR-PF-100SW	White	21.6 A	6,500 K				180 g
	HPR-PF-100RD	Red		636 nm				
	HPR-PF-150SW	White	36 A	6,500 K		FCB-PF-EL9 Straight Cable (Dedicated cable) ▶ P.122		270 g
	HPR-PF-150RD	Red		636 nm				
	HPR-PF-200SW	White	43.2 A	6,500 K				400 g
	HPR-PF-200RD	Red		636 nm				
Bar type (Emitting surface width: 18 mm)	LDL-PF-52X18SW	White	5.4 A	7,500 K	Diffusion plate Polarizing plate Bracket	FCB-PF Straight Cable (Dedicated cable) ▶ P.122	PF-A4048-2 PF-A16048-4	140 g
	LDL-PF-52X18RD	Red		627 nm				
	LDL-PF-102X18SW	White	10.8 A	7,500 K				210 g
	LDL-PF-102X18RD	Red		627 nm				
	LDL-PF-152X18SW	White	16.2 A	7,500 K				290 g
	LDL-PF-152X18RD	Red		627 nm				
Bar type (Emitting surface width: 30 mm)	LDL-PF-52X30SW	White	9 A	7,500 K				180 g
	LDL-PF-52X30RD	Red		627 nm				
	LDL-PF-102X30SW	White	18 A	7,500 K				270 g
	LDL-PF-102X30RD	Red		627 nm				
	LDL-PF-152X30SW *	White	27 A	7,500 K		FCB-PF x2 *		380 g
	LDL-PF-152X30RD *	Red		627 nm				
Dome type	HPD-PF-75SW	White	12 A	6,500 K	Bracket	FCB-PF Straight Cable (Dedicated cable) ▶ P.122		150 g
	HPD-PF-75RD	Red		636 nm				
	HPD-PF-100SW	White	21.6 A	6,500 K				170 g
	HPD-PF-100RD	Red		636 nm				
	HPD-PF-150SW	White	36 A	6,500 K		FCB-PF-EL9 Straight Cable (Dedicated cable) ▶ P.122		310 g
	HPD-PF-150RD	Red		636 nm				
	HPD-PF-200SW	White	43.2 A	6,500 K				480 g
	HPD-PF-200RD	Red		636 nm				
Coaxial type	LFV-PF-35SW	White	14.4 A	7,800 K	Diffusion plate Polarizing plate Light control film	FCB-PF Straight Cable (Dedicated cable) ▶ P.122		230 g
	LFV-PF-35RD	Red	10.8 A	627 nm				
	LFV-PF-50SW	White	21.6 A	7,800 K				400 g
	LFV-PF-50RD	Red	18 A	627 nm				

* The LDL-PF-152X30SW/RD Light Unit has two connectors. Use two extension cables of the same length to connect the Light Unit. Using cables of different lengths may cause uneven light emission due to voltage drop caused by the DC resistance of the cable.

Extension Cables ▶ P.122
Dedicated Control Unit ▶ P.273

LED Properties

Spectral distribution



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.

Various technical documents available. PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs

Options

Diffusion Plates

Reduces glare, especially problematic in the imaging of glossy workpieces.

Ring type units

Model name	Applicable Light Unit (Common for all colors)
DF-LDR-PF-36	LDR-PF-36
DF-LDR-PF-54	LDR-PF-54
DF-LDR-PF-75	LDR-PF-75

An adapter is needed for attachment to the Light Unit.

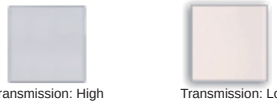
▶ P.302

Bar type units

Model name	Applicable Light Unit (Common for all colors)
DF-LDL-PF-52X18	LDL-PF-52X18
DF-LDL-PF-102X18	LDL-PF-102X18
DF-LDL-PF-152X18	LDL-PF-152X18
DF-LDL-PF-52X30	LDL-PF-52X30
DF-LDL-PF-102X30	LDL-PF-102X30
DF-LDL-PF-152X30	LDL-PF-152X30

▶ P.302

Coaxial type units



Transmission: High (Standard plate)

Transmission: Low (The end of the model name: -UF)

The transmission ratio can be changed by replacing the standard diffusion plate.

Model name	Applicable Light Unit (Common for all colors)
DF-LFV3-35	LFV-PF-35
DF-LFV3-50	LFV-PF-50

Model name	Applicable Light Unit (Common for all colors)
DF-LFV3-35-UF	LFV-PF-35
DF-LFV3-50-UF	LFV-PF-50

▶ P.302

Polarizing Plates

Reduces glare when used in combination with a Polarizing Filter on the camera.

Ring type units

Model name	Applicable Light Unit (Common for all colors)
PL-LDR-PF-36	LDR-PF-36
PL-LDR-PF-54	LDR-PF-54
PL-LDR-PF-75	LDR-PF-75

An adapter is needed for attachment to the Light Unit.

▶ P.303

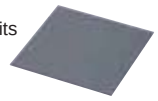
Bar type units

Model name	Applicable Light Unit (Common for all colors)
PL-LDL-PF-52X18-△△	LDL-PF-52X18
PL-LDL-PF-102X18-△△	LDL-PF-102X18
PL-LDL-PF-152X18-△△	LDL-PF-152X18
PL-LDL-PF-52X30-△△	LDL-PF-52X30
PL-LDL-PF-102X30-△△	LDL-PF-102X30
PL-LDL-PF-152X30-△△	LDL-PF-152X30

△△: Polarizing direction
HO: Light is polarized parallel to the longer edge of the plate.
VE: Light is polarized parallel to the shorter edge of the plate.

▶ P.303

Coaxial type units



Model name	Applicable Light Unit (Common for all colors)
PL-LFV3-35	LFV-PF-35
PL-LFV3-50	LFV-PF-50

▶ P.303

Polarizing Filters

For use with camera lenses

Model name	Notes
PL-25	M25.5 P0.5
PL-25-NL	M25.5 P0.5
PL-27	M27.0 P0.5
PL-27-NL	M27.0 P0.5
PL-30	M30.5 P0.5
PL-30-NL	M30.5 P0.5
PL-40	M40.5 P0.5
PL-40-NL	M40.5 P0.5
PL-46	M46.0 P0.75

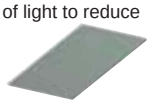
"-NL" models have a lock.

▶ P.301

Light Control Films

Improves parallelism of light to reduce light diffraction.

Coaxial type units



Model name	Applicable Light Unit (Common for all colors)
LC-LFV3-35	LFV-PF-35
LC-LFV3-50	LFV-PF-50

▶ P.304

Brackets

Secures Light Units.

Bar type units

Model name	Applicable Light Unit (Common for all colors)
BK-LDL-PF	LDL-PF-52X18
	LDL-PF-102X18
	LDL-PF-152X18
	LDL-PF-52X30
	LDL-PF-102X30
	LDL-PF-152X30

▶ P.305

Adapters

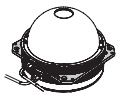
For attaching a Diffusion Plate or Polarizing Plate to the Ring Light.

Ring type units

Model name	Applicable Light Unit (Common for all colors)
AD-LDR-PF-36	LDR-PF-36
AD-LDR-PF-54	LDR-PF-54
AD-LDR-PF-75	LDR-PF-75

▶ P.307

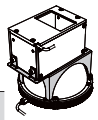
Brackets



Light Joint Brackets

Model name	Applicable units 1 (Common for all colors)	Applicable units 2 (Common for all colors)
BK-75-JO	HPR-PF-75	HPD-PF-75
BK-100-JO	HPR-PF-100	HPD-PF-100
BK-150-JO	HPR-PF-150	HPD-PF-150
BK-200-JO	HPR-PF-200	HPD-PF-200

▶ P.305



Coaxial Light Joint Brackets

Model name	Applicable units 1 (Common for all colors)	Applicable units 2 (Common for all colors)
BK-HPD2-75-LFV	HPD-PF-75	LFV-PF-35
BK-HPD2-100-LFV	HPD-PF-100	LFV-PF-50
BK-HPD2-150-LFV	HPD-PF-150	

▶ P.306

Expansion Mounting Brackets

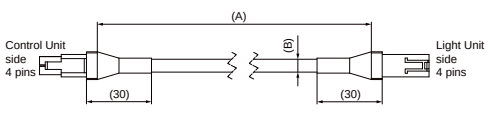
Model name	Applicable Light Unit (Common for all colors)	
BK-75-CI	HPR-PF-75	HPD-PF-75
BK-100-CI	HPR-PF-100	HPD-PF-100
BK-150-CI	HPR-PF-150	HPD-PF-150
BK-200-CI	HPR-PF-200	HPD-PF-200

▶ P.306

Extension Cables

Straight cables (Dedicated cables)

Applicable Light Units: Ring type, bar type, coaxial type, ring type for diffused lighting (75 and 100 sizes), dome type (75 and 100 sizes)



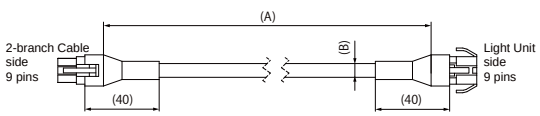
Model name	Dimension A	Dimension B	Cable permitted bending radius*	Weight
FCB-1-PF	1 m	Ø5.9	35.4 mm	100 g
FCB-2-PF	2 m			150 g
FCB-3-PF	3 m			200 g
FCB-5-PF	5 m	Ø7.0	42.0 mm	450 g

* The above cable permitted bending radii are reference values. Actual values may vary.
For information on connecting the extension cable, refer to the next page.

Straight cables (Dedicated cables)

(mm)

Applicable Light Units: Ring type for diffused lighting (150 and 200 sizes), dome type (150 and 200 sizes)



Model name	Dimension A	Dimension B	Cable permitted bending radius*	Weight
FCB-1-PF-EL9	1 m	Ø7.4	44.4 mm	100 g
FCB-2-PF-EL9	2 m			190 g
FCB-3-PF-EL9	3 m			270 g
FCB-5-PF-EL9	5 m	Ø9.1	54.6 mm	680 g

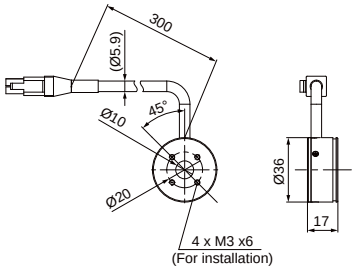
* The above cable permitted bending radii are reference values. Actual values may vary.
For information on connecting the extension cable, refer to the next page.

PF Series

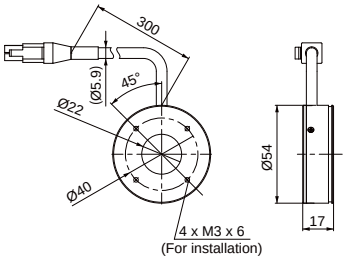
Dimensions (mm)

Ring Type

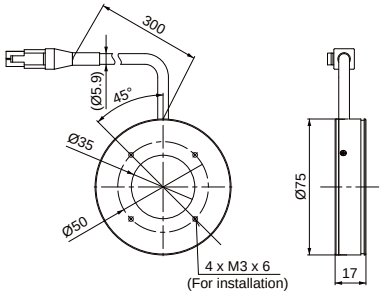
LDR-PF-36SW/RD



LDR-PF-54SW/RD

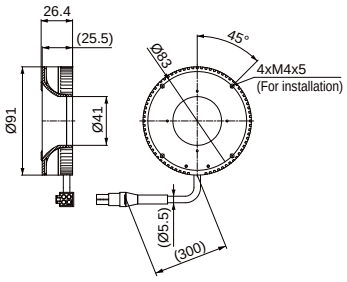


LDR-PF-75SW/RD

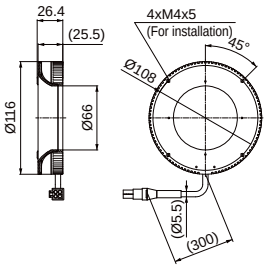


Ring Type for Diffused Lighting

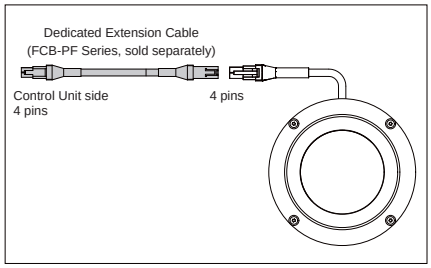
HPR-PF-75SW/RD



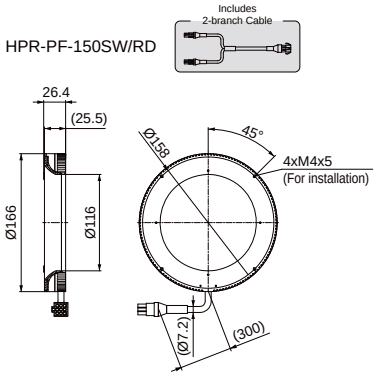
HPR-PF-100SW/RD



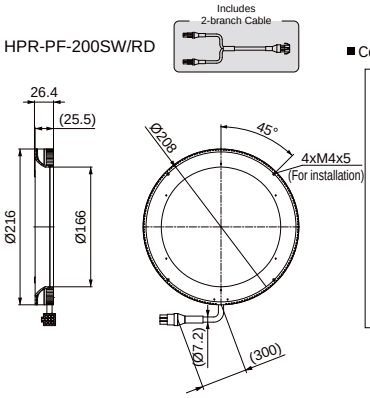
■ Connecting an extension cable to the HPR-PF-75/100 Light Unit



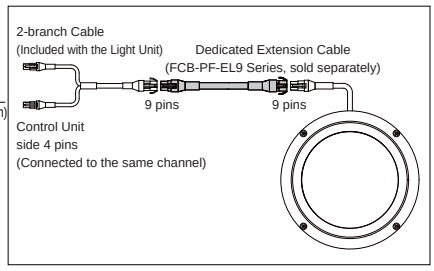
HPR-PF-150SW/RD



HPR-PF-200SW/RD

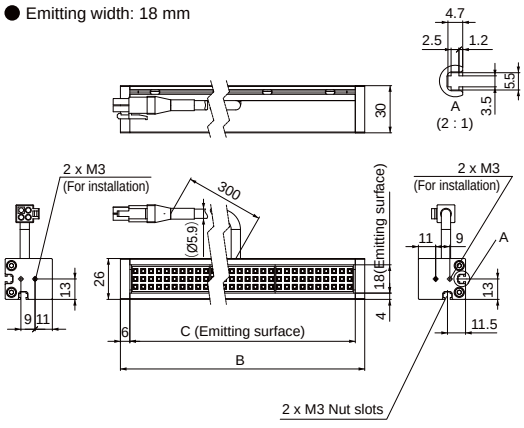


■ Connecting an extension cable to the HPR-PF-150/200 Light Unit



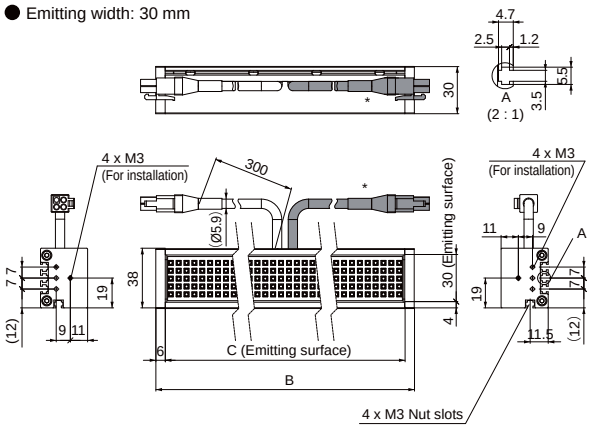
Bar Type

● Emitting width: 18 mm



Model name	B	C
LDL-PF-52X18SW/RD	64	52
LDL-PF-102X18SW/RD	114	102
LDL-PF-152X18SW/RD	164	152

● Emitting width: 30 mm



* The LDL-PF-152X30SW/RD Light Unit has two connectors.

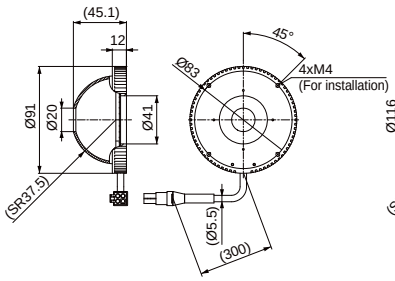
Model name	B	C
LDL-PF-52X30SW/RD	64	52
LDL-PF-102X30SW/RD	114	102
LDL-PF-152X30SW/RD	164	152

Various technical documents available. PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs

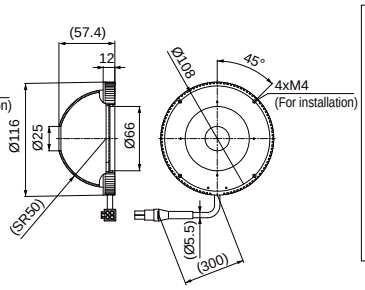
Dimensions (mm)

Dome Type

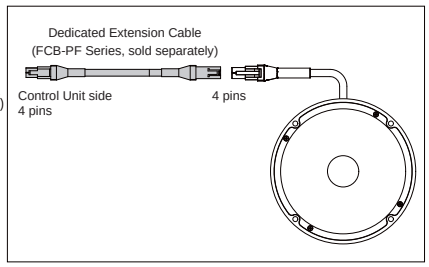
HPD-PF-75SW/RD



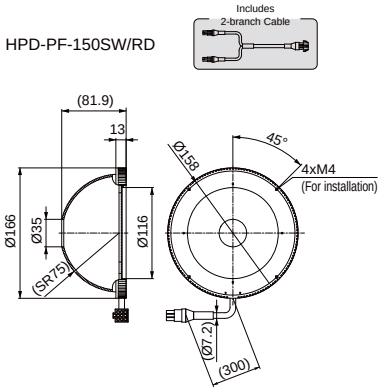
HPD-PF-100SW/RD



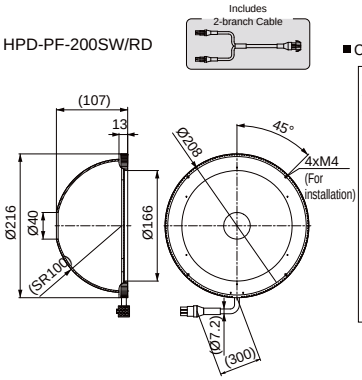
■ Connecting an extension cable to the HPD-PF-75/100 Light Unit



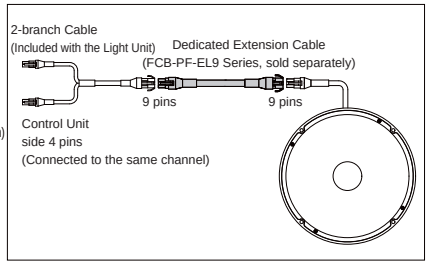
HPD-PF-150SW/RD



HPD-PF-200SW/RD

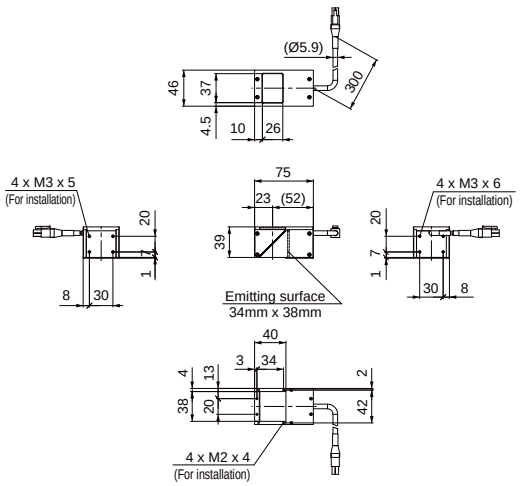


■ Connecting an extension cable to the HPD-PF-150/200 Light Unit



Coaxial Type

LFV-PF-35SW/RD



LFV-PF-50SW/RD