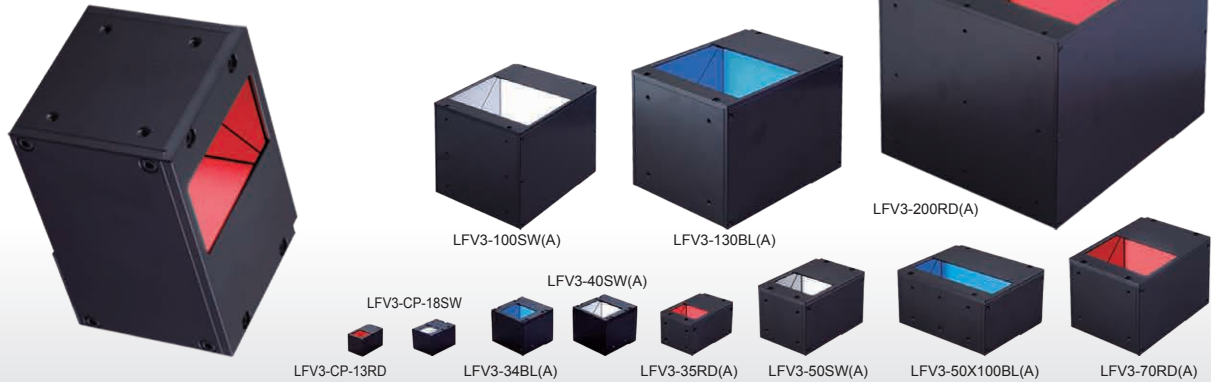




Provides diffused light evenly from the same axis as the camera



For information on change in model names, refer to P.129.

Applications

Inspection for fault, damage, scratches, or dents on glossy surfaces or mirrors; pattern inspection on printed circuit boards; dimension measuring of glass; inspection for damage and dents on resin molded products; etc.

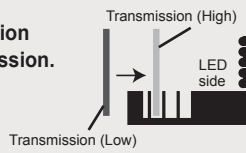
Freely Customize the Diffusion

Customize the diffusion

Diffusion plate status	Result
Change the transmission from (high) to (low)	Increased uniformity
Change the installation position to the LED side	Emphasized directionality

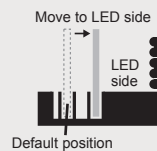
1) Prepared two types of diffusion plates with different transmission.

Replace the diffusion plate to change the transmission.



2) The installation position of the diffusion plate can be adjusted.

Change the position to achieve various imaging effects.



LFV3-CP Series

Replacing the half-mirror with a beam splitter increased accuracy. Suitable for imaging small workpieces and environments with limited installation space.



LFV3-CP-13SW

Supports High-Resolution Cameras

Highly-accurate optical glass is used for the camera window and the half-mirror. This allows for stable imaging when using high-resolution cameras.

LFV3 Series, a Coaxial Light with improved quality

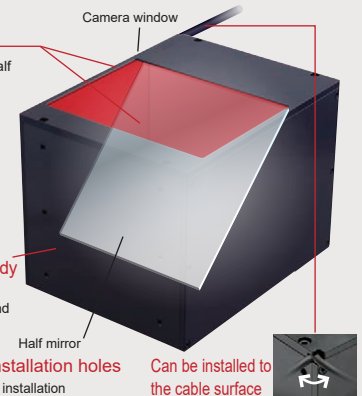
Uses optical glass
The camera window and half mirror are made of optical glass.

Expanded area for the camera window
By making the camera window wider, we ensured a larger field of vision.

Used an aluminum body
Used aluminum alloy to improve heat dissipation and achieve a durable body.

Increased light unit installation holes
We increased the number of installation holes for the light unit. Various installation directions are supported.

Can be installed to the cable surface
The cable can be bent flat in relation to the installation surface.



This description excludes the LFV3-CP-13 Series and the LFV3-CP-18 Series.

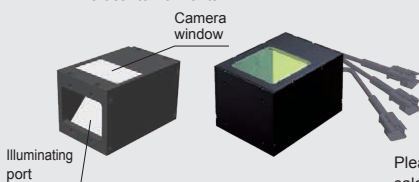
Custom Order Example

E.g.: Different shape

E.g.: Different color

Format/material
Created a light unit that changed the illuminating port from vertical to horizontal

Wavelength/color
Creating a full color (RGB) light unit



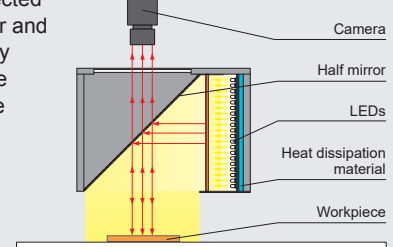
- External/internal diameter
- Wavelength/color
- Increase output
- Cable length
- Illuminating angle
- Format/material
- Connector format
- Installation/mounting
- Etc.

Please contact your CCS sales representative.

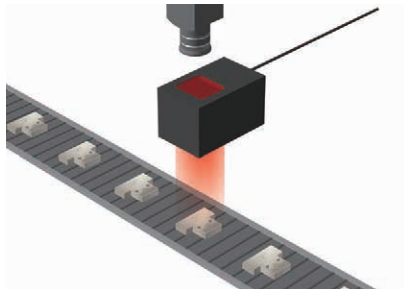
Example Configuration

Diffused light from the LEDs is reflected on the half mirror and directed vertically downward on the same axis as the camera axis.

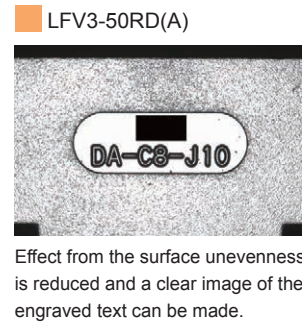
LFV3-100



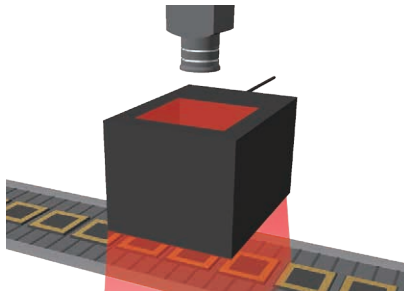
➤ Imaging Example: Imaging Engraved Text on Metal Connector Hoods



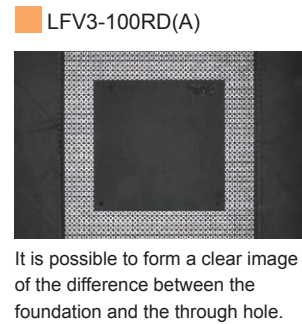
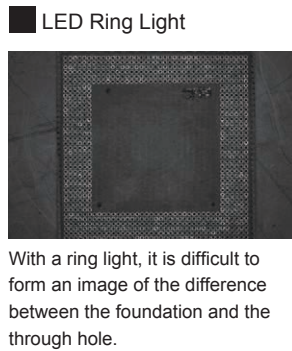
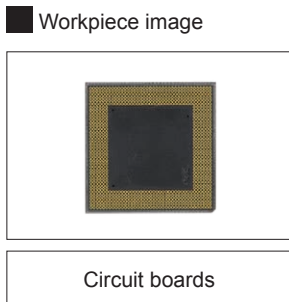
Description	Character recognition
Workpiece	Connector hoods
Conventional lighting	LED bar light
New lighting	LFV3-50RD(A)
Result	Emphasizes the engraved text



➤ Imaging Example: Imaging Through-Holes on Circuit Boards



Description	Visual inspection
Workpiece	Circuit boards
Conventional lighting	LED ring light
New lighting	LFV3-100RD(A)
Result	Improved uniformity



➤ Data: Relative Irradiance Graph and Uniformity (Representative Example)

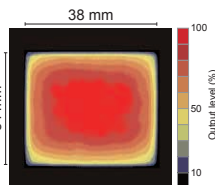
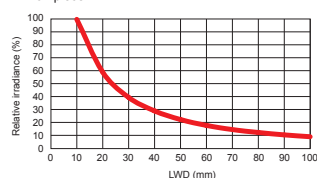
The data included is for reference only. Actual values may vary.

LFV3-35RD(A)

Relative irradiance graph (LWD characteristics)^{*2}

Uniformity (Relative radiance)

^{*1} Irradiance on the optical axis
^{*2} Illuminating distance from the light unit to the workpiece

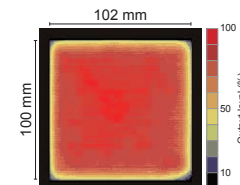
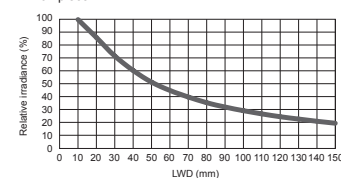


LFV3-100SW(A)

Relative irradiance graph (LWD characteristics)^{*2}

Uniformity (Relative radiance)

^{*1} Irradiance on the optical axis
^{*2} Illuminating distance from the light unit to the workpiece



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LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Ring (Direct)
HLDR3 HPR2 LFR LKR FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2 LDLB HLDL3 LB	Bar
TH2 (5 types) LFL	Flat
HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT	Dome
LFV3	Coaxial
LFV3-G	Coaxial
MSU MFU	Coaxial
PF	Strobe
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB
UV3/VL3 UV LNSP-UV3-FN	UV / Violet
IR2 (Under 1000-nm Type) IR (Over 1000-nm Type) CIR	Infrared
IU	Intensity Control
HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600SW2 PFBR-150 PFB3	Spot, Etc.
LNLP LNSP2 Coaxial Units LNSP-FN LN/LN-HK	Line (Convergent)
LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)	Line (Diffused)
LNDG LNSI2 LNIS LNIS-FN	Line (Oblique Angled)
Telecentric Lens Macro Lens	Lenses

LFV3 Series



Refer to our website for product details.

CCS LFV3

Search



Introduction to Illumination Port Position Change Type (Custom Order Example)

LFV3-RA Series

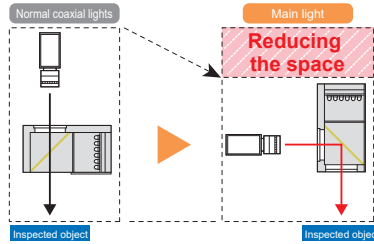


LFV3-35SW-RA24

The position of the illumination port of normal coaxial light can be changed by 90°. Suitable for the transportation system of the inspected objects and for environments where there are restrictions in the installation conditions of the camera.

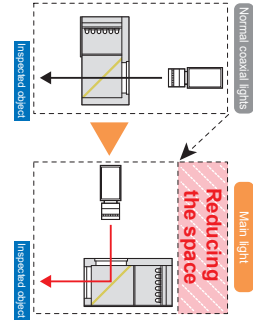
* The captured image is inverted.

1. Reducing the installation space in the vertical direction



Compared to normal coaxial lights, this light helps reduce the installation space in the vertical direction.

2. Reducing the installation space in the horizontal direction



Compared to normal coaxial lights, this light helps reduce the installation space in the horizontal direction.

Custom order products The warranty period of the custom order product is different from that of the CCS standard products. Contact our local sales office for details.

Lineup

Classification	Model Name*1	Input Voltage	Power Consumption			Options	Extension Cables	Recommended Control Units	Weight
			RD (Red)	SW (White)	BL (Blue)				
Standard products	LFV3-34□□ (A)	24 V	3.7 W	3.2 W	3.2 W	—		PD4, PD3	80 g
	LFV3-35□□ (A)	24 V	3.1 W	3.7 W	3.1 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film, Bracket		PD4, PD3, CC-ST-1024, POD*2	175 g
	LFV3-40□□ (A)	24 V	4.6 W	4.6 W	4.6 W	—		PD4, PD3	100 g
	LFV3-50□□ (A)	24 V	8.1 W	11 W	9.1 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film, Bracket	FCB*4 Straight Cable	PD4, PD3, CC-ST-1024*3, POD*2	335 g
	LFV3-50X100□□ (A)	24 V	17 W	20 W	17 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film, Bracket	FCB-W*5 2-Branch Cable	PD4, PD3, POD*2	530 g
	LFV3-70□□ (A)	24 V	13 W	19 W	16 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film, Bracket	FCB-F 4-Branch Cable	PD4, PD3, POD*2	620 g
	LFV3-100□□ (A)	24 V	22 W	27 W	27 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film	FCRB Robot Cable	PD4, PD3, POD*2	1,060 g
	LFV3-130□□ (A)	24 V	31 W	46 W	38 W	Diffusion Plate, Polarizing Plate, Protective Plate, LC film		PD4, PD3, POD*2	1,750 g
	LFV3-200□□ (A)	24 V	43 W	60 W	53 W	—		PD4, PD3, CC-ST-1024, POD*2	4,350 g
	LFV3-CP-13□□	24 V	2.1 W	2.3 W	1.3 W	—		PD4, PD3, CC-ST-1024, POD*2	37 g
Custom order products	LFV3-CP-18□□	24 V	3.3 W	4.1 W	3.4 W	—		PD4, PD3, CC-ST-1024, POD*2	70 g
	LFV3-35□□-RA (A)	24 V	3.1 W	3.7 W	3.1 W	—		PD4, PD3, CC-ST-1024, POD*2	*6
	LFV3-50□□-RA (A)	24 V	8.1 W	11 W	9.1 W	—		PD4, PD3, CC-ST-1024*3, POD*2	
	LFV3-50X100□□-RA (A)	24 V	17 W	20 W	17 W	—		PD4, PD3, CC-ST-1024*3, POD*2	
	LFV3-70□□-RA (A)	24 V	13 W	19 W	16 W	—		PD4, PD3, POD*2	
	LFV3-100□□-RA (A)	24 V	22 W	27 W	27 W	—		PD4, PD3, POD*2	
LFV3-130□□-RA (A)	24 V	*6	46 W	*6	—		PD4, PD3, POD*2		

*1 □□ in the model name contains the LED color.

(RD: Red, SW: White, BL: Blue)

*2 For information on the combination of light units and POD Series control unit, please refer to our website. <https://www.ccs-grp.com/lnk/qir/pod>

*6 This product is custom-made. Contact our local sales office for details.

Extension Cables ▶ P.371

Control Unit Selection Guide ▶ P.305

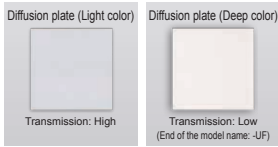
List of Control Unit Specifications ▶ P.307

Change in model names

The suffix "(A)" has been added to the end of several model names, e.g. "LFV3-34RD" has been changed to "LFV3-34RD(A)".

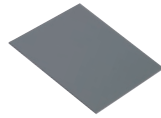
Reason	Effect on functions and performance	Relevant models (applicable to all colors)
Due to part manufacturer's circumstances, some optical parts were expected to become difficult to obtain. CCS has changed these parts with those of comparable performance.	The functions and performance of the light units have not been affected.	LFV3-34(A) / LFV3-35(A) / LFV3-40(A) / LFV3-50(A) / LFV3-50X100(A) / LFV3-70(A) / LFV3-100(A) / LFV3-130(A) / LFV3-200(A)

Options

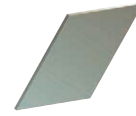


Replace the default diffusion plate to change the transmission.

When selecting, be aware that the default diffusion plate varies based on the emitted color.



Use with a polarizing filter to remove the light's surface reflection.



In this plastic film are fine louvers with extremely narrow gaps between them. It reduces light diffusion in a particular direction and increases parallelism.

Diffusion plate

Model Name	Applicable Light Unit (Common for all colors)
DF-LFV3-35	LFV3-35(A)
DF-LFV3-50	LFV3-50(A)
DF-LFV3-50X100	LFV3-50X100(A)
DF-LFV3-70	LFV3-70(A)
DF-LFV3-100	LFV3-100(A)
DF-LFV3-130	LFV3-130(A)
DF-LFV3-200	LFV3-200(A)

Model Name	Applicable Light Unit (Common for all colors)
DF-LFV3-35-UF	LFV3-35(A)
DF-LFV3-50-UF	LFV3-50(A)
DF-LFV3-50X100-UF	LFV3-50X100(A)
DF-LFV3-70-UF	LFV3-70(A)
DF-LFV3-100-UF	LFV3-100(A)
DF-LFV3-130-UF	LFV3-130(A)
DF-LFV3-200-UF	LFV3-200(A)

Polarizing plate

Model Name	Applicable Light Unit (Common for all colors)
PL-LFV3-35	LFV3-35(A)
PL-LFV3-50	LFV3-50(A)
PL-LFV3-50X100	LFV3-50X100(A)
PL-LFV3-70	LFV3-70(A)
PL-LFV3-100	LFV3-100(A)
PL-LFV3-130	LFV3-130(A)
PL-LFV3-200	LFV3-200(A)

Light Control (LC) Film

Model Name	Applicable Light Unit (Common for all colors)
LC-LFV3-35	LFV3-35(A)
LC-LFV3-50	LFV3-50(A)
LC-LFV3-50X100	LFV3-50X100(A)
LC-LFV3-70	LFV3-70(A)
LC-LFV3-100	LFV3-100(A)
LC-LFV3-130	LFV3-130(A)
LC-LFV3-200	LFV3-200(A)

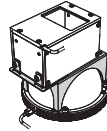
▶ P.364

▶ P.366

▶ P.367

Coaxial Light joint bracket

Model Name	Applicable Light Unit 1 (Common for all colors)	Applicable Light Unit 2 (Common for all colors)
BK-HPD2-75-LFV	LFV3-35	HPD2-75
BK-HPD2-100-LFV	LFV3-50	HPD2-100
BK-HPD2-150-LFV	LFV3-70	HPD2-150
BK-HPD2-200-LFV	LFV3-100	HPD2-200
BK-HPD2-250-LFV	LFV3-130	HPD2-250



Combine with a Dome Light to solve uneven illumination and achieve uniform illumination from all directions.

▶ P.370

Transparent acrylic protective plates (PR Series) with AR (anti-reflective) coatings are available to protect the light emission surface from scratches and dirt. Contact our local sales office for details.

Regarding Changing the Diffusion Plate and Adjusting the Position

Models that support replacing the diffusion plate

Model (Common for all colors)

LFV3-35 / 50 / 50X100 / 70 / 100 / 130 / 200

LFV3-34 / 40 / CP-13 / CP-18 does not support this feature.

Models that support adjusting the position of the diffusion plate

Model (Common for all colors)

LFV3-50 / 50X100 / 70 / 100 / 130 / 200

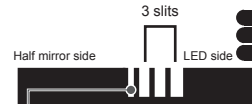
LFV3-34 / 35 / 40 / CP-13 / CP-18 does not support this feature.

Regarding the default diffusion plate

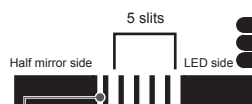
LFV3-35 / 50 / 50X100 / 70 / 100 / 130 / 200	
Red light, white light	Blue light
Diffusion plate (Light color) is default	Diffusion plate (Deep color) is default
Transmission: High	Transmission: Low (End of the model name: -UF)

Position adjustment slit

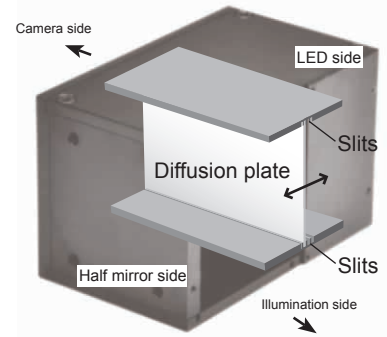
For LFV3-50 / 50X100 / 70



For LFV3-100 / 130 / 200



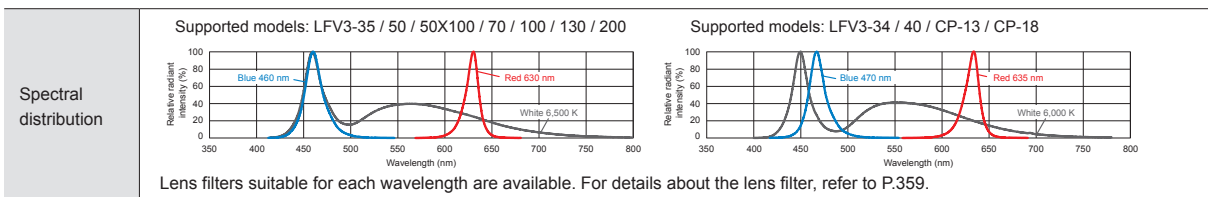
Slit for installing a polarizing plate or light control film



Conceptual image

For details about replacing the diffusion plate or adjusting the position, refer to the User Manual included with the product.

LED Properties



Lens filters suitable for each wavelength are available. For details about the lens filter, refer to P.359.

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

For details on the effective field of view when using coaxial lights, see "Effective Field of View of Coaxial Lights" on P. 393.

You can inquire using our website.

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- Free Product Trial
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- Pricing/Quotation
- Discontinued Products

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LDR2	Ring (Direct)
LDR2-LA	Ring (Direct)
SQR	Ring (Direct)
SQR-TP	Ring (Direct)
HLDR3	Ring (Convergent/Diffused)
HPR2	Ring (Convergent/Diffused)
LFR	Ring (Convergent/Diffused)
LKR	Ring (Convergent/Diffused)
FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2	Bar
LDLB	Bar
HLDL3	Bar
LB	Bar
TH2 (5 types)	Flat
LFL	Flat
HPD2	Dome
LDM2	Dome
LAV	Dome
PDM	Dome
LFXV	Dome
LFX3	Dome
LFX3-PT	Dome
LFV3	Coaxial
LFV3-G	Coaxial
MSU	Coaxial
MFU	Coaxial
PF	Strobe
HLDR-IP	Water-proof
HSL-PCL	Water-proof
Small COB Lights	COB
UV3/VL3	Violet
UV	Violet
LNSP-UV3-FN	Violet
IR2 (Under 1000-nm Type)	Infrared
IF (Over 1000-nm Type)	Infrared
CIR	Infrared
IU	Intensity Control
HLV3	Spot, Etc.
LV	Spot, Etc.
LSP	Spot, Etc.
HFS/HFR	Spot, Etc.
HLV3-22-4-NR	Spot, Etc.
HLV3-3M-RGB-4	Spot, Etc.
PFBR-600SW2	Spot, Etc.
PFBR-150	Spot, Etc.
PFBR3	Spot, Etc.
LNL	Line (Convergent)
LNSP2	Line (Convergent)
Coaxial Units	Line (Convergent)
LNSP-FN	Line (Convergent)
LN/LN-HK	Line (Convergent)
LNSD	Line (Diffused)
LND2	Line (Diffused)
LT	Line (Diffused)
LFVX (Rectangular Type)	Line (Diffused)
TH2 (Rectangular Type)	Line (Diffused)
LNDG	Line (Oblique Angled)
LNIS2	Line (Oblique Angled)
LNIS	Line (Oblique Angled)
LNIS-FN	Line (Oblique Angled)
Telecentric Lens	Lenses
Macro Lens	Lenses

LFV3 Series



Refer to our website for product details.

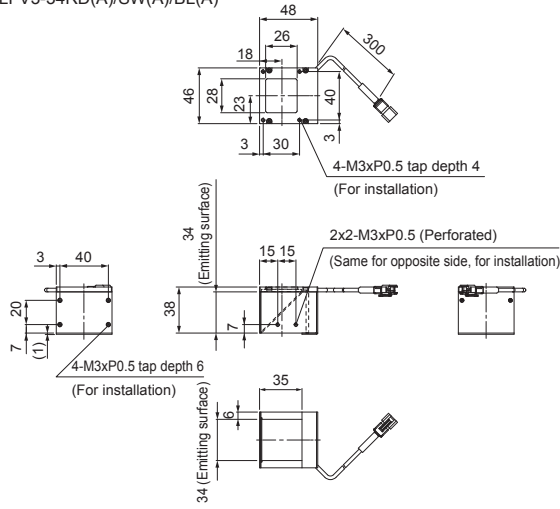
CCS LFV3

Search

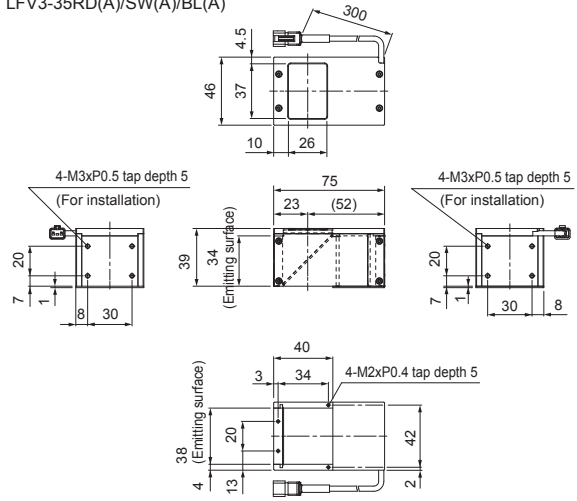


Dimensions (mm)

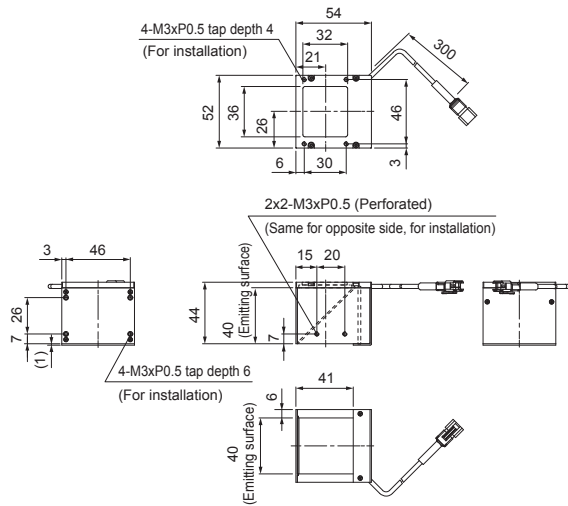
LFV3-34RD(A)/SW(A)/BL(A)



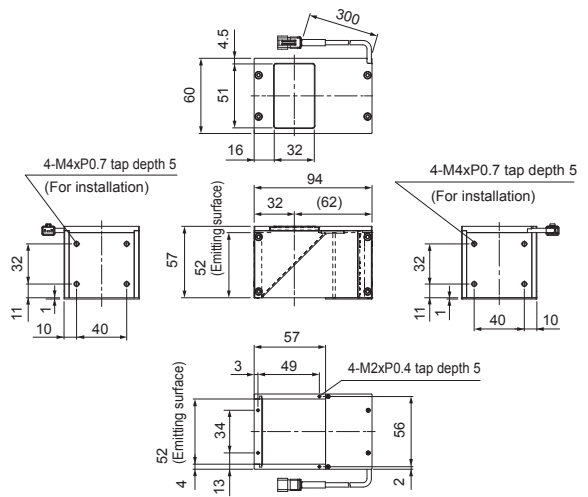
LFV3-35RD(A)/SW(A)/BL(A)



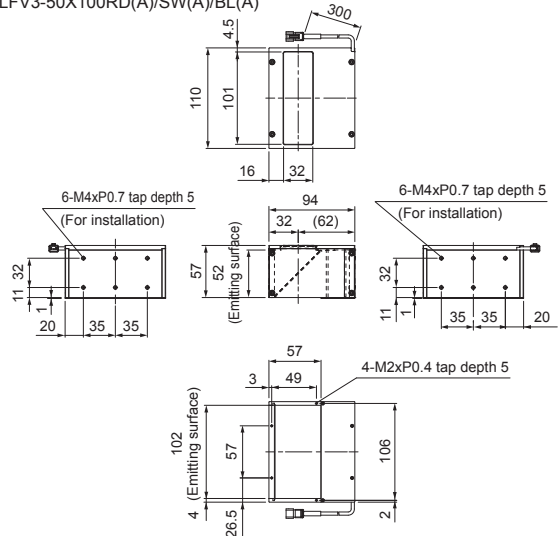
LFV3-40RD(A)/SW(A)/BL(A)



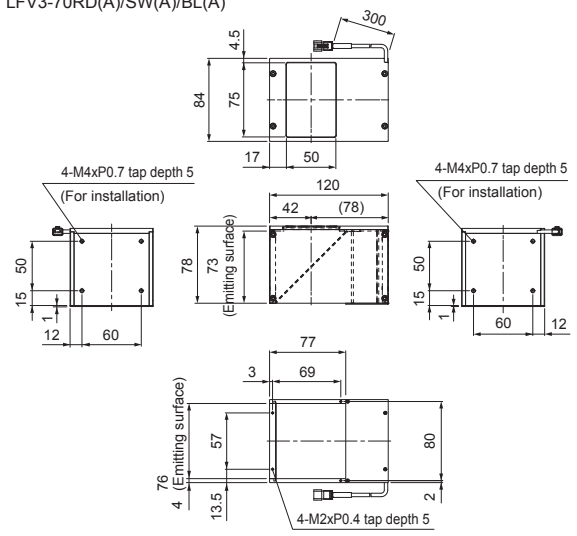
LFV3-50RD(A)/SW(A)/BL(A)



LFV3-50X100RD(A)/SW(A)/BL(A)



LFV3-70RD(A)/SW(A)/BL(A)



Ring (Direct)	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Ring (Convergent/Diffused)	HLDR3 HPR2 LFR LKR FPR
Square	FPQ3
Bar	LDL2 LDLB HLDL3 LB
Flat	TH2 (5 types) LFL
Dome	HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT
Coaxial	LFV3 LFV3-G
Coaxial	MSU MFU
Strobe	PF
Water-proof	HLDR-IP HSL-PCL
COB	Small COB Lights
UV/Violet	UV3/VL3 UV LNSP-UV3-FN
Infrared	IR2 (Under 1000-nm Type) IR (Over 1000-nm Type) CIR
Intensity Control	IU
Spot, Etc.	HLV3 LV LSP HFS/HFR HLV3-22-4-NR HLV3-3M-RGB-4 PFBR-600SW2 PFBR-150 PFBR-150 PFBR-150
Line (Convergent)	LNLPL LNSP2 Coaxial Units LNSP-FN LN/LN-HK
Line (Diffused)	LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)
Line (Oblique Angled)	LNDG LNIS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens

