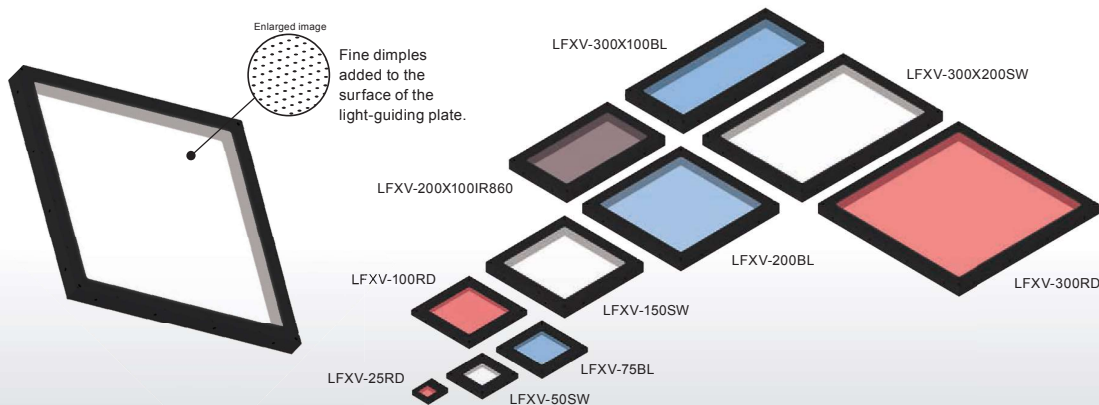




Recreates the effect of dome lights using thin case design



Applications Appearance or text inspection on metal surfaces, curved surfaces, or uneven surfaces; foreign material inspection of food and medicine; character recognition of packaging; inspection of text on can surfaces; etc.

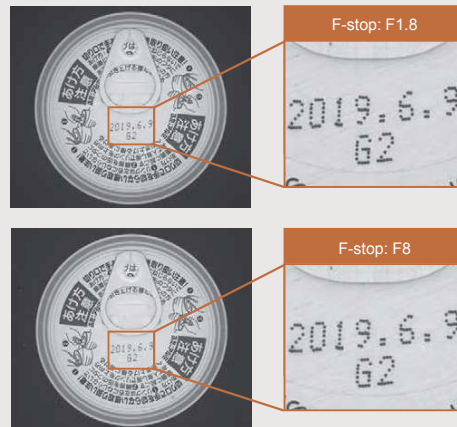
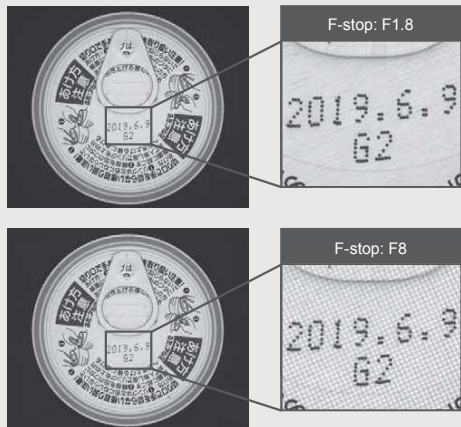
Bright and Clear Field of View Using New Light-Guiding Plate

Reduces image irregularities and moire due to the surface dot pattern.

For details on "Image irregularities due to the surface dot pattern", refer to P.120 "Using LFX3 - Obtaining appropriate images-".

● LFX3-100SW (White)

● LFXV-100SW (White)



Note: Image irregularities and moire may occur, depending on the capture conditions and the type of the image processing.

Imaging environment: 5-megapixel camera (effective pixels: 2448x2048, 3.45x3.45 μm, 2/3 inch), 5M-compatible lens (focal length: 25 mm, F1.8-16), Distance between the camera and the workpiece: 290 mm. Distance between the light unit and the workpiece: 20 mm
The data included is for reference only. Actual values may vary.

Spots of light may appear due to foreign objects in the light-guiding plate, but this falls within our testing standards and is not a product defect.

Custom Order Example

E.g: Different shape

Format/material Created a light unit that has an enlarged emitting surface.



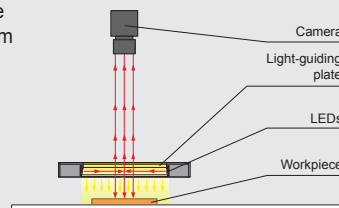
- External/internal diameter
- Wavelength/color
- Increase output
- Cable length
- Illuminating angle
- Format/material
- Connector format
- Installation/mounting
- Etc.

Please contact your CCS sales representative.

Example Configuration

Fine dimples added to the surface of the light-guiding plate enable the uniform illumination of workpieces.

LFXV-100



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 (Strobe)	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 PFBR3
Line (Convergent)	LNLP 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

➤ Total of 40 Models in 10 Different Sizes

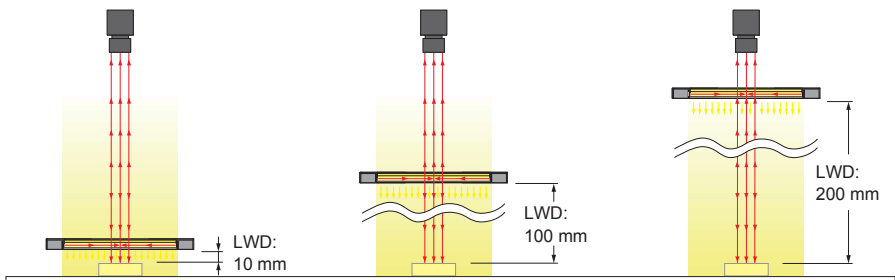
Total of 40 models with a lineup of four different light colors in 10 different light emitting surface sizes. Large sizes and rectangular sizes now available.

NO.	Series	Light emitting surface size (mm)	LED color
(1)	LFXV-25	25x25	Red/White/ Blue/Infrared
(2)	LFXV-50	50x50	
(3)	LFXV-75	75x75	
(4)	LFXV-100	100x100	
(5)	LFXV-150	150x150	
(6)	LFXV-200X100	200x100	
(7)	LFXV-200	200x200	
(8)	LFXV-300X100	300x100	
(9)	LFXV-300X200	300x200	
(10)	LFXV-300	300x300	

➤ Suitable for a Wide Range of Applications

Recreates the effect of Dome Lights when used close to the workpiece.
Recreates the effect of Coaxial Lights when used further from the workpiece.

Imaging Comparison
Changing the distance between the light and the workpiece (LWD) highlights different parts of the workpiece.



Workpiece



At LWD of 10 mm, the whole surface of the workpiece is illuminated uniformly. The bumps are eliminated from the image.



At LWD of 100 mm, the bumps and pull tab are captured.



At LWD of 200 mm, the bumps and pull tab are emphasized.

Workpiece



At LWD of 10 mm, the whole surface of the workpiece is illuminated uniformly. This allows the outer edge of the container and the printed text to be imaged.



At LWD of 100 mm, the printed text and shrink film are captured.



At LWD of 200 mm, the shrink film is emphasized.

LWD is the distance between the lighting fixture and the workpiece. The data included is for reference only. Actual values may vary.

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 LFV3-G	Coaxial
MSU MFU	Coaxial
PF	Strobe
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB
UV3/ML3 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.
LNLPL LNSP2 Coaxial Units LNSP-FN LN/LN-HK	Line (Convergent)
LNSD LND2 LT LNV LFYV LFYV (Rectangular Type) TH2 (Rectangular Type)	Line (Diffused)
LNDG LNSI2 LNSI LNSI-FN	Line (Oblique Angled)
Telecentric Lens Macro Lens	Lens

LFXV Series



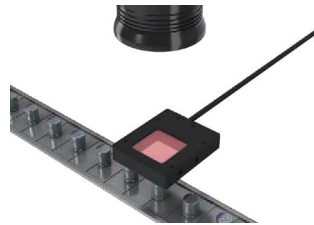
Refer to our website for product details.

CCS LFXV

Search



Imaging Example: Imaging the Appearance of Capacitors



Description	Visual inspection
Workpiece	Capacitors
Conventional light	LED Diffusion Ring Light
New light	LFXV-25RD
Result	Improves the uniformity

Workpiece image



Capacitors

LED Diffusion Ring Light



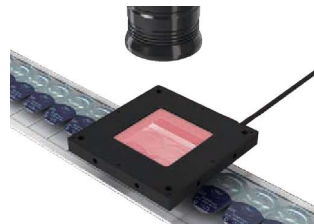
Hairline finishing on the surface makes it difficult to read the printed text.

LFXV-25RD



The hairline finishing is no longer visible, making it possible to read the printed text.

Imaging Example: Imaging the Appearance of Contact Lens Packages



Description	Visual inspection
Workpiece	Contact lens packages
Conventional light	LED Ring Light
New light	LFXV-50RD
Result	Improves the uniformity

Workpiece image



Contact lens packages

LED Ring Light



It is difficult to determine the 2-D code due to the glossy and wavy surface.

LFXV-50RD



It is possible to determine the 2-D code by evenly illuminating the surface.

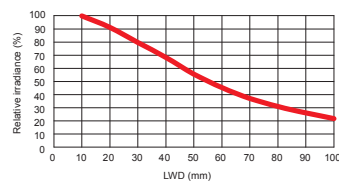
Data: Relative Irradiance Graph and Uniformity (Representative Example)

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

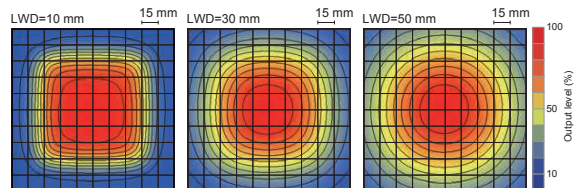
LFXV-100RD

Relative irradiance graph (LWD characteristics)^{*1}

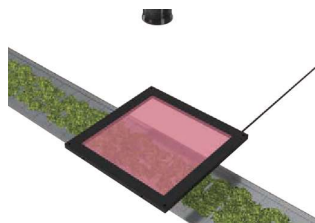
*1 Irradiance on the optical axis
*2 Illuminating distance from the light unit to the workpiece



Uniformity (Relative irradiance)



➤ Imaging Example: Imaging of Foreign Materials in Tea Leaves



Description	Foreign materials inspection
Workpiece	Tea leaves
Conventional light	LED Dome Light
New light	LFXV-200IR860: Infrared Type
Result	Emphasizes foreign material

Workpiece image



Tea leaves

LED Dome Light



It is difficult to image foreign objects using white light.

LFXV-200IR860



Foreign objects can be imaged using infrared light.

The foreign object was intentionally added for image sampling purposes.

➤ Imaging Example: Imaging the Appearance of Food Packages



Description	Visual inspection
Workpiece	Food package
Conventional light	LED Dome Light
New light	LFXV-300SW
Result	Improves the uniformity

Workpiece image



Food packages

LED Dome Light



Shadows from the lighting aperture obscure the center of the container, making imaging difficult.

LFXV-300SW (White)



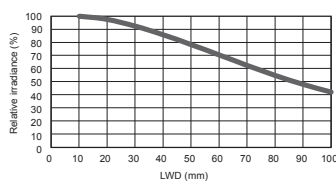
Uniformly lights the container all the way to the bottom, enabling imaging of the container appearance.

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

LFXV-200SW

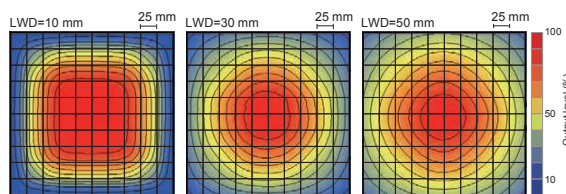
Relative irradiance graph^{*1}
(LWD characteristics)^{*2}

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



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

Uniformity (Relative irradiance)



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 LFV3-G	Coaxial
MSU MFU	Coaxial
PF	Strobe
HLDR-IP HSL-PCL Small COB Lights	Water-proof 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.
LNL LNSP2 Coaxial Units LNSP-FN LN/LN-HK	Line (Convergent)
LNSD LND2 LT LNV LNV (Rectangular Type) TH2 (Rectangular Type)	Line (Diffused)
LNDG LNS2 LNS LNS-FN	Line (Oblique Angled)
Telecentric Lens Macro Lens	Lens

LFXV Series



Refer to our website for product details.

CCS LFXV

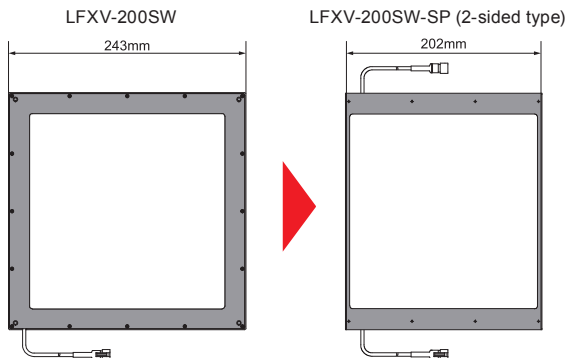
Search



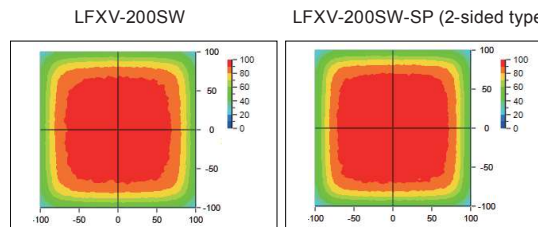
Introduction to LFXV Series 2-sided Type (Custom Order Example)

Saves space without lowering uniformity by installing LEDs on only two sides.

Helps save space



Comparison of the uniformity (relative irradiance) (simulation)



Note: Above is simulation data.
Actual uniformity depends on the customer's operating environment. Contact our local sales office for details.
The central irradiance of the 2-sided type is about 50% lower than the original model.

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

Model Name*1	Input Voltage	Power Consumption				Options	Extension Cables	Recommended Control Units	Weight
		RD (Red)	SW (White)	BL (Blue)	IR860 (Infrared)				
LFXV-25□□	24 V	1.2 W	1.3 W	1.2 W	1.2 W	—	FCB*3 Straight Cable	PD4 PD3	80 g
LFXV-50□□		9.1 W	9.9 W	9.3 W	5.7 W	Protective Plate	CC-ST-1024	POD*2	190 g
LFXV-75□□		14 W	15 W	14 W	12 W		FCB-F 4-Branch Cable	PD4 PD3	POD*2
LFXV-100□□		16 W	20 W	19 W	12 W	400 g			
LFXV-150□□		28 W	30 W	28 W	17 W	870 g			
LFXV-200X100□□		23 W	30 W	28 W	17 W	870 g			
LFXV-200□□		31 W	40 W	38 W	23 W	1,300 g			
LFXV-300X100□□		31 W	40 W	38 W	23 W	1,300 g			
LFXV-300X200□□		38 W	50 W	47 W	29 W	1,600 g			
LFXV-300□□		46 W	60 W	56 W	34 W	2,000 g			

Extension Cables ▶ P.371

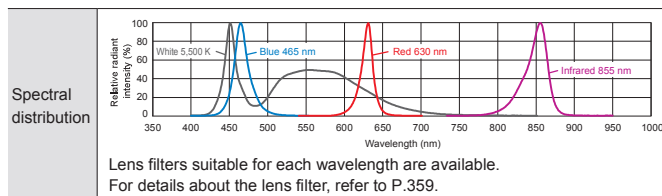
Control Unit Selection Guide ▶ P.305

List of Control Unit Specifications ▶ P.307

*1 □□ in the model name contains the LED color. (RD: Red, SW: White, BL: Blue, IR860: Infrared)

*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/qr/pod>

LED Properties



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.

Precautions for Use

Imaging may be affected by dirt or dust on the light unit's surface.

Be careful when handling the emitting surface and do not let dirt, dust, or fingerprints get on the light unit.

- Do not touch dirt or dust by hand. Remove by blowing air.
- If finger prints get on the light unit, wipe them off using a fine soft cloth.
- If the light unit is very dirty, use a diluted neutral cleaner and a fine soft cloth to lightly wipe it down.
- Do not use chemicals such as alcohol to wipe the emitting surface.

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.

Options



Protective Plate

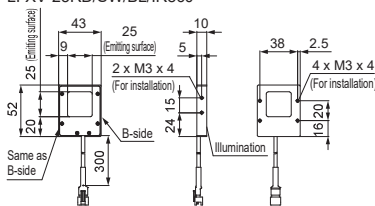
Protects the light-guiding dispersion plate. (It is not intended to prevent dust, water droplets, etc.)

Model Name	Applicable Light Unit
PR-LFXV-50	LFXV-50
PR-LFXV-75	LFXV-75
PR-LFXV-100	LFXV-100 LFXV-PF-100
PR-LFXV-150	LFXV-150
PR-LFXV-200X100	LFXV-200X100
PR-LFXV-200	LFXV-200

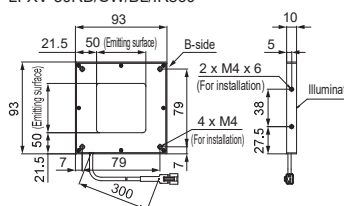
*Protective plates of sizes other than the above can be custom ordered. Contact our local sales office for details.

Dimensions (mm)

LFXV-25RD/SW/BL/IR860

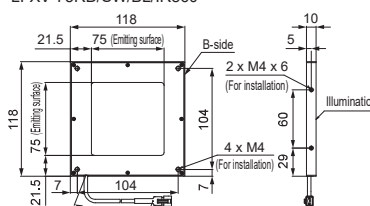


LFXV-50RD/SW/BL/IR860



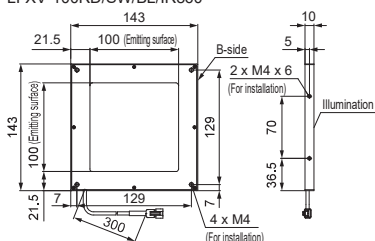
*All sides are the same as B-side.

LFXV-75RD/SW/BL/IR860



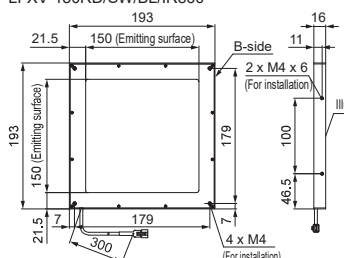
*All sides are the same as B-side.

LFXV-100RD/SW/BL/IR860



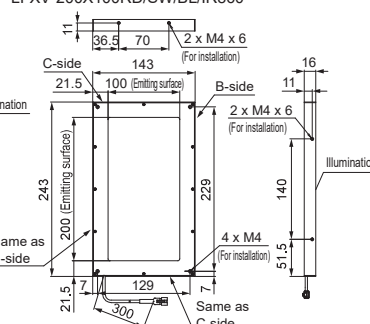
*All sides are the same as B-side.

LFXV-150RD/SW/BL/IR860

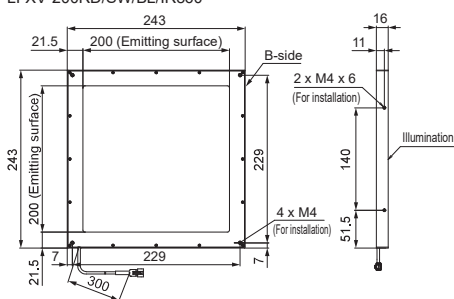


*All sides are the same as B-side.

LFXV-200X100RD/SW/BL/IR860

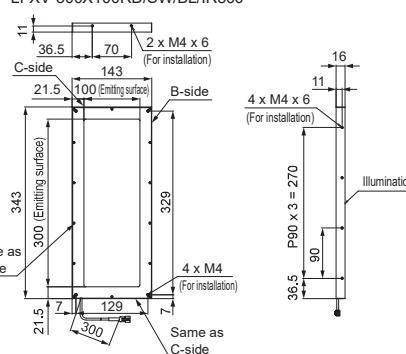


LFXV-200RD/SW/BL/IR860

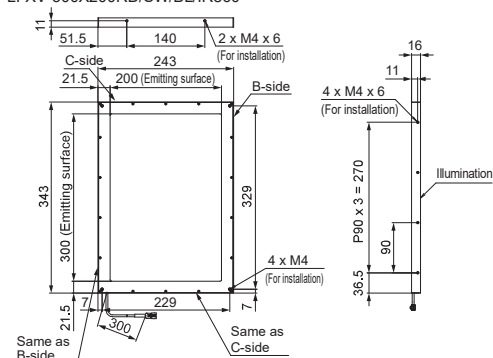


*All sides are the same as B-side.

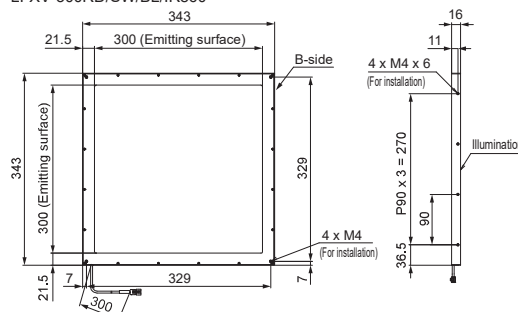
LFXV-300X100RD/SW/BL/IR860



LFXV-300X200RD/SW/BL/IR860

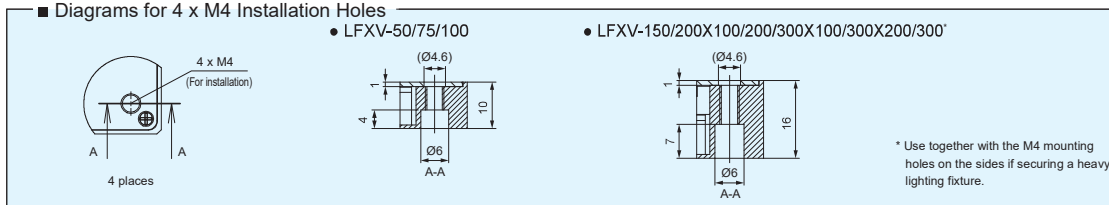


LFXV-300RD/SW/BL/IR860



*All sides are the same as B-side.

Diagrams for 4 x M4 Installation Holes



LDR2	Ring (Direct)
LDR2-LA	Ring (Direct)
LDR-LA1	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	UV / Violet
UV	UV / Violet
LNSP-UV3-FN	UV / Violet
IR2 (Under 1000-nm Type)	Infrared
IR (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.
PFB3	Spot, Etc.
LNLP	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)
LNV	Line (Diffused)
LFV (Rectangular Type)	Line (Diffused)
TH2 (Rectangular Type)	Line (Diffused)
LDNG	Line (Oblique Angled)
LNIS2	Line (Oblique Angled)
LNIS	Line (Oblique Angled)
LNIS-FN	Line (Oblique Angled)
Telecentric Lens	Lens
Macro Lens	Lens