

Flat Dome Lights LFXV Series



Industry Leading Flat Dome Light with a Clear Field of View

- ☐ Newly developed light-guiding plate
- ☐ Available in 10 sizes, for a total lineup of 40 models
- ☐ **Large sizes up to 300 mm** and rectangular sizes now available
- ☐ Select from four LED colors: red, white, blue, and infrared
- ☐ Space-saving case design is thin, compact, and lightweight

10 **Total of 40 Models**
Size
Lineup!



- Bright and clear field of view using new light-guiding plate
- Available in 10 sizes, for a total lineup of 40 models
- Large sizes and rectangular sizes now available
- Select from four LED colors: red, white, blue, and infrared
- Space-saving case design is thin, compact, and lightweight

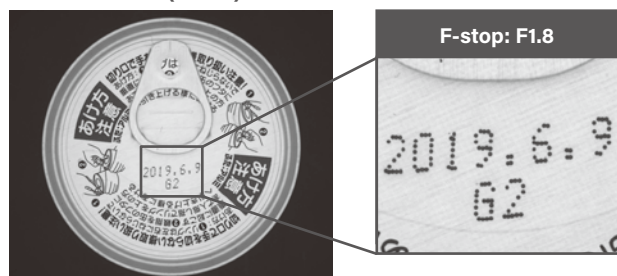


Bright and Clear Field of View Using New Light-Guiding Plate

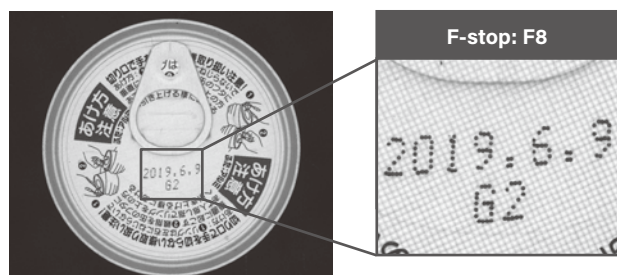
Obtain clear images even with a larger depth of field.

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

● LFX3-100SW (White)



● LFXV-100SW (White)

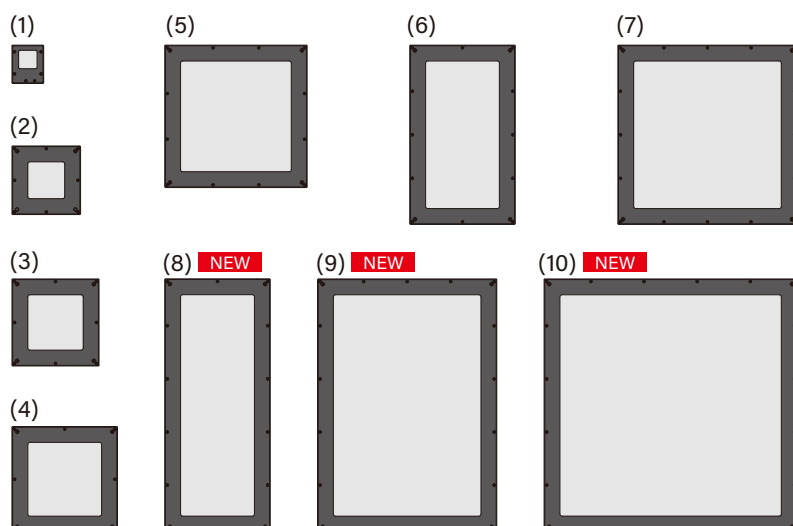


Spots of light may appear due to foreign objects in the light-guiding plate, but this falls within our testing standards and is not a product defect.

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.

Total of 40 Models in 10 Different Sizes

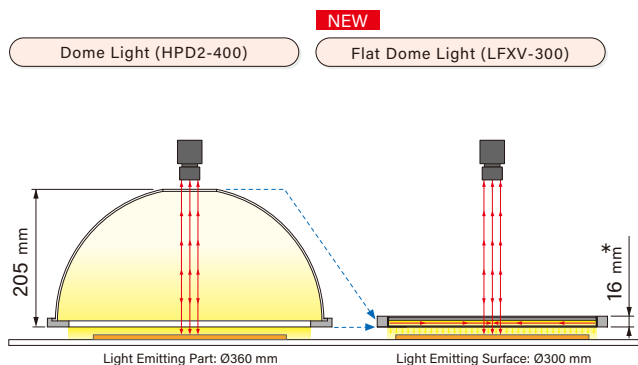
Total of 40 models with a lineup of four different light colors in 10 different light emitting surface sizes.
Large sizes and rectangular sizes now available.



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)	NEW LFXV-300X100	300x100	
(9)	NEW LFXV-300X200	300x200	
(10)	NEW LFXV-300	300x300	

Space-saving case design is thin and compact

Achieve illumination similar to Dome Lights in a lighter, more compact unit.



* LFXV-25/50/75/100 thickness is 10 mm.

LFXV-150/200X100/200/300X100/300X200/300 thickness is 16 mm.

Imaging the Appearance of Bagged Peanuts

● HPD2-400SW (White)



LWD: 15 mm, Light intensity: 70%

● **NEW** LFXV-300SW (White)



LWD: 15 mm, Light intensity: 70%

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

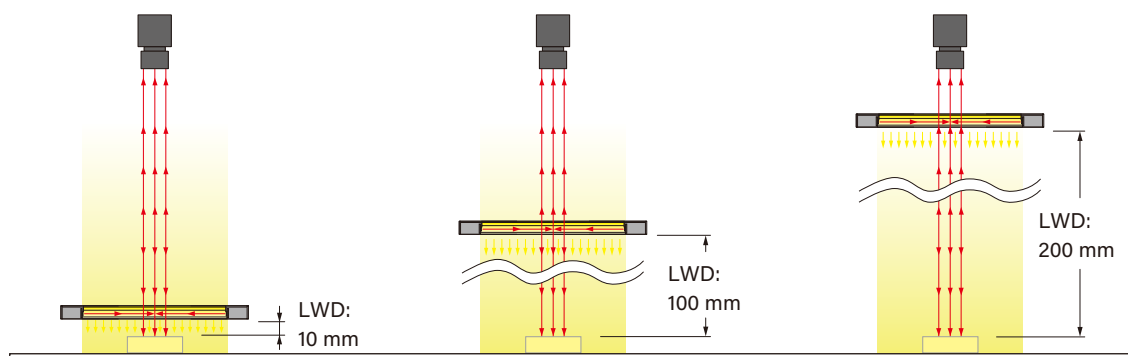
Suitable for a Wide Range of Applications

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.

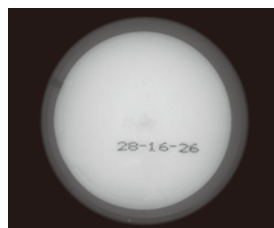


At LWD of 100 mm, the bumps and pull tab are captured.



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.

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

Electronic Components Industry

[Imaging the Appearance of Capacitors]



Workpiece



Capacitors

Diffuse Ring Light (Red)



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

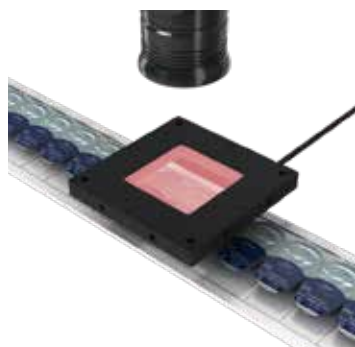
LFXV-25RD (Red)



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

Pharmaceutical Industry

[Imaging the Appearance of Contact Lens Packages]



Workpiece



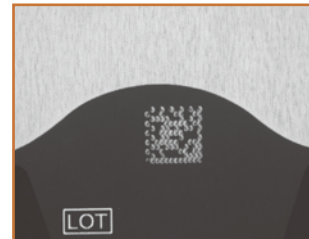
Imaging the Appearance of Contact Lens Packages

Ring Light (Red)



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

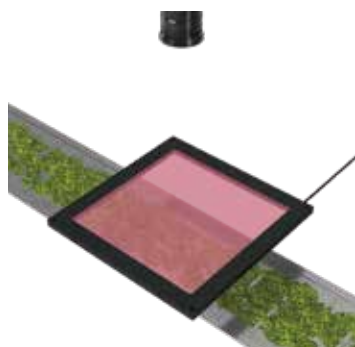
LFXV-50RD (Red)



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

Food Industry

[Imaging of Foreign Materials in Tea Leaves]



Workpiece



Tea Leaves

Dome Light (White)



It is difficult to image foreign objects using white light.

LFXV-200IR860 (Infrared)



Foreign objects can be imaged using infrared light.

Packaging Industry



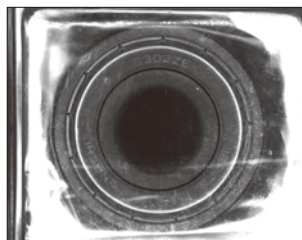
[Imaging Bearings in Transparent Packages]

Workpiece



Bearings

Diffuse Ring Light (Red)



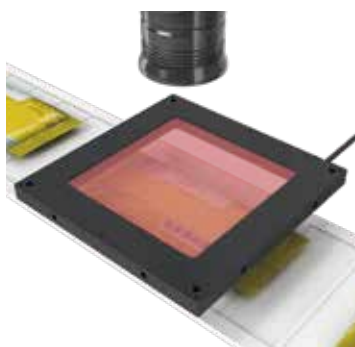
Due to reflection from the package surface, it is difficult to capture the bearings.

LFXV-100RD (Red)



Surface reflection is eliminated and the bearings are cleanly imaged.

Packaging Industry



[Imaging the Printed Text on Food Packages]

Workpiece



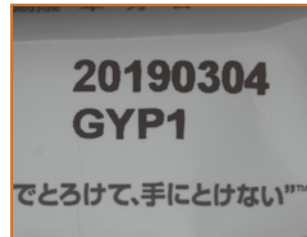
Candies

Diffuse Ring Light (Red)



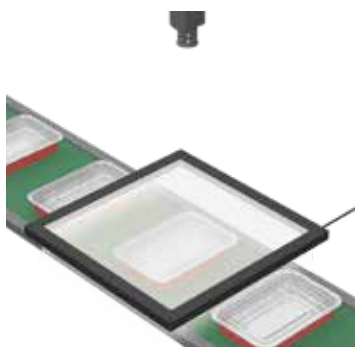
Due to bumps and reflection from the package surface, it is difficult to capture a stable image.

LFXV-100RD (Red)



The effects of surface reflections and bumps are eliminated, enabling stable imaging.

Packaging Industry



[Imaging the Appearance of Food Packages]

Workpiece



Food Package

Dome Light (White)



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

NEW
LFXV-300SW (White)



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

Lineup Overview

Model name	LED color	Power consumption	Peak wavelength / correlated color temperature	Options	Extension cables	Recommended Control Units	Weight
LFXV-25RD	Red	24 V / 1.2 W	630 nm	—	<div>FCB*3 Straight Cable</div> <div>FCB-W*4 2-Branch Cable</div> <div>FCB-F 4-Branch Cable</div> <div>FRCB Robot Cable</div> <p>*3 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.</p> <p>*4 The cables with a model name that ends with "-EL2" are not included.</p>	<div>PD3</div> <div>CC-ST-1024</div> <div>PSB</div> <div>POD *1</div>	80 g
LFXV-25SW	White	24 V / 1.3 W	5,500 K				
LFXV-25BL	Blue	24 V / 1.2 W	465 nm				
LFXV-25IR860	Infrared	24 V / 1.2 W	855 nm				
LFXV-50RD	Red	24 V / 9.1 W	630 nm				
LFXV-50SW	White	24 V / 9.9 W	5,500 K				
LFXV-50BL	Blue	24 V / 9.3 W	465 nm				
LFXV-50IR860	Infrared	24 V / 5.7 W	855 nm				
LFXV-75RD	Red	24 V / 14 W	630 nm				
LFXV-75SW	White	24 V / 15 W	5,500 K				
LFXV-75BL	Blue	24 V / 14 W	465 nm				
LFXV-75IR860	Infrared	24 V / 12 W	855 nm				
LFXV-100RD	Red	24 V / 16 W	630 nm				
LFXV-100SW	White	24 V / 20 W	5,500 K				
LFXV-100BL	Blue	24 V / 19 W	465 nm				
LFXV-100IR860	Infrared	24 V / 12 W	855 nm				
LFXV-150RD	Red	24 V / 28 W	630 nm				
LFXV-150SW	White	24 V / 30 W	5,500 K				
LFXV-150BL	Blue	24 V / 28 W	465 nm				
LFXV-150IR860	Infrared	24 V / 17 W	855 nm				
LFXV-200X100RD	Red	24 V / 23 W	630 nm				
LFXV-200X100SW	White	24 V / 30 W	5,500 K				
LFXV-200X100BL	Blue	24 V / 28 W	465 nm				
LFXV-200X100IR860	Infrared	24 V / 17 W	855 nm				
LFXV-200RD	Red	24 V / 31 W	630 nm				
LFXV-200SW	White	24 V / 40 W	5,500 K				
LFXV-200BL	Blue	24 V / 38 W	465 nm				
LFXV-200IR860	Infrared	24 V / 23 W	855 nm				
LFXV-300X100RD	Red	24 V / 31 W	630 nm				
LFXV-300X100SW	White	24 V / 40 W	5,500 K				
LFXV-300X100BL	Blue	24 V / 38 W	465 nm				
LFXV-300X100IR860	Infrared	24 V / 23 W	855 nm				
LFXV-300X200RD	Red	24 V / 38 W	630 nm				
LFXV-300X200SW	White	24 V / 50 W	5,500 K				
LFXV-300X200BL	Blue	24 V / 47 W	465 nm				
LFXV-300X200IR860	Infrared	24 V / 29 W	855 nm				
LFXV-300RD	Red	24 V / 46 W	630 nm				
LFXV-300SW	White	24 V / 60 W	5,500 K				
LFXV-300BL	Blue	24 V / 56 W	465 nm				
LFXV-300IR860	Infrared	24 V / 34 W	855 nm				

*1 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>

Common Specifications

Input voltage (max.)	24 VDC	Operating environment (indoors only)	Temperature: 0 to 40°C, Humidity: 20 to 85%RH (with no condensation)
Connector	SM connector (SMR-03V-B)	Storage environment	Temperature: -20 to 60°C, Humidity: 20 to 85%RH (with no condensation)
Polarity, signal	1: (+), 2: NC, 3: (-)	Cooling method	Natural air-cooling
CE marking	Safety standard: Conforms to EN 62471	Spectral distribution	
Environmental regulations	RoHS compliant		
Case material	Aluminum alloy, Resin (protective plate, light-guiding plate)		
Cable length	300 mm		

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

Usage Precautions

● **Dirt or dust on the emitting surface may affect the captured image.**

Handle the emitting surface with care. Make sure no dirt, dust, or fingerprints get on the Light Unit.

(*Protective plates* are available as options. See the back cover for details.)

- Remove dirt and dust by blowing air rather than touching by hand.
- Use a soft, finely woven cloth to wipe away any marks, such as fingerprints.
- Use a soft, finely woven cloth soaked with diluted neutral detergent to remove any heavy dirt.
- Do not use chemicals such as alcohol to wipe the emitting surface.

Technical drawings of the LED module showing dimensions in mm:

- Top View:**
 - Overall width: 43 mm
 - Overall height: 52 mm
 - Mounting hole pitch: 25 mm (Emitting surface)
 - Mounting hole diameter: 9 mm
 - Mounting hole offset: 20 mm
 - Mounting hole diameter: 300 mm
- Side View:**
 - Mounting hole pitch: 25 mm (Emitting surface)
 - Mounting hole diameter: 10 mm
 - Mounting hole offset: 5 mm
 - Mounting hole diameter: 12 mm
 - Mounting hole offset: 24 mm
 - Mounting hole diameter: 16 mm
 - Mounting hole offset: 300 mm
- Front View:**
 - Overall width: 38 mm
 - Overall height: 20 mm
 - Mounting hole pitch: 2.5 mm (For installation)
 - Mounting hole diameter: 4 x M3 x 4 (For installation)
 - Mounting hole offset: 16 mm

Technical drawing of the LED panel showing top and side views with dimensions and mounting details.

Top View Dimensions:

- Overall width: 93
- Overall height: 93
- Inner square area (Emitting surface): 50 x 50
- Distance from top edge to inner square top: 21.5
- Distance from left edge to inner square left: 21.5
- Distance from inner square right to right edge: 21.5
- Distance from inner square bottom to bottom edge: 21.5
- Distance from bottom edge to mounting bracket: 7
- Distance from left edge to mounting bracket: 7
- Distance from mounting bracket to right edge: 79
- Distance from mounting bracket to bottom edge: 79
- Mounting bracket length: 300

Side View Dimensions:

- Panel thickness: 10
- Distance from top edge to mounting bracket: 5
- Distance from mounting bracket to bottom edge: 38
- Distance from bottom edge to mounting bracket: 27.5

Mounting Details:

- 2 x M4 x 6 (For installation)
- 4 x M4 (For installation)
- Illumination

Technical drawing of the LED panel showing top and side views with dimensions and mounting details.

Top View Dimensions:

- Overall width: 118
- Overall height: 118
- Inner square emitting surface: 75 (Emitting surface)
- Distance from top edge to inner square top: 21.5
- Distance from bottom edge to inner square bottom: 21.5
- Distance from left edge to inner square left: 21.5
- Distance from right edge to inner square right: 21.5
- Distance from bottom edge to mounting rail: 7
- Mounting rail length: 104
- Mounting rail width: 7
- Mounting rail offset from bottom edge: 300

Side View Dimensions:

- Panel thickness: 10
- Distance from top edge to mounting rail: 5
- Distance from mounting rail to bottom edge: 60
- Distance from bottom edge to mounting rail: 29

Mounting Details:

- Top mounting: 2 x M4 x 6 (For installation)
- Bottom mounting: 4 x M4 (For installation)
- Label: Illumination

Technical drawing of the LED panel showing top and side views with dimensions and mounting details.

Top View Dimensions:

- Overall width: 143
- Overall height: 143
- Inner square (Emitting surface): 100 (width) x 100 (height)
- Distance from top edge to inner square top: 21.5
- Distance from right edge to inner square right: 21.5
- Distance from bottom edge to inner square bottom: 21.5
- Distance from left edge to inner square left: 21.5
- Distance from bottom edge to mounting hole center: 7
- Distance from left edge to mounting hole center: 7
- Distance from inner square bottom to mounting hole center: 129
- Distance from inner square right to mounting hole center: 129
- Mounting hole diameter: 4 x M4 (For installation)
- Mounting bracket length: 300

Side View Dimensions:

- Panel thickness: 10
- Distance from top edge to mounting hole center: 5
- Distance from mounting hole center to bottom edge: 70
- Distance from bottom edge to mounting hole center: 36.5
- Mounting hole diameter: 4 x M4 (For installation)
- Label: Illumination

[illegible]

Technical drawing of the lighting fixture showing top and side views with dimensions and component labels.

Top View Dimensions:

- Overall width: 143
- Overall height: 243
- Inner emitting surface width: 100
- Inner emitting surface height: 200
- Mounting hole spacing (horizontal): 36.5 and 70
- Mounting hole spacing (vertical): 21.5 and 21.5
- Bottom mounting hole offset: 7
- Bottom mounting hole spacing: 129
- Bottom mounting hole offset (from corner): 300

Side View Dimensions:

- Overall height: 140
- Top mounting hole offset: 16
- Top mounting hole spacing: 11
- Bottom mounting hole offset: 51.5

Component Labels:

- 2 x M4 x 6 (For installation) - Top mounting screws
- 2 x M4 x 6 (For installation) - Side mounting screws
- 4 x M4 (For installation) - Bottom mounting screws
- Illumination - Light source area

Technical drawing of the lighting fixture showing top and side views with dimensions and mounting details.

Top View Dimensions:

- Overall width: 243
- Overall height: 243
- Inner square (Emitting surface): 200 (width) x 200 (height)
- Mounting hole spacing (horizontal): 21.5, 7, 229, 7, 21.5
- Mounting hole spacing (vertical): 21.5, 7, 229, 7, 21.5
- Mounting hole diameter: 300

Side View Dimensions:

- Overall height: 140
- Mounting bracket height: 16
- Mounting hole diameter: 11
- Mounting bracket width: 11
- Mounting hole spacing (vertical): 51.5, 51.5

Mounting Details:

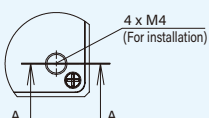
- 2 x M4 x 6 (For installation)
- 4 x M4 (For installation)
- Illumination

The technical drawings illustrate the dimensions and mounting details of the P90 x 3 LED strip light fixture. The front view shows a rectangular unit with a total width of 143 mm and a total height of 343 mm. The emitting surface is 100 mm wide and 300 mm high. Mounting holes are specified as 2 x M4 x 6 (For installation) at the top and 4 x M4 (For installation) at the bottom. The side view shows the fixture's profile with a total depth of 16 mm. The mounting bracket is 11 mm thick. The LED strip is labeled "P90 x 3 = 270" and "Illumination". The mounting holes are 36.5 mm from the bottom edge, and the LED strip is 90 mm from the bottom edge. The emitting surface is 129 mm wide and 300 mm high.

The technical drawings show the dimensions of the P90-3 LED strip light fixture. The front view (left) shows a square fixture with an outer width of 343 mm (300 mm emitting surface) and an outer height of 329 mm (300 mm emitting surface). The mounting bracket has a width of 243 mm and a height of 21.5 mm. The mounting holes are 2 x M4 x 6. The side view (right) shows the fixture's profile with a total height of 36.5 mm, a mounting bracket height of 16 mm, and a mounting hole diameter of 11 mm. The LED strip is 4 x M4 x 6 (for installation) and has a length of 270 mm (P90 x 3). The mounting holes are 4 x M4 (for installation) and the mounting bracket has a width of 90 mm.

[illegible]

5



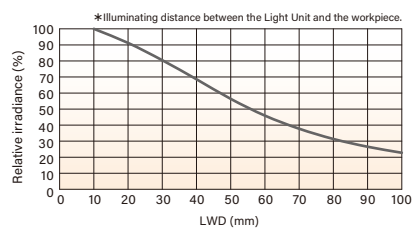
*Use together with the M4 mounting holes on the sides if securing a heavy lighting fixture.

Data (Representative Examples)

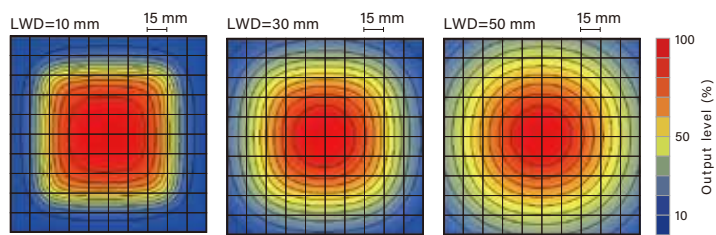
LFXV-100SW (White)



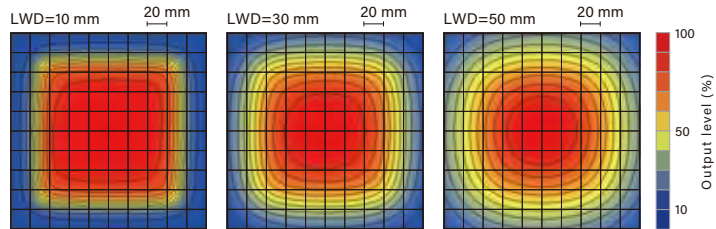
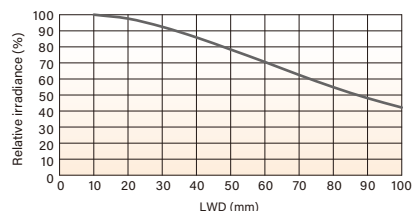
Relative Irradiance Graph (LWD* Characteristics)



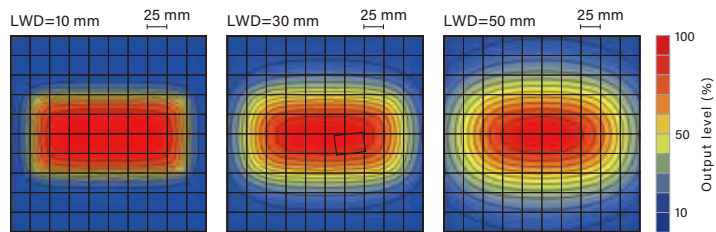
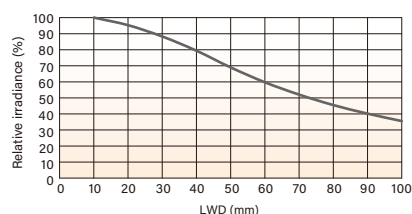
Uniformity (Relative Irradiance)



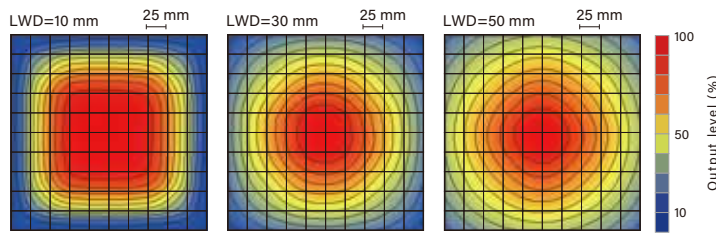
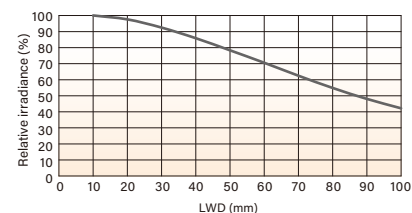
LFXV-150SW (White)



LFXV-200X100SW (White)

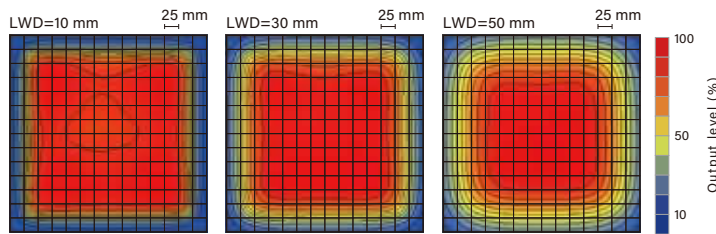
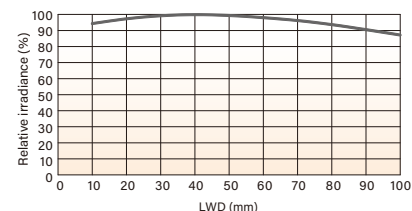


LFXV-200SW (White)



LFXV-300SW (White)

NEW



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

Options

Protective plate (PR series) products are available and made to order. Contact our local sales office for details.

- Protects the light emitting surface from dirt and scratches.
- Acrylic plate with anti-reflective (AR) coating.

"CCS", "LIGHTING SOLUTION", and "LFXV" are registered trademarks or trademarks of CCS Inc.

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.
- 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.
- 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.



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