Flat Dome Lights
LFX3 series

Refer to our website for product details.
CCS LFX3 ▶ Search
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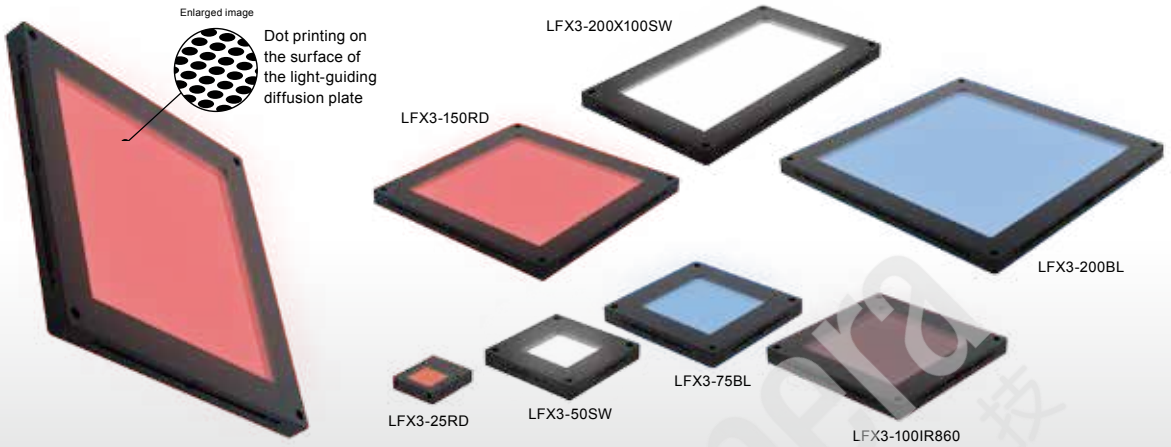
You can also use your smartphone or cell phone.

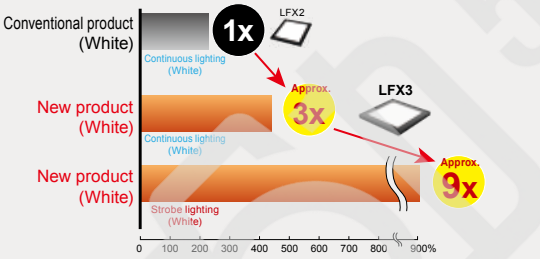
Recreates the effect of a Dome Light with a thin case design



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

High output to match high-speed inspection

The LFX3-series Light Units are high-power Flat Dome Lights perfect for fast-moving production lines. The brightness of the white lights has been tripled.



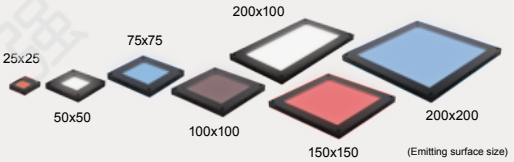
Shutter speed: 1/24,000

Measurement condition Intensity setting: 100%

Brightness comparison between the LFX2-100SW and LFX3-100SW Light Units.
The data included is for reference only. Actual values may vary.

Expanded product lineup: 28 models in total

The Light Unit is available in 7 sizes and 4 LED colors: red, white, blue, and infrared.



Series	Emitting surface size (mm)	LED color
LFX3-25 series	25 x 25	Red/White/Blue/IR
LFX3-50 series	50 x 50	
LFX3-75 series	75 x 75	
LFX3-100 series	100 x 100	
LFX3-150 series	150 x 150	
LFX3-200X100 series	200 x 100	
LFX3-200 series	200 x 200	

Designed to prevent falling screws

No worries of screws* loosening and falling. Cover screws are not used on the light projection side of the Light Unit.

* The screws that are used to install the Light Unit are not considered.

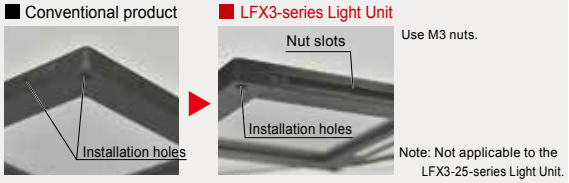
Light projection side

Cover screws are not used on this surface.

Installation using nut slots

Nut Slots are provided on the sides of the Light Unit for a high degree of freedom in installation to match the environment.

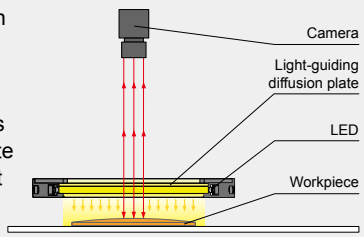
■ Conventional product ■ LFX3-series Light Unit



Example configuration

The dot pattern on the surface of the light-guiding diffusion plate controls the diffusion and transmission of the illuminated light. This product can illuminate uniform diffused light onto the workpiece.

LFX3-100



Various technical documents available. PDF Drawings | DXF Drawings | 3D CAD | Instruction Guides | Product Fliers | Imaging Samples | Data Sheets | Examples of Custom Ordered Products

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Light-weight compact design, space-saving installation, and wide field of view

Comparison of images of printed text

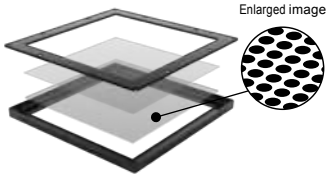
Workpiece: Medicine (Individual packaging)

Flat Dome Light
LFX3-200BL

Dome Light HPD2-250BL + **Coaxial Light** LFV3-70BL

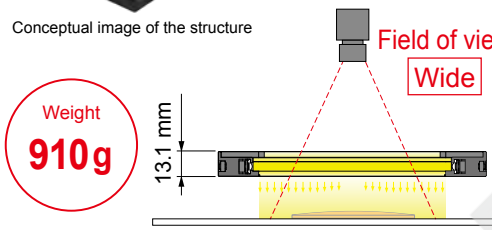
Comparison of structures

Flat Dome Light (LFX3-200)

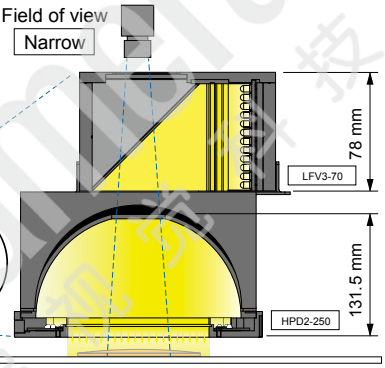


The dot pattern on the surface of the light-guiding diffusion plate controls the diffusion and transmission of the illuminated light.

Conceptual image of the structure



Dome Light (HPD2-250) + Coaxial Light (LFV3-70)



Recreating the effect of Dome Lights with a thin case design

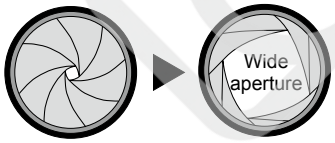
How to use the LFX3 to capture a perfect image

Uneven imaging may occur due to the dot pattern on the emitting surface

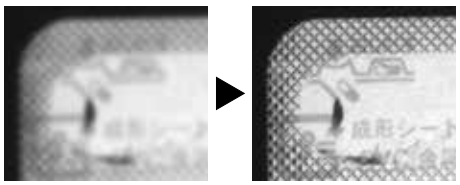
Workpiece: Pharmaceutical product (Blister pack)

Reducing image unevenness caused by the dot pattern

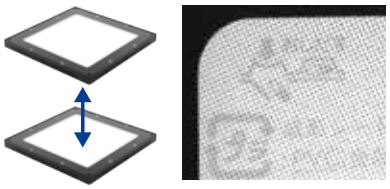
1. Widen the lens aperture slightly more than usual.



2. Focus the lens on the target workpiece.



3. If the dot pattern is visible, adjust the position of the Light Unit.



An example of the dot pattern in an image

4. Finely adjust the light intensity.

Complete!

If there is too much light, increase the camera's shutter speed.

Ambient light may reflect off the Light Unit surface or workpiece surface, affecting the imaging

To prevent effects from ambient light:

- Equip a lens filter to the lens.
- Prevent ambient light from entering with a hood or cover.
- Increase the shutter speed, or slightly increase the light intensity.

LFX3 series

Refer to our website for product details.

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For quick access.

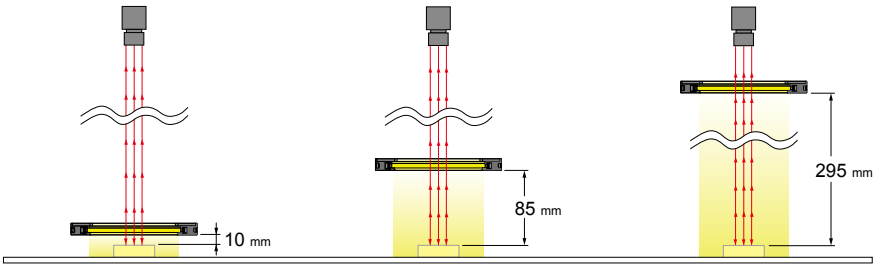
You can also use your smartphone or cell phone.

Supports a wide variety of applications from low angles to high angles

Imaging comparison: top of a can
Changing the distance between the Light Unit and the workpiece (LWD) allows for imaging to fit your purpose.

■ Workpiece image

Canned food



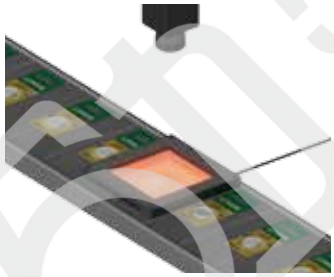
With illumination from LWD 10 mm, the whole surface of the workpiece can be illuminated evenly and the bumps are erased from the image.

With illumination from LWD 85 mm, the bumps of the pull tab alone can be emphasized in the image.

With illumination from LWD 295 mm, all of the bumps on the workpiece surface can be emphasized in the image.

Imaging environment: LFX3-100RD, f25 lens, WD 365 mm, field of view: 69 mm

Imaging example: Imaging characters on button cell batteries



Description	Character recognition
Workpiece	Button cell battery
Conventional lighting	LED Dome Light
New lighting	LFX3-100RD
Result	Emphasizes the characters

■ Workpiece image

Button cell battery

■ LED Dome Light

The textured surface makes it impossible to read the printed characters.

■ LFX3-100RD

Effects from the textured surface are suppressed so that the characters stand out clearly.

Various technical documents available.

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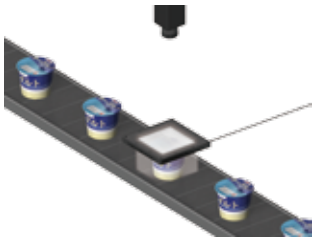
Imaging example: Imaging the external appearance of containers



Description	Visual inspection
Workpiece	Food (Yogurt container)
Conventional lighting	LED Ring Light
New lighting	LFX3-100SW
Result	Improves the uniformity

Workpiece image

Food container

LED Ring Light

It is difficult to image the surface evenly.

LFX3-100SW

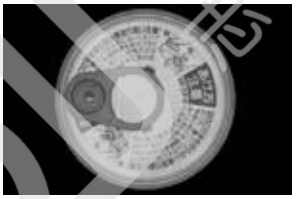
The printed patterns on the surface are clearly captured.

Imaging example: Imaging the external appearance of cans (top surface)

Workpiece image

Can (Top surface)

LED Flat Dome Light (Blue)



It is difficult to capture the texture of the top surface.

LFX3-100IR860 (Infrared)

The printed ink transmits infrared light so that the texture of the top surface is evenly captured.

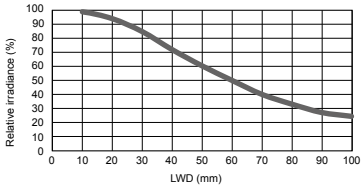
Data: Relative irradiance graph and uniformity (Representative example)

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

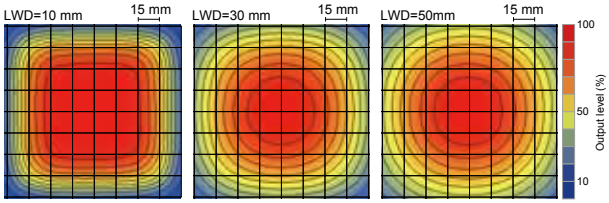
LFX3-100SW

Relative irradiance graph (LWD Characteristics)*2 *1

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



Uniformity (Relative irradiance)



LFX3 series

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Lineup

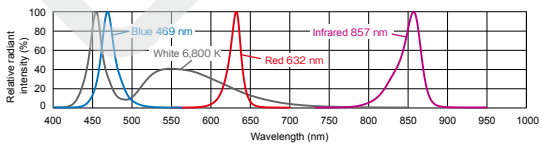
Model name	LED color	Power consumption	Peak wavelength/ correlated color temperature	Options	Extension cables	Recommended Control Units	Weight
LFX3-25RD	Red	24 V / 1.6 W	632 nm	–	FCB*6 Straight Cable FCB-W 2-branch Cable FCB-F 4-branch Cable FRCB Robot Cable *6 The cables with a model name that ends with "-ME7" or "-EL2" are not included.	PD3 / CC-ST-1024 / PSB / POD*1	80 g
LFX3-25SW	White	24 V / 1.5 W	6,800 K				
LFX3-25BL	Blue	24 V / 0.8 W	469 nm				
LFX3-25IR860	Infrared	24 V / 1.4 W	857 nm				
LFX3-50RD	Red	24 V / 13 W	632 nm			PD3 / CC-ST-1024*2 / PSB / POD*1 *2 Can only use blue and infrared.	230 g
LFX3-50SW	White	24 V / 12 W	6,800 K				
LFX3-50BL	Blue	24 V / 6.1 W	469 nm				
LFX3-50IR860	Infrared	24 V / 6.6 W	857 nm				
LFX3-75RD	Red	24 V / 13 W	632 nm			PD3 / CC-ST-1024*3 / PSB / POD*1 *3 Can only use blue.	320 g
LFX3-75SW	White	24 V / 18 W	6,800 K				
LFX3-75BL	Blue	24 V / 9.1 W	469 nm				
LFX3-75IR860	Infrared	24 V / 14 W	857 nm				
LFX3-100RD	Red	24 V / 19 W	632 nm			PD3 / PSB / POD*1	400 g
LFX3-100SW	White	24 V / 23 W	6,800 K				
LFX3-100BL	Blue	24 V / 13 W	469 nm				
LFX3-100IR860	Infrared	24 V / 14 W	857 nm				
LFX3-150RD	Red	24 V / 25 W	632 nm			PD3 / PSB*4 / POD*1 *4 Cannot use white.	620 g
LFX3-150SW	White	24 V / 35 W	6,800 K				
LFX3-150BL	Blue	24 V / 19 W	469 nm				
LFX3-150IR860	Infrared	24 V / 20 W	857 nm				
LFX3-200X100RD	Red	24 V / 28 W	632 nm				620 g
LFX3-200X100SW	White	24 V / 35 W	6,800 K				
LFX3-200X100BL	Blue	24 V / 19 W	469 nm				
LFX3-200X100IR860	Infrared	24 V / 20 W	857 nm				
LFX3-200RD	Red	24 V / 37 W	632 nm			PD3 / PSB*5 / POD*1 *5 Can only use blue and infrared.	910 g
LFX3-200SW	White	24 V / 46 W	6,800 K				
LFX3-200BL	Blue	24 V / 25 W	469 nm				
LFX3-200IR860	Infrared	24 V / 27 W	857 nm				

Extension Cables ▶ P.296 | Control Unit Selection Guide ▶ P.243 | List of Control Unit Specifications ▶ P.245

*1: For information on the combination of Light Units and POD-series Control Unit, please refer to our website. http://www.ccs-grp.com/lnk/qr/pod

LED properties

Spectral distribution



CCS offers you the most suitable lens filter for each wavelength. For details about the lens filter, refer to P.287.

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.

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.

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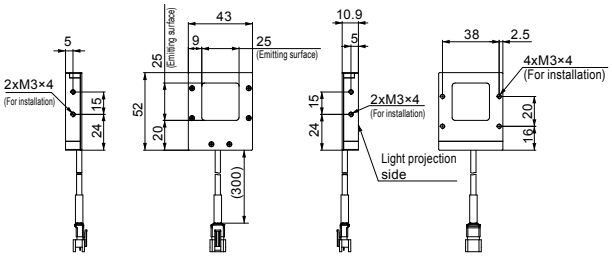
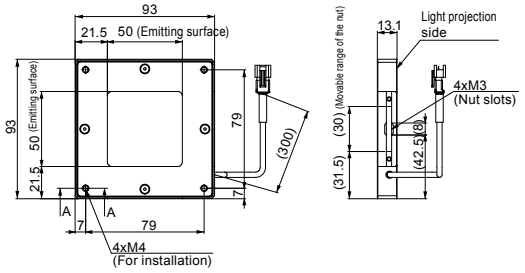
Dimensions (mm)

LFX3-25RD/SW/BL/IR860

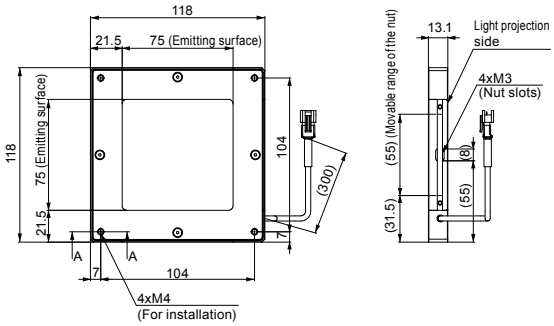


The holes for installation are on the light projection side surface of the Light Unit.
The LFX3-25-series Light Units do not have nut slots.

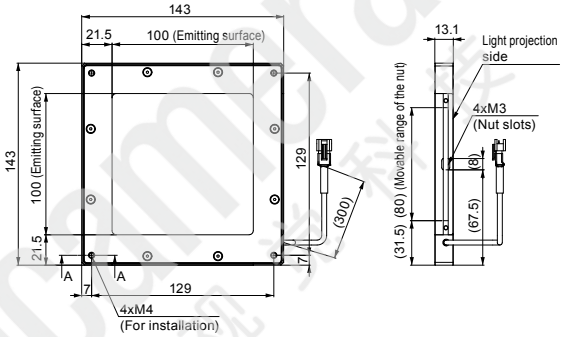
LFX3-50RD/SW/BL/IR860



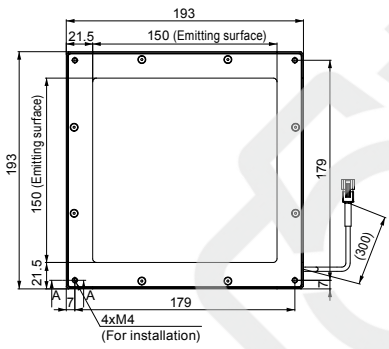
LFX3-75RD/SW/BL/IR860



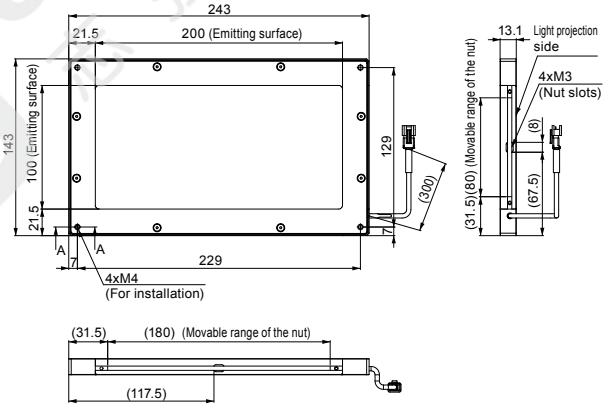
LFX3-100RD/SW/BL/IR860



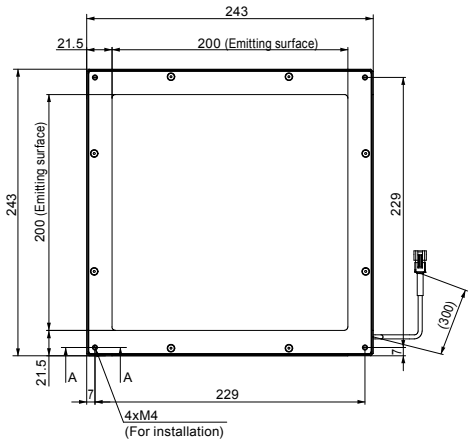
LFX3-150RD/SW/BL/IR860

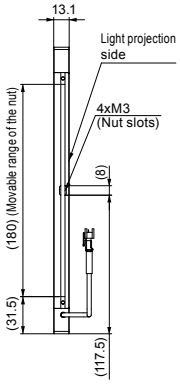


LFX3-200X100RD/SW/BL/IR860

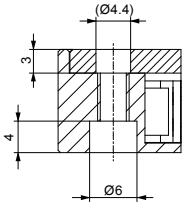


LFX3-200RD/SW/BL/IR860

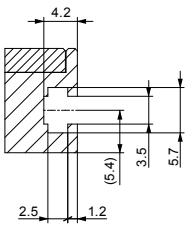




Detail Diagram for the A-A Surface



Detail Diagram for the M3 Nut Slot



Note: These detail diagrams are not applicable to the LFX3-25-series Light Units.

You can change the connectors of the Light Unit cable. Choose between M12 connectors and flying leads. Refer to P.5 for details.