# Diffused Lighting

## Coaxial Lights

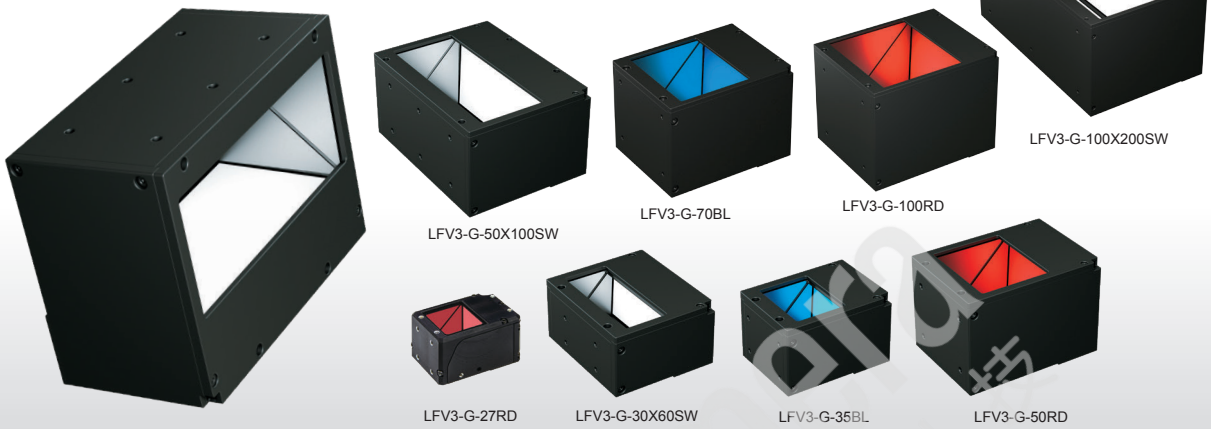
# LFV3-G Series

Refer to our website for product details.

CCS LFV3-G ▶ Search

You can also use your smartphone or cell phone.

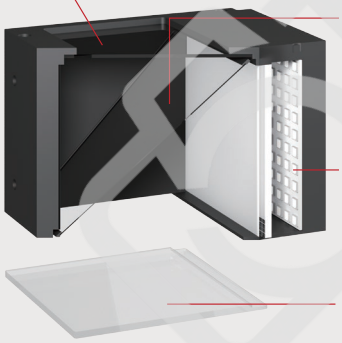
## Equipped with a slim half mirror to support imaging using high-resolution cameras




**Applications** Inspection for 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.

## Prevents ghost images and achieves higher resolution imaging than conventional products.

### LFV3-G Series structure (example)



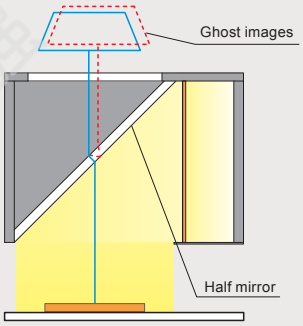
**Uses optical glass**
The camera window and half mirror use optical glass.

**Slim half mirror**
Uses a slim half-mirror to achieve high-resolution imaging.

**Flat light source with narrow directionality**
A narrow beam angle controls the spread of light, resulting in highly directional illumination.

**Protective plate (Optional)**
Uses 2 mm thick, transparent acrylic with an anti-reflective (AR) coating.

### Causes of ghost images (example)




A thick half mirror causes deviations in the light path, generating ghost images. Using a thinner mirror reduces the deviation of the ghost images, enabling high-resolution imaging.

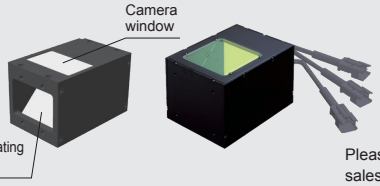
## Custom Orders

E.g.: Different shape

Format/ material — Change the illuminating port from vertical to horizontal

E.g.: Different color

Wavelength/ color — Full color (RGB) Light Unit



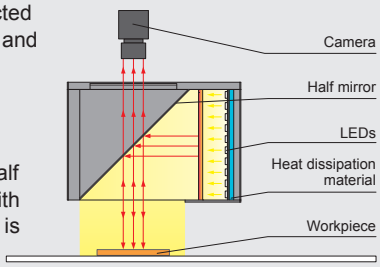

External/ internal diameter | Wavelength/ color | Increase output | Cable length | Illuminating angle | Format/ material | Connector format | Installation/ mounting | Etc.

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. By using a slim half mirror, imaging with reduced ghosting is possible.

### LFV3-G-50

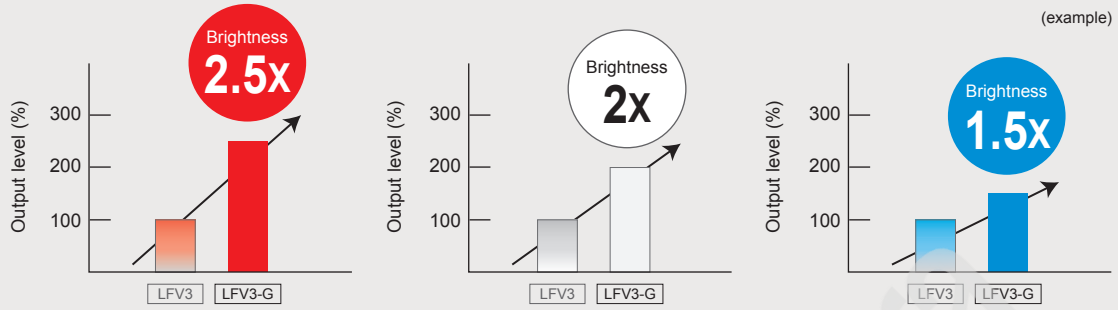



Various technical documents available. PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs — Register to use them.

## Achieves up to 2.5 Times Higher Output Compared to LFV3

Can be combined with the strobe overdrive power supply POD Series to further increase the brightness several times more.

(example)



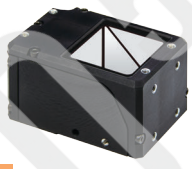

In comparison with light colors of the LFV3 Series. (These values are for reference only and are not guaranteed values.)

Strobe Overdrive Power Supply
POD Series

▶ P.339

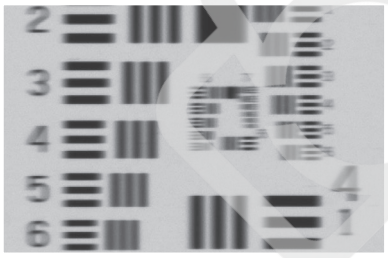

## Imaging Example: Imaging Comparison of Resolution Evaluation Chart

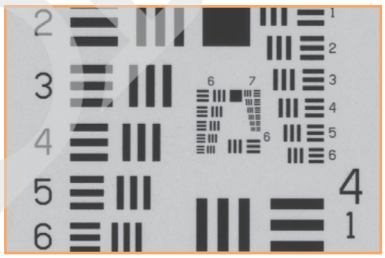
LFV3-50SW (A)

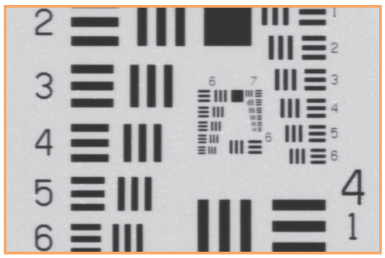


LFV3-G-27SW

LFV3-G-50X100SW







[Imaging conditions] Camera: 2448x2048 3.45 µm monochrome camera, Lens: 2x telecentric lens, Field of view: 4.2 x 3.5 mm (the image is a cutout of about 1.3 x 1.0 mm at the center), Resolution: 1.7 µm/pixel , WD: 110 mm, LWD: 25 mm. * The shutter speed and light intensity are adjusted for each image.

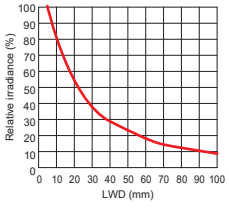
## Data: Relative Irradiance Graph and Uniformity (Representative Example)

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

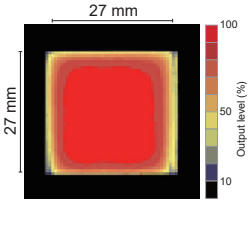
### LFV3-G-27RD

Relative irradiance graph (LWD characteristics) *2 *1

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



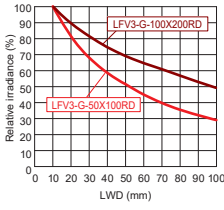

Uniformity (Relative radiance)



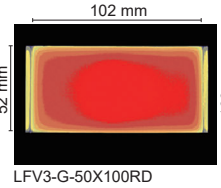

### LFV3-G-50X100RD (Red) / 100X200RD (Red)

Relative Irradiance Graph (LWD characteristics) *2 *1

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

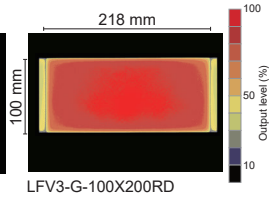



Uniformity (Relative radiance)




LFV3-G-50X100RD

Uniformity (Relative radiance)




LFV3-G-100X200RD

You can inquire using our website.

Sample Testing | Light Unit Selection | Free Product Trial | Custom Orders | Product Details | Pricing/ Quotation | Discontinued Products

Inquire on our website here.
https://www.ccs-grp.com/contact/

# LFV3-G Series

Refer to our website for product details.

CCS LFV3-G ▶ Search

You can also use your smartphone or cell phone.

## Lineup

| Model Name*1 | Input Voltage | Power Consumption RD (Red) | Power Consumption SW (White) | Power Consumption BL (Blue) | Options*2 | Extension Cables | Recommended Control Units | Weight |
|---|---|---|---|---|---|---|---|---|
| LFV3-G-27□□ | 24 V | 5.0 W | 5.0 W | 5.0 W | Protective Plate | FCB*5 Straight Cable / FCB-W*6 2-Branch Cable / FCB-F 4-Branch Cable / FRCB Robot Cable | PD3, CC-ST-1024, PSB, POD*3 | 110 g |
| LFV3-G-30X60□□ | 24 V | 12 W | 11 W | 8.1 W | | | PD3, CC-ST-1024*4, PSB, POD*3 | 165 g |
| LFV3-G-35□□ | 24 V | 8.4 W | 8.3 W | 7.1 W | | | PD3, CC-ST-1024, PSB, POD*3 | 140 g |
| LFV3-G-50□□ | 24 V | 17 W | 17 W | 15 W | | | PD3, PSB, POD*3 | 285 g |
| LFV3-G-50X100□□ | 24 V | 34 W | 34 W | 29 W | | | PD3, PSB*7, POD*3 | 445 g |
| LFV3-G-70□□ | 24 V | 28 W | 25 W | 22 W | | | PD3, PSB, POD*3 | 570 g |
| LFV3-G-100□□ | 24 V | 40 W | 37 W | 32 W | | | PD3, POD*3 | 990 g |
| LFV3-G-100X200□□ | 24 V | 59 W | 59 W | 59 W | | | | 1,730 g |

*4 Can only use blue.
*5 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.
*6 The cables with a model name that ends with "-EL2" are not included.
*7 Can only use blue.

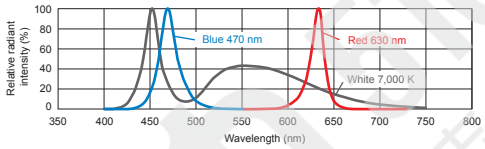
Extension Cables ▶ P.381 | Control Unit Selection Guide ▶ P.321 | List of Control Unit Specifications ▶ P.323

*1 □□ in the model name contains the LED color. (RD: Red, SW: White, BL: Blue)
*2 If you need to replace the diffusion plate or install a polarizing plate, we can do so as a custom-order.
*3 For information on the combination of the LFV3-G and POD Series, please refer to the CCS website. https://www.ccs-grp.com/lnk/qr/pod

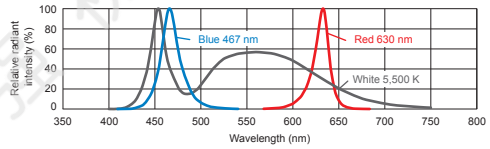
## LED Properties

Spectral distribution

Supported models: LFV3-G-27




Supported models: LFV3-G-30X60 / 35 / 50 / 50X100 / 70 / 100 / 100X200

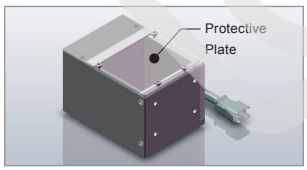



Lens filters suitable for each wavelength are available. For details about the lens filter, refer to P.369.

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.

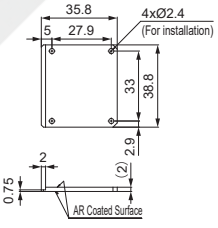
For details on the effective field of view when using coaxial lights, see "Effective Field of View of Coaxial Lights" on P. 397.

## Options

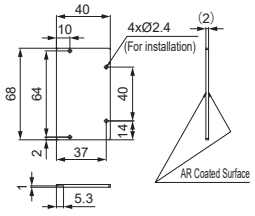



Protective plates are available to prevent any reductions in performance due to intrusion of foreign matter into the lights. Anti-reflective (AR coating) has been applied.
* Be aware that installing a protective plate may reduce image resolution.

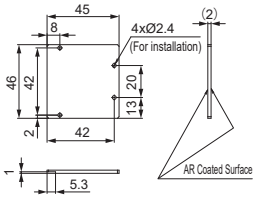
PR-LFV3-27



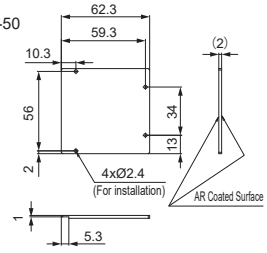

PR-LFV3-30X60



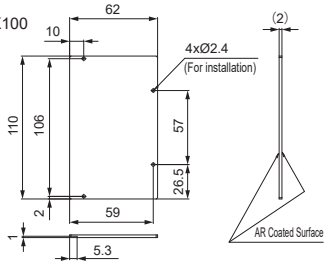

PR-LFV3-35




PR-LFV3-50




PR-LFV3-50X100




**Protective Plate**

Accessories: Pan Head Screws x 5

| Model name | Applicable Light Unit (Common for all colors) |
|---|---|
| PR-LFV3-27 | LFV3-G-27 |
| PR-LFV3-30X60 | LFV3-G-30X60 |
| PR-LFV3-35 | LFV3-G-35, LFV3-35(A) |
| PR-LFV3-50 | LFV3-G-50, LFV3-50(A) |
| PR-LFV3-50X100 | LFV3-G-50X100, LFV3-50X100(A) |
| PR-LFV3-70 | LFV3-G-70, LFV3-70(A) |
| PR-LFV3-100 | LFV3-G-100, LFV3-100(A) |
| PR-LFV3-100X200 | LFV3-G-100X200 |

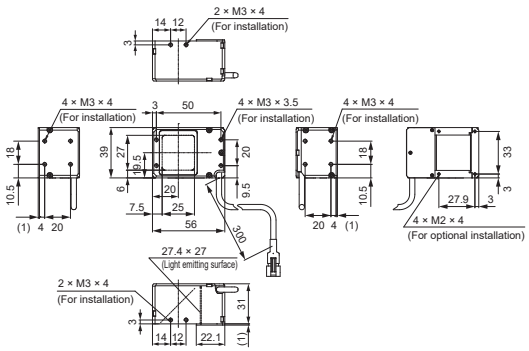
* Protective plates for products other than the applicable light units listed above are available by custom order.

Refer to our website for other external dimensions. https://www.ccs-grp.com/products/series/318

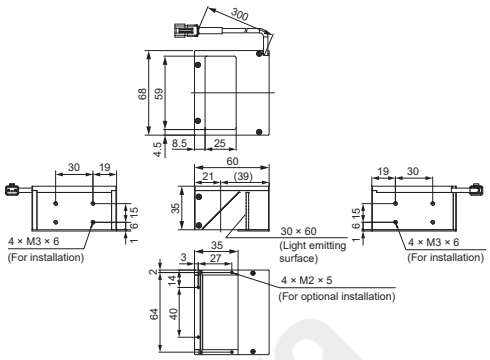
Various technical documents available. PDF Drawings | DXF Drawings | Product Brochures | Instruction Guides | 3D CAD | Data Sheets | Imaging Examples | Digital Catalogs — Register to use them.

## Dimensions (mm)

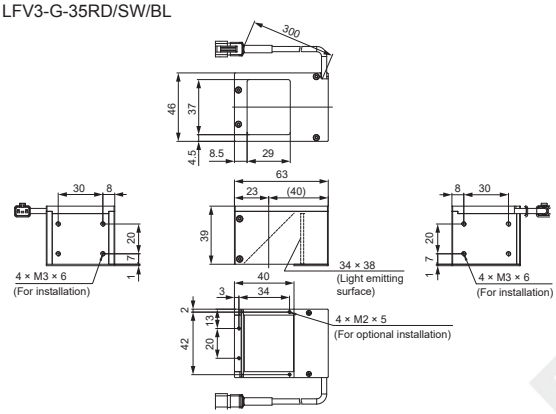
LFV3-G-27RD/SW/BL



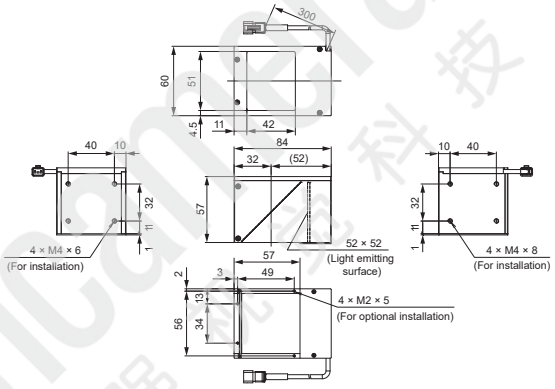

LFV3-G-30X60RD/SW/BL



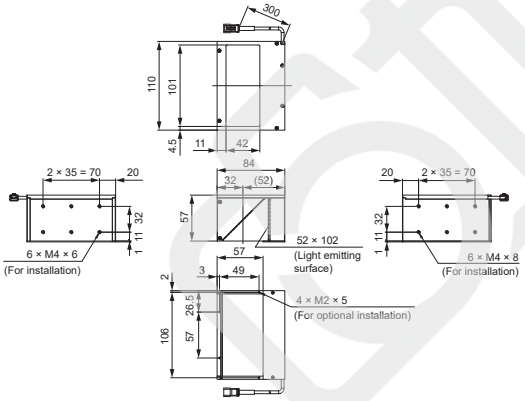

LFV3-G-35RD/SW/BL



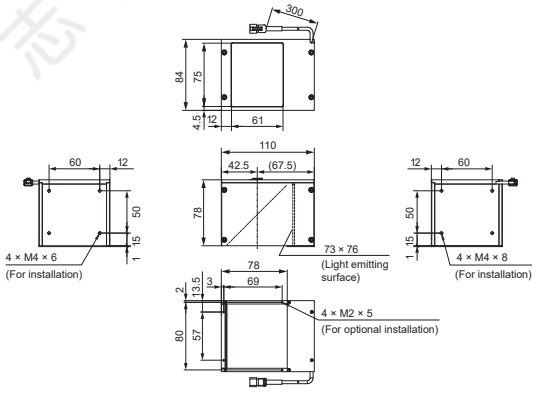

LFV3-G-50RD/SW/BL



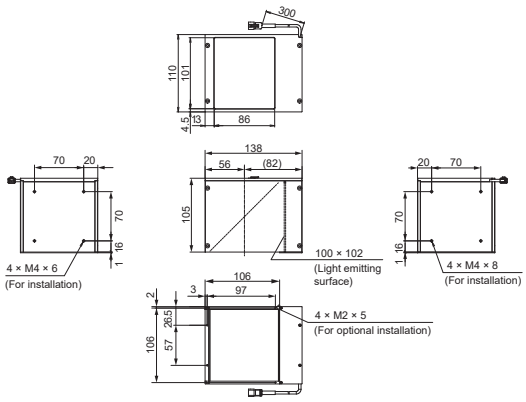

LFV3-G-50X100RD/SW/BL



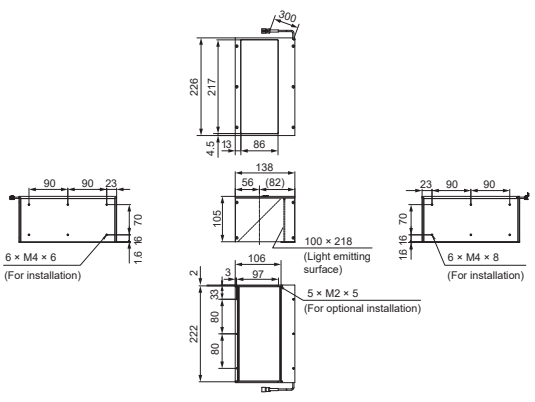

LFV3-G-70RD/SW/BL




LFV3-G-100RD/SW/BL




LFV3-G-100X200RD/SW/BL




You can change the connectors of the Light Unit cable. Choose between M12 connectors and flying leads. Refer to P.19 for details.