CCS
CREATIVE CUSTOMER SATISFACTION

LIGHTING SOLUTION
LED Illuminators for Machine Vision

High-output, Square, Low-angle
LED Light Units

FPQ2 series

CCS Inc.

Uniform, bright, dispersed illumination from a low angle.

High-output, Square, Low-angle LED Light Units

FPQ2 Series

High Output Five Times That of Previous Models

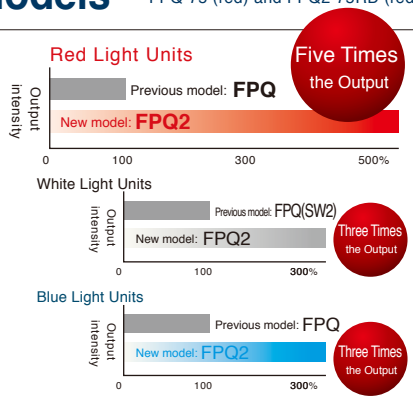
Results of comparison between the FPQ-75 (red) and FPQ2-75RD (red).

Previous Model FPQ-32 (red)

Shutter speed: 1/4,000 s
Light intensity: 100%

New Model FPQ2-32RD (red)

Shutter speed: 1/4,000 s
Light intensity: 100%



*These are the results of comparing FPQ-75-series and FPQ2-75-series Light Units.
*The graphs provided here are for reference only. Results for individual Units may vary.
*Brightness will vary based on the camera's spectral response.

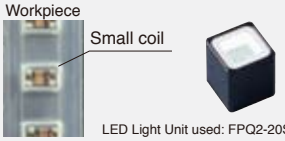
New 20 × 20-mm Models for a More Complete Lineup

Ideal Exterior Dimensions of 20 × 20 mm for Minute Workpieces

Image Sample: Exterior Image of Coil

The entire surface of the coil is illuminated uniformly.

Field of view: 2.4 × 1.8 mm



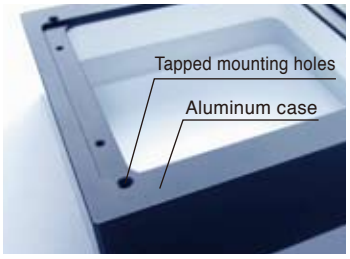
LED Light Unit used: FPQ2-20SW

All of the Previous Sizes and Mounting Locations Are Supported

All Previous Sizes Are Available

*The cable outlet is different from previous models. For details, refer to Dimensions.

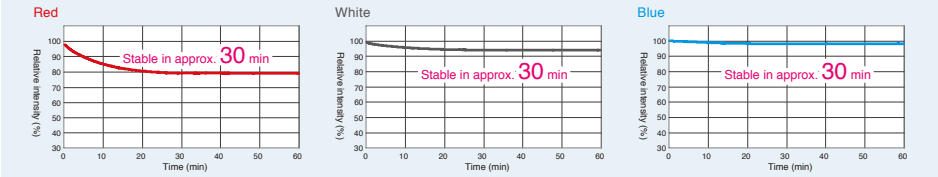
Same Mounting Hole Locations as Previous Models



Better Heat Dissipation Structure

Effective heat dissipation has been achieved by adapting heat-dissipation sheets.
By suppressing temperature increases, LED deterioration is suppressed for reliable, long-term application.

Intensity Changes over Time



*Measurement conditions: Actual measurement values for constant lighting at an ambient air temperature of 25°C.
*The graphs provided here are for reference only. Results for individual Units may vary.

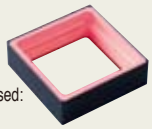
Imaging Samples

Imaging Exterior of Food Packages

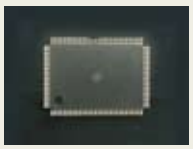
Workpiece: Sauce container

The entire surface of the square container is illuminated uniformly.

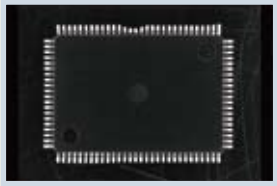
LED Light Unit used: FPQ2-96RD



Imaging of Leads on IC Components



Workpiece: IC component



The IC leads are illuminated uniformly.

LED Light Unit used: FPQ2-75SW

Imaging Exterior of Foodstuff

Workpiece: Chewing gum

The entire surface is illuminated uniformly even with rounded corners.

LED Light Unit used: FPQ2-75SW

Comparisons with Previous Models

Previous Models FPQ Series

Model	LED color	Peak wavelength/ correlated color temperature (typ.)	Size (W×D×H)	Power consumption	Weight
FPQ-32	Red	660 nm	32×32×30	12 V / 1.2 W	60 g
FPQ-32SW2	White	5500 K		24 V / 1.6 W	
FPQ-32-BL	Blue	470 nm		24 V / 1.6 W	
FPQ-32-GR	Green	525 nm		24 V / 1.6 W	
FPQ-48	Red	660 nm	48×48×30	12 V / 2.4 W	95 g
FPQ-48SW2	White	5500 K		24 V / 3.1 W	
FPQ-48-BL	Blue	470 nm		24 V / 3.3 W	
FPQ-48-GR	Green	525 nm		24 V / 3.3 W	
FPQ-75	Red	660 nm	75×75×30	12 V / 3.6 W	160 g
FPQ-75SW2	White	5500 K		24 V / 4.6 W	
FPQ-75-BL	Blue	470 nm		24 V / 4.9 W	
FPQ-75-GR	Green	525nm		24 V / 4.9 W	
FPQ-96	Red	660 nm	96×96×30	12 V / 4.8 W	175 g
FPQ-96SW2	White	5500 K		24 V / 6.1 W	
FPQ-96-BL	Blue	470 nm		24 V / 6.5 W	
FPQ-96-GR	Green	525 nm		24 V / 6.5 W	
FPQ-120	Red	660 nm	120×120×30	12 V / 6.0 W	220 g
FPQ-120SW2	White	5500 K		24 V / 7.6 W	
FPQ-120-BL	Blue	470 nm		24 V / 8.2 W	
FPQ-120-GR	Green	525 nm		24 V / 8.2 W	

New Models FPQ2 Series

	Model	LED color	Peak wavelength/ correlated color temperature (typ.)	Size (W×D×H)	Power consumption	Weight
New Sizes	FPQ2-20RD	Red	630 nm	20×20×23	24 V / 1.5 W	25 g
	FPQ2-20SW	White	6000 K		24 V / 2.6 W	
	FPQ2-20BL	Blue	465 nm		24 V / 1.8 W	
	FPQ2-32RD	Red	630 nm	32×32×30	24 V / 6.1 W	50 g
	FPQ2-32SW	White	6000 K		24 V / 5.1 W	
	FPQ2-32BL	Blue	465 nm		24 V / 3.1 W	
	FPQ2-48RD	Red	630 nm	48×48×30	24 V / 5.8 W	85 g
	FPQ2-48SW	White	6000 K		24 V / 11 W	
	FPQ2-48BL	Blue	465 nm		24 V / 7.1 W	
	FPQ2-75RD	Red	630 nm	75×75×30	24 V / 17 W	145 g
	FPQ2-75SW	White	6000 K		24 V / 16 W	
	FPQ2-75BL	Blue	465 nm		24 V / 9.1 W	
	FPQ2-96RD	Red	630 nm	96×96×30	24 V / 15 W	160 g
	FPQ2-96SW	White	6000 K		24 V / 21 W	
	FPQ2-96BL	Blue	465 nm		24 V / 13 W	
	FPQ2-120RD	Red	630 nm	120×120×30	24 V / 18 W	200 g
	FPQ2-120SW	White	6000 K		24 V / 21 W	
	FPQ2-120BL	Blue	465 nm		24 V / 11 W	

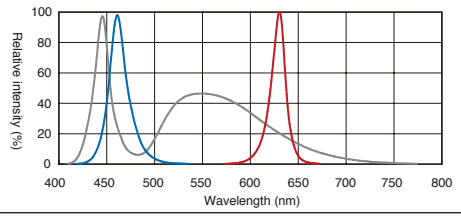
*The power consumptions of the Previous Models FPQ-series Light Units and the New Models FPQ2-series Light Units are different. When replacing Light Units, make sure that the total power consumption is within the output power capacity of the Control Unit.
*Consult with a CCS representative before using an New Models FPQ2-series green (LED color) Light Unit.
*The peak wavelength of the New Models FPQ2-series red (LED color) Light Units is 630 nm. For a Sharp-cut Filter, use the optional R60 Sharp-cut Filter.

All Colors Unified to 24 V

All colors of Light Units in the FPQ2 Series run on 24 V. In the previous series, Red Light Units ran on 12 V, but all colors of Light Units now run on 24 V so that power can be supplied from the same Control Unit regardless of the color.

Specifications

Common Specifications

Input voltage	24 VDC
Case material	Aluminum alloy
Cable length	0.3 m
Connector	SMR-03V-B
Polarity and signals	1: Anode (+), brown, 2: NC, 3: Cathode (–), blue
Cooling method	Natural air cooling
Operating temperature and humidity	Temperature: 0 to 40°C, Humidity: 20% to 85%RH (with no condensation)
Storage temperature and humidity	Temperature: –20 to 60°C, Humidity: 20% to 85%RH (with no condensation)
Technical data	

*The peak wavelength for red light is 630 nm. For a Sharp-cut Filter, use the optional R60 Sharp-cut Filter.

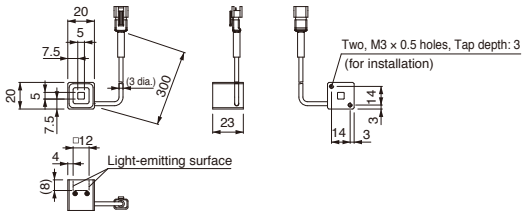
Model Specifications

Model	Direct number	LED color	Peak wavelength/ correlated color temperature (typ.)	Power consumption (max.)	Weight (max.)
FPQ2-20RD	1005263	Red	630 nm	1.5 W	25 g
FPQ2-20SW	1005264	White	6000 K	2.6 W	
FPQ2-20BL	1005265	Blue	465 nm	1.8 W	
FPQ2-32RD	1005266	Red	630 nm	6.1 W	50 g
FPQ2-32SW	1005267	White	6000 K	5.1 W	
FPQ2-32BL	1005268	Blue	465 nm	3.1 W	
FPQ2-48RD	1005269	Red	630 nm	5.8 W	85 g
FPQ2-48SW	1005270	White	6000 K	11 W	
FPQ2-48BL	1005271	Blue	465 nm	7.1 W	
FPQ2-75RD	1005272	Red	630 nm	17 W	145 g
FPQ2-75SW	1005273	White	6000 K	16 W	
FPQ2-75BL	1005274	Blue	465 nm	9.1 W	
FPQ2-96RD	1005275	Red	630 nm	15 W	160 g
FPQ2-96SW	1005276	White	6000 K	21 W	
FPQ2-96BL	1005277	Blue	465 nm	13 W	
FPQ2-120RD	1005278	Red	630 nm	18 W	200 g
FPQ2-120SW	1005279	White	6000 K	21 W	
FPQ2-120BL	1005280	Blue	465 nm	11 W	

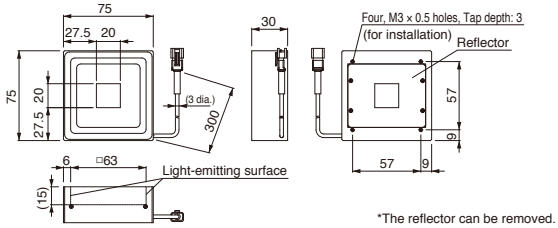
*Direct Numbers: You can easily access the information page for any of our products by entering the product's 7-digit direct number in the designated box on the CCS website (image processing Light Unit page). For details→http://www.ccs-inc.co.jp/dn

Dimension Diagrams (Unit: mm)

FPQ2-20 Series

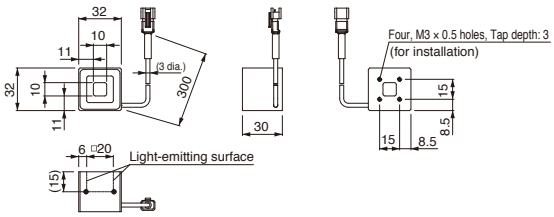


FPQ2-75 Series

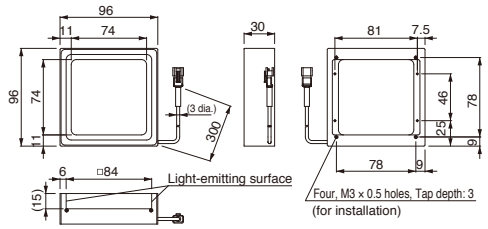


*The reflector can be removed.

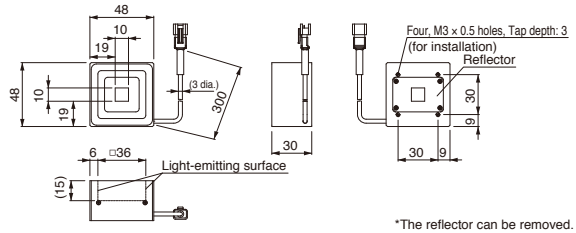
FPQ2-32 Series



FPQ2-96 Series

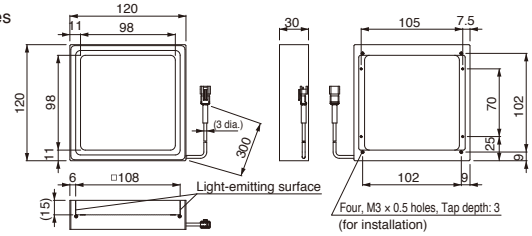


FPQ2-48 Series



*The reflector can be removed.

FPQ2-120 Series



Caution

- Carefully read the product's instruction manual before use to ensure correct operation.
- Product specifications and design are subject to change without notice.
- Examples of workpiece imaging in this catalog are a guide that may be informative for choosing illuminations. Please check the functions of the equipment and requirements when choosing.

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CREATIVE CUSTOMER SATISFACTION

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