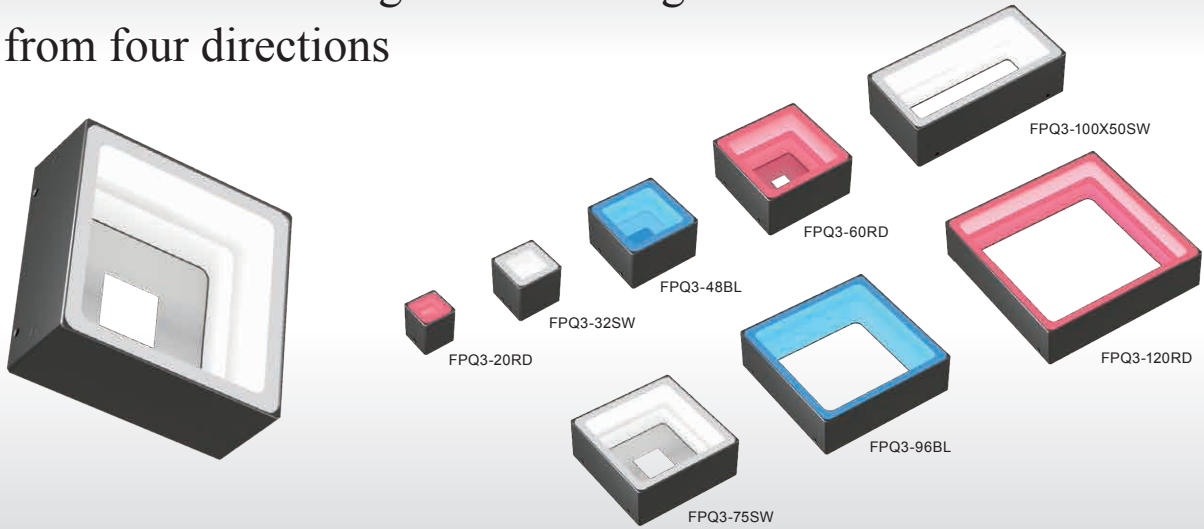




Provides diffused light at a low angle from four directions



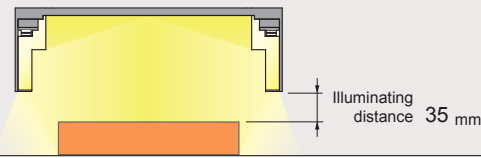
Applications

Visual inspection for electronic parts; character recognition; inspection for bending, slipping, and staining of pins or leads; visual and pattern inspections for circuit boards; fault inspection for LCDs; IC lead inspection; etc.

Effective for quadrangular workpieces

The FPQ3 Series is a low angle light suitable for rectangular workpieces. It prevents the detection of contours at four corners and reflection, which is difficult with a ring light.

Imaging example for the FPQ3-48RD: Imaging for detecting electronics parts

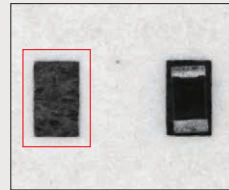


LED Ring Light



There is glare from the surface film and it is difficult to determine if the part is there.

FPQ3-48RD



Film glare is removed, making it possible to determine if the part is there.

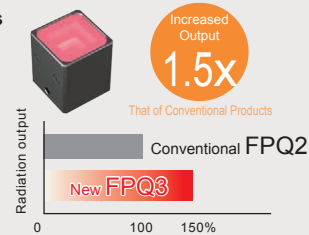
High-Output, 2x Conventional Products

Output has been increased by 2x for white and blue, 1.5x for red light units. Furthermore, output is more than doubled when used with a POD Series strobe overdrive control unit

White Lights
Blue Lights



Red Lights

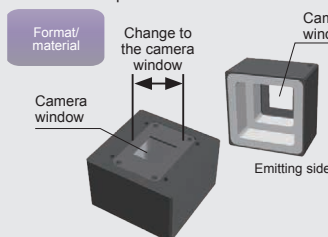


Comparison of the conventional products of the same color. The data included is for reference only. Actual values may vary.

Custom Order Example

Please contact your CCS sales representative.

E.g.: Changed format so that the light unit does not overlap with the field of view.



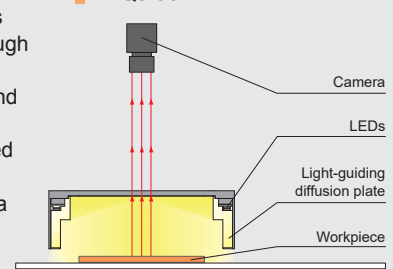
Customizable items

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

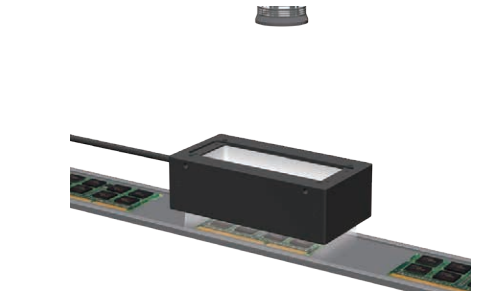
Example Configuration

Light illuminated from the LEDs is transmitted through the light-guiding diffusion plate and uniform diffused light is illuminated centrally on the workpiece from a low angle.

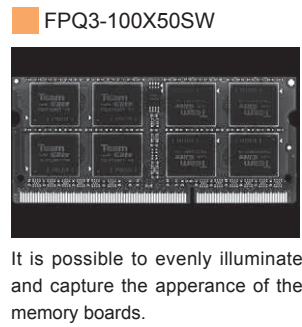
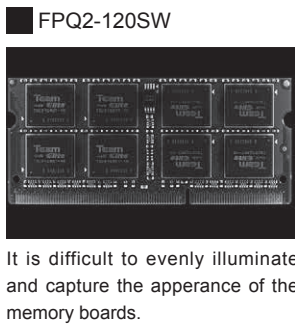
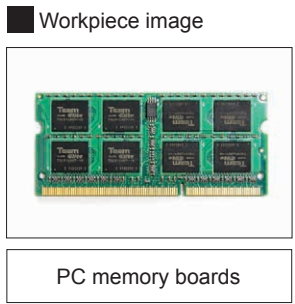
FPQ3-96



Imaging Example: Imaging the Appearance of PC Memory Boards



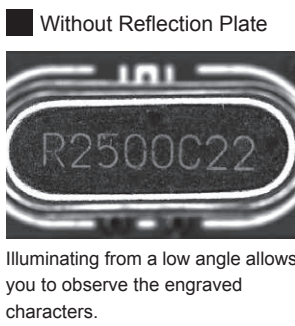
Description	Visual inspection
Workpiece	PC memory boards
Conventional lighting	FPQ2-120SW
New lighting	FPQ3-100X50SW
Result	Improved uniformity



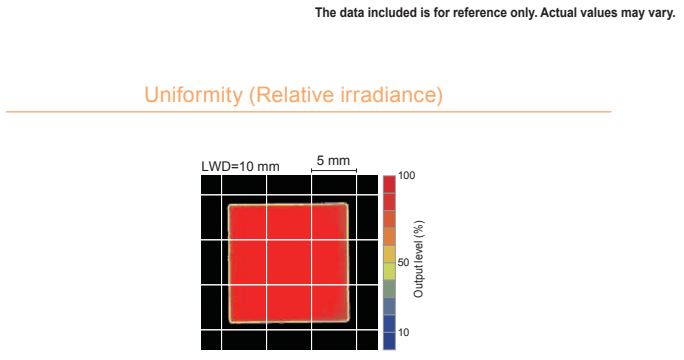
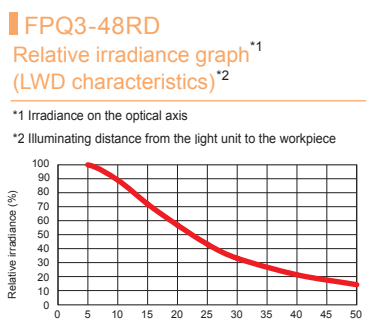
Imaging Example: Imaging the Appearance of Electronic Components



Description	Visual inspection
Workpiece	Electronic components
Conventional lighting	Without reflection panel
New lighting	With a reflection panel
Result	Improved uniformity



Data: Relative Irradiance Graph and Uniformity (Representative Example)

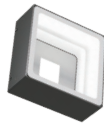


LDR2 LDR2-LA LDR-LA1 SQR SQR-TP	Ring (Direct)
HLDR3 HPR2 LFR LKR FPR	Ring (Convergent/Diffused)
FPQ3	Square
LDL2 LDLB HLDL3 LB	Bar
TH2 (5 types) LFL	Flat
HPD2 LDM2 LAV PDM LFXV LFX3 LFX3-PT	Dome
LFV3 LFV3-G	Coaxial
MSU MFU	Coaxial
PF	Strobe
HLDR-IP HSL-PCL	Water-proof
Small COB Lights	COB
UV3/VL3 UV 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 LNLP LNSP2 Coaxial Units LNSP-FN LN/LN-HK	Line (Convergent)
LNSD LND2 LT LNV LFXV (Rectangular Type) TH2 (Rectangular Type)	Line (Diffused)
LNDG LNSI2 LNIS LNIS-FN	Line (Oblique Angled)
Telecentric Lens Macro Lens	Lenses

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- Product Details
- Pricing/Quotation
- Discontinued Products

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Lineup

Model Name*1	Input Voltage	Power Consumption			Options	Extension Cables	Recommended Control Units		Weight
		RD (Red)	SW (White)	BL (Blue)					
FPQ3-20□□	24 V	1.3 W	3.1 W	2.6 W	-	FCB*5 Straight Cable	PD4	PD3	25 g
FPQ3-32□□	24 V	3.8 W	7.1 W	5.1 W	Reflective plate		CC-ST-1024	POD*2	50 g
FPQ3-48□□	24 V	5.1 W	11 W	7.6 W	-	FCB-W*6 2-Branch Cable	PD4	PD3	90 g
FPQ3-60□□	24 V	7.6 W	15 W	11 W	-	FCB-F 4-Branch Cable	CC-ST-1024*3	POD*2	
						FRCB Robot Cable	PD4	PD3	CC-ST-1024*4
FPQ3-75□□	24 V	12 W	22 W	16 W	-	FCB-W*6 2-Branch Cable	PD4	PD3	155 g
FPQ3-96□□	24 V	13 W	25 W	18 W	Reflective plate		POD*2	PD3	170 g
FPQ3-120□□	24 V	16 W	27 W	21 W	Reflective plate	FCB-W*6 2-Branch Cable	POD*2	PD3	220 g
FPQ3-100×50□□	24 V	11 W	18 W	13 W	-		FRCB Robot Cable	POD*2	PD3

Extension Cables ▶ P.371

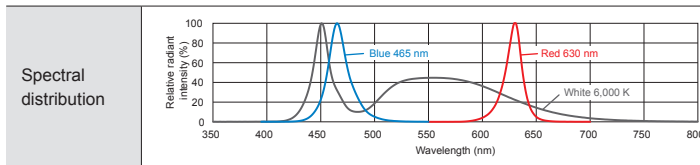
Control Unit Selection Guide ▶ P.305

List of Control Unit Specifications ▶ P.307

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

*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



Lens filters suitable for each wavelength are available.

For details about the lens filter, refer to P.359.

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.

Options



Installing the reflection plate on the light unit enhances the dome effect, which enables highly-uniform and diffused illumination.

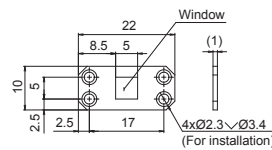
Reflection plate

Model name	Applicable Light Unit (Common for all colors)
RP-FPQ3-32-SQ5	FPQ3-32
RP-FPQ3-96-SQ20	FPQ3-96
RP-FPQ3-120-SQ20	FPQ3-120
RP-FPQ3-100X50-SQ10	FPQ3-100X50

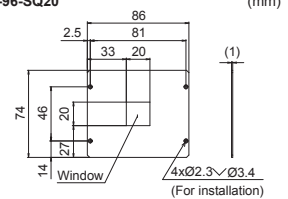
Accessories: Flat countersunk head screws, JClS #0 type 1, M2 (4 mm) x 5 pieces

The FPQ3-48-, FPQ3-60-, and FPQ3-75 Series light units have a factory-installed reflection plate.

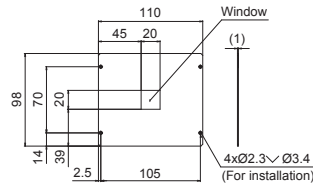
RP-FPQ3-32-SQ5



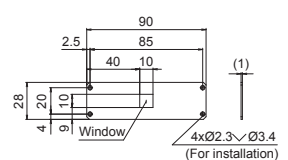
RP-FPQ3-96-SQ20



RP-FPQ3-120-SQ20

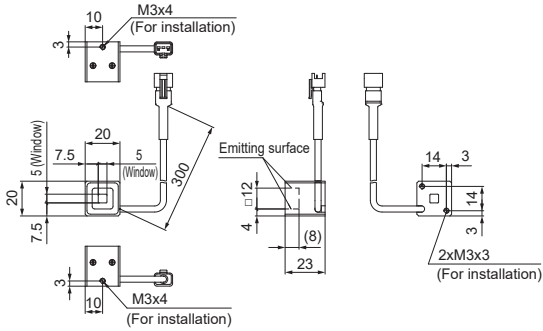


RP-FPQ3-100X50-SQ10

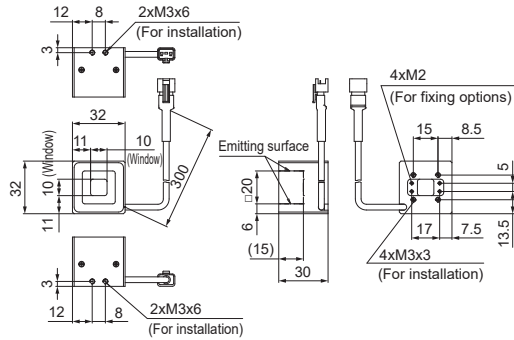


Dimensions (mm)

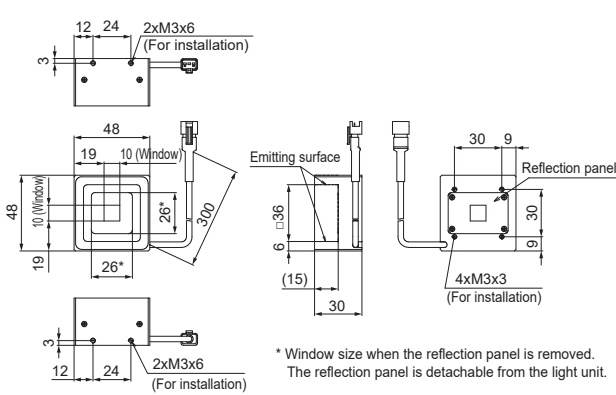
FPQ3-20RD/SW/BL



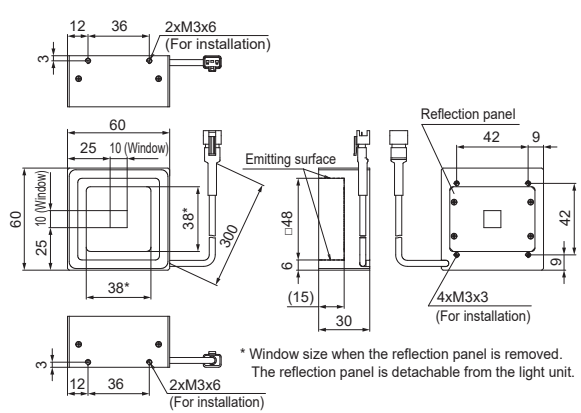
FPQ3-32RD/SW/BL



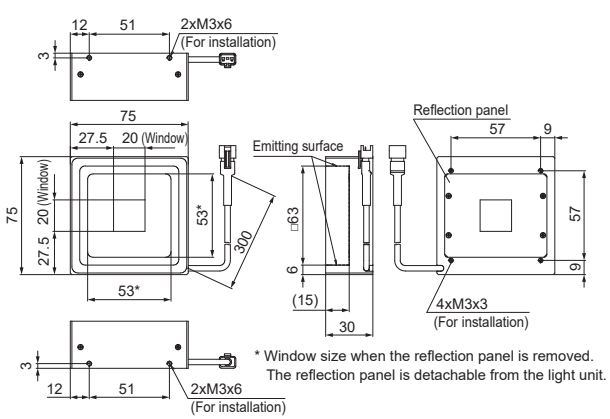
FPQ3-48RD/SW/BL



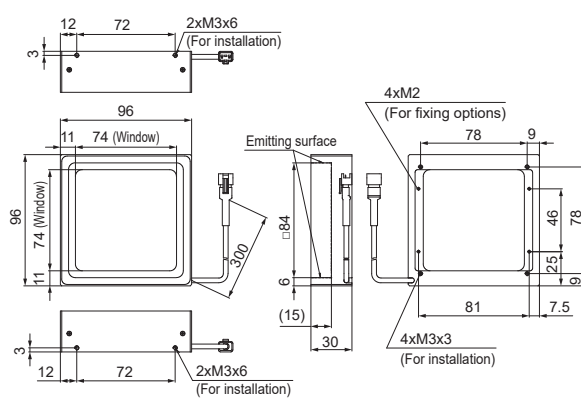
FPQ3-60RD/SW/BL



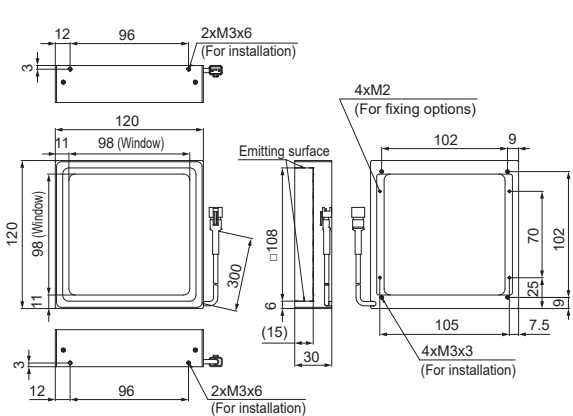
FPQ3-75RD/SW/BL



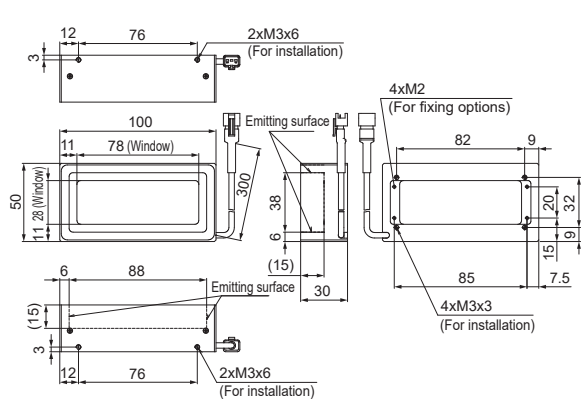
FPQ3-96RD/SW/BL



FPQ3-120RD/SW/BL



FPQ3-100x50RD/SW/BL



LDR2	
LDR2-LA	Ring (Direct)
LDR-LA1	
SQR	
SQR-TP	
HLDR3	Ring (Convergent/Diffused)
HPR2	
LFR	Ring (Convergent/Diffused)
LKR	
FPR	
FPQ3	Square
LDL2	
LDLB	Bar
HLDL3	
LB	
TH2 (5 types)	Flat
LFL	
HPD2	
LDM2	Dome
LAV	
PDM	
LFXV	
LFX3	
LFX3-PT	
LFV3	Coaxial
LFV3-G	Coaxial
MSU	Coaxial
MFU	Coaxial
PF	Strobe
HLDR-IP	Water-proof
HSL-PCL	
Small COB Lights	COB
UV3/VL3	Violet
UV	
LNSP-UV3-FN	
IR2 (Under 1000-nm Type)	Infrared
IF (Over 1000-nm Type)	
CIR	
IU	Intensity Control
HLV3	
LV	
LSP	
HFS/HFR	
HLV3-22-4-NR	Spot, Etc.
HLV3-3M-RGB-4	
PFBR-600SW2	
PFBR-150	
PFB3	
LNLP	
LNSP2	Line (Convergent)
Coaxial Units	
LNSP-FN	Line (Convergent)
LN/LN-HK	
LNLD	
LND2	Line (Diffused)
LT	
LNV	Line (Diffused)
LFXV (Rectangular Type)	
TH2 (Rectangular Type)	
LNDG	Line (Oblique Angled)
LNIS2	
LNIS	Line (Oblique Angled)
LNIS-FN	
Telecentric Lens	
Macro Lens	

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

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