

LED Light Sources PFB3 Series

Renewed with
increased
brightness

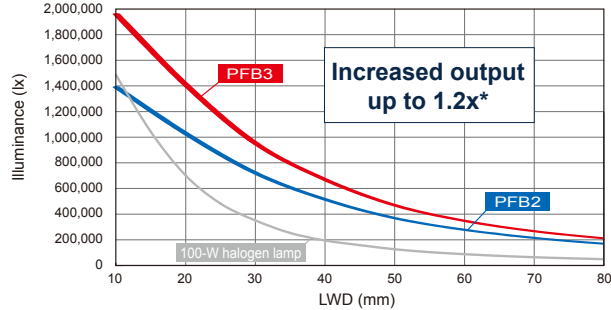


CE

LED Light Sources **PFB3** Series Renewed with increased brightness

Brightness Nice for replacing 100 W-halogen lamps

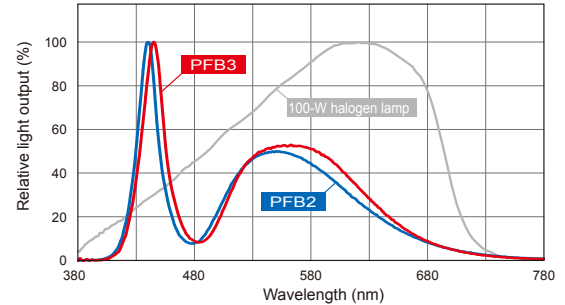
Illuminance comparison with a 100-W halogen lamp



* Actual measurement values with intensity of 100%, bundles of Ø8 mm, a straight light guide installed, and at positions of 50 mm illuminating distance away from the fiber output edge. Results may vary for individual units.

Spectral Distribution

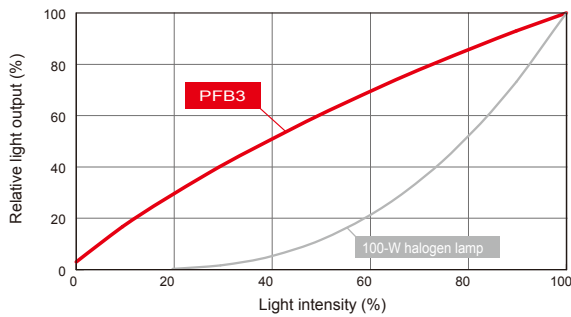
Comparison with a 100-W halogen lamp at the fiber output edge



Actual measurement values based on CCS's in-house measurement conditions. Results may vary for individual units.

Linearity Good controllability of the light intensity

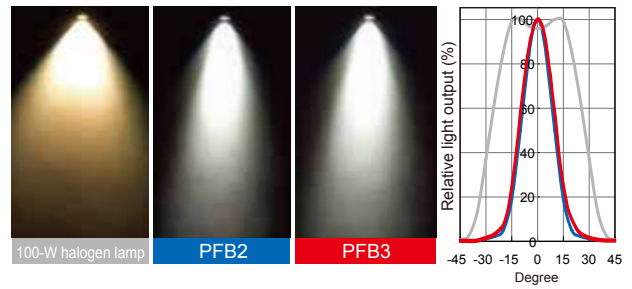
Linearity comparison with a 100-W halogen lamp



Actual measurement values with bundles of Ø8 mm, a straight light guide installed, and at the position of 50 mm away from the fiber output edge. Results may vary for individual units.

Directional Characteristics

Comparison made at the fiber output edge



Actual measurement values with intensity of 100%, bundles of Ø8 mm, and a straight light guide installed. The same fiber is used for the comparison.

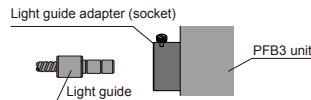
Major Light Guide Manufacturers Support

The PFB3 Series supports major light guide manufacturers; 6 international companies and 5 Japanese companies.

Light Guide Adapter Dimension Chart (mm)

Be sure to check the dimensions of your light guide before selecting the light guide adapter (socket).

PFB3-20SW-F-□□□-□□□
 Model name: JT/SJT/AJT/PJT
 Light guide adapter type: MO/NP/MI/HY/SU/VL/TF/TE/SH1/SH2/DJ1/DJ2/DJ3/DJ4/CS1/IT



We can also help you select the best light guide. Please feel free to inquire.

Common for the series			
<p>PFB3-20SW-F-□□□-MO</p>	<p>PFB3-20SW-F-□□□-NP</p>	<p>PFB3-20SW-F-□□□-MI</p>	<p>PFB3-20SW-F-□□□-HY</p>
<p>PFB3-20SW-F-□□□-SU</p>	<p>PFB3-20SW-F-□□□-VL</p>	<p>PFB3-20SW-F-□□□-TF</p>	<p>PFB3-20SW-F-□□□-TE</p>
<p>PFB3-20SW-F-□□□-SH1</p>	<p>PFB3-20SW-F-□□□-SH2</p>	<p>PFB3-20SW-F-□□□-DJ1</p>	<p>PFB3-20SW-F-□□□-DJ2</p>
<p>PFB3-20SW-F-□□□-DJ3</p>	<p>PFB3-20SW-F-□□□-DJ4</p>	<p>PFB3-20SW-F-□□□-CS1</p> <p>Only for use with the CCS Micro Fiber Heads HFS/HFR Series.</p>	<p>PFB3-20SW-F-□□□-IT</p>

Please contact CCS sales representative for information on the light guides other than the above sizes.

Advantages of Replacing 100-W Halogen Light Sources

- 1** Power consumption of 15 W max. greatly reduces running costs.
- 2** Long lifetime of 25,000 hours* to greatly reduce maintenance man-hours.
- 3** The compact design saves space.
- 4** Ambient temperatures around equipment are greatly reduced by the use of LEDs.

* Calculated values with an intensity of 100%, ambient temperature of 25°C, and a light output drop of up to 70%. Actual values may vary.

Select One from Four Types According to Your Operating Requirements

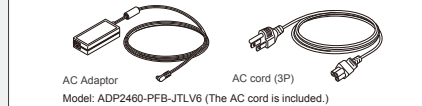
The lineup includes a model where intensity can only be manually adjusted, and models that allow for external control. There are three types of external control: serial, parallel, and analog. Light intensity control and ON/OFF control are available for each control type.

Standard Type

PFB3-20SW-F-JT Series



Optional Products (Sold Separately)



Functions

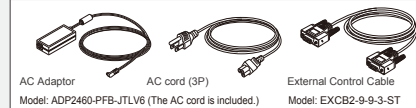
- **Manual light intensity control**
- **A 24 VDC power supply input** (using a terminal block on the back panel)
- **A 100 VAC power supply input** (using an optional AC Adaptor, sold separately)
- **Error detection**
(LED open failure, LED overheating, fan shutdown, and microcontroller oscillator shutdown detection)
No error signal (flashing of error indicator lamp only)

Serial Type

PFB3-20SW-F-SJT Series



Optional Products (Sold Separately)

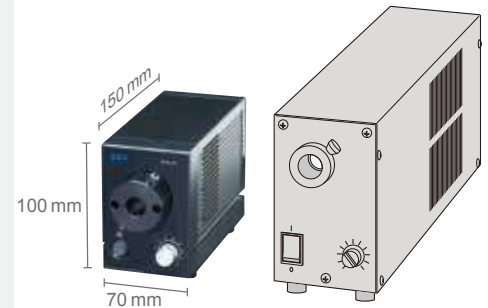


Functions

- **Manual light intensity control**
- **External control**
Control by inputting communications commands
Light intensity control and ON/OFF control
- **A 24 VDC power supply input** (using a terminal block on the back panel)
- **A 100 VAC power supply input** (using an optional AC Adaptor, sold separately)
- **Error detection**
(LED open failure, LED overheating, fan shutdown, and microcontroller oscillator shutdown detection)
Error signal provided

A Compact Size That Fits Almost Anywhere

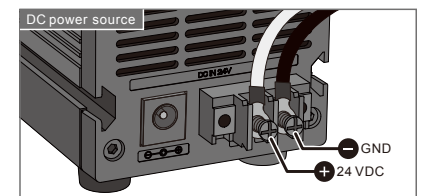
The case is just as compact as the conventional series. This will help you save space.



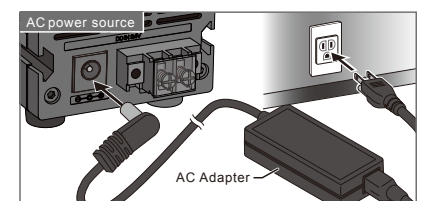
Halogen Light Source
A standard, 100-W halogen light source

Select the Power Supply According to the Operating Conditions

Use the terminal block on the back panel for a 24 VDC power supply. An AC Adaptor (optional, sold separately) can be used to supply power from an 100 to 240 VAC input source.



Use the terminal block on the back panel for 24-V DC power supply.



Use the AC Adaptor for a 100 to 240 VAC power supply.

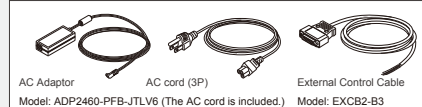
Model: ADP2460-PFB-JTLV6
(U.S. DoE CEC Level VI External Power Supply Efficiency Standards compliant)

Parallel Type

PFB3-20SW-F-PJT Series



Optional Products (Sold Separately)



Functions

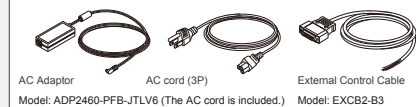
- **Manual light intensity control**
- **External control**
Light intensity control using 8-bit parallel input and ON/OFF control
Connection is possible to both sinking (NPN) and sourcing (PNP) inputs.
- **A 24 VDC power supply input** (using a terminal block on the back panel)
- **A 100 VAC power supply input** (using an optional AC Adaptor, sold separately)
- **Error detection**
(LED open failure, LED overheating, fan shutdown, and microcontroller oscillator shutdown detection)
Error signal provided

Analog Type

PFB3-20SW-F-AJT Series



Optional Products (Sold Separately)



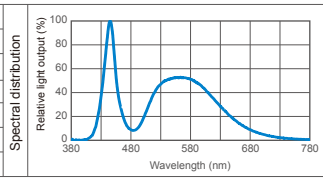
Functions

- **Manual light intensity control**
- **External control**
Analog light intensity control (0 to 5 V)
Light intensity control using external variable resistor (0 to 2.5 V)
ON/OFF control
Connection is possible to both sinking (NPN) and sourcing (PNP) inputs.
- **A 24 VDC power supply input** (using a terminal block on the back panel)
- **A 100 VAC power supply input** (using an optional AC Adaptor, sold separately)
- **Error detection**
(LED open failure, LED overheating, fan shutdown, and microcontroller oscillator shutdown detection)
Error signal provided

Specifications

Common Specifications

Series name	PFB3-20SW Series	
LED color	White	
Correlated color temp. (typ.)	5,700 K	
Lighting method	Constant lighting	
Drive method	Constant-current system	
Light intensity control method	Variable current control	
Number of channels	1 channel	
Error detection	An error indicator lamp on the front panel flashes (0.5 sec) and output stops. Error details: LED open failure detected, LED abnormal temperature detected, Fan shutdown detected (The output will not stop.), Microcontroller oscillator shutdown detected Note: Recovery by cycling power supply	
Input protection	Fuse	
Input voltage (rated)	24 VDC	
Input voltage (range)	21.6 to 26.4 VDC	
Power consumption (typ.)	15 W	
Insulation resistance voltage (input-FG)	Insulation resistance: 500 VDC, 1M Ω min. Withstanding voltage: 250 VAC for one minute, cutoff current: 10 mA max.	
Operating environment	Temperature: 0 to 40°C, Humidity: 20 to 85%RH (No condensation)	
Storage environment	Temperature: -20 to 60°C, Humidity: 20 to 85%RH (No condensation)	
Cooling method	Forced air cooling (Intake vents: sides, Exhaust vents: rear)	
Material, coating, surface processing	Case	Front and rear panels
	Surface processing	Black alumite
	Material	Aluminum alloy
		ABS resin
Weight	1.2 kg max.	



PFB3-20SW-F-SJT-Series (Serial Type) Specifications

Model name	PFB3-20SW-F-SJT-□□ (□□: depends on the light guide attachment adaptor)
Control type	Serial type
Light intensity control	Manual: Continuous control using the intensity control knob Remote: 256-step light intensity using RS-232C communications command (default value: 0) Note: A faint light turns on when the intensity is set to the minimum. Using the Remote/Manual selection switch on the front panel
Light ON/OFF control	Using the RS-232C communications command
Lighting delay (max.)	3800 μs (ON time)
Error detection output	The RS-232C communications command returns error command Note: In the case of a microcontroller oscillator shutdown error, communications are not possible, so the only indicator is the flashing lamp.
CE marking	Safety standard: Conforms to EN62471; EMC standard: Conforms to EN61000-6-2, EN61000-6-4
Optional products	AC Adaptor: ADP2460-PFB-JTLV6, External Control Cable: EXCB2-9-9-3-ST

PFB3-20SW-F-PJT-Series (Parallel Type) Specifications

Model name	PFB3-20SW-F-PJT-□□ (□□: depends on the light guide attachment adaptor)
Control type	Parallel type
Light intensity control	Manual: Continuous control using the intensity control knob Remote: Light intensity can be controlled in 256 steps using the 8-bit light control signals from an external source. Note: A faint light turns on when the intensity is set to the minimum. Using the Remote/Manual selection switch on the front panel
Light ON/OFF control	It depends on the external control connector. (It operates regardless of Manual or Remote.)
Lighting delay (max.)	3800 μs (ON time)
Error detection output	15-pin D-sub, transistor output across 14-15 Normal operation: 14-15 open Error: 14-15 close
CE marking	Safety standard: Conforms to EN62471; EMC standard: Conforms to EN61000-6-2, EN61000-6-4
Optional products	AC Adaptor: ADP2460-PFB-JTLV6, External Control Cable: EXCB2-B3

PFB3-20SW-F-AJT-Series (Analog Type) Specifications

Model name	PFB3-20SW-F-AJT-□□ (□□: depends on the light guide attachment adaptor)
Control type	Analog type
Light intensity control	Manual: Continuous control using the intensity control knob Remote: Analog Continuous intensity control with a 0 to 5 VDC input voltage External variable resistor Continuous intensity control with an external variable resistor Note: A faint light turns on when the intensity is set to the minimum. Using the Remote/Manual selection switch on the front panel Switched with external control connector (analog input voltage or external variable resistor).
Light ON/OFF control	It depends on the external control connector. (It operates regardless of Manual or Remote.)
Lighting delay (max.)	3800 μs (ON time)
Error detection output	15-pin D-sub, transistor output across 14-15 Normal operation: 14-15 open Error: 14-15 close
CE marking	Safety standard: Conforms to EN62471; EMC standard: Conforms to EN61000-6-2, EN61000-6-4
Optional products	AC Adaptor: ADP2460-PFB-JTLV6, External Control Cable: EXCB2-B3

PFB3-20SW-F-JT-Series (Standard Type) Specifications

Model name	PFB3-20SW-F-JT-□□ (□□: depends on the light guide attachment adaptor)
Control type	-
Light intensity control	Continuous control using the intensity control knob Note: A faint light turns on when the intensity is set to the minimum.
Light ON/OFF control	-
Lighting delay (max.)	-
Error detection output	-
CE marking	Safety standard: Conforms to EN62471, EMC standard: Conforms to EN61326-1 Class A
Optional products	AC Adaptor: ADP2460-PFB-JTLV6

- The data for illuminance and lifetime included in this brochure is for reference only. Actual values may vary.
- For detailed information on the light guide, inquire with your light guide manufacturer.
- Installation method: Do not place anything within 50 mm of the fan exhaust outlet on the rear, the air inlets on the left and right sides, and the top of the PFB3 unit.

Dimensions (mm)

Common Dimensions

Front view for the JT series

Front view for the SJT/PJT/AJT series

PFB3-20SW-F-JT Series (Standard Type)	PFB3-20SW-F-SJT Series (Serial Type)	PFB3-20SW-F-PJT Series (Parallel Type)	PFB3-20SW-F-AJT Series (Analog Type)
Optional Products	Optional Products	Optional Products	Optional Products
Model: ADP2460-PFB-JTLV6 (The AC cord is included.)	Model: ADP2460-PFB-JTLV6 (The AC cord is included.) Model: EXCB2-9-9-3-ST	Model: ADP2460-PFB-JTLV6 (The AC cord is included.) Model: EXCB2-B3	Model: ADP2460-PFB-JTLV6 (The AC cord is included.) Model: EXCB2-B3

* The dimensions of the Light Guide Adaptor (socket) vary depending on the light guide in use. For details, refer to our website or the General Catalog of LED Lighting for Machine Vision Applications, or inquire with your CCS sales representative.

Optional Products (Sold Separately)

AC Adaptor (Model: ADP2460-PFB-JTLV6)

AC Adaptor main unit
INPUT: 100 to 240 VAC 130 VA 50/60 Hz
OUTPUT: 22.8 to 25.4 V 2.7A
U.S. DoE CEC Level VI External Power Supply Efficiency Standards compliant

Center plus
Cord connector IEC 60320 C6

Accessory: AC cord

External Control Cable (Model: EXCB2-9-9-3-ST)

(For use with serial type units)

9-pin D-sub (socket) 3,000 9-pin D-sub (socket)

2x#4-40UNC (inch thread) 2x#4-40UNC (inch thread)

Conforms to EIA-232 standard

CN1 CN2
① ①
② ②
③ ③
④ ④
⑤ ⑤
⑥ ⑥
⑦ ⑦
⑧ ⑧
⑨ ⑨
Frame Frame

External Control Cable (Model: EXCB2-B3)

(For use with parallel and analog type units)

15-pin D-sub 3,000 15-pin D-sub

SCIC-0-18-16 Cut off on one end

Shield ground

1 (Black)
2 (White)
3 (Red)
4 (Green)
5 (Yellow)
6 (Brown)
7 (Blue)
8 (Purple)
9 (Gray)
10 (Pink)
11 (White/Black)
12 (Red/Black)
13 (Green/Black)
14 (Yellow/Black)
15 (Brown/Black)
Not connected (Blue/Black)

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CAUTION ● 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.



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