

# High-Power Light Source Units

## PFBR-600SW-LL/-LLCF

— New Custom Model —

High Power & High Speed Switching  
**PFBR-600SW-LL-HD/LLCF-HD**

High Power & Dedicated Strobe Operation  
**PFBR-600SW-LL-XF/LLCF-XF**

## Improving Inspection Speed and Accuracy

Next-Generation Light Sources Delivering High Output and a Fast Response



**PFBR-600SW-LLCF**  
(Filter Changer Model)

**PFBR-600SW-LL**

**Warning**

These products emit high-intensity visible light. Heat-sensitive or flammable light-absorbing materials may be damaged because light-absorbing materials convert incident light into heat. Check the instructions in the instruction guide and use the products in a safe manner.

## High-Power Light Source Units

# PFBR-600SW-LL/-LLCF

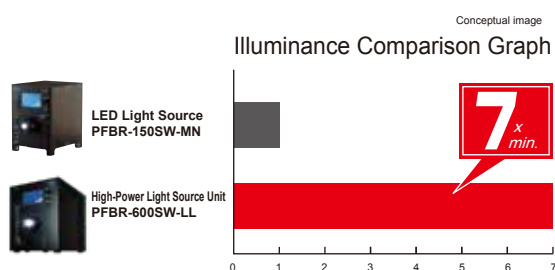
- Stable light output is maintained over long periods with a service life of 20,000 hours\*  
\* Expected service life at 50% maximum light quantity when the feedback control function is enabled.
- Continuous lighting and strobe lighting (internal trigger mode and external trigger mode) can be selected
- Available control modes include manual control and external control over Ethernet, parallel communication, and serial communication
- Light intensity can be set in a maximum of 1,024 steps (10-bit: 1,024 steps / 8-bit: 256 steps)



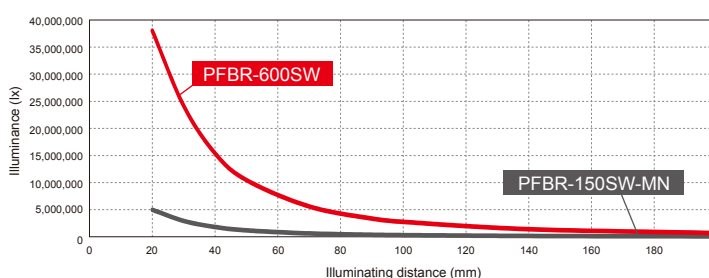
PFBR-600SW-LL

## » Provides High Output to Easily Replace Xenon Flash Light Sources

Output increased more than 7x that of previous LED light sources. The result is an ultra-high output light source unit comparable to xenon flash light sources.



Actual measurement values with intensity of 100%, a bundle of Ø8 mm, a straight light guide with a total length of 1,000 mm installed, and at a position 50 mm away from the fiber output edge.  
(Results may vary for individual units.)

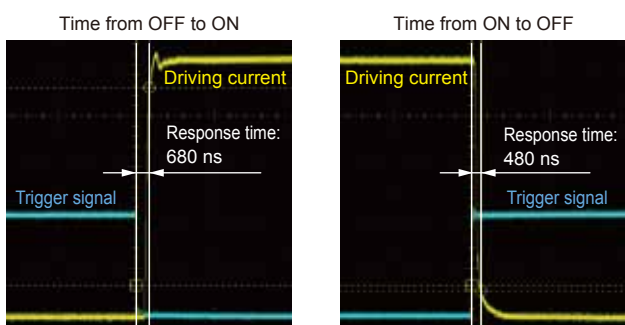


Actual measurement values with intensity of 100%, bundles of Ø8 mm, a straight light guide with a total length of 1,000 mm installed, and at positions at each illuminating distance away from the fiber output edge.  
(Results may vary for individual units.)

## » High-Speed Response 1 μs or Faster

For pulse illumination synchronized to external trigger input.

### Response Time by External Trigger Signal Input

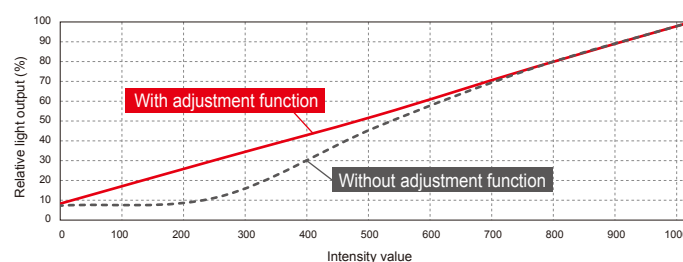


Measured at the maximum light quantity.  
This data is for reference only. Actual values may vary.

## » Equipped with Linearity Adjustment Function

Linearity with reproducibility is achieved with our unique correction function.

### Light Intensity is Adjustable with a High Resolution of 1,024 Steps.

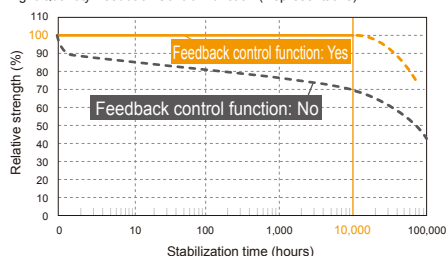


Actual measurement values using our measurement conditions. Results for individual products may vary.  
The correction function on this product is permanently enabled.

## » Equipped with Light Quantity Feedback Control Function

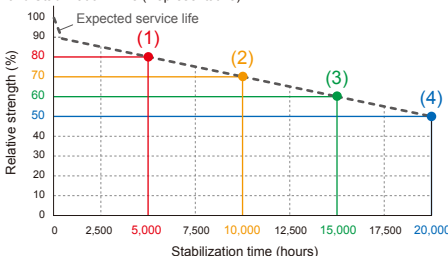
Use the light quantity feedback control function and set the desired stabilization time to maintain output over long periods.

Comparison of Relative Strength According to Light Quantity Feedback Control Function (Representative)



Note: When the stabilization time is set to 10,000 hours.  
This graph is representative of the function. Actual values may vary.

Relationship between Light Quantity Feedback Control Function and Stabilization Time (Representative)



Note: In Ta=40°C environment.  
This graph is representative of the function. Actual values may vary.

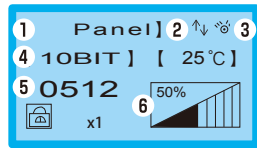
- (1) Stabilized up to 5,000 hours at 80% maximum light quantity.
- (2) Stabilized up to 10,000 hours at 70% maximum light quantity.
- (3) Stabilized up to 15,000 hours at 60% maximum light quantity.
- (4) Stabilized up to 20,000 hours at 50% maximum light quantity.

Note: Refer to the instruction guide for more information on the light quantity feedback control function.

## » Easily Checked Operating Status on the LCD Panel

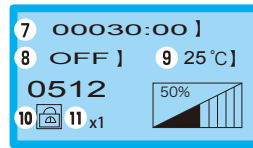
Displays operating status such as light source temperature, light intensity and operating time.

### Operation Display 1



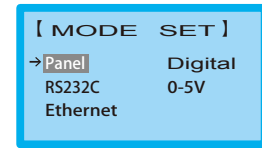
- ① Operating mode
- ② Feedback function icon
- ③ Light ON icon
- ④ Intensity resolution
- ⑤ Intensity value
- ⑥ Intensity indicator

### Operation Display 2



- ⑦ Total time (min.)
  - ⑧ Strobe setting
  - ⑨ Light source temperature
  - ⑩ Lock icon
  - ⑪ Intensity step magnification
- When you press the operating knob, the display of the magnification will change in the following order: x1, x10, and x100.

### Mode Setting Display



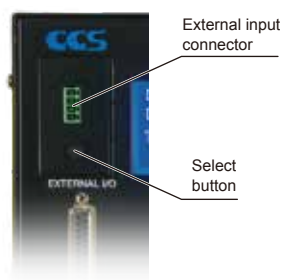
Refer to the instruction guide for details of displayed contents.

## » External Control by Use of a Large Variety of Communication Methods

- Ethernet communication control: TCP/IP and UDP/IP
  - Parallel communication control
  - Serial communication control: RS-232C
- Digital light control: Compatible with sink and source types  
Analog light control: Intensity control from 0 to 5 V

## » PFBR-600SW-LLCF Filter Changer Model

Use color filters to emit light at specific wavelengths.



PFBR-600SW-LLCF

- Equipped with a multi-filter changer that holds five filters.
- Filters can be changed manually and using external communication.
- Easily replace filters by removing the front cover.
- Filters available in six colors.



- Red
- Blue
- Green
- Cyan
- Magenta
- Yellow

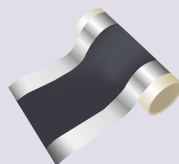
Note: Refer to the instruction guide for installing and setting filters.

A variety of filters are available with excellent heat resistance.

### High Power & High Speed Switching

Custom Model **PFBR-600SW-LL-HD/LLCF-HD**

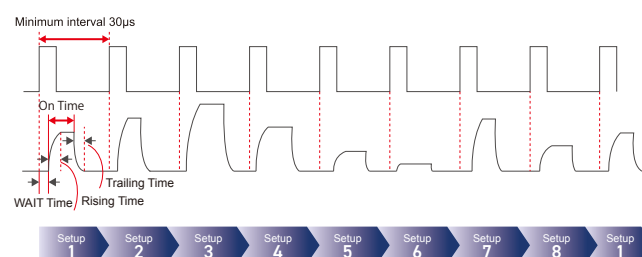
By applying preset light intensity values in a sequence according to the trigger input, it is possible to change light intensity at high speed (8 patterns max). It is suited for inspections where the workpiece surface has differing reflectivity or transparency.



- Workpiece sample of electrode sheet (same workpiece under different light intensity set for each trigger input)



#### Timing Chart



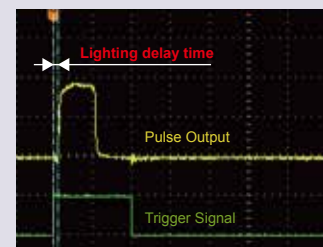
### High Power & Dedicated Strobe Operation

Custom Model **PFBR-600SW-LL-XF/LLCF-XF**

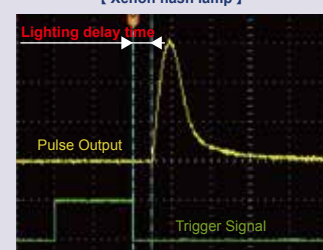
This model is for dedicated strobe operation and offers an alternative solution to xenon flash lamps. It achieves high power output and long life. No special light guide is required, but a plastic light guide is available.

- Comparison of PFBR-600SW-LL-XF and Xenon flash lamp in strobe operation. (PFBR-600SW-LL-XF has no jitter (delay time after trigger input).)

[ PFBR-600SW-LL-XF ]

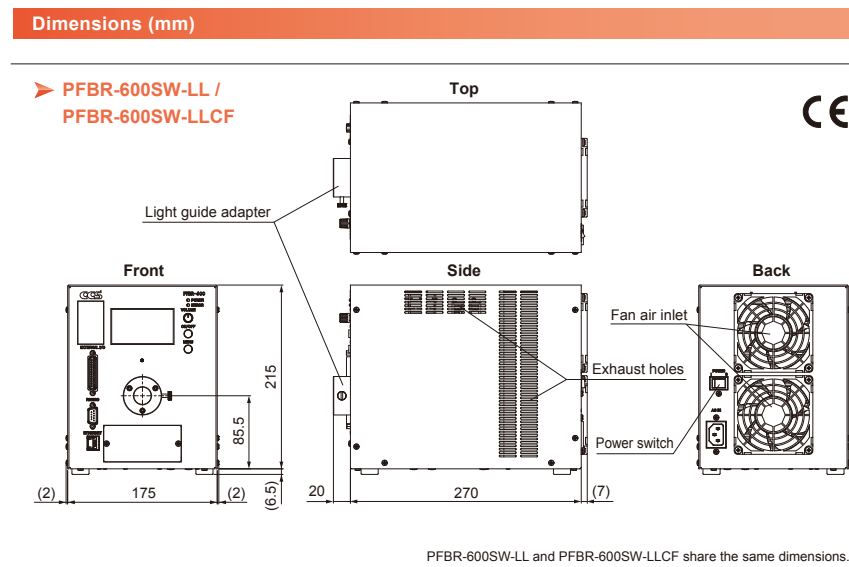
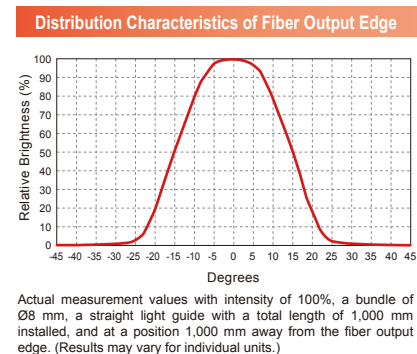
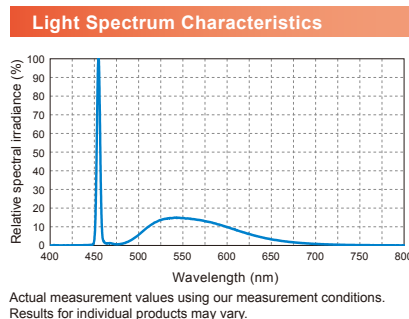


[ Xenon flash lamp ]



These models are custom products. For more details, please contact your local CCS sales representative.

Specifications		
Model name	PFBR-600SW-LL	PFBR-600SW-LLCF (Filter Changer Model)
Applicable fiber bundle diameter	Ø8 to Ø14 mm	
Light distribution angle	Total angle of 30°	
Emitting color	White	
Correlated color temperature (typ.)	5,600 K	
Drive method	Constant-current system	
Intensity control method	Variable-current control	
Number of channels	1 channel	
Input power supply	100 to 240 VAC (±10%), 50/60 Hz	
Power consumption (typ.)	350 VA at 100 V input, 370 VA at 240 V input	
Inrush current (typ.)	40 A (From a cold start)	
Ground leakage current	0.5 mA max. (240 VAC, 60 Hz, with 100 % load)	
Insulation withstand voltage (input-output, input-FG)	1,500 VAC for one minute, cutoff current: 10 mA, 500 VDC, 20 MΩ min.	
Operating environment (indoors only)	Temperature: 0 to 40°C, Humidity: 20 to 80%RH (with no condensation) Altitude: 2,000 m max., AC overvoltage: Category II, Pollution degree: 2	
Storage environment	Temperature: -15 to 60°C, Humidity: 20 to 85%RH (with no condensation)	
Cooling method	Forced cooling	
CE marking	Safety standard: Conforms to EN61010-1, EN62311-2008 EMC standard: Conforms to EN61000-6-2, EN61000-6-4, and EN50581-2012	
Environmental regulations	RoHS compliant	
Material and surface processing	Aluminum alloy (black alumite)	
Weight	8.0 kg max.	8.5 kg max.
Accessories	Instruction guide, 2-m 3-prong AC power cable with ground terminal For PFBR-600SW-LLCF (Filter Changer Model): Filter holders x 5 pcs., holder mounting screws x 18 pcs.	



## ● Light Guides / Light Guide Adapters

We offer various light guides suited to a variety of applications, including straight types, ring types, and types for line sensors.



- Please be aware that the light guide adapter must be installed after purchase by the customer.
- We accept custom orders for the light guides. Please contact your CCS sales representative for details.

## ● Color Filters

Use filters to emit the optimum light for the inspected workpiece.

### ➤ Available Six Colors

Five filters can be installed.



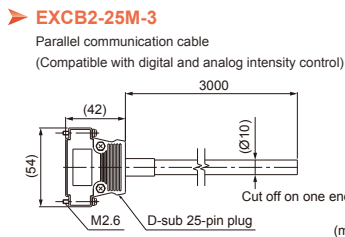
- Red
- Blue
- Green
- Cyan
- Magenta
- Yellow

- A variety of filters are available with excellent heat resistance.
- Contact your CCS sales representative for the detailed information.

## Options (Sold Separately)

### External Control Cables

Select an appropriate cable, depending on the communication method.



- Purchase a commercially available RS-232 crossover cable (length: 3 m max.) for the serial communication cable.
- Purchase a commercially available LAN cable (length: shorter than 30 m) for the Ethernet communication cable. Refer to the instruction guide for more information.

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## Notes

- 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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