CREATING CUSTOMER SATISFACTION

LIGHTING SOLUTION

# LED Light Source Unit

## PFBR-150SW Series

**Provides light output that exceeds that of a 250-W metal halide light source**
**Achieves the highest level in the industry with 2 million lx**


CE

**Caution** This product emits 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 this product in a safe manner.

**CCS Inc.**

# LED Light Source Unit

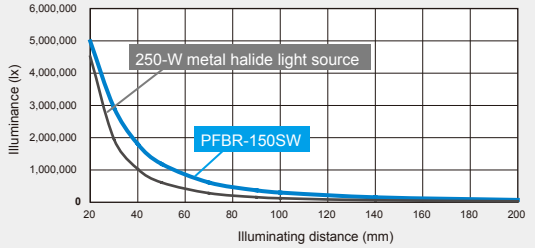
# PFBR-150SW

## Provides light output that exceeds that of a 250-W metal halide light source

## Achieves the highest level in the industry with 2 million* lx

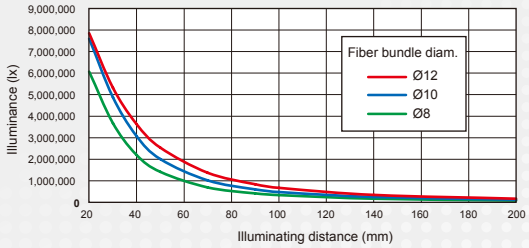
* Actual measurement values with a bundle of Ø10 mm, a straight light guide with a total length of 1,080 mm installed, and at a position 50 mm away from the fiber output edge. (Results may vary for individual units.)
* Current as of our in-house inspection in Feb. 2014.

### LED light source unit that exceeds a 250-W metal halide light source




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

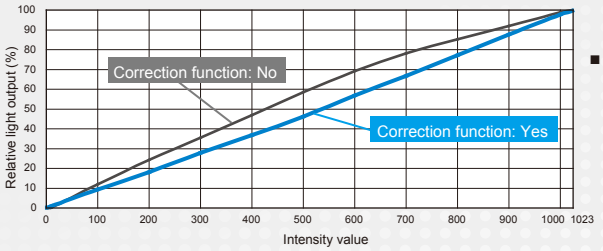
### Optical design is optimized for all types of fiber to provide high output




* Actual measurement values with intensity of 100%, bundles of Ø8, 10, and 12 mm, a straight light guide with a total length of 1,080 mm installed, and at positions at each illuminating distance away from the fiber output edge. (Results may vary for individual units.)

## 1,024-step intensity. Linear characteristics with reproducibility

### Our unique correction function is a standard function. Provides linearity with reproducibility




* Actual measurement values using our measurement conditions (Results may vary for individual units.)
The correction function of this product is always set to "Yes".

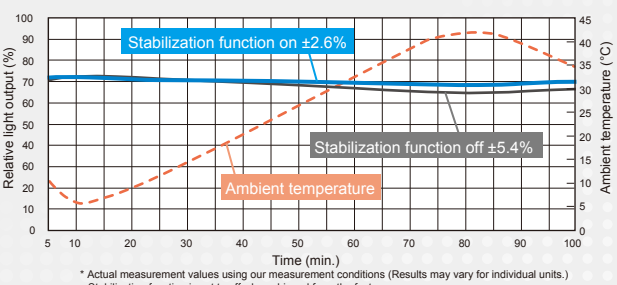
■ Intensity value can be adjusted in steps

- 1024-step intensity (10-bit)
- 256-step intensity (8-bit)

## Equipped with a light output stabilization (feedback) function

Our unique stabilization function maintains brightness fluctuation within ±3%. Functions effectively even when there are variations within the ambient operating temperature range.
(Effective when used in the following range: Operating temperature of 5 to 40 °C and intensity value from 40 to 80%.)

### Stable light output even in severe operating environments

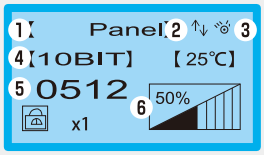



* Actual measurement values using our measurement conditions (Results may vary for individual units.)
Stabilization function is set to off when shipped from the factory.

## Operating status can be monitored by using the monitoring function

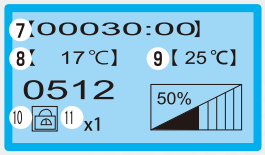
Displays operating status such as LED temperature, internal circuit board temperature and operating time.

### Operation display 1



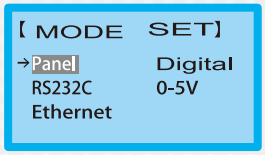

(1) Operating mode
(2) Feedback function icon
(3) Light ON icon
(4) Intensity resolution
(5) Intensity value
(6) Intensity indicator

### Operation display 2




(7) Total time
(8) Internal circuit board temperature
(9) LED temperature
(10) Lock icon
(11) Intensity step magnification

### Mode setting display




* Refer to the Instruction Guide for details of displayed contents.

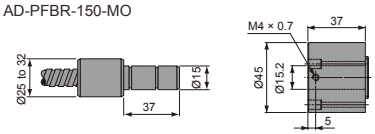
## External control by use of a large variety of communication methods

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

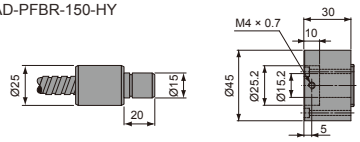
## Standard compatibility with three types of light guides

Check the dimensions of the light guide to be used before selecting an adapter. * Be careful as plastic fiber cannot be used.

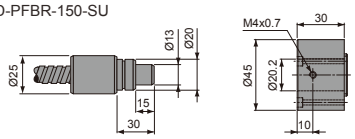
AD-PFBR-150-MO




AD-PFBR-150-HY




AD-PFBR-150-SU



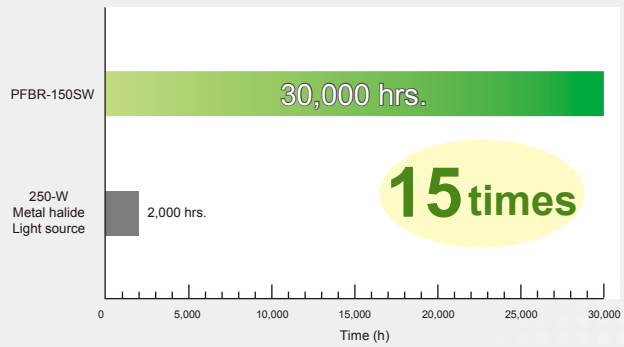

* Please be aware that the light guide adapter must be installed after purchase by the customer. Inquire with the CCS Sales Dept. regarding sizes not listed here.

## Flexible customization

- **Compatible with fiber in bundles from Ø3 to Ø22 mm.**
- **Adapter can be manufactured for compatibility with light guides of various manufacturers.**
- **Linear characteristics (intensity curve) can be customized.**
- **Light distribution characteristics can be optimized by customizing optical lenses.**

## Long product life of 30,000 hours

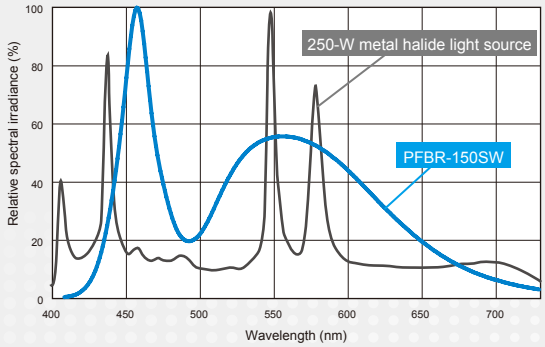
### Product life comparison of PFBR and 250-W metal halide light source




* Calculated values up to intensity of 100%, ambient temperature of 25 °C, and light output drop up to 70%. (Results may vary for individual units.)

## Light spectrum characteristics

### Light spectrum comparison of PFBR and 250-W metal halide light source




* Actual measurement values using our measurement conditions (Results may vary for individual units.)

## Specifications

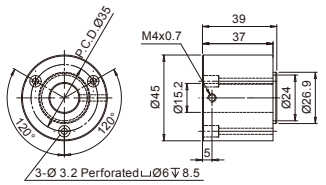
| | |
|---|---|
| Model | PFBR-150SW-MN |
| Applicable fiber bundle diameter | Ø8 to Ø14 mm |
| Light distribution angle | Total angle of 30° |
| LED color | White |
| Correlated color temperature (typ.) | 6500 K |
| Drive method | Constant-current drive |
| Intensity control method | Variable-current control |
| Number of channels | 1 channel |
| Input power supply | 100 to 240 VAC (±10%), 50/60 Hz |
| Power consumption (typ.) | 200 VA |
| Inrush current (typ.) | 15 A at 100 VAC, 30 A at 200 VAC<br>* From a cold start |
| Ground leakage current | 3.5 mA max. (264 VAC, 60 Hz, with no load) |
| Insulation withstand voltage (Input-FG) | 1,500 VAC for one minute, cutoff current: 10 mA,<br>50 VDC, 20 MΩ min. |
| Operating environment | Temperature: 5 to 40°C, Humidity: 20 to 80%RH (with no condensation)<br>Altitude: 2,000 m max., Transient overcurrent: Category II, Pollution level: 2 |
| Storage environment | Temperature: -15 to 60°C, Humidity: 20 to 85%RH (with no condensation) |
| Cooling method | Forced cooling |
| CE marking | Safety standard: EN61010-1 compliant<br>EMC standard: Complies with EN61000-6-2 and EN61000-6-4 |
| Environmental regulations | RoHS compliant |
| Material, coating, and surface processing | Aluminum alloy (black alumite) |
| Weight | 3.9 kg max. |
| Accessories | One Instruction Guide and one 2-m 3-prong AC power cable with ground terminal |

## Options

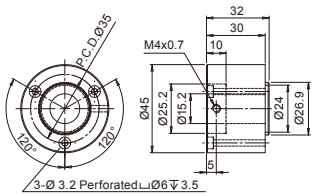
### Light guide adapters

Accessories: One light guide lock screw, three hexagon socket bolts, one hexagon wrench

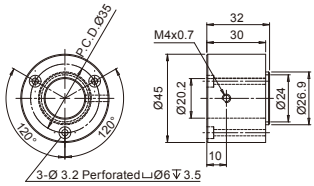
**AD-PFBR-150-MO**




**AD-PFBR-150-HY**



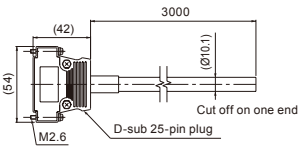

**AD-PFBR-150-SU**



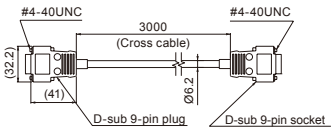

### External control cables

Select an appropriate cable according to the communication method.

**EXCB2-25M-3**
**Parallel communication cable**
**(Compatible with digital and analog intensity)**



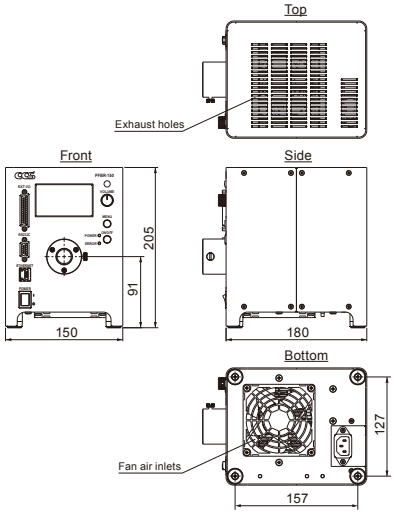

**EXCB2-9M-9F-3-CR**
**Serial communication cable (RS-232C)**




- A light guide adapter is not provided with this product. Order one separately.
- Inquire with the CCS Sales Dept. regarding the light guide adapter not described here.

## Dimensions (mm)

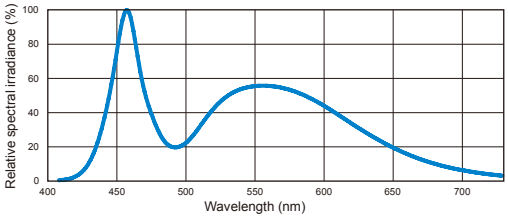
**PFBR-150SW-MN**



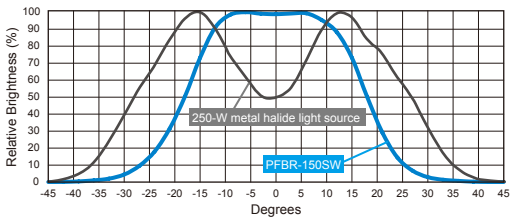

* The shape of the light guide adapter depends on the details of the order.

## Data

### Light spectrum characteristics




### Light distribution characteristics of fiber output edge




* Actual measurement values with intensity of 100%, a bundle of Ø8 mm, a straight light guide with a total length of 1,100 mm installed, and at a position 600 mm away from the fiber output edge. (Results may vary for individual units.)



**CAUTION**

- To use this product safely and correctly, be sure to read the *Instruction Guide* before use. ● The design of this product is subject to change without notification.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