

Patent pending

FALUX
SENSING

Communication between the controller and the LED lighting enables accurate monitoring and feedback brightness controlling.

LED controller Advanced OPPF series

OPPF-30MN : master unit NPN
OPPF-30MP : master unit PNP
OPPF-30SN : slave unit NPN
OPPF-30SP : slave unit PNP

Sensing LED bar lighting OPB-S series

OPB-S5015W : 50 × 15mm
OPB-S10015W : 100 × 15mm
OPB-S15015W : 150 × 15mm
OPB-S20015W : 200 × 15mm
OPB-S25015W : 250 × 15mm
OPB-S30015W : 300 × 15mm



LED controller Advanced OPPF series

- PWM brightness control & strobe drive
- "FALUX sensing" technology for monitoring and feedback controlling
- Brightness is controllable through RS232/Parallel/Analog 0-5V



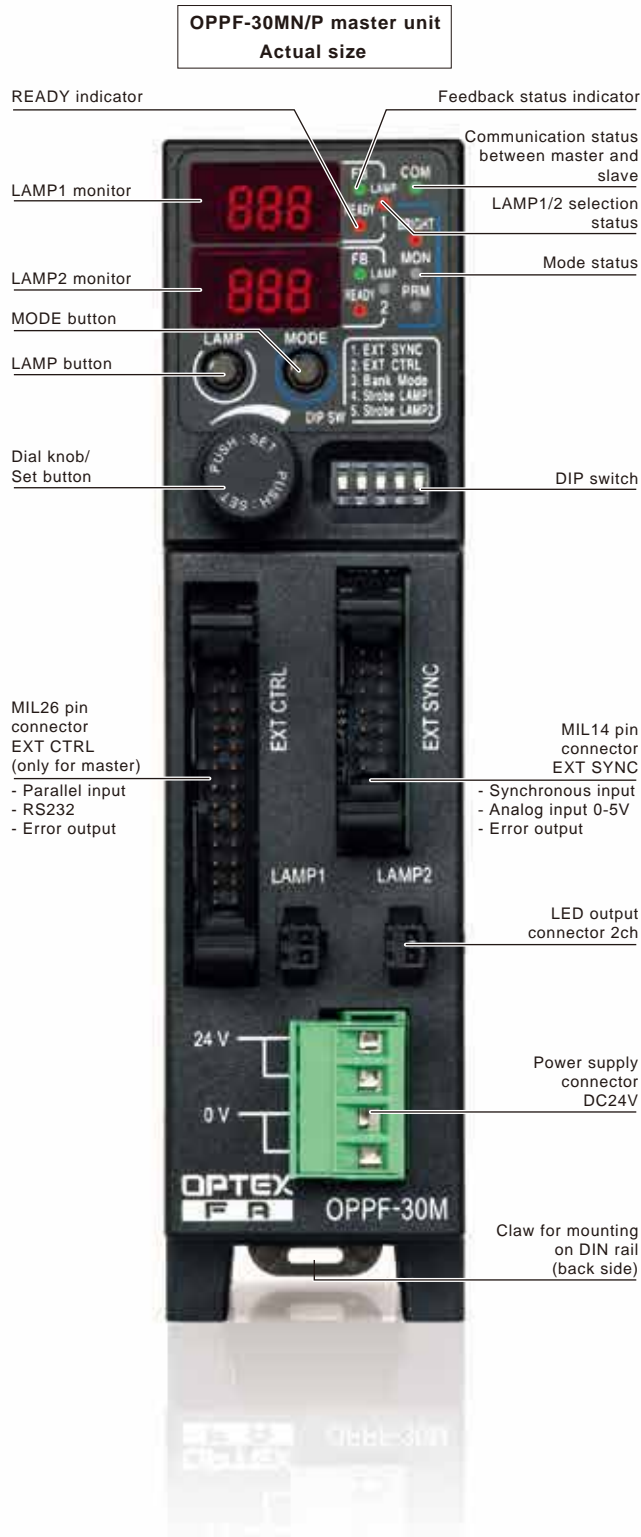
Sensing LED bar lighting OPB-S series

- "FALUX sensing" technology built-in
- Adjustable multiple lightings same brightness easily
- High performance as well as OPB series



LED controller Advanced OPPF series

- Support PWM mode and strobe mode
- Brightness feedback controlling and monitoring brightness and temperature by "FALUX sensing"
- Brightness is controllable through RS232/Parallel/Analog 0-5V



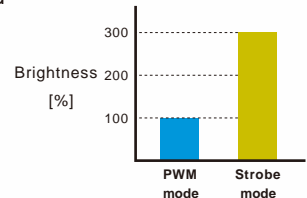
Support PWM mode and strobe mode

PWM mode

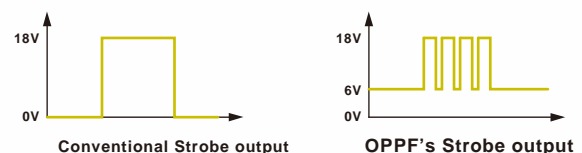
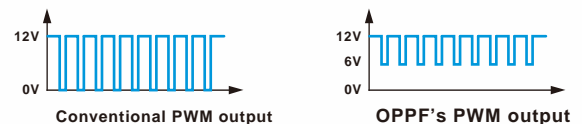
Adjustable step of Duty is 1,000 at the frequency up to 100kHz.
Maximum output power is 30W for 2 LED lighting totally.

Strobe mode

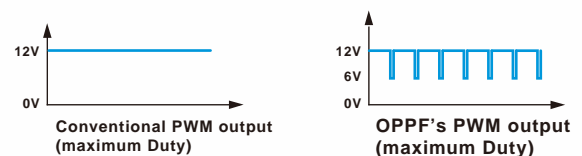
Adjustable step of Duty is 1,000.
Pulse width is adjustable from 10 μ s up to 9.99ms (10 μ s step, adjustable maximum step : 1,000).
Output voltage is overdriven up to 18V when the pulse width is less than 1ms.
In this case, brightness is 3 times brighter than PWM mode.
Maximum output is 15W for each LED lighting.



- Around 6V power is supplied to the LED output while the pulse is off so that the LED circuitry is activated. Although, LED is not driven under 6V power supply.



- To integrate communication signal, Duty won't be 100% at maximum Duty.



- Other setup item
 - Auto Strobe cycle
 - LED output delay timer
 - Filter time factor for Sync input (for noise reduction)
 - Polarity of Sync input
 - PWM frequency



“FALUX sensing” technology enables brightness feedback controlling and monitoring brightness and temperature

Patent pending

Monitoring function

- Monitoring of brightness is available even at transition moment of PWM and Strobe.
- You can get alarm when the brightness goes lower than the threshold.
- Monitoring of temperature of internal LED lighting unit not only brightness is available.

Feedback controlling

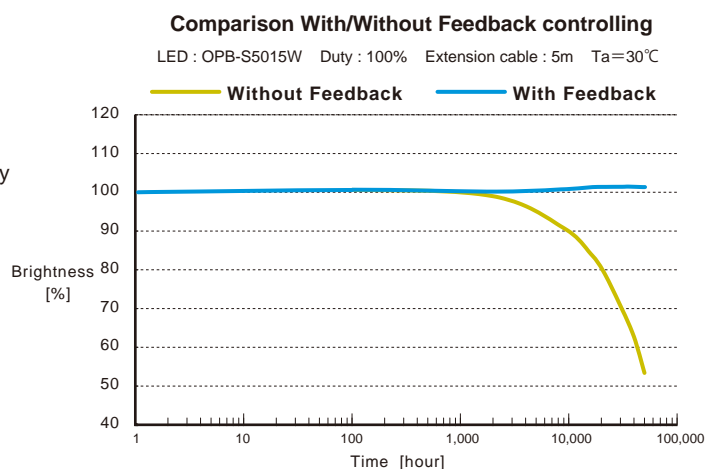
- Feed back controlling enables very stable brightness for long period that helps making maintenance of the brightness simple and easy. The controller adjusts output voltage automatically comparing feedback brightness with setup.
- Feed back controlling compensates voltage loss made by extension cable
- It outputs Feedback Error when the LED output voltage reaches upper or lower limit.

- LED output voltage

PWM mode : DC11~18V

Strobe mode : DC16~22V

- Feedback accuracy : $\pm 1.5\%$ max. (typ.)



You can use OPPF series for conventional LED lighting without “FALUX sensing” regardless any special setup.

Brightness controlling

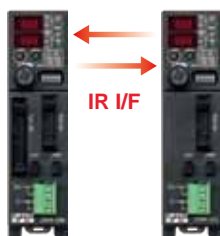
- You can use RS232 and parallel I/F for setup of all OPPF units connected to master unit.
- You can control brightness of each LED lighting individually through analog 0-5V inputs.

Bank memory built-in

- 16 Bank memory built-in for setup.
- You just change the Bank to change the setup.
- You can change the Bank by buttons and dial on front panel and also through RS232 and parallel I/F as well.

Support multiple channel

- Master unit support up to 3 slave units so up to 8 channel can be supported.
- I/F between control units is original infrared interface.
- Setup copy function helps copying setup to all channel easily.
- You can use only slave unit without master unit connected.

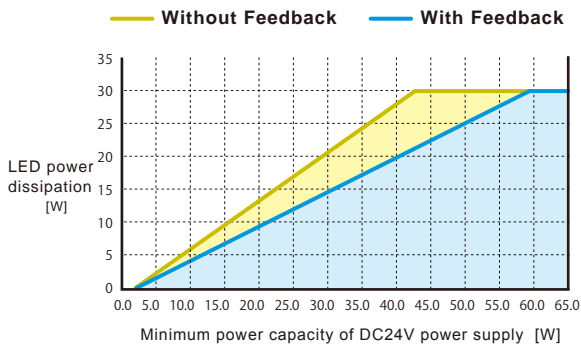


Cost efficient

- All functions built-in are selected carefully from what Optex-FA surveyed from market.
- OPPF series is very much cost efficient but full of functions.
- OPPF series is one of the most competitive products as LED lighting controller that support strobe mode.

Minimum power for DC24V

Please choose power supply with enough power capacity according to LED lighting to drive.

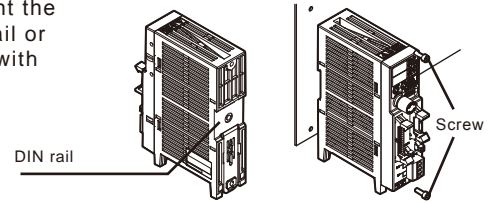


Bigger power is needed for Feedback controlling because of adjusting brightness monitoring LED brightness and compensating voltage dropped by extension cable.

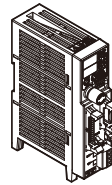
Warning : Please choose power supply with bigger power when using the power supply for other equipment accordingly (add more than twice capacity of rated power of those equipment).

Installation tips

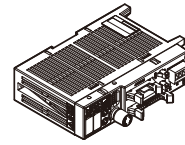
You can mount the unit on DIN rail or on the panel with screws.



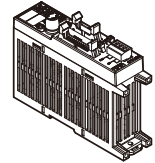
The unit must be installed upright for sufficient heat radiation.



Good



Bad



Bad

Cable connection

Power supply DC24V

Applicable wire : 0.2~2.5mm² 24~12AWG

Length of stripping part : 7mm

Note : You can bridge between master unit and slave unit.

MIL 26 pin connector (EXT CTRL)

MIL 14 pin connector (EXT SYNC)

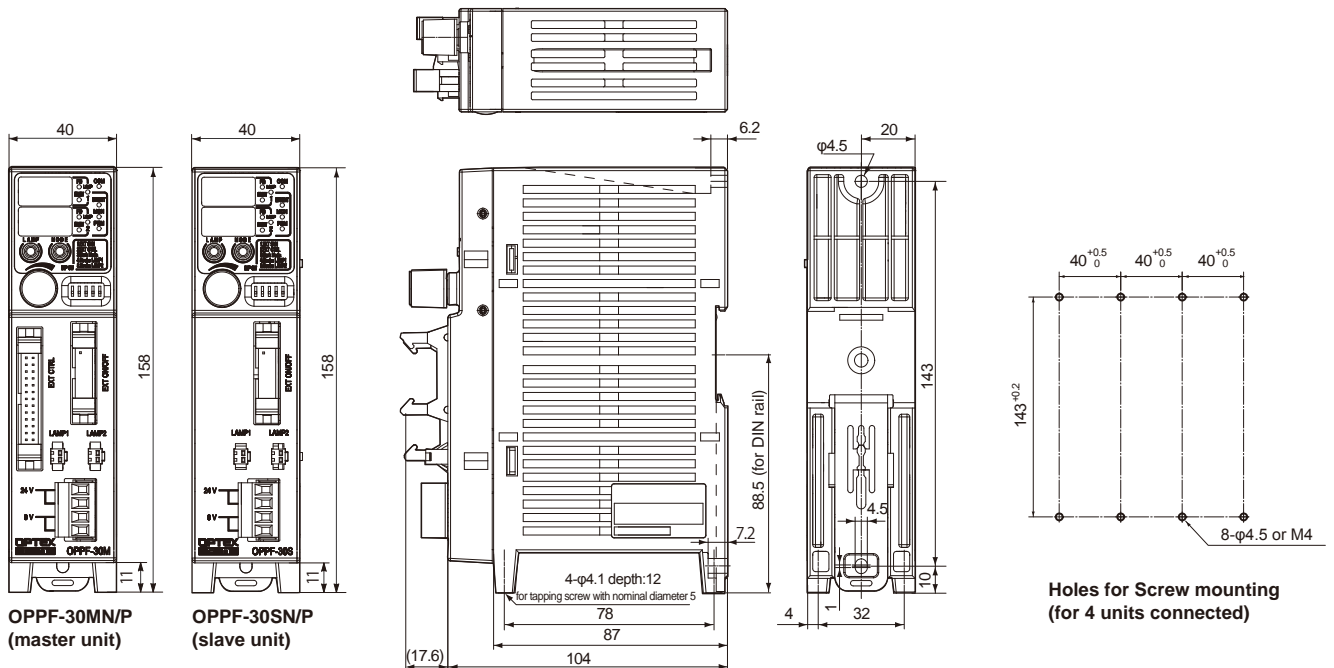
Example :

MISUMI HIFS-S-E-26-2 for MIL 26 pin connector

MISUMI HIFS-S-E-14-2 for MIL 14 pin connector

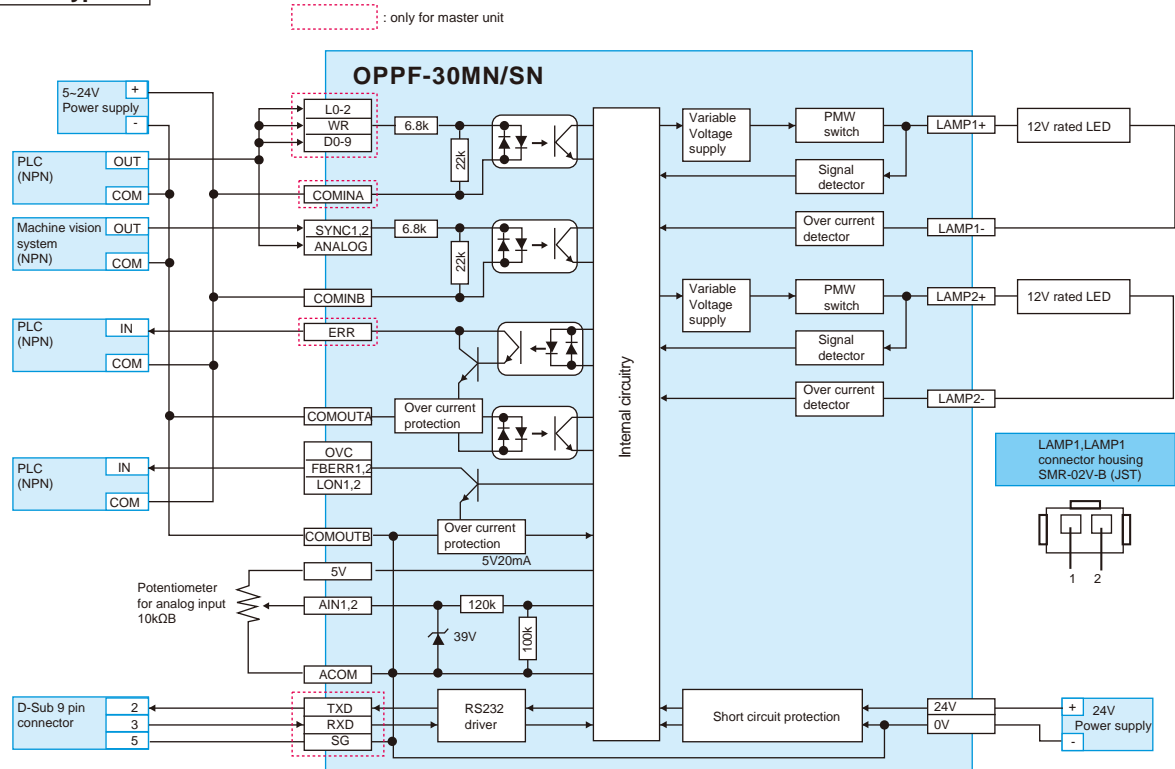
Note : Please use shield cable for noisy environment.

Dimensions



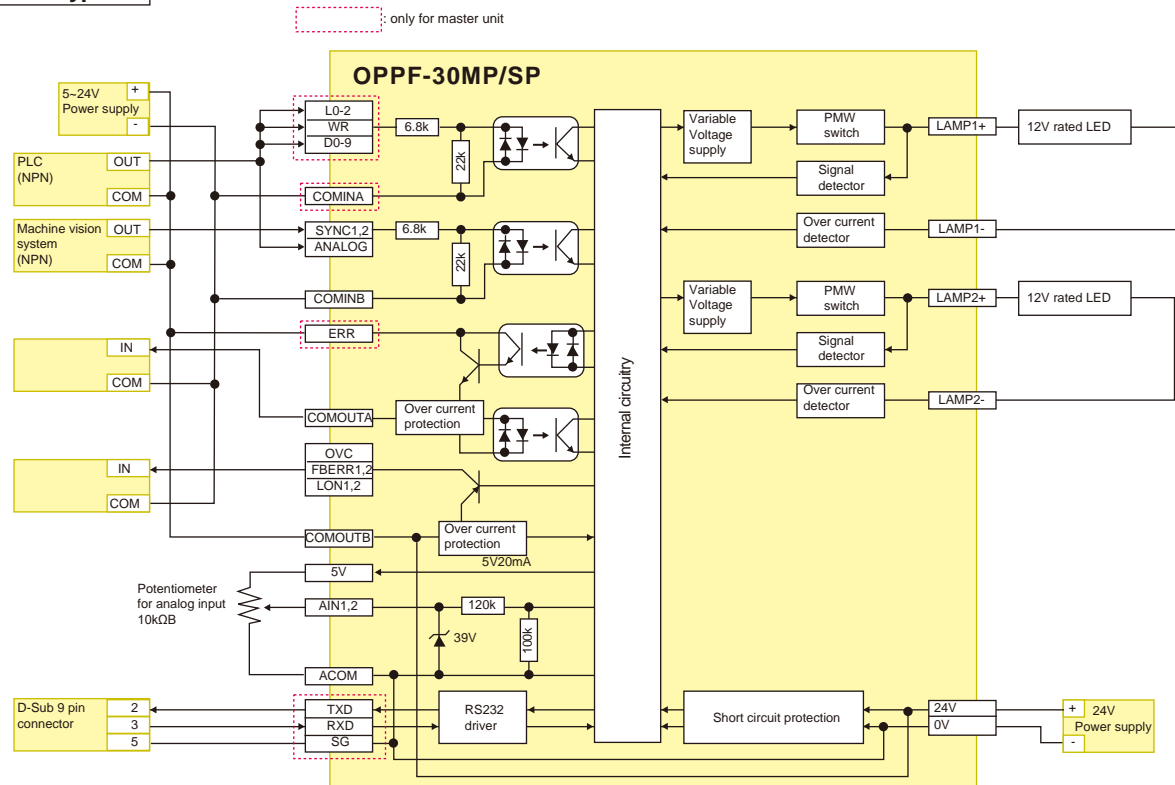
Circuit diagram

NPN type



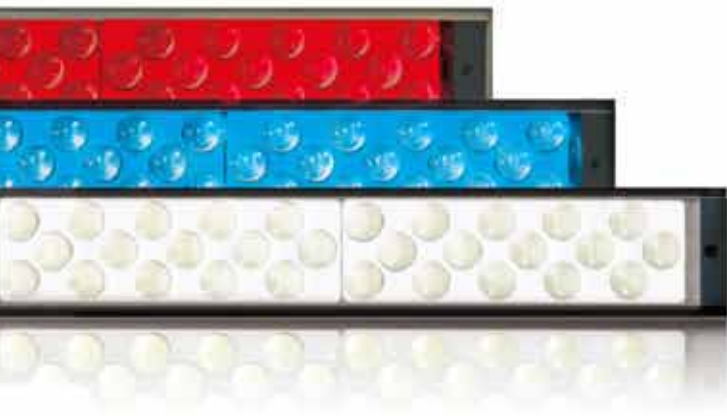
* COMOUTB is connected to 0V of power supply internally.

PNP type



* COMOUTB is connected to 24V of power supply internally.

* COMOUTA means ERR (Error) on PNP type.



Sensing LED bar lighting OPB-S series

- “FALUX sensing” enables monitoring LED temperature and brightness
- Adjust multiple lighting at same brightness easily by referring brightness data stored at factory
- Succeed OPB series in compensating brightness function and high optical quality

Patent pending

“FALUX sensing” built-in

Multiple photo diodes detect LED brightness regardless its flashing pulse width. It provides brightness and temperature data through power line. LED lighting controller OPPF series can control its LED brightness utilizing this feedback data.



Easy brightness setup of multiple LED

Unique brightness data of each LED lighting is stored in the circuitry that utilized for feedback controlling of brightness of each LED lighting. This technology helps setting up of brightness of multiple LED lighting to same brightness level very easily.



Succeed OPB series in quality

Height increased from OPB series is only 3.5mm even with additional sensor circuitry. “FALUX” technology is built-in as well as OPB series.

Patent pending

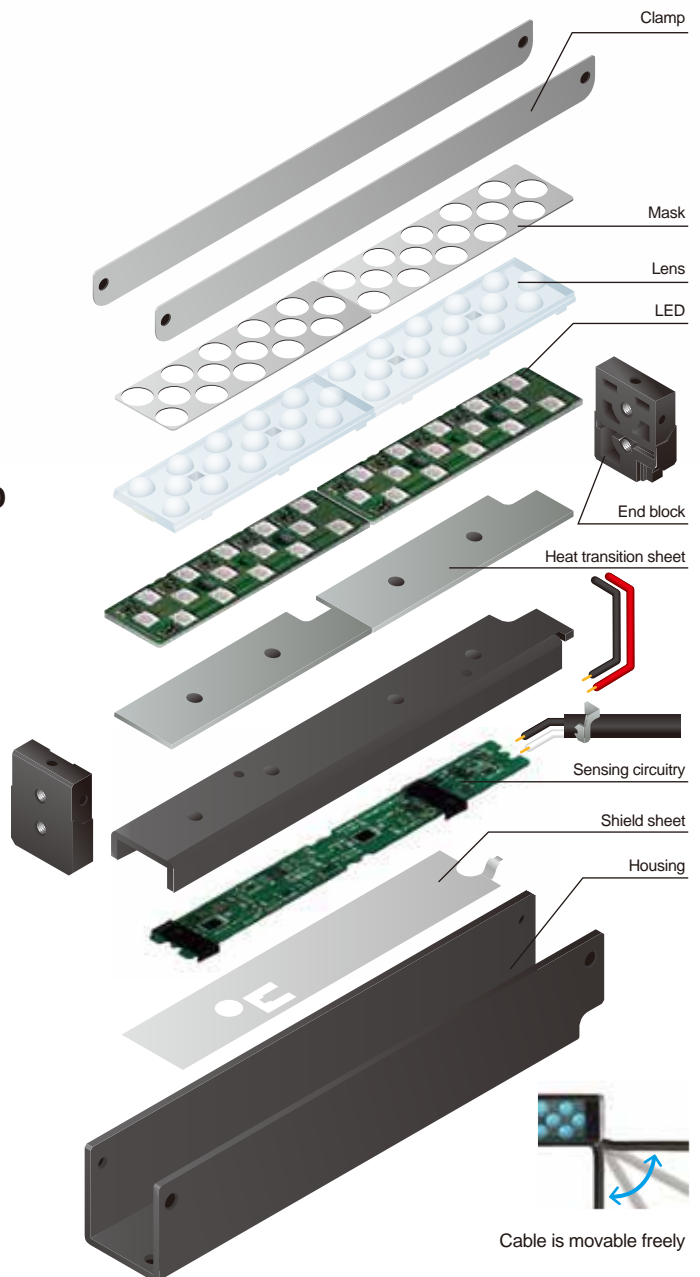
Constant current regulator + Temperature compensation



Patent pending

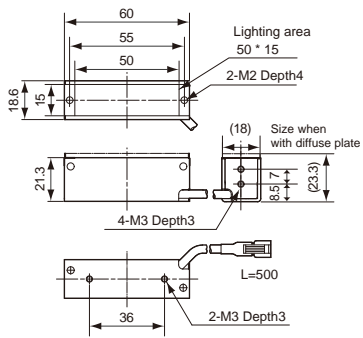
Original lens optimized in light distribution enables guiding light to photo diodes and accurate sensing for feedback controlling

Structure

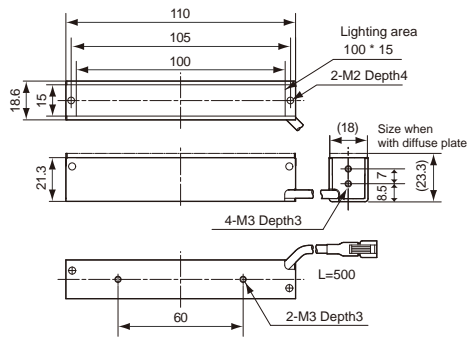


Dimensions

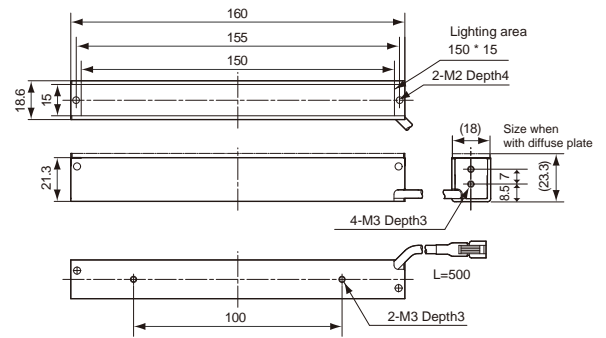
OPB-S5015W



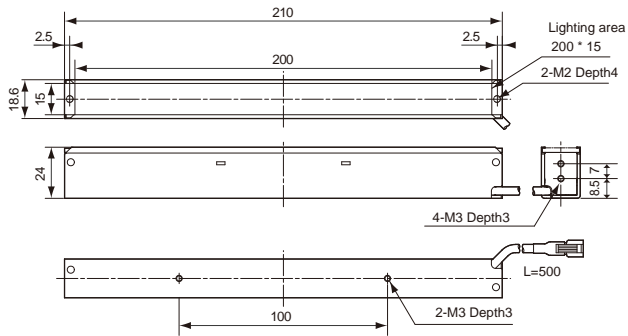
OPB-S10015W



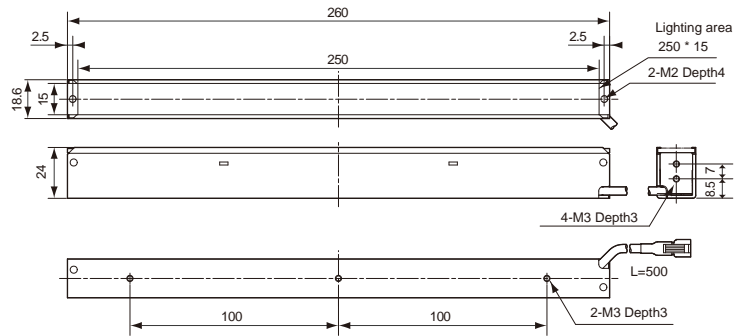
OPB-S15015W



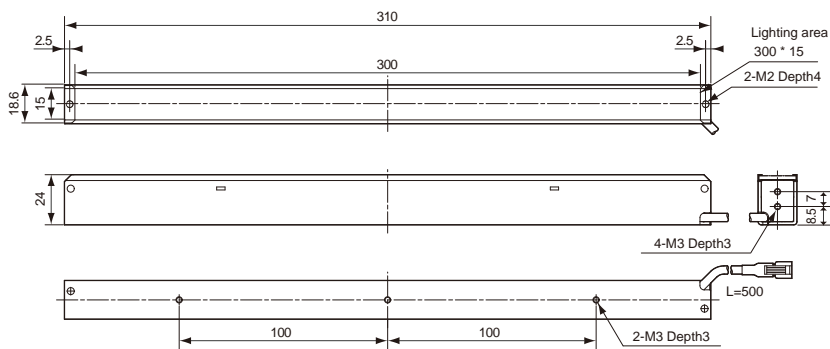
OPB-S20015W



OPB-S25015W



OPB-S30015W



Accessories of OPB-S series are same for OPB series

LED lighting controller Advanced OPPF series

Part number	OPPF-30MN	OPPF-30MP	OPPF-30SN	OPPF-30SP
Type	NPN	PNP	NPN	PNP
Power supply	DC24V±10%			
Power dissipation	Feedback OFF : 1.8A max. / Feedback ON : 2.5A max.			
LED output	2ch			
Output power	PWM mode : 30W max. (2ch total), Strobe mode : 15W max. (each channel)			
Output voltage	PWM mode : DC12V (DC11~18V for feedback control), Strobe mode : DC18V (DC16~22V for feedback control)			
Output current	PWM mode : 2.5A max. (2ch total), Strobe mode : 4.5A max. (each channel)			
PWM control	Frequency : 20/50/100kHz (for strobe mode as well), Adjustable Duty maximum step : 1000			
Strobe control	Pulse width : 10µs~9.99ms (10µs step, adjustable maximum step: 1000), Duty : 10% max. (output voltage is 12V when pulse > 1ms)			
Monitoring	LED brightness (alarming is available with threshold) / LED temperature, Monitoring frequency : brightness: 21ms, Temp.: 105ms			
FB control accuracy	±1.5% max.			
Input	Synchronous input : 2, Analog/Digital switch : 1 Parallel input for brightness control: 10 (4 are used for switching Bank) Write signal for parallel input : 1, Channel switch : 3		Synchronous input : 2, Analog/Digital switch : 1	
	Voltage between common and input : 5V min. for ON / 1.2V max. for OFF (30V max.) Synchronous input response time : 24V input : OFF->ON : 5µs / ON->OFF : 60µs, 5V input : OFF->ON : 44µs / ON->OFF : 41µs Input impedance between common and input : 6.8kΩ, insulated by photo coupler, Other input response time: 5~13ms			
Analog input	Voltage : 0~5V, Input impedance : 220kΩ (not isolated)			
Output	LED output over current alarm : 1, Feedback alarm : 2, LED output busy : 2 Open collector, 100mA Max./DC30V, Residual voltage : 1.0V max.			
	Error: 1 (Logic: "LED output over current" or "LED over heat" or "Feedback error") Open collector, 100mA Max./DC30V, Residual voltage : 1.5V max.		—	
LED output protection	Over current			
Output protection	Over current			
Other protection	Over heat of internal circuitry (drop PWM duty to 25% when over 105℃)			
	LED over heat, LED brightness alarm when lower than threshold			
Communication I/F	RS232 1ch, Baud rate : 4800/9600/19200/38400/57600/115200		—	
Communication between Master and slave	IR communication : RS232 link to slave unit, Parallel I/F link to slave unit including brightness control and Bank switching, Transferring error status from slave unit to master unit, copying setup Communication cycle : approx. 25ms			
Operating Temp./Humid.	0~45℃ / 35~85%/RH (without condensation)			
Storage Temp./Humid.	-20~70℃ / 35~95%/RH (without condensation)			
Vibration resistance	10~55Hz 1.5mm X, Y, Z 2hours			
Shock resistance	10G X, Y, Z 3 times			
Insulation impedance	10MΩ min./DC500V			
Material	Housing : PC			
Weight	385g		375g	
Protection category	IP20			
Conformity	CE, RoHS			
Accessories	Instruction manual in CD-ROM			

* Dimensions are on the page 3

Sensing LED bar lighting OPB-S series

Part number	Size [mm]	Weight [g]	Power dissipation [W]
OPB-S5015W	50 × 15	60	3.1
OPB-S10015W	100 × 15	85	6.2
OPB-S15015W	150 × 15	110	9.4
OPB-S20015W	200 × 15	145	12.5
OPB-S25015W	250 × 15	175	15.6
OPB-S30015W	300 × 15	205	18.7

* Dimensions are on the page 6

Specifications of OPB-S series

Light color	White
Color Temp.	7,000K
Power supply	DC12V
Operating Temp./Humid.	0~40°C / 35~85%/RH (without condensation)
Storage Temp./Humid.	-20~70°C / 35~95%/RH (without condensation)
Vibration resistance	10~55Hz 1.5mm X, Y, Z 2hours
Shock resistance	10G X, Y, Z 3 times
LED life	10k hours when brightness drops 10% / 100% duty, 30 deg.C (typical)
Material	Housing : Aluminum , PBT Lens : PC Heat transition sheet: Silicon rubber
Conformity	CE, RoHS
Accessories	Diffuse plate (60%, 80%), Transparent cover, Polarizing plate, Bracket



Phone 800-280-6933
www.optex-ramco.com



OPTEX FA CO., LTD.

600-8815 Kyoto, Shimogyo, Chudoji Awata 91, Japan
TEL. +81-(0)75-325-2920 FAX. +81-(0)75-325-2921
http://www.optex-fa.com