



High-Brightness Bar Lighting

OPB Series

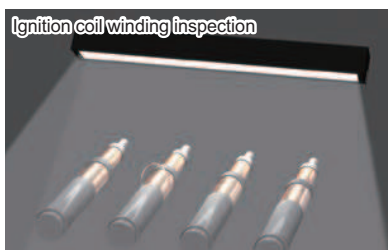
Optex FA's best-selling white bar lighting, now with twice the brightness and wider illumination area

- New high-brightness white (W2) with wider illumination area and increased brightness
- New overdrive strobe lighting type white (OPB-ST) three times brighter than conventional models
- Built-in "FALUX" brightness variation correction circuit

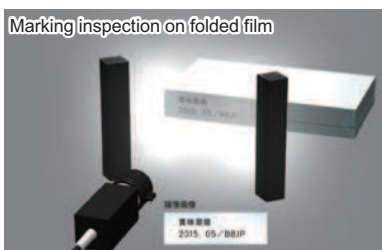


Applications

Ignition coil winding inspection



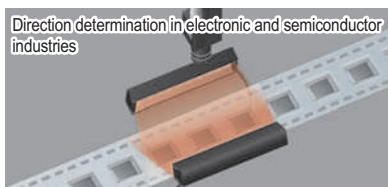
Marking inspection on folded film



Color character recognition on white plastic containers



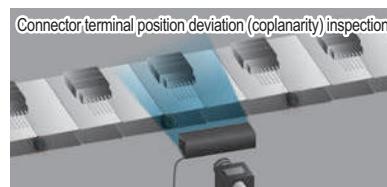
Direction determination in electronic and semiconductor industries



Identification of characters on package marking (OCR)



Connector terminal position deviation (coplanarity) inspection



Visual inspection of non-woven fabric / Replacement for fluorescent lamps



Robot hand mounting



Long-distance lighting for automotive industry



Specifications

Model	Illumination Area [mm]	Weight [g]	Power Consumption [W]				Outline Drawing
			White (W2)	White (W)	Blue	Red	
OPB-5015□	50 × 15	55	3.4	3.1		2.0	①
OPB-10015□	100 × 15	80		6.2		3.9	②
OPB-15015□	150 × 15	105		9.0		5.7	③
OPB-20015□	200 × 15	140		12.0		7.4	④
OPB-25015□	250 × 15	170		14.7		9.1	⑤
OPB-30015□	300 × 15	200		17.6		10.9	⑥
OPB-45015□*	450 × 15	280		23.8	-	-	⑦

● □ = W2/W: White, B: Blue, R: Red *Only W2 or W is available for OPB-45015□.

Bar lighting with bracket

Model	Illumination Area [mm]	Weight [g]	Power Consumption [W]				Outline Drawing
			White (W2)	White (W)	Blue	Red	
OPB-5015□-B	50 × 15	75	3.4	3.1		2.0	8
OPB-10015□-B	100 × 15	110		6.2		3.9	9
OPB-15015□-B	150 × 15	140		9.0		5.7	10

● □ = W2/W: White, B: Blue, R: Red

Bar lighting dedicated for overdrive strobe lighting

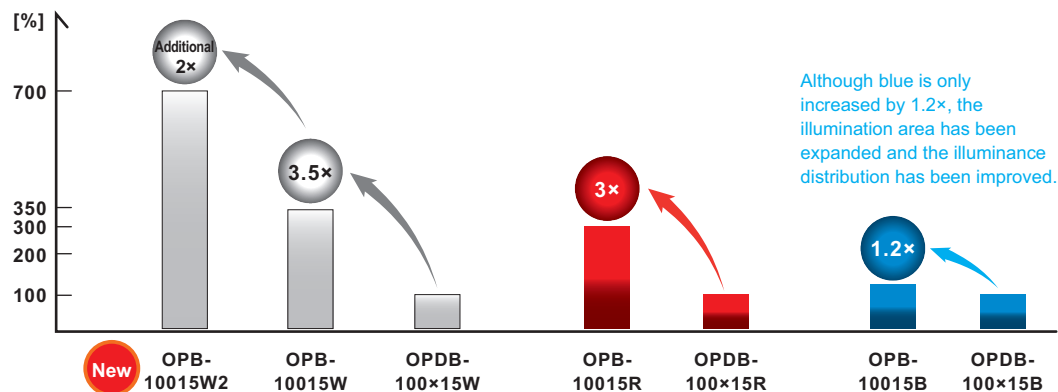
Model	Illumination Area [mm]	Illumination Color	Weight [g]	Power Consumption [W]	Applicable Power Supply	Outline Drawing
OPB-ST10015W	100 × 15	White	80	8.0	OPPF Series (excluding 500 kHz) Strobe mode (Luminescence width setting: 1 ms or less, Duty: 5% or less)	2
OPB-ST15015W	150 × 15		105	12.0		3

*12 VDC PWM mode cannot be used.

Features

■ New high-brightness white (W2)

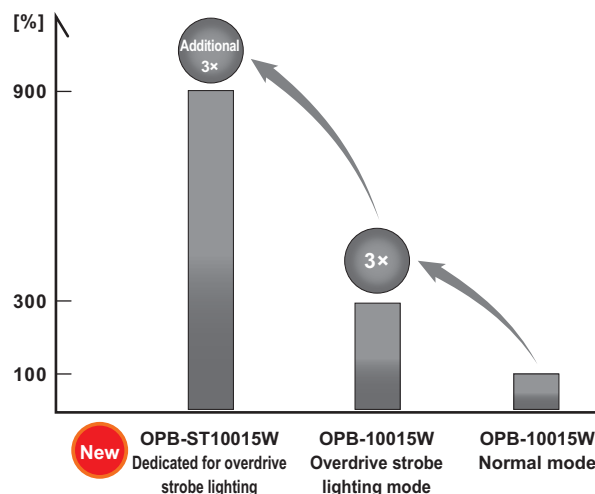
- Twice the brightness of conventional products
- Wider illumination area (See P. 16 "Illumination Area According to Illumination Distance")



■ New white bar lighting dedicated for overdrive strobe lighting

Model: OPB-ST10015W
OPB-ST15015W

Designed to be used specifically as overdrive strobe lighting, these bar lighting devices offer high brightness. Ensuring sufficient brightness even with short exposure times, these devices are ideal for high-speed lines such as those in the electronic components industry.





■ Built-in “FALUX” correction circuit

Patent registered

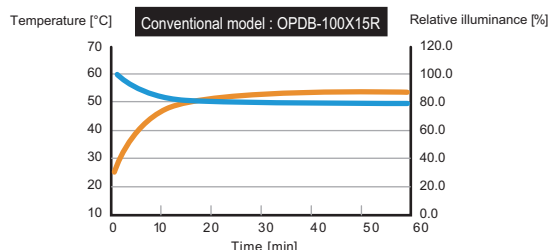
This product is equipped with Optex FA's proprietary “FALUX” brightness variation correction circuit. Using the constant current circuit dependent on the input voltage, variations in the forward current of individual LEDs are corrected. Meanwhile, the temperature compensation circuit compensates for fluctuations in brightness due to increases in temperature after lighting.



Input voltage-dependent constant current circuit
+
Temperature compensation circuit

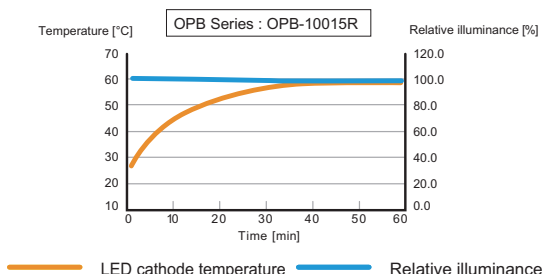
FALUX not included

In order to reduce LED forward voltage variations, the LEDs needed to be sorted according to their Vf measurement. Moreover, illumination efficiency dropped as the temperature increased, dramatically reducing the brightness. Red variation was particularly noticeable, requiring a waiting period for brightness to stabilize before beginning tests.

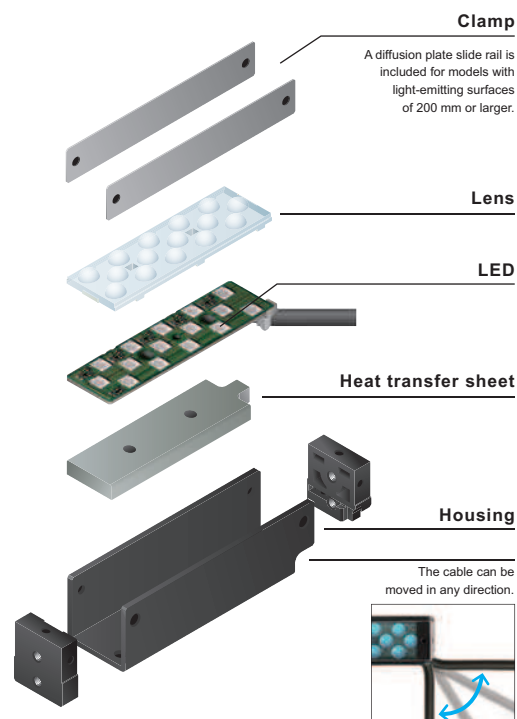


FALUX included

The brightness of each LED is fixed, virtually eliminating variations in brightness following increases in temperature. Whether with continuous illumination or ON/OFF control, brightness remains fixed.



■ Structure of the OPB Series



■ Wide variety of options

In addition to diffusion plates, transparent covers, and polarizing plates, the lineup also includes brackets for convenient mounting. Lighting angles can also be adjusted between 0 and 90°. Square brackets for mounting 1 to 4 devices are also available.



The angle scale on the bracket makes adjustment simple.

■ Light distribution characteristics optimized for image processing

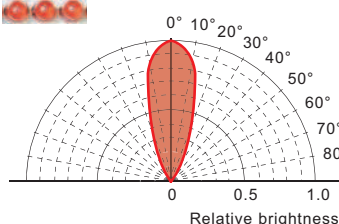
The lens features a new design based on technology accumulated from image processor and photoelectric sensor development. In order to take advantage of the high-brightness LED characteristics, the light collection efficiency has been increased and the light distribution characteristics have been optimized for image processing.

The equipped brightens only the necessary area and offers even light distribution. The red light distribution characteristics are described below.

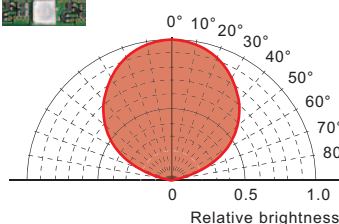
These photos are for a 1.5 cm square LED.



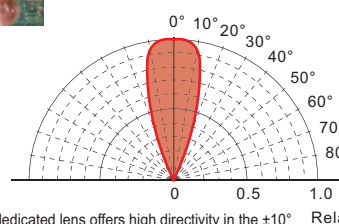
Conventional LEDs
Illumination angle



New model LEDs without lens
Illumination angle



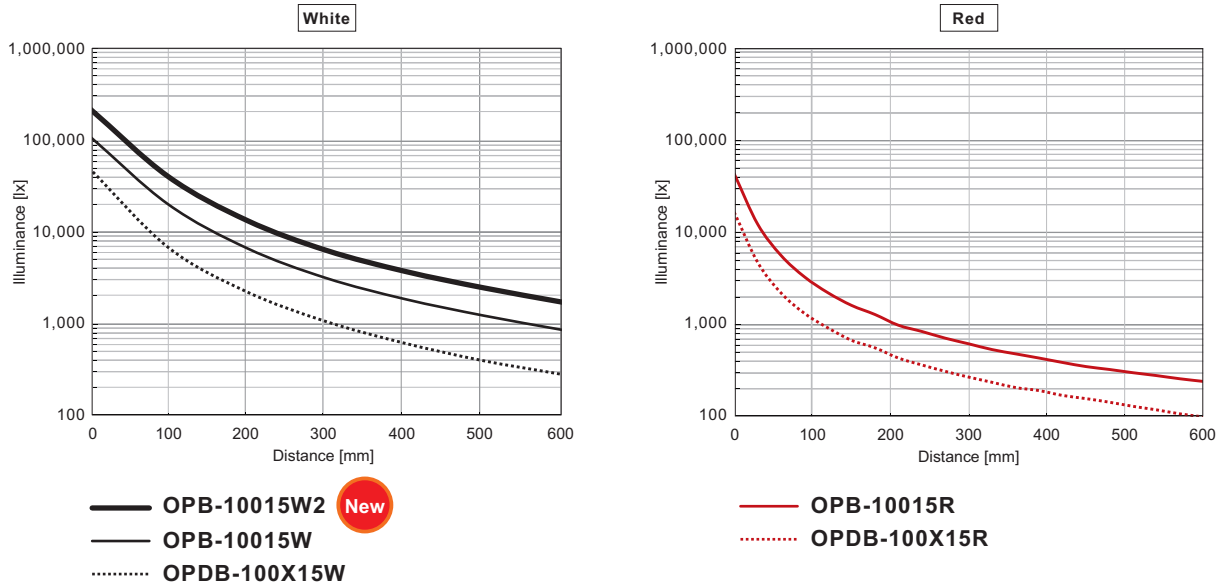
New model LEDs + Optex FA-designed lens
Illumination angle



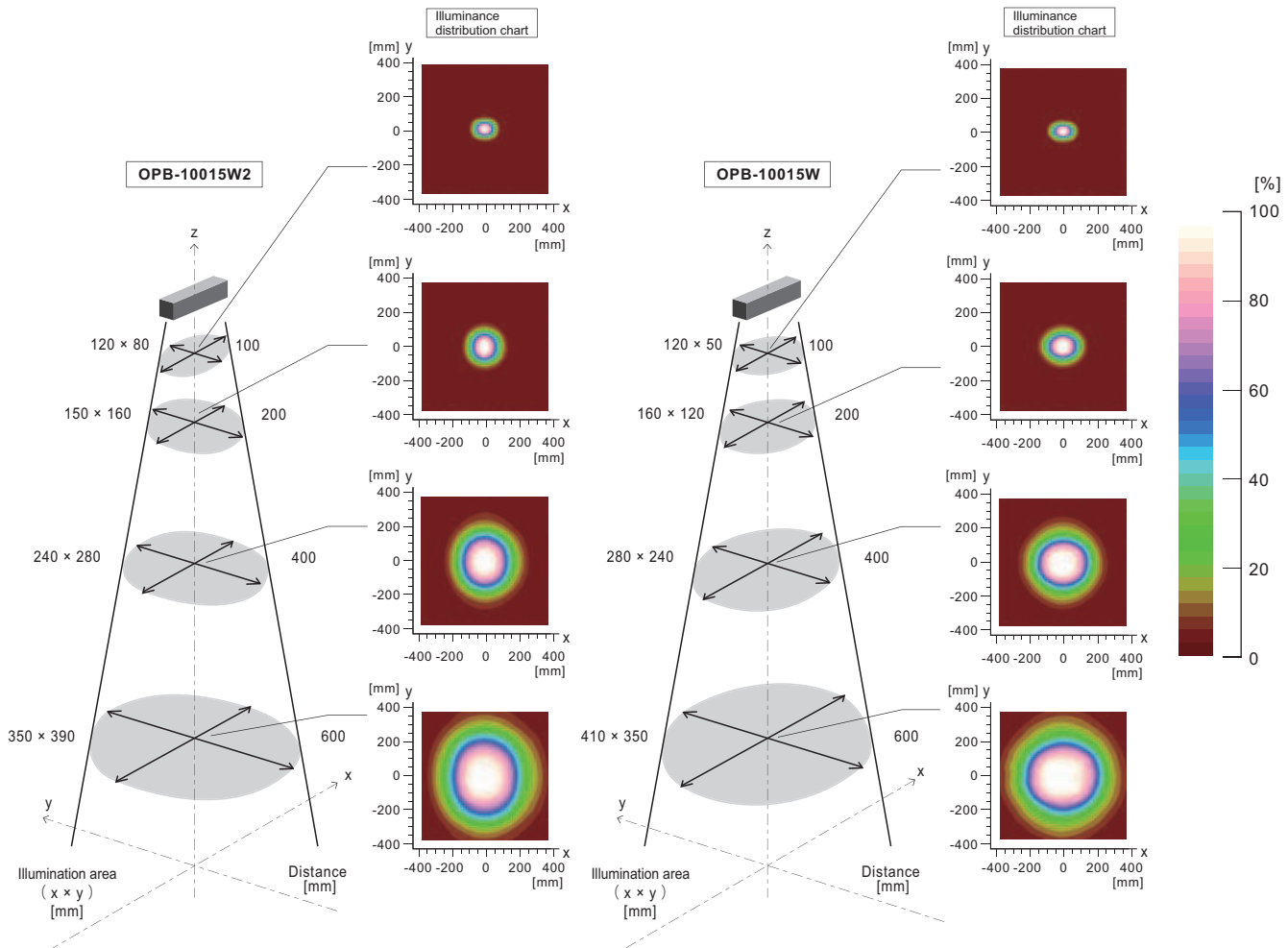
The dedicated lens offers high directivity in the $\pm 10^\circ$ range for relative brightness close to peak levels.

Data

Conventional Model Comparison of Illumination According to Illumination Distance



Illumination Area According to Illumination Distance (Typical example)





Specifications

Series	OPB Series				OPB-ST Series
Illumination color	White (W2)	White	Blue	Red	White
Color temperature / Peak wavelength	6,500 K	7,000 K	470 nm	630 nm	7,000 K
Input voltage	12 VDC				18 VDC
Degradation of LED	For brightness to drop 10% after 10,000 hours (Dimming value setting = 100%, 30°C) *Typical values				
Classification (IEC62471: 2006)	Risk Group 1 (Low-Risk)				
Applicable regulations/standards	EMC (2014/30/EU), RoHS (2011/65/EU, MIIT Order No.32) / EN 61326-1:2013				
Protection rating	IP40 (IEC 60529: 1989 / A1: 1999 + A2: 2013)				
Ambient temperature/humidity	0 to 40°C / 35 to 85% RH (no condensation)				
Storage temperature/humidity	-20 to 70°C / 35 to 95% RH (no condensation)				
Vibration resistance	10 to 55 Hz; amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions				
Shock resistance	Approximately 10 G, 3 times in each of the X, Y, and Z directions				
Material	Housing: Aluminum and PBT, Lens: PC (UV-resistant)				
Options	Diffusion plate (60% or 80%), transparent cover, polarizing plate, bracket				

● See P. 69 for spectrum distribution diagrams.

Options/Accessories

Diffusion plate (transmittance: 60%) [For backlight]

Model	Applicable Lighting	Weight [g]	
DF-OPB-5015	OPB-5015	5	
DF-OPB-10015	OPB-10015	10	
DF-OPB-15015	OPB-15015	15	
DF-OPB-20015	OPB-20015	20	
DF-OPB-25015	OPB-25015	25	
DF-OPB-30015	OPB-30015	30	
DF-OPB-45015	OPB-45015	45	

Diffusion plate (transmittance: 80%) [For wide-area illumination]

Model	Applicable Lighting	Weight [g]	
DF80-OPB-5015	OPB-5015	5	
DF80-OPB-10015	OPB-10015	10	
DF80-OPB-15015	OPB-15015	15	
DF80-OPB-20015	OPB-20015	20	
DF80-OPB-25015	OPB-25015	25	
DF80-OPB-30015	OPB-30015	30	
DF80-OPB-45015	OPB-45015	45	

Transparent cover

Model	Applicable Lighting	Weight [g]	
TC-OPB-5015	OPB-5015	5	
TC-OPB-10015	OPB-10015	10	
TC-OPB-15015	OPB-15015	15	
TC-OPB-20015	OPB-20015	20	
TC-OPB-25015	OPB-25015	25	
TC-OPB-30015	OPB-30015	30	
TC-OPB-45015	OPB-45015	45	

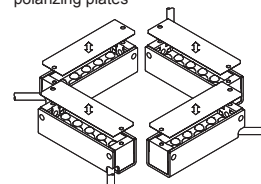
Polarizing plate

Model	Applicable Lighting	Weight [g]	
PL-OPB-5015	OPB-5015	5	
PL-OPB-10015	OPB-10015	10	
PL-OPB-15015	OPB-15015	15	
PL-OPB-20015	OPB-20015	20	
PL-OPB-25015	OPB-25015	25	
PL-OPB-30015	OPB-30015	30	
PL-OPB-45015	OPB-45015	45	

Remarks

The direction of polarization is parallel to the notches on the corners.
When using multiple lighting units, refer to the figure to the right and mount the polarizing plates so that the notches are all parallel.
Attach the included transparent covers so that they overlap on the polarizing plates during use.

Reference diagram for mounting polarizing plates

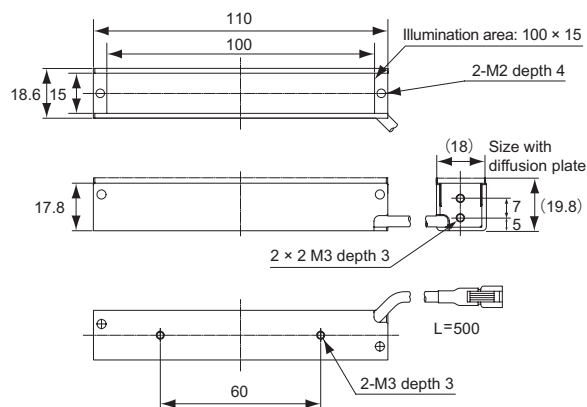


Bracket

Model	Applicable Lighting	Shape	Weight [g]	Outline Drawing	Remarks
BKT-OPB-L	All OPB Series models	L-shaped	20	⑪	Lighting angles can also be adjusted between 0 and 90°. Mounting bolts are included.
BKT-OPB-C50	OPB-5015	C-shaped	20	⑫	
BKT-OPB-C100	OPB-10015	C-shaped	30	⑬	
BKT-OPB-C150	OPB-15015	C-shaped	40	⑭	
BKT-OPB-C200	OPB-20015	C-shaped	50	⑮	
BKT-OPB-Q50	OPB-5015	Square	180	⑯	Can be used for mounting up to four lighting devices. Please prepare the same number of BKT-OPB-L brackets as the lighting devices to mount.
BKT-OPB-Q100	OPB-10015	Square	220	⑰	

(unit: mm)

② OPB-10015_ / OPB-ST10015_



Technical drawing of the L500 LED lighting fixture, showing three views: top, side, and front.

Top View:

- Overall length: 160
- Overall width: 150
- Illumination area: 150×15
- Mounting holes: 2-M2 depth 4

Side View:

- Overall height: 18.6

Front View:

- Overall height: 17.8
- Overall length: 100
- Mounting holes: 2 x 2 M3 depth 3

Detail View (Mounting Bracket):

- Size with diffusion plate: (18)
- Height: 7
- Width: (19.8)
- Mounting holes: 2 x 2 M3 depth 3

Label: L=500

Technical drawing of a 200x15mm LED strip light assembly, showing three views: top, side, and front.

Top View: The top view shows the length of the assembly as 210mm and the width as 18.6mm. The illumination area is 200mm x 15mm. There are two mounting holes, labeled "2-M2 depth 4".

Side View: The side view shows the height of the assembly as 20.5mm. There are two mounting holes, labeled "2 x 2 M3 depth 3".

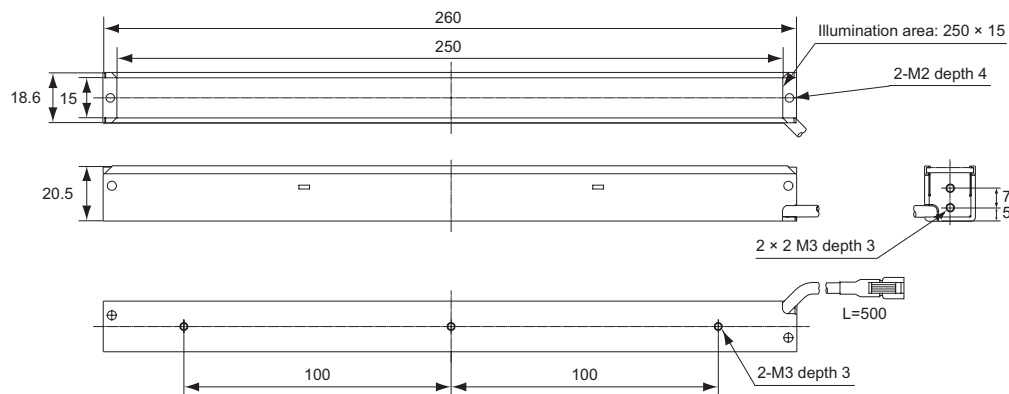
Front View: The front view shows the length of the assembly as L=500mm. There are two mounting holes, labeled "2-M3 depth 3", with a spacing of 100mm between them.

Options	OP
	MDF
Controllers / Power Supplies	OPPD
	OPPF
	OPPCW
Spot	OPS-S
Coaxial	OPX
Backlight	OPF
Bar	OPB
	OPB-S
Ring	OPR
	OPR-SF

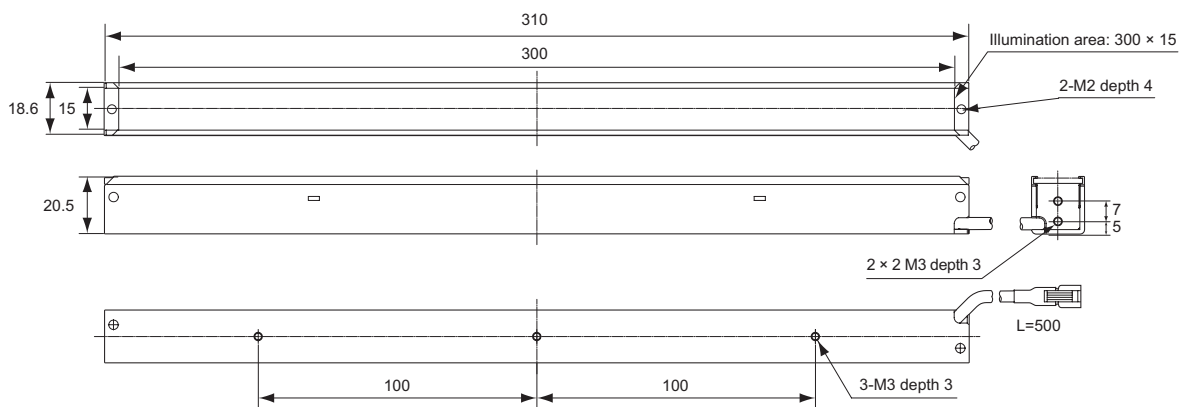


Dimensions

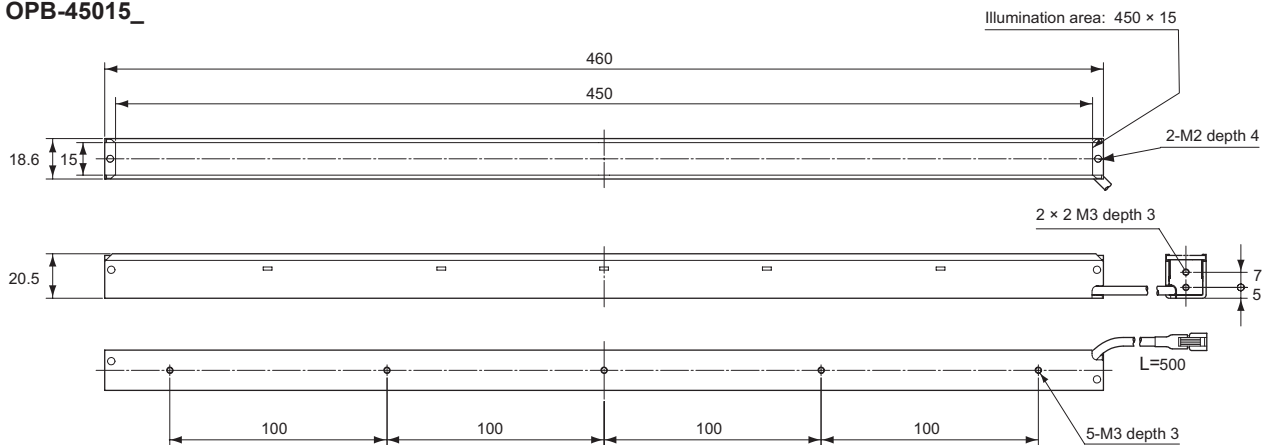
⑤ OPB-25015_



⑥ OPB-30015_

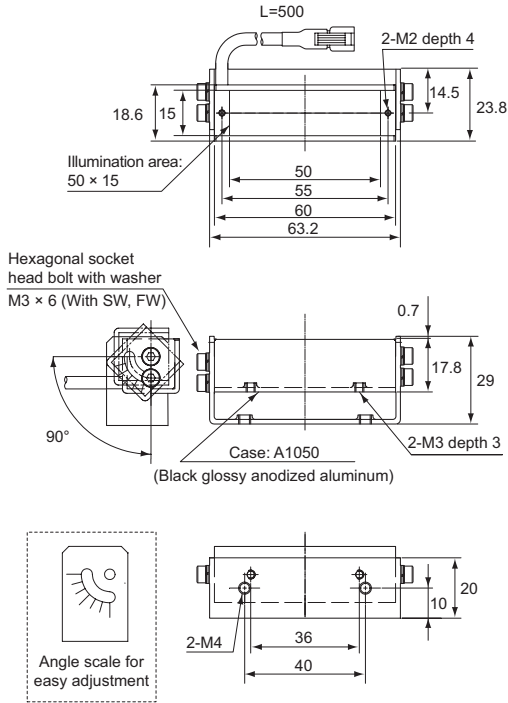


⑦ OPB-45015_

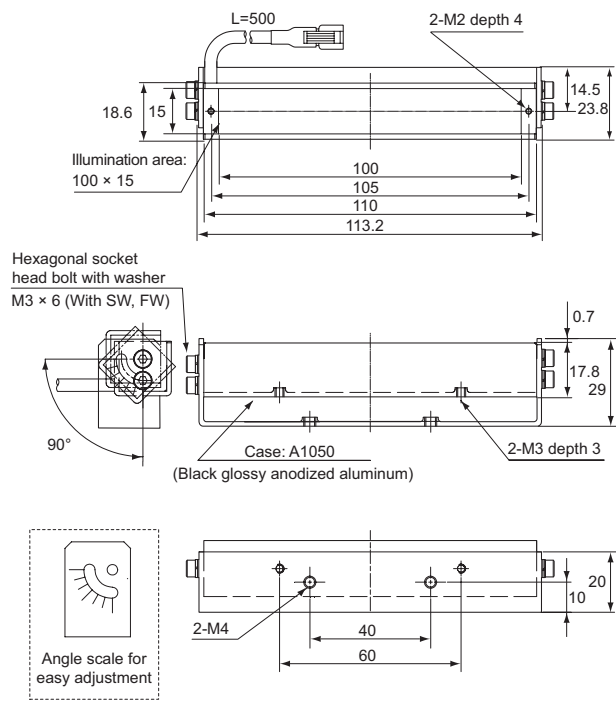


(unit: mm)

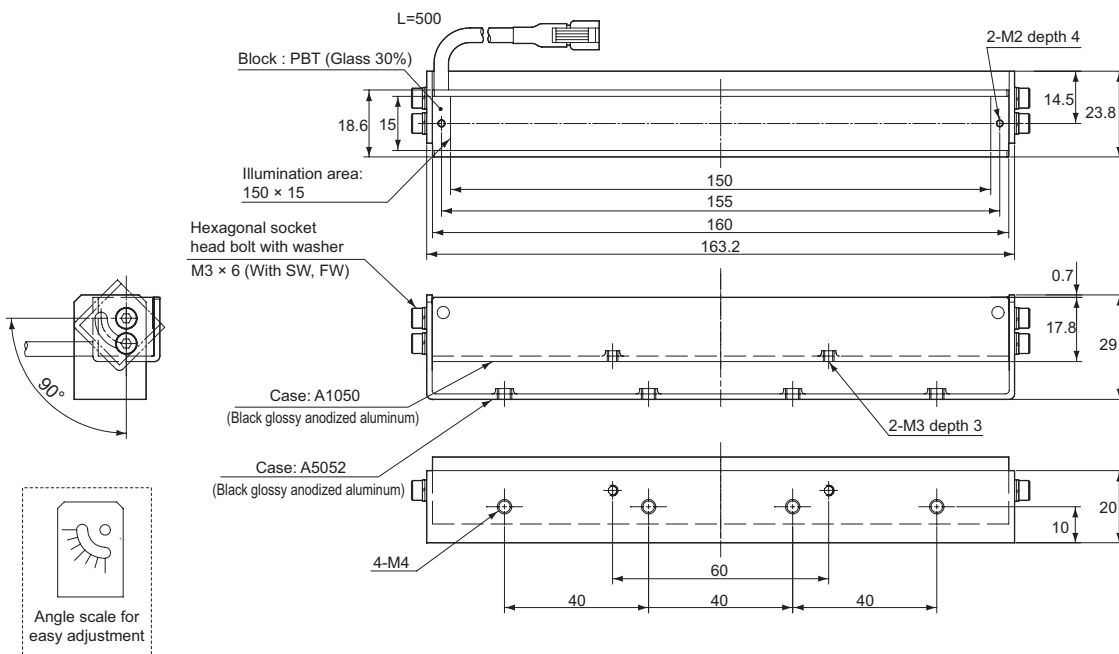
⑧ OPB-5015_-B (with bracket)



⑨ OPB-10015_-B (with bracket)



⑩ OPB-15015_-B (with bracket)



Ring	OPR
	OPR-SF
Bar	OPB
	OPB-S
Backlight	OPF
Coaxial	OPX
Spot	OPS-S
Controllers / Power Supplies	OPPD
	OPPF
	OPPCW
Options	OP
	MDF



Dimensions

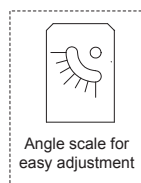
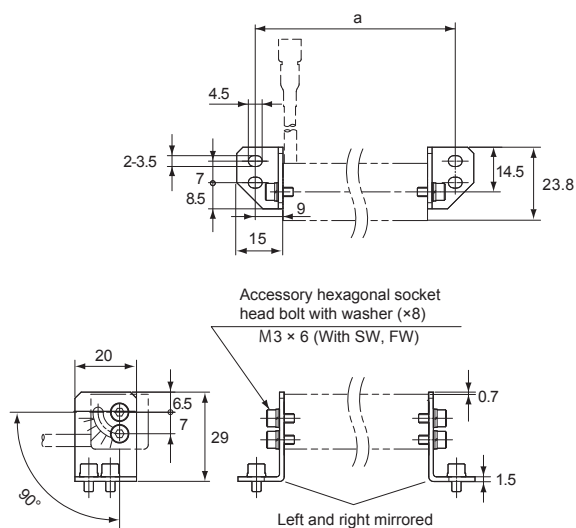
Options (brackets)

11 BKT-OPB-L

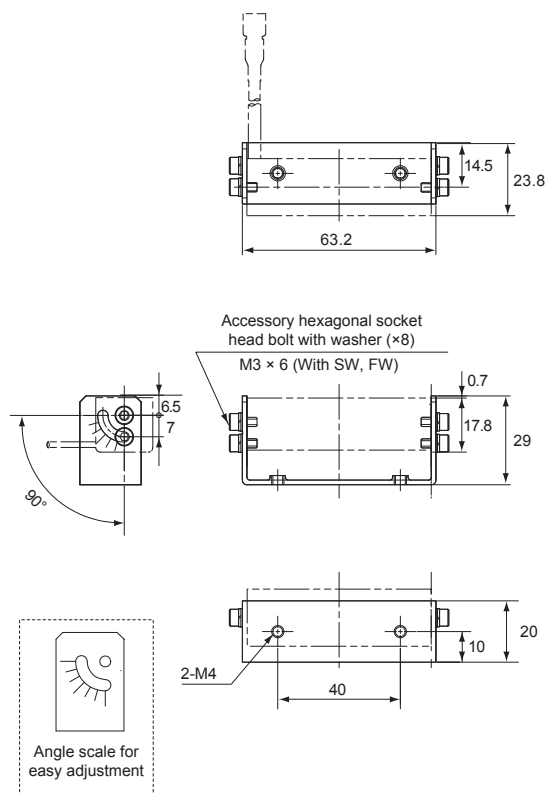
L-shaped bracket common for all sizes

12 BKT-OPB-C50

C-shaped bracket for OPB-5015□

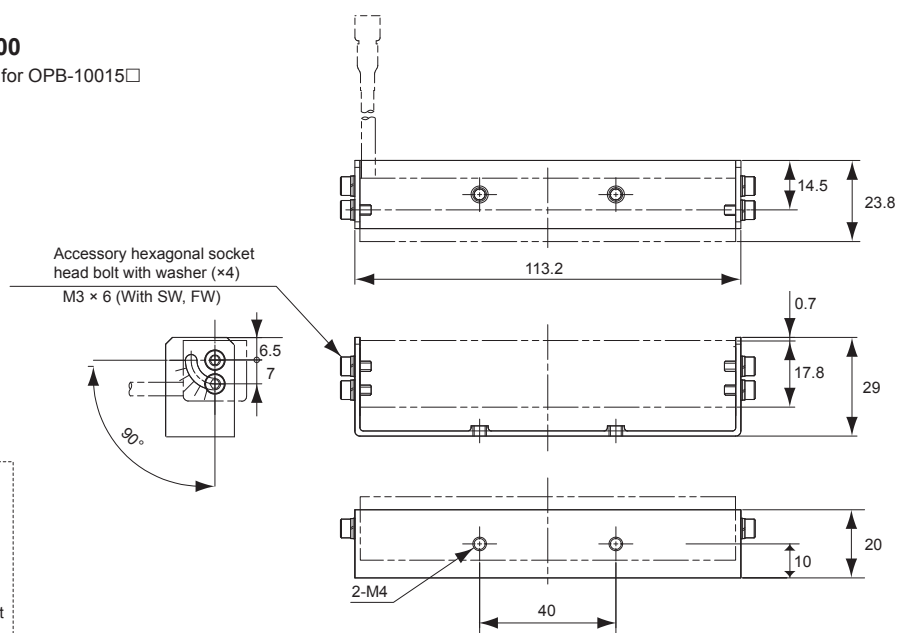
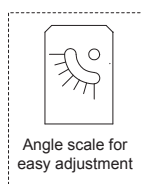


Model	Dimension a
OPB-5015□	78
OPB-10015□	128
OPB-15015□	178
OPB-20015□	228
OPB-25015□	278
OPB-30015□	328
OPB-45015□	478



13 BKT-OPB-C100

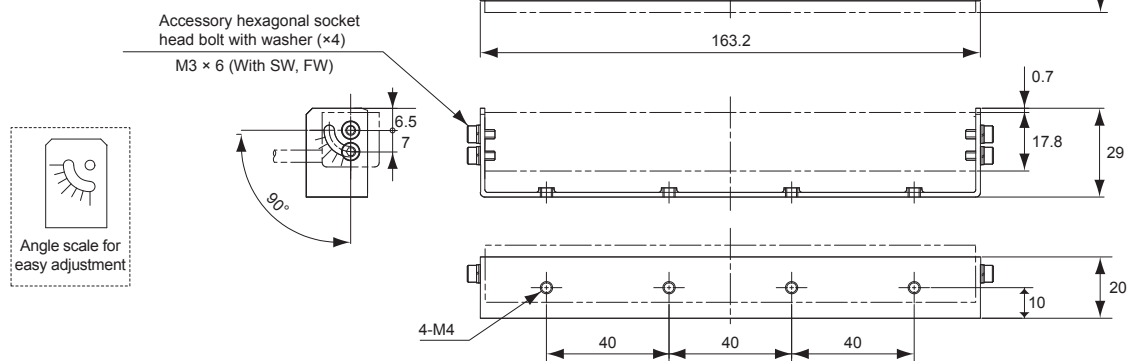
C-shaped bracket for OPB-10015□



(unit: mm)

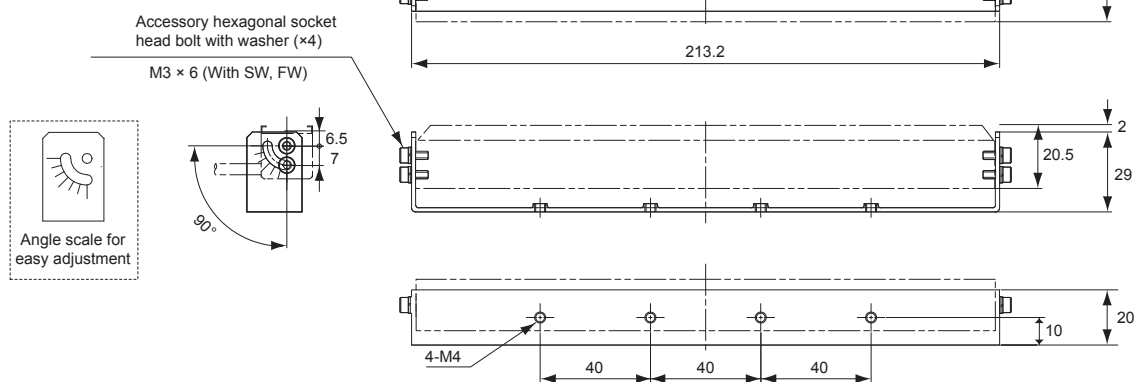
14 BKT-OPB-C150

C-shaped bracket for OPB-15015□



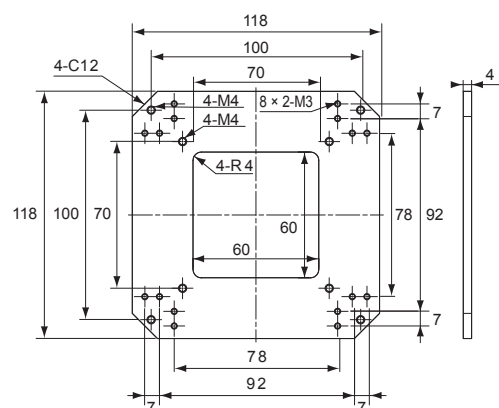
15 BKT-OPB-C200

C-shaped bracket for OPB-20015□



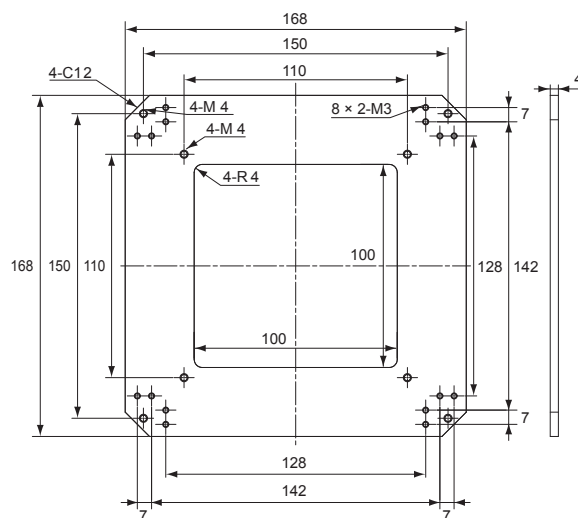
16 BKT-OPB-Q50

Square bracket for OPB-5015□ (for mounting 1 to 4 devices)



17 BKT-OPB-Q100

Square bracket for OPB-10015□ (for mounting 1 to 4 devices)



Ring	OPR
	OPR-SF
Bar	OPB
	OPB-S
Backlight	OPF
Coaxial	OPX
Spot	OPS-S
Controllers / Power Supplies	OPPD
	OPPF
	OPPCW
Options	OP
	MDF