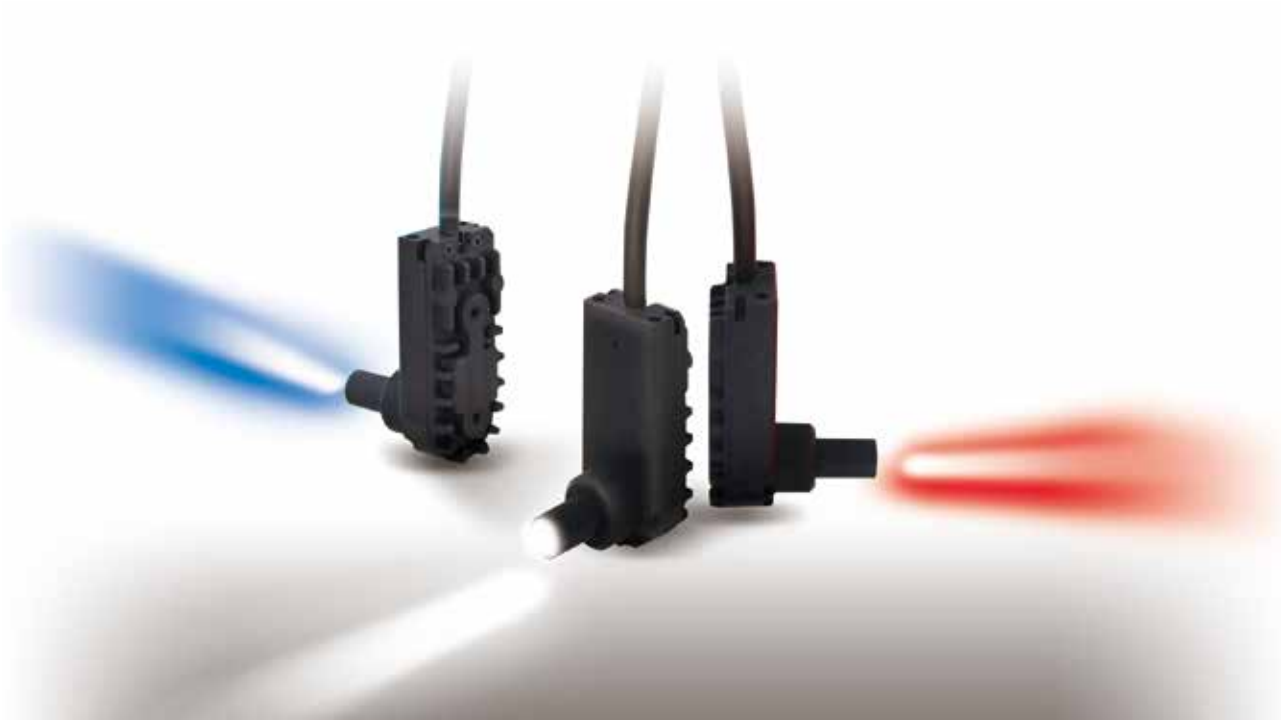
Sensing Spot Lighting

OPS-S Series

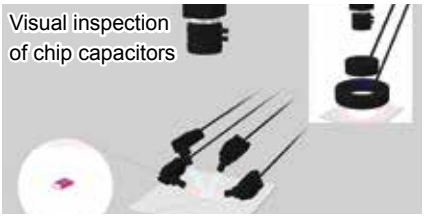
Innovative sensing spot lighting

- Strobe lighting type for overdrive is Two times brighter than constant lighting type
- High-brightness, high-uniform types for optimization with telecentric lenses



CE

Applications



Specifications

Controller	Type	Model	Illumination Color	Power Consumption [W]	Weight [g]	Input	Outline Drawing
Sensing support PWM type	High-brightness type	OPS-S20R	Red	2.5	40	12 VDC	❶
		OPS-S20□	White, Blue	2.8			
	Highly uniform type	OPS-S20R-U	Red	2.5			
		OPS-S20□-U	White, Blue	2.8			
	High-brightness type dedicated for overdrive strobe lighting	OPS-ST20□	White, Blue	2.8		18 VDC*1	

● □ = W: White, B: Blue ● See p. 69 for spectrum distribution diagrams.

*1 Applicable controller: OPPF Series

Features

■ High-brightness type with unique lens design for best-in-class brightness

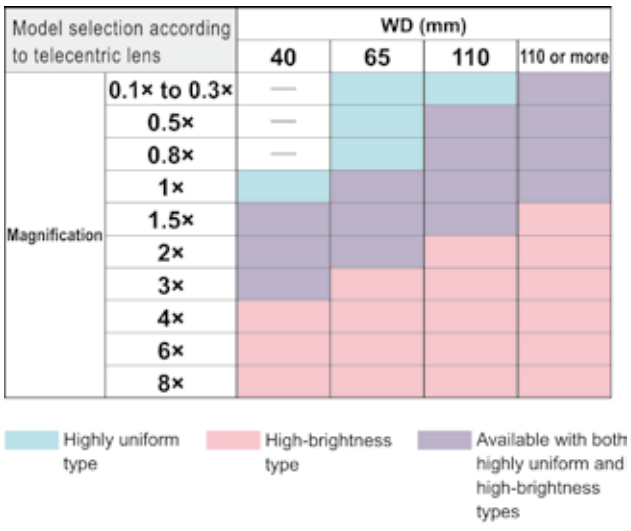
With conventional spot lighting, constant current driving is the most common, and no strobe controllers were capable of overdrive. With the OPS-S Series, the controller is any general-purpose 12 V power, allowing for overdrive functionality with strobe controllers.
With the highly uniform type, uniformity is improved thanks to a low-magnification lens with a short working distance. In addition, the low brightness requirements of mirror-like workpieces with high reflectance can be met and high intensity resolutions are ensured. Highly uniform types offer about 1/10 the brightness of high-brightness types.

*Applicable controller: OPPF Series

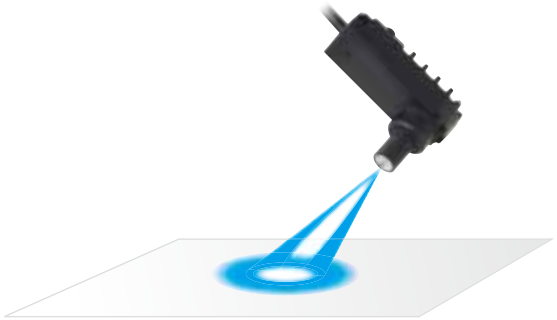
■ High-brightness, high-uniform types for optimization with telecentric lenses

Optimized for the optical system of telecentric lenses, the OPS-S Series offers both high brightness and high uniformity. High-brightness types are available for high-magnification, long-distance lenses, and highly uniform types are available for low-magnification, short-range lenses. With no bright points in the center of illumination (hot spots) even with the high-brightness type, no light axis deviation occurs due to the use of original lenses.
Refer to the chart below when specifying a type.

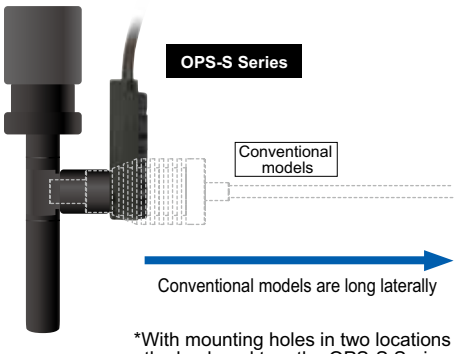
*Brightness and uniformity were evaluated using an actual telecentric lens.



■ **Also usable as oblique lighting for direct illumination**
Because of the strong directivity of the high-brightness type, this type can be used as oblique lighting for direct illumination even without a condensing lens.



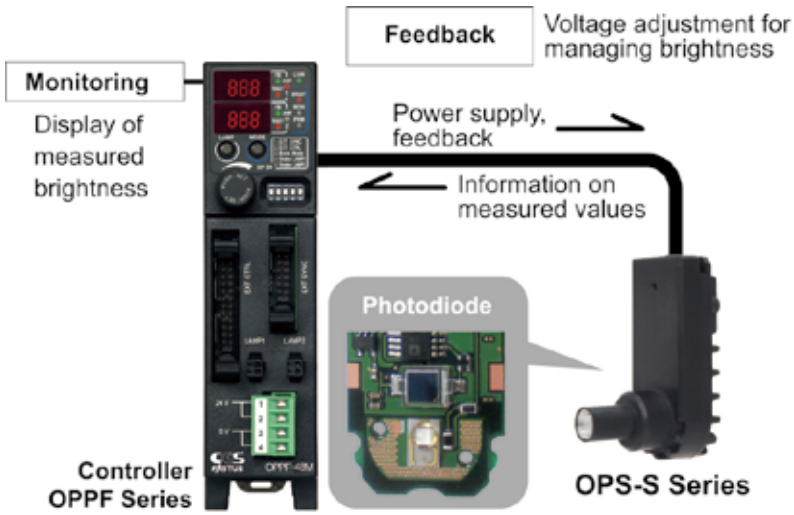
■ **Space-saving L-shaped body**
This model uses an L-shaped housing with the control board placed in parallel to the lens.
This construction reduces dead space when mounting.



*With mounting holes in two locations on the back and top, the OPS-S Series can also be mounted to lenses besides telecentric lenses.

Brightness monitoring and feedback with “FALUX sensing”

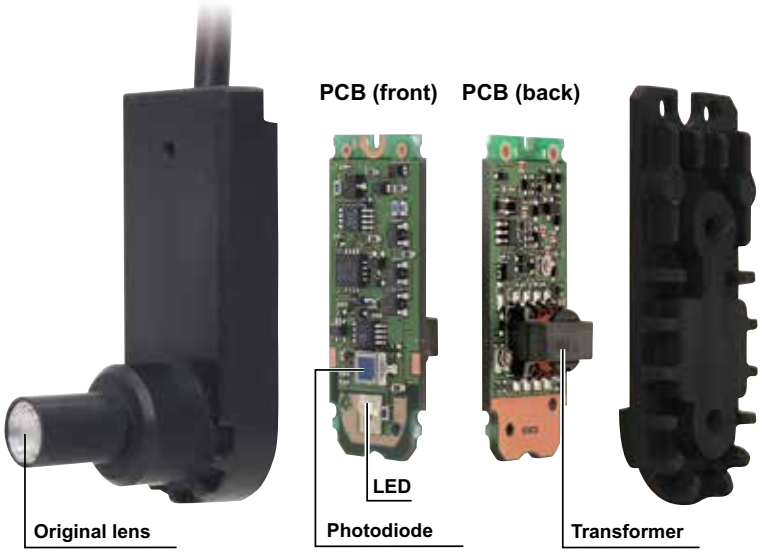
OPS-S Series lighting also includes “FALUX sensing” technology, which features photodiodes that not only monitor brightness but also provide feedback on long-term brightness deterioration, allowing for constant maximum brightness to be maintained for up to around 50,000 hours. This helps reduce maintenance costs during operation.

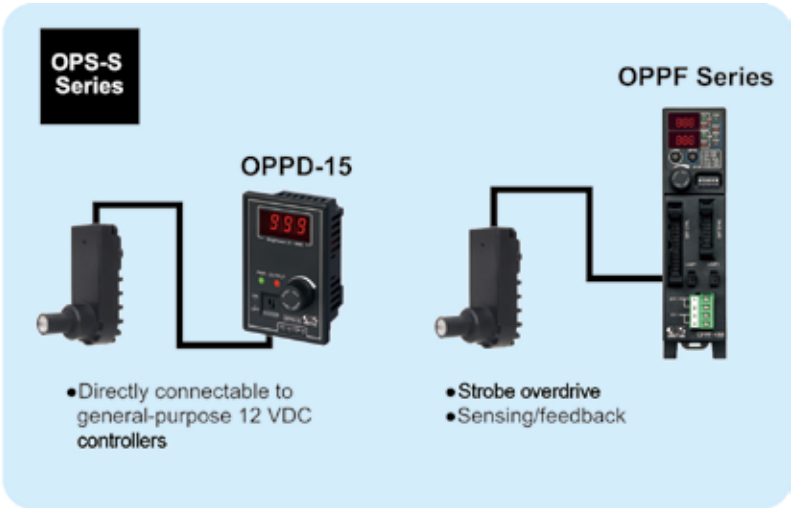


New “FALUX-it” technology for 12 VDC drivability eliminating the need for a dedicated controller and resistance box

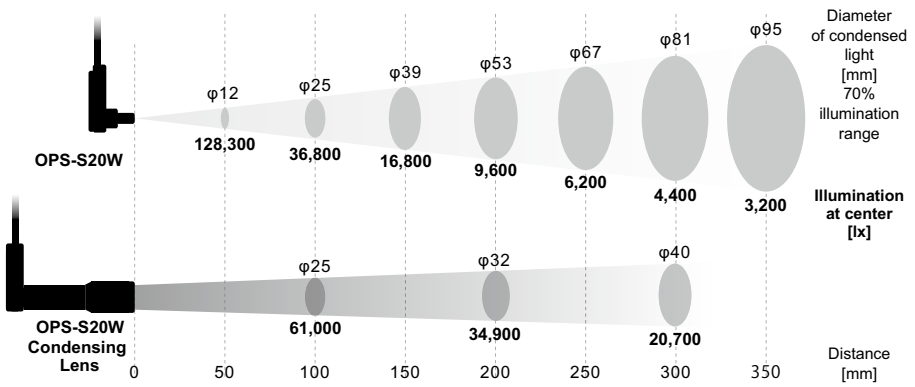
Thanks to the newly developed voltage conversion constant current circuit with a built-in transformer, constant current control according to the voltage is possible for converting to the different forward voltages for each LED color is possible with reduced heat generated by the excess voltage.

FALUX-it (FALUX integrated transform) technology
Voltage conversion constant current circuit + Temperature compensation circuit





Illumination Area According to Illumination Distance



Specifications

Type	PWM type with sensing support			High-brightness type for strobe lighting	
Model	**OPS-S20W (-U)**	**OPS-S20R (-U)**	**OPS-S20B (-U)**	**OPS-ST20W**	**OPS-ST20B**
Illumination color	White	Red	Blue	White	Blue
Color temperature / Peak wavelength	6,300 K	640 nm	470 nm	6,300 K	470 nm
Input	12 V			18 V*1	
Recommended PWM frequency	50 kHz to 150 kHz				
Self-oscillation frequency when DC voltage is applied	50 kHz to 60 kHz				
Light-emitting surface size	ø7 mm				
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; 8 hours in each of the X, Y, and Z directions				
Shock resistance	10 G, 3 times in each of the X, Y, and Z directions				
Classification (IEC62471: 2006)	OPS-S20W / OPS-S20B (-U) / OPS-ST20W / OPS-ST20B : Risk Group 2 (Moderate-Risk)				
	OPS-S20W-U / OPS-S20R (-U) : Risk Group 1 (Low-Risk)				
Regulations/standards	Conforms to 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)				
Degradation of LED	40,000 h	30,000 h	40,000 h		
	The brightness will drop by 30% (typical value) for the above accumulated time. Conditions: Light intensity setting = 100%, ambient environment = 25°C				
Protection circuit	Automatic shutoff if internal temperature reaches 100°C				
Material	Housing: ADC12, Lens: PC (UV-resistant)				
Options	Condensing lens				

*1 Applicable controller: OPPF Series (excluding 500 kHz, luminescence width setting: 1 ms or less)

● See p. 69 for spectrum distribution diagrams.

Options/Accessories

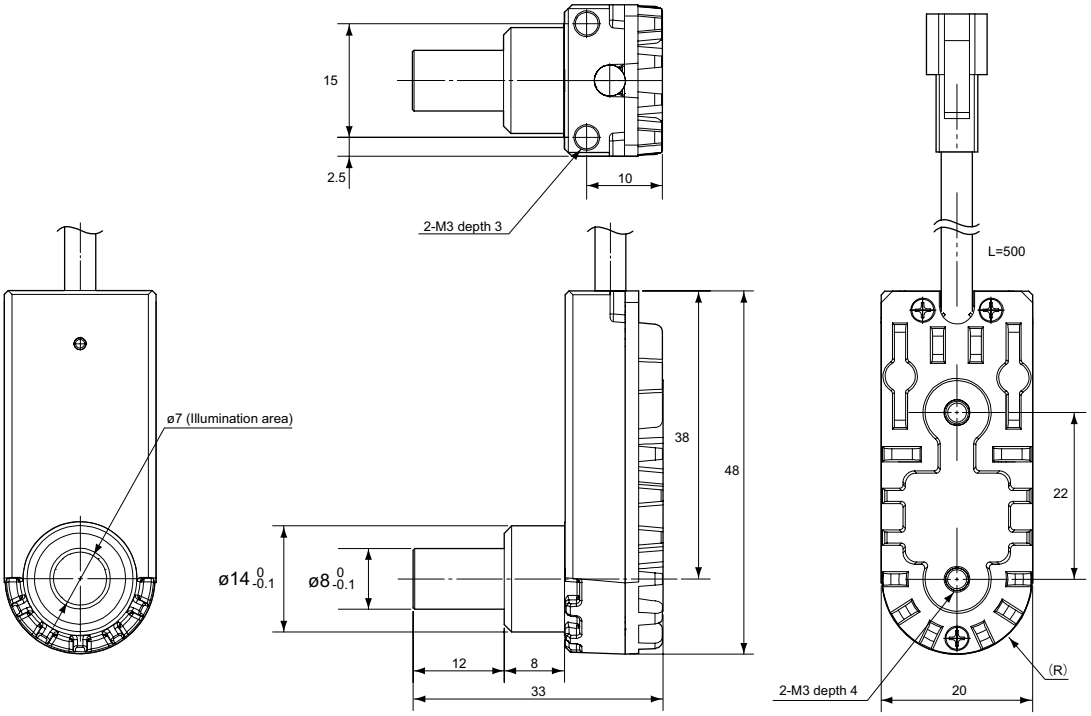
Condensing lens

Model	Weight [g]	Outline Drawing
HL-24-21	30	❷

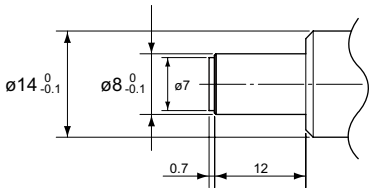
Dimensions

(unit: mm)

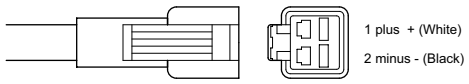
❶ OPS-S20
OPS-ST20



OPS-S20-U



OPS-S20/-U
OPS-ST20



❷ HL-24-21