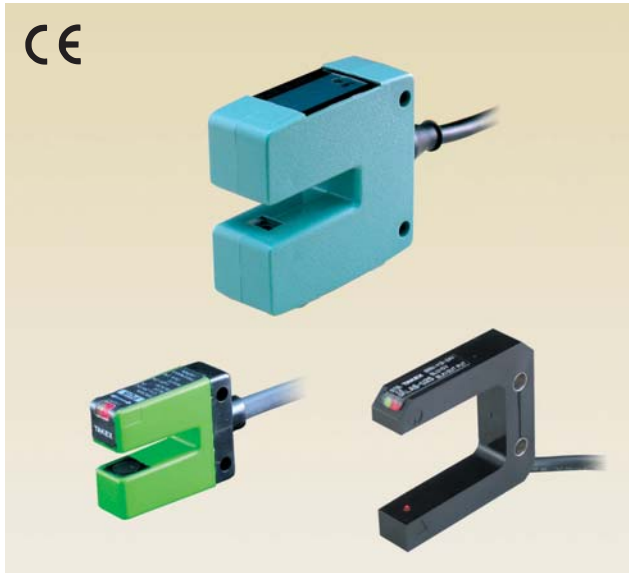


CE



- No light axis alignment necessary
- Ideal for position checking or of stacker crane in automatic warehouse

Embedded Amplifier Photo Sensors

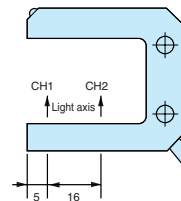
### Type

Detection method	Detecting distance	Model		Operation mode	Output mode
		NPN type	PNP type		
U-shaped through-beam type 	5 mm fixed	<b>PU5</b>	---	Light-ON/ Dark-ON selectable (depending on cable)	NPN open collector
	10 mm fixed	<b>PU10</b>	---		Current output/ voltage output
	19 mm fixed	<b>AS-U20</b>	---	Light-ON	NPN open collector
		<b>AS-U20D</b>	---	Dark-ON	
	25 mm fixed	<b>AS-U25</b>	---	Light-ON	
		<b>AS-U25D</b>	---	Dark-ON	
	30 mm fixed	<b>AS-U30</b>	<b>AS-U30PN</b>	Light-ON	
		<b>AS-U30D</b>	<b>AS-U30DPN</b>	Dark-ON	

### Sample Applications

<ul style="list-style-type: none"> <li>• Positioning of forming machine, stepping motor, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Detection of presence of liquid, powder, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Specified-length cutting of sheet material</li> </ul>
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- 2-channel output type  
2-channel output types are separately available  
Model AS-U25-2  
Model AS-U25D-2



## Rating/Performance/Specification

Model	PU5	PU10	AS-U20(D)	AS-U25(D)	AS-U30(D)
Detection method	Through-beam type (U-shaped)				
Detecting distance	5 mm fixed	10 mm fixed	19 mm fixed	25 mm fixed	30 mm fixed
Detection object	φ 1mm (Min.) Opaque	φ 2mm (Min.) Opaque			φ 5mm (Min.) Opaque
Power supply	12-24V DC ±10% / Ripple 10% max.				
Current consumption	20mA max.	45mA max.	25mA max.		35mA max.
Output mode	NPN open collector Sink current 100 mA (30 VDC) max.	Current output Sink current 75 mA (48 VDC) voltage output Output impedance: 4.7 kΩ	NPN open collector*2 Rating: sink current 100 mA (30 VDC) max.		
Operation mode	Light-ON/Dark-ON (2 outputs)		Dark-ON*1		
Response time	200 μs max.	50 μs max.	0.35ms max.		0.5ms max.
Light source (wavelength)	Infrared LED (910 nm)	Infrared LED (940 nm)	Red LED (650nm)		Red LED (950nm)
Indicator	Light reception indicator (red LED)		Operation indicator (red LED) Stability indicator (green LED)		Operation indicator (red LED)
Short circuit protection	—————		Provided		
Material	Case	Polycarbonate	Polycarbonate		Heat-resistant ABS
	Lens	Polycarbonate	Acrylic		
Connection	Permanently attached cord (outer dimension: dia. 5 x 3) 0.14 sq. 4 core 1 m length	Permanently attached cord (outer dimension: dia. 6.2) 0.3 sq. 4 core 3 m length	Permanently attached cord (outer dimension: dia. 4) 0.2 sq. 3 core 2 m length		Permanently attached cord (outer dimension: dia. 4.2) 0.3 sq. 3 core 2 m length
Mass	About 40g	About 220g	About 55g	About 60g	About 140g
Notes	*1 Light-ON type separately available AS-U20, as-U25, AS-U30 *2 PNP output type separately available AS-U30PN, AS-U30DPN				

## Environmental Specification

Ambient temperature	AS series: -25 - +55°C (non-freezing) PU series: -10 - +55°C
Ambient humidity	35-85%RH (non-condensing)
Protective structure	IP67 (IP 40 for PU10)
Vibration	10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 direction
Shock	500 m/s <sup>2</sup> / 3 times each in 3 directions
Insulation resistance	500 VDC, 100 MΩ higher

### • Applicable power supply unit

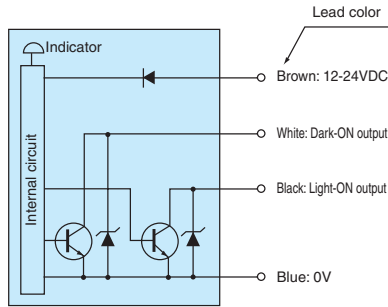
PS Series  
High capacity of 200 mA at 12 VDC



(General-purpose type) PS3N  
PS3N-SR  
(Multifunctional type) PS3F  
PS3F-SR

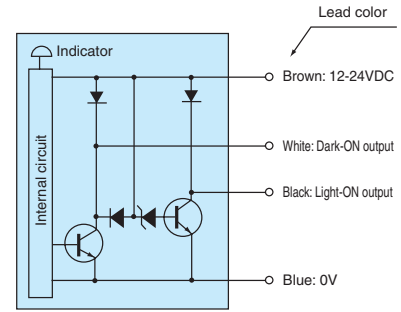
## Input/Output Circuit and Connection

PU5



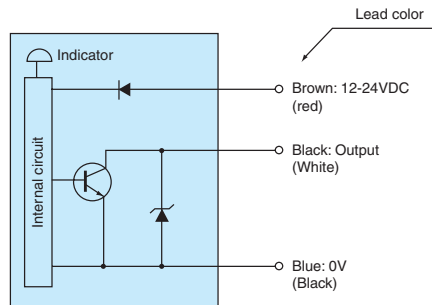
\*Insulate any unused output lead.

PU10

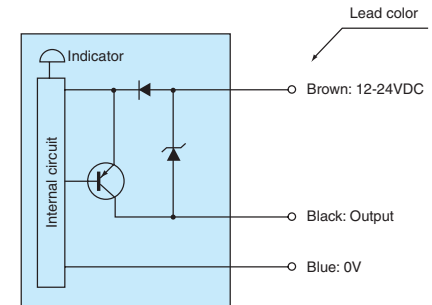


\*Insulate any unused output lead

AS-U20  
AS-U20D  
AS-U25  
AS-U25D  
AS-U30  
AS-U30D



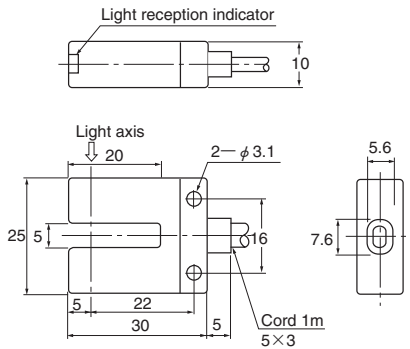
AS-U30PN  
AS-U30DPN



## Dimensions (in mm)

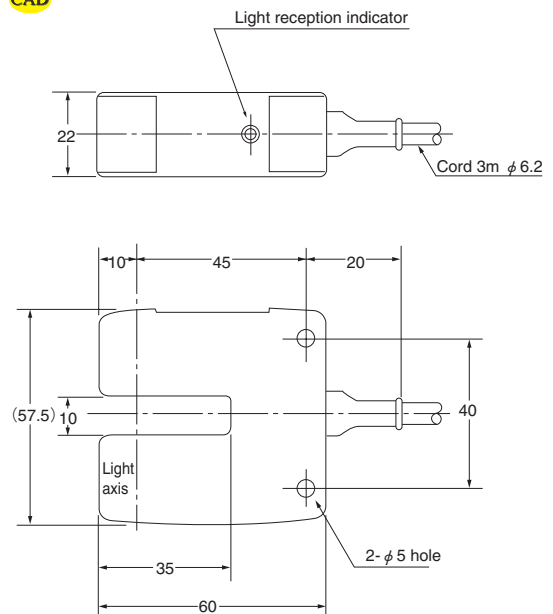
PU5

CAD

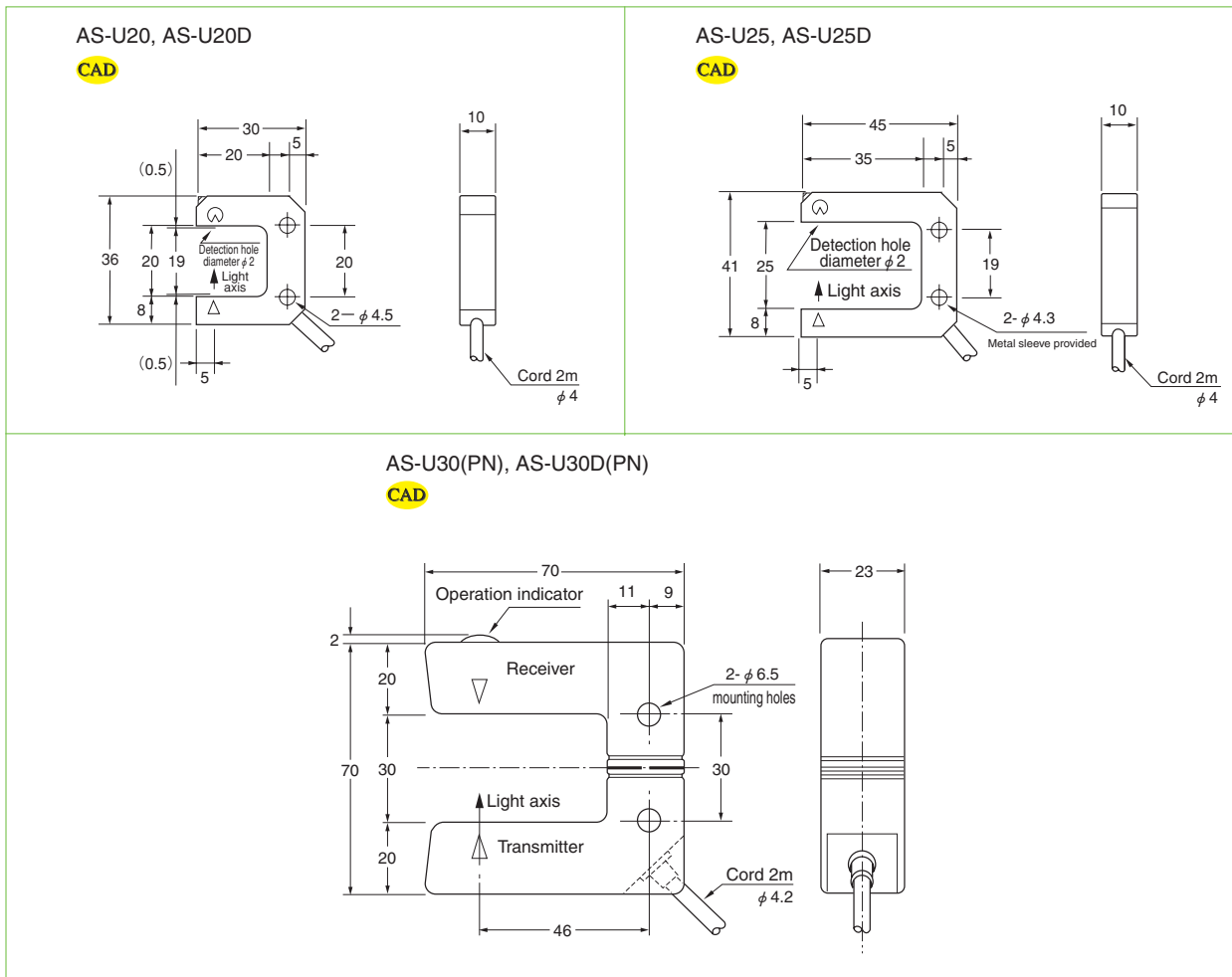


PU10

CAD



**Dimensions (in mm)**



Embedded Amplifier Photo Sensors

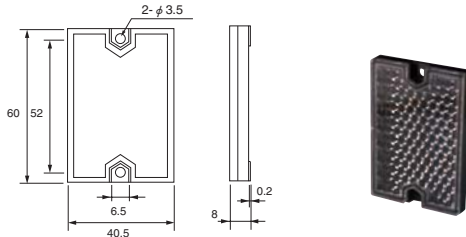
# Reflector

## Dimensions (in mm)

**K-7**

CAD

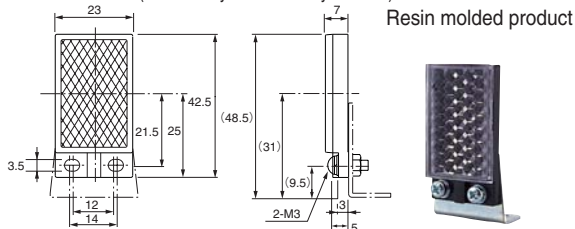
(Applicable to polarization reflector type  
Effective reflecting surface: 56 x 36 mm  
Material: Mirror: acrylic / Base: heat-resistant ABS  
Protective structure: IP 67  
Mounting: secured with M3 screws (alternatively adhesive may be used)



**K-71**

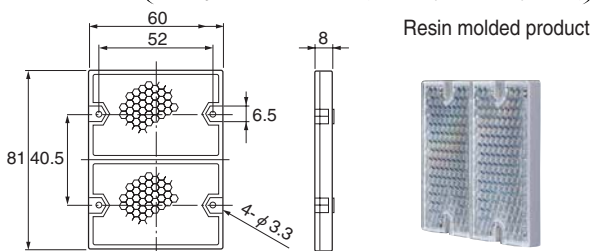
CAD

(Applicable to polarization reflector type  
Effective reflecting surface: 32 x 19 mm  
Mounting: mounting bracket provided, secured with M3 screws (alternatively adhesive may be used)



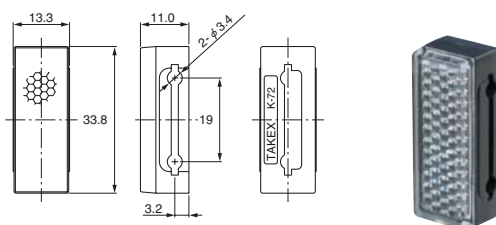
**K-77**

(Applicable to polarization reflector type  
Effective reflecting surface: 68 x 56 mm  
Mounting: secured with M3 screws (alternatively adhesive may be used)

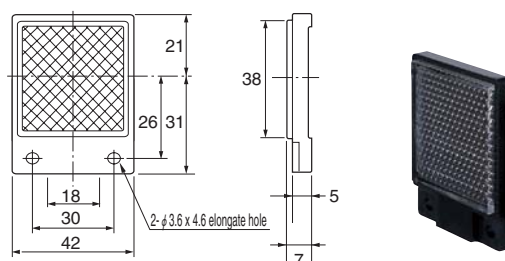


**K-72**

(Applicable to polarization reflector type  
Effective reflecting surface: 29 x 8 mm  
Material: Mirror: acrylic / Base: heat-resistant ABS  
Protective structure: IP 67  
Mounting: mounting bracket provided, secured with M3 screws



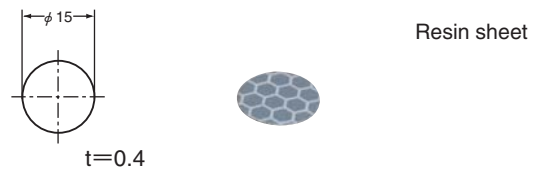
**K-MT4**



**S-15**

CAD

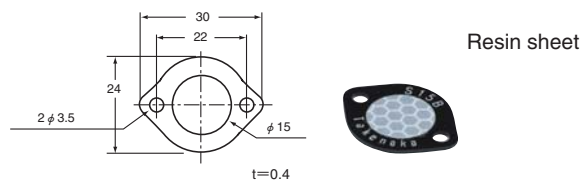
(Effective reflecting surface:  $\phi$  15  
Mounting: Pasted: adhesive on back side)



**S-15B**

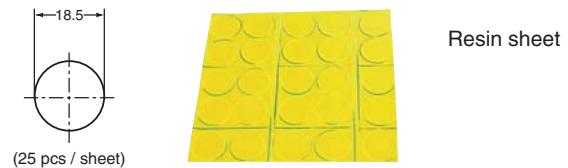
CAD

(Effective reflecting surface:  $\phi$  15  
Mounting: Secured by pasting or with M3 screws)



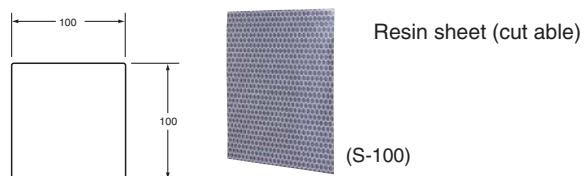
**S-25**

(Effective reflecting surface:  $\phi$  18.5 mm x 25 per sheet  
Mounting: Pasted: adhesive on back side)



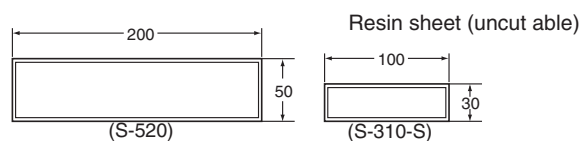
**S-100**  
**S-200**

(Effective reflecting surface: 100mm x 100mm (S-100)  
Mounting: Pasted: adhesive on back side)



**S-520**  
**S-310-S**

(Applicable to polarization reflector type  
(S-520) Effective reflecting surface: 198 x 48 mm / Color: yellow  
(S-310-S) Effective reflecting surface: 98 x 28 mm / Color: Silver  
Mounting: Pasted: adhesive on back side)



**S-510G**

(Applicable to polarization reflector type  
Effective reflecting surface: 100 x 50mm  
Mounting: Pasted: adhesive on back side)

