



Cost effective and Eco-Friendly

- | Low price achieved by equipping our unique Opto-ASIC
- | Employs a newly developed 4 element red LED light source
- | Ultra-low current consumption
- | Easy-to-see indicators and operating panel

Related products

Sensor head for amplifier separate type
Z3R-Q
● P.404

BGS type
BGS-Z
● P.326

Laser type
Z-L
● P.272

Selection table

Type	Shape	Sensing distance	Model (Models in parentheses are connector types)	
			NPN type	PNP type
Through-beam type		25 m	Z2T-2000N (Z2T-2000CN4)	Z2T-2000P (Z2T-2000CP4)
Retro-reflective type		0.01 to 4.4 m	Z2R-400N (Z2R-400CN4)	Z2R-400P (Z2R-400CP4)
Diffuse-reflective type		0 to 1 m	Z2D-80N (Z2D-80CN4)	Z2D-80P (Z2D-80CP4)

● For the connector type, please purchase an optional JCN series connector cable.

Options/Accessories

Reflector

Standard
(included with retro-reflective type)

V-61
60.9 × 50.9 mm
Sensing distance:
0.01 to 4.4 m



Small type

V-42
42 × 35 mm
Sensing distance:
0.01 to 2.7 m



Vertical type

P45A
54 × 12.4 mm
Sensing distance:
0.01 to 1.5 m



Side mount

P25
32 × 14 mm
Sensing distance:
0.01 to 2 m



Ultra-small

V-30
43 × 23 mm
Sensing distance:
0.01 to 2.5 m



Reflective sheet

Diamond grade sheet
100 × 100 mm
Sensing distance:
0.1 to 1.1 m



Protective mounting bracket

● Durable 2 mm thick stainless steel type

LK series
LK-S01 **LK-S02**

Anti-interference filter

BL-100-POLF
For through-beam type
(4 pieces)

Slit mask for through-beam type

BL-W100
Slit width 0.5 mm, 1 mm,
2 mm (2 of each)

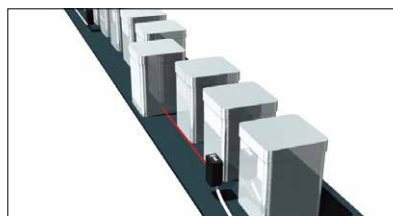
Connector cables

Straight JCN-S
Cable length: 2 m
L-shaped JCN-L
Cable length: 2 m

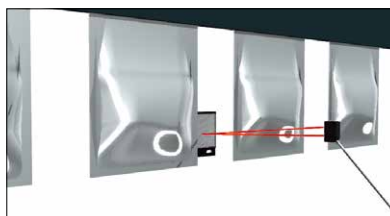
JCN-5S
Cable length: 5 m
JCN-5L
Cable length: 5 m

JCN-10S
Cable length: 10 m
JCN-10L
Cable length: 10 m

Detection of deviation from conveyor belts



Detection of glossy pouches



Detection of paper passage



Achieved by our unique Opto-ASIC

Realized unprecedented price reduction

We've succeeded in lowering costs through in-house development of the chip-on-board Opto-ASIC, in which both a switching circuit and light receiving element have been integrated.

Employs a newly developed high-brightness 4 element LED

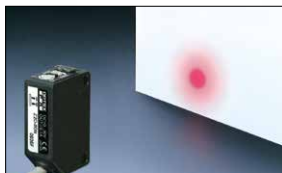
Longest sensing distance in the class!

Equipped with a newly developed 4 element red LED light source. In addition to minimizing the decreases in emitted light that occur over time, it features a through-beam type sensor with a longest-in-class 25 m sensing distance! Not only is detection over long distances possible, but it is also tolerant against dust and fine particles.

■ Through-beam type
Sensing distance: 25 m



Low deterioration 4 element red LED.
The spot light is also highly visible.



■ Retro-reflective type
Sensing distance: 0.01 to 4.4 m

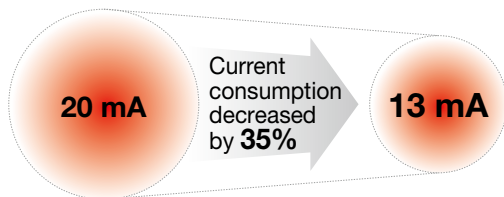


■ Diffuse-reflective type
Sensing distance: 0 to 1 m

Eco-friendly

Ultra-low current consumption

Power consumption reduced by 35% *, contributing to the eco-friendliness of all devices and machinery.



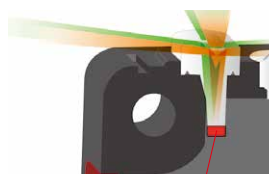
*When compared with our conventional retro-reflective type

Enhanced operability

Easy-to-see indicators and operating panel

The indicator part is equipped with a cover featuring an inner-surface reflecting structure. The cover surface does not diffuse light, but instead improves visibility by reflecting light in multiple directions internally. Also, silk printing has been used for the operating panel. This is a user-friendly design that enables labelling to be easily seen even in dark areas.

Mirrored cover of indicator part



LED chips

Silk-printed operating panel



Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Sensors with Built-in Amplifier

Z3

Z-M

Z2

E

J

K

S

S2

C-R

C2

PLN

Specifications

Type		Through-beam type	Retro-reflective type	Diffuse-reflective type	
Model	NPN	Cable type	Z2T-2000N	Z2R-400N	Z2D-80N
		Connector type	Z2T-2000CN4	Z2R-400CN4	Z2D-80CN4
	PNP	Cable type	Z2T-2000P	Z2R-400P	Z2D-80P
		Connector type	Z2T-2000CP4	Z2R-400CP4	Z2D-80CP4
Sensing distance		25 m	0.01 to 4.4 m ^{*1}	0 to 1 m ²	
Light source		4 element red LED, wavelength 640 nm			
Spot size		Approx. ø1000 mm (at distance of 25 m)	Approx. ø220 mm (at distance of 4.4 m)	Approx. ø140 mm (at distance of 1 m)	
Response time		500 µs or less			
Hysteresis		—	—	20% Max.	
Distance adjustment		1-turn potentiometer			
Indicators		Output indicator: orange LED, Stability indicator: green LED (no indicator equipped on through-beam type emitter)			
Control output		NPN/PNP type Open collector Max. 100 mA/30 VDC			
Output mode		Light ON / Dark ON selection switch			
Connection type		Cable type: Cable length: 2 m ø3.8 mm Connector type: M8, 4-pin			
Rating	Supply voltage		10 to 30 VDC, including 10% ripple (p-p)		
	Current consumption		Emitter: 11 mA or less Receiver: 8 mA or less	13 mA or less	15 mA or less
Applicable regulations		EMC directive (2004/108/EC)			
Applicable standards		EN 60947-5-2			
Company standards		Noise resistance: Feilen Level 4 cleared			
Environmental resistance	Ambient temperature/humidity		-25 to +55°C (no freezing) / 35 to 85% RH (no condensation)		
	Ambient illuminance		Sunlight: 10,000 lx Incandescent lamp: 3,000 lx		
	Vibration resistance		10 to 55 Hz; double amplitude 1.5 mm; 2 hours in each of the X, Y, and Z directions		
	Shock resistance		Approx. 100 G (1000 m/s ²); 3 times in each of the X, Y, and Z directions		
	Degree of protection		IP67		
Material		Housing: ABS (glass fiber filled), Front cover: PMMA			
Weight without cable		Approx. 10 g			
Included accessories		Mounting bracket: BEF-W100-B ^{*3}	Mounting bracket: BEF-W100-B ^{*3} Reflector: V-61	Mounting bracket: BEF-W100-B ^{*3}	

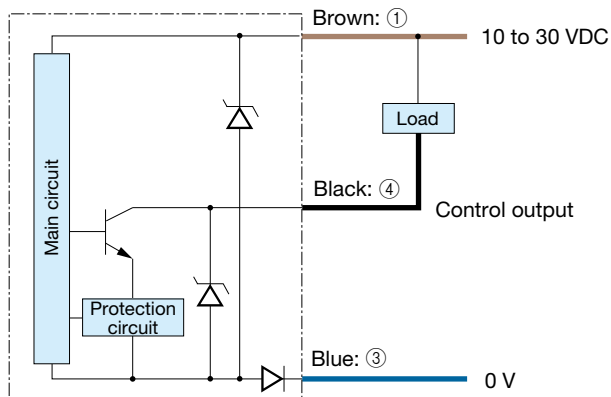
*1. When reflector V-61 is used

*2. Using a 100 × 100 mm white sheet of paper.

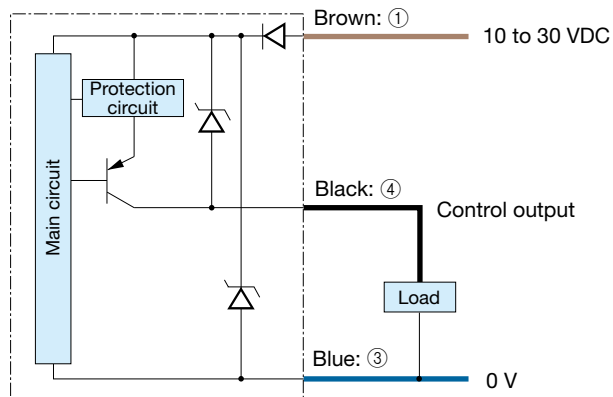
*3. Mounting bracket BEF-W100-A is included with the connector type.

Output circuit diagram

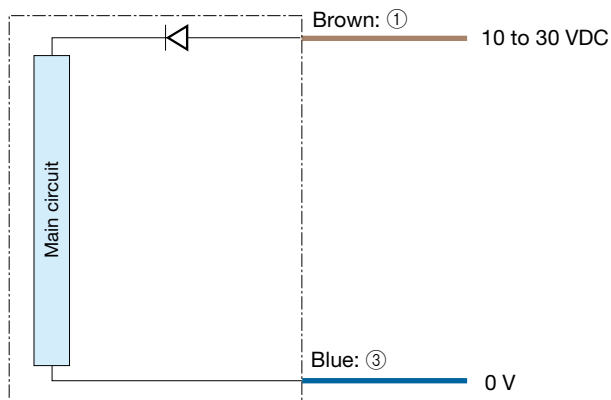
NPN output type



PNP output type



Through-beam type emitter



Connector type

(Pin configuration) Sensor side Connector cable side



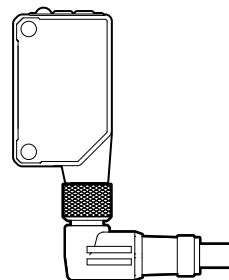
- ① 10 to 30 VDC
- ② —
- ③ 0 V
- ④ Control output

Connecting

- ① to ④ are connector pin No.

Notes

- When using a switching regulator for the power supply, be sure to ground the frame ground terminal.
- Because wiring sensor wires with high-voltage wires or power supply wires can result in malfunctions due to noise, which can cause damage, make sure to wire separately.
- Avoid using the transient state while the power is on (approx. 100 ms).
- The connector direction is fixed as the drawing below when you use L-shaped connector cable. Be aware that rotation is not possible.



Dimensions

Sensor

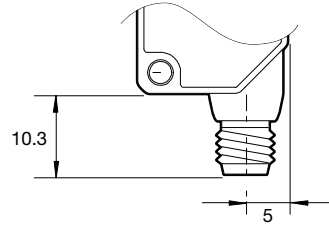
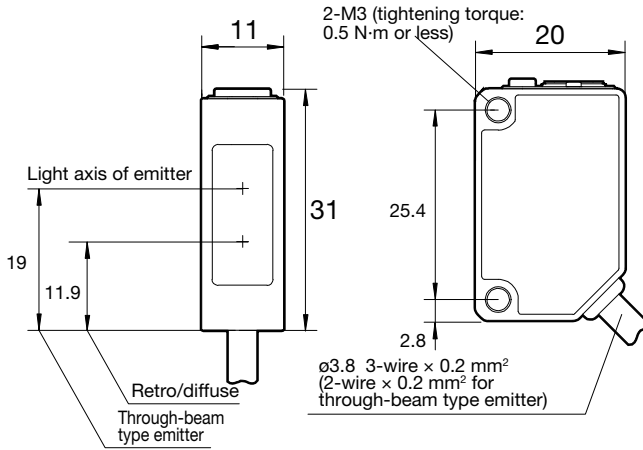
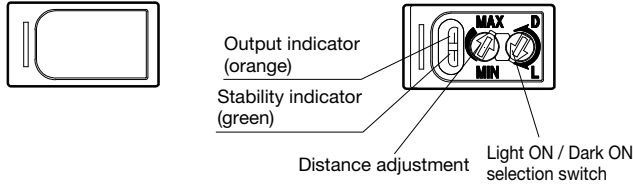
■ Cable type

■ Connector type

(Unit: mm)

Through-beam type emitter

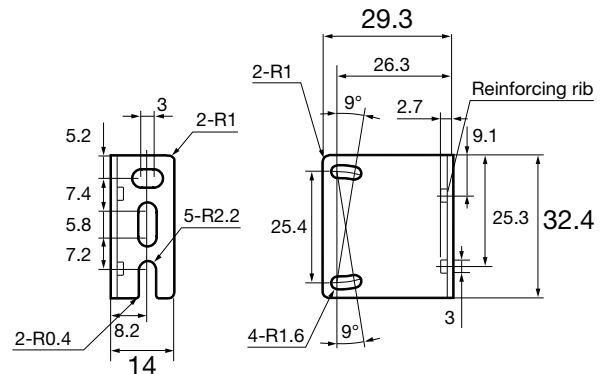
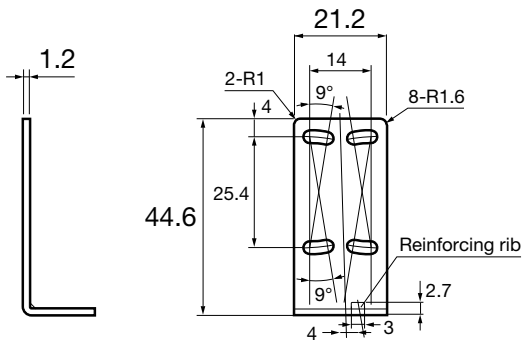
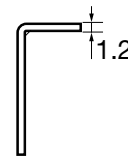
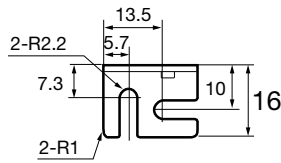
Through-beam type receiver/retro/diffuse



Mounting bracket

■ BEF-W100-B (included with cable type)

■ BEF-W100-A (included with connector type)



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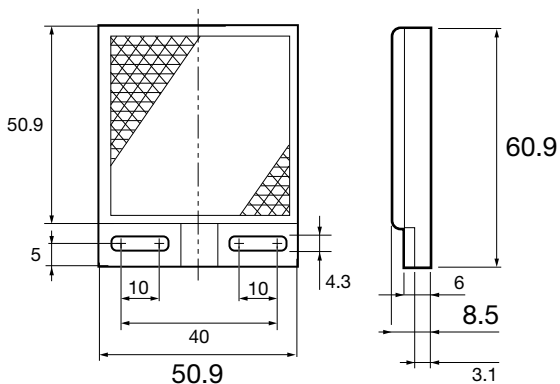
C2

PLN

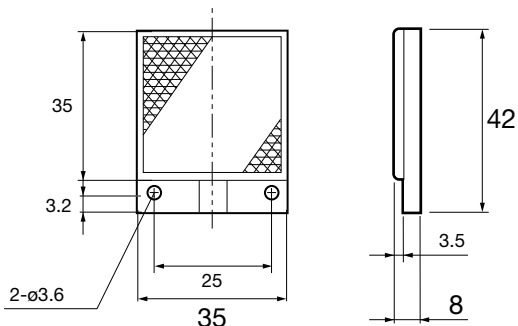
Reflector

(Unit: mm)

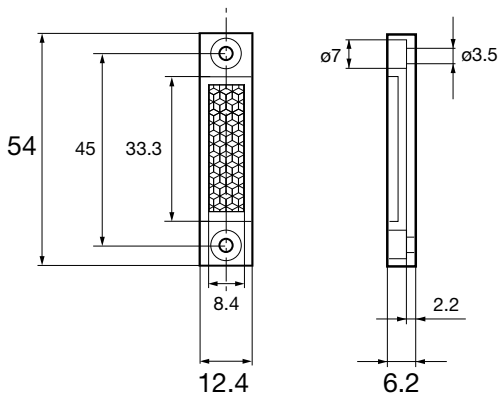
■ V-61: Standard type reflector (included with retro-reflective type)



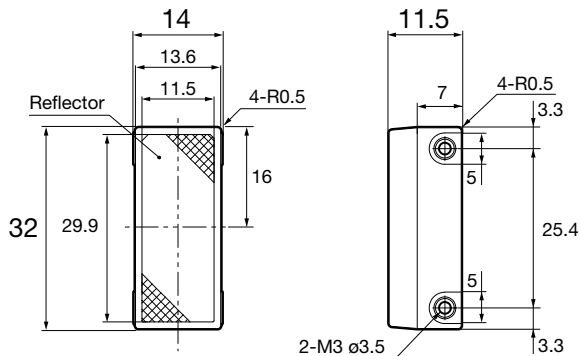
■ V-42: Small reflector (optional)



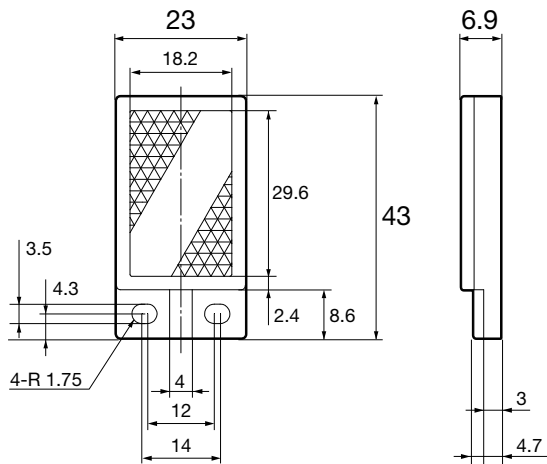
■ P45A: Vertical type reflector (optional)



■ P25: Side mount reflector (optional)



■ V-30: Ultra-small reflector (optional)

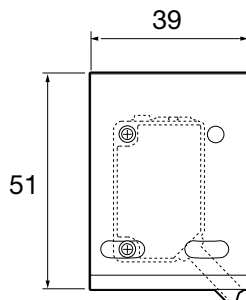
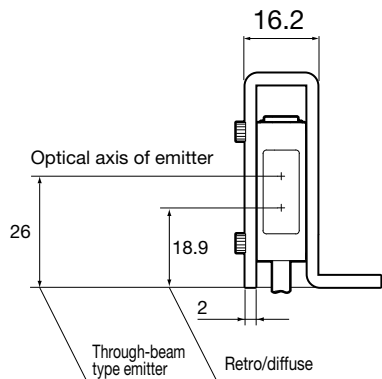
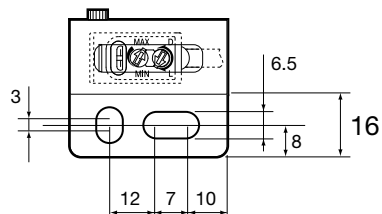


Dimensions

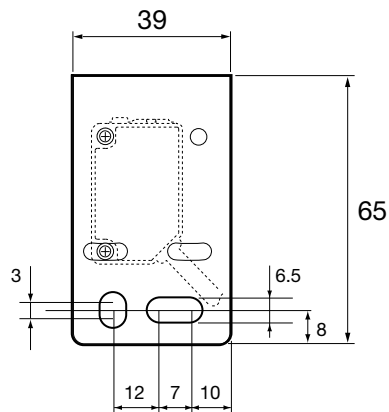
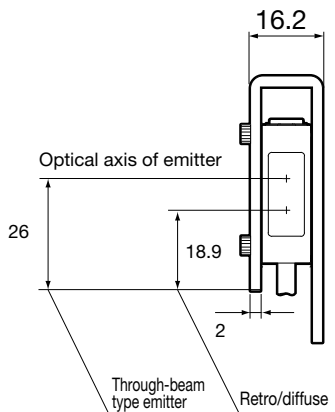
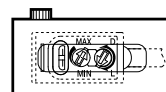
Protective mounting bracket

(Unit: mm)

■ LK-S01



■ LK-S02



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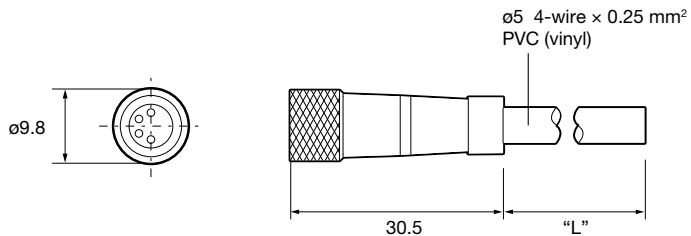
C2

PLN

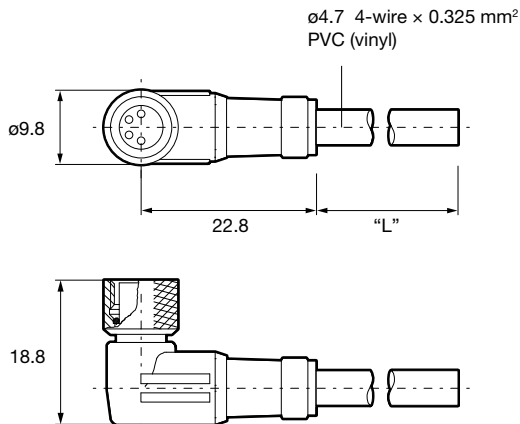
Connector cable (optional)

(Unit: mm)

■ JCN-S, JCN-5S, JCN-10S



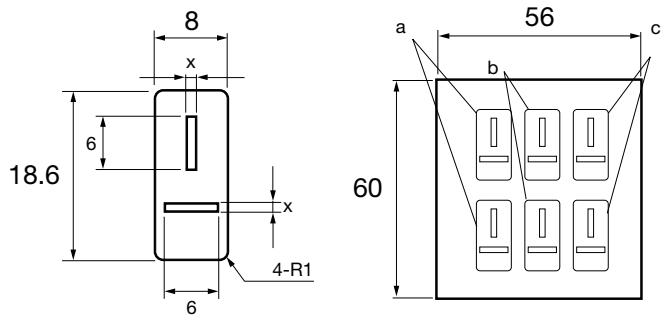
■ JCN-L, JCN-5L, JCN-10L



Slit mask

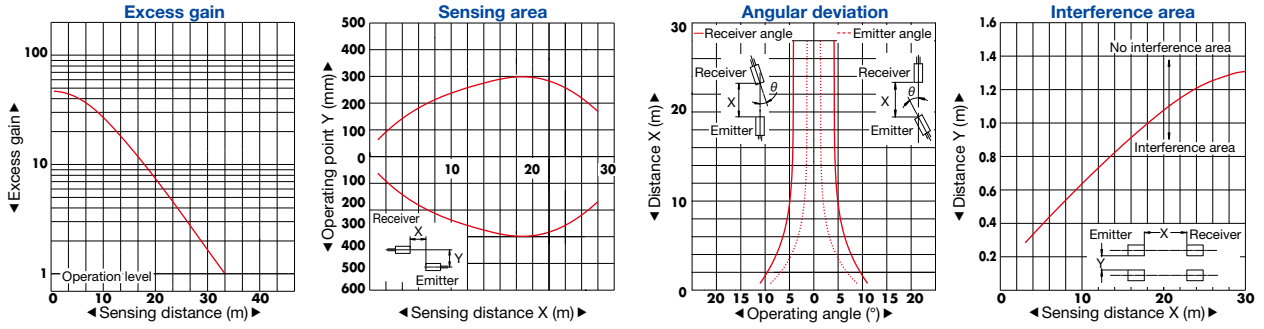
■ BL-W100: Slit mask (optional)

	a	b	c
Slit width X	0.5	1	2
Sensing distance	4 m	8 m	15 m

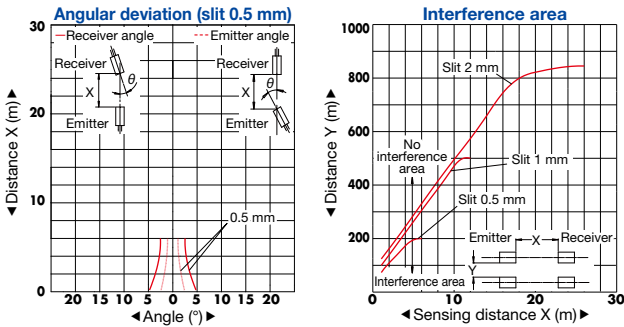
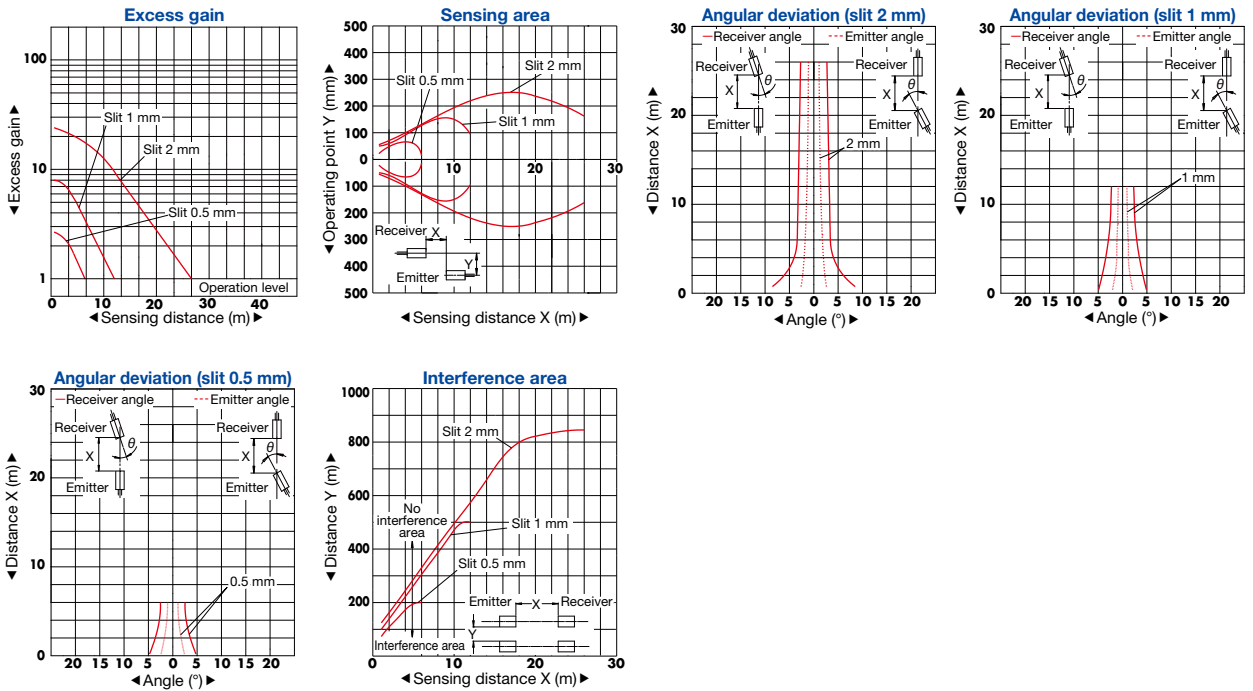


Typical characteristic data

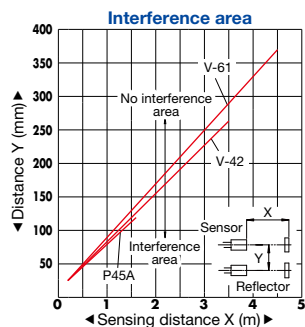
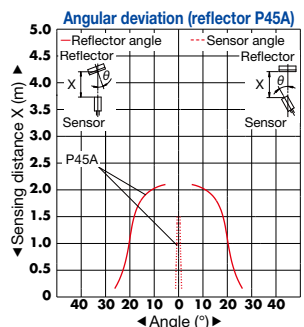
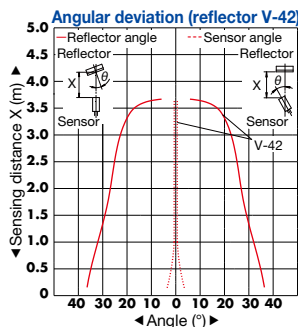
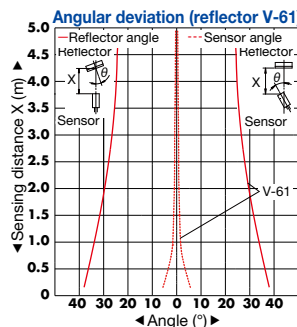
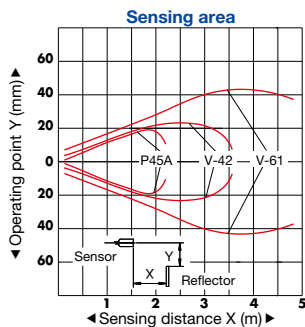
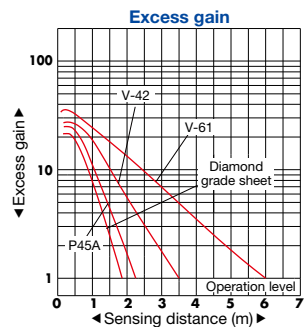
Z2T-2000



When slit mask is attached Z2T-2000



Z2R-400



Z2D-80

