

M18 cylindrical type

C-R_{series}



Best-in-class robust and powerful

- | Large sensing distance
- | Full-metal housing in brass
- | Easy to Align even the long distance

Related products

Laser type
Z-L
● P.272

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

BGS type
BGS-Z
● P.326

Selection table

Type	Shape	Sensing distance	Model (Models in parentheses are connector types)	
			NPN type	PNP type
Through-beam		25 m	CTD-2500N-R	CTD-2500P-R
Retro-reflective		0.01 to 4 m	CRD-400N-R	CRD-400P-R
Diffuse-reflective		0 to 1 m	CDD-100N-R	CDD-100P-R
Limited diffuse reflective		0 to 110 mm	CDD-11N-R	CDD-11P-R

Options/Accessories

Reflector

Standard

V-61
60.9 × 50.9 mm
Sensing distance: CRD-400□-R
0.01 to 4 m

Small type

V-42
42 × 35 mm
Sensing distance: CRD-400□-R
0.01 to 2.4 m

Vertical type

P45A
54 × 12.4 mm
Sensing distance: CRD-400□-R
0.01 to 1.4 m

Side mount

P25
32 × 14 mm
Sensing distance: CRD-400□-R
0.01 to 1.6 m

Ultra-small

V-30
43 × 23 mm
Sensing distance: CRD-400□-R
0.01 to 2.2 m

Reflective sheet

Diamond grade sheet
Sensing distance: CRD-400□-R
0.1 to 1 m
100 × 100 mm (adhesive type)

New C-R Series

Cylindrical photoelectric sensor with long-distance detection, robustness, and excellent usability.



The new C-R Series has much higher performance than conventional models, and is more easy-to-use. This is a new generation photoelectric sensor with the high detection performance, cost performance ratio, and robustness that are required of cylindrical sensors.

Large Sensing Distance

Achieved 25 m detection distance, the longest for through beam types!
Meets the need for long-distance application.



Z3

ZM

Z2

E

J

K

S

S2

CR

C2

PLN

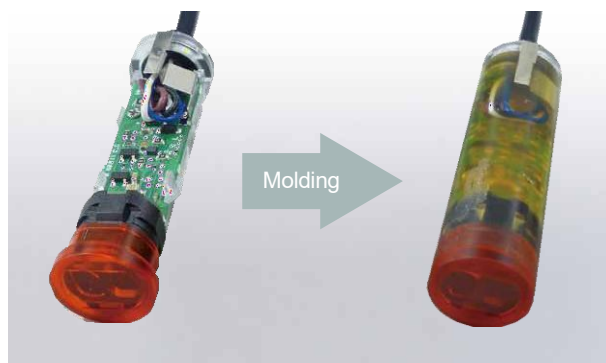
Features

NEW STRUCTURE

Hotmelt molding

High vibration resistance

Hotmelt molding enables high vibration resistance up to 100 Hz, 2 hours. (For details, see Specification)



Watertight: IP67

The C-R Series meets the conditions for the watertight IP67 rating. Can be used on work sites or devices that are exposed to splashing water such as the food and beverage industry.



Note: Due to refraction of light resulting from water or oil on the optical surface, detections may not be performed correctly.

Full-metal Housing in Brass

Robust design

In the conventional model, the tip and the end of the housing were made of plastic.

New C-R Series achieved the high robustness by full-metal housing.



Easy to Align even the long distance

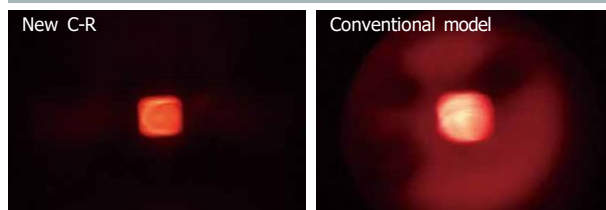
Visible red LED

Red LED, which allows easy alignment, has been adopted for all models as the light source. The spot beam location is visible, reducing the time required for alignment.

In addition, spot beam flare is minimized, which improves the visibility when compared to conventional models.



i.e.) Limited range type spot beam



Front Output Indicator is equipped on the receiver (Through-beam type)

Output indicator is equipped not only on the side of the receiver, but also on the front. When panning the emitter for alignment, the ON/OFF state of the indicator is visible from the emitter side, so alignment can be performed more easily by a single operator.

When aligned, the Front Output Indicator turns ON.



Photoelectric Sensors

Specialized Photoelectric Sensors

Laser Displacement Sensors

Sensors with Built-in Amplifier

Z3

Z-M

Z2

E

J

K

S

S2

CR

C2

PLN

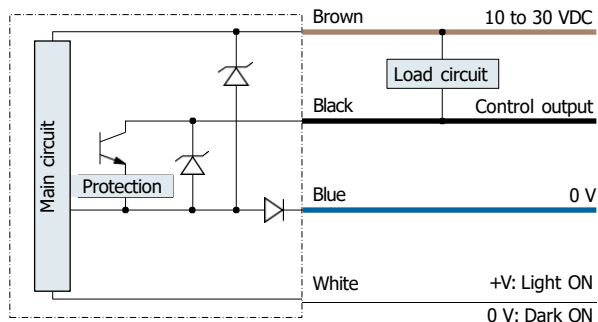
Specifications

Type		Through-beam type	Retro-reflective type	Diffuse-reflective type	Limited diffuse reflective type
Model	NPN	CTD-2500N-R	CRD-400N-R	CDD-100N-R	CDD-11N-R
	PNP	CTD-2500P-R	CRD-400P-R	CDD-100P-R	CDD-11P-R
Sensing distance ^{*1}		25 m	0.01 to 4 m	0 to 1 m	0 to 110 mm
Light Source		Red LED			
Spot size (approx.)		∅1600 mm / at 25 m	∅240 mm / at 4 m	∅70 mm / at 1 m	∅5 mm / at 110 mm
Supply voltage		10 to 30 VDC, including 10% ripple (p-p)			
Current consumption		Emitter: 20 mA max.	25 mA max.	30 mA max.	25 mA max.
		Receiver: 25 mA max.			
Response time		500 μs max.			
Control output		NPN/PNP Open collector 100 mA max. / 30 VDC max. (Residual voltage 1.8 V max.)			
Operation mode		Light ON, Dark ON Selectable by control wire			
Distance adjustment		1- turn potentiometer			
Indicator		Output indicator (Orange LED) / Stability indicator (Green LED)			
Vibration Resistance		10 to 100 Hz; max.1.5 mm (p-p), max.150 m/s ² , 8 hours in each of the X, Y, and Z directions			
Shock Resistance		Approximately 50 G, 3 times in each of the X, Y, and Z directions			
Ambient temp. /humidity		-25 to 55°C / 35 to 85%RH (No condensation or freezing)			
Storage temp. /humidity		-30 to 70°C / 35 to 95%RH (No condensation or freezing)			
Applicable regulations/standards		EMC Directive (2014/30/EU) / IEC 60947-5-2: 2007/A1: 2012			
Degree of protection/Material		IEC 60529: IP67 / Case: Brass Ni plated, Front Cover: PMMA			

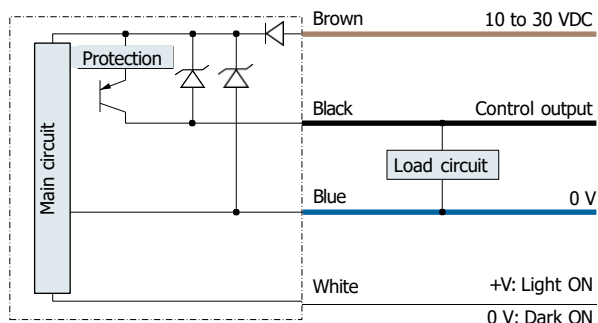
- *1. · Retro-reflective type: Reflector V-61
- Diffuse-reflective type: White paper 90% 200 x 200 mm
- Limited diffuse reflective type: White paper 90% 100 x 100 mm

Output circuit diagram

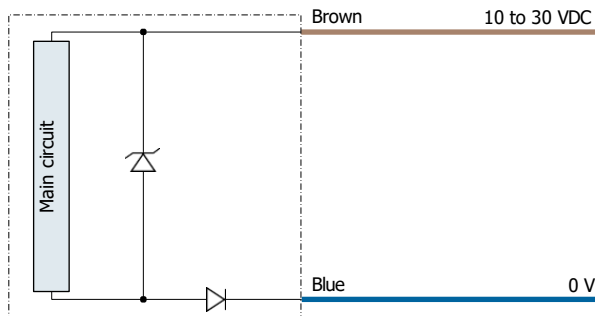
NPN type



PNP type

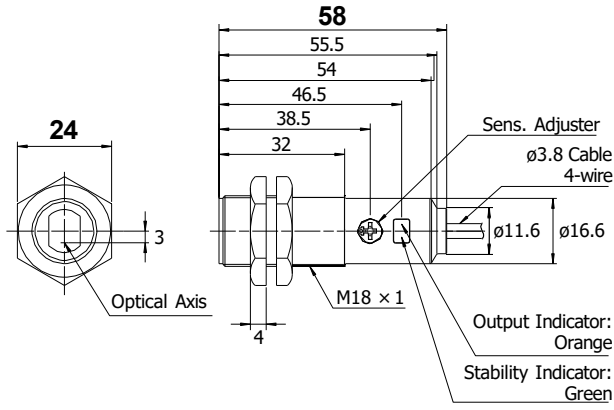


Through-beam Emitter

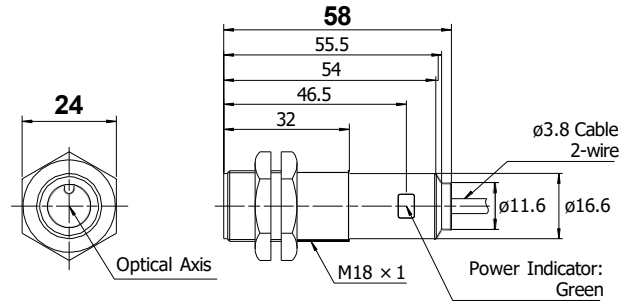


Dimensions

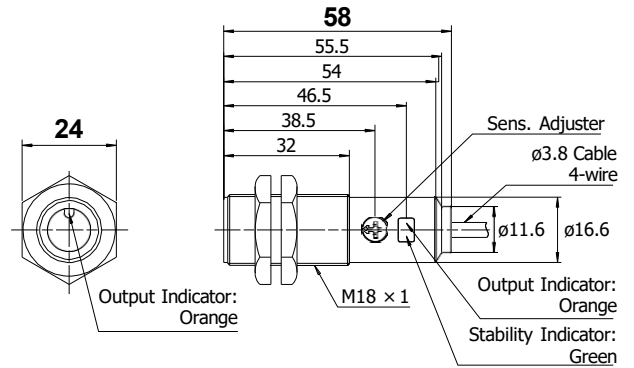
■ Retro-reflective, Diffuse-reflective, Limited diffuse reflective



■ Through-beam (Emitter)

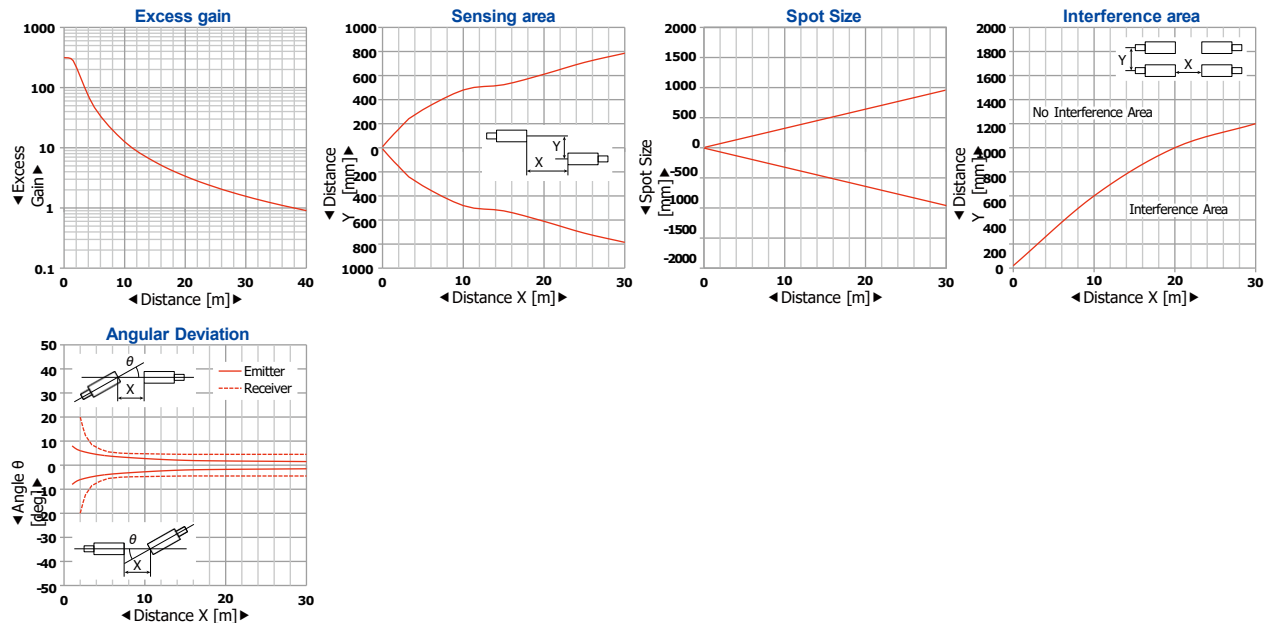


■ Through-beam (Receiver)

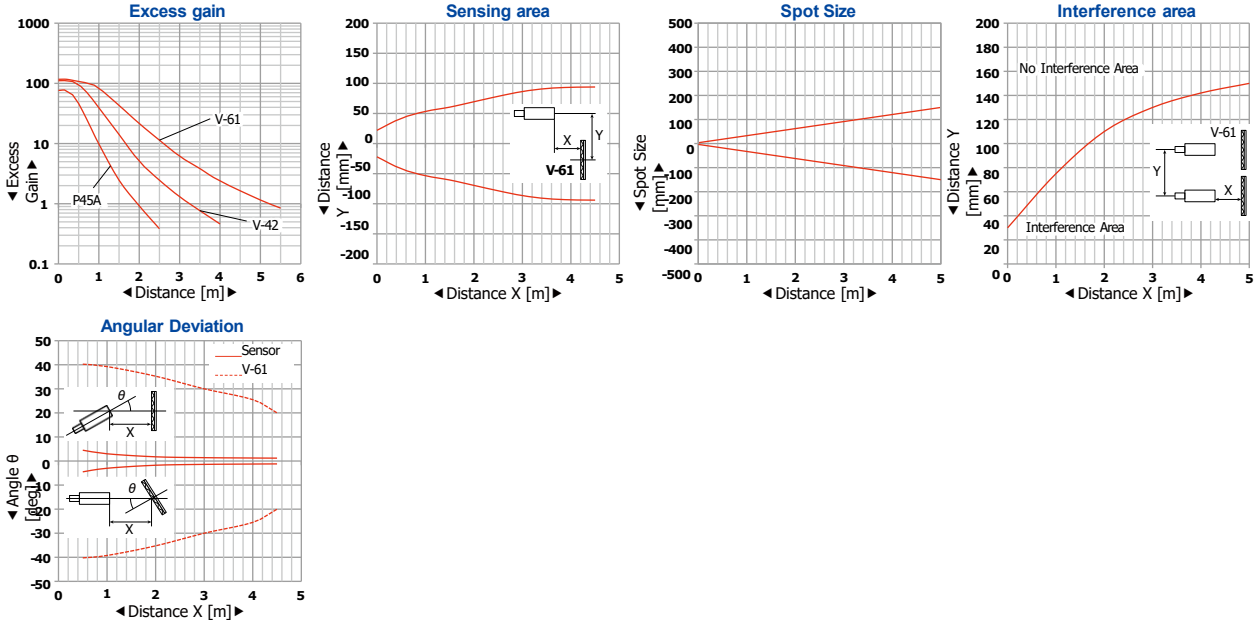


Typical characteristic data

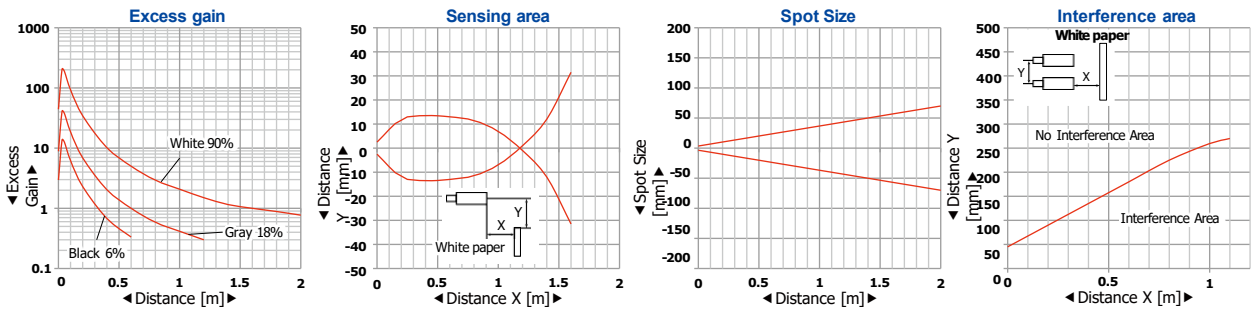
CTD-2500(N/P)-R



CRD-400(N/P)-R



CDD-100(N/P)-R



CDD-11(N/P)-R

