

404

Low cost/Coaxial type

Z3R-Q, ZR-QX series



Low cost type and coaxial type transparent object detection sensor

- Long range detection at 2 m
- Uses red LED for simple light axis adjustment
- Industry standard size

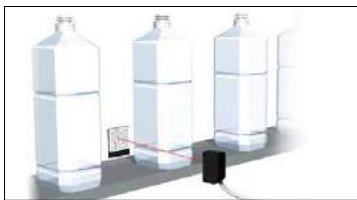
Related products

High-accuracy laser

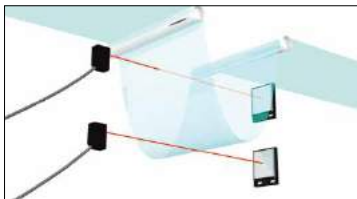
DR-Q
● P.396



Detection of plastic bottle passage



Transparent film upper and lower limit control



Selection table

Type	Shape	Sensing distance	Reflector	Mounting bracket	Model (Models in parentheses are connector types)	
					NPN type	PNP type
Low cost		0.01 to 2 m	Sold separately	Sold separately	Z3R-Q200N (Z3R-Q200CN4)	Z3R-Q200P (Z3R-Q200CP4)
Coaxial		0 to 2 m	Included (P250F)	Included*	ZR-QX200N (ZR-QX200CN4)	ZR-QX200P (ZR-QX200CP4)

● A connector cable is not included in the connector type. Please purchase an optional JCN series separately.
*The floor-mounted BEF-W100-B is included with the cable type, and the back-mounted BEF-W100-A is included with the connector type.

Reflectors for Z3R-Q

Standard 	Small 	Ultra-small 	Side mount 	Vertical type
V-61 Sensing distance: 0.01 to 2 m 60.9 x 50.9 mm	V-42 Sensing distance: 0.01 to 1.4 m 42 x 35 mm	V-30 Sensing distance: 0.01 to 1.2 m 42 x 23 mm	P25 Sensing distance: 0.01 to 0.7 m 32 x 14 mm	P45A Sensing distance: 0.01 to 0.7 m 54 x 12.4 mm

Reflectors for ZR-QX

Standard (included in ZR-QX) 	Small 	Ultra-small
P250F Sensing distance: 2 m 61 x 51 mm	PL20F Sensing distance: 1 m 60 x 20 mm	PL10F Sensing distance: 500 mm 32 x 20 mm

Common options/accessories

Connector cables

Straight

- JCN-S**
Cable length: 2 m
- JCN-5S**
Cable length: 5 m
- JCN-10S**
Cable length: 10 m



L-shaped

- JCN-L**
Cable length: 2 m
- JCN-5L**
Cable length: 5 m
- JCN-10L**
Cable length: 10 m

Mounting bracket

For cable type
Floor-mounted



BEF-W100-B

For connector type
Back-mounted



BEF-W100-A

Protective mounting bracket

- Ultra-durable 2 mm thick type
- Rust-resistant stainless steel
- Sensor is firmly secured using M3 Hex socket head cap screws
- The bracket is also firmly secured using M6 screws



LK-S01



LK-S02

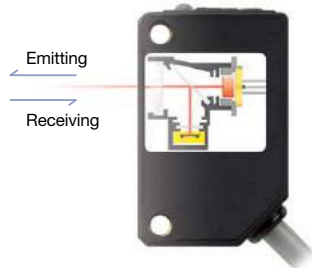


Can be mounted vertically or horizontally

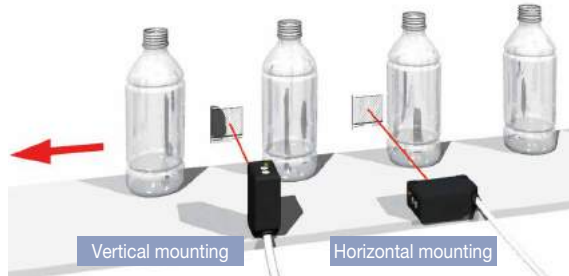
Coaxial type: ZR-QX200□

Since the light axis of both the receiver and emitter are a coaxial structure, there is no need to take into account the sensor mounting direction or workpiece movement direction. As an LED light source transparent object detection sensor, it boasts top of the line detection stability.

Structure of coaxial type



Stable detection whether standing or laying on its side



Uses a 4 element red LED for the light source

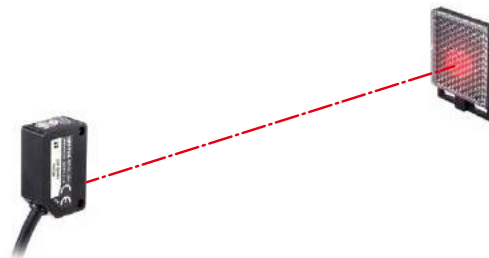
High brightness 4 element LED: Z3R-Q200□

Because the decreases in emitted light that occur over time are low in the case of 4 element LEDs, this means that stable detection is possible over long periods of time.



Easy adjustment of light axis

Unlike infrared light, light reflected brightly at the reflector, enabling light axis adjustments to be performed quickly.



Degree of protection: IP67, Shock resistance: 100 G

Its integrally molded structure enables all models to conform to IP67 and achieve a shock resistance up to 100 G. It doesn't break even when wet and can be used in locations where vibrations are generated.



Standard specification size

Features an industry standard pitch of 25.4 mm.



Photoelectric Sensors

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Laser Displacement Sensors

Transparent Object Sensors

DR-Q

Z3R-Q, ZR-QX

KR-Q, SR-Q

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Displacement
SensorsTransparent
Object Sensors

DR-Q

Z3R-Q, ZR-QX

KR-Q, SR-Q

Low cost/Coaxial type **Z3R-Q, ZR-QX** series

Specifications

Type		Low cost	Coaxial type	
Model	NPN	Cable type	Z3R-Q200N	Z3R-QX200N
		Connector type	Z3R-Q200CN4	Z3R-QX200CN4
	PNP	Cable type	Z3R-Q200P	Z3R-QX200P
		Connector type	Z3R-Q200CP4	Z3R-QX200CP4
Sensing distance		0.01 to 2 m ¹	0 to 2 m ²	
Light source		4 element red LED	Red LED	
Spot size		Approx. ø140 mm (at a distance of 2 m)	Approx. ø60 mm (at a distance of 2 m)	
Response time		500 µs or less		
Distance adjustment		1-turn potentiometer		
Indicators		Output indicator (orange), stability indicator (green)	Output indicator (orange)	
Control output		NPN/PNP type open collector Max. 100 mA/30 VDC		
Output mode		Light ON / Dark ON selectable		
Connection type		Cable type: Cable length: 2 m ø3.8 / Connector type: M8, 4-pin		
Rating	Supply voltage	10 to 30 VDC, including 10% ripple (p-p)		
	Current consumption	20 mA or less		
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 or less		
	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		IEC standard: IP67		
Material		Housing: ABS Front cover: PMMA		
Weight without cable		Approx. 10 g		
Included accessories		None	Reflector: V-61 Mounting bracket: BEF-W100-B ³	

*1. When reflector V-61 is used.

*2. When reflector P250F is used.

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

● Specifications are subject to change without prior notice for product improvement purposes.

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Transparent Object Sensors

DR-Q

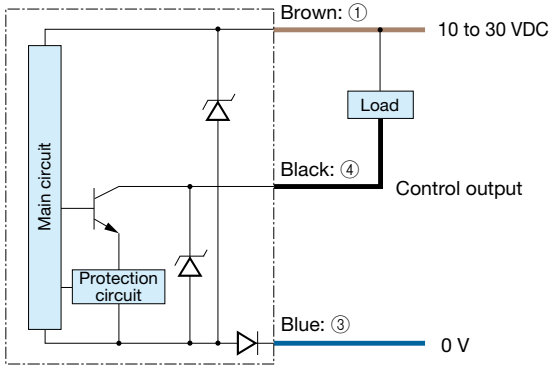
Z3R-Q, ZR-QX

KR-Q, SR-Q

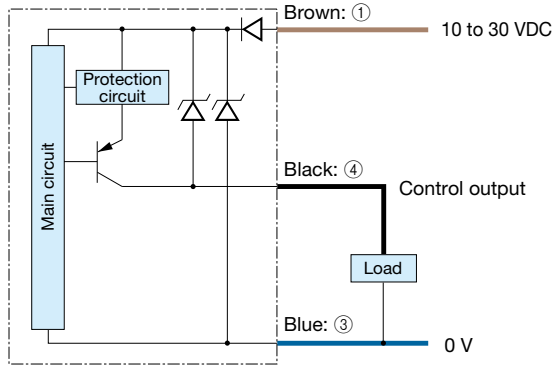
Output circuit diagram

Z3R-Q200

NPN output type

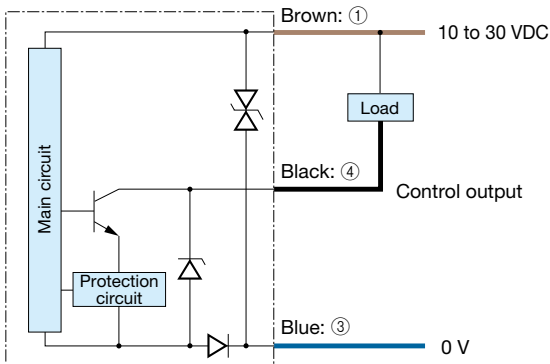


PNP output type

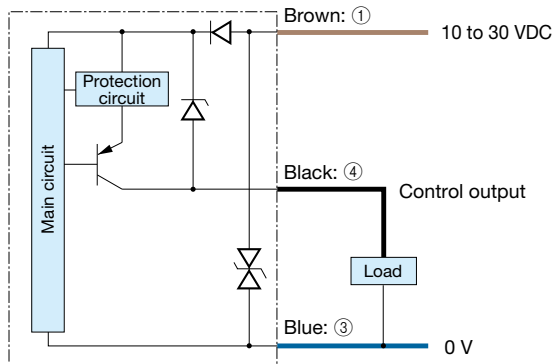


ZR-QX200

NPN output type



PNP output type



Connector type

(Pin configuration) Sensor side Connector cable side



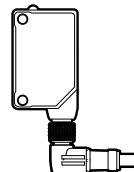
- ① 10 to 30 VDC
- ② —
- ③ 0 V
- ④ Control output

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 in the drawing below when you use L-shaped connector cable. Be aware that rotation is not possible.



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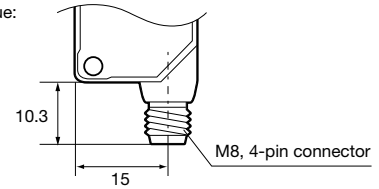
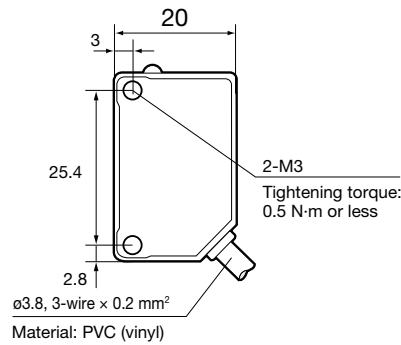
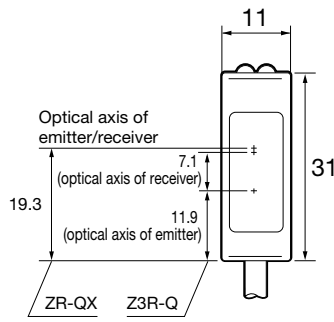
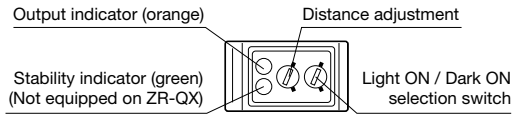
Dimensions

Sensor

(Unit: mm)

■ Cable type

■ Connector type



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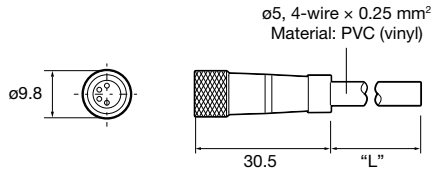
DR-Q

Z3R-Q, ZR-QX

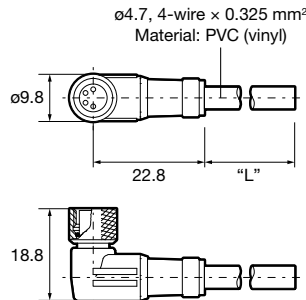
KR-Q, SR-Q

Connector cable (optional)

■ JCN-S, JCN-5S, JCN-10S



■ JCN-L, JCN-5L, JCN-10L

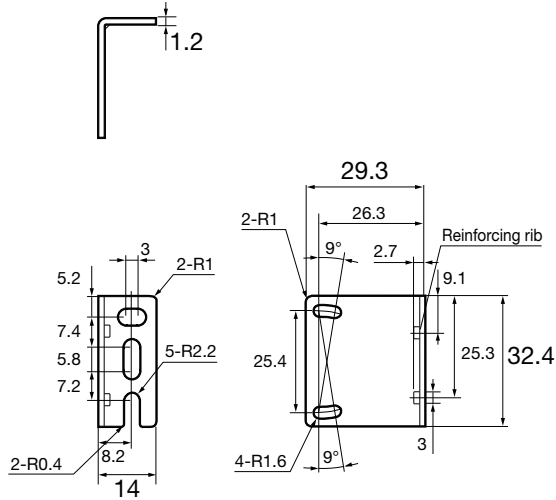
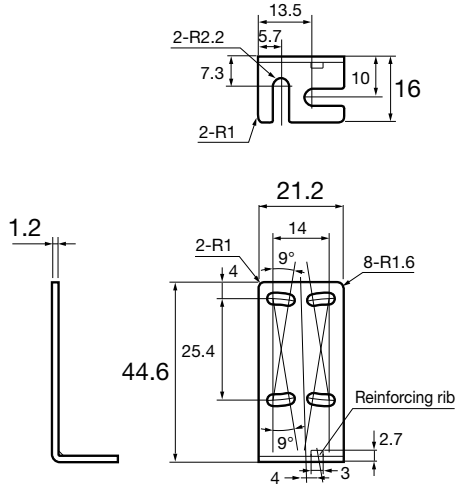


Mounting bracket

(Unit: mm)

■ BEF-W100-B

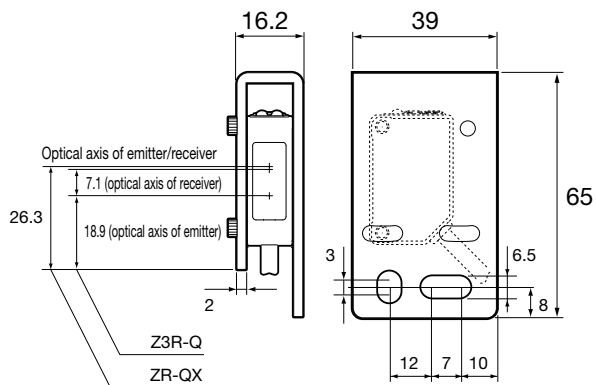
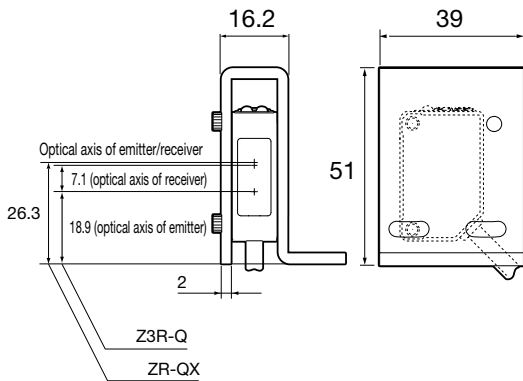
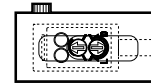
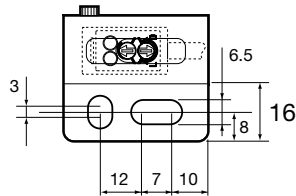
■ BEF-W100-A



Protective mounting bracket

■ LK-S01

■ LK-S02



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DR-Q

Z3R-Q, ZR-QX

KR-Q, SR-Q

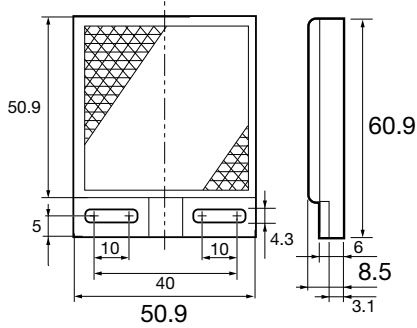
Low cost/Coaxial type Z3R-Q, ZR-QX series

Dimensions

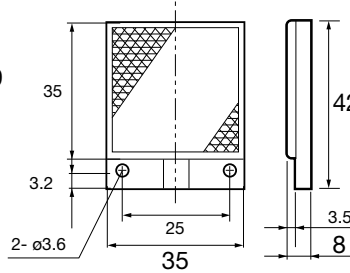
Reflectors for Z3R-Q

(Unit: mm)

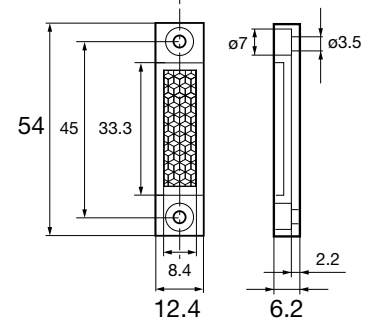
■ V-61: Standard type reflector



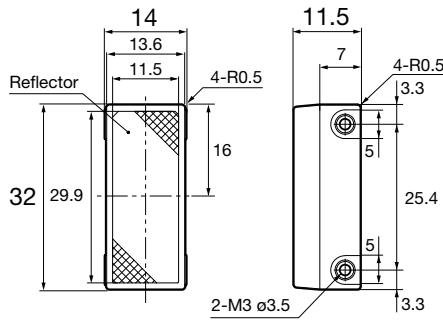
■ V-42: Small reflector



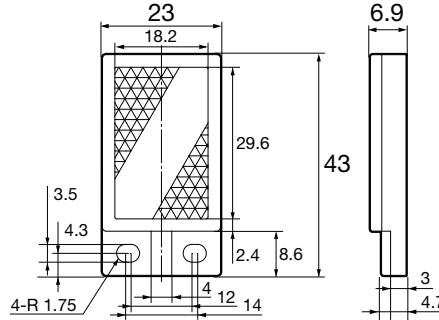
■ P45A: Vertical type reflector



■ P25: Side mount reflector

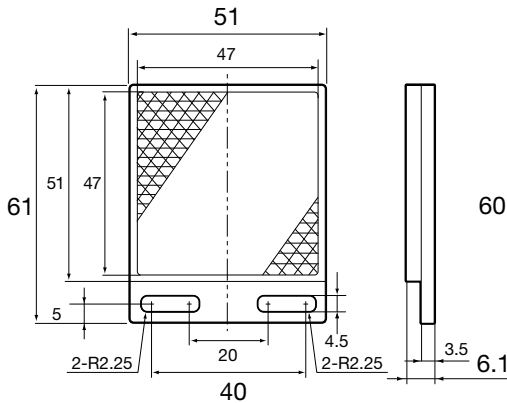


■ V-30: Ultra-small reflector

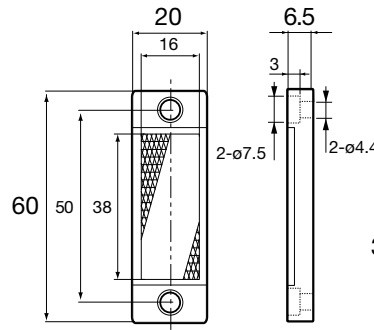


Reflectors for ZR-QX

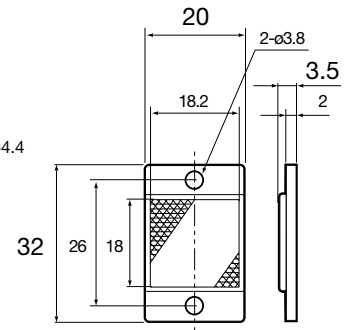
■ P250F (included)



■ PL20F (optional)



■ PL10F (optional)



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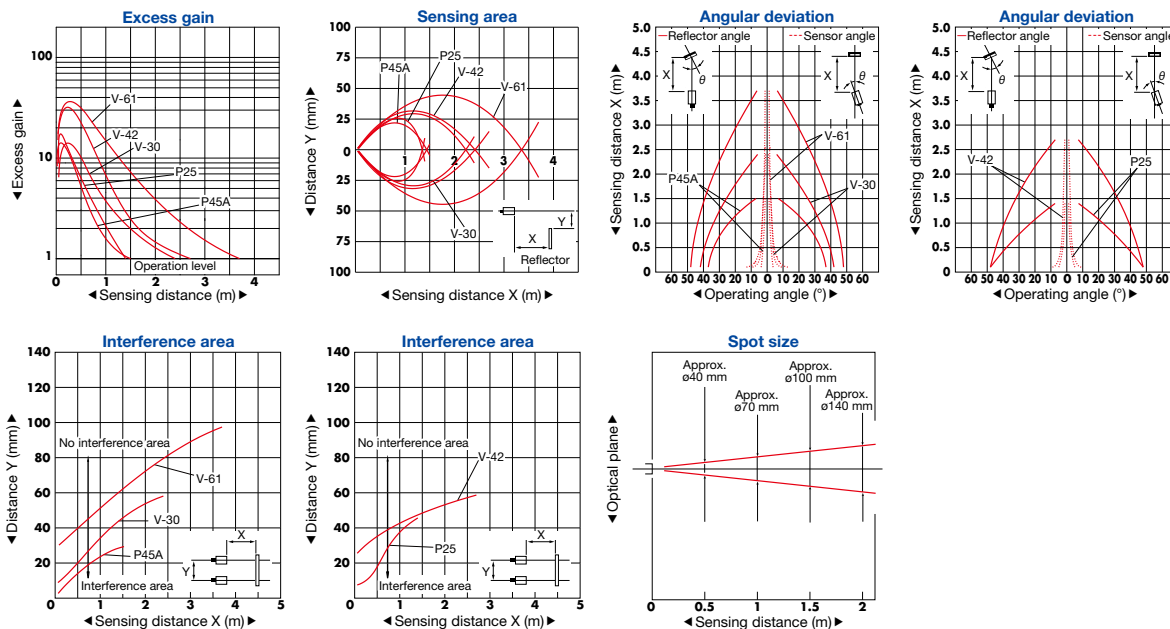
DR-Q

Z3R-Q, ZR-QX

KR-Q, SR-Q

Typical characteristic data

Z3R-Q200



ZR-QX200

