

Laser Sensor

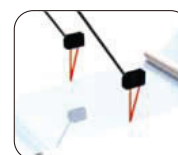
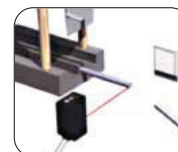
Z-L / BGS-ZL series

M8 QD type

Cable type

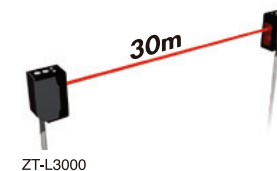
- The Laser light source projects a 2 mm spot at 400 mm distance (Diffuse mode).
- BGS (Background Suppression) sensing is also available in the BGS-ZL series.

Applications

Edge control
(BGS-ZL30)Height control of
multi-colored object
(BGS-ZL30)Counting metal parts
(ZR-L1000)Thin plates counting
(ZT-L3000)

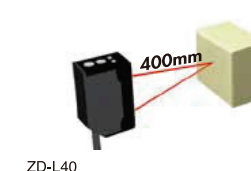
Features

Thru-Beam type



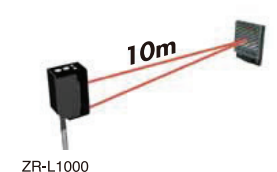
ZT-L3000

Diffuse type



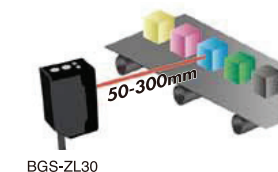
ZD-L40

Retro Reflective type



ZR-L1000

BGS type

BGS-ZL30
BGS-ZL10

Class 2/Class II IEC, FDA Regulation

Conforms to Class 2 (IEC) and Class II (FDA) regulations.
(Class 1 for Thru-beam type)



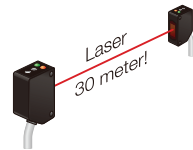
Laser Thru-beam / RetroType

- **30 meter sensing distance (Thru-beam type), fast 250μsec. response time.**
- **Compact size with Laser source, small 2 mm diameter projected beam.**
- **IP67 rating**
- **M8 QD types are available**

Features

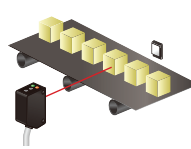
Thru-beam type, ZT-L series

30mm spot size at 30 meter sensing distance



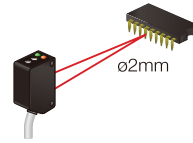
250μsec response

Good for fast moving objects.



Diffuse Reflective, ZD-L type

Fine 2mm spot at 400mm sensing distance



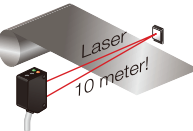
Cross-talk prevention

2 sensors can be mounted side-by-side.



Retro Reflective, ZR-L type

10mm spot size at 10 meter sensing distance



IP67 rating

Hose it down!
Water-tightness is tested to IP67.



Specifications

Model	Thru-beam		Polarized Retro-reflective	Diffuse-reflective
Cable type	NPN	ZT-L3000N	ZR-L1000N	ZD-L40N
	PNP	ZT-L3000P	ZR-L1000P	ZD-L40P
M8 connector type	NPN	ZT-L3000CN	ZR-L1000CN	ZD-L40CN
	PNP	ZT-L3000CP	ZR-L1000CP	ZD-L40CP
Supply voltage	DC10~30V Inc. 10% ripple			
Power consumption	30mA max.		20mA max.	
Sensing distance	30meter		10meter (Reflector : P250F)	400mm
Spot size	30mm/30m		10mm/8m	2mm/400mm
Response time	250μsec			
Hysteresis	—			20% Max
Operating temp	-10 to +50°C			
Operating humidity	35 to 85%			
Storage temp / humidity	-25 to +70°C/35 to 95%			
Vibration resistance	10 to 55Hz width 1.5mm			
Shock resistance	50 G (500 m/s ²)			
Protection category	IP67			
Light source	Laser (650nm)			
Laser class (IEC)	class 1		class 2	
Laser class (FDA)	class I		class II	
Output indicator	Orange(Yellow) LED			
Laser power indicator	Green LED			
Sensitivity adjustment	Single turn potentiometer			
Operating mode	Light On / Dark On selectable (switch)			
Connection	2m cable / M8 connector			

BGS - Laser Type

Fine spot / high speed applications

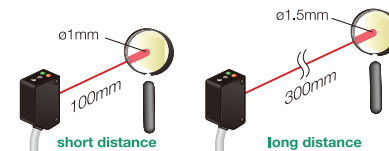
- **BGS (Background Suppression Type) Sensors are not influenced by the background, available with conventional Laser light source.**
- **250 μsec fast response (Laser light source models)**
- **1 mm projected spot size with BGS optical system (BGS-ZL Laser types)**

Features

1 mm projected spot size

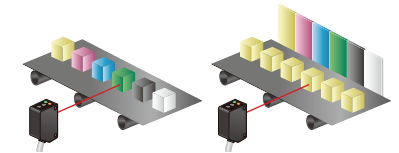
The Short distance BGS Laser sensor projects a very small ø1 mm spot at 100 mm distance.

Ideal for the detection of small targets at long distance without being influenced by the background. The Long distance type projects a ø1.5 mm spot at 300 mm.



BGS optical system designed with Laser light source

Extremely small BGS type sensors are only 17 x 10 x 20mm. Ideal for use in OEM equipment such as Printed Circuit Board processing machines.



External control of Laser Beam

External control of laser OFF is possible by connecting gray wire to GND (NPN type) or DC10-30V (PNP type).

(This function is not available in 3 pin types)



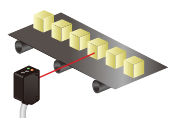
4 Turn adjustment pot.

A four turn adjustment pot. is built-in for precise adjustment of the sensing distance. The potentiometer has a slip clutch that protects it from damage when it is turned past the end.



250μsec response

Good for fast moving objects.



Specifications

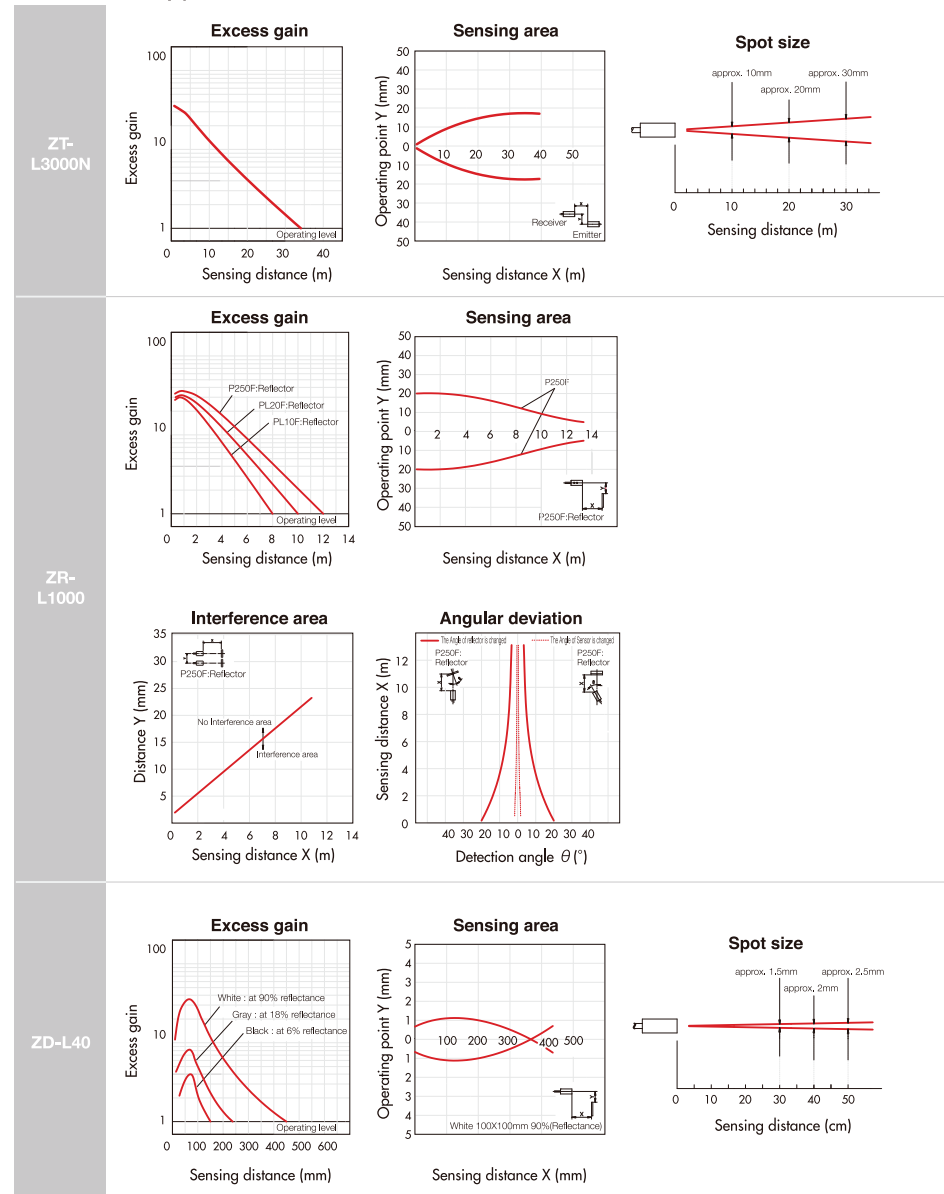
Model		long distance		short distance	
Type	NPN PNP	2m Cable	M8QD 4pin	2m Cable	M8QD 4pin
Adjustable distance		BGS-ZL30N	BGS-ZL30CN	BGS-ZL10N	BGS-ZL10CN
Sensing distance		BGS-ZL30P	BGS-ZL30CP	BGS-ZL10P	BGS-ZL10CP
Response time		50 - 300 mm (*1)		20 - 100 mm (*1)	
Spot size		10 - 300 mm (*1)		5 - 100 mm (*1)	
Hysteresis (white to white)		250μs			
Operating mode		φ 1.5mm/300mm		φ 1mm/100mm	
Output indicator		5%		3%	
Sensitivity adjustment		Light On / Dark On selectable			
Control output		Output : orange, Laser Power : green			
Supply voltage		4-turn, endless pot.			
Power consumption		NPN or PNP open collector, 100mA max / DC30V			
Protection category		DC 10 - 30V, including 10% ripple			
Shock resistance		30mA max			
Operating temp / humidity		IP 67			
Materials		50G			
		-10 to 55°C / 35 to 85% RH			
		Housing : ABS with glass, Lens : PMMA			

*1 white paper 100 X 100mm

"M8-QD in 3 pins for European machines " are available with extension code of -CN(P)3, for instance, "BGS-ZL30CN3".



Reference (typical)



Reference (typical)

