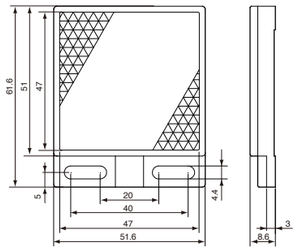
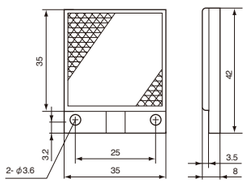
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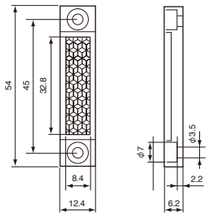
Standard reflector V-61



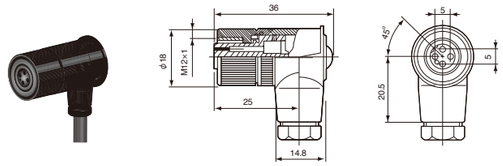
Small reflector V-42



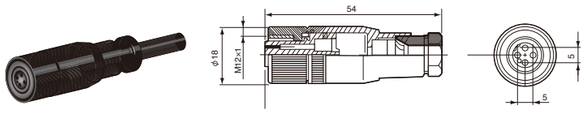
Tiny reflector P-45



90 degree QD connector CCN-L



Standard QD connector CCN-S



- Specifications are subject to change without prior notice.
- Specifications and technical information not mentioned here are written in Instruction Manual. Or visit our website for details.
- All the warnings and cautions to know prior to use are given in Instruction Manual.

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78002-00-QL1206

OPTEX FA

Photoelectric sensor
C2 Series

Plastic Casing

Compliance with RoHS. Plastic in material but tough structure.
"C2 Series" – An ecological product.



The best in its class of Cylindrical type sensor with custom ASIC .

Up to 40M of Max sensing distance.



Metal Casing

Metallic Brass casing coated with Nickel of 20um thickness.
Coating applies to internal and external of the casing.
"C2 Series" – Now with an Ultimate anti-rust housing.

CE



Well known for its conventional shape but not conventional in quality. An ultimate cylindrical sensor designed in Japan.

Custom ASIC with Power Circuit

The electronic circuit consists mainly of Optex FA's custom ASIC with only 27 electronic components.
The ASIC contains power circuit and this helps to avoid defects by electric damage from the power line.



RoHS products

Both plastic housing and metal housing are RoHS compliant.
With an Eco-minded electric design, the current consumption is only 18mA (Diffuse type)

RoHS

Hysteresis of Max 10%. Between black/white colors.

Between black/white colors, hysteresis is Max at 10% (Diffuse type). C2DM-11 gives a sensing distance of 110mm for white object and 90mm for black object.



Trimmer of Silicon plastic for high durability against chemical impact.

The trimmer is tightly sealed against water with IP67 rating.
Silicon plastic trimmer is the best solution against water, oil. chemical and environmental heat.

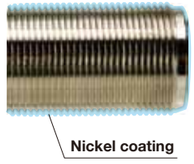
Easy Alignment and installation

Ample sensing area provides easy alignment when installing the thru-beam sensor. For instance, there is an allowance of 70cm to align the sensor at 10M distance. The highly bright LED is visible at long distance as well.



Nickel coating of 20 μ thickness for anti-rust solution.

Metal type consists of brass-nickel housing with extra nickel coating of 20u thickness. This coating is done for the external and internal of the housing. It helps protect the metal housing against rust and toughen it.



BGS type sensors

BGS type sensors are designed to detect any target regardless of the color and/or background.



Durable to 70N (7kg) of tension

The cable is firmly fixed to the internal circuit board so that it can withstand pulling tension of up to 70N (7kg).



Product family



Plastic housing

				Standard	Angle 90°
Retro-reflective Without Polarizing fillter	2m cable	NPN		C2RP-350N	C2RP-S350N
		PNP		C2RP-350P	C2RP-S350P
	M12 connector	NPN		C2RP-350CN	C2RP-S350CN
		PNP		C2RP-350CP	C2RP-S350CP
Retro-reflective With Polarizing fillter	2m cable	NPN		C2RP-F400N	C2RP-SF400N
		PNP		C2RP-F400P	C2RP-SF400P
	M12 connector	NPN		C2RP-F400CN	C2RP-SF400CN
		PNP		C2RP-F400CP	C2RP-SF400CP
Diffuse-reflective Focused 110mm type	2m cable	NPN		C2DP-11N	C2DP-S11N
		PNP		C2DP-11P	C2DP-S11P
	M12 connector	NPN		C2DP-11CN	C2DP-S11CN
		PNP		C2DP-11CP	C2DP-S11CP
Diffuse-reflective Energetic 400mm type	2m cable	NPN		C2DP-40N	C2DP-S40N
		PNP		C2DP-40P	C2DP-S40P
	M12 connector	NPN		C2DP-40CN	C2DP-S40CN
		PNP		C2DP-40CP	C2DP-S40CP
Diffuse-reflective Energetic 800mm type	2m cable	NPN		C2DP-80N	C2DP-S80N
		PNP		C2DP-80P	C2DP-S80P
	M12 connector	NPN		C2DP-80CN	C2DP-S80CN
		PNP		C2DP-80CP	C2DP-S80CP
Thru-beam	2m cable	NPN		C2TP-2000N	C2TP-S2000N
		PNP		C2TP-2000P	C2TP-S2000P
	M12 connector	NPN		C2TP-2000CN	C2TP-S2000CN
		PNP		C2TP-2000CP	C2TP-S2000CP
BGS	2m cable	NPN		BGS-CP30N	–
		PNP		BGS-CP30P	–
	M12 connector	NPN		BGS-CP30CN	–
		PNP		BGS-CP30CP	–



Metal housing

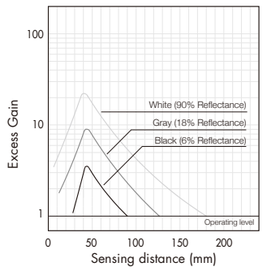
Retro-reflective Without Polarizing fillter	2m cable	NPN		C2RM-350N	C2RM-S350N
		PNP		C2RM-350P	C2RM-S350P
	M12 connector	NPN		C2RM-350CN	C2RM-S350CN
		PNP		C2RM-350CP	C2RM-S350CP
Retro-reflective With Polarizing fillter	2m cable	NPN		C2RM-F400N	C2RM-SF400N
		PNP		C2RM-F400P	C2RM-SF400P
	M12 connector	NPN		C2RM-F400CN	C2RM-SF400CN
		PNP		C2RM-F400CP	C2RM-SF400CP
Diffuse-reflective Focused 110mm type	2m cable	NPN		C2DM-11N	C2DM-S11N
		PNP		C2DM-11P	C2DM-S11P
	M12 connector	NPN		C2DM-11CN	C2DM-S11CN
		PNP		C2DM-11CP	C2DM-S11CP
Diffuse-reflective Energetic 400mm type	2m cable	NPN		C2DM-40N	C2DM-S40N
		PNP		C2DM-40P	C2DM-S40P
	M12 connector	NPN		C2DM-40CN	C2DM-S40CN
		PNP		C2DM-40CP	C2DM-S40CP
Diffuse-reflective Energetic 800mm type	2m cable	NPN		C2DM-80N	C2DM-S80N
		PNP		C2DM-80P	C2DM-S80P
	M12 connector	NPN		C2DM-80CN	C2DM-S80CN
		PNP		C2DM-80CP	C2DM-S80CP
Thru-beam	2m cable	NPN		C2TM-2000N	C2TM-S2000N
		PNP		C2TM-2000P	C2TM-S2000P
	M12 connector	NPN		C2TM-2000CN	C2TM-S2000CN
		PNP		C2TM-2000CP	C2TM-S2000CP
BGS	2m cable	NPN		BGS-CM30N	–
		PNP		BGS-CM30P	–
	M12 connector	NPN		BGS-CM30CN	–
		PNP		BGS-CM30CP	–

EXCESS GAIN

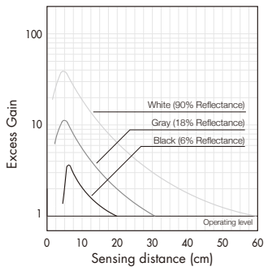
*common between plastic / metal housing

Standard Types

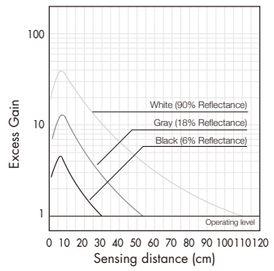
C2D□-11



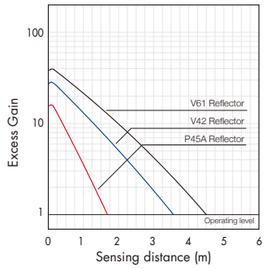
C2D□-40



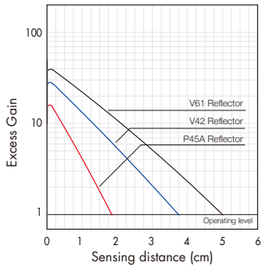
C2D□-80



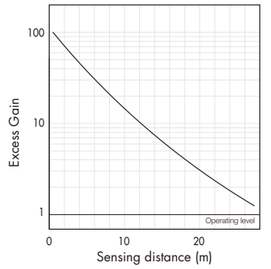
C2R□-350



C2R□-F400

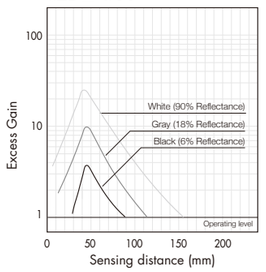


C2T□-2000

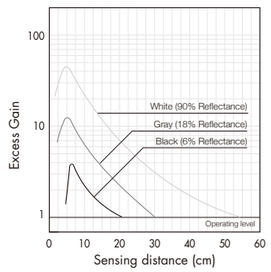


Angle (90 degree)

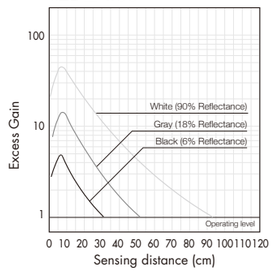
C2D□-S11



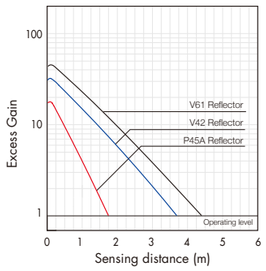
C2D□-S40



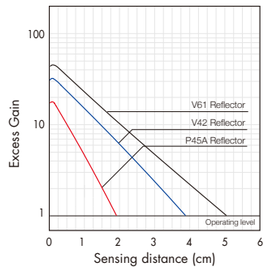
C2D□-S80



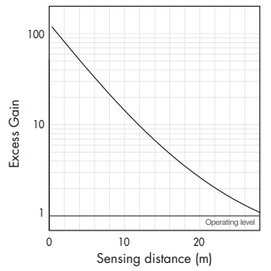
C2R□-S350



C2R□-SF400



C2T□-S2000

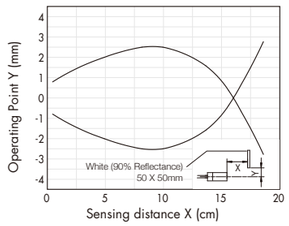


SENSING AREA

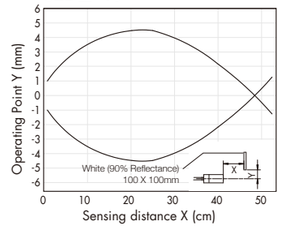
*common between plastic / metal housing

Standard Types

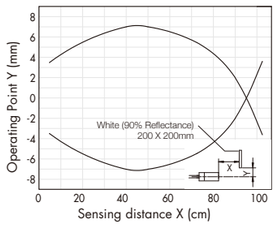
C2D□-11



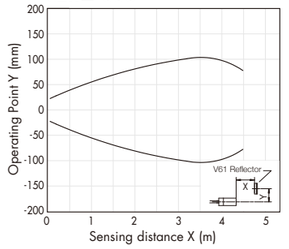
C2D□-40



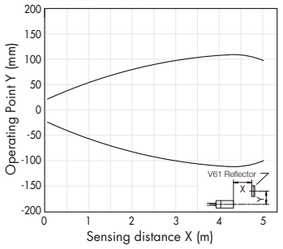
C2D□-80



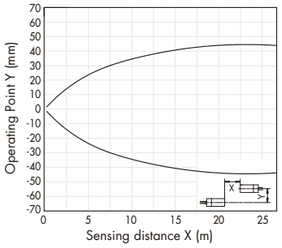
C2R□-350



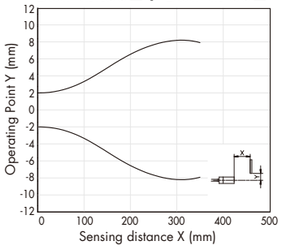
C2R□-F400



C2T□-2000

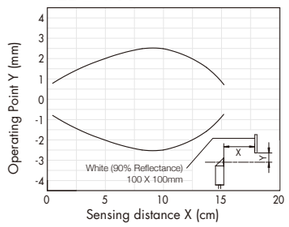


BGS-CM30□ / BGS-CP30□

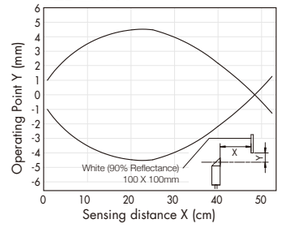


Angle (90 degree)

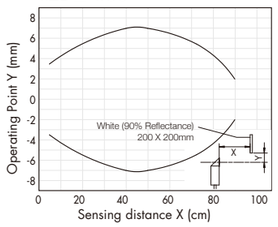
C2D□-S11



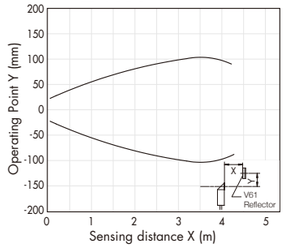
C2D□-S40



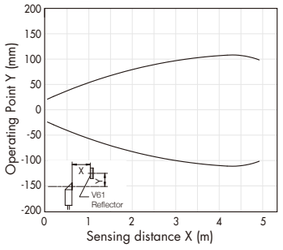
C2D□-S80



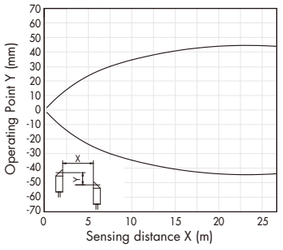
C2R□-S350



C2R□-SF400



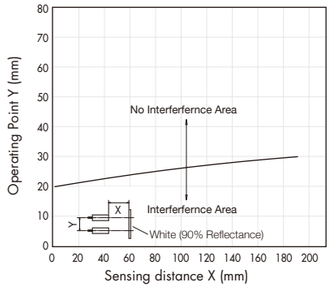
C2T□-S2000



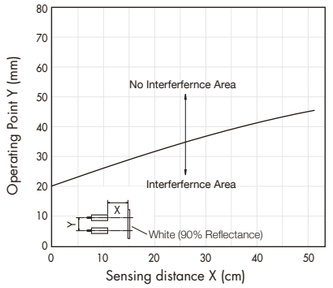
INTERFERENCE AREA *common between plastic / metal housing

Standard Types

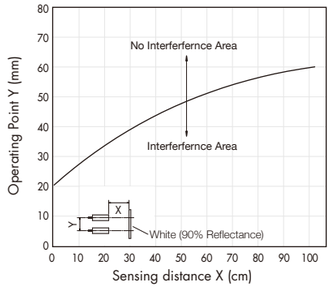
C2D□-11



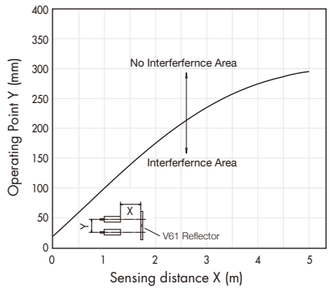
C2D□-40



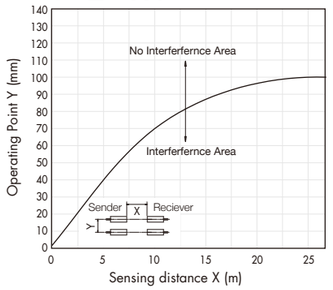
C2D□-80



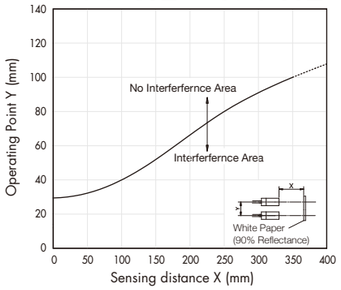
C2R□-350 / C2R□-F400 common



C2T□-2000

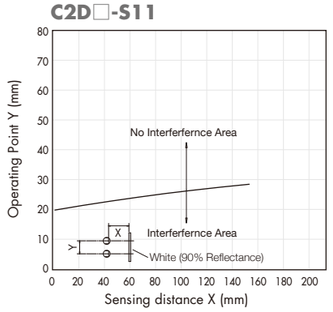


BGS-CM30□ / BGS-CP30□

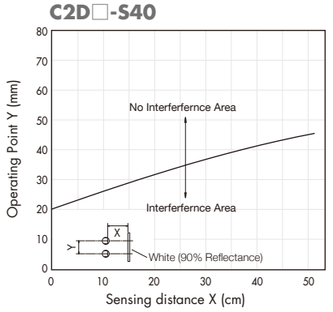


Angle (90 degree)

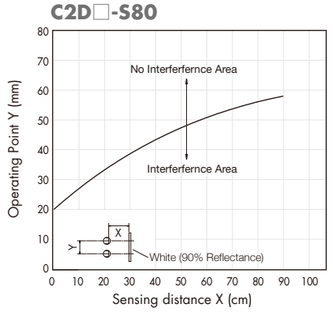
C2D□-S11



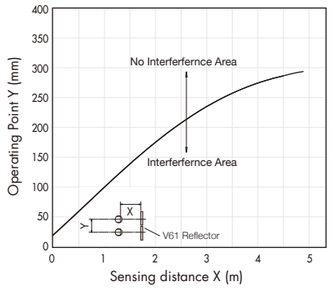
C2D□-S40



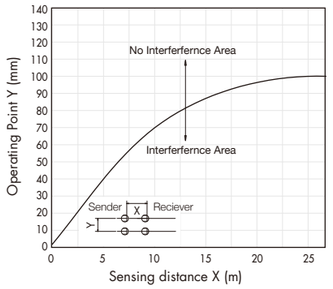
C2D□-S80



C2R□-S350 / C2R□-SF400 common



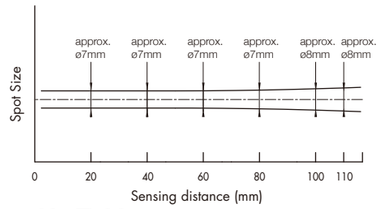
C2T□-S2000



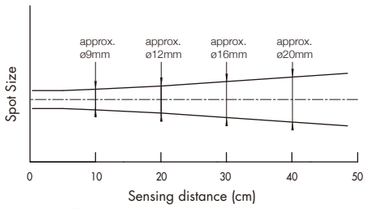
SPOT SIZE *common between plastic / metal housing

Standard Types

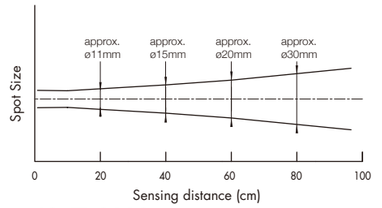
C2D□-11



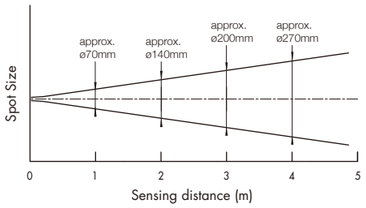
C2D□-40



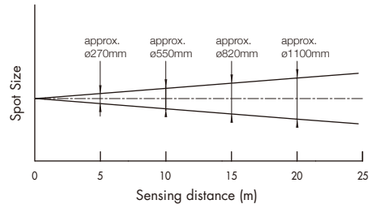
C2D□-80



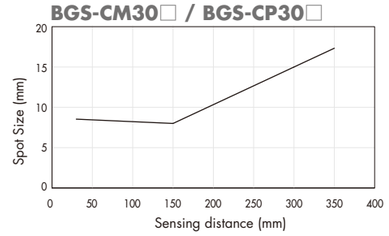
C2R□-350



C2T□-2000

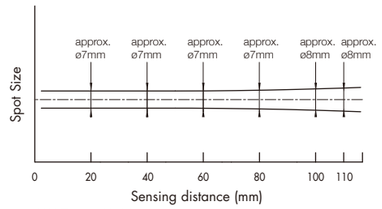


BGS-CM30□ / BGS-CP30□

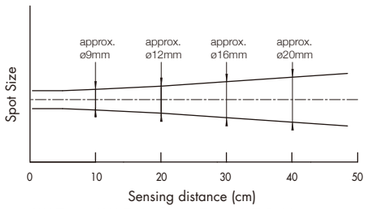


Angle (90 degree)

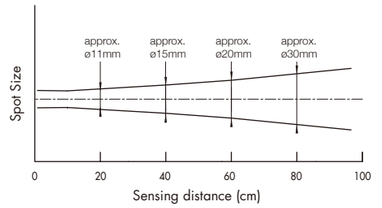
C2D□-S11



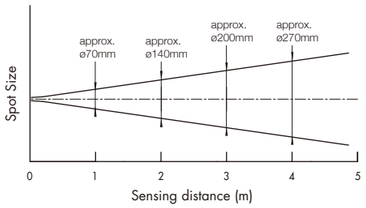
C2D□-S40



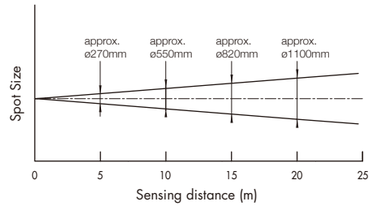
C2D□-S80



C2R□-S350 / C2R□-SF400 common



C2T□-S2000

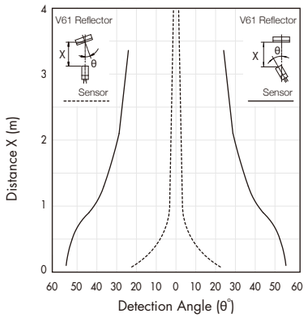


ANGULAR DEVIATION

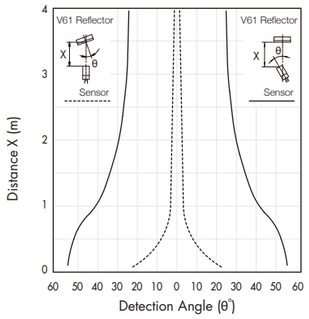
*common between plastic / metal housing

Standard Types

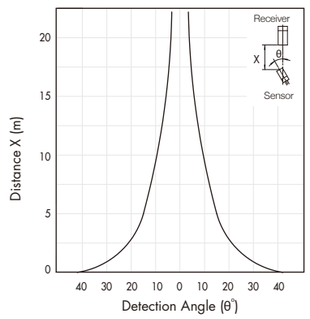
C2R□-350



C2R□-F400

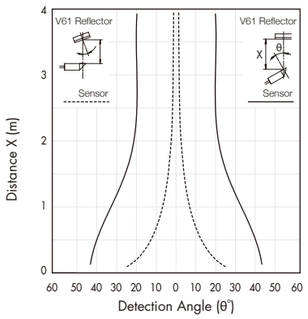


C2T□-2000

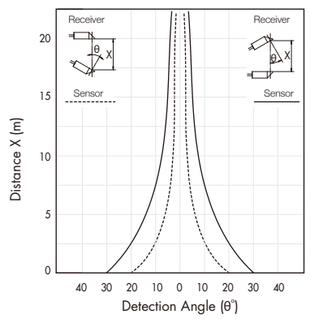


Angle (90 degree)

C2R□-S350 / C2R□-SF400 common



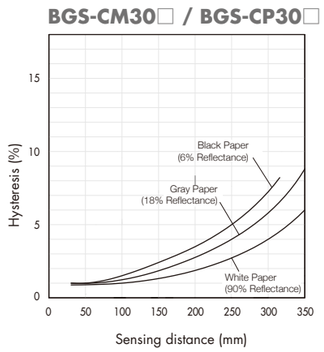
C2T□-S2000



BGS HYSTERESIS

*common among all the BGS types

BGS-CM30□ / BGS-CP30□

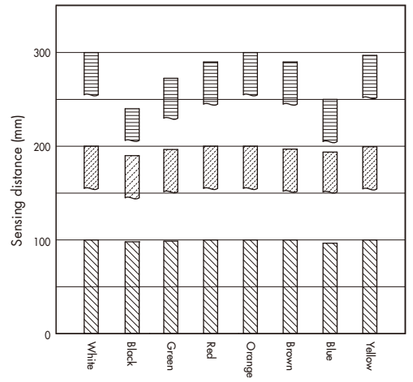


BGS RESPONSE

*common among all the BGS types

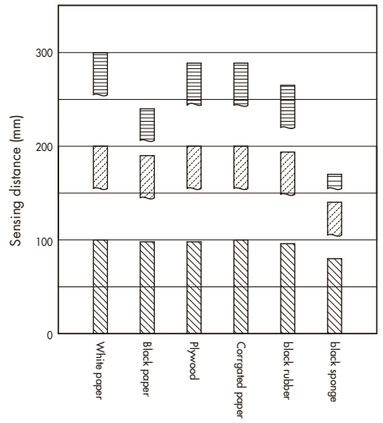
Color response

BGS-CM30□ / BGS-CP30□



Material response

BGS-CM30□ / BGS-CP30□



SPECIFICATIONS

Type		Thru-beam	Retro-reflective		Diffuse-reflective			BGS
			With polarizing filter	Without polarizing filter	110mm type	400mm type	800mm type	
Standard								
Plastic housing	**2m Cable**	**C2TP-2000(N,P)**	**C2RP-F400(N,P)**	**C2RP-350(N,P)**	**C2DP-11(N,P)**	**C2DP-40(N,P)**	**C2DP-80(N,P)**	**BGS-CP30(N,P)**
	M12	**C2TP-2000C(N,P)**	**C2RP-F400C(N,P)**	**C2RP-350C(N,P)**	**C2DP-11C(N,P)**	**C2DP-40C(N,P)**	**C2DP-80C(N,P)**	**BGS-CP30C(N,P)**
Metal housing	**2m Cable**	**C2TM-2000(N,P)**	**C2RM-F400(N,P)**	**C2RM-350(N,P)**	**C2DM-11(N,P)**	**C2DM-40(N,P)**	**C2DM-80(N,P)**	**BGS-CM30(N,P)**
	M12	**C2TM-2000C(N,P)**	**C2RM-F400C(N,P)**	**C2RM-350C(N,P)**	**C2DM-11C(N,P)**	**C2DM-40C(N,P)**	**C2DM-80C(N,P)**	**BGS-CM30C(N,P)**
Angle (90 degree)								
Plastic housing	**2m Cable**	**C2TP-S2000(N,P)**	**C2RP-SF400(N,P)**	**C2RP-S350(N,P)**	**C2DP-S11(N,P)**	**C2DP-S40(N,P)**	**C2DP-S80(N,P)**	–
	M12	**C2TP-S2000C(N,P)**	**C2RP-SF400C(N,P)**	**C2RP-S350C(N,P)**	**C2DP-S11C(N,P)**	**C2DP-S40C(N,P)**	**C2DP-S80C(N,P)**	–
Metal housing	**2m Cable**	**C2TM-S2000(N,P)**	**C2RM-SF400(N,P)**	**C2RM-S350(N,P)**	**C2DM-S11(N,P)**	**C2DM-S40(N,P)**	**C2DM-S80(N,P)**	–
	M12	**C2TM-S2000C(N,P)**	**C2RM-SF400C(N,P)**	**C2RM-S350C(N,P)**	**C2DM-S11C(N,P)**	**C2DM-S40C(N,P)**	**C2DM-S80C(N,P)**	–
Sensing distance		20m	0.01 ~ 4m (V-61)	0.01 ~ 3.5m (V-61)	11cm *1	40cm *1	80cm *1	300mm *1
Spot size		⌀1100 mm / 20m	⌀270 mm / 4m	⌀240 mm / 3.5m	⌀8 mm / 11cm	⌀20 mm / 40cm	⌀30 mm / 80cm	⌀15 mm / 300mm
Light source		Red LED		IR LED	Red LED			
Supply voltage		DC10 ~ 30V including ripple (P-P) 10%						
Power consumption		Emitter : 20mA Max Receiver : 15mA Max	20mA Max					35mA Max
Hysteresis		-			10% Max			
Response time		0.5ms Max						1ms Max
Control output		NPN/PNP Open Collector 100mA Max / DC30V Max (Residual voltage Max 1.8V / 100mA Max)						
Operation mode		Light ON / Dark ON selectable by control wires						
Sensitivity adjustment		1 turn pot.						4 turn pot.
LED indicator		Output indicator (Orange LED) / Stability indicator (Green LED)						
Environmental illuminance		Sunlight : 10,000 lux, Incandescent lamp : 3,000 lux Max						
Vibration resistance		10 ~ 55Hz amplitude 1.5mm X-Y-Z each 2 hours						
Shock resistance		500m/S^2 (50G) X-Y-Z each 3 times						
Operating / Storage temperature		Operating temperature : — 25 ~ +55 °C (no freezing) / Storage temperature : — 30 ~ +70 °C						
Operating / Storage humidity		Operating humidity : 35 ~ 85%RH / Storage humidity : 35 ~ 95%RH						
Protection / Material		IEC IP67(common to any type) Plastic housing : PBT (glass included) / Metal housing : BSBM, Front Cover , Lens : PMMA						

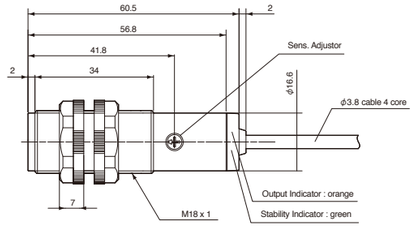
*1 White Paper 90%

DIMENSIONS (mm)

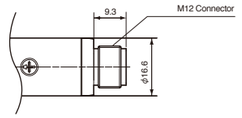
Plastic housing

Standard

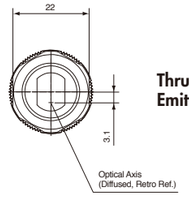
Cable type



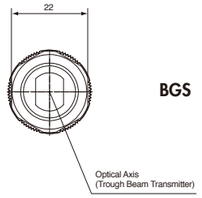
M12 Connector type



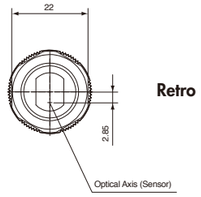
Diffuse-reflective
(110,400,800mm Type)
Thru-beam reciever



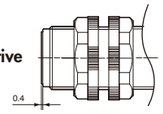
Thru-beam Emitter



BGS

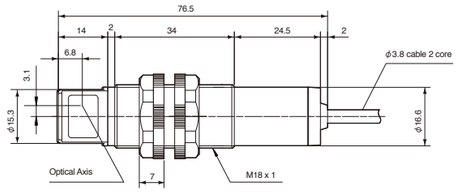


Retro reflective

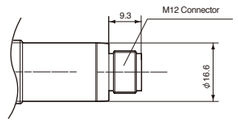


Angle (90 degree)

Cable type

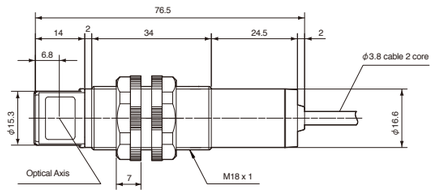


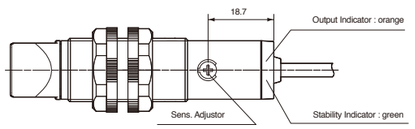
M12 Connector type



Diffuse-reflective
Thru-beam reciever

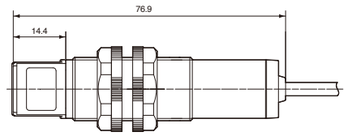
Thru-beam Emitter

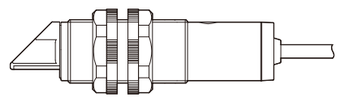




Top view

Retro reflective



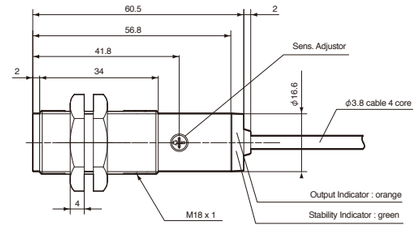


Side view

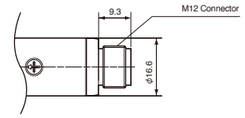
Metal housing

Standard

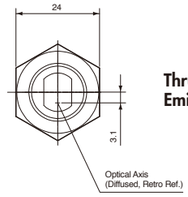
Cable type



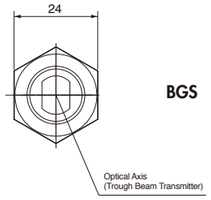
M12 Connector type



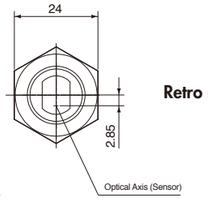
Diffuse-reflective
(110,400,800mm Type)
Thru-beam reciever



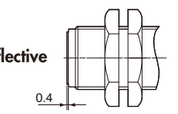
Thru-beam Emitter



BGS

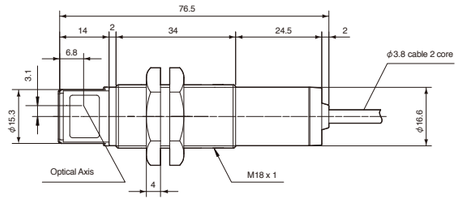


Retro reflective

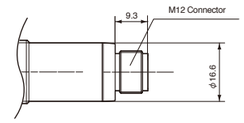


Angle (90 degree)

Cable type

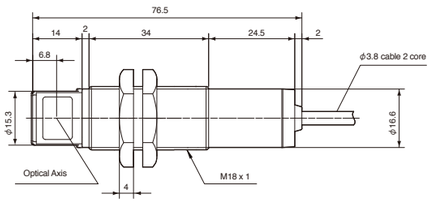


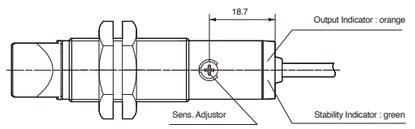
M12 Connector type



Diffuse-reflective
Thru-beam reciever

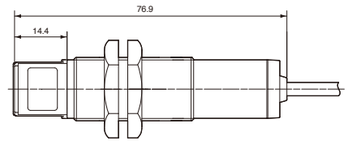
Thru-beam Emitter

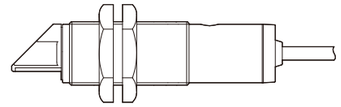




Top view

Retro reflective





Side view