

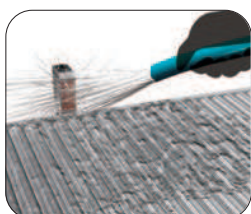
Stainless steel housing type

Z-M / BGS-ZM series



- IP69K: Highly water resistant
- Tough structure for food processing line needs washing with high temperature and high pressure water.
- Achieves long sensing distance.
- 8 turn sensitivity adjustment potentiometer (BGS type)

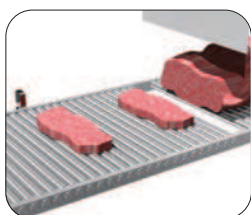
Applications



For production line needs washing



For production line with detergent splash



For meat and fresh food processing line

Product Types

Cable / QD	Output	Diffuse
Distance		0 - 800mm *1
Cable	NPN	ZD-M80N
	PNP	ZD-M80P
M8-QD	NPN	ZD-M80CN
	PNP	ZD-M80CP

Cable / QD	Output	Retro reflective
Distance		0.01 - 5.5m *2
Cable	NPN	ZR-M550N
	PNP	ZR-M550P
M8-QD	NPN	ZR-M550CN
	PNP	ZR-M550CP

Cable / QD	Output	Through beam
Distance		30m
Cable	NPN	ZT-M3000N
	PNP	ZT-M3000P
M8-QD	NPN	ZT-M3000CN
	PNP	ZT-M3000CP

Cable / QD	Output	BGS	
Distance		10 - 100mm *3	10 - 300mm *3
Cable	NPN	BGS-ZM10N	BGS-ZM30N
	PNP	BGS-ZM10P	BGS-ZM30P
M8-QD	NPN	BGS-ZM10CN	BGS-ZM30CN
	PNP	BGS-ZM10CP	BGS-ZM30CP

* 1 With 200mm x 200mm white paper

* 2 With V-61

* 3 With 100mm x 100mm white paper

C

C2

E

J

J2

J3

V

V2

V3
V4

SR-Q

S

Z
BGS-Z

Z2

Z3

ZM

K

BGS-2S

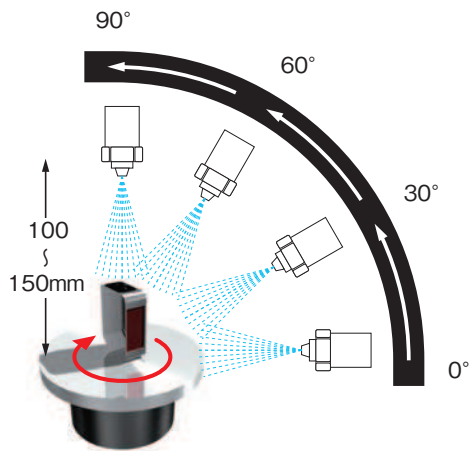
Y

DM-18T

Accessory

IP69K protection

IP69K is an rating of German standard DIN 40050-9 extends the IEC 60529 rating system for high-pressure, high-temperature wash-down applications.



Test condition:

A sensor on the turn table that rotates 5 times per minutes.

Pressure: 80~100bar

Flow rate: 14~16 litre/minute

Temperature: +80°C / -5°C

Distance from nozzle: 100~150mm

Nozzle angle: 0°, 30°, 60°, 90°

Testing period: 30sec per every angle

* IP69K doesn't mean to guarantee that the sensor works under the test condition above. The sensor won't work correctly when the lens gets wet and the light is refracted.

High-pressure, high-temperature, detergent wash-down resistant Tough structure

Top cover : Poly Ether Sulphone (PES)

Oil, detergent, high-temperature resistant.
Top level protection in transparent plastic.

Housing : SUS316L

Highly corrosion-resistant. Detergent,
bactericide resistant.

Lens PPSU for thru-beam, diffuse type

Chemical, heat resistant. Very stable material.

Lens PMMA with SiO coating for retro reflective type

Oil, scratch resistant.
Water repellent and anti-static.

SW, Pot: Poly Ether Etherketone (PEEK)

Shock, scratch, stress, heat resistant.
Highly resistant to chemical except concentrated sulfuric acid.

Printing by laser marking

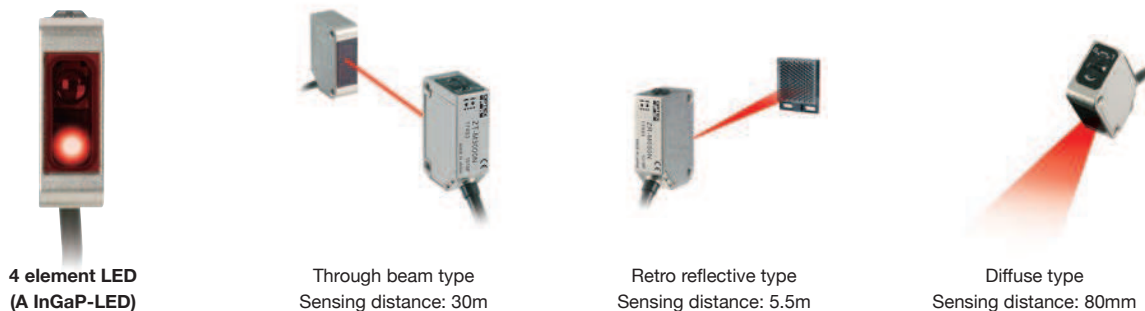
There is no label attached so you don't
have to care about interfusion into foods
of the label unsticked.

Gasket (FKM), cable (PVC)

Chemical, oil resistant and flexible.

Longest sensing distance in the class

High brightness LED by 4 element enables longest sensing distance in the class.



4 element LED
(A InGaP-LED)

Through beam type
Sensing distance: 30m

Retro reflective type
Sensing distance: 5.5m

Diffuse type
Sensing distance: 80mm

8 turn sensitivity adjustment (BGS Type)

8 turn sensitivity adjustment potentiometer helps
easy mounting and easy position adjustment.

8 turn potentiometer



C

C2

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J2

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SR-Q

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Z3

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BGS-2S

Y

DM-18T

Accessory

Specifications

Model		Through beam	Retro reflective	Diffuse	BGS	
Cable type	NPN	ZT-M3000N	ZR-M550N	ZD-M80N	BGS-ZM30N	BGS-ZM10N
	PNP	ZT-M3000P	ZR-M550P	ZD-M80P	BGS-ZM30P	BGS-ZM10P
M8	NPN	ZT-M3000CN4	ZR-M550CN4	ZD-M80CN4	BGS-ZM30CN4	BGS-ZM10CN4
connector type	PNP	ZT-M3000CP4	ZR-M550CP4	ZD-M80CP4	BGS-ZM30CP4	BGS-ZM10CP4
M8 (3-pin)	NPN	ZT-M3000CN3	ZR-M550CN3	ZD-M80CN3	BGS-ZM30CN3	BGS-ZM10CN3
connector type	PNP	ZT-M3000CP3	ZR-M550CP3	ZD-M80CP3	BGS-ZM30CP3	BGS-ZM10CP3
M12	NPN	ZT-M3000N-M12	ZR-M550N-M12	ZD-M80N-M12	BGS-ZM30N-M12	BGS-ZM10N-M12
connector type	PNP	ZT-M3000P-M12	ZR-M550P-M12	ZD-M80P-M12	BGS-ZM30P-M12	BGS-ZM10P-M12
Supply voltage		DC10~30V Inc. 10% ripple				
Power consumption		Emitter : 15mA max.		28mA max.		
		Receiver : 15mA max.				
Sensing distance		30m	0.01 - 5.5m (*1)	0 - 800mm (*2)	10 - 300mm (*3)	10 - 100mm (*3)
Adjustable distance		-			20 - 300mm (*3)	20 - 100mm (*3)
Spot size		φ1200mm at 30m	φ300mm at 5.5m	φ40mm at 800mm	φ19mm at 250mm	φ6mm at 80mm
Response time		500μs				
Hysteresis		-		20% Max	5% Max	3% Max
Ambient temp		-25 to +55 degree C				
Ambient humidity		35 to 85%				
Vibration resistance		10~55Hz double amplitude1.5mm X,Y,Z 2hours				
Shock resistance		100G (1000m/s2) X,Y,Z 3times				
Protection category		IEC :IP67 DIN :IP69K	IEC :IP67 DIN :IP69K Reflector is IP67	IEC :IP67 DIN :IP69K		
Light source		4 element red LED				
Indicator		Red LED: output, Green LED: stable, Emitter of thru-beam type doesn't have in dicator			Orange LED: output, Green LED: stable	
Sensitivity adjustment		1 turn potentio meter			8 turn potentiometer	
Operation mode		Light ON/Dark ON selectable by switch				
Control output		NPN (PNP) Open collector, Max.100mA/DC30V				
Cable		Cable length: 2m, φ4				
Conformity		CE Feilen Level 3				
Environmental illuminance		Sunlight: 10,000 lux max. Incandescent lamp: 3,000 lux max.				
Material		Housing: SUS316L	Housing: SUS316L	Housing: SUS316L		
		Top cover: PES	Top cover: PES	Top cover: PES		
		Lens: PPSU	Lens: PMMA	Lens: PPSU		
		Switch, Pot: PEEK	Switch, Pot: PEEK	Switch, Pot: PEEK		
		Cable: PVC	Cable: PVC	Cable: PVC		
		Gasket: FKM	Gasket: FKM	Gasket: FKM		
Accessory		Mounting bracket:BEF-W100B	Mounting bracket:BEF-W100B Reflector: V-61	Mounting bracket:BEF-W100B		

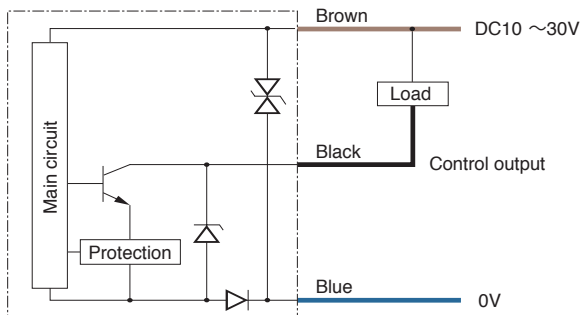
(*1) With V-61

(*2) With 200mm x 200mm white paper

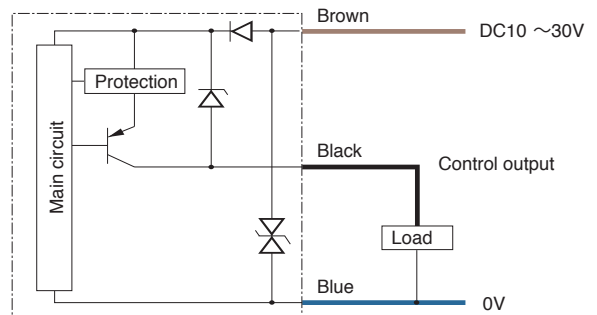
(*3) With 100mm x 100mm white paper

Circuit diagram

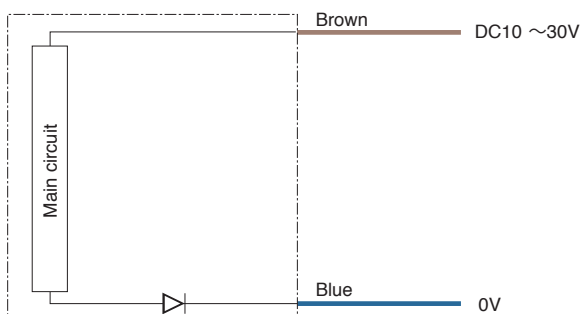
NPN output



PNP output



Through beam emitter

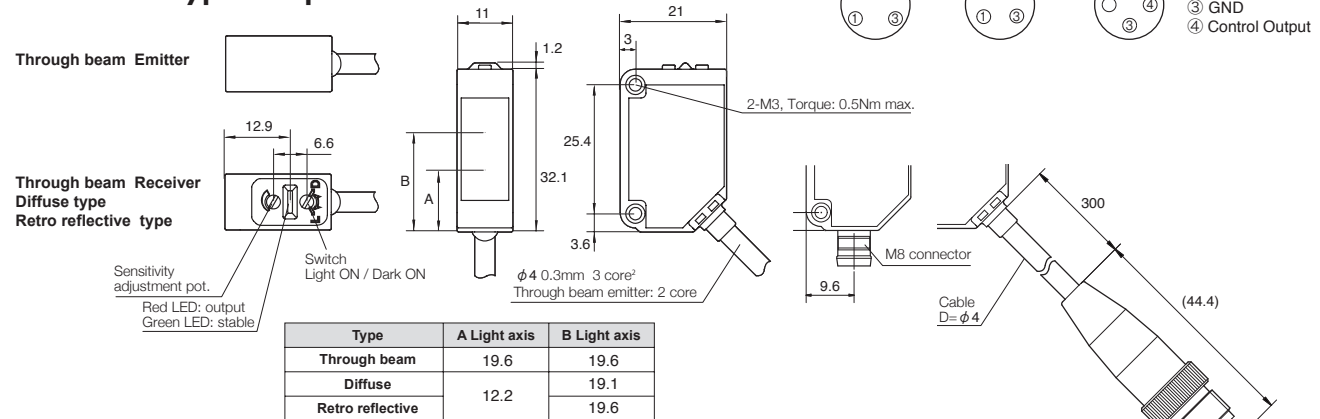


Notes

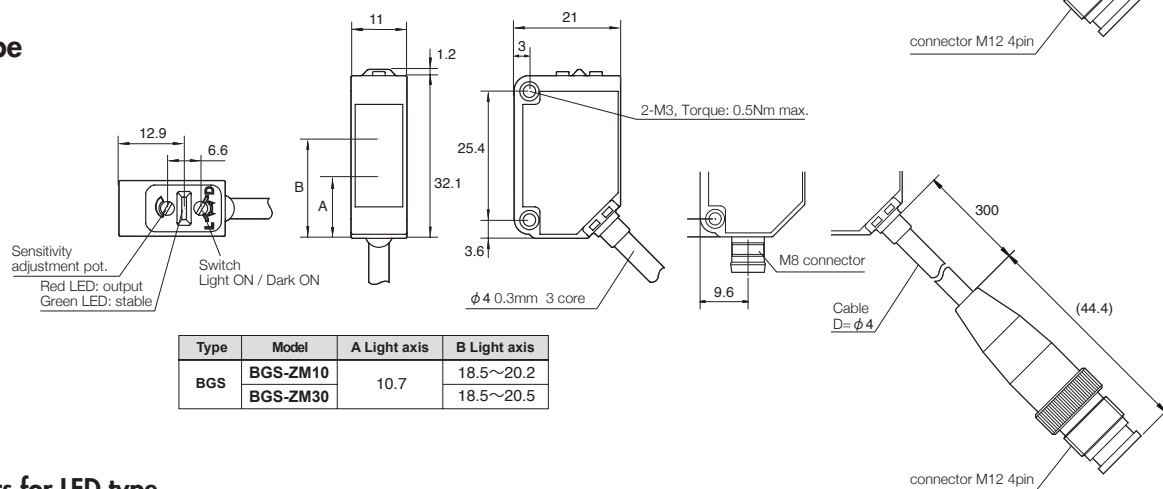
- When using switching regulator for power supply, please connect frame ground to earth ground.
- Wiring close to high voltage or power line to motors may cause malfunction because of inductive noise. Please wire separated from those lines.
- Please wait around 100msec before use sensor output after power up.

Dimensions

General use type except BGS



BGS type



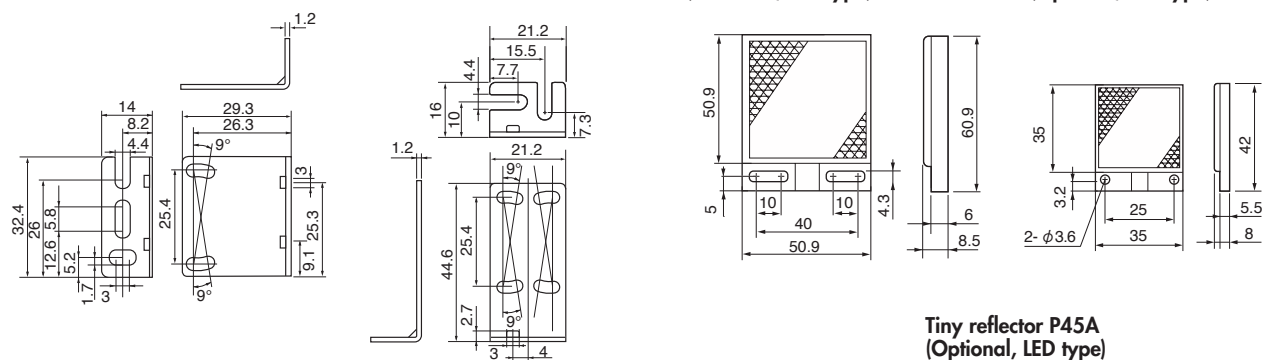
Reflectors for LED type

Standard bracket BEF-W100-A
Accessory for M8 QD type sensors

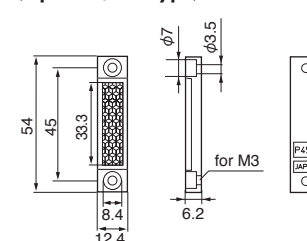
Standard bracket BEF-W100-B
Accessory for cabled type sensors

Standard reflector V-61
(Standard, LED type)

Small reflector V-42
(Optional, LED type)



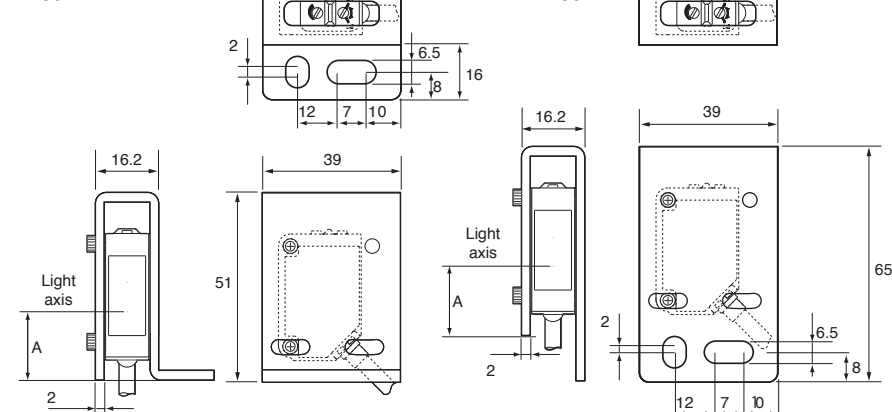
Tiny reflector P45A
(Optional, LED type)



Protective mounting bracket

LK-S01

LK-S02



Type	A Light axis
Through beam	26.6
Diffuse	19.2
Retro reflective	17.7

(Unit : mm)

Options

Standard reflector V-61
(Except ZR-QX200)



Small reflector V-42



Tiny reflector P45A



Protective mounting brackets
LK-S01



LK-S02



JCN-S : M8 Straight type



JCN-S : 2 meter
JCN-5S : 5 meter
JCN-10S : 10 meter

JCN-L : L-shape M8 type

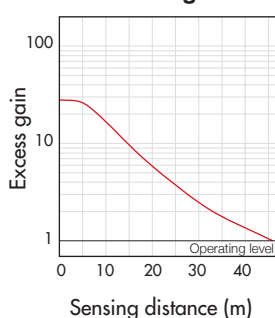


JCN-L : 2 meter
JCN-5L : 5 meter
JCN-10L : 10 meter

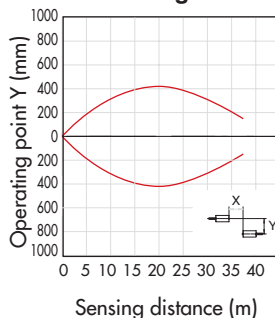
Reference (typical)

ZT-
M3000N

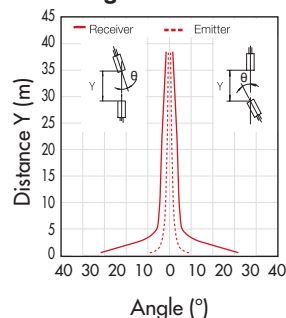
Excess gain



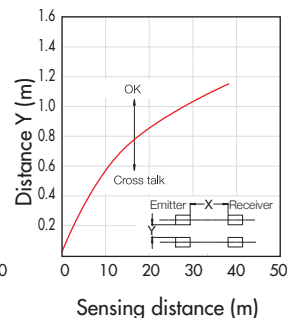
Sensing area



Angular deviation

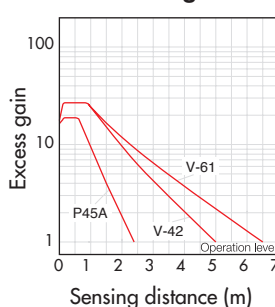


Interference area

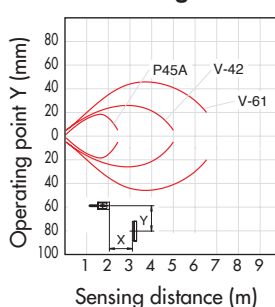


ZR-
M550N

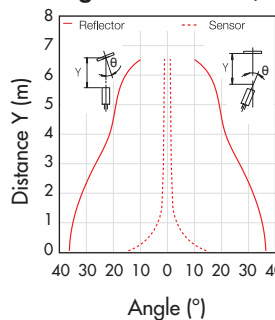
Excess gain



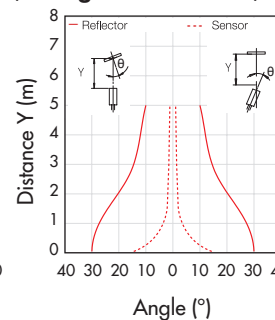
Sensing area



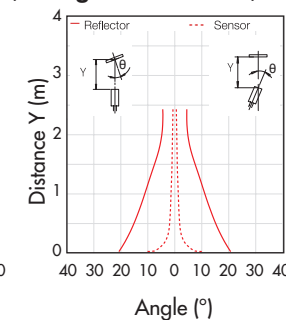
Angular deviation (V-61)



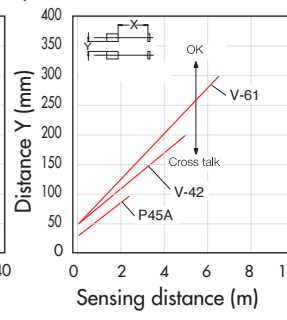
Angular deviation (V-42)



Angular deviation (P45A)

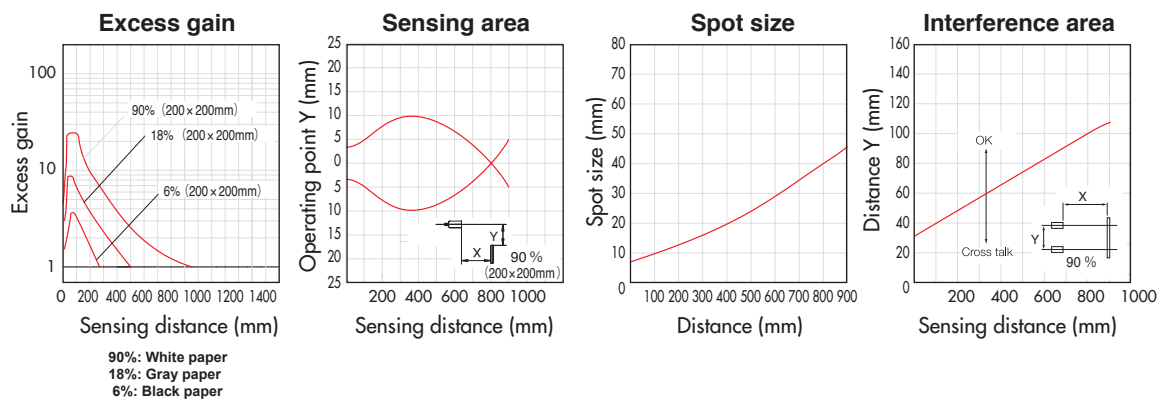


Interference area

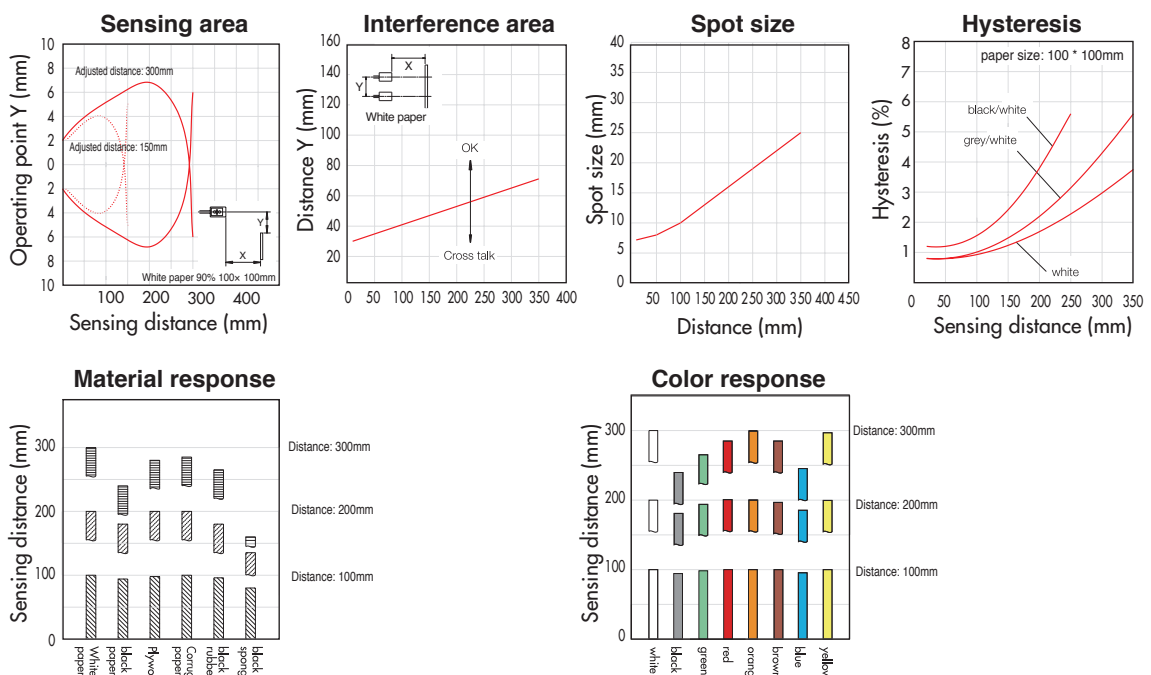


Reference (typical)

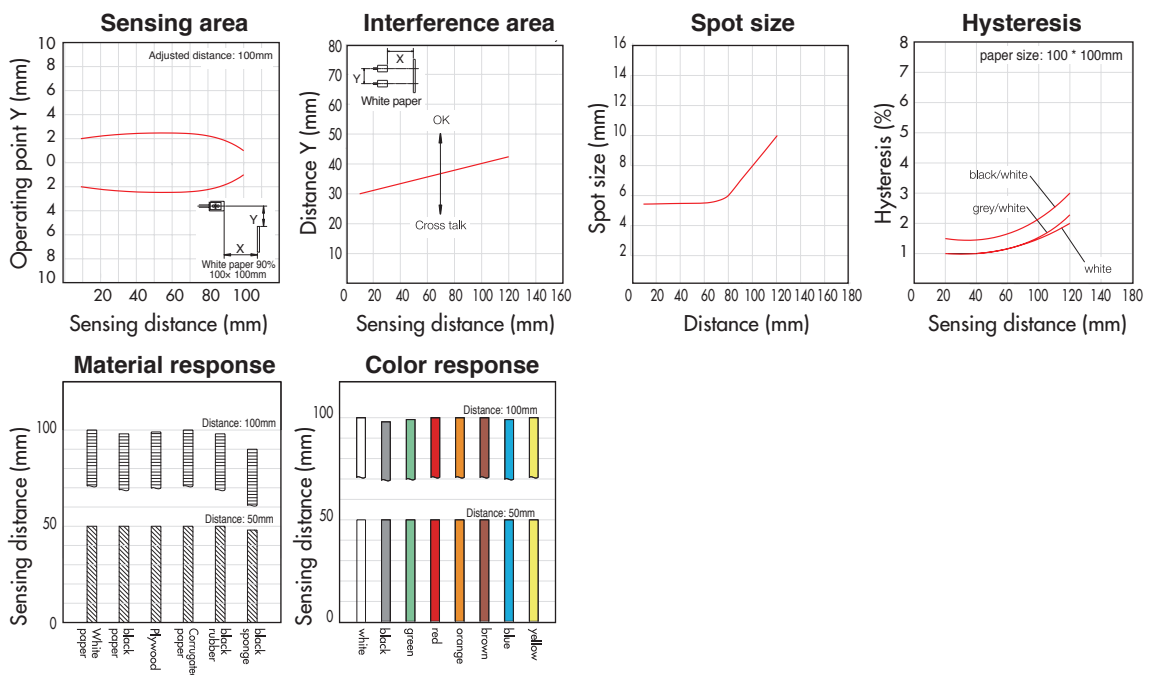
ZD-M80N



BGS-ZM30N



BGS-ZM10N



C

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V2

V3

V4

SR-Q

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BGS-Z

Z2

Z3

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BGS-2S

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DM-18T

Accessory