

Specifications

Supply Voltage

10 V DC to 30 V DC (10% maximum ripple within specified limits) at less than 16 mA, exclusive of load

Sensing Beam

Visible red LED, 640 nm

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Output Configuration

Solid-state complementary: NPN or PNP (current sinking or sourcing), or bipolar (both sinking and sourcing) depending on model;
Rating: 100 mA total output current

Off-state leakage current: < 50 µA at 30 V dc

ON-state saturation voltage: < 1.5 V at 10 mA; < 3.0 V at 100 mA

Protected against false pulse on power-up and continuous overload or short circuit of outputs

Required Overcurrent Protection



WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Output Response

2.8 millisecond ON/OFF

Note: 200 millisecond delay on power-up; outputs do not conduct during this time

Adjustments

Five-turn adjustment screw sets cutoff distance between min. and max. positions, clutched at both ends of travel

Repeatability

250 µs

Indicators

2 LED indicators on sensor top:

Green solid: Power on

Amber solid: Light sensed

Amber flashing: Marginal sensing condition

Construction

ABS housing,rylic lens cover; PVC cable, nickel-plated brass connector, etal adjustment pot

Environmental Rating

IEC IP67; NEMA 6; UL Type 1

Connections

2 m (6.5 ft) 4-wire PVC cable, 9 m (30 ft) PVC cable, or 4-pin Pico-style or Euro-style 150 mm (6 in) pigtail QD, depending on model

Operating Conditions

Relative Humidity: 95% relative humidity at 50 °C (non-condensing)

Temperature: -20 °C to 55 °C (-4 °F to 131 °F)

Application Notes

For mirror-like objects, minimize the sensor to object mounting distance and tilt the sensor so reflected light is directed away from the sensor when the object is present.

Certifications



Performance Curves

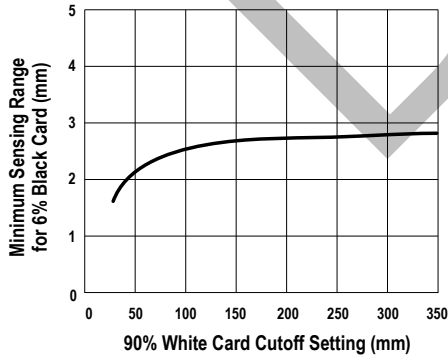


Figure 5. Minimum Sensing Range (Dead Zone) vs. 90% White Cutoff Setting

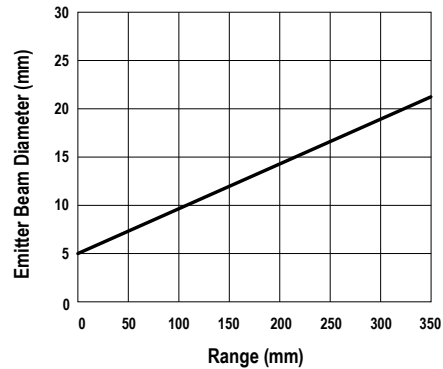
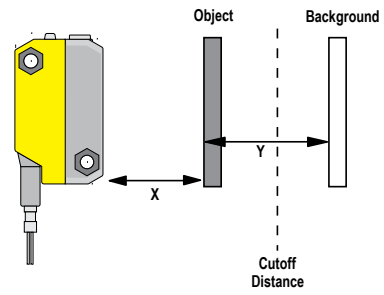
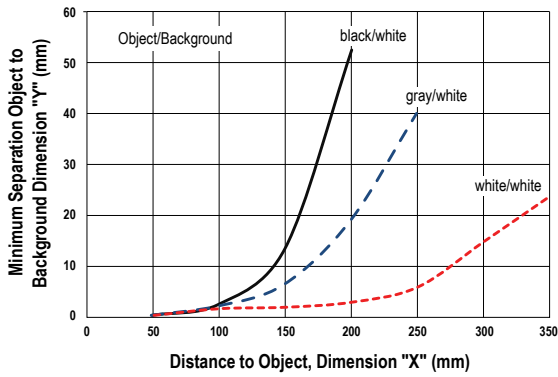


Figure 6. Typical Emitter Spot Diameter vs. Distance



X: Distance to Object (mm)

Y: Minimum Separation Between Object and Background (mm)

Figure 7. Minimum Separation Distance Between Object and Background: Background Suppression Mode

Excess Gain Curves

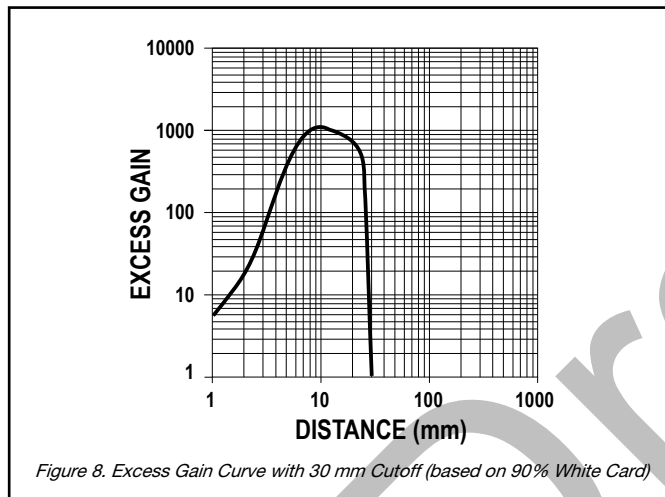


Figure 8. Excess Gain Curve with 30 mm Cutoff (based on 90% White Card)

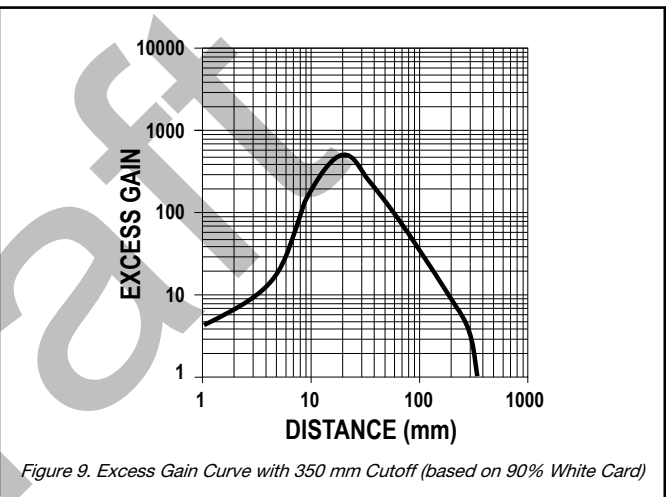
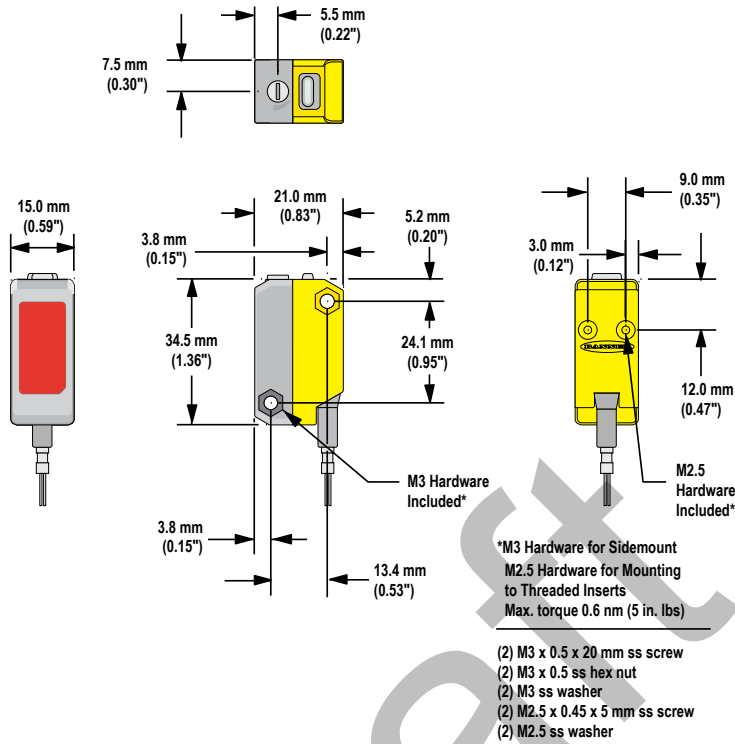


Figure 9. Excess Gain Curve with 350 mm Cutoff (based on 90% White Card)

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise.



Accessories

Quick-Disconnect (QD) Cordsets

4-Pin Snap-on M8/Pico-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
PKG4-2	2.03 m (6.66 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
4-Pin Threaded M12/Euro-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	1.83 m (6 ft)	Straight		<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			

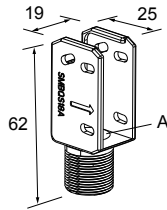
Mounting Brackets

All measurements are listed in millimeters, unless noted otherwise.

SMBQS18A

- Wrap-around protection bracket
- Die-cast bracket
- Base fits 18 mm threaded hole
- Metal hex nut, lock washer and grommet included
- Mounting holes specially designed for QS18AF sensors

Hole size: A = \varnothing 15.3

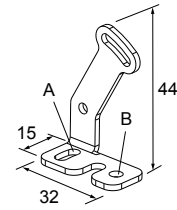


SMBQS18AF

- Right-angle mounting bracket
- 14-ga. 304 stainless steel

Hole center spacing: A to B = 20.3

Hole size: A = 4.3×9.4 , B = \varnothing 4.3



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