Specifications

Required Fiber **Optic** Cable
PI or PB Series plastic fibers

Sensing Beam
Visible red, 680 nm

Supply Voltage and Current
10 V dc to 30 V dc at 25 mA (exclusive of load current)

Supply **Protection** Circuitry
Protected against reverse polarity and transient voltages

Output **Configuration**
Complementary: one normally open (N.O.) and the other normally closed (N.C.); N.C. output may be wired as diagnostic alarm output by reversing power supply connections[3] (see Wiring Diagrams); Outputs are NPN (Sinking) or PNP (Sourcing), depending on model
Diagnostic alarm output energizes whenever excess gain falls to between 1× and 1.5× in the light condition; this output corresponds to flashing amber indicator LED

Output **Rating**
150 mA maximum (each output); the total load may not exceed 150 mA
Off-state leakage current: < 5 microamps at 30 V dc
On-state saturation voltage: < 1 V at 10 mA dc; < 1.5 V at 150 mA dc

Output **Protection** Circuitry
Protected against false pulse on power-up (false pulse protection circuit causes a 0.1 second delay on power-up); short-circuit protected

Output Response Time
500 microseconds "on" and "off"

Repeatability
160 microseconds; response time and repeatability are independent of signal strength

Adjustments
The sensitivity control is located on top of the module; it is a 15-turn slotted brass screw, clutched at both ends of travel

Indicators
Two LEDs: Green and Amber
Green steady = power to sensor is "on"
Green flashing = output is overloaded
Amber steady = normally open output is conducting
Amber flashing = marginal excess gain (1× to 1.5×) in light condition = alarm output "on"

Construction
Black ABS flame retardant housing with acrylic cover; Stainless steel M3 × 0.5 hardware for use with ABS mounting bracket (supplied)

Environmental **Rating**
IEC IP54; NEMA 2

Connections
2 m (6-1/2 ft) or 9 m (30 ft) attached cable, or 4-pin pico-style quick disconnect fitting; Cables for QD models are purchased separately

Operating Conditions
–20 °C to +55 °C (–4 °F to +131°F)
90% at +50 °C maximum relative humidity (non-condensing)

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

Certifications

Dimensions

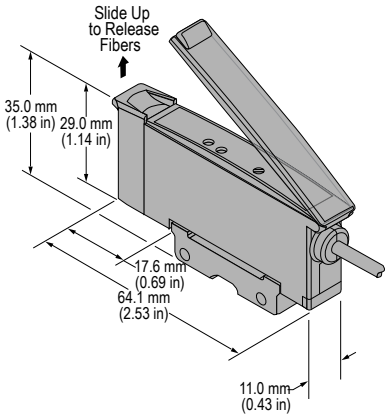


Figure 1. Cabled Models

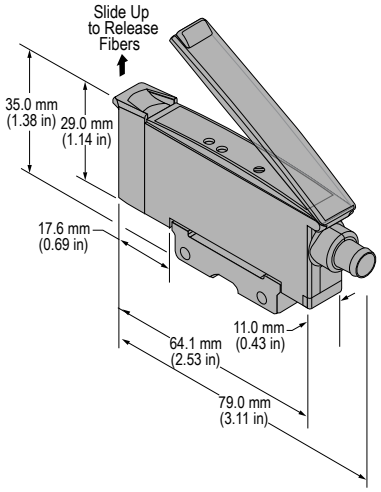


Figure 2. QD Models

[3] U.S. Patent #5087838

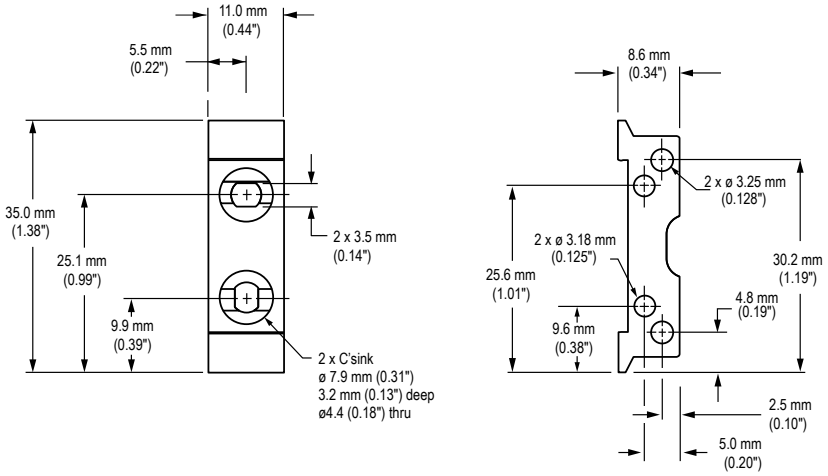
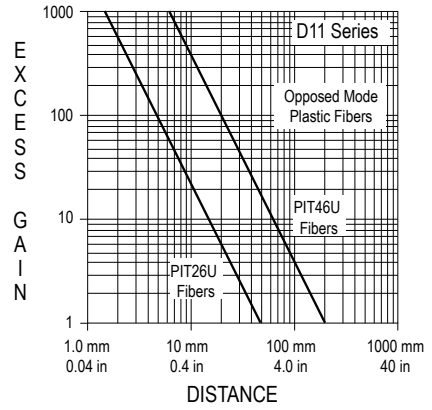


Figure 3. Mounting Bracket

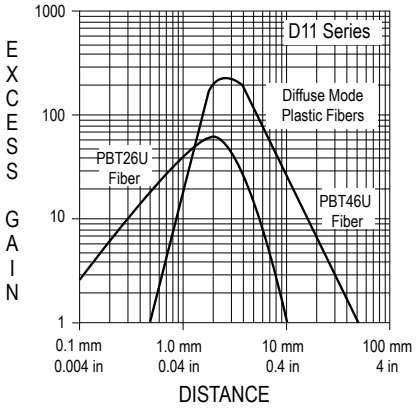
Performance Curves

Diffuse mode performance based on 90% reflectance white test card.

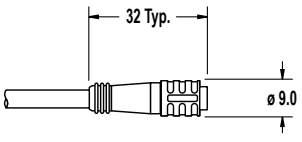
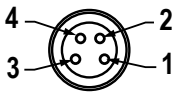
Opposed Mode



Diffuse Mode



Accessories

4-Pin Snap-on M8/Pico-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
PKG4-2	2 m (6.56 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black
PKW4Z-2	2 m (6.56 ft)	Right-Angle