


## Datasheet

Miniature self-contained DC photoelectric sensor

	<ul style="list-style-type: none"> <li>• Self-contained DC sensor in a miniature right-angle housing; only 11 mm (0.43 in) thick</li> <li>• Epoxy-encapsulated circuitry; IP54 (NEMA5) construction; hermetically-sealed optics</li> <li>• 1.8 m (70 in) opposed range or 0.5 m (20 in) diffuse range</li> <li>• Diffuse models have sensitivity adjustment</li> <li>• Choose models for light operate (LO) or dark operate (DO); choose either NPN (sinking) or PNP (sourcing) output models</li> </ul>
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**WARNING:**



- **Do not use this device for personnel protection**
- Using this device for personnel protection could result in serious injury or death.
- This device does not include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A device failure or malfunction can cause either an energized (on) or de-energized (off) output condition.

## Models

**NOTE:** Models with a quick disconnect require a mating cordset.

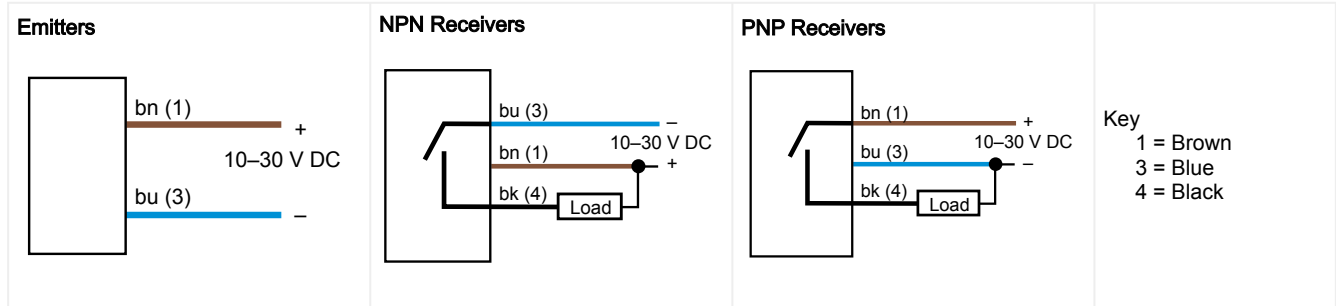
### Q10 Opposed Mode Emitter (E) and Receiver (R)

Models	Range	Cable	Supply Voltage	NPN/ PNP	LO/ DO	
Q106E	1.8 m (70 in)	2 m (6.5 in)	10 V DC to 30 V DC	-	-	
Q106EQ		3-Pin integral quick-disconnect connector				
Q10AN6R		2 m (6.5 in)		NPN	LO	
Q10AN6RQ		3-Pin integral quick-disconnect connector			DO	
Q10RN6R		2 m (6.5 in)				PNP
Q10RN6RQ		3-Pin integral quick-disconnect connector			DO	
Q10AP6R		2 m (6.5 in)		PNP		
Q10AP6RQ		3-Pin integral quick-disconnect connector			DO	
Q10RP6R		2 m (6.5 in)				DO
Q10RP6RQ		3-Pin integral quick-disconnect connector				

### Q10 Diffuse Mode

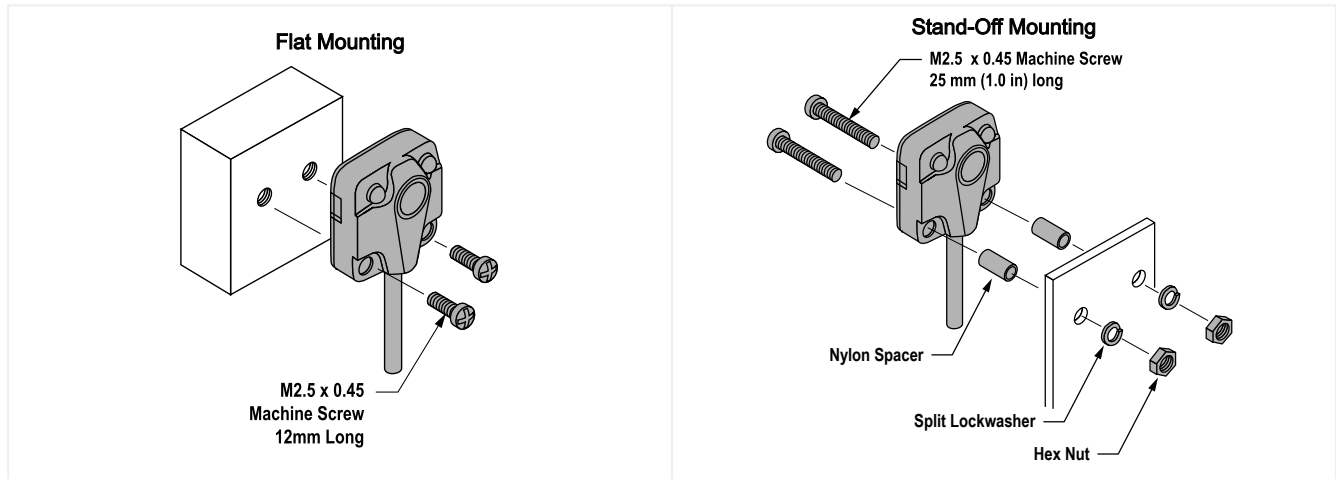
Models	Range	Cable	Supply Voltage	NPN/ PNP	LO/ DO	
Q10AN6D	0.5 m (20 in)	2 m (6.5 in)	10 V DC to 30 V DC	NPN	LO	
Q10AN6DQ		3-Pin integral quick-disconnect connector			DO	
Q10RN6D		2 m (6.5 in)				PNP
Q10RN6DQ		3-Pin integral quick-disconnect connector			DO	
Q10AP6D		2 m (6.5 in)		PNP		
Q10AP6DQ		3-Pin integral quick-disconnect connector			DO	
Q10RP6D		2 m (6.5 in)				DO
Q10RP6DQ		3-Pin integral quick-disconnect connector				

## Wiring Diagrams



Quick disconnect wiring diagrams are functionally identical.

## Mounting Specifications



## Specifications

### Sensing Beam

Infrared, 880 nm

### Supply Voltage and Current

10 V dc to 30 V dc (10% maximum ripple)

Emitter or receiver: 15 mA

Diffuse models: 20 mA (exclusive of load)

### Supply Protection Circuitry

Protected against reverse polarity

### Output Configuration

SPST solid-state dc switch

Choose NPN (current sinking) or PNP (current sourcing) models

Choose light operate or dark operate models

### Output Rating

150 mA maximum

Off-state leakage current: < 10 microamps at 30 V dc

On-state saturation voltage: < 0.5 V at 10 mA dc; < 1.5 V at 150 mA dc

### Output Protection Circuitry

Protected against output short-circuit, continuous overload, and false pulse on power-up

Overload trip point  $\geq$  220 mA, typical, at 20 °C

### Output Response Time

Opposed mode: 8 ms On, 4 ms Off

Diffuse mode: 3 ms On and Off

### Repeatability

Opposed mode: 1.0 ms

Diffuse mode: 0.75 ms

### Adjustments

Diffuse models (only); single-turn, top-mounted sensitivity control for adjustment of system gain (turn clockwise to increase)

### Indicators

Opposed mode receivers and diffuse mode sensors have two LEDs: Green and Amber

Green on = power to the sensor is On

Green flashing = output is overloaded

Amber on = light is sensed

Amber flashing = marginal excess gain (1 to 1.5 $\times$ ) in light condition

Emitters have one Green LED; Green on = power to the sensor is On

### Construction

Housings are black ABS; Rated UL 94V0

Lenses are hermetically-sealed glass; lens covers are clear acrylic

Circuitry is epoxy-encapsulated and completely sealed

Stainless steel M2.5 mounting hardware is included

### Connections

2 m (6.5 ft) attached cable, or 3-pin pico-style quick-disconnect fitting

Cables for QD models are purchased separately

**Environmental Rating**

IP54 (NEMA 5)

**Operating Conditions**

-40 °C to +70 °C (-40 °F to +158 °F)

90% at +50 °C maximum relative humidity (non-condensing)

**Certifications**

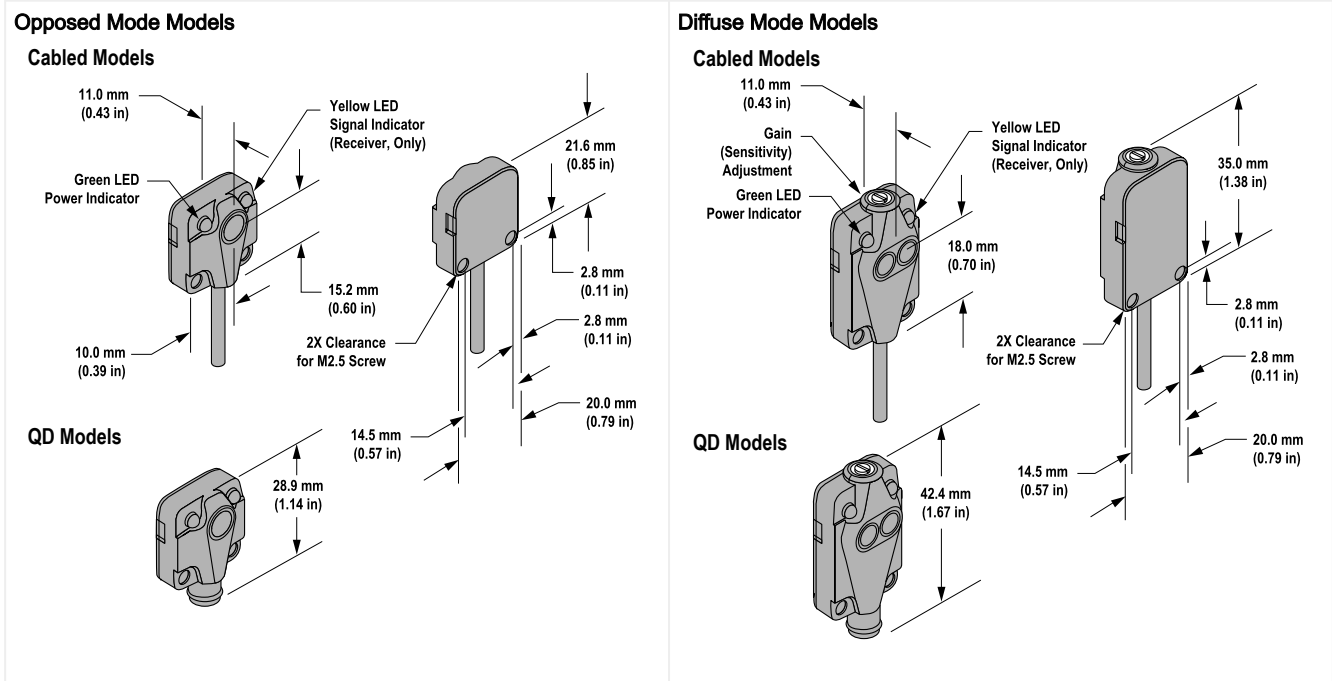


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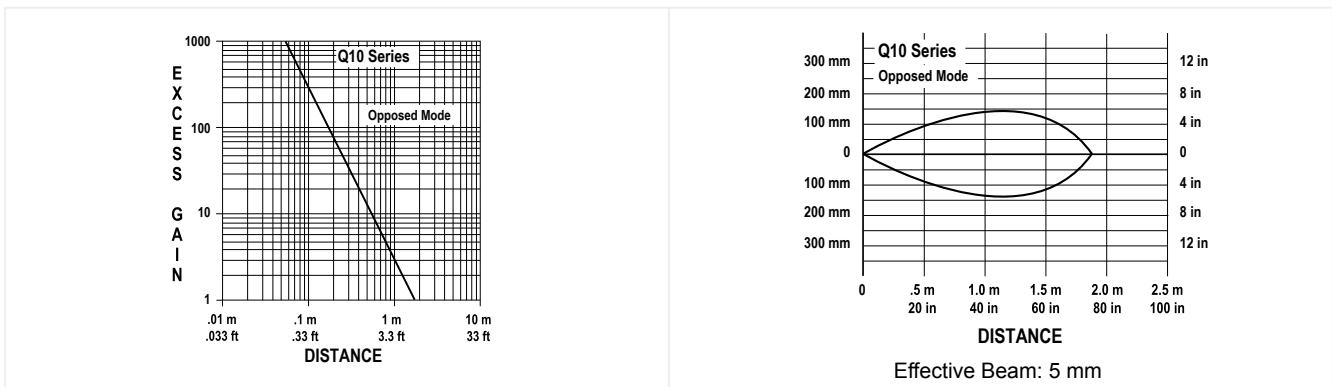
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**Dimensions**



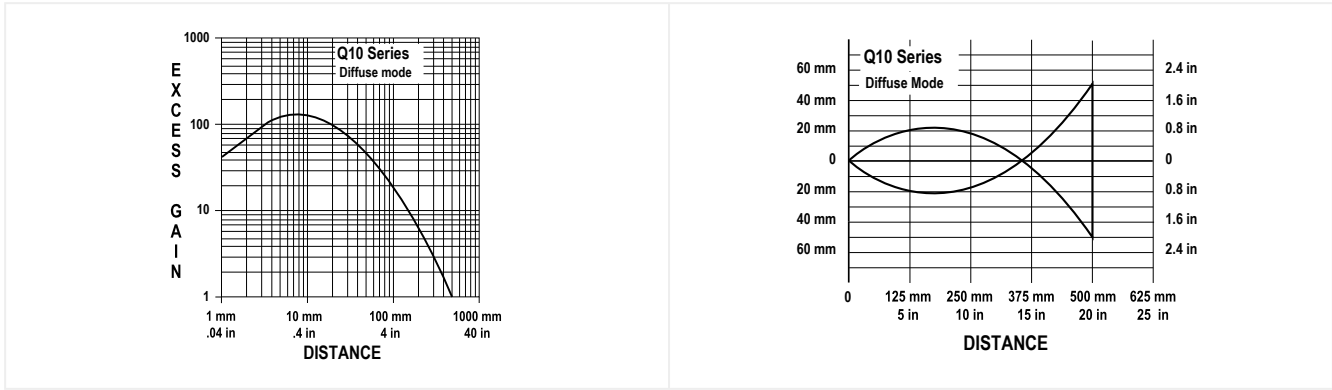
**Performance Curves**

**Opposed Mode**



**Diffuse Mode**

Performance based on a 90% reflectance white test card.



## Cordsets

3-pin Snap/M8 Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
PKG3Z-2	2 m (6.56 ft)	Straight	<p>28 mm max. (1.1")  <math>\phi</math> 10 mm max. (0.4")</p>	<p>1 = Brown                      3 = Blue                      4 = Black</p>
PKW3-2	2 m (6.56 ft)	Right-Angle	<p>25 mm max. (1.0")  <math>\phi</math> 12 mm max. (0.5")                      20 mm (0.8")</p>	

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