

# Q26 Series Sensors



## Coaxial Polarized Retro-Reflective Sensor for Clear Object Detection


For the latest technical information about this product, including specifications, dimensions, and wiring, see [www.BannerEngineering.com](http://www.BannerEngineering.com)



### Features

- Reliable detection of clear, translucent, or opaque objects - including mirror like surfaces
- Coaxial optics enable reliable detection of targets to the face of the sensor
- Simple set-up and adjustment with a single turn sensitivity adjuster potentiometer
- Light Operate and Dark Operate selection by rotary switch
- Compact sensor housing size of 14 x 25 x 42 mm

### Models

Model	Mode	Range	Output	Connector
Q26PXLQ7	 Coaxial polarized retro-reflective	5 - 800 mm sensor to reflector distance on BRT-60x40C	PNP	4-pin Threaded/Snap M8/Pico-Style QD connector
Q26PXLQ5				4-pin 150 mm (6") Euro-style pigtail QD with PVC cable jacket
Q26NXLQ7			NPN	4-pin Threaded/Snap M8/Pico-Style QD connector
Q26NXLQ5				4-pin 150 mm (6") Euro-style pigtail QD with PVC cable jacket



#### WARNING: Not To Be Used for Personnel Protection

Never use this product as a sensing device for personnel protection. Doing so could lead to serious injury or death. This product does NOT include the self-checking redundant circuitry necessary to allow its use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition.

## Specifications

### Supply Voltage and Current

12 to 30V dc (10% maximum ripple within specified limits); supply current (exclusive of load current): 15mA

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Output Configuration

Primary output (pin 2) NPN or PNP (current sinking or sourcing), depending on model; second output (pin 4) is a Health mode output.

### Output Rating

100 mA max

**OFF-state leakage current:** less than 1 microamp @ 30V dc

**ON-state saturation voltage:** less than 1V @ 10 mA dc; less than 1.5V @ 150 mA dc

### Output Protection Circuitry

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

### Emitter LED Wavelength

660 nm

### Emitter Beam Diameter

see [Figure 6. Spot Diameter Diagram](#) on page 4

### Output Response Time

250  $\mu$ S ON and OFF

### Repeatability

50 microseconds

### Construction

ABS plastic housing; glass window

### Indicators

**Green steady:** Power ON

**Yellow steady:** Output conducting

### Environmental Rating

Leakproof design rated IP67

### Operating Conditions

**Temperature:** -10° to +55° C (+14° to 131° F)

**Relative Humidity:** 90% at 50°; non-condensing

### Connection

4-pin Threaded/Snap M8/Pico-Style QD connector or 4-pin 150 mm (6") Euro-style pigtail QD with PVC cable jacket

### Vibration and Shock

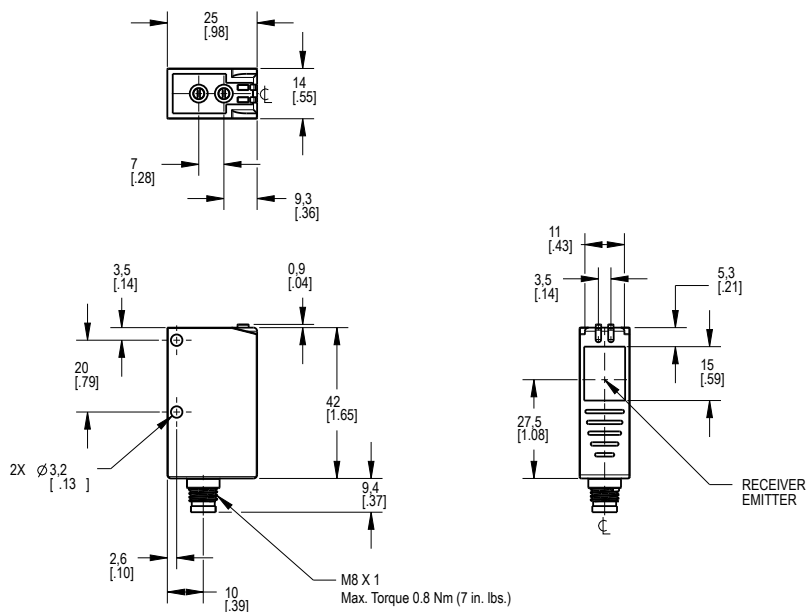
EN60068-2-6

EN60068-2-27

### Certifications



## Dimensions



## Overview

The Banner Q26 sensor is a high performance clear object sensor. The polarized coaxial optical design ensures reliable detection of transparent, opaque, or reflective targets at any distance between the sensor and the reflector. Sensitivity adjustment of the sensor is done with a single turn potentiometer. Light Operate and Dark Operate selection is made by a sealed rotary switch.

## Set-Up Procedure for Maximum Sensitivity

1. Mount the Q26 sensor loosely and mount the reflector rigidly to your machine or detection point.
2. Align the sensor to the reflector and lock into position.
3. Adjust the sensitivity until the output (Yellow LED) changes state; note the position of the sensitivity potentiometer.
4. Place the transparent target between the sensor and the reflector. Adjust the potentiometer until the output changes state.
5. Move the potentiometer half way between these two positions and verify reliable detection.
6. Adjust the potentiometer as necessary to achieve a reliable detection of your transparent target.
7. Adjust the Light Operate / Dark Operate rotary switch to obtain the desired output behavior.

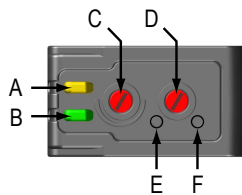


Figure 1. Sensor Top View

- A. Yellow LED Output Conducting
- B. Green LED Power ON
- C. Sensitivity Adjustment Potentiometer
- D. LO / DO Rotary Selection Switch
- E. Light Operate Selected
- F. Dark Operate Selected

## Health Mode Output Overview

Health Mode communicates to the user that there is adequate or inadequate excess gain for reliable sensor operation. It provides a continuous signal that the sensor is operating normally and is connected properly. When the Q26 sensor is set-up for maximum sensitivity, the excess gain will often be between 1.0 and 1.5 excess gain with no target present and the Health output will be OFF. This is normal operation for clear object sensing.

In Health Mode, the Health output is ON when the excess gain of the sensor is greater than 1.5X threshold or less than 1X threshold. The Health Mode output provides a signal to the customer's PLC that the sensor is operating with adequate excess gain, or the beam is blocked.

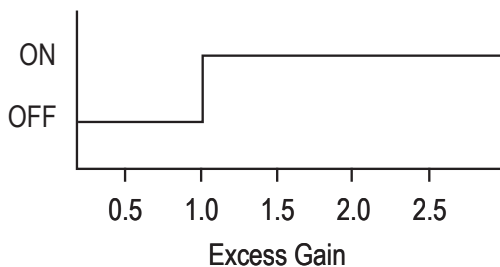


Figure 2. Primary Output (Light Operate)

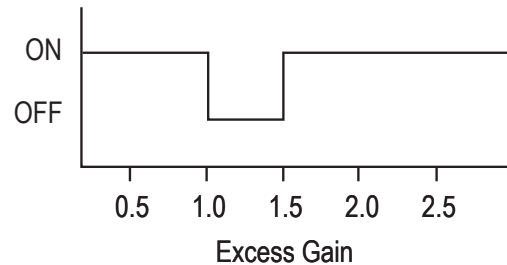


Figure 3. Secondary Health Output

# Beam Pattern and Spot Diameter Diagram

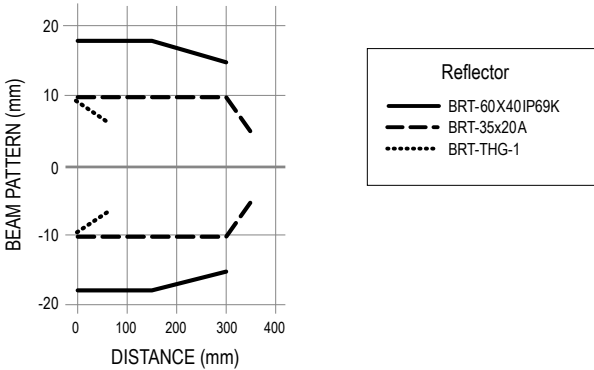


Figure 4. Beam Pattern

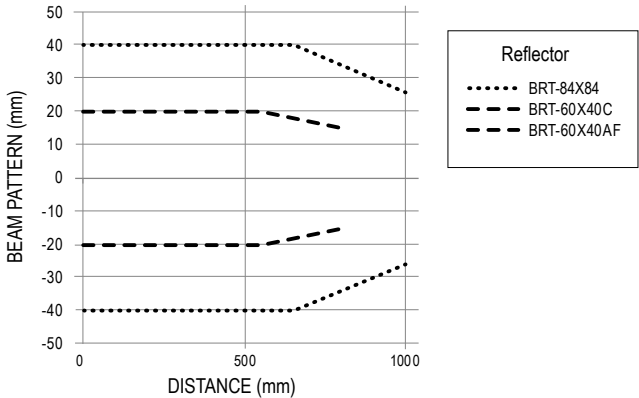


Figure 5. Beam Pattern

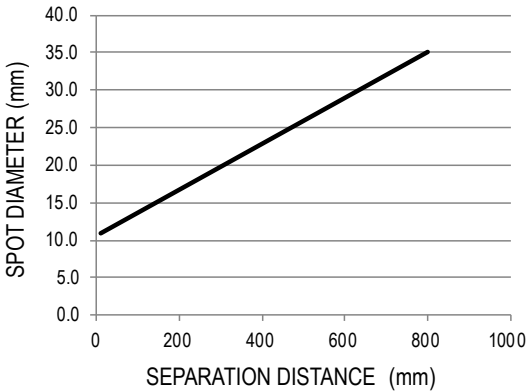
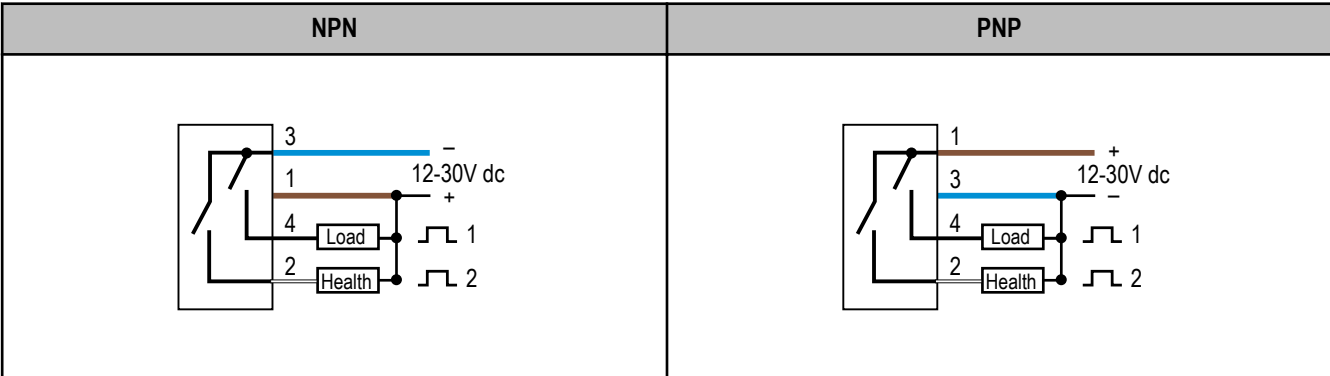


Figure 6. Spot Diameter Diagram

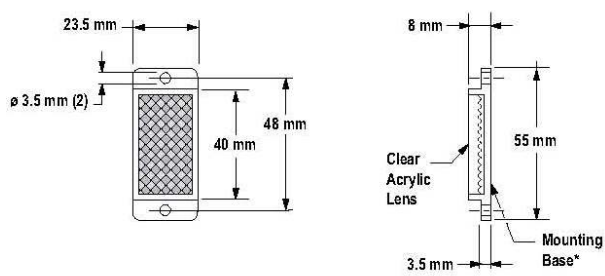
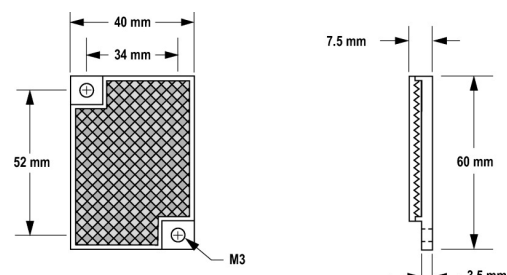
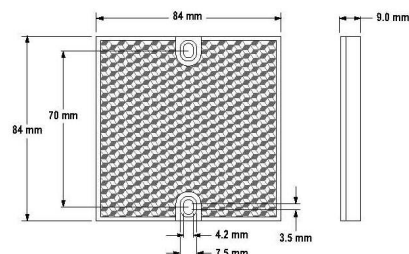
## Wiring



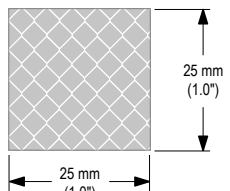
## Cordsets

Pico-Style QD	
<p><b>4-Pin M8/Pico-Style Cordsets (straight connector)</b></p> <p><b>PKG4M-2</b> 2m (6.5')</p> <p><b>PKG4M-5</b> 5m (15')</p> <p><b>PKG4M-9</b> 9m (30')</p>	
<p><b>4-Pin M8/Pico-Style Cordsets (right-angle connector)</b></p> <p><b>PKW4M-2</b> 2m (6.5')</p> <p><b>PKW4M-5</b> 5m (15')</p> <p><b>PKW4M-9</b> 9m (30')</p>	
Euro-Style QD	
<p><b>4-Pin M12/Euro-Style Cordsets (straight connector)</b></p> <p><b>MQDC-406</b>, 2 m (6.5')</p> <p><b>MQDC-415</b>, 5 m (15')</p> <p><b>MQDC-430</b>, 9 m (30')</p>	
<p><b>4-Pin M12/Euro-Style Cordsets (right-angle connector)</b></p> <p><b>MQDC-406RA</b>, 2 m (6.5')</p> <p><b>MQDC-415RA</b>, 5 m (15')</p> <p><b>MQDC-430RA</b>, 9 m (30')</p>	

# Reflectors

Model	Dimensions
<p><b>BRT-35x20A</b> Small reflector for object detection</p>	
<p><b>BRT-60X40C</b> Standard Reflector</p>	
<p><b>BRT-60X40AF</b> Anti-fog coated reflector reduces condensation build-up</p>	
<p><b>BRT-60X40IP69K</b> Chemically resistant material for washdown areas</p>	
<p><b>BRT-84x84A</b> Large reflector for longer range requirements</p>	

## Reflective Tape

Model	Dimensions
<p><b>BRT-THG-1</b> 1" x 1" reflective tape Good for short distance and low cost applications, expect reduced range</p>	

Brackets

Model	Dimensions
<p><b>SMBLSTDLQ26</b></p>	
<p><b>SMBLSTQ26</b></p>	



Warranty: Banner Engineering Corporation warrants its products to be free from defects for a period of one year. Banner Engineering Corporation will repair or replace, free of charge, any product of its manufacture found to be defective at the time it is returned to the factory during the warranty period. This warranty does not cover damage or liability for the improper application or installation of Banner products. This warranty is in lieu of any other warranty either expressed or implied.