WORLD-BEAM™ QS18

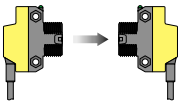
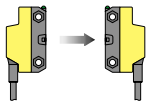
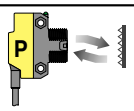
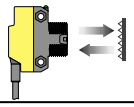
Miniature self-contained photoelectric sensors in universal housing

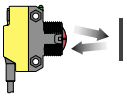
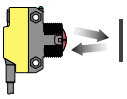
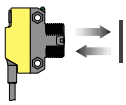
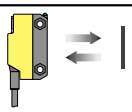
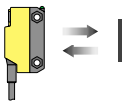


WORLD-BEAM Features

- Easily fits (or retrofits) almost any mounting situation
- Exceptional optical performance, comparable to larger “mini-style” or barrel sensors
- 10 to 30V dc operation, with complementary (SPDT) NPN or PNP outputs, depending on model
- Bright LED operating status indicators are visible from 360°
- Rugged sealed housing, protected circuitry
- Models available with or without 18 mm threaded “nose”
- All models less than 1 millisecond output response for excellent sensing repeatability
- Choose 2 m (6.5') or 9 m (30') cable or 150 mm (6") Pico-style pigtail quick-disconnect

WORLD-BEAM Models

Sensing Mode		Model*	Range	Output
Opposed	940 nm Infrared	QS186E	20 m (66')	N/A
	Effective Beam: 13 mm (0.5") 	QS186EQ		
		QS18VN6R		NPN
		QS18VN6RQ		
		QS18VP6R		PNP
		QS18VP6RQ		
	940 nm Infrared	QS186EB	3 m (10')	N/A
	Effective Beam: 13 mm (0.5") 	QS186EBQ		
		QS18VN6RB		NPN
		QS18VN6RBQ		
		QS18VP6RB		PNP
		QS18VP6RBQ		
Polarized Retro	660 nm Visible Red 	QS18VN6LP	3.5 m (12')	NPN
		QS18VN6LPQ		
		QS18VP6LP		PNP
		QS18VP6LPQ		
Retro	660 nm Visible Red 	QS18VN6LV	6.5 m (21')	NPN
		QS18VN6LVQ		
		QS18VP6LV		PNP
		QS18VP6LVQ		

Sensing Mode		Model*	Range	Output
Convergent	660 nm Visible Red 	QS18VN6CV15	16 mm (0.63")	NPN
		QS18VN6CV15Q		
		QS18VP6CV15		PNP
		QS18VP6CV15Q		
	660 nm Visible Red 	QS18VN6CV45	43 mm (1.7")	NPN
		QS18VN6CV45Q		
		QS18VP6CV45		PNP
		QS18VP6CV45Q		
Diffuse	940 nm Infrared 	QS18VN6D	450 mm (18")	NPN
		QS18VN6DQ		
		QS18VP6D		PNP
		QS18VP6DQ		
	940 nm Infrared 	QS18VN6DB	450 mm (18")	NPN
		QS18VN6DBQ		
		QS18VP6DB		PNP
		QS18VP6DBQ		
Divergent	940 nm Infrared 	QS18VN6W	100 mm (4")	NPN
		QS18VN6WQ		
		QS18VP6W		PNP
		QS18VP6WQ		

*Model numbers ending in “**Q**” have 150 mm (6") Pico-style QD. 30' cable models available by adding “**W/30**” to the model number of any cabled sensor (e.g., **QS186E W/30**).

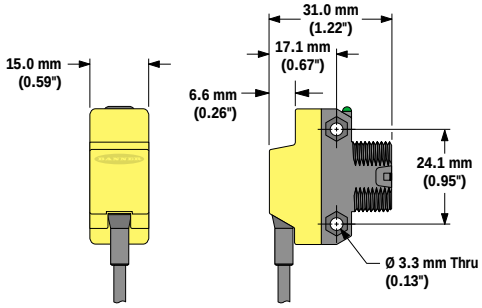
WORLD-BEAM™ QS18

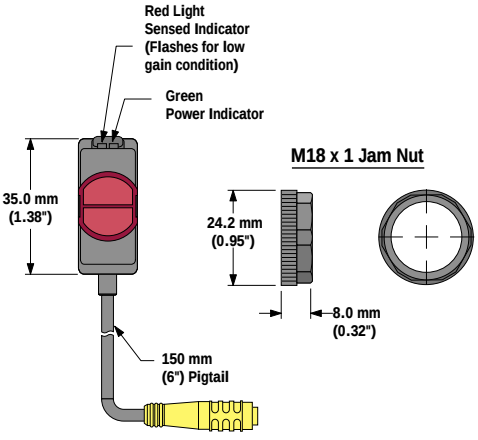
WORLD-BEAM Specifications

Supply Voltage	10 to 30V dc (10% maximum ripple) at less than 25 mA, exclusive of load; Protected against reverse polarity and transient voltages
Light Source	**Opposed** and **Diffuse** mode models: 940 nm infrared; **Retroreflective** and **Convergent** mode models: 660 nm visible red
Output Configuration	Solid-state complementary (SPDT); NPN or PNP (current sinking or sourcing), depending on model; **Rating:** 100 mA maximum each output at 25°C **Off-state leakage current:** less than 50 µA @ 30V dc **ON-state saturation voltage:** less than 1V @ 10 mA; less than 1.5V @ 100 mA Protected against false pulse on power-up and continuous overload or short circuit of outputs
Output Response	**Opposed Mode:** 750 microseconds ON; 375 microseconds OFF **All others:** 600 microseconds ON/OFF NOTE: 100 millisecond delay on power-up; outputs do not conduct during this time
Repeatablility	**Opposed Mode:** 100 microseconds **All others:** 150 microseconds
Adjustments	**Convergent**, **diffuse, and non-polarized retroreflective** mode models (only): Single-turn sensitivity (GAIN) adjustment potentiometer
Indicators	2 LED indicators: **Green steady:** Power ON **Green flashing:** Output overloaded **Red steady:** Light sensed **Red flashing:** Marginal excess gain
Construction	Polycarbonate/ABS alloy housing, rated IEC IP67; NEMA 6
Connections	2 m (6.5') 4-wire PVC cable, 9 m (30') PVC cable, or 4-pin Pico-style 150 mm (6") pigtail QD, depending on model
Operating Conditions	**Temperature**: -20° to +70° C (-4° to + 158° F) **Relative Humidity:** 90% @ 50° C (non-condensing)

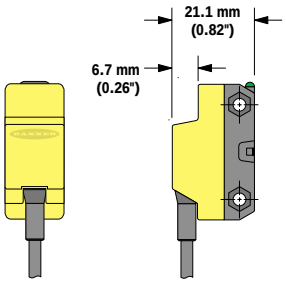
WORLD-BEAM Dimensions and Features

Model Suffix E, R

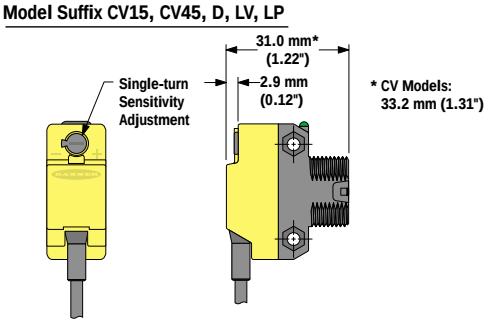




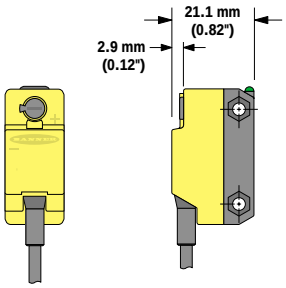
Model Suffix EB, RB



Model Suffix CV15, CV45, D, LV, LP



Model Suffix DB,W

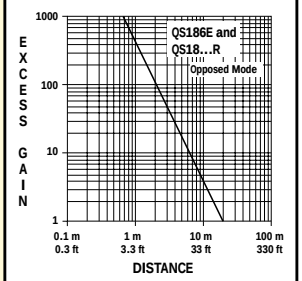


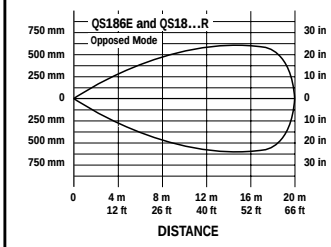
Packing List:
Sensor
M18 x 1 jam nut
English installation sheet, P/N 63687
Multi-language installation sheet, P/N 63689
M3 hardware packet
2 – M3 x 0.5 x 20 mm Stainless Steel Screw
2 – M3 x 0.5 Stainless Steel Hex Nut
2 – M3 Stainless Steel Washer

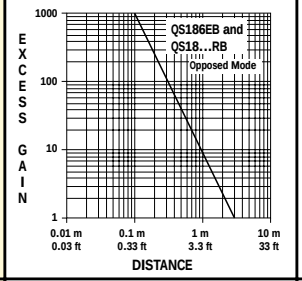
Banner Engineering Corp. • Minneapolis, U.S.A.
Website: http://www.baneng.com • Tel: 763.544.3164

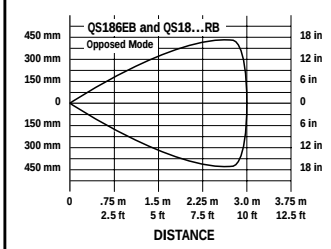
WORLD-BEAM Performance Curves

Opposed

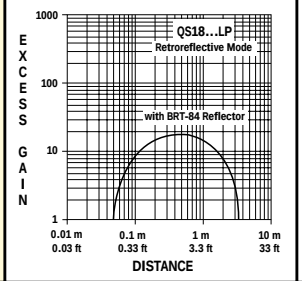


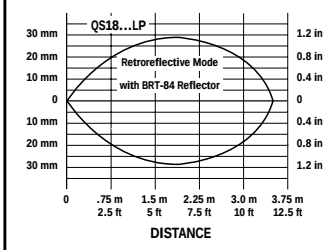




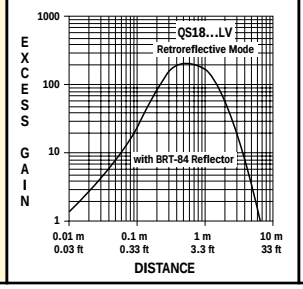


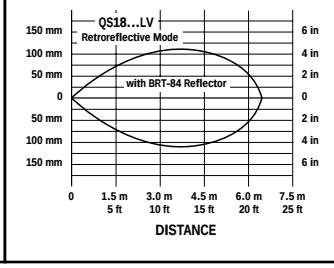
Polarized Retro



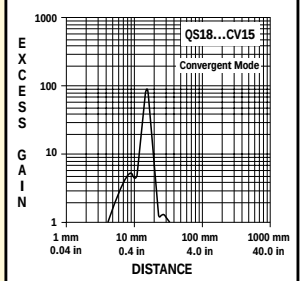


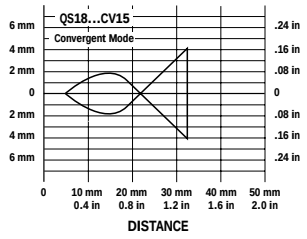
Retro

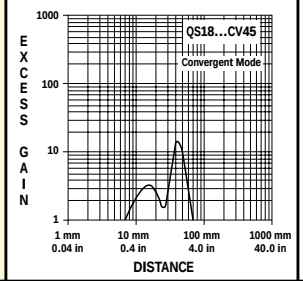


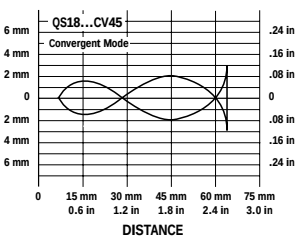


Convergent

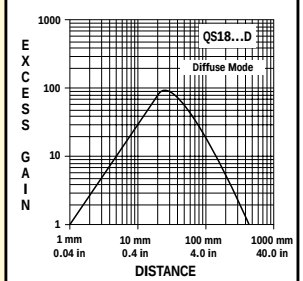


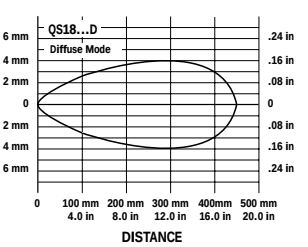


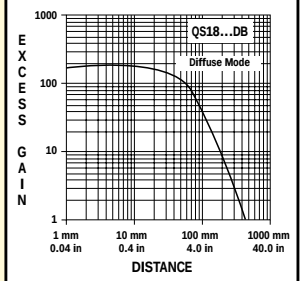


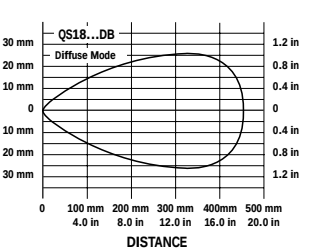


Diffuse

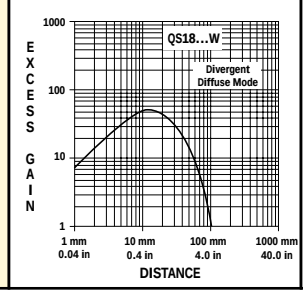


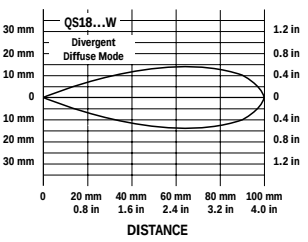






Divergent Diffuse

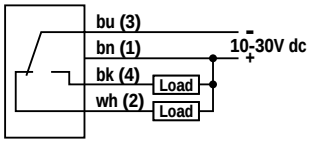




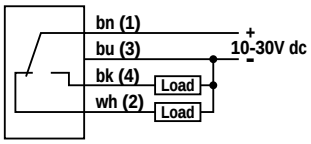
WORLD-BEAM™ QS18

WORLD-BEAM Hookups

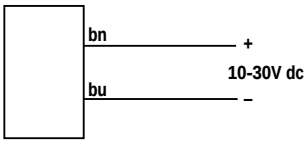
QS18 Sensors with NPN (Sinking) Outputs



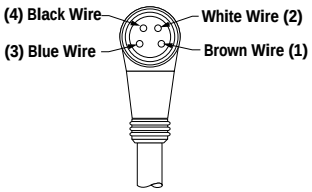
QS18 Sensors with PNP (Sourcing) Outputs



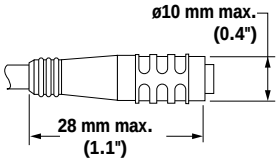
QS18 Emitters



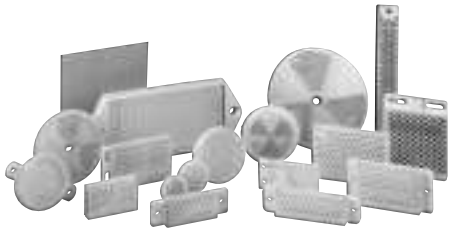
4-Pin Pico-Style Pin-out (Cable Connector Shown)



Pico-Style Quick-Disconnect Cables

Style	Model	Length	Dimensions
4-Pin Straight	PKG4-2	2 m (6.5')	

Retroreflective Targets



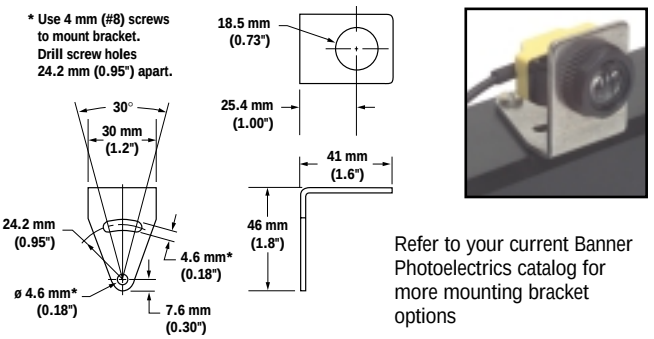
See the Accessories section of your current Banner Photoelectric Sensors catalog for complete information.

NOTE: Polarized sensors require corner cube type retroreflective targets only.

Mounting Brackets

SMB18A

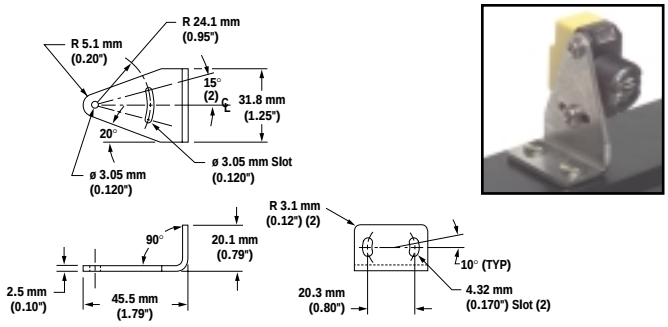
- 12-gauge, stainless steel
- Right-angle mounting bracket



Refer to your current Banner Photoelectrics catalog for more mounting bracket options

SMB312S

- Stainless steel 2-axis, side mounting bracket



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the photoelectric specialist

WARNING . . . Not To Be Used for Personnel Protection

Never use these products as sensing devices for personnel protection. Doing so could lead to serious injury or death.

These sensors do NOT include the self-checking redundant circuitry necessary to allow their use in personnel safety applications. A sensor failure or malfunction can cause either an energized or de-energized sensor output condition. Consult your current Banner Safety Products catalog for safety products which meet OSHA, ANSI and IEC standards for personnel protection.

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