

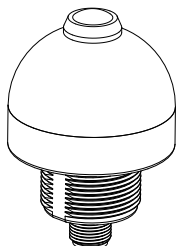
K50 Series Pick-to-Light



Datasheet

For the latest technical information about this product, including specifications, dimensions, and wiring, see www.bannerengineering.com.

Self-contained indicator for bin-picking operations



WARNING: Not To Be Used for Personnel Protection

Never use this device as a sensing device for personnel protection. Doing so could lead to serious injury or death. This device 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.

Standard Models - Single Color

- Job light is ON at all times while job input is active.
- Presence of hand (or pressing push button) activates output.

Model	Sensing Mode / LED	Housing	Range	Cable	Output ¹	Job Light	
K50APLPGXDQ	Polarized retroreflective, visible red, 680 nm	50 mm dome 30 mm mount polycarbonate	2 m (6 ft)	Integral 4-pin Euro QD	PNP, N.O.	Green	
K50RPLPGXDQ					PNP, N.C.		
K50ANLPGXDQ					NPN, N.O.		
K50RNLPGXQDQ					NPN, N.C.		
K50APFF50GXQDQ	Fixed field, infrared, 880 nm		50 mm cutoff		PNP, N.O.		
K50RPF50GXQDQ					PNP, N.C.		
K50ANFF50GXQDQ					NPN, N.O.		
K50RNFF50GXQDQ					NPN, N.C.		
K50APFF100GXQDQ					100 mm cutoff		PNP, N.O.
K50RPF100GXQDQ							PNP, N.C.
K50ANFF100GXQDQ	NPN, N.O.						
K50RNFF100GXQDQ	NPN, N.C.						
K50APPBGXDQ	Push button		—		PNP, N.O.		
K50RPPBGXDQ					PNP, N.C.		
K50ANPBGXDQ					NPN, N.O.		
K50RNPBGXDQ					NPN, N.C.		

Only 4-pin integral M12/Euro-style quick disconnect fitting models are listed. A model with a QD requires a mating cordset.

- To order the 2 m (6 ft) PVC cable model, omit suffix "Q" from model number (e.g., K50APLPGXD).
- To order the 9 m (30 ft) PVC cable model, replace suffix "Q" with "W/30" (e.g., K50APLPGXD W/30).
- To order the 150 mm (5.9 in) PVC pigtail with 4-pin Euro-style fitting, replace suffix "Q" with "QP" (e.g., K50APLPGXDQP).

Specialty C-Series — Two-Color Models, 12 to 30 V dc

- Job light is green while the job input is active (unless a hand is present)

¹ N.O. = Normally Open; N.C. = Normally Closed



- Presence of hand (or pressing push button) activates output and overrides job light (turns red) for visual verification that action was sensed
- Retroreflective models: To simplify alignment, the sensor provides a red signal when the retroreflective target is incorrectly aligned

Model	Sensing Mode / LED	Range	Cable	Output	Job Light
K50RPLPGRCQ	Polarized retroreflective, Visible red, 680 nm	2 m (6 ft)	4-pin Euro QD	PNP (Sourcing)	Green (Red)
K50RNLPGRQC				NPN (Sinking)	
K50APFF50GRQC	Fixed-field, Infrared, 880 nm	50 mm cutoff		PNP (Sourcing)	
K50ANFF50GRQC				NPN (Sinking)	
K50APFF100GRQC		100 mm cutoff		PNP (Sourcing)	
K50ANFF100GRQC				NPN (Sinking)	
K50APPBGRQC	Push button	—		PNP (Sourcing)	
K50ANPBGRQC				NPN (Sinking)	

Only 4-pin integral Euro-style QD models are listed. A model with a QD requires a mating cordset.

- To order the 2 m (6 ft) PVC cable model, omit suffix "Q" from model number (e.g., K50APLPGRQCQ).
- To order the 9 m (30 ft) PVC cable model, replace suffix "Q" with "W/30" (e.g., "K50APLPGRC W/30").
- To order the 150 mm (5.9 in) PVC pigtail with 5-pin Euro-style fitting, replace suffix "Q" with "QP" (e.g., K50RPLPGRCQP).

Specialty E-Series — Two-Color Models

- Job light is green at all times while job input is active.
- Presence of hand (or pressing push button) activates output.
- Presence of hand (or pressing push button) while job input is inactive causes unit to light red, for visual verification that sensor is functioning properly.

Model	Sensing Mode / LED	Range	Cable	Output	Job Light
K50RPLPGREQ	Polarized retroreflective, visible red, 680 nm	2 m (6 ft)	Integral 4-pin Euro QD	PNP (Sourcing)	Green (Red)
K50RNLPGREQ				NPN (Sinking)	
K50APFF50GREQ	Fixed field infrared, 880 nm	50 mm cutoff		PNP (Sourcing)	
K50ANFF50GREQ				NPN (Sinking)	
K50APFF100GREQ		100 mm cutoff		PNP (Sourcing)	
K50ANFF100GREQ				NPN (Sinking)	
K50APPBGREQ	Push button	—		PNP (Sourcing)	
K50ANPBGREQ				NPN (Sinking)	

Only 4-pin integral Euro-style QD models are listed. A model with a QD requires a mating cordset.

- To order the 2 m (6 ft) PVC cable model, omit suffix "Q" from model number (e.g., K50RPLPGREQ).
- To order the 9 m (30 ft) PVC cable model, replace suffix "Q" with "W/30" (e.g., K50RPLPGREQ W/30).
- To order the 150 mm (5.9 in) PVC pigtail with 4-pin Euro-style fitting, replace suffix "Q" with "QP" (e.g., K50RPLPGREQQP).

Installation

For push-button models, install the sensor at such a height and in a location that will be easy for the user and/or supervisor to see the indicator and will be comfortable for the user to press the push-button.

For other models, install the sensor in a location that will be comfortable for the user to break the beam when reaching for the required part. When multiple sensors will be located in close proximity, to monitor multiple bins for example, mount all the sensors in a similar sensing position (all mounted at the tops of the bins and pointing down, for example). This may reduce potential optical crosstalk, where one sensor detects another sensor's beam.

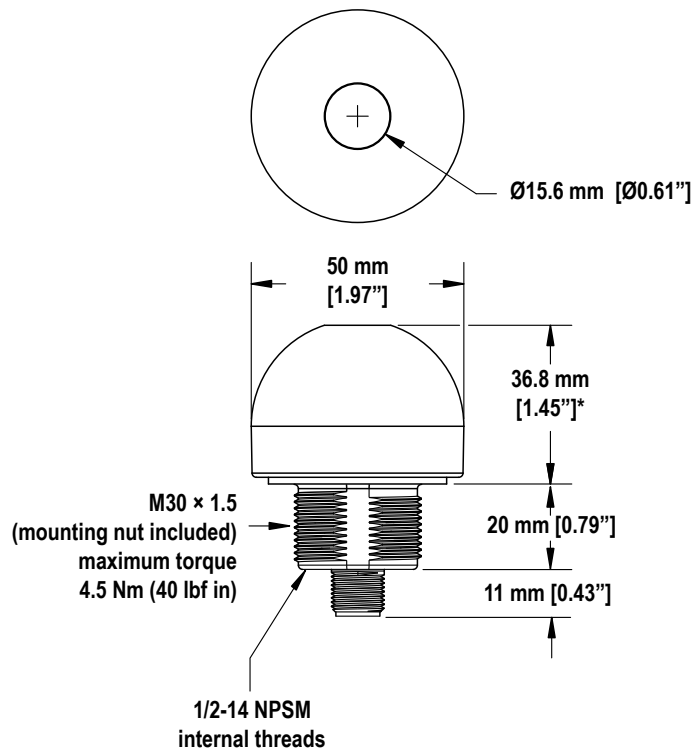
Wiring



NOTE: Cabled hookups only are shown. Wiring is functionally identical for cabled and quick-disconnect models.

NPN (Sinking) Output Models	PNP (Sourcing) Output Models	Wiring Key
		<ol style="list-style-type: none"> 1. Brown 2. White 3. Blue 4. Black

Dimensions



*For push-button models, this dimension is 44.2 mm (1.74 in)

Specifications

Supply Voltage and Current

12 to 30 V dc (10% maximum ripple)
 < 75 mA max current at 12 V dc (exclusive of load)
 < 40 mA max current at 30 V dc (exclusive of load)
 AS-i compatible

Supply Protection Circuitry

Protected against transient voltages (fast-transient and over-voltage) and reverse polarity

Output Configuration

PNP or NPN, depending on model

Output Rating

Maximum Load: 150 mA
 OFF-state leakage current: <10 μ A at 30 V dc
 ON-state saturation voltage: < 2V at 10 mA dc; < 2.5V at 150 mA dc

Output Protection Circuitry

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

Output Response Time

3 milliseconds On and Off

Power-Up Output Delay Time

300 milliseconds

Indicators

Entire translucent dome provides indicator light; either Job or Pick Sensed indicator inhibits the other light, depending on model.
 Job ("Pick") Indicator: Green
 Pick Sensed Indicator: Red or Off, depending on model

Job Light Enable Input

Input impedance: 8000 ohms
 Sinking - Input low < 1.5 V
 Sourcing - Input high > 7V

Construction

Base: polycarbonate
 Translucent dome: polycarbonate
 Push button: thermoplastic
 Lens: polycarbonate or acrylic

Connections

Depending on model: 4-wire, 2 m (6.5 ft) integral cable; 4-pin M12/Euro-style quick disconnect fitting; 150 mm PVC pigtail quick disconnect; accessory cordset required for QD models

Ambient Light Immunity

Up to 5,000 lux

EMI -RFI Immunity

Immune to EMI and RFI noise sources, per IEC 947-5-2

Environmental Rating

Fully encapsulated; IEC IP67
 Integral QD models: DIN 40050 (IP69K) when using IP69K-rated cables; Pigtail and cable models: IP69K when mounted with conduit

Operating Conditions

-40 °C to +50 °C (-40 °F to +122 °F)
 90% at +50 °C maximum relative humidity (non-condensing)

Certifications



All models except push buttons

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