Datasheet

Daylight-Visible, General-Purpose Indicators for Indoor or Outdoor Use

To view or download the latest technical information about this product, including specifications, dimensions, accessories, and wiring, see www.bannerengineering.com.

- Intense levels of light output for areas with high ambient light - even outdoors
- Viewable around entire perimeter; some models also emit light from top
- 1- or 2-, or 3-color models available
- Rugged, sealed thermoplastic housing rated for IEC IP67 and IP69K per DIN 40050-9
- Bright, even light
- 12 V dc to 30 V dc or 85 V ac to 130 V ac (75 V dc to 120 V dc) or 100 V ac to 250 V ac (90 V dc to 240 V dc) operation, depending on model
- 12 V dc operation useful for applications on mobile vehicles
- Consult factory for models with strobing capability

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.

Models

<table>
<thead>
<tr>
<th>Model</th>
<th>LED Color(s)¹</th>
<th>Input</th>
<th>Supply Voltage</th>
<th>Connection²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perimeter View Only</td>
<td>Perimeter + Top View</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K50BLXGXPQ</td>
<td>K50BCLXGXPQ</td>
<td>Green</td>
<td>12 V to 30 V dc</td>
<td>4-pin M12/Euro-style integral quick disconnect</td>
</tr>
<tr>
<td>K50BLXBPQ</td>
<td>K50BCLXBPQ</td>
<td>Red</td>
<td>12 V to 30 V dc</td>
<td></td>
</tr>
<tr>
<td>K50BLXYPQ</td>
<td>K50BCLXYPQ</td>
<td>Yellow</td>
<td>12 V to 30 V dc</td>
<td></td>
</tr>
<tr>
<td>K50BLXBPQ</td>
<td>K50BCLXBPQ</td>
<td>Blue</td>
<td>12 V to 30 V dc</td>
<td></td>
</tr>
<tr>
<td>K50BCLWXPQ</td>
<td>K50BCLWXPQ</td>
<td>White</td>
<td>12 V to 30 V dc</td>
<td></td>
</tr>
<tr>
<td>K50BCLGRXPQ</td>
<td>K50BCLGRXPQ</td>
<td>Green/Red</td>
<td>PNP</td>
<td>4-pin M12/Euro-style integral quick disconnect</td>
</tr>
<tr>
<td>K50BCLGRYPQ</td>
<td>K50BCLGRYPQ</td>
<td>Green/Red/Yellow</td>
<td>PNP</td>
<td>5-pin M12/Euro-style integral quick disconnect³</td>
</tr>
<tr>
<td>K50BCLGYNQ</td>
<td>K50BCLGYNQ</td>
<td>Green/Red/Yellow</td>
<td>NPN</td>
<td></td>
</tr>
<tr>
<td>K50BCLGA120Q</td>
<td>K50BCLGA120Q</td>
<td>Green</td>
<td>85 V to 130 V ac</td>
<td>3-pin A12/Micro-style integral quick disconnect</td>
</tr>
<tr>
<td>K50BCLYA120Q</td>
<td>K50BCLYA120Q</td>
<td>Red</td>
<td>85 V to 130 V ac</td>
<td></td>
</tr>
<tr>
<td>K50BLBA120Q</td>
<td>K50BLBA120Q</td>
<td>Blue</td>
<td>85 V to 130 V ac</td>
<td></td>
</tr>
<tr>
<td>K50BLWA120Q</td>
<td>K50BLWA120Q</td>
<td>White</td>
<td>85 V to 130 V ac</td>
<td></td>
</tr>
<tr>
<td>K50BCLA230Q</td>
<td>K50BCLA230Q</td>
<td>Green</td>
<td>100 V to 250 V ac</td>
<td></td>
</tr>
<tr>
<td>K50BLYA230Q</td>
<td>K50BLYA230Q</td>
<td>Red</td>
<td>100 V to 250 V ac</td>
<td></td>
</tr>
<tr>
<td>K50LYA230Q</td>
<td>K50LYA230Q</td>
<td>Yellow</td>
<td>100 V to 250 V ac</td>
<td></td>
</tr>
<tr>
<td>K50LBBA230Q</td>
<td>K50LBBA230Q</td>
<td>Blue</td>
<td>100 V to 250 V ac</td>
<td></td>
</tr>
</tbody>
</table>

¹ Available colors include: Green (G), Red (R), Yellow (Y), Blue (B) and White (W).
² Integral quick disconnect models are listed.
- To order the 150 mm (6 in) PVC cable model with a M12/Euro-style quick disconnect, replace the suffix "Q" with "QP" in the model number. For example, K50BLXGXPQP.
- To order the 2 m (6.5 ft) PVC cable model, omit the suffix "Q" in the model number. For example, K50BLXGXP.
- Models with a quick disconnect require a mating cordset.
³ 3-color models use a 4-pin mating cable, see wiring diagram.
Wiring Diagrams — DC Models

Table 1: 1-Color Models (PNP/NPN Selectable)

<table>
<thead>
<tr>
<th>PNP</th>
<th>NPN</th>
<th>Pinout</th>
<th>Key:</th>
</tr>
</thead>
</table>
| ![Diag1](image1.png) | ![Diag2](image2.png) | ![Diag3](image3.png) | 1 = Brown  
2 = White  
3 = Blue  
4 = Black  
C1 = Indicator color 1  
X = Not used |

Table 2: 2-Color Models

<table>
<thead>
<tr>
<th>PNP</th>
<th>Pinout</th>
<th>Key:</th>
</tr>
</thead>
</table>
| ![Diag4](image4.png) | ![Diag5](image5.png) | 1 = Brown  
2 = White  
3 = Blue  
4 = Black  
C1 = Indicator color 1  
C2 = Indicator color 2  
X = Not used |

Table 3: 3-Color Models

<table>
<thead>
<tr>
<th>PNP</th>
<th>NPN</th>
<th>Pinout</th>
<th>Key:</th>
</tr>
</thead>
</table>
| ![Diag6](image6.png) | ![Diag7](image7.png) | ![Diag8](image8.png) | 1 = Brown  
2 = White  
3 = Blue  
4 = Black  
5 = Gray  
C1 = Indicator color 1  
C2 = Indicator color 2  
C3 = Indicator color 3  
X = Not used |

Wiring Diagrams — AC Models

Quick-Disconnect

Wiring Key:  
1 = Green (not used)  
2 = Red/Black  
3 = Red/White

Cabled

Wiring Key:  
1 = Black  
3 = White

Pinout
Specifications

Supply Voltage and Current - 12 V dc to 30 V dc models
- K50BL 1-color models: 140 mA max. at 12 V dc, 70 mA max. at 30 V dc
- K50BCL 1-color models: 160 mA max. at 12 V dc, 80 mA max. at 30 V dc
- K50BL 2-color models, per color: 75 mA max. at 12 V dc, 40 mA max. at 30 V dc
- K50BCL 2-color models, per color: 95 mA max. at 12 V dc, 40 mA max. at 30 V dc
- K50BL 3-color models, per color: 85 mA at 12 V dc, 55 mA at 30 V dc
- K50BCL 3-color models, per color: 110 mA at 12 V dc, 65 mA at 30 V dc

Supply Voltage and Current - 120 V ac models
- K50BL models: 85 V ac to 130 V ac or 75 V dc to 120 V dc at 16 mA max.
  50/60 Hz
- K50BCL models: 85 V ac to 130 V ac or 75 V dc to 120 V dc at 60 mA max.
  50/60 Hz

Supply Voltage and Current - 230 V ac models
- K50BL models: 100 V ac to 250 V ac or 90 V dc to 240 V dc at 20 mA max.
  50 Hz to 60 Hz
- K50BCL models: 100 V ac to 250 V ac or 90 V dc to 240 V dc at 25 mA max.
  50 Hz to 60 Hz

Supply Protection Circuitry
- 12 V dc to 30 V dc models: Protected against reverse polarity and transient voltages
- 120 V ac and 230 V ac models: Protected against transient voltages

Indicators
- LED colors are independently selected, depending on model
- For 3-color models: only one color can be on at a time. The higher color number overrides the lower color number.

Environmental Rating
- Rated IEC IP67 and IP69K per DIN 40050-9
- NEMA/UL Type 4X, 13

Application Note
- Light emits 360° from housing sides in K50BL models and housing sides and tops in K50BCL models.

Certifications

Dimensions

Construction
- Base and covers: polycarbonate

Connections
- Integral 4-pin M12/Euro-style (dc models) QD, 3-pin Micro-style (ac models) QD, or 2 m (6.5 ft) integral cable, depending on model

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

Vibration and Mechanical Shock
- All models meet Mil. Std. 202F requirements method 201A (vibration: 10 to 60 Hz max., double amplitude 0.06 in, maximum acceleration 10G). Also meets IEC 947-5-2; 30G 11 ms duration, half sine wave.

Indicator Power-up Response Time
- DC 1, and 2- color models
  ON: 10 ms; OFF: 7 ms
- DC 3-color models
  ON: 250 ms; OFF: 10 ms
- AC models
  ON/OFF: 500 µs

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.

<table>
<thead>
<tr>
<th>Supply Wiring (AWG)</th>
<th>Required Overcurrent Protection (Amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>5.0</td>
</tr>
<tr>
<td>22</td>
<td>3.0</td>
</tr>
<tr>
<td>24</td>
<td>2.0</td>
</tr>
<tr>
<td>26</td>
<td>1.0</td>
</tr>
<tr>
<td>28</td>
<td>0.8</td>
</tr>
<tr>
<td>30</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Dimensions

P/N 155509 Rev. M www.bannerengineering.com - Tel: + 1 888 373 6767
## Accessories

### Cordsets

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Style</th>
<th>Dimensions</th>
<th>Pinout (Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC-406</td>
<td>1.83 m (6 ft)</td>
<td>Straight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-415</td>
<td>4.57 m (15 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-430</td>
<td>9.14 m (30 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-450</td>
<td>15.2 m (50 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-406RA</td>
<td>1.83 m (6 ft)</td>
<td>Right-Angle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-415RA</td>
<td>4.57 m (15 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-430RA</td>
<td>9.14 m (30 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-450RA</td>
<td>15.2 m (50 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 3-Pin Micro-Style Cordsets

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
<th>Style</th>
<th>Dimensions</th>
<th>Pinout (Female)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC-306</td>
<td>1.83 m (6 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-315</td>
<td>4.57 m (15 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-330</td>
<td>9.14 m (30 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-306RA</td>
<td>1.83 m (6 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-315RA</td>
<td>4.57 m (15 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MQDC-330RA</td>
<td>9.14 m (30 ft)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Mounting Brackets

All measurements are listed in millimeters, unless noted otherwise.

**SMB30A**
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel

**SMB30FA**
- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-ga. 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric and inch size bolt available

**Hole center spacing:** A to B=40

**Hole size:** A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5

**Bolt thread:** SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50

**Hole size:** B= ø 30.1
SMB30MM
- 12-ga. stainless steel bracket
  with curved mounting slots for
  versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor

Hole center spacing: A = 51, A to B = 25.4
Hole size: A = 42.6 x 7, B = ø 6.4, C = ø 30.1

SMB30SC
- Swivel bracket with 30 mm
  mounting hole for sensor
- Black reinforced thermoplastic
  polyester
- Stainless steel mounting and
  swivel locking hardware included

Hole center spacing: A= ø 50.8
Hole size: A= ø 7.0, B= ø 30.0

LMBE12RA35
- Direct mounting of stand-off pipe, with
  common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the
  center of the 1/2-14 NPSM nut is 35 mm

Hole center spacing: 20.0

LMBE12RA45
- Direct mounting of stand-off pipe, with
  common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the
  center of the 1/2-14 NPSM nut is 45 mm

Hole center spacing: 35.0

Elevated Mount System

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
<th>Components</th>
</tr>
</thead>
</table>
| SA-M30E12 - Black Acetal | • Streamlined black acetal stand-off pipe adapter/cover  
|                 | • Connects between 30 mm light base and ½ in. NPSM/DN15 pipe  
|                 | • Mounting hardware included                  |                          |
| Polished 304 Stainless Steel | Black Anodized Aluminum  
| SOP-E12-150SS 150 mm (6 in) long | SOP-E12-150A 150 mm (6 in) long  
| SOP-E12-300SS 300 mm (12 in) long | SOP-E12-300A 300 mm (12 in) long  
| SOP-E12-900SS 900 mm (36 in) long | SOP-E12-900A 900 mm (36 in) long  
| SA-E12M30 - Black Acetal | • Streamlined black acetal mounting base adapter/cover  
|                 | • Connects between ½ in. NPSM/DN15 pipe and 30 mm (1-3/16 in) drilled hole  
|                 | • Mounting hardware included                  |                          |

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For patent information, see www.bannerengineering.com/patents.
This equipment complies with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules and CAN ICES-3 (B)/NMB-3(B). These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the manufacturer.