Lighting & Indication
Every 3.5 seconds, a Banner sensor is installed somewhere in the world. Banner solves problems for most of the manufacturing companies in the Fortune 500, who rely on Banner for reliable automation solutions.

Banner products help manufacture the cars you drive, the TVs you watch, the food you eat, the medicine you take and virtually every product you consume. Whatever the industry, Banner has a solution to help you automate your plants, improve efficiency and manufacture quality products.

Manufacturing Specialists
Banner is a leading source for manufacturing needs with an extensive product line. With over 30,000 products, including our award-winning sensors, wireless solutions, vision sensors and lighting, machine safety, indicator lights and LED lighting, we have a solution for you.

Application Solution Experts
Our field sales engineers are the most highly-trained and experienced professionals in the industry. They can rapidly analyze an application to help you find the best solution.

Global Presence
We are a global company with a focus on our commitment to customers around the world. Banner has worldwide support with a network of 3,000 professionals who are ready to help you in your plant no matter where you are located.

Banner Specials
Banner’s growing family of Lighting and Indicator products include thousands of standard products. However, if you have an application requiring a unique solution, contact one of Banner’s Application Engineers and learn about our rapid customization and ability to deliver special product variations.
Table of Contents

New Products ........................................................................................................................................ 4

Light Up the Visual Factory ............................................................................................................... 6

Banner's Lighting and Indication Solutions

LED Lighting ........................................................................................................................................ 16
Robust, high-quality and energy-efficient LED Lighting products have sleek designs and are ideal for a wide range of industrial and mobile applications.

Signal Tower Lights ......................................................................................................................... 42
Premium LED-based, stylish Signal Tower Lights are completely flexible with preassembled or modular models to suit application needs, and have a wide range of mounting accessories for quick and easy installation.

Indicators ............................................................................................................................................. 58
Rugged Indicators require no additional protective enclosure and are flexible in design, size and mounting for a unique indication solution.

Touch Buttons ................................................................................................................................... 100
Touch Buttons come in a variety of options for lighting and touch functions and have unique, rugged packages that require no additional protective enclosure.

Pick-to-Light ....................................................................................................................................... 116
Rugged, unique Pick-to-Light products help reduce assembly time and increase quality for online and offline operator guidance processes.

Complimentary Banner Solutions

Wireless ................................................................................................................................................ 138

Vision Lighting ................................................................................................................................... 140

How to Reach Us ............................................................................................................................... 143
LED Lighting

WLB92 Industrial Light bar
pages 20-21

WLS27 Extruded LED Strip Lights
pages 22-23

LED Motion Sensing Switch and Models with Built-in Motion Sensor
pages 24-25

SHOP ONLINE at www.airlinehyd.com
800-999-7378
New Products

Tower Lights

Wireless TL70 Tower Lights
pages 46-47

K50 Modbus Series Indicator Lights
pages 76-77

Indicators

Pick-to-Light

K50 Modbus Pick-to-Light Series
pages 132-133

bannerengineering.com

SHOP ONLINE at www.airlinehyd.com
Light Up the Visual Factory

Enhance your Visual Management Efforts with Banner’s Lighting and Indicators.

Illuminate the Work Area with LED Lighting

- Boost Worker Productivity
- Improve Product Quality
- Reduce Energy Costs

Electrical Panel Lighting

Machine Lighting

Workstation Lighting

Visual Inspection Station

Sensor Emulation
Communicate Status

- Empower Operators
- Alert Supervisors
- Accelerate Resolution

Increase Efficiency with Light Guided Part Picking

- Reduce Cycle Time
- Error-proof Assembly
- Streamline Training

Machine and Process Status
Call for Parts
Loading Dock/Bay Communication

Pick-to-Light for Assembly and Kitting
Pick-to-Light for Warehouse and Logistics
Lean Principle

Light Up the ‘Gemba’

Gemba is the Japanese term for “the real place”—or in lean manufacturing, the factory floor, where actual services are provided or where work gets done. Lighting up the “Gemba” means to make problems visible so they can be quickly fixed. Proper workplace illumination is a key step to achieve efficient processes, optimal defect detection and maximum worker safety.
Illuminate Work Areas with High-Intensity LED Lighting

Increase efficiency, improve product quality and reduce costs with Banner’s industrial LED lighting products. Banner LED lights are designed to withstand the toughest environments featuring high-quality, shatterproof housings and washdown safe models.

**Boost Productivity** – Proper lighting increases the speed and accuracy of visual task performance, reducing assembly times

**Improve Product Quality** – Appropriate lighting improves the ability of the human eye to detect part defects during assembly and inspection

**Reduce Costs** – Ultra-long lifetimes, no maintenance, and advanced energy efficiency for long-term savings

---

Strip Lights page 22

Chemical-Resistant Lights page 28

Spot Lights page 34
Lean Principle

Jidoka

Enabling a machine or operator to detect abnormalities and stop the process is referred to as Jidoka. Bright, easily detectable status lights enable operators to simultaneously monitor several machines, resulting in significant productivity gains. Implementation can also prevent production of defective products, eliminate overproduction and focus attention on process problems and solutions. Typically the machine is "set" to do self inspection and notify a human if defects are detected.

Communicate Status to Supervisors

Bright, highly visible indication allows for improved communication across the manufacturing floor. Convenient, effective wireless options allow for rapid communication throughout the plant.

Immediate – Instant attention to problems as they occur can reduce downtime, improve quality and reduce safety issues

Simple – Efficient visual communication reduces complexity and focuses attention on key pieces of information

Standard – Consistent communication using established practices eliminates confusion and speeds up reaction times
Communicate Status to Operators

Clear status indication gives workers information when and where they need it, resulting in efficient processes.

**Empower Operators** – Indicators, touch buttons and E-stops for operator communication and interface improve accountability by empowering workers to take action when problems occur.

**Alert Supervisors** – Tower lights and indicators communicate machine, work cell and inventory status, which helps supervisors identify and resolve issues quickly.

**Accelerate Problem Resolution** – Immediate, overt status information ensures more efficient problem resolution.

**Conspicuous** – mounting them where they are most visible versus where the electrical enclosure is located.

**Unambiguous** - there should be no confusion of on/off states.

**Andon** is a device that calls attention to defects, equipment abnormalities or other problems. It typically reports status through a system of lights (red for failure, amber for marginal and green for normal operation are common). Andon is an important tool in lean manufacturing and should be:

**Conspicuous** – mounting them where they are most visible versus where the electrical enclosure is located.

**Unambiguous** - there should be no confusion of on/off states.
Lean Principle

Poke-Yoke

An example of the Poke-Yoke method, or mistake proofing, is light-guided assembly. With simple implementation in the factory, this technique speeds up manufacturing by visually guiding the assembler and providing feedback for correct and incorrect picks.
Increase Efficiency with Pick-to-Light Assembly Processes

Easy-to-see pick-to-light indication guides operators for assembly and kitting applications. Real-time sensor feedback ensures accuracy.

**Fast** – increase operator efficiency with visual guidance to the correct part location

**Accurate** – Visual indication and pick feedback result in increased operator accuracy

**Cost Effective** – Simple devices that can be easily implemented into a control system

**Flexible** – A variety of hardware solutions and mounting options

Touch Buttons
page 100

Sensors
page 128

Sensor Arrays
page 118
Banner’s lighting and indicator solutions are high-quality, stylish products designed to meet your application needs. With flexible designs and energy-efficient LED products, Banner gives you better indication solutions that require no maintenance.

**The Design:**
Sleek yet Rugged

**The Products:**
Simple yet Intelligent

**The Options:**
Endless yet Unique

**Ease-of-use**
Banner’s lighting and indicator products require no additional protective enclosure, have quick-disconnect options and a variety of mounting solutions, making products easy to install.

**Energy savings**
With high-quality, long-life LED lights, Banner’s lighting and indicator products provide efficient, energy-saving options that are extremely bright and highly visible on the factory floor.
Banner’s lighting and indicator products are advanced solutions that pinpoint what’s important to give you a unique solution that suits your environmental, workplace efficiency and mounting needs.

Banner’s lighting and indicator products are made to last in the toughest environments with housings rated up to IP69K.

Banner’s high quality products are made for long-term use, requiring zero maintenance after installation.

Banner’s innovative products are advanced solutions that pinpoint what’s important to give you a unique solution that suits your environmental, workplace efficiency and mounting needs.
LED Lighting

Banner's LED lighting solutions are high-quality, energy-efficient products that provide bright illumination for up to 50,000 hours of working life. Robust, vibration-resistant housings and sleek designs make the Banner LED lighting line ideal for a wide range of industrial and mobile applications, including machine lighting, enclosure lighting, visual inspection illumination and work cell lighting. Low dc voltage operation allows for lighting control via a PLC or other control system for additional energy savings.
WLB32 LED Light Bar

The WLB32 utilizes advanced LED lighting technology providing high-quality and maintenance-free industrial lighting solutions that will last for years.

- High brightness with an even light output for a no-glare glow
- Robust metal housing, shatterproof light cover and easy installation
- Ideal for work stations, machine lighting, control cabinets and manufacturing lines
- Energy efficient for overall cost savings
- High/Low/Off switch allows users to customize light levels
Family | Power | Cascadable | Lighted Length (mm) | Control | Connector | Plug Type (AC Models)
--- | --- | --- | --- | --- | --- | ---
WLB32 | Z | C | 285 | PB = Hi/Low/Off | QM | B
Z = AC
Blank = DC
C = Cascadable
PB = No Switch
QM = AC
Q = Euro QD (dc)
Blank = Cable (dc)
EF = France, Belgium, Slovakia, Tunisia, Germany, Austria, Netherlands, Spain, S. Korea
G = UK, Ireland, Cyprus, Malta, Malaysia, Singapore, Hong Kong, Vietnam
I = Australia, New Zealand, Papua New Guinea, Argentina, China
N = Brazil, South Africa
C = AC connector with flying leads
Blank = No power cord

Operating Voltage
12 to 30 V dc (dc models)
90 to 264 V ac (ac models)

Lumen Output
600/ft

LED Lifetime
50,000 hours

Color Temperature
Daylight White — 5000 k

Switch
High = 100% intensity
Low = 50% intensity

Environmental Rating
IP50 — Dry location only

Certifications
UL

Length (mm) | Lumens (Typical @ 25 °C) | AC Models Typical Wattage* (Watts) | DC Models Typical Wattage* (Watts)
--- | --- | --- | ---
285 | 600 | 9 | 7.4
570 | 1200 | 18 | 14.8
850 | 1800 | 27 | 22.2
1130 | 2400 | 36 | 29.6

* Typical operating wattage is measured at 120 V ac or 24 V dc, depending on model

AC Cascade and Power Cordsets (DC Cascade and Power cordsets shown on page 25)

Double-Ended Cascading Cordset
Male straight/Male straight connectors

LQMAE-300SS
0.15 m (0.5')
LQMAEC-301SS
0.31 m (1.0')
LQMAEC-303SS
0.91 m (3.0')
LQMAEC-306SS
1.83 m (6.0')

LQMAE-312SS
3.66 m (12.0')
LQMAEC-320SS
6.10 m (20.0')
LQMAEC-330SS
9.14 m (30.0')

LQMAC-306
Flying Leads
LQMAC-306B
North & Central America, Japan, Taiwan
LQMAC-306D
India, Sri Lanka, Nepal, Namibia
LQMAC-306EF
France, Belgium, Slovakia, Tunisia, Germany, Austria, Netherlands, Spain, S. Korea
LQMAC-306G
UK, Ireland, Cyprus, Malta, Malaysia, Singapore, Hong Kong, Vietnam
LQMAC-306I
Australia, New Zealand, Papua New Guinea, Argentina, China
LQMAC-306N
Brazil

Power Cordset
1.8 m (6')

LMBWLB32
LMBWLB32-180S
LMBWLB32MAG
LMBWLB32U
LMBWLB32UT

Additional accessories are available at bannerengineering.com
The WLB92 has design aesthetics for an office and rugged durability for the factory. With several mounting options, AC and DC models and a dimming function available, the WLB92 industrial LED light bar suits a wide variety of lighting application needs.

- Durable light stands up in your environment with a rugged metal housing and shatterproof light cover
- No maintenance time or cost with long-life, energy-efficient LEDs
- Easy installation with variety of mounting options: surface, swivel, snap and hanging brackets
- AC models are DLC qualified and have a five year warranty
AC Conduit Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Voltage</th>
<th>Cascadable</th>
<th>Lighted Length</th>
<th>Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLB92</td>
<td>Z</td>
<td>C</td>
<td>550 mm</td>
<td>A</td>
<td>CT</td>
</tr>
<tr>
<td></td>
<td>Z = AC</td>
<td>C = Cascadable</td>
<td>1100 mm</td>
<td></td>
<td>CT = Conduit Entry</td>
</tr>
</tbody>
</table>

AC Quick-Disconnect Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Voltage</th>
<th>Cascadable</th>
<th>Lighted Length</th>
<th>Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLB92</td>
<td>Z</td>
<td>C</td>
<td>550 mm</td>
<td>PB</td>
<td>QB</td>
</tr>
<tr>
<td></td>
<td>Z = AC</td>
<td>C = Cascadable</td>
<td>1100 mm</td>
<td></td>
<td>QB = Switch, Dimming Knob</td>
</tr>
</tbody>
</table>

DC Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascadable</th>
<th>Lighted Length</th>
<th>Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLB92</td>
<td>X</td>
<td>550 mm</td>
<td>PB</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td>X = Non-Cascadable</td>
<td>1100 mm</td>
<td></td>
<td>Q = Integral 4-pin Euro QD</td>
</tr>
</tbody>
</table>

Operating Voltage
- 24 V dc (dc models)
- 100 to 277 V ac (ac models)

Construction
- Housing: Anodized aluminum
- Window: Polycarbonate

LED Lifetime
- 50,000 hours

Color Temperature
- Daylight White — 5000 k

Environmental Rating
- IEC IP50

Certifications
- UL
- cUL

AC Power Cordset 1.8 m (6')
- For use with models using QM connector.
- Cascadable model cables available on page 19.

DC Power Cordset 2 m (6.5')
- For use with DC models
- 4-Pin M12 Euro-Style Cordsets

Additional accessories available at bannerengineering.com
Banner’s WLS27 LED Strip Lights have sturdy internal aluminum housings, encased in shatterproof, UV-stabilized, polycarbonate shells, making them ideal for harsh indoor and outdoor applications.

- Round shape makes them suitable for laminar airflow applications
- Rugged, water-resistant IP67, IP68g and IP69k design
- Daisy chain power to multiple lights
- Capability to dim lights using the wiring pinout (Hi/Lo/Off)
- Automatic temperature protection built into the unit to protect the product lifetime
### 4-Pin M12/Euro-Style Cordsets

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Cool White</th>
<th>Warm White</th>
<th>Red</th>
<th>Green</th>
<th>Blue</th>
<th>Yellow</th>
<th>Typical Wattage** (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td>300</td>
<td>300</td>
<td>50</td>
<td>155</td>
<td>35</td>
<td>45</td>
<td>3.6</td>
</tr>
<tr>
<td>285</td>
<td>600</td>
<td>600</td>
<td>100</td>
<td>330</td>
<td>70</td>
<td>90</td>
<td>7.2</td>
</tr>
<tr>
<td>430</td>
<td>900</td>
<td>900</td>
<td>150</td>
<td>495</td>
<td>105</td>
<td>135</td>
<td>11.0</td>
</tr>
<tr>
<td>570</td>
<td>1200</td>
<td>1200</td>
<td>200</td>
<td>660</td>
<td>140</td>
<td>180</td>
<td>14.6</td>
</tr>
<tr>
<td>710</td>
<td>1500</td>
<td>1500</td>
<td>250</td>
<td>825</td>
<td>175</td>
<td>225</td>
<td>18.5</td>
</tr>
<tr>
<td>850</td>
<td>1800</td>
<td>1800</td>
<td>300</td>
<td>990</td>
<td>210</td>
<td>270</td>
<td>22.1</td>
</tr>
<tr>
<td>990</td>
<td>2100</td>
<td>2100</td>
<td>350</td>
<td>1155</td>
<td>245</td>
<td>315</td>
<td>25.9</td>
</tr>
<tr>
<td>1130</td>
<td>2400</td>
<td>2400</td>
<td>400</td>
<td>1320</td>
<td>280</td>
<td>360</td>
<td>29.8</td>
</tr>
</tbody>
</table>

* Lumen values lowered by 35% on diffused window models
** Typical operating wattage is measured at 24 V dc

---

**Supply Voltage**
12 to 30 V dc

**Construction**
*Housing*: Polycarbonate

**LED Lifetime**
50,000 hours

**Environmental Rating**
IEC IP67, IP68g, IP69K per DIN 40050

**Operating Temperature**
-40 to +70 °C (-40 to +158 °F)

**Certifications**

---

**LED Color**
- C = Cool White
- WW = Warm White
- R = Red
- G = Green
- B = Blue
- Y = Yellow

**Construction**
- Q = Integral Euro QD
- QD models require mating cordset

**Connector**
- S = Sealed

---

**WLS27 Family**
- C = Cascadable
- X = Non Cascadable

---

**MQDC-WDSS-406**
2 m (6.5')
MQDC-WDSS-415
5 m (15')
MQDC-WDSS-430
9 m (30')

**MQDC-406**
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

**MQDEC-401SS**
0.3 m (1')
MQDEC-403SS
1 m (3')
MQDEC-406SS
2 m (6.5')

**CSB-M1241M1241**
0.3 m (1') male trunk; 2 x 0.3 m (1') female branches

---

**Additional accessories are available at bannerengineering.com**
Banner’s LED Strip Lights have sturdy aluminum housings, shatterproof windows and a low-profile, space-saving design. Convenient angle brackets can be used to direct the light exactly where it’s needed.

- Magnetic mount options available for easy installation
- Lensed option or choice of clear or diffuse window
- Can be cascaded end-to-end to minimize wiring
- Ability to dim lights using wiring or High/Low/Off switch
- In-line or built-in motion detector switch available for an economic, automated way to switch ON/OFF lights
<table>
<thead>
<tr>
<th>Family</th>
<th>Cascadable</th>
<th>LED Color</th>
<th>Lighted Length (mm)</th>
<th>Window</th>
<th>Construction</th>
<th>Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLS28-2</td>
<td>C</td>
<td>W</td>
<td>Cool White</td>
<td>D</td>
<td>X</td>
<td>PB</td>
<td>Q</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Lumens* (Typical @ 25 °C)</th>
<th>Typical Wattage** (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td>325 Cool White, 325 Warm White, 55 Red, 180 Green, 40 Blue, 50 Yellow</td>
<td>3.6</td>
</tr>
<tr>
<td>285</td>
<td>650 Cool White, 650 Warm White, 110 Red, 360 Green, 80 Blue, 100 Yellow</td>
<td>7.2</td>
</tr>
<tr>
<td>430</td>
<td>975 Cool White, 975 Warm White, 165 Red, 540 Green, 120 Blue, 150 Yellow</td>
<td>11.0</td>
</tr>
<tr>
<td>570</td>
<td>1300 Cool White, 1300 Warm White, 220 Red, 720 Green, 160 Blue, 200 Yellow</td>
<td>14.6</td>
</tr>
<tr>
<td>710</td>
<td>1625 Cool White, 1625 Warm White, 275 Red, 900 Green, 200 Blue, 250 Yellow</td>
<td>18.5</td>
</tr>
<tr>
<td>850</td>
<td>1950 Cool White, 1950 Warm White, 330 Red, 1080 Green, 240 Blue, 300 Yellow</td>
<td>22.1</td>
</tr>
<tr>
<td>990</td>
<td>2275 Cool White, 2275 Warm White, 385 Red, 1260 Green, 280 Blue, 350 Yellow</td>
<td>25.9</td>
</tr>
<tr>
<td>1130</td>
<td>2600 Cool White, 2600 Warm White, 440 Red, 1440 Green, 320 Blue, 400 Yellow</td>
<td>29.8</td>
</tr>
</tbody>
</table>

* Lumen values lowered by 35% on diffused window models
** Typical operating wattage is measured at 24 V dc

Supply Voltage: 12 to 30 V dc
Construction: Housing: Clear anodized aluminum
End Caps: Painted zinc
Window: Acrylic
LED Lifetime: 50,000 hours
Environmental Rating: Non-sealed Models: IEC IP50
Sealed Models: IEC IP67/IP69K per DIN 40050
Operating Temperature: -25 to +70 °C (-13 to +158 °F)
Certifications:
- UL cUL Listed
- cTUVus
- CE Mark

Top Mount: SMBWLS28RA (included with light)
Side Mount: SMBWLS28SM
Magnetic Mount: SMBWLSMAG — Protective cover for magnet sold separately
Snap Mount: SMBWLS28SP

4-Pin M12/Euro-Style Cordsets
- MQDC-406 2 m (6.5')
- MQDC-415 5 m (15')
- MQDC-430 9 m (30')
- MODEC-401SS 0.3 m (1')
- MODEC-403SS 1 m (3')
- MODEC-406SS 2 m (6.5')
- CSB-M1241M1241 0.3 m (1') male trunk; 2 x 0.3 m (1') female branches

PSD-24-4 Class 2 Power Supply
- Input: 90-264 V ac 1.5A
- Output: 24 V dc 3.9A
- 2 m (6.5') 4-Pin Euro Connector

Additional accessories are available at bannerengineering.com
Banner’s WLS28-2 Dual Color LED Strip Lights have a slim profile and are manufactured from a sturdy aluminum extrusion and die-cast metal end caps. The LED strip lights are ideal for applications requiring more than one color such as mobile vehicle illumination, where red light makes it easier for operators’ eyes to transition to dark areas at night. Another application includes machine status indication, where alternating colors illuminate equipment during an error condition.

- Enhanced light quality with bright, densely-spaced LEDs
- Optional three-position switch for manual color selection
- Rugged, water-resistant IP69K models available
- Internal temperature control to protect the device in extreme conditions
- Cascadable models allow control of several lights with one power cable
Supply Voltage
12 to 30 V dc

Construction
- Housing: Clear anodized aluminum
- End Caps: Painted zinc
- Window: Acrylic

Environmental Rating
- Non-sealed Models: IEC IP50
- Sealed Models: IEC IP67/IP69K per DIN 40050

Operating Temperature
-25 to +70 °C (-13 to +158 °F)

Certifications

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Lumens* (Typical @ 25 °C)</th>
<th>Typical Wattage** (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Daylight White</td>
<td>Red</td>
</tr>
<tr>
<td>285</td>
<td>475</td>
<td>200</td>
</tr>
<tr>
<td>570</td>
<td>950</td>
<td>400</td>
</tr>
<tr>
<td>850</td>
<td>1425</td>
<td>600</td>
</tr>
<tr>
<td>1130</td>
<td>1900</td>
<td>800</td>
</tr>
</tbody>
</table>

* Lumen values lowered by 35% on diffused window models
** Typical operating wattage is measured at 24 V dc

Additional accessories are available at bannerengineering.com
WLC60 Heavy-Duty LED Light

The WLC60 Heavy-Duty LED Light was designed to withstand the harshest environments. The ultra-bright light is oil, chemical and water resistant with IP68, IP68g and IP69K ratings, making it an ideal choice for many industrial lighting applications, including machine lighting and machine tool environments.

- Chemical-resistant design protects against liquid ingress
- Durable polycarbonate window or borosilicate glass (BSG) option available for enhanced chemical and thermal resistance
- High brightness paired with advanced glare-reducing optics
- Vibration and shock resistant
- Stainless steel models available with a corrosion resistant 316L housing, ideal for food and beverage, pharmaceutical, chemical and marine applications
WLC60 LED Light

Family | Cascadable | LED Color | Lighted Length (mm) | Window | Mounting Type | Construction | Connector Exit | Connector
--- | --- | --- | --- | --- | --- | --- | --- | ---
WLC60 | X | W | 340 | G | Blank = Base Mount | Blank = Polycarbonate | Blank = Side Exit | Q

WLC60 LED Light—Stainless Steel

Family | Cascadable | LED Color | Lighted Length (mm) | Window | Mounting Type | Construction | Connector Exit | Connector
--- | --- | --- | --- | --- | --- | --- | --- | ---
WLC60 | X | W | 340 | G | Blank = Base Mount | SS = 316 Stainless Steel | Blank = Side Exit | Q

Supply Voltage | 12 to 30 V dc
Construction | Housing: Nickel-plated aluminum
Window: Polycarbonate or Borosilicate Glass
Environmental Rating | Rated IEC IP68, IP68g, IP69K per DIN 40050
Operating Temperature | -40 to +70 °C (-40 to +158 °F)
Certifications | UL

<table>
<thead>
<tr>
<th>Length (mm)</th>
<th>Lumens (Typical @ 25 °C)</th>
<th>Typical Wattage* (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>340</td>
<td>1300</td>
<td>14.2</td>
</tr>
<tr>
<td>640</td>
<td>2600</td>
<td>28.1</td>
</tr>
</tbody>
</table>

*Typical operating wattage is measured at 24 V dc

Additional accessories are available at bannerengineering.com

PSD-24-4 - Class 2 Power Supply
Input: 90-264 V ac 1.5A
Output: 24 V dc 3.9A
2 m (6.5') 4-Pin Euro Connector
WLC90 Heavy-Duty LED Light

Banner’s WLC90 Heavy-Duty Lights are designed to operate in harsh environments, withstanding washdown and spray from water and chemicals such as coolants and detergents. They are extremely compact and bright, making them an excellent choice for machining centers and food processing equipment.

- Rugged housing resists water, coolants, oils and detergent with IP68, IP68g and IP69K ratings
- Wide operating temperature range with an internal monitoring circuit that will dim the LEDs to a safe level at extreme temperatures
- Three lens options to suit many application needs
- Pan and tilt brackets for versatile mounting to direct light in any direction
- All models have three discrete intensity level settings
Supply Voltage 12 to 30 V dc

Construction
Housing: Nickel-plate aluminum
Window: polycarbonate or borosilicate glass

Environmental Rating
Rated IEC IP68, IP68g, IP69K per DIN 40050

Operating Temperature
-40 to +70 °C (-40 to +158 °F)

Certifications

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Window</th>
<th>Lensing</th>
<th>Connector Exit</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLC90</td>
<td>W</td>
<td>G</td>
<td>L15</td>
<td>Blank = Side Exit</td>
<td>Q (Euro Integral QD)</td>
</tr>
</tbody>
</table>

Blank = Polycarbonate
G = Borosilicate Glass
L8 = ± 8°
L15 = ± 15°
L30 = ± 30°
Blank = 2 m Integral Cable

Lumens (Typical @ 25 °C) Typical Wattage* (Watts)

| Cool White | 625 | 8.1 |

*Typical operating wattage is measured at 24 V dc

Rear-Exit Models
Side-Exit Models
LMBWLC90PT
SMBAMS70AS

4-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle, add RA to the end of the model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

4-Pin M12/ Euro-Style Washdown Cordset
Straight connector models only

MQDC-WDSS-406
2 m (6.5')
MQDC-WDSS-415
5 m (15')
MQDC-WDSS-430
9 m (30')

Additional accessories are available at bannerengineering.com

PSD-24-4 Class 2 Power Supply
Input: 90-264 Vac 1.5A
Output: 24 V dc 3.9A
2 m (6.5') 4-Pin Euro Connector
WLA LED Area Lights

Banner’s LED Area Lights provide high intensity, uniform light with low energy consumption and a small footprint. Banner’s Area Lights are a versatile lighting source for a wide range of indoor and outdoor applications with angle bracket or magnetic mount options available.

- Up to 2600 lumens for extremely bright illumination
- Encapsulated models available for enhanced resistance to chemicals, vibration and shock
- Choice of clear or diffuse window for reduced glare
- Optical lensed options create more focused illumination
- Rugged housing rated to IP69K for high-pressure, high-temperature washdown applications
### Supply Voltage

12 to 30 V dc

### Construction

- **Housing:** PBT
- **Window:** Acrylic
- **Connector:** Nickel-plated brass or PVC-jacketed cable

### Environmental Rating

Rated IEC IP67 and IP69K, per DIN 40050

### Operating Temperature

-20 to +50 °C (-4 to +122 °F)

### Certifications

Encapsulated models not UL listed

---

**Family**

<table>
<thead>
<tr>
<th>Array Size (mm)</th>
<th>Window</th>
<th>Lensing</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA Standard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WLA Encapsulated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### LED Color

- **W** = Cool White
- **WW** = Warm White
- **R** = Red
- **G** = Green
- **B** = Blue
- **Y** = Yellow

#### Array Size (mm)

<table>
<thead>
<tr>
<th>Array Size (mm)</th>
<th>Lumens*</th>
<th>Typical Wattage**</th>
</tr>
</thead>
<tbody>
<tr>
<td>105x180</td>
<td>550</td>
<td>9.6</td>
</tr>
<tr>
<td>190x180</td>
<td>1100</td>
<td>19.2</td>
</tr>
<tr>
<td>275x180</td>
<td>1650</td>
<td>29.8</td>
</tr>
<tr>
<td>360x180</td>
<td>2200</td>
<td>38.4</td>
</tr>
</tbody>
</table>

- *Lumen values lowered by 35% on diffused window models
- **Typical operating wattage is measured at 24 V dc**

---

**Magnetic Mount**

**4-Pin M12/Euro-Style Cordsets**

- Straight connector models listed; for right-angle, add RA to the end of the model number (example, MQDC-406RA)

**4-Pin M12/Euro-Style Washdown Cordset**

- Straight connector models only

**Additional accessories are available at bannerengineering.com**

---

**SMBBSSM**

**SMBBSRA**

**SMBWLAMAG** — Protective cover for magnet sold separately

---

**PSD-24-4**

- **Class 2 Power Supply**
- **Input:** 90–264 V ac, 1.5A
- **Output:** 24 V dc, 3.9A
- **2 m (6.5’) 4-Pin Euro Connector**
WL50S LED Spot Lights

Banner’s high-intensity LED Spot Lights emit light in a controlled beam, providing extremely bright illumination directly at a target with optimal energy efficiency. These lights are rugged and water-resistant, making them a good choice for machine lighting, food and beverage applications and mobile applications.

- Three lens options to suit many application needs
- Rugged, sealed housing rated to IP69K
- 50 mm diameter with flat profile and 30 mm mounting base
- Stainless steel version with FDA-grade silicone gasket and Viton® O-Ring seal
- Many bracket options for simple mounting and alignment
### WL50S Family
- **LED Color**: W
- **LED Color**: L11
- **Connector**: Q

<table>
<thead>
<tr>
<th>Lens</th>
<th>Lumens (Typical @ 25 °C)</th>
<th>Typical Wattage* (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>±2°</td>
<td>295 270 170</td>
<td>4.3</td>
</tr>
<tr>
<td>±11°</td>
<td>285 200 105</td>
<td></td>
</tr>
<tr>
<td>±20°</td>
<td>270 190 100</td>
<td></td>
</tr>
</tbody>
</table>

*Typical operating wattage is measured at 24 V dc

#### Supply Voltage
- 12 to 30 V dc

#### Construction
- **Housing**: Black anodized aluminum or Stainless Steel with FDA-grade silicone gasket and Viton® o-ring seal
- **Window**: Polycarbonate or glass window
- **Connector**: Nickel-plated QD connector or PVC-jacketed cable
- **Mounting Nut**: Black zinc-plated steel or Stainless Steel mounting nut

#### Environmental Rating
- IEC IP67, IP69K per DIN 40050

#### Operating Temperature
- -20 to +50 °C (-4 to +122 °F)

## Accessories
- **4-Pin M12/Euro-Style Cordsets**
  - MQDC-406
    - 2 m (6.5’)
  - MQDC-415
    - 5 m (15’)
  - MQDC-430
    - 9 m (30’)
- **4-Pin M12/Euro-Style Washdown Cordset**
  - MQDC-WDSS-406
    - 2 m (6.5’)
  - MQDC-WDSS-415
    - 5 m (15’)
  - MQDC-WDSS-430
    - 9 m (30’)

Additional accessories are available at bannerengineering.com

---

**DIMMABLE MODELS—** pages 38-39
WL50-2 LED Work Lights

Banner’s LED Work Lights are ideal in areas where space is limited. Featuring a low-profile, 50 mm flat-pack design and robust housing, the LED Work Lights are suitable for many applications, including maintenance stations, control cabinets and general illumination applications.

- Low power consumption
- Aesthetic shape that sheds debris and moisture
- Rugged, water-resistant IP69K models
- VELCRO® brand VELCOIN® fasteners included for quick mounting and convenient repositioning of light (WL50F-2 models only)
- Long-lasting LED technology for zero maintenance after installation
### Supply Voltage
12 to 30 V dc

### Construction
- **Housing:** Polycarbonate
- **Connector:** Nickel-plated brass or PVC-jacketed cable

### Environmental Rating
- **Standard Models:** IP69K per DIN 40050
- **Push-Button Models:** IEC IP67

### Operating Temperature
-40 to +50 °C (−40 to +122 °F)

### Certifications

**Mounting Options for Flat Mount Models**
- VELCRO® Brand VELCOIN® Fasteners (included)
- Screw Mount

**Mounting Options for 30 mm Mount Models**
- FLX18 Flex Arm Mounts
  - See page 40 for more information

**DIMMABLE MODELS—**
- pages 38-39

---

### Lumens (Typical @ 25 °C)

<table>
<thead>
<tr>
<th>Color</th>
<th>Lumens (Typical)</th>
<th>Typical Wattage* (Watts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool White</td>
<td>185</td>
<td>2.4</td>
</tr>
</tbody>
</table>

*Typical operating wattage is measured at 24 V dc

---

- **MQDC-406**
  - 2 m (6.5’)
- **MQDC-415**
  - 5 m (15’)
- **MQDC-430**
  - 9 m (30’)

Additional accessories are available at bannerengineering.com
**LED Dimming Controller & Dimmable LED Lights**

The LED Pulse-Width Modulation (PWM) Dimming Controller allows an operator to dim an LED light source without loss of accuracy. The high-frequency modulation allows for precise intensity control and flicker-free illumination. The Dimming Controller paired with Banner’s LED lighting products helps further increase energy savings, helping to reduce overall energy costs.

- Ability to dim light at an operator station
- Works with special models of the strip lights, heavy-duty lights, area lights, spot lights and work lights
- Allows for control of multiple lights with one module
- PWM versions of LED lights can be controlled by other PWM output devices as well as Banner’s controller
- Ability to control intensity from zero to 100 percent to suit the level required for the application

---

### WLS28-2 LED Strip Lights

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascadable</th>
<th>LED Color</th>
<th>Lighted Length (mm)</th>
<th>Window</th>
<th>Construction</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLS28-2</td>
<td>C</td>
<td>W</td>
<td>145</td>
<td>X</td>
<td>PWM</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>285</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>430</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>570</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>710</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>850</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>990</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* W = Cool White

---

### WLC60 Heavy-Duty LED Light

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascadable</th>
<th>LED Color</th>
<th>Lighted Length (mm)</th>
<th>Window</th>
<th>Mounting Type</th>
<th>Construction</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLC60</td>
<td>X</td>
<td>W</td>
<td>340</td>
<td>G</td>
<td>Base Mount</td>
<td>A</td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>340</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>640</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* W = Cool White

---

### WLS27 LED Strip Lights

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascadable</th>
<th>LED Color</th>
<th>Lighted Length (mm)</th>
<th>Window</th>
<th>Construction</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLS27</td>
<td>C</td>
<td>W</td>
<td>145</td>
<td>D</td>
<td>S</td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>145</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>285</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>430</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>570</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>710</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>850</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>990</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* W = Cool White

---

* Sealed models not available with ON/OFF switch

---

* Flush Mount models only available in 340 mm length

---

* PWM models require mating cordset

---

* Sealed models not available with ON/OFF switch

---

* PWM models require mating cordset

---

* Sealed models not available with ON/OFF switch

---

* PWM models require mating cordset
### WLC90 Heavy-Duty LED Light

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Window</th>
<th>Lensing</th>
<th>Connector</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLC90</td>
<td>W</td>
<td>G</td>
<td>L15</td>
<td>Q</td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L8 = ±8”</td>
<td>Blank = Side Exit</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L15 = ±15”</td>
<td>R = Rear Exit</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>L30 = ±30”</td>
<td></td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
</tbody>
</table>

- W = Cool White
- Blank = Polycarbonate
- G = Borosilicate Glass

### WLA LED Area Lights

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Array Size (mm)</th>
<th>Window</th>
<th>Lensing</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLA</td>
<td>W</td>
<td>105X180</td>
<td>E</td>
<td>L11</td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td>105X180</td>
<td></td>
<td>Blank = No Lenses</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>190X180</td>
<td></td>
<td>L11 = ±11”</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>275X180</td>
<td></td>
<td>L22 = ±22”</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>360X180</td>
<td></td>
<td>L30 = ±30”</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
</tbody>
</table>

- W = Cool White
- Blank = Clear Plastic
- D = Diffused Plastic

### WL50S LED Spot Lights

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Lens Angle</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL50S</td>
<td>W</td>
<td>L11</td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L5 = ±5° (small)</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L11 = ±11” (large)</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L20 = ±20” (largest)</td>
<td>PWM = Dimmable</td>
<td>QQ models require mating cordset</td>
</tr>
</tbody>
</table>

- W = White

### WL50-2 LED Work Lights

<table>
<thead>
<tr>
<th>Family</th>
<th>Power Switch</th>
<th>Intensity Control</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>WL50-2</td>
<td></td>
<td>PWM</td>
<td>Q</td>
</tr>
<tr>
<td>WL50F-2</td>
<td></td>
<td>PWM</td>
<td>Q</td>
</tr>
</tbody>
</table>

- W = White
- Blank = Standard
- PB = ON/OFF Switch
- PWM = Dimmable
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QQ models require mating cordset

---

**Note:** The images of the devices are not included in the text representation. However, the diagrams and tables above provide a comprehensive overview of the features and specifications of the LED lights.
Flex Arm

Banner’s Flex Arm Mounting Accessories provide versatile mounting options to easily direct lighting where it is needed, whether in a work station or along a manufacturing line. The Flex Arm is available for use with spot lights, work lights and vision spot lights.

- Versatile mounting options including magnetic mount, clamp mount and flange mount
- Vinyl coated to protect against moisture
- Adjustable arm allows for easy repositioning of light to suit many application needs
- Concentrate light exactly where needed
- Portability with magnetic and clamp mount options
<table>
<thead>
<tr>
<th>Models</th>
<th>Base Connection</th>
<th>Light Connection</th>
<th>Brackets</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLX18-1212</td>
<td>1/2-14 NPSM</td>
<td>1/2-14 NPSM (Male)</td>
<td>SMB22A, SMBFLXMXAG, LMBE12RA</td>
</tr>
<tr>
<td>FLX18-F12</td>
<td>3-Hole Flange</td>
<td>Use with: WL50, WL50PB, WL50-2, WL50-2PB</td>
<td>Direct Mount</td>
</tr>
<tr>
<td>FLX18-12M30</td>
<td>1/2-14 NPSM</td>
<td>SMB22A, SMBFLXMXAG, LMBE12RA</td>
<td></td>
</tr>
<tr>
<td>FLX18-DM30</td>
<td>M30 x 1.5 (Female)</td>
<td>Use with: WL50, WL50PB, WL50-2, WL50-2PB, WL50S</td>
<td>SMBFLXCLAMPD, SMBFLXMXAGD, LMBE12RA</td>
</tr>
<tr>
<td>FLX18-FM30</td>
<td>3-Hole Flange</td>
<td>Direct Mount</td>
<td></td>
</tr>
</tbody>
</table>
Banner’s Signal Tower Lights are premium LED-based products that are designed for long life and no maintenance. These rugged, yet stylish tower lights are completely flexible with preassembled or modular models to suit application needs, and have an extensive range of mounting accessories, which allows for a quick and easy installation process. Various model offerings allow for customized solutions, including a choice of ac or dc supply power, three audible output options, standard or high light intensities and quick-disconnect or prewired options.
Banner’s TL70 Tower Light is a 70 mm, modular LED indicator with extremely bright and uniform light. The modularity gives the user flexibility to customize tower lights as needed and change positions in the field. The TL70 is also available preassembled for easy installation.

- Light segments have user-selectable solid ON or flashing
- Up to five colors plus audible in one device
- Rugged, water-resistant IP65 housing with UV stabilized material
- Bright, uniform indicator segments appear gray when off to eliminate false indication from ambient light
- Several connection options to choose from including M12 quick disconnect, cabled and terminal-wired
Supply Voltage
12 to 30 V dc

Construction
Bases and Covers: Polycarbonate
Light Segment: Polycarbonate

Environmental Rating
IP65

Operating Temperature
−40 to +50 °C (−40 to +122 °F)

Certifications

TL70 Base
Housing
Connection
Housing Color

B-TL70
Q5
Blank = Black
C = Gray

Base Segment
5 = 2 m, 5-wire Integral Cable
8 = 2 m, 8-wire Integral Cable
T = Terminal
Q5 = 5-pin Euro Integral QD (1-4 modules)
Q8 = 8-pin Euro Integral QD (5+6 modules)
QP5 = 5-pin Euro Pigtail (1-4 modules)
QP8 = 8-pin Euro Pigtail (5+6 modules)

TL70 Segments
Housing
Color/Alarm
Housing Color

SG-TL70
G = Green
Y = Yellow
R = Red
B = Blue
W = White
A = Audible
Blank = Black
C = Gray

Tower Height (H)
General-Purpose
Sealed
IP67
Tower Height (H)
Terminal
Directional
1
87.6 mm
87.6 mm
144.3 mm
2
137.3 mm
137.3 mm
194.0 mm
3
187.0 mm
187.0 mm
243.7 mm
4
236.7 mm
236.7 mm
293.4 mm
5
286.4 mm
286.4 mm
343.1 mm

Accessories are listed on pages 56-57
Wireless TL70 Tower Lights

Monitor where you couldn’t before. Wireless indicators bring vivid visual status indication to challenging areas.

- Two-way wireless communication eliminates costly and time-consuming wiring runs
- 900 MHz or 2.4 GHz models available
- 70 mm modular light segments enable custom arrangements and feature user-selectable solid ON or flashing display
- Select up to five highly-visible color light segments per device with optional audible available
- Indicator segments appear gray when off, eliminating false indication from ambient light
**TL70 Base**

- **Housing**: B-TL70
- **Radio Band**: DXN2
- **Connection**: Q5
- **Housing Color**: Blank = Black
  - **Light Segment**: Polycarbonate
- **Environmental Rating**: IP65
- **Operating Temperature**: −40 to +50 °C (−40 to +122 °F)
- **Certifications**: General-Purpose

---

**TL70 Segments**

- **Housing**: SG-TL70
- **Color/Alarm**: R
- **Connection**: Q
- **Housing Color**: Blank = Black
  - **Light Segment**: Polycarbonate

---

**TL70 Multicolor Segments**

- **Housing**: SG-TL70
- **Color**: W B G
- **Connection**: Q
- **Housing Color**: Blank = Black

---

**TL70 Preassembled Model**

- **Housing**: TL70
- **Radio Band**: DXN2
- **Color/Position**: W B G Y R
- **Audible Alarm**: Blank = None
- **Housing Color**: Blank = Black
- **Connection**: Q

---

**Supply Voltage**: 12 to 30 V dc

**Construction**: Bases and Covers: Polycarbonate
- **Light Segment**: Polycarbonate

**Environmental Rating**: IP65

**Operating Temperature**: −40 to +50 °C (−40 to +122 °F)

**Certifications**: General-Purpose

---

**Tower Height (H)**

<table>
<thead>
<tr>
<th></th>
<th>General-Purpose</th>
<th>Sealed Omni-Directional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>87.6 mm</td>
<td>87.6 mm</td>
</tr>
<tr>
<td>2</td>
<td>137.3 mm</td>
<td>137.3 mm</td>
</tr>
<tr>
<td>3</td>
<td>187.0 mm</td>
<td>187.0 mm</td>
</tr>
<tr>
<td>4</td>
<td>236.7 mm</td>
<td>236.7 mm</td>
</tr>
<tr>
<td>5</td>
<td>286.4 mm</td>
<td>286.4 mm</td>
</tr>
</tbody>
</table>

**Accessories are listed on pages 56-57**

---

**EZ-LIGHT® TL70 Tower Lights**

Can be built-to-order, prewired and configured with easy mounting and connecting.

Configure the model for your application today and we'll assemble it for you! Visit [www.bannerengineering.com/towerlights](http://www.bannerengineering.com/towerlights)
Banner’s TL50 Tower Lights are designed to be exceptionally bright with a long, visible indication range, providing excellent operational status for workers and supervisors. Several models are available for use in a variety of environments, including options with audible alerts.

- Install quickly and easily with no assembly required
- Clearly evident ON/OFF status
- Versatile mounting options
- Compact, sleek, rugged design with IP67 models available
- Audible alert: continuous, pulsed and staccato models available
EZ-LIGHT® TL50 Tower Lights are built-to-order, prewired and configured with easy mounting and connecting. Configure the model for your application today and we’ll assemble it for you! Visit www.bannerengineering.com/towerlights

Supply Voltage

18 to 30 V dc or 21-27 V ac; 85 to 264 V ac
>5 segments: 12-30 V dc or 21-26 V ac

Construction

Bases and Covers: ABS
Light Segment: Polycarbonate

Environmental Rating

General-Purpose and Sealed Audible:
IEC IP67
Standard Audible:
IEC IP50

Operating Temperature

General-Purpose:
-40 to +50 °C (~-40 to +122 °F)
Standard and Sealed Audible:
-20 to +50 °C (~-4 to +122 °F)

Certifications

Audible
max. intensity 92 db @ 1 meter (typical)

Sealed Audible
max. intensity 94 db @ 1 meter (typical)

Sealed Omni-Directional Audible
Standard: max. intensity 99 db @ 1 meter (typical)
Intensity Adjust: max. intensity 95 db @ 1 meter (typical)

Tower Height (H)

<table>
<thead>
<tr>
<th>General-Purpose IP67</th>
<th>Audible IP50</th>
<th>Sealed Audible IP67</th>
<th>Sealed Omni-Directional</th>
<th>85 to 264 V AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>92.0 mm</td>
<td>74.4 mm</td>
<td>88.4 mm</td>
<td>88.4 mm</td>
</tr>
<tr>
<td>1</td>
<td>61.2 mm</td>
<td>92.0 mm</td>
<td>115.1 mm</td>
<td>129.1 mm</td>
</tr>
<tr>
<td>2</td>
<td>101.9 mm</td>
<td>132.7 mm</td>
<td>155.8 mm</td>
<td>169.8 mm</td>
</tr>
<tr>
<td>3</td>
<td>142.6 mm</td>
<td>173.4 mm</td>
<td>196.5 mm</td>
<td>210.5 mm</td>
</tr>
<tr>
<td>4</td>
<td>183.3 mm</td>
<td>214.1 mm</td>
<td>237.2 mm</td>
<td>251.2 mm</td>
</tr>
<tr>
<td>5</td>
<td>224.0 mm</td>
<td>254.8 mm</td>
<td>277.9 mm</td>
<td>291.1 mm</td>
</tr>
<tr>
<td>6</td>
<td>264.7 mm</td>
<td>298.5 mm</td>
<td>318.6 mm</td>
<td>332.6 mm</td>
</tr>
<tr>
<td>7</td>
<td>305.4 mm</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Add 69 mm to any of these heights to get total height

Accessories are listed on pages 56-57
TL50 Compact Tower Lights

Banner’s TL50 Compact Tower Lights are a hybrid between the TL50 Beacon and TL50 High Brightness models with a shorter design, making them ideal for status indication on small to mid-size pieces of equipment. The TL50 Compact displays up to five stacked colors in one tower with universal ac voltage and up to seven stacked colors in one tower with standard dc voltage.

- Half the height of standard TL50 models
- Bright, uniform lighted segments with 10 color choices available
- Available with standard, sealed or Omni-Directional audible
- Compact, sleek, rugged design with IP67 models available
- DC models work down to 12 volts, allowing for use in battery-powered mobile equipment
EY-LIGHT® TL50 Tower Lights are built-to-order, prewired and configured with easy mounting and connecting. Configure the model for your application today and we’ll assemble it for you! Visit www.bannerengineering.com/towerlights

Supply Voltage

12 to 30 V dc or 21 to 27 V ac; 85 to 264 V ac

Construction

Bases and Covers: ABS
Light Segment: Polycarbonate

Environmental Rating

General-Purpose and Sealed Audible:
IEC IP67
Standard Audible: IEC IP50

Operating Temperature

General-Purpose:
−40 to +50 °C (−40 to +122 °F)
Standard and Sealed Audible:
−20 to +50 °C (−4 to +122 °F)

Certifications

General-Purpose Audible
Sealed Audible
Sealed Omni-Directional Audible
85 to 264 V ac

Audible max. intensity 92 db @ 1 meter (typical)
Sealed Audible max. intensity 94 db @ 1 meter (typical)
Sealed Omni-Directional Audible Standard: max. intensity 99 db @ 1 meter (typical)
Intensity Adjust: max. intensity 95 db @ 1 meter (typical)

Add 69 mm to any of these heights to get total height

Accessories are listed on pages 56-57

800-999-7378

SHOP ONLINE at www.airlinehyd.com
TL50 Beacon Tower Lights

Banner’s TL50 Beacon Tower Lights are extremely rugged and built for use in the toughest industrial environments. With a sleek and stylish design, the TL50 Beacon’s housing is UV stabilized, making it suitable for use in outdoor environments.

- Highly visible indication for indoor or outdoor applications
- Compact, stylish design with rotating and flashing options
- Audible alert: continuous, pulsed and staccato models available
- Omni-Directional audible models provide clear annunciation in the noisiest environments
- Models available with rugged, water-resistant IP67 housing
Supply Voltage
12 to 30 V dc or 21-27 V ac
85 to 264 V ac

Construction
Bases and Covers: ABS
Light Segment: Polycarbonate

Environmental Rating
General-Purpose and Sealed Audible: IEC IP67
Standard Audible: IEC IP50

Operating Temperature
General-Purpose:
~40° to +50° C (~40° to +122° F)
Standard and Sealed Audible:
~20° to +50° C (~4° to +122° F)

Certifications

Colors (C) / Function (F)

<table>
<thead>
<tr>
<th>Color</th>
<th>General-Purpose</th>
<th>Audible¹</th>
<th>Sealed Audible</th>
<th>Sealed Omni-Directional</th>
<th>85 to 264V AC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IP67</td>
<td>IP50</td>
<td>IP50</td>
<td>IP67</td>
<td>2 m Integral Cable</td>
</tr>
<tr>
<td>1</td>
<td>100.2 mm</td>
<td>102 db</td>
<td>94 db</td>
<td>99 db</td>
<td>Q = Euro Integral QD (dc only)</td>
</tr>
<tr>
<td>2</td>
<td>126.0 mm</td>
<td>105 db</td>
<td>97 db</td>
<td>101 db</td>
<td>QP = Euro Pigtail QD (Available with Micro Pigtail QD for ac models if 4 segments or less)</td>
</tr>
<tr>
<td>3</td>
<td>151.8 mm</td>
<td>117 db</td>
<td>109 db</td>
<td>112 db</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>165.8 mm</td>
<td>128 db</td>
<td>120 db</td>
<td>123 db</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

¹ Tower Height (H) with top unscrewed approximately 3.5 mm to allow sound to escape

Accessories are listed on pages 56-57
CL50 Column Lights

The CL50 Column Lights are rugged, cost-effective and easy-to-install multicolor indicators with highly visible illumination for clear equipment status indication. These compact devices have a unique design with versatile mounting options, allowing for easy installation.

- Up to three colors in one device for multiple status indication
- Ideal for machine process status indication and visual guidance
- Install quickly and easily, no tools required
- Large surface area can be easily seen from long distances
- Audible models available with standard or sealed audible element
Supply Voltage
- 18 to 30 V dc
- 85 to 264 V ac

Construction
- Bases and Covers: ABS
- Light Segment: Polycarbonate

Environmental Rating
- General-Purpose and Sealed Audible: IEC IP67
- Standard Audible: IEC IP50

Operating Conditions
- General-Purpose: -40 to +50 °C (-40 to +122 °F)
- Standard and Sealed Audible: -20 to +50 °C (-4 to +122 °F)

Certifications
- General-Purpose Audible: UL 60950
- Sealed Audible: UL 60950
- Sealed Omni-Directional Audible: UL 60950

Accessories are listed on pages 56-57
### Cordsets for DC Models

**4-Pin M12/ Euro-Style Cordsets**
- Use with 3-color models
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC-406</td>
<td>2 m (6.5')</td>
</tr>
<tr>
<td>MQDC-415</td>
<td>5 m (15')</td>
</tr>
<tr>
<td>MQDC-430</td>
<td>9 m (30')</td>
</tr>
</tbody>
</table>

**5-Pin M12/ Euro-Style Cordsets**
- Use with 4-color models
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC1-506</td>
<td>2 m (6.5')</td>
</tr>
<tr>
<td>MQDC1-515</td>
<td>5 m (15')</td>
</tr>
<tr>
<td>MQDC1-530</td>
<td>9 m (30')</td>
</tr>
</tbody>
</table>

**8-Pin M12/ Euro-Style Cordsets**
- Use with 5+ -color models
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC2S-806</td>
<td>2 m (6.5')</td>
</tr>
<tr>
<td>MQDC2S-815</td>
<td>5 m (15')</td>
</tr>
<tr>
<td>MQDC2S-830</td>
<td>9 m (30')</td>
</tr>
</tbody>
</table>

### Cordsets for AC Models

**4-Pin Micro-Style Cordsets**
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQAC2-406RA)

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQAC2-406</td>
<td>2 m (6.5')</td>
</tr>
<tr>
<td>MQAC2-415</td>
<td>5 m (15')</td>
</tr>
<tr>
<td>MQAC2-430</td>
<td>9 m (30')</td>
</tr>
</tbody>
</table>

**5-Pin Micro-Style Cordsets**
- Straight connector models

<table>
<thead>
<tr>
<th>Model Code</th>
<th>Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQAC2-506</td>
<td>2 m (6.5')</td>
</tr>
<tr>
<td>MQAC2-515</td>
<td>5 m (15')</td>
</tr>
<tr>
<td>MQAC2-530</td>
<td>9 m (30')</td>
</tr>
</tbody>
</table>

### Mounting Brackets

- SMB30MM
- SMB30A
- SMBAMS30P
- SMB30RAVK
- SMB30RA
- LMB30RA
- LMB30RAC

### Sealed Right-Angle Brackets

- LMBE12RA
- LMBE12RAC
- LMB30RA

### Controller

- LC80T: 5 Toggle switches
  - ON-OFF-FLASH function
- LC80R: 12-Position rotary switches
  - ON-OFF-FLASH function

### Laser Marking

Light sections can be permanently marked with custom text or images
Accessories

Elevated Mount System (for TL70)

- **SA-M30** Black polycarbonate adapter/cover
- **SA-M30C** Gray polycarbonate adapter/cover
- **SOP-E12-150A** (150 mm) Black anodized aluminum pipe
- **SOP-E12-300A** (300 mm) Black anodized aluminum pipe
- **SOP-E12-900A** (900 mm) Black anodized aluminum pipe
- **SOP-E12-150AC** (150 mm) Clear anodized aluminum pipe
- **SOP-E12-300AC** (300 mm) Clear anodized aluminum pipe
- **SOP-E12-900AC** (900 mm) Clear anodized aluminum pipe
- **SOP-E12-150SS** (150 mm) 304 stainless steel pipe
- **SOP-E12-300SS** (300 mm) 304 stainless steel pipe
- **SOP-E12-900SS** (900 mm) 304 stainless steel pipe
- **SA-E12M30** Black Acetal mounting base
- **SA-E12M30C** White UHMW mounting base
- **SA-F12** Black Zinc mounting base

Additional accessories are available at bannerengineering.com

Elevated Mount System (for other models)

- **SA-M30TE12** Black Acetal adapter/cover
- **SA-M30TE12C** White UHMW adapter/cover
- **SOP-E12-150A** (150 mm) Black anodized aluminum pipe
- **SOP-E12-300A** (300 mm) Black anodized aluminum pipe
- **SOP-E12-900A** (900 mm) Black anodized aluminum pipe
- **SOP-E12-150AC** (150 mm) Clear anodized aluminum pipe
- **SOP-E12-300AC** (300 mm) Clear anodized aluminum pipe
- **SOP-E12-900AC** (900 mm) Clear anodized aluminum pipe
- **SOP-E12-150SS** (150 mm) 304 stainless steel pipe
- **SOP-E12-300SS** (300 mm) 304 stainless steel pipe
- **SOP-E12-900SS** (900 mm) 304 stainless steel pipe
- **SA-E12M30** Black Acetal mounting base
- **SA-E12M30C** White UHMW mounting base
- **SA-F12** Black Zinc mounting base

Flush Foldable Bracket

**SA-FFB12** Black
**SA-FFB12C** Gray

To change position:
1. Remove screws & pull out
2. Adjust angle
3. Push in & replace screws
4. Complete

Additional accessories are available at bannerengineering.com

SHOP ONLINE at www.airlinehyd.com 800-999-7378
Indicators

Banner's Indicators offer a wide variety of bright, highly visible models ranging from daylight visible to multiple colors in one device. Indicators have a rugged design for long-term use and require no additional protective box. Flexibility in design, size and mounting provides a unique solution for many indication applications.
## Selection Guide

<table>
<thead>
<tr>
<th></th>
<th>Base Mount</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K30L</td>
<td>K50L</td>
<td>K90L</td>
<td>K50BL</td>
<td>S18L/S22L</td>
<td>M18</td>
<td></td>
</tr>
<tr>
<td>Dome Size (mm)</td>
<td>30</td>
<td>50</td>
<td>90</td>
<td>50</td>
<td>18</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Mounting Hole Diameter</td>
<td>22</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>18/22</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>DC Power Option</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>AC Power Option</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audible Alarm Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Daylight Visible Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Multiple Colors per Light Segment</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>IP67 Options</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>IP69K Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Flashing or Strobing Options</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Hazardous Area Models</td>
<td>page 68</td>
<td>page 68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modbus Models</td>
<td>page 76</td>
<td>page 76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T-Style Mount</td>
<td>Flat Mount</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>---------------</td>
<td>------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>78</td>
<td>98</td>
<td>94</td>
<td>90</td>
<td>92</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>T-Series</td>
<td>T-Series</td>
<td>T-Series</td>
<td>T-Series</td>
<td>T-Series</td>
<td>T-Series</td>
<td>T-Series</td>
<td></td>
</tr>
<tr>
<td>8/18/30</td>
<td>8/18/30</td>
<td>8/18/30</td>
<td>8/18/30</td>
<td>8/18/30</td>
<td>8/18/30</td>
<td>8/18/30</td>
<td></td>
</tr>
<tr>
<td>Dome Size (mm)</td>
<td>30</td>
<td>50</td>
<td>50</td>
<td>80</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Mounting Hole  Diameter</td>
<td>NA</td>
<td>50</td>
<td>50</td>
<td>80</td>
<td>50</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>DC Power Option</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>AC Power Option</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Audible Alarm</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Daylight Visible Options</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Multiple Colors per Light Segment</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>IP67 Options</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>IP69K Options</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Flashing or Strobing Options</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>Hazardous Area Models</td>
<td>page 68</td>
<td>page 68</td>
<td>page 68</td>
<td>page 68</td>
<td>page 68</td>
<td>page 68</td>
<td></td>
</tr>
<tr>
<td>Modbus Models</td>
<td>page 76</td>
<td>page 76</td>
<td>page 76</td>
<td>page 76</td>
<td>page 76</td>
<td>page 76</td>
<td></td>
</tr>
</tbody>
</table>
K50L 50 mm
Domed Indicators

Banner’s K50L is our most popular indicator light. The smooth 50 mm diameter dome gives uniform illumination from all directions. These indicators are completely epoxy encapsulated, which protects the electronics from the harshest environments, making them nearly indestructible. The neutral color when in the off condition eliminates false indication from surrounding ambient light.

- Up to five colors in one device with many different color combinations
- Long-lasting, energy-efficient LEDs for years of operation with zero maintenance
- Audible alarm models available with several tones and intensity levels
- Many models rated to IP69K to handle high-pressure washdown environments
- Base has internal and external threads allowing for a variety of mounting methods
One-, Two- or Three-Color Indicators, 18 to 30V dc

**Family**
- K50L

**LED Color**
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White

**Input**
- P = PNP
- N = NPN

**Connector**
- Q = Euro Integral QD
- QP = Euro Pigtail QD

**Voltage**
- P = 120 V ac

**Connector**
- Q = Euro Integral QD
- QP = Euro Pigtail QD

**LED Color/Audible**
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- T = Turquoise
- O = Orange
- V = Violet
- M = Magenta
- X = Not Used

**Supply Voltage**
- Sealed Audible: 12 to 30 V dc
- AC models: 65 to 130 V ac
- Other Models: 18 to 30 V dc

**Construction**
- Base: polycarbonate
- Translucent Dome: polycarbonate

**Environmental Rating**
- Standard Models: IEC IP67/ Integral QD models meet DIN 40050 (IP69K)
- Standard Audible Models (A1, A2, AL1): IP50
- Fixed Audible Sealed Models (AS): IEC IP67/ IP69K per DIN 40050
- Adjustable Loud Audible Sealed Models (ALS, ALS4): IEC IP67/ IP69K per DIN 40050

**Operating Temperature**
- Sealed Audible: −20 to +50 °C (−4 to +122 °F)
- All Other Models: −40 to +50 °C (−40 to +122 °F)

**Certifications**
- CE
- UL

Multifunction options and accessories are on pages 64-65
Multifunction Options

These multicolor indicator lights are extremely versatile. They allow for any of the colors to be ON, steady or flashing, or you can alternate between colors. The functionality is easily controlled with simple combinations of the hookup wires. Choose up to five colors in a single device with several different housing styles available.
K50L Accessories

Additional accessories are available at bannerengineering.com

SA-M30E12
Black Acetal adapter/cover
SA-M30E12C
White UHMW adapter/cover
SOP-E12-150A (150 mm)
SOP-E12-300A (300 mm)
SOP-E12-900A (900 mm)
Black anodized aluminum pipe
SOP-E12-150AC (150 mm)
SOP-E12-300AC (300 mm)
SOP-E12-900AC (900 mm)
Clear anodized aluminum pipe
SOP-E12-150SS (150 mm)
SOP-E12-300SS (300 mm)
SOP-E12-900SS (900 mm)
304 stainless steel pipe
SA-E12M30
Black Acetal mounting base
SA-E12M30C
White UHMW mounting base

SA-FFB12
Black flush foldable bracket for use with elevated mount systems
SA-FFB12C
Gray flush foldable bracket for use with elevated mount systems
see page 57 for additional information on this bracket

Cordsets for DC Models

4-Pin M12/
Euro-Style Cordsets
use with 3-color models
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

- MQDC-406
  2 m (6.5')
- MQDC-415
  5 m (15')
- MQDC-430
  9 m (30')

5-Pin M12/
Euro-Style Cordsets
use with 4-color models
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- MQDC1-506
  2 m (6.5')
- MQDC1-515
  5 m (15')
- MQDC1-530
  9 m (30')

8-Pin M12/
Euro-Style Cordsets
use with 5-color models
Straight connector models

- MQDC2S-806
  2 m (6.5')
- MQDC2S-815
  5 m (15')
- MQDC2S-830
  9 m (30')

Cordsets for AC Models

4-Pin Micro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQAC2-406RA)

- MQAC2-406
  2 m (6.5')
- MQAC2-415
  5 m (15')
- MQAC2-430
  9 m (30')

5-Pin Micro-Style Cordsets
Straight connector models

- MQAC2-506
  2 m (6.5')
- MQAC2-515
  5 m (15')
- MQAC2-530
  9 m (30')

Additional accessories are available at bannerengineering.com
The K30L Indicators are rugged, cost-effective and easy-to-install, providing simple indication solutions on the factory floor. These small, 30 mm dome indicators have long-life LEDs for zero maintenance after installation and provide highly visible indication.

- Illuminated dome provides easy-to-see operator guidance
- Easy-to-install 22 mm threaded base mount, no tools required
- Up to three colors in one device to communicate multiple statuses
- Many colors and color combinations available
- Rugged epoxy encapsulated design
Supply Voltage
10 to 30 V dc

Construction
Base: Polycarbonate
Dome: Polycarbonate

Environmental Rating
IEC IP67, IP69K per DIN 40050

Operating Temperature
−40 to +50 °C (−40 to +122 °F)

Certifications

**Family**

| K30L |

**LED Color**

| G | R | Y |

- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- T = Turquoise
- O = Orange
- V = Violet
- M = Magenta
- X = Not Used

**Input**

| P |

- P = PNP
- N = NPN

**Connector**

| Q |

- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD

QD models require mating cordset

4-Pin M12/Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional accessories are available at bannerengineering.com
K50 and K30 Hazardous Indicators

Banner’s K50 and K30 Indicator Lights for hazardous areas have a smooth 50 or 30 mm diameter dome that provides uniform illumination from all directions. The indicators are available in models rated to IP67 and IP69K for use in harsh environments, making them nearly indestructible. Extensive approvals ensure indicator lights are safe to use in most classified zones or areas.

- Up to three colors in one device and five colors to choose from
- Models rated to IP67 and IP69K for use in harsh environments
- Unique design appears gray when off, eliminating false indication from ambient light
- Easy mounting and configuration
- Worldwide IECEx approval for quicker access into countries outside Europe and North America
Supply Voltage

- Ex ia: 8 to 30 V dc
- Ex mb/Ex ta and Ex nA/Ex tc: 10 to 30 V dc

Construction

- Base: polycarbonate
- Translucent Dome: polycarbonate

Environmental Rating

- IP67, IP69K

Operating Temperature

- −40 to +50 °C (−40 to +122 °F)

Certifications

- CE
- UL
- ATEX
- CSA
- CEC

Indicator Family Protection Method Suitable for ATEX Suitable for NEC & CEC

<table>
<thead>
<tr>
<th>Family</th>
<th>Protection Type</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50L</td>
<td>I</td>
<td>G R Y</td>
<td>P</td>
<td>Q</td>
</tr>
<tr>
<td>K30L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>K50L Models</th>
<th>K30L Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø 50 mm</td>
<td>ø 30.0 mm</td>
</tr>
<tr>
<td>ø 30 mm</td>
<td>ø 22.0 mm</td>
</tr>
</tbody>
</table>

4-Pin M12/ Euro-Style Cordsets

- MQDC-406 2 m (6.5')
- MQDC-415 5 m (15')
- MQDC-430 9 m (30')

Additional accessories are available at bannerengineering.com

SMB30A  SMB30SC  SMB30FA

SMB22A  SMBAMS22P  SMBAMS22RA
K90L 90 mm Domed Indicators

K90L and K90TL Domed Indicators are rugged, 90 mm indicator lights that provide extremely bright and uniform illumination from all directions and longer distances. The K90L models have a separate input wire for internally controlled flashing, while the K90TL models can be used as a multisegment tower light, alternating between selected input colors to indicate multiple statuses.

- Illuminated dome provides easy-to-see operator guidance
- Up to five colors in one device to communicate multiple statuses
- Rugged design with an IP67 rating
- K90L has a separate input wire to enable flashing of active color
- By enabling multiple inputs, the K90TL alternates between selected colors
1- to 5-Color Standard Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Colors</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K90L</td>
<td>G R Y</td>
<td>P</td>
<td>Q</td>
</tr>
</tbody>
</table>

- **G** = Green
- **R** = Red
- **Y** = Yellow
- **B** = Blue
- **W** = White

**QD models require mating cordset**

**Connector**

- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro QD Pigtail

**Input**

- P = PNP
- N = NPN

2- to 5-Color Toggle Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Colors</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K90TL</td>
<td>W B G R Y</td>
<td>P</td>
<td>Q</td>
</tr>
</tbody>
</table>

- **G** = Green
- **R** = Red
- **Y** = Yellow
- **B** = Blue
- **W** = White

**Connector**

- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro QD Pigtail

**Input**

- P = PNP
- N = NPN

**Supply Voltage**

12 to 30 V dc

**Construction**

- Base: polycarbonate
- Translucent Dome: polycarbonate

**Environmental Rating**

IP67

**Operating Temperature**

−40 to +50° C (−40 to +122 °F)

**Certifications**

- SA-M30
  - Black polycarbonate adapter/cover
  - Gray polycarbonate adapter/cover
  - SOP-E12-150A (150 mm)
  - SOP-E12-300A (300 mm)
  - SOP-E12-900A (900 mm)
  - Black anodized aluminum pipe
  - SOP-E12-150SS (150 mm)
  - SOP-E12-300SS (300 mm)
  - SOP-E12-900SS (900 mm)
  - 304 stainless steel pipe
  - SA-E12M30C
  - Black Acetal mounting base
  - SA-E12M30C
  - White UHMW mounting base

- SA-FFB12
  - Black flush foldable bracket for use with elevated mount systems
  - SA-FFB12C
  - Gray flush foldable bracket for use with elevated mount systems

See page 57 for additional information on this bracket

Additional accessories are available at bannerengineering.com
Banner’s K50 Beacon Indicators are extremely bright, making them ideal for indoor and outdoor areas with high levels of ambient light. The tough UV stabilized polycarbonate housing and epoxy encapsulated electronics allow for years of maintenance-free operation. They are available in five colors and a wide range of voltage levels to fit nearly any application.

- Continuous, strobing and rotating models available
- 12-30 V dc models are ideal for battery-powered mobile applications
- Models with LEDs emitting from the top in addition to the perimeter
- Rugged, sealed housing rated to IP69K for high-pressure washdown
- Models for 120 V and 230 V ac operation
### One- or Two-Color Indicators, 12 to 30 V dc

<table>
<thead>
<tr>
<th>Family</th>
<th>Function</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50BL</td>
<td>R1</td>
<td>X G X</td>
<td>P</td>
<td>Q</td>
</tr>
<tr>
<td>K50BCL</td>
<td>R1 = Rotating*</td>
<td>G = Green</td>
<td>P = PNP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>S1 = Strobing**</td>
<td>Y = Yellow</td>
<td>N = NPN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Blank = None</td>
<td>B = Blue</td>
<td>Blank = 2 m Integral Cable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>W = White</td>
<td>Q = Euro Integral QD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>X = Not Used</td>
<td>QP = Euro Pigtail QD</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QD models require mating cordset</td>
<td></td>
</tr>
</tbody>
</table>

* Rotating only available on K50BL 1-color models
** Strobing only available on K50BCL 1-color models

### One-Color Indicators, 85 to 250 V ac

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50BL</td>
<td>G</td>
<td>A120</td>
<td>Q</td>
</tr>
<tr>
<td>K50BCL</td>
<td>G = Green</td>
<td>A120</td>
<td>Blank = 2 m Integral Cable</td>
</tr>
<tr>
<td></td>
<td>Y = Yellow</td>
<td>A230</td>
<td>Q = Micro Integral QD</td>
</tr>
<tr>
<td></td>
<td>R = Red</td>
<td></td>
<td>QP = Micro Pigtail QD</td>
</tr>
<tr>
<td></td>
<td>B = Blue</td>
<td></td>
<td>QD models require mating cordset</td>
</tr>
<tr>
<td></td>
<td>W = White</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Supply Voltage
- 12 to 30 V dc
- 85 to 130 V ac
- 100 to 250 V ac

### Construction
- Base and covers: polycarbonate

### Environmental Rating
- IEC IP67 and IP69K, per DIN 40050

### Operating Temperature
- −40 to +50 °C (−40 to +122 °F)

### Certifications
- UL

---

*SMB30A SMB30FA SMB30SC SMBAMS30P

Additional accessories are available at bannerengineering.com

---

**Rotating only available on K50BL 1-color models**

**Strobing only available on K50BCL 1-color models**

---

*see page 57 for additional information on this folding bracket*
Banner’s K50 Daylight Visible Indicators are rugged, cost-effective and easy-to-use indicators for use in outdoor environments or in areas with high levels of ambient light. The K50 Daylight Visible Indicator has a flat 50 mm profile with high-intensity LEDs that clearly show status indication.

- Intense levels of light output for outdoor application use
- Easy-to-install 30 mm threaded base mount, no tools required
- Up to three colors in one device to communicate multiple statuses
- Rugged design for many years of operation
- Completely self-contained, no controller needed
**Supply Voltage**

- 15 to 30 V dc
- 85 to 130 V ac

**Construction**

Polycarbonate; fully encapsulated

**Environmental Rating**

IEC IP67

**Operating Temperature**

−40 to +50 °C (−40 to +122 °F)

**Certifications**

CE

---

**One- or Three-Color Indicators, 15 to 30 V dc**

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50LD</td>
<td>1: X 2: G 3: X</td>
<td>P = PNP</td>
<td>Q = Integral Cable</td>
</tr>
</tbody>
</table>

- G = Green
- Y = Yellow
- W = White
- R = Red
- X = Not Used

**One-Color Indicators, 85 to 130 V ac**

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50LD</td>
<td>G</td>
<td>A120</td>
<td>Q = Integral Cable</td>
</tr>
</tbody>
</table>

- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- X = Not Used

---

**4-Pin M12/ Euro-Style Cordsets**

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

- MQDC-406 2 m (6.5')
- MQDC-415 5 m (15')
- MQDC-430 9 m (30')

**3-Pin M12/ Micro-Style Cordsets**

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-306RA)

- MQDC-306 2 m (6.5')
- MQDC-315 5 m (15')
- MQDC-330 9 m (30')

---

Additional accessories are available at bannerengineering.com
K50 Modbus Indicators

The K50 Serial Multicolor Indicators are the first rugged, industrial-rated indicator devices using a common industrial protocol for communication and programming, providing improved ways to program and install a system.

- Rugged, compact multicolor indicators in several package types
- Built-in flashing and strobing capability
- High intensity models for outdoor applications
- Fully encapsulated IP67/IP69K construction
- Modbus RTU communication minimizes the cabling requirements
Supply Voltage: 12 to 30 V dc
Construction:
- Base: Polycarbonate
- Covers: Polycarbonate
LEDs on LD Models: Acrylic
Environmental Rating: IEC IP67/IP69K per DIN 40050
Operating Temperature: −40 to +50 °C (−40 to +122 °F)
Certifications: CE

Family
- K50L = Standard
- K50LD = Daylight Visible
- K50BL = Beacon Light

LED Color
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White

Bus Indicator
- S1 = Modbus 485

Connection
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD

QD models require mating cordset

Additional accessories are available at bannerengineering.com

SA-M30E12 Black Acetal adapter/cover
SA-M30E12C White UHMW adapter/cover
SOP-E12-150A (150 mm)
SOP-E12-300A (300 mm)
SOP-E12-900A (900 mm)
Black anodized aluminum pipe
SOP-E12-150SS (150 mm)
SOP-E12-300SS (300 mm)
SOP-E12-900SS (900 mm)
304 stainless steel pipe
SA-E12M30 Black Acetal mounting base
SA-E12M30C White UHMW mounting base

see page 57 for additional information on this folding bracket

Additional accessories are available at bannerengineering.com
T30 and T18 T-Style Indicators

The T18 and T30 Indicators have an 18 mm or 30 mm T-Style housing that is easy to install in a punched hole or directly on a machine.

- Up to three colors in one device to communicate multiple statuses
- 18 mm or 30 mm T-Style housing for easy installation
- Designed for panel-mount or stand-alone applications
- Right-angle wiring connection for low profile applications
- Rugged, fully encapsulated design rated to IP67
### One-, Two- or Three-Color Indicators

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>T30</td>
<td>G = Green</td>
<td>P = PNP</td>
<td>Q = Euro Integral QD</td>
</tr>
<tr>
<td>T18</td>
<td>R = Red</td>
<td>N = NPN</td>
<td>QP = Euro Pigtail QD</td>
</tr>
<tr>
<td></td>
<td>Y = Yellow</td>
<td></td>
<td>QQ = QD models require mating cordset</td>
</tr>
</tbody>
</table>

- **T30 Models**
  - Φ 40.0 mm
  - 45.0 mm
  - 63.7 mm
  - Φ 30 mm

- **T18 Models**
  - Φ 16.3 mm
  - 40.0 mm
  - 33.0 mm
  - Φ 18 mm

* Add 7 after last color option for Sensor Emulators (example, T30GYX7PQ). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor’s Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor’s output is energized, the Yellow LED is ON.

**Supply Voltage**
- 10 to 30 V dc

**Construction**
- Housing: Thermoplastic polyester
- Diffuser: Acetal

**Environmental Rating**
- IEC IP67

**Operating Temperature**
- −40 to +50 °C (−40 to +122 °F)

**Certifications**
- CE

---

**Additional accessories are available at bannerengineering.com**

**4-Pin M12/Euro-Style Cordsets**
- MQDC-406
  - 2 m (6.5')
  - MQDC-415
  - 5 m (15')
  - MQDC-430
  - 9 m (30')

Multifunction options available on page 64
T8L T-Style Indicators

Banner’s T8L T-Style Mount Indicators have a low profile, ideal for simple panel mounting or use on a machine. The T8L can be easily assembled into a punched hole with the included mounting hardware, no additional hardware needed.

- Up to two colors in one device with an 8 mm threaded nose
- Designed for panel-mount or stand-alone applications
- Right-angle wiring exit for low profile applications
- Ideal for operator guidance and equipment status indication
- Rugged design rated to IP67
### One- or Two-Color Indicators

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>T8L</td>
<td>G</td>
<td>P</td>
<td>QP</td>
</tr>
<tr>
<td></td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **G** = Green
- **Y** = Yellow
- **R** = Red
- **X** = Not Used

- **P** = PNP
- **N** = NPN

- **Blank** = 2 m Integral Cable
- **QP** = Euro Pigtail QD

QD models require mating cordset

*Add 7 after last color option for Sensor Emulators (example, T8LGXY7QP). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor’s Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor’s output is energized, the Yellow LED is ON.*

---

### Specifications

- **Supply Voltage**: 10 to 30 V dc
- **Construction**: Housing: Polycarbonate/ABS alloy  
  Diffuser: Acetal
- **Environmental Rating**: IEC IP67
- **Operating Temperature**: −40 to 50 °C (~−40 to +122 °F)

---

4-Pin M12/ Euro-Style Cordsets

<table>
<thead>
<tr>
<th>Model</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>MQDC-406</td>
<td>2 m (6.5’)</td>
</tr>
<tr>
<td>MQDC-415</td>
<td>5 m (15’)</td>
</tr>
<tr>
<td>MQDC-430</td>
<td>9 m (30’)</td>
</tr>
</tbody>
</table>

Additional accessories are available at bannerengineering.com
S18L & S22L
Barrel Indicators

The overmolded IP69K rated design makes the S18L & S22L Indicators extremely rugged and able to withstand harsh environments. There are standard intensity and high intensity daylight visible models available in a variety of colors with 18 mm or 22 mm bases.

• Designed for panel-mount or stand-alone applications
• Up to three colors available in one device allowing one S18L or S22L to replace three conventional panel indicators
• Compact and light weight, but extremely rugged
• Daylight visible models can be used outdoors in direct sunlight or as miniature task or vision lights with extremely bright indication
• Models meet NEMA 4 and 4X enclosure ratings
Supply Voltage
General Purpose: 10 to 30 V dc
High-Intensity Models: 9 to 30 V dc

Construction
Housing: UV stabilized polycarbonate
Mounting Nut: PBT
Sealing Washer: Nitrile

Environmental Rating
IEC IP67, IP69K, per DIN 40050

Operating Temperature
General Purpose: −40 to +50 °C (−40 to +122 °F)
Other Models: −40 to +60 °C (−40 to +140 °F)

Certifications

SMBAMS18RA
use with S18L

SMB18A
use with S18L

SMB18FA
use with S18L

SMBC18
for use with S18L
on 28 mm pipe

SMBAMS22RA
use with S22L

SMB22A
use with S22L

Daylight Visible

<table>
<thead>
<tr>
<th>Family</th>
<th>Color*</th>
<th>Input</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>S18L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S22L</td>
<td>G</td>
<td>R</td>
<td>Y</td>
</tr>
<tr>
<td></td>
<td>G = Green</td>
<td>Y = Yellow</td>
<td>R = Red</td>
</tr>
<tr>
<td></td>
<td>B = Blue</td>
<td>O = Orange</td>
<td>W = White</td>
</tr>
</tbody>
</table>

Daylight Visible High-Intensity

<table>
<thead>
<tr>
<th>Family</th>
<th>Color*</th>
<th>Input</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>S18DLH</td>
<td></td>
<td>P</td>
<td>Q</td>
</tr>
<tr>
<td>S22DLH</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>G = Green</td>
<td>Y = Yellow</td>
<td>R = Red</td>
</tr>
<tr>
<td></td>
<td>B = Blue</td>
<td>O = Orange</td>
<td>W = White</td>
</tr>
</tbody>
</table>

* Single-color models are available and should be ordered as PNP, but can be wired for either PNP or NPN input.

4-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5')
MQDC-415
5 m (15')
MQDC-430
9 m (30')

Additional accessories are available at bannerengineering.com
M18 Metal
Barrel Indicators

The M18 indicators are compact, yet extremely rugged indicators that are easy-to-install with an 18 mm threaded base. These compact devices are completely self-contained and offer easy-to-see operator guidance on the factory floor.

- Up to three colors in one device to communicate multiple statuses
- 18 mm barrel-mount indicator with nickel-plated brass housing
- Ideal for operator guidance and equipment status indication
- Rugged, completely epoxy encapsulated design can withstand harsh conditions
One-, Two- or Three-Color Indicators

Family
M18

LED Color
G = Green
R = Red
X* = Not Used

Input
P = PNP
N = NPN

Connector
Q = Euro Integral QD
QP = Euro Pigtail QD
Blank = 2 m Integral Cable

* Add 7 after last color option for Sensor Emulators (example, M18GYX7PQ). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor’s Green and Yellow indicator function. When the sensor is energized, the Green LED is ON. When the sensor’s output is energized, the Yellow LED is ON.

Multifunction options available on page 64

Supply Voltage
10 to 30 V dc

Construction
Housing: Nickel-plated brass
Diffuser: Acetal

Environmental Rating
IEC IP67

Operating Temperature
−40 to +50 °C (−40 to +122 °F)

Certifications

4-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
2 m (6.5’)
MQDC-415
5 m (15’)
MQDC-430
9 m (30’)

MQDC-406
2 m (6.5’)
MQDC-415
5 m (15’)
MQDC-430
9 m (30’)

Additional accessories are available at bannerengineering.com

SMB18A
SMBAMS18P
SMBAMS18RA
SMB18FA

MQDC-406
2 m (6.5’)
MQDC-415
5 m (15’)
MQDC-430
9 m (30’)

Additional accessories are available at bannerengineering.com
K80L Flat-Mount Domed Indicators

The K80L indicators are rugged, cost-effective, flat-mount indicators that provide easy-to-see operator guidance with a 50 mm dome.

- Easy-to-mount to flat surfaces such as walls or panels
- High-intensity LEDs give highly visible indication and provide zero-maintenance operation
- Audible alarm models available with several tones and intensity levels
- Rugged, fully encapsulated design rated to IP67
- Up to five colors in one device to communicate multiple statuses
**One-, Two- or Three-Color Indicators, 18 to 30 V dc**

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K80L</td>
<td>G R Y* P</td>
<td></td>
<td>Q</td>
</tr>
</tbody>
</table>

* Add 7 after last color option for Sensor Emulators (example, K80LGRX7PQ). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor's Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor's output is energized, the Yellow LED is ON.

**Two- or Three-Color and Audible Indicators, 18 to 30 V dc**

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color/Audible</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K80L</td>
<td></td>
<td></td>
<td>Q</td>
</tr>
</tbody>
</table>

**Supply Voltage**

- 18 to 30 V dc

**Construction**

- Housing: Polycarbonate
- Dome: Polycarbonate

**Environmental Rating**

- Standard: IP67
- Audible: IP50

**Operating Temperature**

- Standard: -40 to +50 °C (-40 to +122 °F)
- Audible: -20 to +50 °C (-4 to +122 °F)

**Certifications**

- CE

---

Additional accessories are available at bannerengineering.com

**4-Pin M12/ Euro-Style Cordsets**

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

**5-Pin M12/ Euro-Style Cordsets**

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

**5-Pin Micro-Style Cordsets**

Straight connector models

- MQDC2-506 2 m (6.5')
- MQAC2-515 5 m (15')
- MQAC2-530 9 m (30')

---

SHOP ONLINE at www.airlinehyd.com

800-999-7378
Banner’s portable, battery-powered K80 Call Lights provide operational status indication for personnel and are ideal in locations where power is limited or unavailable. The preassembled housing and multiple mounting options make the indicator light cost-effective and easy to install.

- Flashes ON/OFF
- Switch activated
- No assembly required
- Rugged and easy to install
- Long-life LED technology gives up to 100 hours of operation on two 9V batteries (included)
**Model** | **LED Function** | **Input**
---|---|---
K80CLR | Red 1 Second Flash Rate | ON/OFF Switch

Supply Voltage: 18 V dc (includes two 9 V batteries)

Construction:
- **Housing:** Polycarbonate
- **Dome:** Polycarbonate

Environmental Rating: IP50

Operating Temperature: −20 to +50 °C (−4 to +122 °F)

SMBDX80DIN
for mounting to 35 mm DIN Rail
The K80FL standard intensity models have uniform lighting, viewable from nearly 180 degrees. The K80FDL daylight visible models are more intense with a narrower field-of-view for use in areas with high levels of ambient light, including outdoor applications. These indicators are ideal for a variety of applications including traffic control at truck docks, car washes and general machine status indication.

- Extremely bright indicator with selectable flash rates
- Up to three colors in one device with a choice of many colors or color combinations
- Large flat face allows for clear indication from farther distances
- Easy to mount to flat surfaces such as walls or panels
- Long-lasting LED technology with low power consumption
Supply Voltage: 12 to 30 V dc

Construction:
- Base: Polycarbonate
- Translucent Face: Acrylic

Environmental Rating: IEC IP67

Operating Conditions:
- −40 to +50 °C (−40 to +122 °F)

Certifications:
- CE

Family
- K80FL = Standard
- K80FDL = Daylight Visible

Color
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- O = Orange
- V = Violet
- T = Turquoise
- M = Magenta
- X = Not Used

Input
- P = PNP

Connector
- Q = Euro Integral QD
- QP = Euro Pigtail QD

4-Pin M12/Euro-Style Cordsets:
- MQDC-406 2 m (6.5')
- MQDC-415 5 m (15')
- MQDC-430 9 m (30')

Blank = Terminal-wired

* These colors are not available in the daylight visible models

Additional accessories are available at bannerengineering.com

SMBDX80DIN for mounting to 35 mm DIN Rail

MQDC-406 2 m (6.5')
MQDC-415 5 m (15')
MQDC-430 9 m (30')

* These colors are not available in the daylight visible models
Banner’s K80L Segmented Indicator has up to four individual segments that can be lighted separately or in combination for error-proofing and operator guidance applications.

- Easily mounted on flat surfaces
- Up to four individual color segments can show status of items simultaneously or in combination
- Optional, customizable labels available for enhanced segment identification
- Highly visible color segments allow for quick and easy identification of statuses
**Family**

K80L

**Segment Configuration**

- 4 = 4 Segments
- 3 = 1 Half & 2 Qtr.
- 2 = 2 Halves
- 1 = Entire Area

<table>
<thead>
<tr>
<th>4</th>
<th>3TH</th>
<th>2H</th>
<th>1</th>
</tr>
</thead>
</table>

**LED Color**

- 1 = Multifunction
- 2 = 4 Segments
- 3 = 1 Half & 2 Qtr.
- 4 = 2 Halves

**Function**

- 1 = Multifunction

**Input**

- P = PNP
- N = NPN

**Connector**

- Q = Euro Integral QD
- QP = Euro Pigtail QD

*For less than 4 colors, use X as model placeholder (example: K80L2HGXX1PQ).*

---

**Supply Voltage**

18 to 30 V dc

**Construction**

- Base: ABS/Polycarbonate
- Translucent Face: Acrylic

**Environmental Rating**

IEC IP67

**Operating Temperature**

-40 to +50 °C (–40 to +122 °F)

**Certifications**

MQDC1-506

2 m (6.5’)

MQDC1-515

5 m (15’)

MQDC1-530

9 m (30’)

---

**Segmented Indicator Label Kits**

- SALK-K80L4: 4-segment transparent laser label (includes 30 labels and 1 protective cover labels)
- SALK-K80L1: 1-segment transparent laser label (includes 30 labels)

**5-Pin M12/ Euro-Style Cordsets**

- SMBDX80DIN: for mounting to 35 mm DIN Rail

---

Additional accessories are available at bannerengineering.com

---

SHOP ONLINE at www.airlinehyd.com

800-999-7378
Banner’s K50FL can display up to five colors in a single device for various application uses. With a bright, highly visible illuminated dome, K50FLs are ideal for operator guidance and equipment status indication.

- Flat-pack mounting allows for indicators to be mounted on any flat surface
- Fully encapsulated indicators with most models rated to IP69K for high-pressure washdown environments
- Many colors and color combinations available
- Long-lasting LED technology with low power consumption
- Multifunction models available with steady ON, flashing or alternating frequencies

**K50FL Flat-Mount Domed Indicators**
One-, Two- or Three-Color Indicators, 18 to 30 V dc

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color</th>
<th>Input</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50FL</td>
<td>G R Y*</td>
<td>P</td>
<td>Q</td>
</tr>
</tbody>
</table>

- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **T** = Turquoise
- **O** = Orange
- **V** = Violet
- **M** = Magenta
- **X** = Not Used

- **P** = PNP
- **N** = NPN

- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD

*Add 7 after last color option for Sensor Emulators (example, K50LGRX7PQ). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor’s Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor’s output is energized, the Yellow LED is ON.

Multifunction options available on page 64

| Supply Voltage | 18 to 30 V dc |
| Construction   | Base: ABS |
|                | Dome: Polycarbonate |
| Environmental Rating | IP67 |
| Operating Temperature | -40 to +50 °C (–40 to +122 °F) |
| Certifications  | |

4-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

- MQDC-406
  - 2 m (6.5')
  - 5 m (15')
  - 9 m (30')

- MQDC-415
  - 5 m (15')

- MQDC-430
  - 9 m (30')

5-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- MQDC1-506
  - 2 m (6.5')

- MQDC1-515
  - 5 m (15')

- MQDC1-530
  - 9 m (30')

bannerengineering.com 95

SHOP ONLINE at www.airlinehyd.com 800-999-7378
Banner’s SP Series Indicators are rugged, easy-to-install signal lights that provide high visibility outdoors or in other applications where there are high levels of ambient light. These signal lights are preassembled with up to three indicators per unit. The rugged housing is designed to withstand wet and dirty environments.

- Intense levels of light output for use outdoors or in environments with high levels of ambient light
- Controlled field-of-view for signage and narrow lane use
- Shock, vibration and impact resistant
- Convenient Euro quick-disconnect option for easy installation
- 15 to 30 V dc or 85 to 130 V ac supply voltage, depending on model
**Supply Voltage**
15 to 30 V dc
85 to 130 V ac

**Construction**
Flat or DIN-mount polycarbonate

**Environmental Rating**
- SP150: IEC IP67
- SP250: IEC IP65
- SP350: IEC IP65

**Operating Conditions**
−40 to +50 °C (−40 to +122 °F)

**Certifications**

---

**Color Sequence**

<table>
<thead>
<tr>
<th>Family</th>
<th>SP150*</th>
<th>SP250</th>
<th>SP350</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>G</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>2</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

G = Green
Y = Yellow
R = Red
B = Blue
W = White
Blank = Not Used

**Input**
P = PNP
N = NPN
A120 = 85 to 130 V ac
(Terminal-wired only)

**Connector**
Blank = Terminal-wired
Q = Euro Integral QD
QP = Euro Pigtail QD
QD models require mating cordset

---

**Position 1**

**Position 2**

**Position 3**

---

**Additional accessories are available at bannerengineering.com**
Banner’s TL30F Linear Segmented Indicator is a low-profile, flat-mount indicator. Multiple color segments can be lit simultaneously, making this a useful option for operator guidance or machine indication. This versatile product is also frequently used with pick-to-light products to give operators additional visual indication such as number of parts to pick or color-coded part picking.

- Displays three or five colors in single device
- Durable, rugged metal housing rated to IP65
- Easily mounts on horizontal or vertical work centers or automation machinery
- Compact devices easily fit on work stations
- 18 to 30 V dc bimodal (NPN or PNP) and 21 to 27 V ac inputs
Three-Color Indicators

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color*</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL30F</td>
<td>G</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>

- G = Green
- Y = Yellow
- R = Red

Blank = 2 m Integral Cable
Q = Euro Integral QD
QD models require mating cordset

Five-Color Indicators

<table>
<thead>
<tr>
<th>Family</th>
<th>LED Color*</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>TL30F</td>
<td>W</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td></td>
<td>R</td>
<td></td>
</tr>
</tbody>
</table>

- R = Red
- Y = Yellow
- G = Green
- B = Blue
- W = White

Blank = 2 m Integral Cable
Q = Euro Integral QD
QD models require mating cordset

* TL30F indicators are pre-configured in three- or five-colors. Positions are set as pictured below. For other color combinations, please contact the factory.

Supply Voltage
- 18 to 30 V dc
- 21 to 27 V ac

Construction
- Housing: Black painted aluminum
- End Caps: Thermoplastic
- Light Bar: Acrylic

Environmental Rating
- IEC IP65

Operating Conditions
- −40 to +50 °C (−40 to +122 °F)

Certifications

4-Pin M12/Euro-Style Cordsets
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406
- 2 m (6.5')
- MQDC-415
- 5 m (15')
- MQDC-430
- 9 m (30')

MQDC2S-806
- 2 m (6.5')
- MQDC2S-815
- 5 m (15')
- MQDC2S-830
- 9 m (30')

8-Pin M12/Euro-Style Cordsets
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

MQDC2S-806
- 2 m (6.5')
- MQDC2S-815
- 5 m (15')
- MQDC2S-830
- 9 m (30')

Additional accessories are available at bannerengineering.com
Banner is the leader in ergonomic, visual and sealed operator touch buttons for industrial applications. Banner’s Touch Buttons require no protective enclosure. A wide variety of mounting brackets and convenient quick-disconnect options make Banner Touch Buttons easy to mount on tube racks, metal shelving or automation machinery. Since Banner Touch Buttons can have multiple colors per button and a variety of I/O capabilities, one can replace several conventional buttons, making them ideal in lean manufacturing environments.
The K50 Touch Series is a versatile family that combines a large, bright indicator with solid-state switching capability activated by a simple touch. There are several models with a variety of input/output options to choose from that fit nearly any application.

- Simple operation with the touch of a finger, hand or whole palm, with or without gloves
- Rugged, fully encapsulated IP69K construction
- Models with either latching or momentary outputs
- One-, two- and three-color models available with a variety of colors and option of custom laser surface marking
Independent Input/Output Models with up to Three Indicator Colors Controlled by Separate Inputs

The output is activated by touching the device and is totally independent of the indicator inputs.

One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

These models do not have inputs to control the indicator. The color of the indicator is determined by the non-activated or activated condition.

Supply Voltage: 12 to 30 V dc

Construction:
- Housing: Polycarbonate
- Translucent dome: Polycarbonate
- Mounting Nut: PBT

Environmental Rating: IEC IP67, IP69K per DIN 40050

Operating Temperature: −40 to +50 °C (−40 to +122 °F)

Certifications:

- SMB30A
- SMB30FA
- SMB30FVK
- SMB30RAVK

5-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example: MQDC1-506RA)

- MQDC1-506 2 m (6.5')
- MQDC1-515 5 m (15')
- MQDC1-530 9 m (30')

8-Pin M12/
Euro-Style Cordsets
For use with 3 color F2 models. Straight connector models listed; for right-angle models, add RA to the end of model number (example: MQDC2S-806RA)

- MQDC2S-806 2 m (6.5')
- MQDC2S-815 5 m (15')
- MQDC2S-830 9 m (30')

Additional accessories are available at bannerengineering.com
K30 Illuminated Touch Buttons

The K30 Touch Series is a versatile family that combines a small, bright indicator with solid-state switching capability activated by a simple touch. These easy-to-use small indicators are cost-effective with a 22 mm threaded base to fit into industry standard punched holes.

- Simple operation with the touch of a finger, hand or whole palm
- Easily actuated with bare hands or work gloves
- Rugged, fully encapsulated IP69K construction
- Models with either latching or momentary outputs
- One- and two-color models available with a variety of colors and option of custom laser surface marking
### Independent Input/Output Models with One Color Controlled by a Separate Input

The output is activated by touching the device and is totally independent of the indicator input.

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Input/Output Function</th>
<th>Activation Method</th>
<th>Color (power applied)</th>
<th>Color (input active)</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K30</td>
<td>A</td>
<td>P</td>
<td>T</td>
<td>G</td>
<td>R</td>
<td>F2</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td>Normally Open</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blank 2 m Integral Cable</td>
</tr>
</tbody>
</table>

**Family Function Connection**
- **A**: Normally Open
- **R**: Normally Closed
- **B**: Bipolar Output (PNP & NPN)
- **P**: PNP
- **N**: NPN
- **T**: Touch

**Function**
- **F2**: Multifunction

**Connection**
- Blank = Momentary
- L = Latching

### One- or Two-Color Momentary or Latching Bipolar (1 NPN and 1 PNP) Output Models

These models do not have inputs to control the indicator. The color of the indicator is determined by the non-activated or activated condition.

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Output Function</th>
<th>Output Type</th>
<th>Activation Method</th>
<th>Color (not activated)</th>
<th>Color (activated)</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K30</td>
<td>A</td>
<td>L</td>
<td>B</td>
<td>T</td>
<td>G</td>
<td>R</td>
<td>H</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td>Normally Open</td>
<td>Momentary</td>
<td>Latching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Blank 2 m Integral Cable</td>
</tr>
</tbody>
</table>

**Family Function Connection**
- **A**: Normally Open
- **R**: Normally Closed
- **B**: Bipolar Output (NPN & PNP)
- **P**: PNP
- **N**: NPN
- **T**: Touch

**Function**
- **H**: Output Only

**Connection**
- Blank = Momentary
- L = Latching

Supply Voltage: 12 to 30 V dc

Construction:
- Housing: Polycarbonate
- Translucent dome: Polycarbonate
- Mounting Nut: PBT

Environmental Rating:
- IEC IP67, IP69K per DIN 40050

Operating Temperature:
- −40 to +50 °C (~−40 to +122 °F)

Certifications:
- CE
- UL

![Image of the device](image)

4-Pin M12/ Euro-Style Cordsets

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA).

MQDC-406
- 2 m (6.5')

MQDC-415
- 5 m (15')

MQDC-430
- 9 m (30')

Additional accessories are available at bannerengineering.com

---

SHOP ONLINE at www.airlinehyd.com

800-999-7378
Banner’s OTB and LTB are the industry standard for ergonomic touch buttons and are ideal as replacements for mechanical pushbuttons. These touch buttons have LED indicators to signal “power on” and “output active” conditions.

- Optimized for easy mounting with 30 mm threaded base
- Ergonomic design eliminates hand, wrist and arm stress
- Momentary and alternate action models available
- Available in a wide variety of voltage ranges and output types to suit any application
- Field covers (black) included to prevent inadvertent activation from loose clothing, debris, etc.
Supply Voltage
Models for 105 to 130 V ac, 210 to 250 V ac (50/60 Hz), 10 to 30 V dc, or 20 to 30 V ac/dc

Construction
Upper Housing: Black polysulfone or Polycarbonate
Base: Fiber-reinforced PBT

Environmental Rating
IEC IP66
NEMA 1, 3, 4X, 12 and 13

Operating Temperature
-20 to +50°C (-4 to +122°F)

Certifications

4-Pin M12/Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)

MQDC-406 2 m (6.5')
MQDC-415 5 m (15')
MQDC-430 9 m (30')

MBCC-406 1.83 m (6')
MBCC-412 3.66 m (12')
MBCC-430 9.14 m (30')

MBCC-506 1.83 m (6')
MBCC-512 3.66 m (12')
MBCC-530 9.14 m (30')

4-Pin Mini-Style Cordsets

MBCC-406 1.83 m (6')
MBCC-412 3.66 m (12')
MBCC-430 9.14 m (30')

MBCC-506 1.83 m (6')
MBCC-512 3.66 m (12')
MBCC-530 9.14 m (30')

5-Pin Mini-Style Cordsets

MQDC-506 1.83 m (6')
MQDC-512 3.66 m (12')
MQDC-530 9.14 m (30')
VTB Verification Touch Buttons

The VTB features a brightly illuminated base for enhanced visual indication. Like the OTB, the VTB is an ergonomic touch button that requires no physical pressure to operate, and is ideal for machine start/stop and other applications where clear, visual indication of the touch button status is desired.

• Illuminated version of the Optical Touch Button
• Ergonomic design eliminates hand, wrist and arm stress
• Provides bright, easy-to-see status indication that can be seen in almost any environment
• One- and two-color models available
• 30 mm threaded base for convenient mounting
Supply Voltage: 12 to 30 V dc

Construction:
- Upper Housing: Polysulfone or polycarbonate
- Base: White polycarbonate

Environmental Rating: IP66

Operating Temperature: -20 to +50 °C (4 to +122 °F)

Certifications: CE, UL

4-Pin M12/
Euro-Style Cordsets
- MQDC-406-6 (6')
- MQDC-415 (15')
- MQDC-430 (30')

5-Pin M12/
Euro-Style Cordsets
- MQDC1-506 (6.5')
- MQDC1-515 (15')
- MQDC1-530 (30')

Optional Field Covers
- Black: OTC-1-BK, OTCL-1-BK
- Green: OTC-1-GN, OTCL-1-GN
- Red: OTC-1-RD, OTCL-1-RD
- Yellow: OTC-1-YW, OTCL-1-YW

Additional accessories are available at bannerengineering.com

SHOP ONLINE at www.airlinehyd.com

800-999-7378
K50L and K30L Illuminated Push Buttons

These two product families combine Banner’s popular K50L and K30L EZ-LIGHT® indicators with a sealed push button that can withstand washdown applications. Unlike typical lighted push buttons, these devices are extremely bright and can be seen from all directions due to their unique shape. The rugged, encapsulated construction allows them to be used as stand-alone devices without an enclosure.

- Up to three colors in one device with a variety of colors for customized indication
- Available in two sizes with a variety of mounting brackets available
- Quick-disconnect models for easy installation
- Dry contact switch output is completely isolated from the LED indicator input
- Designed for panel-mount or stand-alone applications
Supply Voltage
- K30L: 10 to 30 V dc
- K50L: 12 to 30 V dc

Construction
- Base: Polycarbonate
- Translucent dome: Polycarbonate
- Pushbutton: Thermoplastic

Environmental Rating
- IEC IP65

Operating Temperature
- −40 to +50 °C (−40 to +122 °F)

Certifications
- CE
- UL

Color
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- T = Turquoise
- O = Orange
- V = Violet
- M = Magenta
- X = Not Used

Connection
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD
- QD models require mating cordset

Input
- P = PNP

Output
- PB2 = Momentary Push Button

4-Pin M12/ Euro-Style Cordsets
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC-406RA)
- MQDC-406
  - 2 m (6.5’)
- MQDC-415
  - 5 m (15’)
- MQDC-430
  - 9 m (30’)
- MQDC1-506
  - 2 m (6.5’)
- MQDC1-515
  - 5 m (15’)
- MQDC1-530
  - 9 m (30’)

5-Pin M12/ Euro-Style Cordsets
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)
- MQDC2S-806
  - 2 m (6.5’)
- MQDC2S-815
  - 5 m (15’)
- MQDC2S-830
  - 9 m (30’)

8-Pin M12/ Euro-Style Cordsets
- For use with 3-color models
- Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC2S-806RA)

Additional accessories are available at bannerengineering.com
Banner’s round, 30 mm mount E-Stop buttons are ideal for many emergency stop safety applications with bright, highly visible indication. The easy to install E-Stops are available with two-color lighting, or red lighting only. EZ-LIGHT™ logic provides an illuminated base when the button is armed and the machine is enabled to RUN or is running, and turns to a flashing red indication whenever the button is pushed.

- Easy installation and hookup with no assembly, individual wiring or additional enclosure required
- Rugged design rated to IP65 with a 30 mm mounting base
- Models designed to interface with Safety BUS nodes/gateways
- Safe Break Action ensures NC contacts will open if the contact block is separated from the actuator
- Compliant with ANSI B11.19, ANSI NFPA79 and IEC/EN 60204-1 Emergency Stop requirements
Supply Voltage
12 to 30 V dc

Construction
Upper Housing: Polycarbonate/Polymide
Base: White polycarbonate

Environmental Rating
IP65

Operating Temperature
Temperature: –25 to +55 °C (–13 to +131 °F)
Humidity: 45% to 85% RH (no condensation)

Certifications

CSS Series Hookup Cordset Solution
This interconnection solution allows for quick hookup of a series string of emergency stop buttons. The user must ensure that the CSS series hookup cordsets are installed so that they cannot be easily defeated by not allowing access to the QD connectors or allowing improper connection bypassing the function of the Emergency Stop.

Model Description Illumination
SSA-EB1PLYR-12ECQ8 2NC / 1NO (PNP) YEL/RED-Flash/Solid
SSA-EB1PLGR-12ECQ8 2NC / 1NO (PNP) GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ECQ8 2NC / 1NO (PNP) OFF/RED-Flash/Solid
SSA-EB1PL-12ECQ8 2NC / 1NO (PNP) OFF/RED-Solid/Solid
SSA-EB1PLYR-02ECQ5A 2NC – Safety BUS node compatible YEL/RED-Flash

Model Description Illumination
SSA-EB1PLYR-02ECQ5B 2NC – Safety BUS node compatible YEL/RED-Flash
SSA-EB1PLXR-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PLXR-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PL-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Solid
SSA-EB1PL-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Solid

Cordsets available on page 115

SSA-MBK-EEC1 SSA-MBK-EEC2 SSA-MBK-EEC3

CSS Series Hookup Cordset Solution
This interconnection solution allows for quick hookup of a series string of emergency stop buttons. The user must ensure that the CSS series hookup cordsets are installed so that they cannot be easily defeated by not allowing access to the QD connectors or allowing improper connection bypassing the function of the Emergency Stop.

Model Description Illumination
SSA-EB1PLYR-12ECQ8 2NC / 1NO (PNP) YEL/RED-Flash/Solid
SSA-EB1PLGR-12ECQ8 2NC / 1NO (PNP) GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ECQ8 2NC / 1NO (PNP) OFF/RED-Flash/Solid
SSA-EB1PL-12ECQ8 2NC / 1NO (PNP) OFF/RED-Solid/Solid
SSA-EB1PLYR-02ECQ5A 2NC – Safety BUS node compatible YEL/RED-Flash

Model Description Illumination
SSA-EB1PLYR-02ECQ5B 2NC – Safety BUS node compatible YEL/RED-Flash
SSA-EB1PLXR-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PLXR-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PL-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Solid
SSA-EB1PL-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Solid

Cordsets available on page 115

SSA-MBK-EEC1 SSA-MBK-EEC2 SSA-MBK-EEC3

CSS Series Hookup Cordset Solution
This interconnection solution allows for quick hookup of a series string of emergency stop buttons. The user must ensure that the CSS series hookup cordsets are installed so that they cannot be easily defeated by not allowing access to the QD connectors or allowing improper connection bypassing the function of the Emergency Stop.

Model Description Illumination
SSA-EB1PLYR-12ECQ8 2NC / 1NO (PNP) YEL/RED-Flash/Solid
SSA-EB1PLGR-12ECQ8 2NC / 1NO (PNP) GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ECQ8 2NC / 1NO (PNP) OFF/RED-Flash/Solid
SSA-EB1PL-12ECQ8 2NC / 1NO (PNP) OFF/RED-Solid/Solid
SSA-EB1PLYR-02ECQ5A 2NC – Safety BUS node compatible YEL/RED-Flash

Model Description Illumination
SSA-EB1PLYR-02ECQ5B 2NC – Safety BUS node compatible YEL/RED-Flash
SSA-EB1PLXR-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PLXR-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Flash
SSA-EB1PL-02ECQ5A 2NC – Safety BUS node compatible OFF/RED-Solid
SSA-EB1PL-02ECQ5B 2NC – Safety BUS node compatible OFF/RED-Solid

Cordsets available on page 115

SSA-MBK-EEC1 SSA-MBK-EEC2 SSA-MBK-EEC3

CSS Series Hookup Cordset Solution
This interconnection solution allows for quick hookup of a series string of emergency stop buttons. The user must ensure that the CSS series hookup cordsets are installed so that they cannot be easily defeated by not allowing access to the QD connectors or allowing improper connection bypassing the function of the Emergency Stop.
Flush-Mount E-Stop Buttons

Banner’s flush mount E-Stop buttons are ideal for many emergency stop safety applications with bright, highly visible indication. The easy to install E-Stops are available with two-color lighting, or red lighting only. EZ-LIGHT™ logic provides an illuminated base when the button is armed and the machine is enabled to RUN or is running, and turns to a flashing red indication whenever the button is pushed.

- Easy installation and hookup with no assembly, individual wiring or additional enclosure required
- IP65 sealed enclosure with flush-mount design for easy mounting on walls or flat surfaces
- Lockable models available
- Models designed to interface with Safety BUS nodes/gateways
- Compliant with ANSI B11.19, ANSI NFPA79 and IEC/EN 60204-1 Emergency Stop requirements
Illuminated Flush-mount E-Stop Push-Buttons

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Illumination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA-EB1PLYR-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>YEL/RED-Flash/Solid</td>
</tr>
<tr>
<td>SSA-EB1PLGR-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>GREEN/RED-Flash/Solid</td>
</tr>
<tr>
<td>SSA-EB1PLXR-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>OFF/RED-Flash/Solid</td>
</tr>
<tr>
<td>SSA-EB1PL-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>OFF/RED-Solid/Solid</td>
</tr>
<tr>
<td>SSA-EB1PLYR-02ED1Q5A</td>
<td>2NC – Safety BUS node compatible</td>
<td>YEL/RED-Flash</td>
</tr>
</tbody>
</table>

Lockable Illuminated Flush-mount E-Stop Push-Buttons

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Illumination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSA-EB1MLYP-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>YEL/RED-Flash/Solid</td>
</tr>
<tr>
<td>SSA-EB1MLGRP-12ED1Q8</td>
<td>2NC / 1NO (PNP)</td>
<td>GREEN/RED-Flash/Solid</td>
</tr>
</tbody>
</table>

Supply Voltage: 12 to 30 V dc

Construction: Upper Housing: Polycarbonate/Polymide
Base: White polycarbonate

Environmental Rating: IP65

Operating Temperature: Temperature: –25 to +55 °C (+13 to +131 °F)
Humidity: 45% to 85% RH (no condensation)

Certifications:

E-stops can be cascaded. See diagram on page 113
Pick-to-Light

Banner’s Pick-to-Light products are the easy choice for light-guided assembly processes. Banner is a specialist in pick-to-light applications with products that reduce assembly time and increase quality for online and offline operator guidance processes. Pick-to-light products have unique, rugged packages that are easy to mount for quick installation and have bright indicators with a choice of verification functions.
PVD
Diffuse/Retroreflective Parts Verification Array

PVD Pick-to-Light Sensors are compact, one-piece solutions useful in many part assembly, pick-to-light and error-proofing applications.

- Innovative, low-profile design with auto-configuration feature for diffuse or retroreflective modes
- Ideal for bin picking in tube rack or shelving applications
- Green light for pick and red light for mispick with selectable control features
- Rugged housing for high durability
- Protective mounting brackets available
Family | Sensing Length (L1) | Connection
---|---|---
PVD | 100 | Q

- **Sensing Range**: Retroreflective: 2 m
  Diffuse: 400 mm
- **Supply Voltage**: 12 to 30 V dc
- **Construction**: Housing: Black painted aluminum
  Lenses: Acrylic
  End Caps: Thermoplastic
  Switch Cover: Thermoplastic
- **Environmental Rating**: NEMA 2; IEC IP62
- **Operating Temperature**: 0 to +50 °C (+32 to 122 °F)
- **Certifications**:

<table>
<thead>
<tr>
<th>Models</th>
<th>No. of Beams</th>
<th>Sensing Length (L1)</th>
<th>Overall Length (L2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVD100</td>
<td>4</td>
<td>100 mm</td>
<td>137.8 mm</td>
</tr>
<tr>
<td>PVD225</td>
<td>8</td>
<td>225 mm</td>
<td>266.4 mm</td>
</tr>
</tbody>
</table>

4-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle, add RA to the end of the model number (example, MQDC-406RA)
- MQDC-406
  2 m (6.5’)
- MQDC-415
  5 m (15’)
- MQDC-430
  9 m (30’)

5-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)
- MQDC1-506
  2 m (6.5’)
- MQDC-515
  5 m (15’)
- MQDC1-530
  9 m (30’)

Additional accessories are available at bannerengineering.com
Banner’s PVL Pick-to-Light Retroreflective Sensor offers a reliable, cost-effective solution for bin-picking processes. The PVL is easy to install with no assembly required.

- Rugged housing for high durability and works well for larger openings and parts
- 70 mm beam spacing with two available lengths
- Highly visible pick/mispick dual-function indicator
- Can mount directly to a racking profile vertically or horizontally
- Slotted housing design allows cable to exit on either end
**Sensing Range**

*Retroreflective:* 1.5 m

**Supply Voltage**
12 to 30 V dc

**Construction**
*Housing:* aluminum anodized
*Translucent Indicator:* polycarbonate

**Environmental Rating**
IP50

**Operating Temperature**
0 to +50 °C (+32 to 122 °F)

**Certifications**

---

### Family | Sensing Length | Output | Connection |
--- | --- | --- | --- |
PVL | 225 | P | Q |
--- | --- | --- | --- |
MQDC-406 | 2 m (6.5’) | MQDC-415 | 5 m (15’) |
MQDC-430 | 9 m (30’) |

**SMBPVL1 and SMBPVL2-225 or -500**

**SMBPVL4 and SMBPVL3-225 or -500**

for use on 28 mm pipe

---

**4-Pin M12/ Euro-Style Cordsets**

Straight connector models listed; for right-angle models, add RA to the end of the model number (example, MQDC-406RA)

<table>
<thead>
<tr>
<th>Models</th>
<th>No. of Beams</th>
<th>Sensing Length (L1)</th>
<th>Hole-to-Hole Length (L2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVL225</td>
<td>4</td>
<td>225 mm</td>
<td>327.5 mm</td>
</tr>
<tr>
<td>PVL500</td>
<td>8</td>
<td>500 mm</td>
<td>608.0 mm</td>
</tr>
</tbody>
</table>

**BRT-THG-1-100**
Replacement retroreflective tape

**BRT-84X64A**
Long Range Reflectors

Additional accessories are available at bannerengineering.com

---

[Image of product diagram]
The PVA Pick-to-Light Sensor helps reduce missed and misassembled parts for increased quality and reduced production costs. With highly visible job lights, Banner’s PVA provides the most reliable solution for error proofing.

- Emitter/receiver arrays for high resolution sensing
- Four lengths to cover a variety of openings and applications
- Highly reliable sensing over a long operating range
- Wide field-of-view makes alignment easy
- Protective mounting brackets available
Sensing Range: 2 m
Supply Voltage: 12 to 30 V dc
Construction:
- Housing: Black painted aluminum
- Lenses: Acrylic
- End Caps: PBT
- Switch Cover: Thermoplastic
Environmental Rating: NEMA 2; IEC IP62
Operating Temperature: 0 to +50 °C (+32 to 122 °F)
Certifications: 

<table>
<thead>
<tr>
<th>Models</th>
<th>No. of Beams</th>
<th>Sensing Length (L1)</th>
<th>Overall Length (L2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVA100</td>
<td>5</td>
<td>100 mm</td>
<td>137.8 mm</td>
</tr>
<tr>
<td>PVA225</td>
<td>10</td>
<td>225 mm</td>
<td>266.4 mm</td>
</tr>
<tr>
<td>PVA300</td>
<td>13</td>
<td>300 mm</td>
<td>341.4 mm</td>
</tr>
<tr>
<td>PVA375</td>
<td>16</td>
<td>375 mm</td>
<td>416.6 mm</td>
</tr>
</tbody>
</table>

Additional accessories are available at bannerengineering.com

4-Pin M12/Euro-Style Cordsets
- MQDC-406: 2 m (6.5')
- MQDC-415: 5 m (15')
- MQDC-430: 9 m (30')
The K50 Touch Series is a versatile family that combines a large, bright indicator with solid-state switching capability activated by a simple touch. These easy-to-use lighted touch button indicators allow for increased productivity with highly visible indication.

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Ideal for efficient pick-to-light applications where a rugged device is needed
- Simple operation with the touch of a finger, hand or whole palm, with or without gloves
- One-, two- and three-color models available with a variety of colors and option of custom laser surface marking
- Rugged, water-resistant IP69K housing
One- or Two-Color Models

Family: K50  
Output State: A  
Input: P  
Activation Method: T  
Color: G  
Job:  
Sense: R  
Function: C

1-Color Only
D = Job light always ON with job input. Touch activates output.

2-Color Only
C = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light.

A = Normally Open  
R = Normally Closed

P = PNP  
N = NPN

Three-Color Models

Family: K50  
Output State: A  
Input: P  
Activation Method: T  
Color: G  
Job:  
Mispick: R  
Sense: Y  
Function: C3

C3 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light.

Blank = 2 m Integral Cable  
Q = Euro Integral QD  
QP = Euro Pigtail QD  
QPMA = PUR Euro Pigtail QD

Connection: Q

Blank = 2 m Integral Cable  
Q = Euro Integral QD  
QP = Euro Pigtail QD  
QPMA = PUR Euro Pigtail QD

QD models require mating cordset

One- or Two-Color Models

Family: K50  
Output State: A  
Input: P  
Activation Method: T  
Color: G  
Job:  
Sense: R  
Function: C

1-Color Only
D = Job light always ON with job input. Touch activates output.

2-Color Only
C = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light.

A = Normally Open  
R = Normally Closed

P = PNP  
N = NPN

Three-Color Models

Family: K50  
Output State: A  
Input: P  
Activation Method: T  
Color: G  
Job:  
Mispick: R  
Sense: Y  
Function: C3

C3 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light.

Blank = 2 m Integral Cable  
Q = Euro Integral QD  
QP = Euro Pigtail QD  
QPMA = PUR Euro Pigtail QD

QD models require mating cordset

Supply Voltage: 12 to 30 V dc

Construction: Housing: Polycarbonate  
Translucent dome: Polycarbonate  
Mounting Nut: PBT

Environmental Rating: IEC IP67, IP69K per DIN 40050

Operating Temperature: −40 to +50 °C (−40 to +122 °F)

Certifications: ETL

5-Pin M12/Euro-Style Cordsets

Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

MQDC1-506 2 m (6.5')  
MQDC1-515 5 m (15)  
MQDC1-530 9 m (30')

Additional accessories are available at bannerengineering.com
Banner’s K30 Touch Pick-to-Light Series is a versatile family that combines a small, bright indicator with solid-state switching capability activated by a simple touch. These easy-to-use small indicators are cost-effective with a 22 mm threaded base to fit into industry standard punched holes and are ideal for error proofing of bin-picking and parts-verification applications.

- Ergonomic design requires no physical pressure to operate, preventing stress on hands and wrists
- Ideal for efficient pick-to-light applications where a rugged device is needed
- Simple operation with the touch of a finger, hand or whole palm with or without gloves
- One- and two-color models available with a variety of colors and option of custom laser surface marking
- Rugged, water-resistant IP69K housing
### Supply Voltage
12 to 30 V dc

### Construction
- **Housing:** Polycarbonate
- **Translucent dome:** Polycarbonate
- **Mounting Nut:** PBT

### Environmental Rating
IEC IP67, IP69K per DIN 40050

### Operating Temperature
-40 to +50 °C (−40 to +122 °F)

### Certifications
- UL listed
- CE certified

---

#### Function
- **A**: Normally Open
- **R**: Normally Closed
- **P**: PNP
- **N**: NPN
- **G**: Green
- **Y**: Yellow
- **R**: Red
- **B**: Blue
- **W**: White
- **T**: Turquoise
- **O**: Orange
- **V**: Violet
- **M**: Magenta
- **X**: Not Used

### Connection
- **Q**: Euro integral QD
- **QP**: Euro pigtail QD
- **QPMA**: PUR Euro pigtail QD

QD models require mating cordset

---

#### Additional accessories are available at bannerengineering.com
K50 Optical Pick-to-Light Series

The K50FF and K50LP use reliable photoelectric sensing for non-contact part-picking applications.

- Photoelectric pick acknowledgment
- Fixed-field or polarized retroreflective depending on model
- Simple, one-piece, cost-effective installations
- Easily mounted on any type of tube rack or shelving
- Several logic functions available to customize the operation of the application and control system
One- or Two-Color Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Input</th>
<th>Sensing Mode</th>
<th>Range</th>
<th>Color</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50</td>
<td>A</td>
<td>P</td>
<td>FF</td>
<td>50</td>
<td>G</td>
<td>C</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Blank = LP models | 50 = 50 mm | 100 = 100 mm |

1-Color Only
D = Job light always ON with job input. Touch activates output.

2-Color Only
C = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light.

E = Job light always ON with job input. Touch activates output. Touch with inactivate job input activates sense light.

Three-Color Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Input</th>
<th>Sensing Mode</th>
<th>Range</th>
<th>LED Color</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50</td>
<td>A</td>
<td>P</td>
<td>FF</td>
<td>50</td>
<td>G R Y</td>
<td>C3</td>
<td>Q</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Blank = LP models | 50 = 50 mm | 100 = 100 mm |

C3 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light. Touch with inactive job input activates mispick light and activates output.

C4 = Job light always ON with job input. Touch activates output and overrides job light with sense light until job input is removed. Touch with inactive job input activates mispick light for 5 seconds after touched and activates output.

### Specifications

- **Sensing Range**
  - Polarized Retroreflective: 2.0 m
  - Fixed-field: 50 mm or 100 mm

- **Supply Voltage**
  - 12 to 30 V dc

- **Construction**
  - Housing: Polycarbonate
  - Translucent dome: Polycarbonate
  - Mounting Nut: PBT

- **Environmental Rating**
  - IEC IP67, IP69K per DIN 40050

- **Operating Temperature**
  - -40 to +50 °C (-40 to +122 °F)

- **Certifications**
  - Some models pending. Contact factory for additional information.

---

5-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- MQDC1-506
  - 2 m (6.5')
- MQDC1-515
  - 5 m (15')
- MQDC1-530
  - 9 m (30')

### Retroreflective Targets
- BRT-2X2
- BRT-3X35B
- BRT-5X51BM
- BRT-500
- BRT-100X18A

### Retroreflective Tape
- BRT-THG-1-100
- BRT-THG-2-100
- BRT-THG-3-100
- BRT-TVHG-2X2

Additional accessories are available at bannerengineering.com
Banner’s line of indicators with push buttons are ideal for pick-to-light operations that require a physical acknowledge function. Unlike conventional push buttons, these devices are extremely bright and can be seen from all directions due to their unique shape.

- Rugged, encapsulated construction with sealed push button
- Convenient Euro quick-disconnect options for simple installation
- Multiple colors per light with a variety of I/O options
- Bright, clear indication is visible in the harshest environments
- Wide selection of mounting brackets for easy installation on tube racks or shelving
### K30, K50 and K80 One- or Two-Color

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Sensing Mode</th>
<th>LED Color</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K30</td>
<td>A</td>
<td>PB</td>
<td>G</td>
<td>D</td>
<td>Q</td>
</tr>
<tr>
<td>K50</td>
<td>P</td>
<td>(plastic)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K80</td>
<td>N</td>
<td>(metal)</td>
<td>R</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PB** = Push Button
- **A** = Normally Open
- **P** = PNP
- **R** = Normally Closed
- **N** = NPN

### K50 and K80 Three-Color

<table>
<thead>
<tr>
<th>Family</th>
<th>Output State</th>
<th>Sensing Mode</th>
<th>LED Color</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50</td>
<td>A</td>
<td>PB</td>
<td>G</td>
<td>C3</td>
<td>Q</td>
</tr>
<tr>
<td>K80</td>
<td>P</td>
<td>(plastic)</td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>(metal)</td>
<td>Y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **PB** = Push Button
- **A** = Normally Open
- **R** = Normally Closed
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

### Supply Voltage
12 to 30 V dc

### Construction
- **Base and Translucent Dome:** Polycarbonate
- **Push Button:** Thermoplastic or Stainless Steel

### Environmental Rating
IEC IP67

### Operating Temperature
−40 to +50 °C (−40 to +122 °F)

### Certifications
CE, UL, CSA

### Additional accessories are available at bannerengineering.com

---

**SMB22A**
- with K30

**SMBAMS22P**
- with K30

**SMBDX80DIN**
- for mounting to 35 mm DIN Rail

**SMBAMS22RA**
- with K30

**SMB30A**
- with K50

**5-Pin M12/ Euro-Style Cordsets**
- Straight connector models listed: for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

**MQDC1-506**
- 2 m (6.5')

**MQDC1-515**
- 5 m (15')

**MQDC1-530**
- 9 m (30')

**Blank** = Terminal Wired (K80 only)
**Q** = Euro Integral QD
**QP** = Euro Pigtail QD
**QPMA** = PUR Euro Pigtail QD
**QD models require mating cordset**
K50 Modbus Pick-to-Light Series

The K50 Serial Pick-to-Light Sensors are the first rugged, industrial-rated pick-to-light devices using a common industrial protocol for communication and programming, providing improved ways to program and install a system.

- Compact, single-point devices for error-proofing of bin-picking operations
- Rugged, cost-effective, and easy-to-install solutions for error-proofing and parts verification applications
- Illuminated dome provides easy-to-see job light status
- Choose either polarized retroreflective or fixed-field models
- Fully encapsulated IP67 construction
- Modbus RTU communication minimizes the cabling requirements
Sensing Range
- Polarized Retroreflective: 2.0 m
- Fixed-field: 50 mm or 100 mm

Supply Voltage
- 12 to 30 V dc

Construction
- Polycarbonate

Environmental Rating
- IEC IP67

Operating Temperature
- −40 to +50 °C (−40 to +122 °F)

Certifications
- CE

Sensing Mode
- LP = Polar Retro
- FF = Fixed-Field

Range
- Blank = LP models
  - 25 = 25 mm
  - 50 = 50 mm
  - 100 = 100 mm

LED Color
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White

Bus Indicator
- S1 = Modbus 485

Connection
- Q = Euro Integral QD
- QP = Euro Pigtail QD
- QD models require mating cordset
The VTB provides an ergonomic pick-to-light solution that requires no physical pressure to operate. Output is activated while a finger is in the “touch area,” interrupting the button’s optical sensing beam. A brightly illuminated base provides clear visual indication to the operator.

- Ideal for pick-to-light operations in tight areas
- Ergonomic design eliminates hand, wrist and arm stress
- Provides bright, easy-to-see status indication that can be seen in almost any environment
- One- or two-color models available
- 30 mm threaded base for convenient mounting
Supply Voltage
12 to 30 V dc

Construction
Upper Housing: Polysulfone or polycarbonate
Base: White polycarbonate

Environmental Rating
IP66

Operating Temperature
-20 to +50 °C (-4 to +122 °F)

Certifications
CE, UL

One-Color Illuminated Base Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Output</th>
<th>Job Light Color</th>
<th>Upper Housing Material</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTB</td>
<td>P6</td>
<td>N6 = NPN, P6 = PNP</td>
<td>Blank = Polysulfone or polycarbonate</td>
<td>Q = Euro Integral QD</td>
</tr>
</tbody>
</table>

Two-Color Illuminated Base Models

<table>
<thead>
<tr>
<th>Family</th>
<th>Output</th>
<th>Job Light 1 Color</th>
<th>Job Light 2 Color</th>
<th>Upper Housing Material</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTB</td>
<td>P6</td>
<td>G = Green, R = Red</td>
<td>G = Green, B = Blue</td>
<td>Blank = Polysulfone or polycarbonate</td>
<td>Q = Euro Integral QD</td>
</tr>
</tbody>
</table>

Optional Field Covers

- Black: OTC-1-BK
- Green: OTC-1-GN
- Red: OTC-1-RD
- Yellow: OTC-1-YW

4-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle, add RA to the end of the model number (example, QMDC-406RA)

- MQDC-406: 1.83 m (6')
- MQDC-415: 5 m (15')
- MQDC-430: 9.14 m (30')

5-Pin M12/
Euro-Style Cordsets
Straight connector models listed; for right-angle models, add RA to the end of model number (example, MQDC1-506RA)

- MQDC1-506: 2 m (6.5')
- MQDC1-515: 5 m (15')
- MQDC1-530: 9 m (30')

Additional accessories are available at bannerengineering.com
Actuation Methods

The actuation method is the means by which an operator’s actions are sensed. Banner’s Pick-to-Light line includes a variety of actuation methods, including contact and non-contact sensors covering a single point on a small bin or a wide opening on a large bin. These actuation methods enable error proofing in a large variety of assembly and kitting applications. Below is a description of each actuation method offered to help you select the best solution for your specific application.

**Emitter/Receiver**
In opposed-mode sensing, the sensor’s emitter and receiver are housed in two separate units. The emitter is placed opposite the receiver, so that the light beam goes directly from the emitter to the receiver.

**Retroreflective Mode**
Retroreflective sensors contain both the emitter and receiver elements. The beam(s) is(are) established between the emitter, the retroreflector and the receiver. An object is sensed when it interrupts or “breaks” the effective beam.

**Diffuse**
With a diffuse-mode sensor, the object is detected when the object reflects the sensor’s transmitted light energy back to the sensor.
**Fixed Field Mode**
Background suppression sensors have a definite limit to their sensing range, ignoring objects that lie beyond their range. Fixed-field sensors compare the amount of reflected light that is seen by two differently aimed receiver elements. If the light reaching the second receiver element is equal to or greater than the light reaching the first receiver element, then the object will be recognized.

**Push Buttons**
Push buttons take physical force to press and actuate the button.

**Touch Buttons**
Touch buttons can be actuated with no force, just contact with the surface. The contact can be made with a whole hand, palm or finger.
Monitor Status across the Factory with Banner’s Wireless Solutions

Easy-to-use Wireless Systems Can Transform Banner Tower Lights and Indicators into a Wireless Visual Management Solution

Banner wireless products eliminate costly wiring and speed up continuous improvement projects. Wireless products are optimized for long range data transmission with bi-directional, two-way communication that supports input and output signals.
Central monitoring of machine status with Banner’s Wireless products allows users to easily analyze productivity and efficiency. Banner’s Wireless Gateway can connect directly to an HMI or other control system to send status messages via email or text.

Banner’s SureCross® Wireless solutions can be paired with any Banner indicator and are ideal for a wide range of applications including Andon, call button, remote operator guidance, pick-to-light, logistics and status monitoring.

For complete information on Banner’s full Wireless family, visit www.bannerengineering.com/Wireless.

<table>
<thead>
<tr>
<th>Models</th>
<th>Frequency</th>
<th>Environmental Rating</th>
<th>I/O</th>
</tr>
</thead>
<tbody>
<tr>
<td>DX80N9X6S-P8</td>
<td>900 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DX80N2X6S-P8</td>
<td>2.4 GHz</td>
<td>IP67, NEMA 6</td>
<td>12 Inputs or Outputs Configurable</td>
</tr>
<tr>
<td>DX80G9M6S-P8</td>
<td>900 MHz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DX80G2M6S-P8</td>
<td>2.4 GHz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Additional Gateways are available to support Modbus TCP/RTU and Ethernet IP industrial protocols.
Advanced Vision Lighting Solutions from Banner

Reliable Vision Performance Requires Advanced Lighting Solutions

Banner knows lights. We’ve been designing and perfecting LED-based industrial controls for over 40 years. We’ve developed a comprehensive line of lighting solutions dedicated to your machine vision applications.

For complete information on Banner’s full Vision Lighting family, refer to the Vision Lighting brochure, www.bannerengineering.com/137003, or visit www.bannerengineering.com/visionlights.
Linear Array Lights
Linear Array Lights effectively illuminate large areas over long distances while cutting through dust, mist and grime.

LED Area Lights
Area Lights provide even illumination with high-intensity lights for the highest levels of contrast to help vision sensors detect the presence or absence of a feature.

LED On-Axis Lights
Banner’s innovative On-Axis Lights use a beam splitter to focus light along a camera’s optical axis, providing even, diffused illumination.

LED Back Lights
Banner Backlights provide more optical contrast by creating an image that shows a silhouette of a part, allowing for inspection of size and shape.

LED Ring Lights
Ring Lights brightly illuminate the area directly in front of a camera and are especially useful for small parts and high-speed inspections.

Low-Angle Ring Lights
Low-Angle Ring Lights enhance the contrast of surface features, making them ideal for a number of quality, identification and verification applications.

LED Spot Lights
Banner’s Spot Lights are compact to fit into tight spaces, and when properly placed can effectively create shadows or highlights to boost optical contrast.
More Information Online

www.bannerengineering.com

For the latest lighting and indicator products, brackets, cordsets, accessories, and new solutions, find us on the web at www.bannerengineering.com.

You also have access to more detailed information such as engineering drawings, complete specifications, installation instructions, product configurators and product videos.
How to Reach Us

Global Sales and Support

Questions? Need additional assistance?
Banner has more than 3,000 representatives and distributors worldwide — ready to help you.

Our highly skilled application engineers and industry experts are ready to support you wherever you are. For a complete listing, go to bannerengineering.com and find your local Banner Representative.

To contact a Banner Engineer about your application, call

1-888-3-SENSOR (1-888-373-6767)

www.bannerengineering.com/contact-us

Banner Engineering—Headquarters
Phone: +1 763 544 3164
www.bannerengineering.com

Banner Engineering—Europe
Phone: +32 2 456 07 80
www.bannerengineering.com/eu

Banner Engineering—Mexico
Phone: +52 81 8363-2714
www.bannerengineering.com.mx

Banner Engineering—China
Phone: +86 21 33968888
www.bannerengineering.com.cn

Banner Engineering—India
Phone: +91 20 66405623
www.bannerengineering.co.in
Limited Warranty

Banner Engineering Corp. warrants its products to be free from defects in material and workmanship for one year following the date of shipment. Banner Engineering Corp. will repair or replace, free of charge, any product of its manufacture which, at the time it is returned to the factory, is found to have been defective during the warranty period. This warranty does not cover damage or liability for misuse, abuse, or the improper application or installation of the Banner product.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp.