BANNER®

more sensors, more solutions

Lighting & Indication

4th edition

Lighting & Indication

BANNER®

more sensors, more solutions

Who is Banner?

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.

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

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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.

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Indicators
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K50 Modbus
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Light Up the Visual Factory

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

Sensor Emulation

Illuminate the Work Area with LED Lighting

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- Boost Worker Productivity
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Workstation Lighting

Visual Inspection Station

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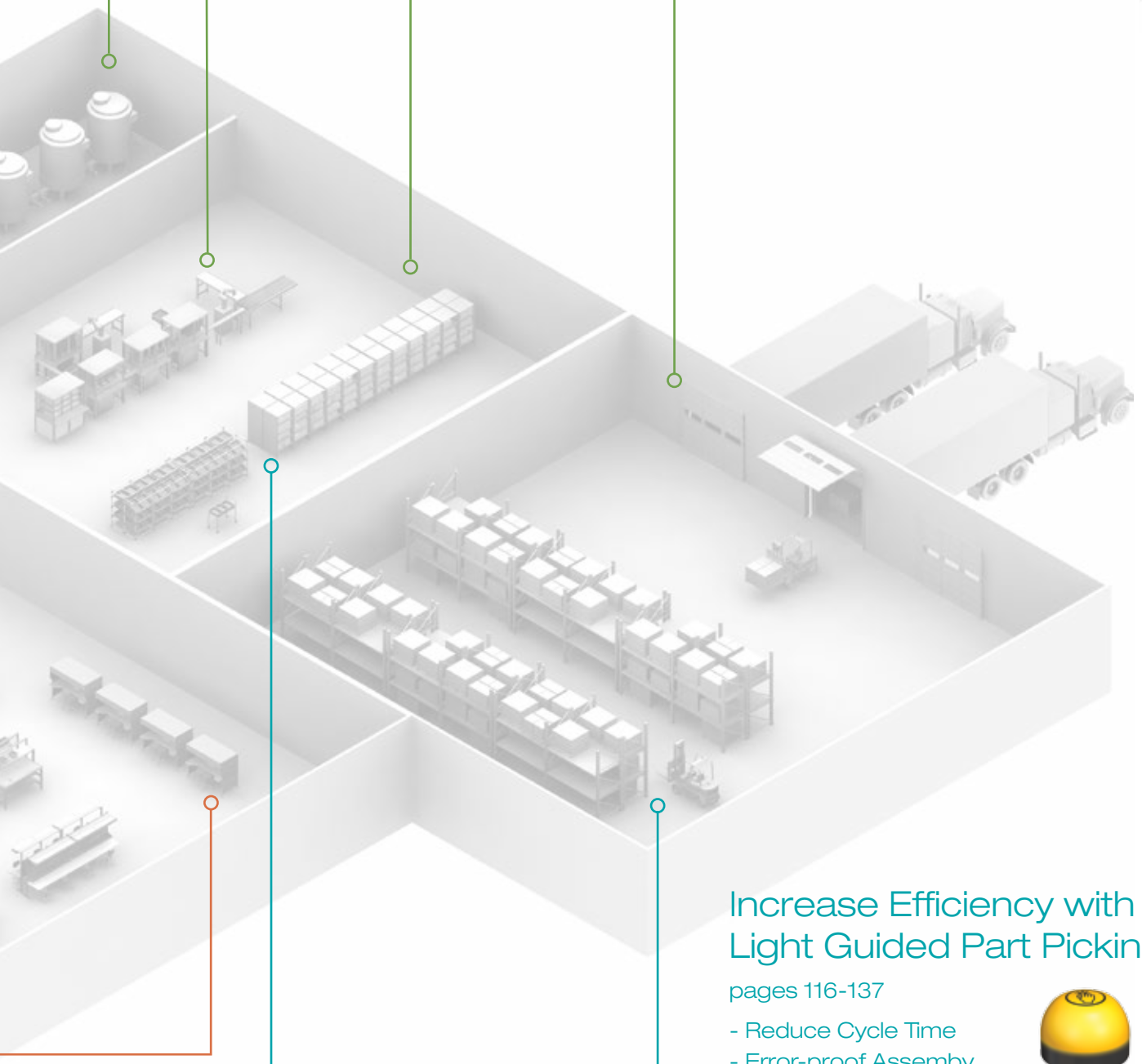
- Empower Operators
- Alert Supervisors
- Accelerate Resolution

Machine and Process Status

Call for Parts

Loading Dock/Bay Communication



Increase Efficiency with Light Guided Part Picking

pages 116-137

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

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
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Chemical-Resistant Lights
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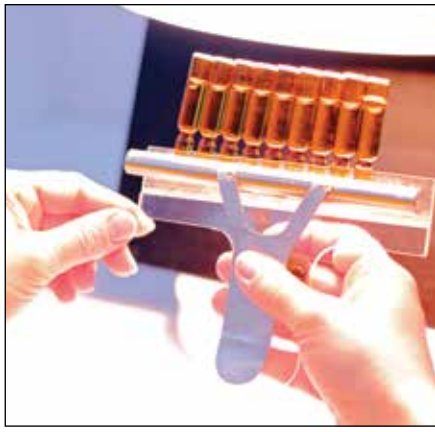
Spot Lights
page 34



Tower Lights
page 44

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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

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 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

Indicators
page 58

Touch Buttons
page100

E-Stops
page 112

Lean Principle

Andon

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

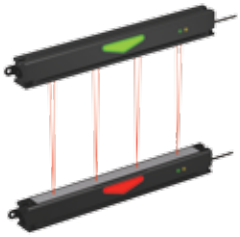
Accurate – Visual indication and pick feedback result in increased operator accuracy

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



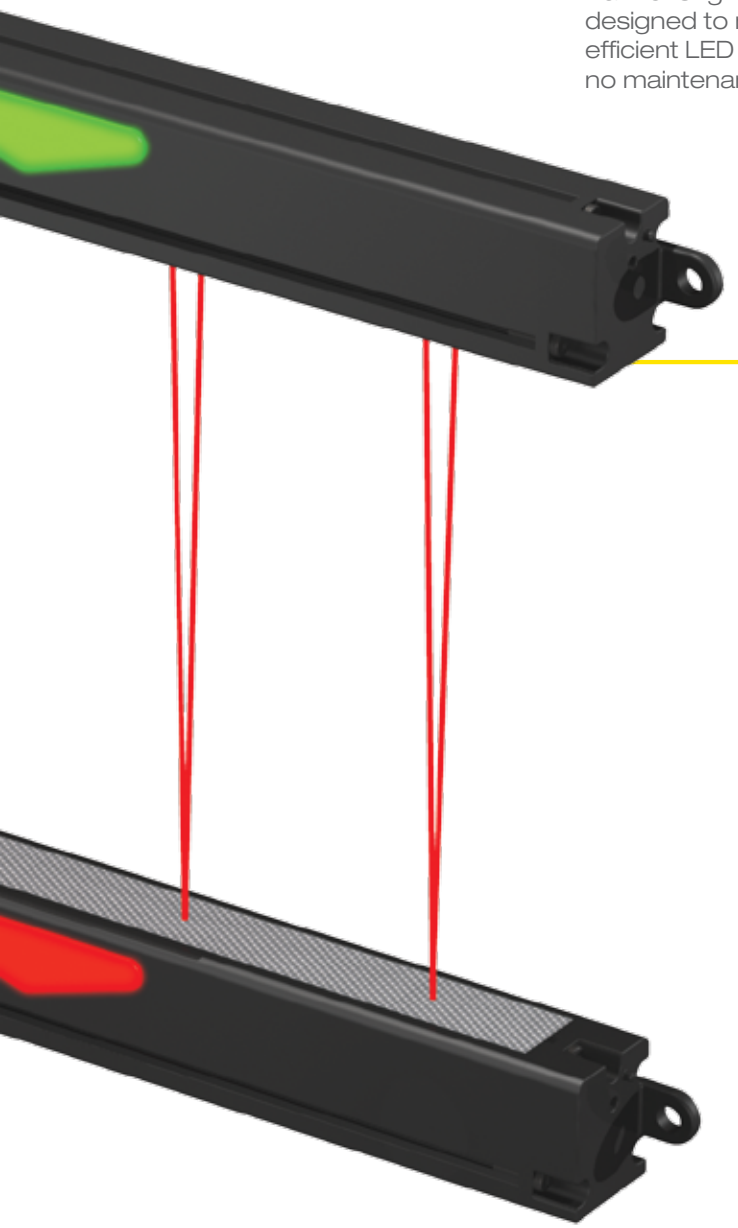
Sensor Arrays
page 118

The Design: Sleek yet Rugged

The Products: Simple yet Intelligent

The Options: Endless yet Unique

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.



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

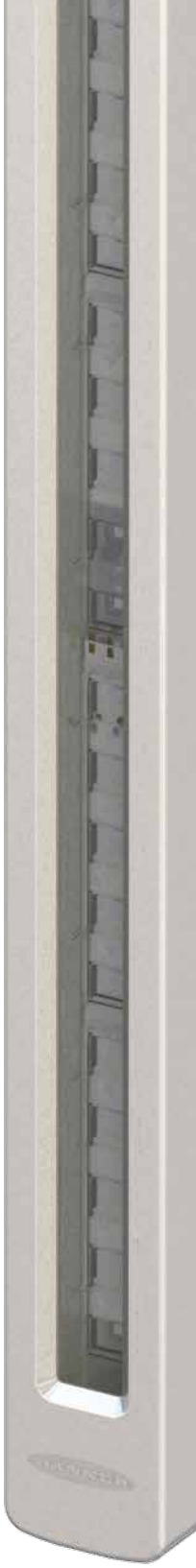
With high-quality, long-life LED lights, Banner's lighting and indicator products provide efficient, energy-saving options that are extremely bright and highly visible on the factory floor.

high quality

All of Banner's lighting and indicator products are made for long-term use, requiring zero maintenance after installation.

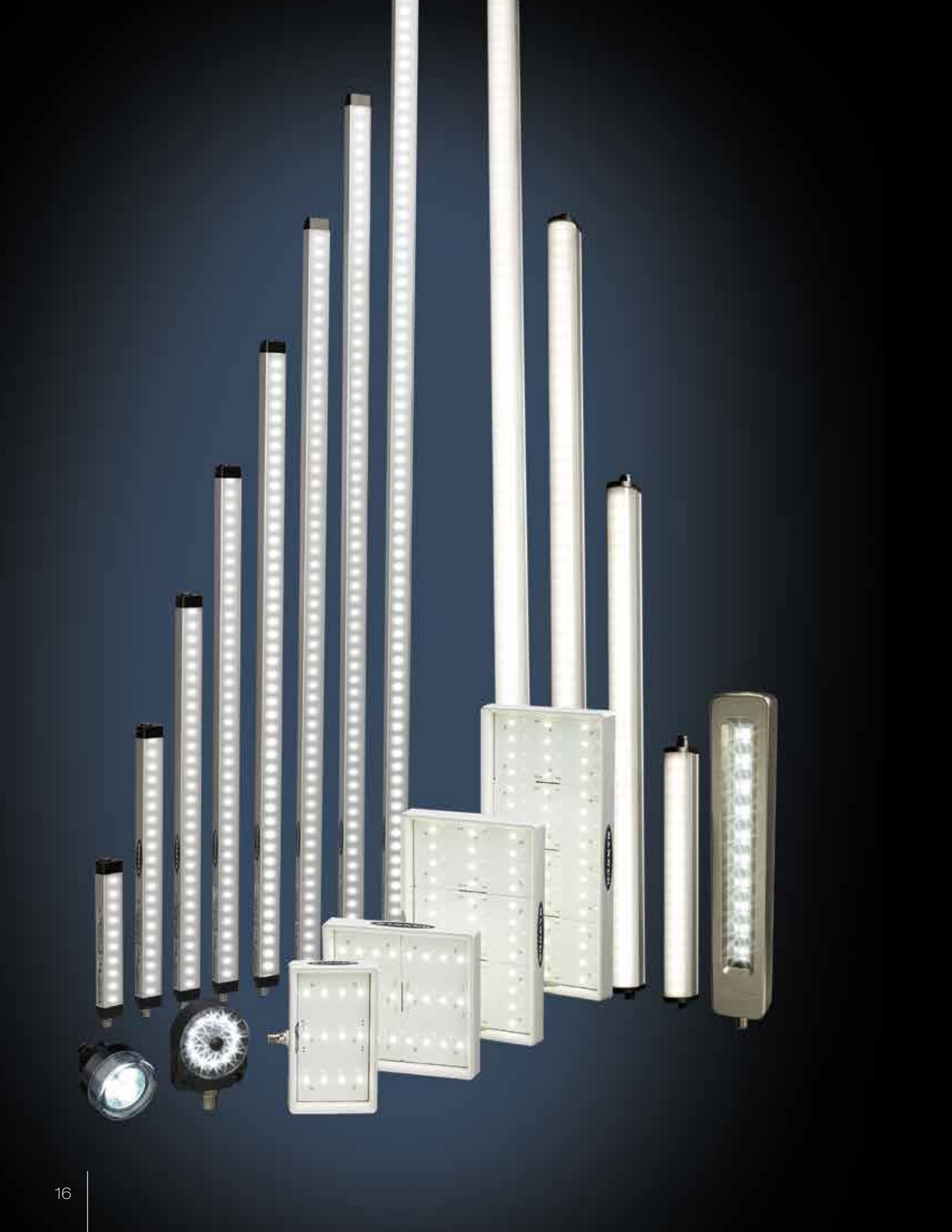
rugged

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



innovative

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.



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**	**QM**	**B**
	Z = AC **Blank** = DC	**C** = Cascadable	**285** **570** **850** **1130**	**PB** = Hi/Low/OFF **Blank** = No Switch	**Blank** = Cable (dc) **Q** = Euro QD (dc) **QM** = AC QD models require mating cordset	**B** = North & Central America, Japan, Taiwan **D** = India, Sri Lanka, Nepal, Namibia **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	CE cULus LISTED

Lighted Length (L)

285 mm 850 mm
570 mm 1130 mm

Length (mm)	Lumens (Typical @ 25 °C) Daylight White	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

LQMAEC-3005SS 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')
LQMAEC-312SS 3.66 m (12.0')
LQMAEC-320SS 6.10 m (20.0')
LQMAEC-330SS 9.14 m (30.0')

Power Cordset
1.8 m (6')

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

LMBWLB32

LMBWLB32-180S

LMBWLB32MAG

LMBWLB32U

LMBWLB32UT

Additional accessories are available at bannerengineering.com

WLB92 Industrial Light Bar

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 avaialble, 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

Family	Voltage	Cascadable	Lighted Length	Control	Connector
WLB92	Z	C	550	A	CT
	Z = AC	**C** = Cascadable	**550 mm** **1100 mm**	**A** = 0-10 V Analog Dimming	**CT** = Conduit Entry

AC Quick-Disconnect Models

Family	Voltage	Cascadable	Lighted Length	Control	Connector	Plug Type (1.8 m cable)
WLB92	Z	C	550	PB	QM	B
	Z = AC	**C** = Cascadable	**550 mm** **1100 mm**	**PB** = Switch, Dimming Knob	**QM** = AC	**B** = North & Central America, Japan, Taiwan **D** = India, Sri Lanka, Nepal, Namibia **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 **C** = AC connector with flying leads **Blank** = No power cord

DC Models

Family	Cascadable	Lighted Length	Control	Connector
WLB92	X	550	PB	Q
	X = Non-Cascadable	**550 mm** **1100 mm**	**PB** = Switch, Dimming Knob **PWM** = Dimmable via Pulse Width Modulation	**Blank** = 2 m Integral Cable **Q** = Integral 4-pin Euro QD **QD** models require mating cordset

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	

Lighted Length (L)
550 mm 1100 mm

Length (mm)	Lumens (Typical @ 25 °C) Daylight White	AC Models Typical Wattage* (Watts)	DC Models Typical Wattage* (Watts)
550	3130	34	35
1100	6500	70	70

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

LMBWLB92

LMBWLB92-CLIP

LMBWLB92S

LMBWLB92HKS

LMBWLB92RAS

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

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

For use with DC models
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')

Additional accessories are available at bannerengineering.com

WLS27 LED Strip Lights

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

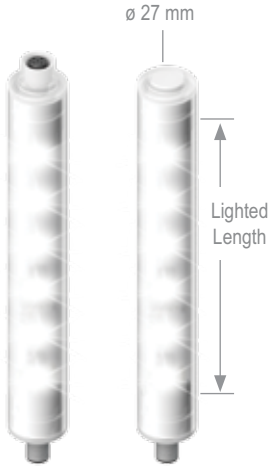
Family	Cascadable	LED Color	Lighted Length (mm)	Window	Construction	Connector
WLS27	C	W	145	D	S	Q
	C = Cascadable X = Non Cascadable	W = Cool White WW = Warm White R = Red G = Green B = Blue Y = Yellow	145 285 430 570 710 850 990 1130	D = Diffused Plastic	S = Sealed	Q = Integral Euro QD *QD models require mating cordset*

DIMMABLE MODELS— pages 38-39

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	

Length (mm)	Lumens* (Typical @ 25 °C)						Typical Wattage** (Watts)
	Cool White	Warm White	Red	Green	Blue	Yellow	
145	300	300	50	165	35	45	3.6
285	600	600	100	330	70	90	7.2
430	900	900	150	495	105	135	11.0
570	1200	1200	200	660	140	180	14.6
710	1500	1500	250	825	175	225	18.5
850	1800	1800	300	990	210	270	22.1
990	2100	2100	350	1155	245	315	25.9
1130	2400	2400	400	1320	280	360	29.8

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



First or Middle of Cascade | **Stand-Alone or Cascade End Light**

LMBWLS27EC

LMBWLS27H

LMBWLS27U

LMBWLS27SP

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')

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 Cordsets
Double-Ended (straight male/straight female connectors)

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

4-Pin M12/Euro-Style Cordsets
Splitter

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

Additional accessories are available at bannerengineering.com

WLS28-2 LED Strip Lights

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

Family	Cascadable	LED Color	Lighted Length (mm)	Window	Construction	Control	Connector
WLS28-2	C	W	145	D	X	PB	Q

C = Cascadable
X = Non Cascadable

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

145
285
430
570
710
850
990
1130

Blank = Clear Plastic
D = Diffused Plastic
L25 = 25° Lensed Window

S = Sealed*
X = Not Sealed

Blank = None
M = Motion Switch
PB = Hi/Lo/OFF Switch

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

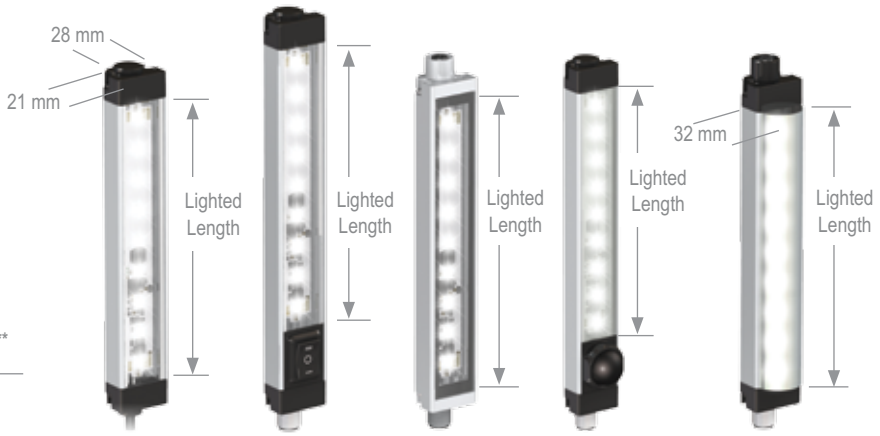
** Sealed models not available with ON/OFF or Motion Switch*

DIMMABLE MODELS— pages 38-39

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	CE cULus

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

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



Stand-Alone Cable Models | **Stand-Alone Push Button QD Models** | **Sealed Cascadable Models** | **Motion Detector Models** | **Lensed Cascadable Models**

Top Mount

SMBWLS28RA
(included with light)

Side Mount

SMBWLS28SM

Magnetic Mount
Shown with SMBWLS28RA

SMBWLSMAG
SMBWLSMAGR —Protective cover for magnet sold separately

Snap Mount

SMBWLS28SP

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

WLS28-2MQ
In-Line Motion Detection Switch with M12 Connectors

WLS28-2PBQ
In-Line Switch with M12 Connectors

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 Cordsets
Double-Ended (straight male/straight female connectors)

4-Pin M12/Euro-Style Cordsets
Splitter

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

WLS28-2 Dual-Color LED Strip Lights

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

Family	Cascadable	Colors (C) /Density (D) C1	D1	C2	D2		Lighted Length (mm)	Window	Construction	Power Switch	Connector
WLS28-2	X	W		R	2	–	285	D	X	PB	Q

Cascadable
- **C** = Cascadable
- **X** = Non Cascadable

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

Density
- **Blank** = 100%
- **2** = 50%
- **3** = 33%

Lighted Length (mm)
- **285**
- **570**
- **850**
- **1130**

Window
- **Blank** = Clear Plastic
- **D** = Diffused Plastic
- **L25** = 25° Lensed Window

Construction
- **S** = Sealed*
- **X** = Not Sealed

Power Switch
- **Blank** = None
- **PB** = Color 1/OFF/Color 2

Connector
- **Blank** = 2 m Integral Cable
- **Q** = Integral Euro QD

QD models require mating cordset

** Sealed models not available with ON/OFF Switch*

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	CE, c UL us LISTED

Length (mm)	Lumens* (Typical @ 25 °C) Daylight White	Red	Green	Blue	Yellow	Typical Wattage** (Watts)
285	475	200	300	110	150	7.2
570	950	400	600	220	300	14.6
850	1425	600	900	330	450	22.1
1130	1900	800	1200	440	600	29.8

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

Stand-Alone Cable Models | **Stand-Alone Push Button QD Models** | **Sealed Cascadable Models** | **Lensed Cascadable Models**

Top Mount

SMBWLS28RA
(included with light)

Side Mount

SMBWLS28SM

Magnetic Mount
Shown with SMBWLS28RA

SMBWLSMAG
SMBWLSMAGR —Protective cover for magnet sold separately

Snap Mount

SMBWLS28SP

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 Cordsets
Double-Ended (straight male/straight female connectors)

4-Pin M12/Euro-Style Cordsets
Splitter

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

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

WLS28-2PBQ
In-Line Switch with M12 Connectors

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**		**A**		**Q**

- **Cascadable:** **C** = Cascadable; **X** = Non-Cascadable
- **LED Color:** **W** = Cool White
- **Lighted Length (mm):** **340*** ; **640**
- **Window:** **Blank** = Polycarbonate; **G** = Borosilicate Glass
- **Mounting Type:** **Blank** = Base Mount; **F** = Flush Mount
- **Construction:** **A** = Nickel-Plated Aluminum
- **Connector Exit:** **Blank** = Side Exit; **R** = Rear Exit
- **Connector:** **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD

* Flush-mount models only available in 340 mm length

QD models require mating cordset

WLC60 LED Light—Stainless Steel

Family	Cascadable	LED Color	Lighted Length (mm)	Window	Mounting Type	Construction	Connector Exit	Connector
WLC60	**X**	**W**	**340**	**G**		**SS**		**Q**

- **Cascadable:** **X** = Non-Cascadable
- **LED Color:** **W** = Cool White
- **Lighted Length (mm):** **340**
- **Window:** **Blank** = Polycarbonate; **G** = Borosilicate Glass
- **Mounting Type:** **Blank** = Base Mount
- **Construction:** **SS** = 316 Stainless Steel
- **Connector Exit:** **Blank** = Side Exit
- **Connector:** **Blank** = 2 m Integral Cable; **Q** = Euro Integral QD

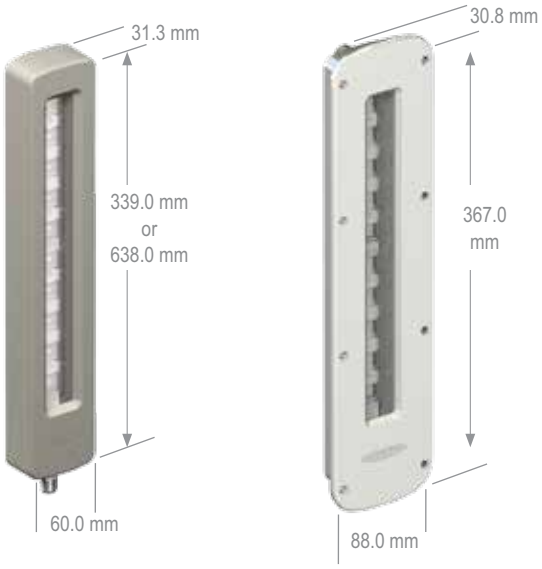
QD models require mating cordset

DIMMABLE MODELS—pages 38-39

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

Length (mm)	Lumens (Typical @ 25 °C) Cool White	Typical Wattage* (Watts)
340	1300	14.2
640	2600	28.1

*Typical operating wattage is measured at 24 V dc



LMBWLC60F

LMBWLC60RA

LMBWLC60RA
4 bracket kit for swivel option. Can mount SMBMAG3 magnet also

LMBWLC60MAG*
SMBWLSMAGR — Protective cover for magnet sold separately

* Do not use with stainless steel models

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

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 Cordsets
Double-Ended (straight male/ straight female connectors)

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

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

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

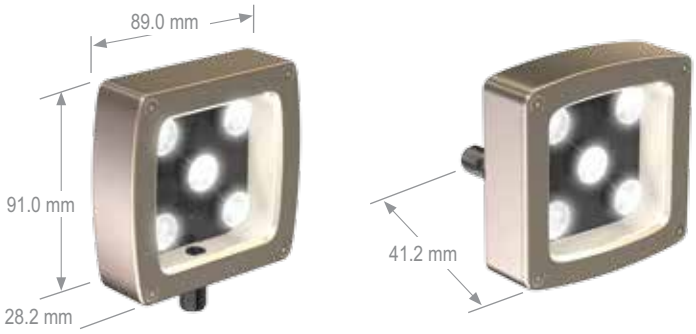
Family	LED Color	Window	Lensing	Connector Exit	Connector
WLC90	W	G	L15		Q
	W = Cool White	**Blank** = Polycarbonate **G** = Borosilicate Glass	**L8** = ± 8° **L15** = ± 15° **L30** = ± 30°	**Blank** = Side Exit **R** = Rear Exit	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

DIMMABLE MODELS— pages 38-39

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	CE, c UL us LISTED

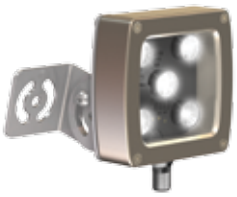
Lumens (Typical @ 25 °C)	Typical Wattage* (Watts)
Cool White	
625	8.1

*Typical operating wattage is measured at 24 V dc



Rear-Exit Models

LMBWLC90PT



Side-Exit Models

SMBAMS70AS

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

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

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

Family
WLA
Standard

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

Array Size (mm)
105X180
- **105X180**
- **190X180**
- **275X180**
- **360X180**

Window
- **Blank** = Clear Plastic
- **D** = Diffused Plastic

Lensing
L11
- **Blank** = No Lenses
- **L11** = ± 11°
- **L22** = ± 22°
- **L30** = ± 30°

Connector
Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD

QD models require mating cordset

Family
WLA
Encapsulated

LED Color
W
- **W** = Cool White

Array Size (mm)
105X180
- **105X180**
- **190X180**
- **275X180**
- **360X180**

Window
E
- **E** = Encapsulated in Polyurethane

Connector
Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD

QD models require mating cordset

DIMMABLE MODELS— pages 38-39

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	CE cULus LISTED Encapsulated models not UL listed

Size (mm)	Lumens* (Typical @ 25 °C)						Typical Wattage** (Watts)
	Cool White	Warm White	Red	Green	Blue	Yellow	
105x180	550	435	125	325	95	275	9.6
190x180	1100	870	250	650	190	550	19.2
275x180	1650	1305	375	975	285	825	28.8
360x180	2200	1740	500	1300	380	1100	38.4

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

Magnetic Mount

SMBBSSM

SMBBSRA

SMBWLAMAG
SMBWLAMAGR — 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

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

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

Family
WL50S
Black Anodized Aluminum

LED Color
W
- **W** = White
- **G** = Green
- **R** = Red

Lens Angle
L11
- **L5** = ±5° (small)
- **L11** = ±11° (large)
- **L20** = ±20° (largest)

Connector
Q
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD

QD models require mating cordset

Family
WL50S
Stainless Steel

LED Color
W
- **W** = White
- **G** = Green
- **R** = Red

Housing
SS
- **SS** = Stainless Steel

Window Material
G
- **Blank** = Acrylic
- **G** = Glass

Lens Angle
L11
- **L5** = ±5° (small)
- **L11** = ±11° (large)
- **L20** = ±20° (largest)

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

QD models require mating cordset

DIMMABLE MODELS— pages 38-39

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)
Certifications	CE, c UL us LISTED

Lens	Lumens (Typical @ 25 °C)			Typical Wattage* (Watts)
	Cool White	Green	Red	
±5°	295	210	110	4.3
±11°	285	200	105	
±20°	270	190	100	

*Typical operating wattage is measured at 24 V dc

SMB30FA

SMB30SC

SMBAMS30P

SMBAMS30RA

FLX18 Flex Arm Mounts
See page 40 for more information

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

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

Family	Power Switch	Connector
WL50-2	**PB**	**Q**
WL50-2 = 30 mm Mount **WL50F-2** = Flat Mount	**Blank** = Standard **PB** = ON/OFF Switch	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

DIMMABLE MODELS— pages 38-39

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	CE, c UL us LISTED

Lumens (Typical @ 25 °C) Cool White	Typical Wattage* (Watts)
185	2.4

*Typical operating wattage is measured at 24 V dc

30 mm Push-Button Model

Standard Flat-Mount Model

Mounting Options for Flat Mount Models

Screw Mount

VELCRO® Brand VELCOIN® Fasteners (included)

Mounting Options for 30 mm Mount Models

FLX18 Flex Arm Mounts
See page 40 for more information

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**)

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

Additional accessories are available at bannerengineering.com

PN LC65P1T

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

page 24

Family	Cascadable	LED Color	Lighted Length (mm)	Window	Construction	Intensity Control	Connector
WLS28-2	C	W	145		X	PWM	Q

- **Cascadable:** C = Cascadable; X = Non Cascadable
- **LED Color:** W = Cool White
- **Lighted Length (mm):** 145, 285, 430, 570, 710, 850, 990, 1130
- **Window:** Blank = Clear Plastic; D = Diffused Plastic; L25 = 25° Lensed Window
- **Construction:** S = Sealed*; X = Not Sealed
- **Intensity Control:** PWM = Dimmable
- **Connector:** Blank = 2 m Integral Cable; Q = Integral Euro QD
  QD models require mating cordset

** Sealed models not available with ON/OFF switch*

WLC60 Heavy-Duty LED Light

page 28

Family	Cascadable	LED Color	Lighted Length (mm)	Window	Mounting Type	Construction	Connector Exit	Intensity Control	Connector
WLC60	X	W	340	G		A		PWM	Q

- **Cascadable:** C = Cascadable; X = Non-Cascadable
- **LED Color:** W = Cool White
- **Lighted Length (mm):** 340 *, 640
- **Window:** Blank = Polycarbonate; G = Borosilicate Glass
- **Mounting Type:** Blank = Base Mount; F = Flush Mount *
- **Construction:** A = Nickel-Plated Aluminum
- **Connector Exit:** Blank = Side Exit; R = Rear Exit
- **Intensity Control:** PWM = Dimmable
- **Connector:** Blank = 2 m Integral Cable; Q = Euro Integral QD
  QD models require mating cordset

* Flush Mount models only available in 340 mm length

WLS27 LED Strip Lights

page 22

Family	Cascadable	LED Color	Lighted Length (mm)	Window	Construction	Intensity Control	Connector
WLS27	C	W	145	D	S	PWM	Q

- **Cascadable:** C = Cascadable; X = Non Cascadable
- **LED Color:** W = Cool White
- **Lighted Length (mm):** 145, 285, 430, 570, 710, 850, 990, 1130
- **Window:** D = Diffused Plastic
- **Construction:** S = Sealed
- **Intensity Control:** PWM = Dimmable
- **Connector:** Q = Integral Euro QD
  QD models require mating cordset

WLC90 Heavy-Duty LED Light

page 30

Family	LED Color	Window	Lensing	Connector Exit	Intensity Control	Connector
WLC90	W	G	L15		PWM	Q
	W = Cool White	**Blank** = Polycarbonate **G** = Borosilicate Glass	**L8** = ± 8° **L15** = ± 15° **L30** = ± 30°	**Blank** = Side Exit **R** = Rear Exit	**PWM** = Dimmable	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

WLA LED Area Lights

page 32

Family	LED Color	Array Size (mm)	Window	Lensing	Intensity Control	Connector
WLA Standard	W	105X180		L11	PWM	Q
	W = Cool White	**105X180** **190X180** **275X180** **360X180**	**Blank** = Clear Plastic **D** = Diffused Plastic	**Blank** = No Lenses **L11** = ± 11° **L22** = ± 22° **L30** = ± 30°	**PWM** = Dimmable	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

Family	LED Color	Array Size (mm)	Window	Intensity Control	Connector
WLA Encapsulated	W	105X180	E	PWM	Q
W = Cool White		**105X180** **190X180** **275X180** **360X180**	**E** = Encapsulated in Polyurethane	**PWM** = Dimmable	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

WL50S LED Spot Lights

page 34

Family	LED Color	Lens Angle	Intensity Control	Connector
WL50S Black Anodized Aluminum	W	L11	PWM	Q
W = White		**L5** = ±5° (small) **L11** = ±11° (large) **L20** = ±20° (largest)	**PWM** = Dimmable	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

Family	LED Color	Housing	Window Material	Lens Angle	Intensity Control	Connector
WL50S Stainless Steel	W	SS	G	L11	PWM	Q
W = White		**SS** = Stainless Steel	**Blank** = Acrylic **G** = Glass	**L5** = ±5° (small) **L11** = ±11° (large) **L20** = ±20° (largest)	**PWM** = Dimmable	**Q** = Euro Integral QD *QD models require mating cordset*

WL50-2 LED Work Lights

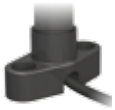
page 36

Family	Power Switch	Intensity Control	Connector
WL50-2	PB	PWM	Q
WL50-2 = 30 mm Mount **WL50F-2** = Flat Mount	**Blank** = Standard **PB** = ON/OFF Switch	**PWM** = Dimmable	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD *QD models require mating cordset*

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

Models	Base Connection	Light Connection	Brackets		
FLX18-1212	1/2-14 NPSM	1/2-14 NPSM (Male) Use with: **WL50** **WL50PB** **WL50-2** **WL50-2PB**	**SMB22A**	**SMBFLXMAG** **SMBFLXMAGR** — Protective cover for magnet sold separately	**LMBE12RA**
FLX18-F12	3-Hole Flange		Direct Mount		
FLX18-12M30	1/2-14 NPSM	M30 x 1.5 (Female) Use with: **WL50** **WL50PB** **WL50-2** **WL50-2PB** **WL50S**	**SMB22A**	**SMBFLXMAG** **SMBFLXMAGR** — Protective cover for magnet sold separately	**LMBE12RA**
FLX18-DM30	 2 x 1/4-20W 1.375 spacing		**SMBFLXCLAMPD**	**SMBFLXMAGD** **SMBFLXMAGDR** — Protective cover for magnet sold separately	
FLX18-FM30	3-Hole Flange		Direct Mount		

Signal Tower Lights

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.

TL70 Tower Lights

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

TL70 Base

Housing: B-TL70 — Base Segment

Connection: Q5
- **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)

QD models require mating cordset

Housing Color:
- **Blank** = Black
- **C** = Gray

TL70 Segments

Housing: SG-TL70 — TL70 Segment

Color/Alarm: R
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **A** = Audible

Housing Color:
- **Blank** = Black
- **C** = Gray

TL70 Multicolor Segments

Housing: SG-TL70 — TL70 Segment

Color: 1 W, 2 B, 3 G
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White

Housing Color:
- **Blank** = Black
- **C** = Gray

TL70 Preassembled Model

Housing: TL70

Color/Position: 1 W, 2 B, 3 G, 4 Y, 5 R
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White

Audible Alarm:
- Blank = None
- A = Audible*

** For audible only, leave colors blank*

Housing Color:
- Blank = Black
- C = Gray

Connection: Q
- Blank = 2 m Integral Cable
- T = Terminal Wired
- Q = Euro Integral QD
- QP = Euro Pigtail QD

QD models require mating cordset

LASER MARKING AVAILABLE

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

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	CE, c UL us LISTED

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

General-Purpose *Terminal* *Audible*

	Tower Height (H)		
	General-Purpose IP67	Terminal	Sealed Omni-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	Radio Band	—	Connection	Housing Color
B-TL70	DXN2	—	Q5	

Housing
B-TL70 = Base Segment

Radio Band
DXN2 = Node 2.4 GHz
DXN9 = Node 900 MHz

Connection
5 = 2 m, 5-wire Integral Cable
8 = 2 m, 8-wire Integral Cable
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)
QD models require mating cordset

Housing Color
Blank = Black
C = Gray

TL70 Segments

Housing	—	Color/Alarm	Housing Color
SG-TL70	—	R	

Housing
SG-TL70 = TL70 Segment

Color/Alarm
G = Green, B = Blue, Y = Yellow, W = White, R = Red, A = Audible

Housing Color
Blank = Black
C = Gray

TL70 Multicolor Segments

Housing	Color 1	Color 2	Color 3	Housing Color
SG-TL70	W	B	G	

Housing
SG-TL70 = TL70 Segment

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

Housing Color
Blank = Black
C = Gray

TL70 Preassembled Model

Housing	Radio Band	Color/Position 1	2	3	4	5	Audible Alarm	Housing Color	Connection
TL70	DXN2	W	B	G	Y	R			Q

Housing
TL70

Radio Band
DXN2 = Node 2.4 GHz
DXN9 = Node 900 MHz

Color/Position
G = Green, B = Blue, Y = Yellow, W = White, R = Red, A = Audible

Audible Alarm
Blank = None
A = Audible*
** For audible only, leave colors blank*

Housing Color
Blank = Black
C = Gray

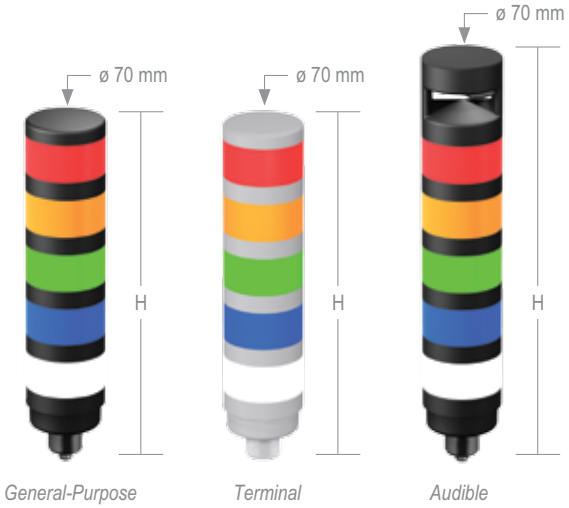
Connection
Blank = 2 m Integral Cable
T = Terminal Wired
Q = Euro Integral QD
QP = Euro Pigtail QD
QD models require mating cordset

LASER MARKING AVAILABLE

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

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	CE, c UL us LISTED

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



General-Purpose *Terminal* *Audible*

	Tower Height (H)		
—	General-Purpose IP67	Terminal	Sealed Omni-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

TL50 Tower Lights

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

Housing	Brightness	Supply Voltage	Color Position 1	2	3	4	5	6**	7**	Audible Alarm	Housing Color	Connection
TL50	H		G	Y	R							Q

Housing
TL50

Brightness
Blank = Standard
H = High Brightness**

Supply Voltage
Blank (1 to 5 colors) = 18 to 30 V dc or 21 to 27 V ac
Blank (6 or 7 colors) = 12 to 30 V dc or 21 to 26 V ac
Z = 85 to 264 V ac

Color Position
G = Green
Y = Yellow
R = Red
B = Blue
W = White
T = Turquoise*
O = Orange*
V = Violet*
S = Sky Blue*
M = Magenta*
Blank = Audible Only

* These colors are not available in the high brightness models
** Positions 6 and 7 not available in high brightness or AC models. Position 7 not available with audible

Audible Alarm
Blank = None (IP67)
A = Audible (IP50)
ALS = Sealed Audible Continuous Tone
ALS3 = Sealed Audible Pulsed Tone
ALS4 = Sealed Audible Staccato Tone
AOS = Omni-Directional Sealed Audible Continuous Tone
AOSI = Omni-Directional Sealed Audible Continuous Tone with Intensity Adjust
AOS3 = Omni-Directional Sealed Audible Pulsed Tone
AOS3I = Omni-Directional Sealed Audible Pulsed Tone with Intensity Adjust
AOS4 = Omni-Directional Sealed Audible Staccato Tone
AOS4I = Omni-Directional Sealed Audible Staccato Tone with Intensity Adjust

Housing Color
Blank = Black
C = Gray

Connection
Blank = 2 m Integral Cable
Q = Euro Integral QD (dc only)
QP = Euro Pigtail QD (Available with Micro Pigtail QD for ac models if 4 segments or less)

QD models require mating cordset

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

LASER MARKING AVAILABLE

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	CE, c UL us LISTED

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)

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

—	Tower Height (H) General-Purpose IP67	Audible IP50	Sealed Audible IP67	Sealed Omni-Directional	85 to 264 V AC
0	—	92.0 mm	74.4 mm	88.4 mm	Add 69 mm to any of these heights to get total height
1	61.2 mm	92.0 mm	115.1 mm	129.1 mm	
2	101.9 mm	132.7 mm	155.8 mm	169.8 mm	
3	142.6 mm	173.4 mm	196.5 mm	210.5 mm	
4	183.3 mm	214.1 mm	237.2 mm	251.2 mm	
5	224.0 mm	254.8 mm	277.9 mm	291.1 mm	
6	264.7 mm	298.5 mm	318.6 mm	332.6 mm	
7	305.4 mm	—	—	—	

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

Housing

TL50C

C = Compact

Supply Voltage

Blank = 12 to 30 V dc or 21 to 27 V ac
Z = 85 to 264 V ac

Color Position

1	2	3	4	5	6*	7*
G	Y	R				

- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **T** = Turquoise
- **O** = Orange
- **V** = Violet
- **S** = Sky Blue
- **M** = Magenta
- **Blank** = Audible Only

* Positions 6 and 7 not available in AC models. Position 7 not available with audible

Audible Alarm

Blank = None (IP67)
A = Audible (IP50)
ALS = Sealed Audible Continuous Tone
ALS3 = Sealed Audible Pulsed Tone
ALS4 = Sealed Audible Staccato Tone
AOS = Omni-Directional Sealed Audible Continuous Tone
AOSI = Omni-Directional Sealed Audible Continuous Tone with Intensity Adjust
AOS3 = Omni-Directional Sealed Audible Pulsed Tone
AOS3I = Omni-Directional Sealed Audible Pulsed Tone with Intensity Adjust
AOS4 = Omni-Directional Sealed Audible Staccato Tone
AOS4I = Omni-Directional Sealed Audible Staccato Tone with Intensity Adjust

Housing Color

Blank = Black
C = Gray

Connection

Blank = 2 m Integral Cable
Q = Euro Integral QD (dc only)
QP = Euro Pigtail QD
(Available with Micro Pigtail QD for ac models if 4 segments or less)

QD models require mating cordset

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

LASER MARKING AVAILABLE

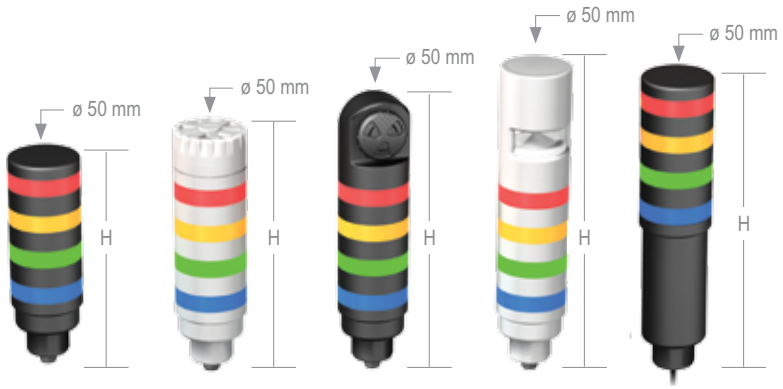
Supply Voltage	12 to 30 V dc or 21-27 V ac; 85 to 264 V ac
Construction	*Bases and Covers:* ABS *Light Segment:* Polycarbonate
Environmental Rating	*General-Purpose and Sealed Audible:* IEC IP67 *Standard Audible:* IEC IP50
Operating Temperature	*General-Purpose:* −40 to +50 °C (−40 to +122 °F) *Standard and Sealed Audible:* −20 to +50 °C (−4 to +122 °F)
Certifications	CE, cULus LISTED

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)

Position 7
Position 6
Position 5
Position 4
Position 3
Position 2
Position 1



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

—	Tower Height (H) General-Purpose IP67	Audible IP50	Sealed Audible IP67	Sealed Omni-Directional	85 to 264 V AC
0	—				
1	46.2 mm	77.1 mm	100.2 mm	114.2 mm	Add 69 mm to any of these heights to get total height
2	72.0 mm	102.9 mm	126.0 mm	140.0 mm	
3	97.8 mm	128.7 mm	151.8 mm	165.8 mm	
4	123.6 mm	154.5 mm	177.6 mm	191.6 mm	
5	149.4 mm	180.3 mm	203.4 mm	217.4 mm	
6	175.2 mm	206.1 mm	229.2 mm	243.4 mm	
7	201.0 mm	—	—	—	

Accessories are listed on pages 56-57

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

Colors (C) /Function (F)

Housing	Supply Voltage	C1	F1	C2	F2	C3	F3	C4	F4	C5*	F5*	Audible Alarm	Housing Color	Connection
TL50BL		G	2	Y		R	1							Q

Supply Voltage
Blank = 12 to 30 V dc
Z = 85 to 264 V ac

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

Function
Blank = ON Solid
1 = Rotating
2 = Flashing

* Not available with audible

Audible Alarm
Blank = None (IP67)
A = Audible (IP50)
ALS = Sealed Audible Continuous Tone
ALS3 = Sealed Audible Pulsed Tone
ALS4 = Sealed Audible Staccato Tone
AOS = Omni-Directional Sealed Audible Continuous Tone
AOSI = Omni-Directional Sealed Audible Continuous Tone with Intensity Adjust
AOS3 = Omni-Directional Sealed Audible Pulsed Tone
AOS3I = Omni-Directional Sealed Audible Pulsed Tone with Intensity Adjust
AOS4 = Omni-Directional Sealed Audible Staccato Tone
AOS4I = Omni-Directional Sealed Audible Staccato Tone with Intensity Adjust

Housing Color
Blank = Black
C = Gray

Connection
Blank = 2 m Integral Cable
Q = Euro Integral QD (dc only)
QP = Euro Pigtail QD (Available with Micro Pigtail QD for ac models if 4 segments or less)
QD models require mating cordset

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	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	CE c UL us LISTED

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)

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

Color Count	Tower Height (H) General-Purpose IP67	Audible† IP50	Sealed Audible IP67	Sealed Omni-Directional	85 to 264V AC
1	46.2 mm	77.1 mm	100.2 mm	114.2 mm	Add 69 mm to any of these heights to get total height
2	72.0 mm	102.9 mm	126.0 mm	140.0 mm	
3	97.8 mm	128.7 mm	151.8 mm	165.8 mm	
4	123.6 mm	154.5 mm	177.6 mm	191.6 mm	
5	149.4 mm	—	—	—	

† 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

DC Models

Housing	Color Sequence 1	2	3	Audible Models Only	Inputs	Housing Color	Connection
CL50	G	X	X		P		Q

Color Sequence

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

Audible Models Only

- **Blank** = None (IP67)
- **A** = Audible (IP50)
- **ALS** = Sealed Audible Continuous Tone
- **ALS3** = Sealed Audible Pulsed Tone
- **ALS4** = Sealed Audible Staccato Tone
- **AOS** = Omni-Directional Sealed Audible Continuous Tone
- **AOSI** = Omni-Directional Sealed Audible Continuous Tone–Intensity Adjust
- **AOS3** = Omni-Directional Sealed Audible Pulsed Tone
- **AOS3I** = Omni-Directional Sealed Audible Pulsed Tone–Intensity Adjust
- **AOS4** = Omni-Directional Sealed Audible Staccato Tone
- **AOS4I** = Omni-Directional Sealed Audible Staccato Tone–Intensity Adjust

Inputs

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

Housing Color

- **Blank** = Black
- **C** = Gray

Connection

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

QD models require mating cordset

AC Models

Housing	Supply Voltage	Color Sequence 1	2	3	Audible Models Only	Housing Color	Connection
CL50	Z	G	R	Y			Q

Supply Voltage

- **Z** = 85 to 264 V ac

Color Sequence

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

Audible Models Only

- **Blank** = None (IP67)
- **A** = Audible (IP50)
- **ALS** = Sealed Audible Continuous Tone
- **ALS3** = Sealed Audible Pulsed Tone
- **ALS4** = Sealed Audible Staccato Tone
- **AOS** = Omni-Directional Sealed Audible Continuous Tone
- **AOSI** = Omni-Directional Sealed Audible Continuous Tone–Intensity Adjust
- **AOS3** = Omni-Directional Sealed Audible Pulsed Tone
- **AOS3I** = Omni-Directional Sealed Audible Pulsed Tone–Intensity Adjust
- **AOS4** = Omni-Directional Sealed Audible Staccato Tone
- **AOS4I** = Omni-Directional Sealed Audible Staccato Tone–Intensity Adjust

Housing Color

- **Blank** = Black
- **C** = Gray

Connection

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

QD models require mating cordset

LASER MARKING AVAILABLE

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	CE, c UL us LISTED

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

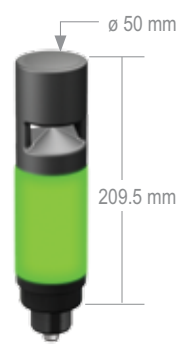
Sealed Audible
max. intensity 94 db @ 1 meter (typical)

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

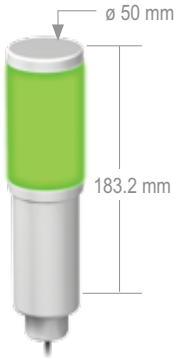
General-Purpose

Audible

Sealed Audible



Sealed Omni-Directional Audible



85 to 264V ac

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**)

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 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')

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')

Mounting Brackets

SMB30MM

SMB30A

SMBAMS30P

SMB30RAVK

Sealed Right-Angle Brackets

LMBE12RA

LMBE12RAC

LMB30RA

LMB30RAC

Controller

LC80T
5 Toggle switches
ON-OFF-FLASH function

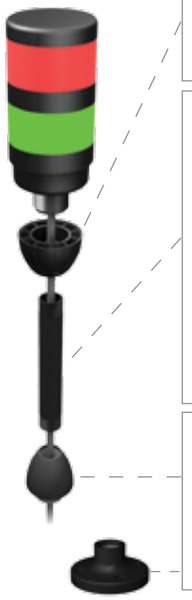
LC80R
12-Position rotary switches
ON-OFF-FLASH function

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)
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-F12
Black Zinc mounting base

Elevated Mount System (for other models)

SA-M30TE12
Black Acetal adapter/cover
SA-M30TE12C
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-F12
Black Zinc mounting base

Flush Foldable Bracket

for use with
elevated mount systems

SA-FFB12 Black
SA-FFB12C Gray

To change position

1. Remove screws & pull out

2. Adjust angle

3. Push in & replace screws

4. Complete

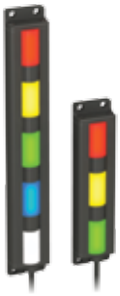
Additional accessories are available at bannerengineering.com

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

	Base Mount				Barrel Mount		
Page	66	61	70	72	82	84	
Family Name	K30L	K50L	K90L	K50BL	S18L/S22L	M18	
Dome Size (mm)	30	50	90	50	18	18	
Mounting Hole Diameter	22	30	30	30	18/22	18	
DC Power Option	√	√	√	√	√	√	
AC Power Option		√		√			
Audible Alarm Options		√					
Daylight Visible Options		√		√	√		
Multiple Colors per Light Segment	√	√	√	√	√	√	
IP67 Options	√	√	√	√	√	√	
IP69K Options	√	√		√	√		
Flashing or Strobing Options		√	√	√		√	
Hazardous Area Models	page 68	page 68					
Modbus Models		page 76		page 76			



T-Style Mount

Flat Mount

	78	98	94	90	92	96
	T-Series	TL30F	K50FL	K80	K80 Segmented	SP Series
	8/18/30	NA	50	50	80	50
	8/18/30	NA	NA	NA	NA	NA
	√	√	√	√	√	√
				√		√
				√		√
	√		√	√		√
	√	IP65	√	√	√	√
			√			
			√	√	√	

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	LED Color			Input	Connector
K50L	G	R	Y	P	Q

- **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

QD models require mating cordset

One-, Two- or Three-Color Indicators, 85 to 120V ac

Family	LED Color			Voltage	Connector
K50L	G	R	Y	A120	Q

- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White
- **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **A120** = 120 V ac
- **Blank** = 2 m Integral Cable
  Q = Micro Integral QD
  QP = Micro Pigtail QD

QD models require mating cordset

One-, Two- or Three-Color Audible Indicators

Family	LED Color/Audible				Input	Connector
K50L	G	R		Y	P	Q

- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White
- **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **A1** = Steady (75 dB) IP50
  A2 = Pulsed (75 dB) IP50
  AL1 = Loud Steady (95 dB) IP50
  ALS = Sealed Audible (94 dB) IP67 Continuous Tone*
  ALS4 = Sealed Audible (94 dB) IP67 Staccato Tone*
  AS = Steady (65 dB) IP69K*
  Blank = None
- **P** = PNP
  N = NPN*
- **Blank** = 2 m Integral Cable
  Q = Euro Integral QD
  QP = Euro Pigtail QD

QD models require mating cordset

* NPN not available for ALS, ALS4 and AS models

Multifunction options available on page 64

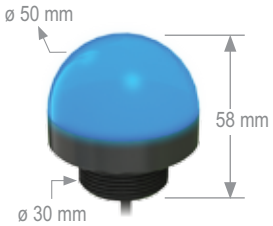
Supply Voltage
Sealed Audible: 12 to 30 V dc
AC models: 85 to 130 V ac
Other Models: 18 to 30 V dc

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, c UL us LISTED



K50L Models

K50L Audible Models (A1, A2, AL1)

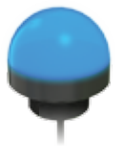
K50L Adjustable Loud Audible Models (ALS, ALS4)

K50L Fixed Audible Models (AS)
No open cavities to collect liquids

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 *page 62*

K50FL *page 94*

K80L *page 76*

T30 *page 78*

M18 *page 84*

Three-Color Multifunction Indicators

Family	LED Color			Function	Input	Connector
K50L	G	R	Y	2	P	Q

Family: K50L, K50FL, K80L, T30, M18

LED Color: G = Green, Y = Yellow, R = Red, B = Blue, W = White, T = Turquoise, O = Orange, V = Violet, M = Magenta

Function: 2 = Multifunction

Input: P = PNP, N = NPN

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

QD models require mating cordset

NOTE: Displays 3 colors and multiple flashing frequencies: Steady ON, flashing or alternating

Four-Color Multifunction Indicators

Family	LED Color				Function	Input	Connector
K50L	G	R	Y	B	4	P	Q

Family: K50L, K50FL, K80L

LED Color: G = Green, Y = Yellow, R = Red, B = Blue, W = White, T = Turquoise, O = Orange, V = Violet, M = Magenta

Function: 4 = Multifunction

Input: P = PNP, N = NPN

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

QD models require mating cordset

NOTE: Displays 4 colors and multiple flashing frequencies: Steady ON, flashing or alternating

Five-Color Multifunction Indicators

Family	LED Color					Input	Connector
K50L	G	R	Y	B	W	P	Q

Family: K50L, K50FL, K80L

LED Color: G = Green, Y = Yellow, R = Red, B = Blue, W = White, T = Turquoise, O = Orange, V = Violet, M = Magenta

Input: P = PNP, N = NPN

Connector: Blank = 2 m Integral Cable, Q8 = Euro Integral QD, QP8 = Euro Pigtail QD

QD models require mating cordset

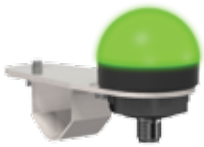
NOTE: Displays 5 colors and multiple flashing frequencies: Steady ON, flashing or alternating

K50L Accessories

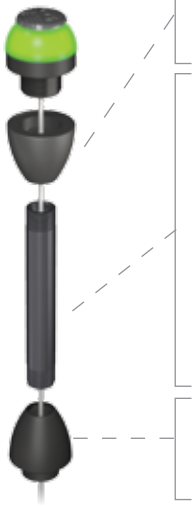
SMB30A

SMB30SC

SMB30FA



SMB30FVK



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

K30L 30 mm Domed Indicators

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

One-, Two- or Three- Color Indicators

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

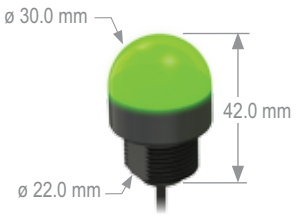
- **P** = PNP
- **N** = NPN

Connector
Q

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

QD models require mating cordset

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	CE, c UL us LISTED



SMB22A

SMBAMS22P

SMBAMS22RA

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

Family	Protection Type	LED Color			Input	Connector
K50L	**I**	**G**	**R**	**Y**	**P**	**Q**

K50L
K30L

I = Ex ia
M = Ex mb/Ex ta
N = Ex nA/Ex tc

G = Green
Y = Yellow
R = Red
B = Blue
W = White
X = No Color

P = PNP

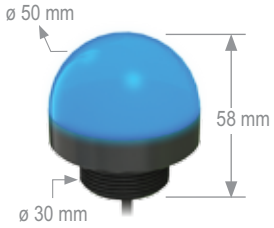
Blank = 2 m Integral Cable
Q = 4-pin integral Euro QD*
QP = Euro PVC Pigtail QD*
W/XX = XX ft cable

QD models require mating cordset
* Not available on Ex mb models

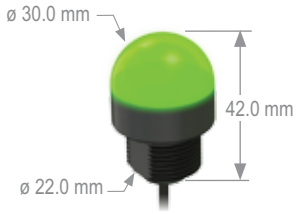
Indicator Family	Protection Method	Suitable for ATEX	Suitable for NEC & CEC	
Ex ia	Intrinsically Safe	Gas Zones: 0, 1, & 2 Dust Zones: 20, 21, & 22 Mines	Gas zones: 0, 1, & 2	Class I Division 1 & 2 Class II/III Division 1 & 2
Ex mb/Ex ta	Encapsulation/Enclosure	Gas Zones: 1 & 2 Dust Zones: 20, 21 & 22	Gas zones: 1 & 2	Class I Division 2 Class II/III Division 1 & 2**
Ex nA/Ex tc	Non-Sparking/Enclosure	Gas Zones: 2 Dust Zones: 22	Gas zones: 2	Class I Division 2 Class II/III Division 2**

** Available on K50L models only

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	



K50L Models



K30L Models

SMB30A

SMB30SC

SMB30FA

SMB22A

SMBAMS22P

SMBAMS22RA

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

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

Family	Colors 1	2	3	4	5	Input	Connector
K90L	**G**	**R**	**Y**			**P**	**Q**

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

P = PNP
N = NPN

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

2- to 5-Color Toggle Models

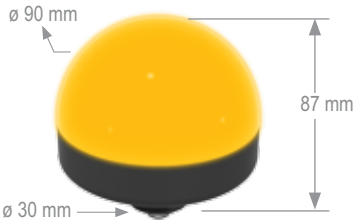
Family	Colors 1	2	3	4	5	Input	Connector
K90TL	**W**	**B**	**G**	**R**	**Y**	**P**	**Q**

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

P = PNP
N = NPN

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

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	CE, cULus LISTED



SA-M30
Black polycarbonate adapter/cover
SA-M30C
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-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

Additional accessories are available at bannerengineering.com

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')

8-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, **MQDC1-806RA**)

MQDC1-806
2 m (6.5')
MQDC1-815
5 m (15')
MQDC1-830
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')

K50 Beacon Omni-Directional High-Intensity Indicators

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

Family: **K50BL**
- **K50BL** = Perimeter View
- **K50BCL** = Perimeter & Top View

Function: **R1**
- **R1** = Rotating*
- **S1** = Strobing**
- **Blank** = None

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

* Rotating only available on K50BL 1-color models

** Strobing only available on K50BCL 1-color models

One- Color Indicators, 85 to 250 V ac

Family: **K50BL**
- **K50BL** = Perimeter View
- **K50BCL** = Perimeter & Top View

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

Input: **A120**
- **A120** = 85-130 V ac
- **A230** = 100-250 V ac

Connector: **Q**
- **Blank** = 2 m Integral Cable
- **Q** = Micro Integral QD
- **QP** = Micro Pigtail QD

QD models require mating cordset

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	CE, cULus LISTED

SMB30A

SMB30FA

SMB30SC

SMBAMS30P

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

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

K50L Daylight Visible Directional Indicators

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

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

Family	LED Color 1	LED Color 2	LED Color 3	Input	Connector
K50LD	X	G	X	P	Q

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

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

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

QD models require mating cordset

One- Color Indicators, 85 to 130 V ac

Family	LED Color	Input	Connector
K50LD	G	A120	Q

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

Input
- **A120** = 85-130 V ac

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

QD models require mating cordset

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

SMB30A

SMB30FA

SMB30SC

SMBAMS30P

K50DS

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**)

- **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')

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

Family

K50

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

LED Color

G **R** **Y**

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

Bus Indicator

S1

- **S1** = Modbus 485

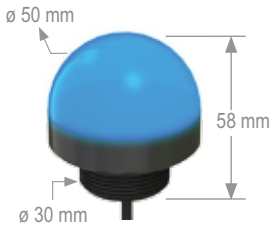
Connection

Q

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

QD models require mating cordset

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



K50L Models

K50BL Models

K50LD Models

SMB30A

SMB30FA

SMB30SC

SMBAMS30P

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

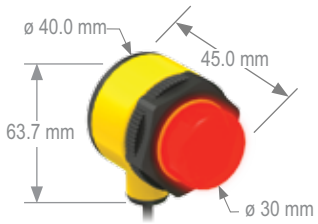
One-, Two- or Three- Color Indicators

Family	LED Color			Input	Connector
T30	**G**	**R**	**Y***	**P**	**Q**
T30 = T30 **T18** = T18	**G** = Green **Y** = Yellow **R** = Red		**B** = Blue **W** = White **X** = Not Used	**P** = PNP **N** = NPN	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD *QD models require mating cordset*

* 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.

Multifunction options available on page 64

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



T30 Models

T18 Models

SMB30A
use with T30

SMBAMS30P
use with T30

SMBAMS30RA
use with T30

SMB18A
use with T18

SMB1815SF
use with T18

SMBAMS18P
use with T18

SMBAMS18RA
use with T18

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

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

Family	LED Color			Input	Connector
T8L	G	R	X*	P	QP

- **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, **T8LGYX7PQP**). 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:* Polycarbonate/ABS alloy *Diffuser:* Acetal
Environmental Rating	IEC IP67
Operating Temperature	−40 to +50 °C (−40 to +122 °F)
Certifications	CE

SMB8MM

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

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

Color*

Family	1	2	3	Input	Connection
S22L	G	R	Y	P	Q

Family
- S18L
- S22L

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

Input
- P = PNP
- N = NPN

Connection
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD
- T = 4-Screw Terminals

QD models require mating cordset

Daylight Visible

Color*

Family	1	2	3	Input	Connection
S22DL	G	R	Y	P	Q

Family
- S18DL
- S22DL

Color*
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- O = Orange
- X = Not Used

Input
- P = PNP
- N = NPN

Connection
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD
- T = 4-Screw Terminals

QD models require mating cordset

Daylight Visible High-Intensity

Family	Color	Connection
S22DLH	R	Q

Family
- S18DLH
- S22DLH

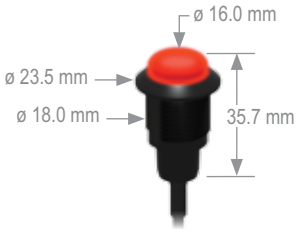
Color
- G = Green
- Y = Yellow
- R = Red
- B = Blue
- W = White
- X = Not Used

Connection
- Blank = 2 m Integral Cable
- Q = Euro Integral QD
- QP = Euro Pigtail QD
- T = 4-Screw Terminals

QD models require mating cordset

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

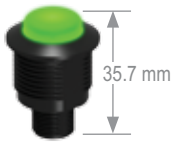
Supply Voltage	*General Purpose:* 10 to 30 V dc *High-Intensity Models:* 9 to 30 V dc
Construction	*Housing:* UV stabilized polycarbonate *Mounting Nut:* PBT *Sealing Washer:* Nitrile
Environmental Rating	IEC IP67, IP69K, per DIN 40050
Operating Temperature	*General Purpose:* −40 to +50 °C (−40 to +122 °F) *Other Models:* −40 to +60 °C (−40 to +140 °F)
Certifications	CE, cULus LISTED



Cabled Models

QD Models

Field-Wired Models (Terminals)



SMB18A
use with S18L

SMB18FA
use with S18L

SMB22A
use with S22L

SMBAMS18RA
use with S18L

SMBC18
for use with S18L on 28 mm pipe

SMBAMS22RA
use with S22L

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 **R** **X***

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

Input

P

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

Connector

Q

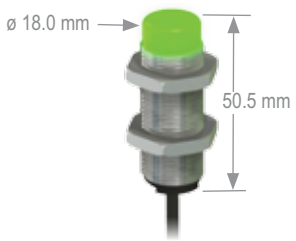
- **Blank** = 2 m Integral Cable
- **Q =** Euro Integral QD
- **QP** = Euro Pigtail QD

QD models require mating cordset

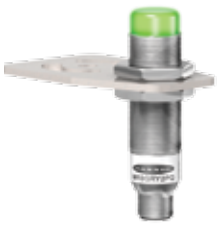
* Add **7** after last color option for Sensor Emulators (example, **M18GYX7PQ**). Use with discrete output of photoelectric and proximity sensors to duplicate the sensor's Green and Yellow indicator function. When the sensor is powered, the Green LED is ON. When the sensor's output is energized, the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

Multifunction options available on page 64

Supply Voltage	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	CE



SMB18A



SMBAMS18P

SMBAMS18RA

SMB18FA

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

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

Family	LED Color			Input	Connector
K80L	G	R	Y*	P	Q

- **G** = Green, **Y** = Yellow, **R** = Red
- **B** = Blue, **W** = White, **X** = Not Used
- **P** = PNP, **N** = NPN
- **Blank** = 2 m Integral Cable, **Q** = Euro Integral QD, **QP** = Euro Pigtail QD

QD models require mating cordset

* 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.

One-, Two- or Three-Color Indicators, 85 to 130 V ac

Family	Color			Voltage	Connector
K80L	G	R	Y	A120	Q

- **G** = Green, **Y** = Yellow, **R** = Red
- **B** = Blue, **W** = White, **X** = Not Used
- **Blank** = Field-Wired, **Q** = Micro Integral QD, **QP** = Micro Pigtail QD

QD models require mating cordset

A120 = 120 V ac

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

Family	LED Color/Audible				Input	Connector
	1	2		3		
K80L	G	R	A1	Y	P	Q

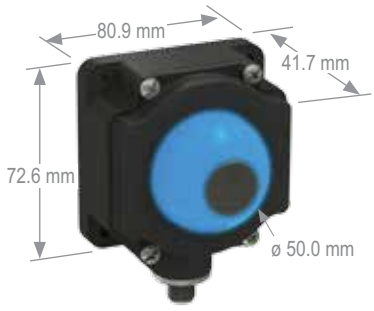
- **G** = Green, **Y** = Yellow, **R** = Red
- **B** = Blue, **W** = White, **X** = Not Used
- **A1** = Steady (75 dB) IP50K, **A2** = Pulsed (75 dB) IP50K, **AL1** = Loud Steady (95 dB) IP50K, **Blank** = None IP50
- **P** = PNP, **N** = NPN
- **Blank** = Field-Wired, **Q** = Euro Integral QD, **QP** = Euro Pigtail QD

QD models require mating cordset

Multifunction options available on page 64

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

K80L Models



K80L Audible Models

SMBDX80DIN
for mounting to 35 mm DIN Rail

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')

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')

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

K80 Call Light Battery Powered Flashing Indicators

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

K80FL and K80FDL Flat-Mount Indicators

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

Family

K80FDL

- **K80FL** = Standard
- **K80FDL** = Daylight Visible

Color

G **R** **Y**

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

Input

P

- **P** = PNP

Connector

Q

- **Blank** = Terminal-wired
- **Q =** Euro Integral QD
- **QP** = Euro Pigtail QD

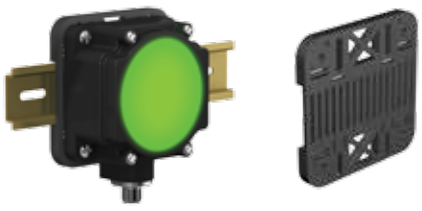
QD models require mating cordset

* These colors are not available in the daylight visible models

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

K80FL Models

K80FDL Models



SMBDX80DIN
for mounting to 35 mm DIN Rail

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

K80 Segmented Indicators

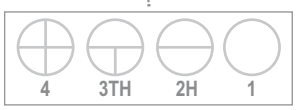
Banner's K80L Segmented Indicator has up to four individual segments that can be lighted separately or in combination for error-proofing and operator guidance applications.

- 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	Segment Configuration		LED Color*				Function	Input	Connector
			1	2	3	4			
K80L	4		G	R	Y	B	1	P	Q

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

Blank = 4 Segments or 1 Solid Color
H = Horizontal Split
TH = Top Half



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

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

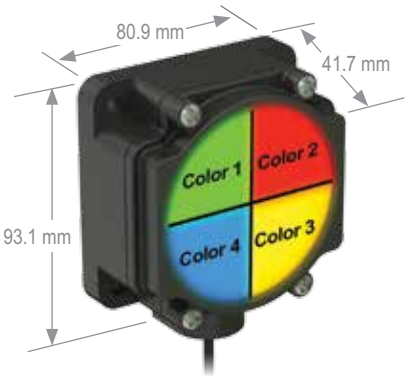
1 = Multifunction

P = PNP
N = NPN

Blank = Terminal-wired
Q = Euro Integral QD
QP = Euro Pigtail QD

QD models require mating cordset

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	CE



SMBDX80DIN
for mounting to 35 mm DIN Rail

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
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

K50FL Flat-Mount Domed Indicators

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

One-, Two- or Three-Color Indicators, 18 to 30 V dc

Family	LED Color			Input	Connector
K50FL	G	R	Y*	P	Q

- **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

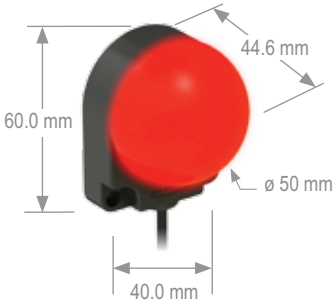
- **Blank** = 2 m Integral Cable
- **Q** = Euro Integral QD
- **QP** = Euro Pigtail QD

QD models require mating cordset

* 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	CE



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')

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')

SP Series Signal Lights

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

Family	Color Sequence 1	2	3	Input	Connector
SP150	**G**	**Y**	**R**	**P**	**Q**

SP150* / **SP250** / **SP350**

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

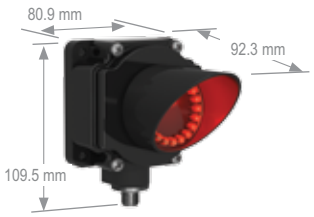
P = PNP
N = NPN
A120 = 85 to 130 V ac (Terminal-wired only)

Blank = Terminal-wired
Q = Euro Integral QD
QP = Euro Pigtail QD

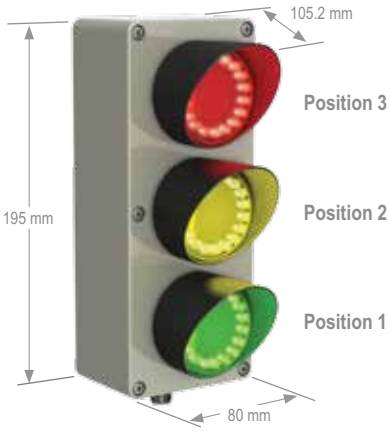
QD models require mating cordset

* **SP150** only available in 1 or 3 color options. For 1 color **SP150** models input is PNP/NPN selectable.

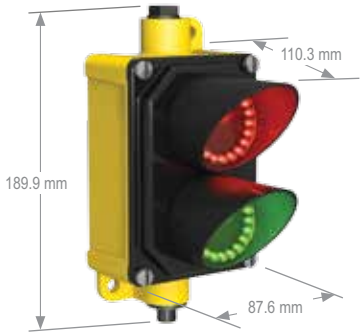
Supply Voltage	15 to 30 V dc 85 to 130 V ac
Construction	Flat or DIN-mount polycarbonate
Environmental Rating	*SP150:* IEC IP67 *SP250:* IEC IP65 *SP350:* IEC IP65
Operating Conditions	−40 to +50 °C (−40 to +122 °F)
Certifications	CE



SP150 Models

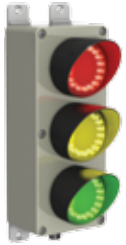


SP350 Models



SP250 Models

SMBDX80DIN
for mounting to 35 mm DIN Rail



SMBSP350 (Tabs only)

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

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

TL30F Linear Segmented Indicators

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

Family	LED Color* 1	2	3	Connector
TL30F	G	Y	R	Q

G = Green
Y = Yellow
R = Red

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

Five-Color Indicators

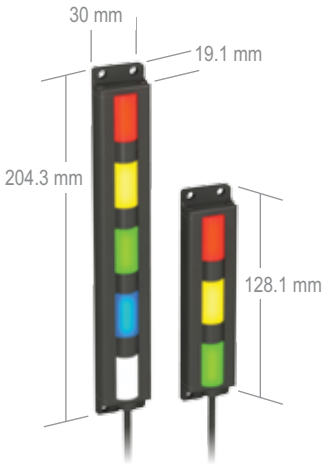
Family	LED Color* 1	2	3	4	5	Connector
TL30F	W	B	G	Y	R	Q

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	CE



SMBPVA1

SMBPVA2
for use
on 28 mm pipe

SMBPVA6
for use
on 28 mm pipe

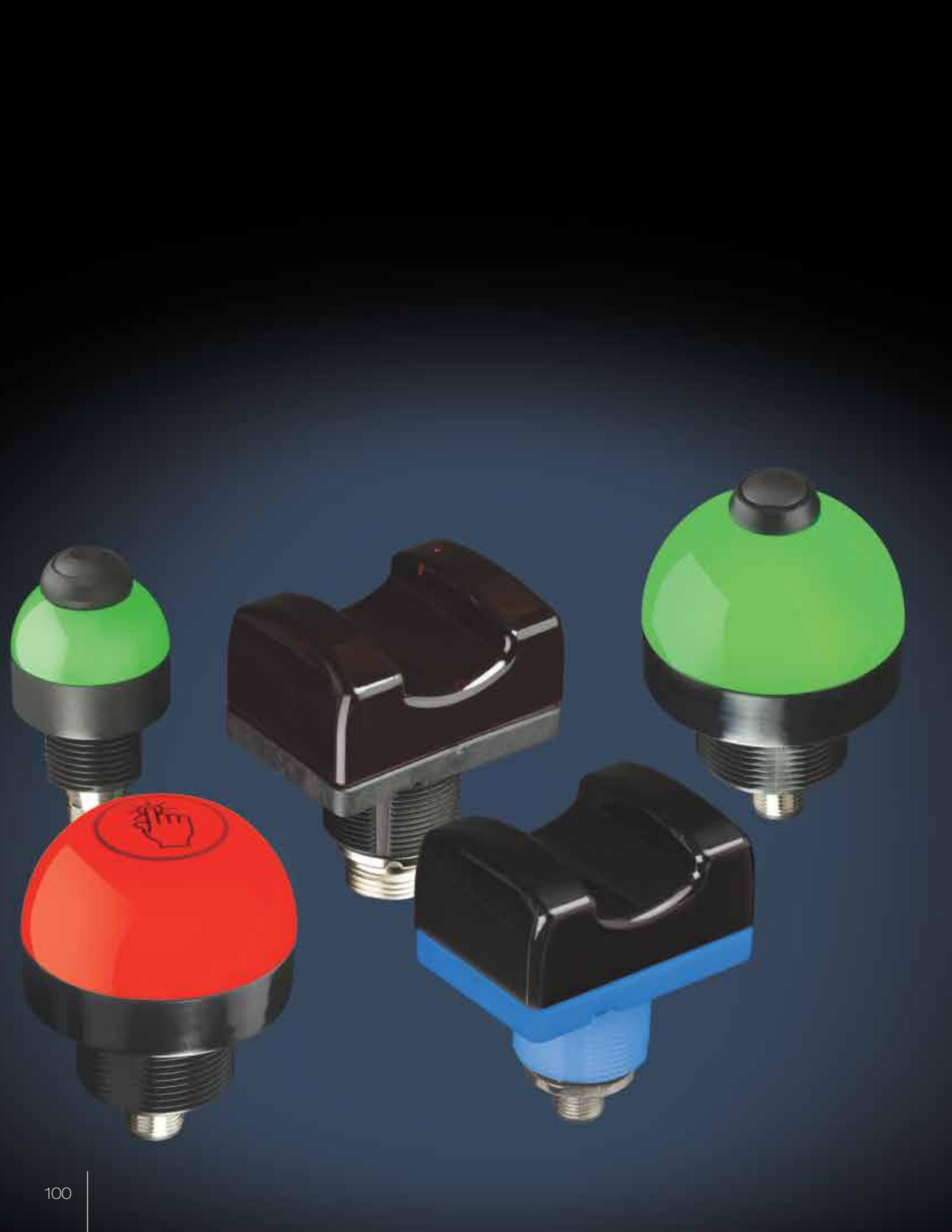
4-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add **RA** to the end of model number (example, **MQDC-406RA**)

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



Touch Buttons

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.

K50 Illuminated Touch Buttons

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.

Family	Output State	Input/ Output	Activation Method	Color 1	Color 2	Color 3	Function	Connection
K50	A	P	T	G	R	Y	F2	Q

- **A** = Normally Open, **R** = Normally Closed
- **P** = PNP, **N** = NPN
- **T** = Touch
- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White, **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **F2** = Multifunction
- **Blank** = 2 m Integral Cable, **Q** = Euro Integral QD, **QP** = Euro Pigtail QD
  QD models require mating cordset

LASER MARKING AVAILABLE

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.

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection
K50	A	L	B	T	G	Y	H	Q

- **A** = Normally Open, **R** = Normally Closed
- **Blank** = Momentary, **L** = Latching
- **B** = Bipolar Output (NPN & PNP)
- **T** = Touch
- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White, **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **H** = Output Only
- **Blank** = 2 m Integral Cable, **Q** = Euro Integral QD, **QP** = 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	CE, cULus LISTED

SMB30A

SMB30FA

SMB30FVK

SMB30RAVK

TC-K50-CL
Touch Guard

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

Family	Output State	Input/ Output	Activation Method	Color (power applied)	Color (input active)	Function	Connection
K30	A	P	T	G	R	F2	Q

- **A** = Normally Open
- **P** = PNP, **N** = NPN
- **T** = Touch
- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White
- **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **F2** = Multifunction
- **Blank** = 2 m Integral Cable
  Q = Euro Integral QD
  QP = Euro Pigtail QD
  QD models require mating cordset

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.

LASER MARKING AVAILABLE

Family	Output State	Output Function	Output Type	Activation Method	Color (not activated)	Color (activated)	Function	Connection
K30	A	L	B	T	G	R	H	Q

- **A** = Normally Open
  R = Normally Closed
- **Blank** = Momentary
  L = Latching
- **B** = Bipolar Output (NPN & PNP)
- **T** = Touch
- **G** = Green, **Y** = Yellow, **R** = Red, **B** = Blue, **W** = White
- **T** = Turquoise, **O** = Orange, **V** = Violet, **M** = Magenta, **X** = Not Used
- **H** = Output Only
- **Blank** = 2 m Integral Cable
  Q = Euro Integral QD
  QP = 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	CE, cULus LISTED

SMB22A

SMB22FVK

SMBAMS22P

SMB22RAVK

TC-K30-CL
Touch Guard

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

OTB/LTB
Optical Touch Buttons

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.

Family	Output	Upper Housing Material	Connection
OTB	**VP6**		**QD**
OTB = Momentary Action **LTB** = Alternate Action	**VP6** = Complementary PNP (1 NO & 1 NC) * **VN6** = Complementary NPN (1 NO & 1 NC) * **VR81** = 20-30 V ac or dc SPDT electromechanical relay **A5** = 120 V ac SPDT electromechanical relay **B5** = 220/240 V ac SPDT electromechanical relay	**Blank** = Polysulfone **L** = Polycarbonate	**Blank** = 2 m Integral Cable **QD** = Mini Integral QD **QDH** = Euro Integral QD ** *QD models require mating cordset*

* OTB models only

** Only available for OTBVP6 or OTBVN6 models

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	

SMB30A

SMB30MM

SMB30SC

Optional Field Covers

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

Black	**OTCL-1-BK**
Green	**OTCL-1-GN**
Red	**OTCL-1-RD**
Yellow	**OTCL-1-YW**

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**)

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

5-Pin Mini-Style Cordsets

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

One-Color Illuminated Base Models

Family	Output	Job Light Color	Upper Housing Material	Connection
VTB	P6			Q
	N6 = NPN **P6** = PNP	**Blank** = Green **R** = Red **B** = Blue	**Blank** = Polysulfone **L** = Polycarbonate	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD *QD models require mating cordset*

Two-Color Illuminated Base Models

Family	Output	Job Light 1 Color	Job Light 2 Color	Upper Housing Material	Connection
VTB	P6	G	R		Q
	N6 = NPN **P6** = PNP	**G** = Green **R** = Red **B** = Blue	**G** = Green **R** = Red **B** = Blue	**Blank** = Polysulfone **L** = Polycarbonate	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD *QD models require mating cordset*

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 cULus

SMB30MM

SMB30FA

SMB30SC

SMBAMS30RA

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
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

Optional Field Covers

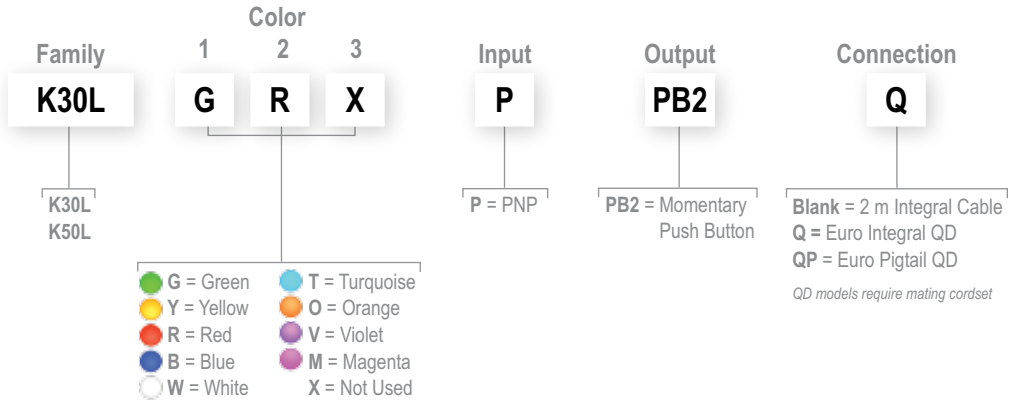
Black	**OTC-1-BK**
Green	**OTC-1-GN**
Red	**OTC-1-RD**
Yellow	**OTC-1-YW**

Black	**OTCL-1-BK**
Green	**OTCL-1-GN**
Red	**OTCL-1-RD**
Yellow	**OTCL-1-YW**

K50L and K30L Illuminated Push Buttons

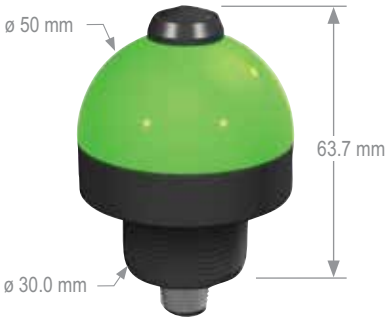
These two product families combine Banner's popular K50L and K30L EZ-LIGHT® indicators with a sealed push button that can withstand washdown applications. Unlike typical lighted push buttons, these devices are extremely bright and can be seen from all directions due to their unique shape. The rugged, 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	

K30 Push Models



K50 Push Models

SMBCK30
use with K30L
on 28 mm pipe

SMB22A
use with K30L

SMB30A
use with K50L

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**)

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')
MQDC1-515
5 m (15')
MQDC1-530
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**)

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

30 mm Mount Illuminated E-Stops

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

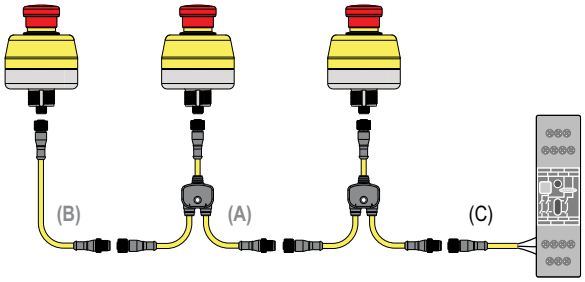
Model	Description	Illumination
SSA-EB1PLYR-12ECQ8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1PLGR-12ECQ8	2NC / 1NO (PNP)	GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ECQ8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1PL-12ECQ8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid
SSA-EB1PLYR-02ECQ5A	2NC – Safety BUS node compatible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

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.



SSA-MBK-EEC1

SSA-MBK-EEC2

SSA-MBK-EEC3

Cordsets available on page 115

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

Model	Description	Illumination
SSA-EB1PLYR-12ED1Q8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1PLGR-12ED1Q8	2NC / 1NO (PNP)	GREEN/RED-Flash/Solid
SSA-EB1PLXR-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1PL-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid
SSA-EB1PLYR-02ED1Q5A	2NC – Safety BUS node compatible*	YEL/RED-Flash

Model	Description	Illumination
SSA-EB1PLYR-02ED1Q5B	2NC – Safety BUS node compatible	YEL/RED-Flash
SSA-EB1PLXR-02ED1Q5A	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PLXR-02ED1Q5B	2NC – Safety BUS node compatible	OFF/RED-Flash
SSA-EB1PL-02ED1Q5A	2NC – Safety BUS node compatible	OFF/RED-Solid
SSA-EB1PL-02ED1Q5B	2NC – Safety BUS node compatible	OFF/RED-Solid

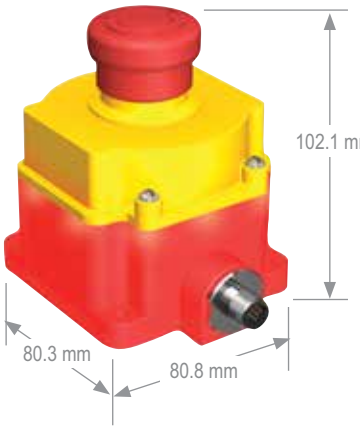
Lockable Illuminated Flush-mount E-Stop Push-Buttons

Model	Description	Illumination
SSA-EB1MLYRP-12ED1Q8	2NC / 1NO (PNP)	YEL/RED-Flash/Solid
SSA-EB1MLGRP-12ED1Q8	2NC / 1NO (PNP)	GREEN/RED-Flash/Solid

Model	Description	Illumination
SSA-EB1MLXRP-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Flash/Solid
SSA-EB1MLP-12ED1Q8	2NC / 1NO (PNP)	OFF/RED-Solid/Solid

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

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	CE



Illuminated Flush-mount Model

Lockable Illuminated Flush-mount Model

4-Pin M12/ Euro-Style Cordsets
Straight connector models listed

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

8-Pin M12/ Euro-Style Cordsets
Straight connector models listed

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

5-Pin Double-Ended Euro-Style Cordsets (Male/Female)

8-Pin Double-Ended Euro-Style Cordsets (Male/Female)

DEE2R-51D 0.31 m (1')	**DEE2R-525D** 7.62 m (25')
DEE2R-53D 0.91 m (3')	**DEE2R-550D** 15.2 m (50')
DEE2R-58D 2.44 m (8')	**DEE2R-575D** 22.9 m (75')
DEE2R-515D 4.57 m (15')	**DEE2R-5100D** 30.5 m (100')

DEE2R-81D 0.31 m (1')	**DEE2R-825D** 7.62 m (25')
DEE2R-83D 0.91 m (3')	**DEE2R-850D** 15.2 m (50')
DEE2R-88D 2.44 m (8')	**DEE2R-875D** 22.9 m (75')
DEE2R-815D 4.57 m (15')	**DEE2R-8100D** 30.5 m (100')

4-Pin M12 Euro-Style Splitter Cordset (Female/Male/Female) — **CSS-M12F41M12M41M12F41**

8-Pin M12 Euro-Style Splitter Cordset (Female/Male/Female) — **CSS-M12F81M12M81M12F81**

Pick-to-Light

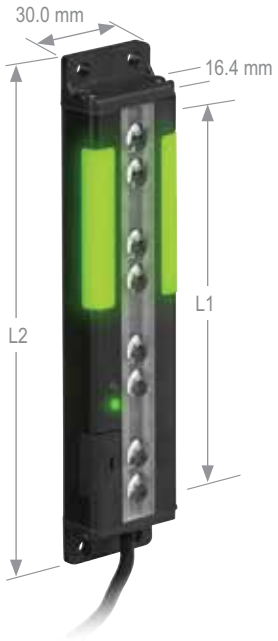
Banner's Pick-to-Light products are the easy choice for light-guided assembly processes. Banner is a specialist in pick-to-light applications with products that reduce assembly time and increase quality for online and offline operator guidance processes. Pick-to-light products have unique, rugged packages 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**
	100 = 100 mm **225** = 225 mm	**Blank** = 2 m Integral Cable **Q** = 2 m Euro Pigtail QD *QD models require mating cordset*



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	

Models	No. of Beams	Sensing Length (L1)	Overall Length (L2)
PVD100	4	100 mm	137.8 mm
PVD225	8	225 mm	266.4 mm

SMBPVA1
included with the PVD

SMBPVA2
for use on 28 mm pipe

SMBPVA6
for use on 28 mm pipe

SMBPVA9

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**)

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**)

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')

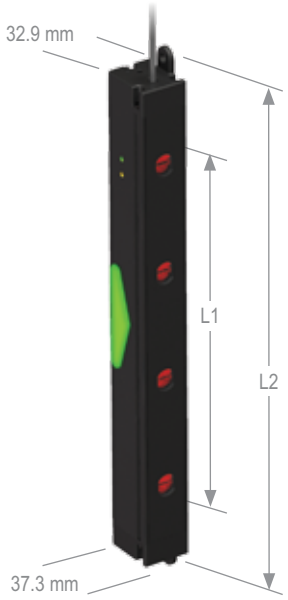
Additional accessories are available at bannerengineering.com

PVL Retroreflective Parts Verification Array

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.

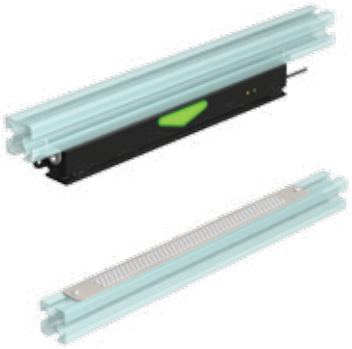
- Rugged housing for high durability and works well for larger openings and parts
- 70 mm beam spacing with two available lengths
- Highly visible pick/mispick dual-function indicator
- Can mount directly to a racking profile vertically or horizontally
- Slotted housing design allows cable to exit on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

Family	Sensing Length	Output	Connection
PVL	**225**	**P**	**Q**
	225 = 225 mm **500** = 500 mm	**P** = PNP **N** = NPN	**Blank** = 2 m Integral Cable **Q =** 2 m Euro Pigtail QD *QD models require mating cordset*

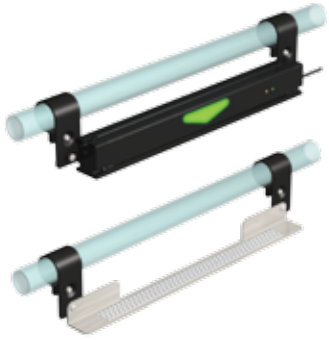


Sensing Range	*Retroreflective:* 1.5 m
Supply Voltage	12 to 30 V dc
Construction	*Housing:* aluminum anodized *Translucent Indicator:* polycarbonate
Environmental Rating	IP50
Operating Temperature	0 to +50 °C (+32 to 122 °F)
Certifications	CE

Models	No. of Beams	Sensing Length (L1)	Hole-to-Hole Length (L2)
PVL225	4	225 mm	327.5 mm
PVL500	8	500 mm	608.0 mm



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**)

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

BRT-THG-1-100
Replacement retroflective tape

BRT-84X84A
Long Range Reflectors

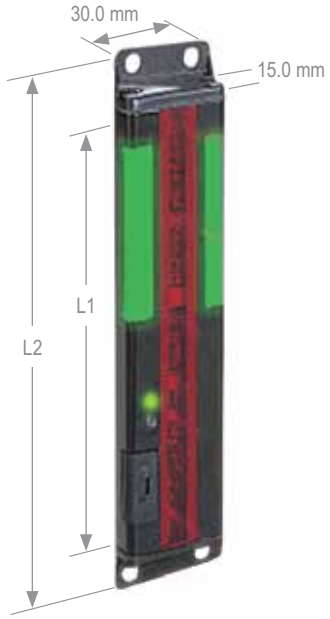
Additional accessories are available at bannerengineering.com

PVA Opposed-Mode Parts Verification Array

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

Family	Length	Output	Emitter/ Receiver	Connection
PVA	100	P6	E	Q
	100 = 100 mm **225** = 225 mm **300** = 300 mm **375** = 375 mm	**P6** = PNP **N6** = NPN	**E** = Emitter **R** = Receiver **Blank** = E/R Pair	**Blank** = 2 m Integral Cable **Q** = 2 m Euro Pigtail QD *QD models require mating cordset*



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	CE cULus

Models	No. of Beams	Sensing Length (L1)	Overall Length (L2)
PVA100	5	100 mm	137.8 mm
PVA225	10	225 mm	266.4 mm
PVA300	13	300 mm	341.4 mm
PVA375	16	375 mm	416.6 mm

SMBPVA1
pair included with the PVA

SMBPVA2
for use on 28 mm pipe

SMBPVA6
for use on 28 mm pipe

SMBPVA5

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')

Additional accessories are available at bannerengineering.com

K50 Touch Pick-to-Light Series

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

Output State
- **A** = Normally Open
- **R** = Normally Closed

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

Activation Method
- **T** = Touch

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

Function

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.

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

QD models require mating cordset

LASER MARKING AVAILABLE

Three-Color Models

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

Output State
- **A** = Normally Open
- **R** = Normally Closed

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

Activation Method
- **T** = Touch

Color (Job / Mispick / Sense)
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **T** = Turquoise
- **O** = Orange
- **V** = Violet
- **M** = Magenta
- **X** = Not Used

Function
- **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 until touched. 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.

Connection
- **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	CE, cULus LISTED

SMB30A

SMB30FA

SMB30FVK

SMB30RAVK

TC-K50-CL
Touch Guard

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

K30 Touch Pick-to-Light Series

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

Family	Output State	Input	Activation Method	Color: Job	Color: Sense	Function	Connection
K30	A	P	T	G	R	C	Q

Output State
- **A** = Normally Open
- **R** = Normally Closed

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

Activation Method
- **T** = Touch

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

Function

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.

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

QD models require mating cordset

LASER MARKING AVAILABLE

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 c UL us LISTED

SMB22A

SMB22FVK

SMBAMS22P

SMB22RAVK

TC-K30-CL
Touch Guard

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 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

Family	Output State	Input	Sensing Mode	Range	Color: Job	Color: Sense	Function	Connection
K50	A	P	FF	50	G	R	C	Q

Family: K50

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

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

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

Range: 50
- **Blank** = LP models
- **50** = 50 mm
- **100** = 100 mm

Color: Job: G
Color: Sense: R
- **G** = Green
- **Y** = Yellow
- **R** = Red
- **B** = Blue
- **W** = White
- **X** = Not Used

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

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

Three-Color Models

Family	Output State	Input	Sensing Mode	Range	LED Color	Function	Connection
K50	A	P	FF	50	G R Y	C3	Q

Family: K50

Output State: A
- **A** = Normally Open
- **R** = Normally Closed

Input: P
- **P** = PNP

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

Range: 50
- **Blank** = LP models
- **50** = 50 mm
- **100** = 100 mm

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

Function: C3
- **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 until touched. 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.

Connection: Q
- **Blank** = 2 m Integral Cable
- **Q =** Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

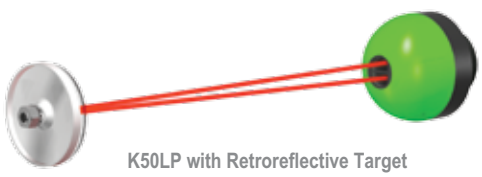
QD models require mating cordset

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	CE, UL LISTED — Some models pending. Contact factory for additional information.

SMB30A

SMB30FA

SMB30RAVK



K50LP with Retroreflective Target

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-35X35B
BRT-51X51BM
BRT-50D
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

K30/K50/K80 Push Button Pick-to-Light Series

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

Family	Output State		Sensing Mode	LED Color		Function	Connection
K30	**A**	**P**	**PB**	**G**	**X**	**D**	**Q**

Family
- **K30*** **K50** **K80**

Output State
- **A** = Normally Open
- **R** = Normally Closed

P = PNP*
N = NPN

* K30 models only available with Normally Open PNP output

Sensing Mode
- **PB** = Push Button (plastic)
- **PBM** = Push Button (metal)

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

Function

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.

Connection
- **Blank** = Terminal Wired (K80 only)
- **Q =** Euro Integral QD
- **QP** = Euro Pigtail QD
- **QPMA** = PUR Euro Pigtail QD

QD models require mating cordset

K50 and K80 Three-Color

Family	Output State		Sensing Mode	LED Color			Function	Connection
K50	**A**	**P**	**PB**	**G**	**R**	**Y**	**C3**	**Q**

Family
- **K50** **K80**

Output State
- **A** = Normally Open

P = PNP

Sensing Mode
- **PB** = Push Button (plastic)
- **PBM** = Push Button (metal)

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

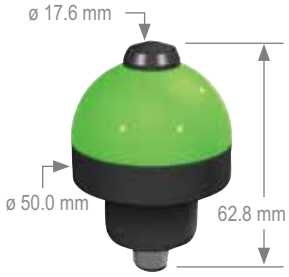
Function
C3 = Job light always ON with job input until touched. Touch activates output and overrides job light with sense light. Touch with inactive job input activates mispick light and activates output.
C4 = Job light always ON with job input until touched. Touch activates output and overrides job 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.

Connection
- **Blank** = Terminal Wired (K80 only)
- **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	*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, cULus LISTED

K30 Models



K50 Models

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')

K80 Models

Additional accessories are available at bannerengineering.com

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

Family	Sensing Mode	Range	LED Color			Bus Indicator	Connection
K50	FF	50	G	R	Y	S1	Q

Family: K50

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

QD models require mating cordset

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

SMB30A

SMB30FA

SMB30RAVK

VTB Verification Touch Buttons

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

One-Color Illuminated Base Models

Family	Output	Job Light Color	Upper Housing Material	Connection
VTB	P6			Q
	N6 = NPN **P6** = PNP	**Blank** = Green **R** = Red **B** = Blue	**Blank** = Polysulfone **L** = Polycarbonate	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD *QD models require mating cordset*

Two-Color Illuminated Base Models

Family	Output	Job Light 1 Color	Job Light 2 Color	Upper Housing Material	Connection
VTB	P6	G	R		Q
	N6 = NPN **P6** = PNP	**G** = Green **R** = Red **B** = Blue	**G** = Green **R** = Red **B** = Blue	**Blank** = Polysulfone **L** = Polycarbonate	**Blank** = 2 m Integral Cable **Q** = Euro Integral QD **QP** = Euro Pigtail QD *QD models require mating cordset*

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 cULus

SMB30MM

SMB30FA

SMB30SC

SMBAMS30RA

Optional Field Covers

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

Black	**OTCL-1-BK**
Green	**OTCL-1-GN**
Red	**OTCL-1-RD**
Yellow	**OTCL-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, **MQDC-406RA**)

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

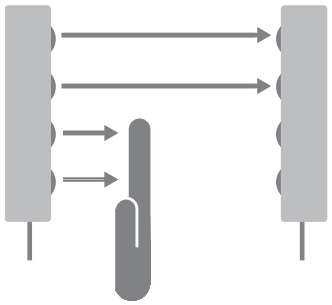
5-Pin M12/ Euro-Style Cordsets
Straight connector models listed; for right-angle models, add **RA** to the end of model number (example, **MQDC1-506RA**)

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.

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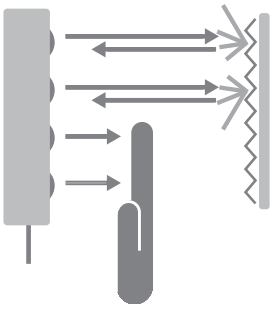
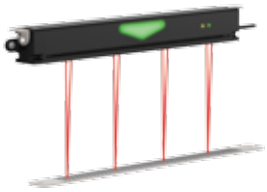


Retroreflective Mode

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.



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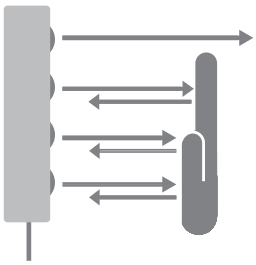

Diffuse

With a diffuse-mode sensor, the object is detected when the object reflects the sensor's transmitted light energy back to the sensor.

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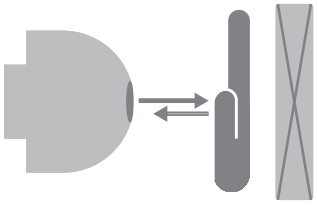

Fixed Field Mode

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.

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Push Buttons

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

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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.

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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.

Node
The Node collects data and wirelessly transmits this data to the Gateway

Gateway
The Gateway accepts data and interfaces to the control system and plant networks or can be wired directly to discrete I/O devices

	Models	Frequency	Environmental Rating	I/O
Node	DX80N9X6S-P8	900 MHz	IP67, NEMA 6	12 Inputs or Outputs Configurable
Node	DX80N2X6S-P8	2.4 GHz	IP67, NEMA 6	12 Inputs or Outputs Configurable
Gateway	DX80G9M6S-P8	900 MHz	IP67, NEMA 6	12 Inputs or Outputs Configurable
Gateway	DX80G2M6S-P8	2.4 GHz	IP67, NEMA 6	12 Inputs or Outputs Configurable

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

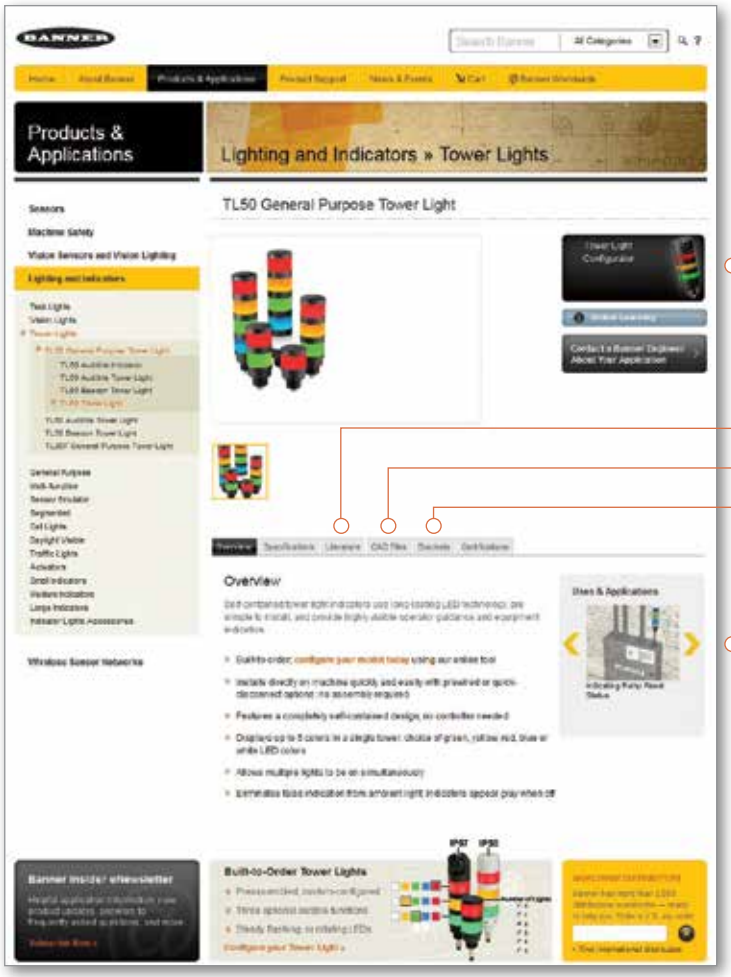
Banner's Spot Lights are compact to fit into tight spaces, and when properly placed can effectively create shadows or highlights to boost optical contrast

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.



Signal Tower Light Configurator

Literature

CAD Files

Full Line of Brackets

Applications and Videos

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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

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

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