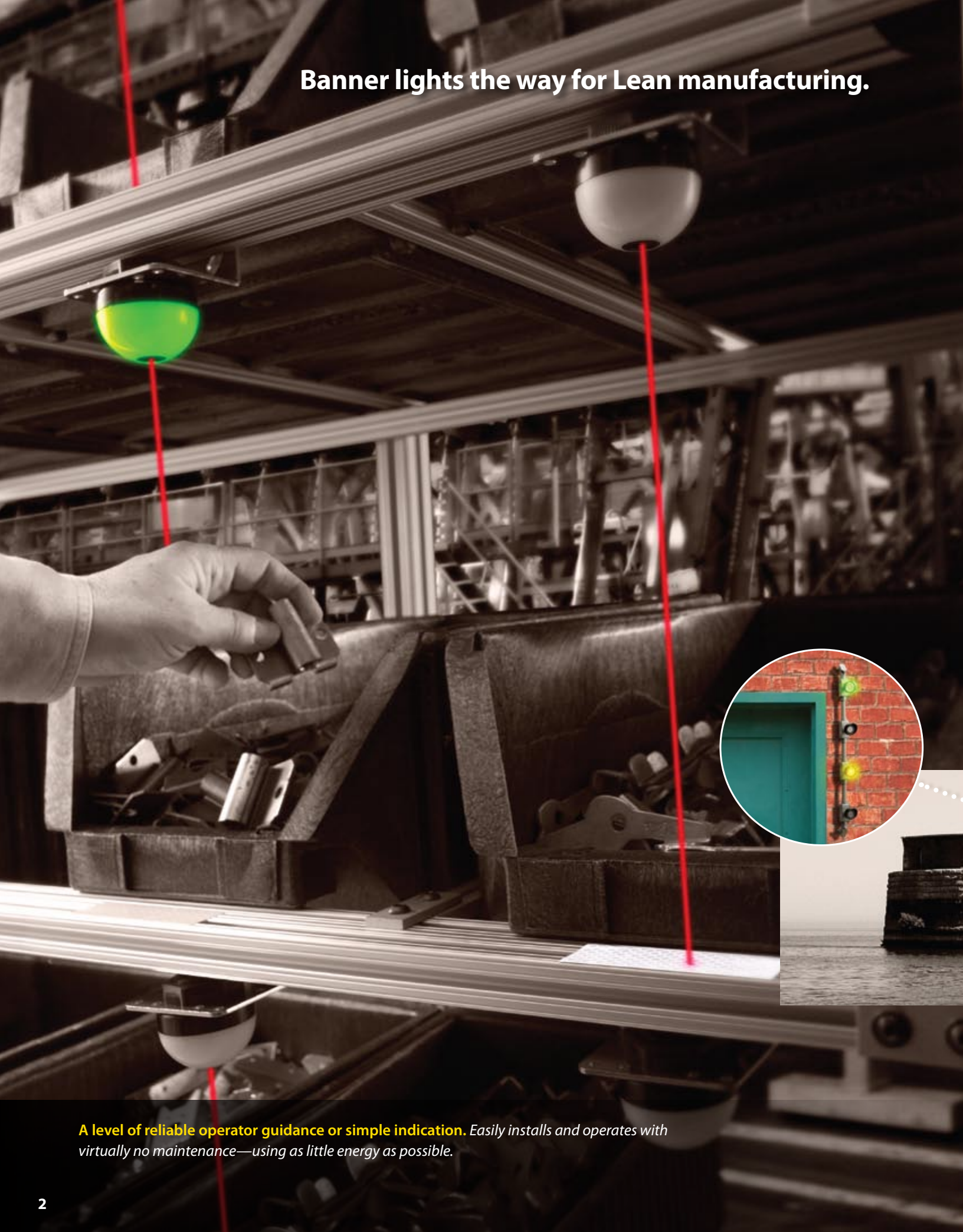**BANNER** ®

more sensors, more solutions

EZ-LIGHT™

**Indicator Lights and
Pick-to-Light Sensors**

SECOND EDITION

Banner lights the way for Lean manufacturing.

A level of reliable operator guidance or simple indication. *Easily installs and operates with virtually no maintenance—using as little energy as possible.*

Beyond Andon: EZ-LIGHT™, the next generation of visual indication

Banner's EZ-LIGHT™ family of products provides numerous solutions for visual process management and operator guidance. From innovative multi-color indicator lights to pick-to-light and sequence-guided assembly, error-proofing and productivity solutions, EZ-LIGHT replaces conventional indicators and devices, providing process refinement in ways never before possible. Incorporating sensor technology into operator guidance indicators ensures virtually error-free assembly and the highest levels of productivity.

EZ-LIGHT™ solutions

- Deliver real-time operational status indication for workers and supervisors
- Eliminate false readings from stray light; always appear gray when off
- Prompt operators and guide sequential part selection
- Verify correct action with sensor or push-button indication
- Offer point sensing or arrays for wide area pick-to-light
- Feature compatibility with PLC or other logic-level control outputs
- Install quickly and easily with pre-wired or quick-disconnect options
- Promote high visibility from all angles
- Reduce costs, defects and Muda (waste)
- Improve plant flow, productivity and efficiency

A complete range of models and styles

- Smart **General-Purpose** indicators displaying up to three colors in one device

- **Multi-Function** indicators displaying up to five colors with solid, flashing or sequenced flashing cycles

- **Sensor Emulator** indicators displaying sensor status where sensor visibility is obscured or limited

- **Segmented** indicators delivering simultaneous one, two, three or four color display for multiple status indication

- **Daylight Visible** indicators generating intense levels of light output for outdoor applications or areas of high ambient light

- **Audible** indicators combining visible light indication with audio alerts

- **Pick-to-Light** indicators and sensors reducing assembly and picking errors, improving product quality while reducing costs

Specify your EZ-LIGHT™ in 4 Easy Steps

1. Choose your housing

K80L

T30

K30L

K50L

T18

T8L   M18

2. Choose color, function, voltage

ON steady

Flashing

Alternating

DC

AC
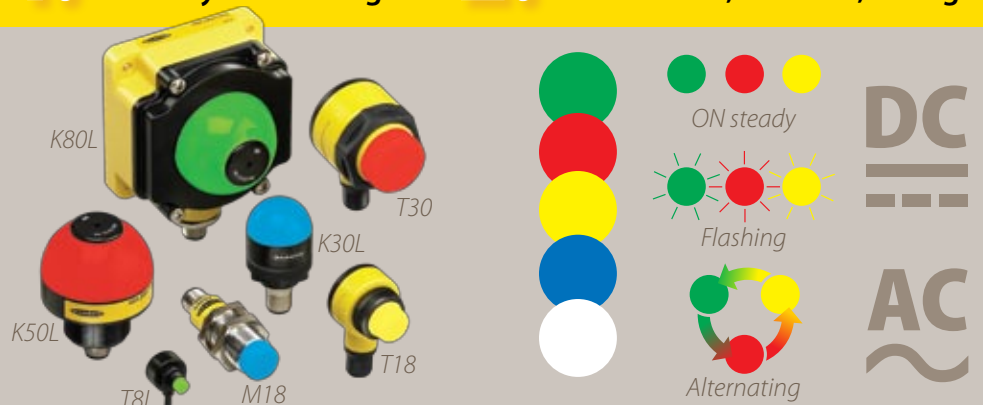
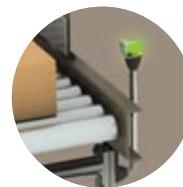## Mounting solutions for any application

- Installs quickly with a single drilled hole and many mounting options

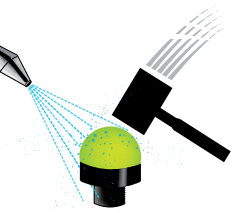*Cabinet mounting*   *Surface mount*   *Standoff pipe and protective brackets*   *Base, nose and DIN-mount brackets*

- Includes models with 22 or 30 mm threaded base for panel mounting

- Features mounting hubs for both EMT and gas/water pipe mounting (K50L model)

- Offers models and accessories for machine- and wall-mounting, as well as ceiling suspension

Robust, durable, green and Lean design

- Completely self-contained operation—no controller needed
- Extremely long-lasting LED technology providing >100,000 hours (11 years continuous) working life
- Very low power consumption: <1W for most DC models, <2W for AC models—compare to competitive units that consume up to 15W
- Ergonomic, lean shape that sheds debris and moisture
- No hook hazards for moving equipment and personnel—unlike conventional stack lights
- Robust IP67/IP69K-rated, water- and oil-tight industrial housings for direct machine mounting
- Rugged, compact design that is cost-effective and easy-to-install
- Shock, vibration and impact resistant
- Compatibility with AS-i modules and fieldbus splitter boxes

Process Inspection Indicator

4-Color Point-of-Use Indicator

Remote Level Indicator

Cabinet-Mount Status Indication

Elevated Indication with Audible Alert

3. Choose input type

4. Choose your connection

NPN/PNP

- OR -

85-130Vac

Attached Cable

PVC or PUR Pigtail QD

Integral QD

Terminal-Wired

Numerous color display options

- Single devices displaying up to 5 colors each—replacing multiple indicators to save panel space and costs
  - Models with 31 functions for steady, flashing or alternating colors
  - Excellent but non-aggressive light brilliance and visibility for operators
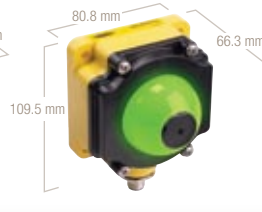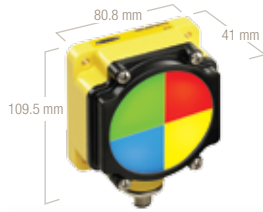
EZ-LIGHT™ Operator Indicator Lights

	K80L	K50L	T30	M18	K30L
Housing	K80L	K50L	T30	M18	K30L
Description	50 mm dome or flat profile	50 mm dome or flat profile	30 mm T-style	18 mm barrel	30 mm dome
Maximum Colors in One Housing	5	5	3	3	3
Standard Colors	●●●●○	●●●●○	●●●●○	●●●●○	●●●●○

Functions

	K80L	K50L	T30	M18	K30L
General Purpose	ON steady	ON steady	ON steady	ON steady	ON steady
Sensor Emulator	Remote indicator, ON steady	Remote indicator, ON steady	Remote indicator, ON steady	Remote indicator, ON steady	Remote indicator, ON steady
Multi-Function	ON steady, Flashing, Alternating	ON steady, Flashing, Alternating	ON steady, Flashing, Alternating	ON steady, Flashing, Alternating	
Audible	Steady (75 dB) Loud steady (95 dB) Pulsed (75 dB)	Steady (75 dB) Loud steady (95 dB) Pulsed (75 dB)			
Segmented	Up to 4 segments				

Specifications

	K80L	K50L	T30	M18	K30L
Power Requirement	18 to 30V dc or 85 to 130V ac	18 to 30V dc or 85 to 130V ac	10 to 30V dc	10 to 30V dc	10 to 30V dc
Input	DC: NPN or PNP AC: 85 to 130V ac	DC: NPN or PNP AC: 85 to 130V ac	NPN or PNP	NPN or PNP	NPN or PNP
Connection (depending on number of colors and functionality)	4-, 5- or 8-pin integral Euro QD; 4-, 5- or 8-pin pigtail Euro QD; Terminal-wired	4-, 5- or 8-pin integral Euro QD; 4-, 5- or 8-pin pigtail Euro QD; 2 m attached cable	4- or 5-pin integral Euro QD; 4- or 5-pin pigtail Euro QD; 2 m attached cable	4- or 5-pin integral Euro QD; 4- or 5-pin pigtail Euro QD; 2 m attached cable	4-pin integral Euro QD; 4-pin pigtail Euro QD; 2 m attached cable
Mounting	Flat or DIN-mount	30 mm threaded base	30 mm threaded nose	18 mm threaded barrel	22 mm threaded base
Construction	Thermoplastic	Thermoplastic	Thermoplastic	Nickel-plated brass	Thermoplastic
Rating	Audible: IP50 All others: IP67	Audible: IP50 All others: IP67	IP67	IP67	IP67
Operating Temperature	Audible: -20˚ to +50˚ C All others: -40˚ to +50˚ C	Audible: -20˚ to +50˚ C All others: -40˚ to +50˚ C	-40˚ to +50˚ C	-40˚ to +50˚ C	-40˚ to +50˚ C

80.8 mm   66.3 mm   109.5 mm   ø 50 mm   56.8 mm   45 mm   63.7 mm   61 mm   16.5 mm   ø 30 mm   58 mm

More information online at **bannerengineering.com**

EZ-LIGHT™ Specialty Indicator Lights

T18	T8L	SEGMENTED K80L	AUDIBLE K80L/K50L	DAYLIGHT VISIBLE K50LD
18 mm T-style	8 mm T-style	50 mm flat profile	50 mm dome	50 mm flat profile
3	2	4	4	3
●●●●○	●●●●○	●●●●○	●●●●○	●●●●○
● **General Purpose** ON steady ● **Sensor Emulator** Remote indicator, ON steady	● **General Purpose** ON steady ● **Sensor Emulator** Remote indicator, ON steady	⊕ **Segmented** Up to 4 segments ○ No segments ⊕ 4 segments ⊖ Horizontal split ⊖ Top half	📶 **Audible** Steady (75 dB) Loud steady (95 dB) Pulsed (75 dB)	☀ **Daylight Visible** Intense levels of light output for outdoor applications
10 to 30V dc	10 to 30V dc	18 to 30V dc	18 to 30V dc	18 to 30V dc
NPN or PNP	NPN or PNP	NPN or PNP	NPN or PNP	NPN or PNP
4-pin integral Euro QD 4-pin pigtail Euro QD 2 m attached cable	4-pin pigtail Euro QD 2 m attached cable	5-pin integral Euro QD 5-pin pigtail Euro QD Terminal-wired	5-pin integral Euro QD 5-pin pigtail Euro QD K50L: 2 m attached cable K80L: Terminal-wired	4-pin integral Euro QD 4-pin pigtail Euro QD 2 m attached cable
18 mm threaded nose	8 mm threaded nose	Flat or DIN-mount	K80L: Flat or DIN-mount K50L: 30 mm threaded base	30 mm threaded base
Thermoplastic	Polycarbonate	Thermoplastic	Thermoplastic	Thermoplastic
IP67	IP67	IP67	IP50	IP67
-40° to +50° C	-40° to +50° C	-40° to +50° C	-20° to +50° C	-40° to +50° C

More information online at **bannerengineering.com**

EZ-LIGHT™ Pick-to-Light Sensors

30 mm
16.4 mm
PVD100: 137.8 mm
PVD225: 266.4 mm

30 mm
15 mm
PVA100: 137.8 mm
PVA225: 266.4 mm
PVA300: 341.4 mm
PVA375: 416.6 mm

ø 50 mm
56.8 mm
80.8 mm
72.5 mm
109.5 mm
59.9 mm
43.2 mm
57.1 mm

Housing	K50	K80	VTB	PVD	PVA
Description	50 mm dome light indicator with sensor or push button	50 mm dome light indicator with push button	Ultra-bright optical touch button	One-component light array	Two-component light array
Job Light	●●●● (green, red, yellow, blue)	●●●● (green, red, yellow, blue)	●●● (green, red, blue)	●● (green, red)	● (green)
Maximum Sensing Range	Retro: 2 m Fixed-Field: 25, 50, 100 mm Push-Button: —	—	—	Retro: 2 m Diffuse: 400 mm	Opposed: 2 m
Minimum Object Detection Size	—	—	—	Retro: 51 to 100 mm Diffuse: 55 mm	35 mm

Specifications

	K50	K80	VTB	PVD	PVA
Power Requirement	12 to 30V dc	12 to 30V dc	12 to 30V dc	12 to 30V dc	12 to 30V dc
Output Configuration	One NPN or PNP & NO or NC, depending on model	One NPN or PNP & NO or NC, depending on model	One NPN or PNP, depending on model	One user-selectable PNP or NPN	One NPN or PNP, depending on model; programmable for light or dark operate
Connection	4- or 5-pin integral Euro QD / 4- or 5-pin pigtail Euro QD / 2 m or 9 m attached cable	4- or 5-pin integral Euro QD / 4- or 5-pin pigtail Euro QD / 2 m or 9 m attached cable	4- or 5-pin integral Euro QD / 2 m or 9 m attached cable	5-pin pigtail Euro QD / 2 m or 9 m attached cable	4-pin pigtail Euro QD / 2 m attached cable
Mounting	30 mm threaded base	Flat or DIN-mount	30 mm threaded base	Flat mount	Flat mount
Construction	Polycarbonate & nylon	Polycarbonate & nylon	Black polysulfone or red polycarbonate with white polycarbonate base	Black painted aluminum	Black anodized aluminum
Rating	IP69K (depending on installation)	IP69K (depending on installation)	IP66; NEMA 4X	IP62; NEMA 2	IP62; NEMA 2
Operating Temperature	-40° to +50° C	-40° to +50° C	-20° to +50° C	0° to +50° C	0° to +50° C
Data Sheet	2-color: 126441 3-color: 137551	2-color: 126441 3-color: 137551	67570	113230	52088

More information online at **bannerengineering.com**

EZ-LIGHT™ Accessories

Standoff Pipe and Cabinet Mounting

SA-M30E12
Thermoplastic Acetal adapter and cover

SOP-E12-150SS
(150 mm)
or
SOP-E12-300SS
(300 mm)
stainless steel pipe

SA-E12M30
Thermoplastic Acetal mounting base

SA-M30M30-75
Thermoplastic Acetal standoff with 30 mm mounting base for cabinet mounting or use with most 30 mm brackets

Line 1

SA-30RL55X93
Zinc coated, oversized right-angle legend plate for identification labels

SA-M22M22-50
Thermoplastic Acetal standoff with 22.5 mm mounting base for cabinet mounting

SMBE12USS
Stainless steel bracket for wall or other flat surfaces

SA-30RL55X93C
Zinc coated bracket with strain relief

K50LD Sun Shield

K50DS
Thermoplastic Polyester sun shield

Brackets

Right-Angle

SMB8MM

T8L

SMB18A

M18   T18

SMB22A

K30L

SMB30A

T30   K50L

SMB30RAVK

T30   K50L

Swivel Brackets

SMB18FA

M18   T18

SMB30FA

K50L   T30

Adapter (22.5 to 18 mm)

SA-2218

M18

DIN-Rail

SMBDX80DIN

K80L

Quick-Disconnect (QD) Cordsets

4-Pin Euro-Style Splitter

Model	Branches (Female)	Trunk (Male)
CSB-M1240M1240	None	None
CSB-M1241M1241	2 x 0.3 m	0.3 m
CSB-M1248M1241	2 x 0.3 m	2.5 m

Used with:
• Sensor emulator

4-Pin Euro-Style

Model*	Length
MQDC-406	2 m
MQDC-415	5 m
MQDC-430	9 m

Used with:
• General purpose (DC)
• Sensor emulator
• Daylight visible

5-Pin Euro-Style

Model*	Length
MQDC1-506	2 m
MQDC1-515	5 m
MQDC1-530	9 m

Used with:
• 3- or 4-color, multi-function
• Segmented
• Audible

8-Pin Euro-Style

Model*	Length
MQDC2S-806	2 m
MQDC2S-815	5 m
MQDC2S-830	9 m

Used with:
• 5-color, multi-function

5-Pin Micro-Style

Model*	Length
MQVR3S-506	2 m
MQVR3S-515	5 m
MQVR3S-530	9 m

Used with:
• General purpose (AC)

More information online at **bannerengineering.com**

*For a right-angle cordset, add **RA** to the model number (example, **MQDC-406RA**).
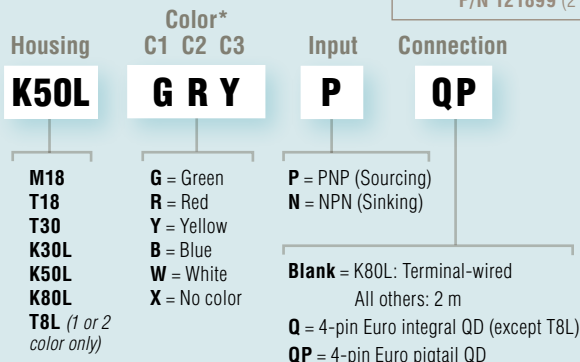
EZ-LIGHT™ Model Guide

Specify your model in 4 easy steps:
1. Choose your housing
2. Choose your color, function and voltage
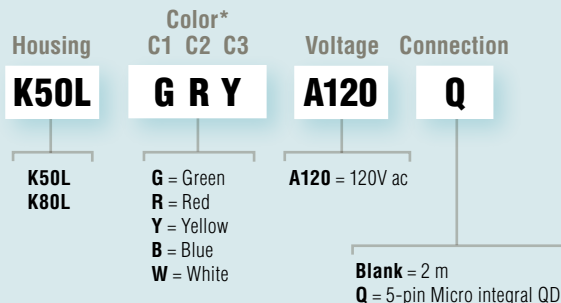3. Choose your input type
4. Choose your connection

K50LD   **K50L**   **K30L**

K80L   **T30**   **T18**   **T8L**   **M18**
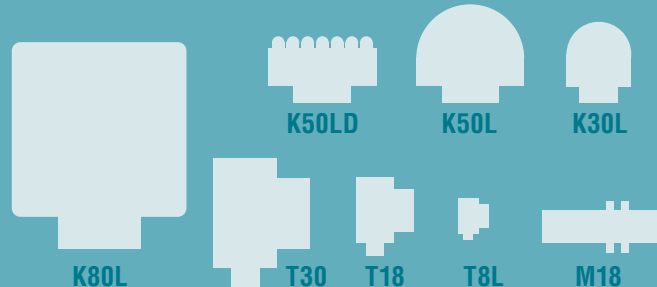
General Purpose: DC Models

Hookup Diagram: **HK01**
Online Data Sheet:
   P/N 130865 (1 color)
   P/N 121899 (2 & 3 color)

Housing	Color* C1 C2 C3	Input	Connection
K50L	**G R Y**	**P**	**QP**

M18
T18
T30
K30L
K50L
K80L
T8L *(1 or 2 color only)*

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
   All others: 2 m
Q = 4-pin Euro integral QD (except T8L)
QP = 4-pin Euro pigtail QD

General Purpose: AC Models

Hookup Diagram: **HK02**
Online Data Sheet: **P/N 134548**

Housing	Color* C1 C2 C3	Voltage	Connection
K50L	**G R Y**	**A120**	**Q**

K50L
K80L

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

A120 = 120V ac

Blank = 2 m
Q = 5-pin Micro integral QD

Multi-Function: 3 Color

Hookup Diagram: **HK03**
Online Data Sheet: **P/N 121902**

Housing	Color* C1 C2 C3	Function†	Input	Connection
K50L	**G R Y**	**2**	**P**	**QP**

M18
T30
K50L
K80L

2 = Multi-Function

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
   All others: 2 m
Q = 5-pin Euro integral QD
QP = 5-pin Euro pigtail QD
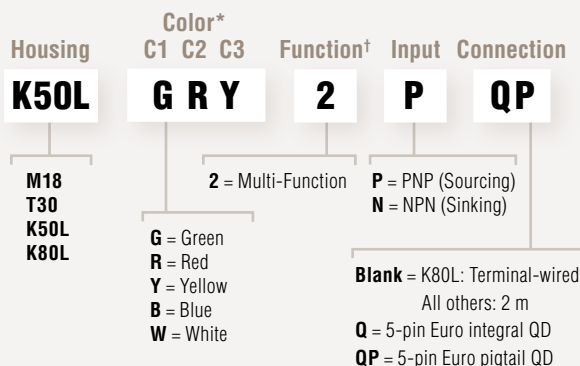
Multi-Function: 4 Color

Hookup Diagram: **HK03**
Online Data Sheet: **P/N 137329**

Housing	Color* C1 C2 C3 C4	Function†	Input	Connection
K50L	**G R Y B**	**4**	**P**	**QP**

K50L
K80L

4 = Multi-Function

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
   K50L: 2 m
Q = 5-pin Euro integral QD
QP = 5-pin Euro pigtail QD
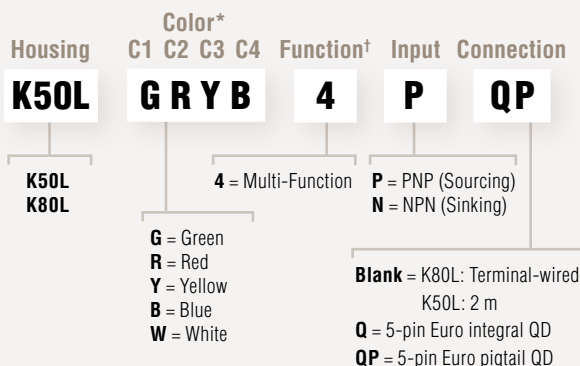
Multi-Function: 5 Color

Hookup Diagram: **HK04**
Online Data Sheet: **P/N 131413**

Housing	Color*† C1 C2 C3 C4 C5	Input	Connection
K50L	**G R Y B W**	**P**	**QP**

K50L
K80L

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
   K50L: 2 m
Q = 8-pin Euro integral QD
QP = 8-pin Euro pigtail QD
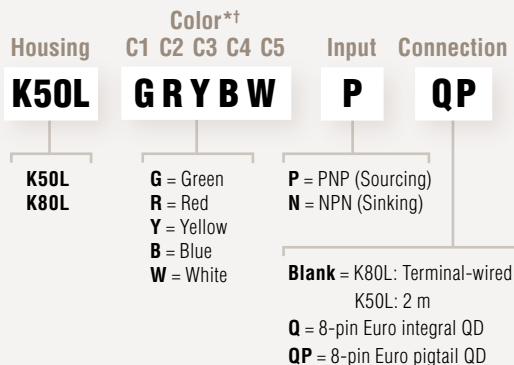
Sensor Emulator: 2 Color

Hookup Diagram: **HK05**
Online Data Sheet: **P/N 121900**

Housing	Color* C1 C2	Function	Input	Connection
K50L	**G Y**	**X7**	**P**	**QP**

T8L
M18
T18
T30
K30L
K50L
K80L

X7 = Sensor Emulator

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
   All others: 2 m
Q = 4-pin Euro integral QD (except T8L)
QP = 4-pin Euro pigtail QD

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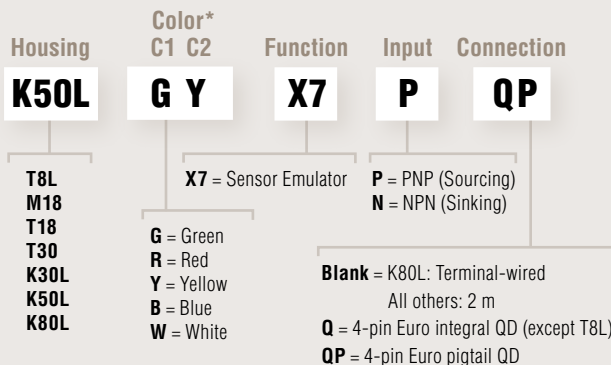
*Number of colors are determined by C1, C2, C3, C4, C5 specified in model guides.
  General-purpose models (DC only): For less than 3 colors, use **X** as a model placeholder (example, **K50LGXXPQP** for green only).
†LED function of ON steady, flashing or alternating (depending on hookup).

More information online at **bannerengineering.com**

G **R** **Y** **B** **W** **X**[*] *Note: Many other colors are available*

*No color: General Purpose and Daylight Visible only

NOTE: For reference only; confirm model number with Banner as some configurations are not available.

Segmented

Hookup Diagram: **HK03**
Online Data Sheet: **P/N 132728**

Housing	Segment Configuration		Color* C1 C2 C3 C4	Function	Input	Connection
K80L	**4**	**-**	**G R Y B**	**1**	**P**	**Q**

K80L

⊕ **4**
⊖ **3TH**
⊖ **2H**
◯ **1**

4 = 4 segments
3 = 1 half & 2 qtr.
2 = 2 halves
1 = Entire area

Blank = 4 segments or no segments
H = Horizontal split
TH = Top half

G = Green
R = Red
Y = Yellow
B = Blue
W = White
X = Place holder

1 = Micro Programmed

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = Terminal-wired
Q = 5-pin Euro QD
QP = 5-pin Euro pigtail QD

*For less than 4 colors, use **X** as a model placeholder (example, **K80L2HGRXX1PQ** = 🔴)*

Audible

Hookup Diagram: **HK03**
Online Data Sheet: **P/N 135242**

Housing	Color C1 C2	Audible Alarm	Color C4	Input	Connection
K50L	**G R**	**A2**	**Y**	**P**	**QP**

K50L
K80L

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

A1 = Steady tone
A2 = Pulsed tone
AL1 = Loud steady tone

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = K80L: Terminal-wired
K50L: 2 m
Q = 5-pin integral QD
QP = 5-pin Euro pigtail QD

Daylight Visible

Hookup Diagram: **HK01**
Online Data Sheet: **P/N 137330**

Housing	Color* C1 C2 C3	Input†	Connection
K50LD	**G R Y**	**P**	**QP**

K50LD

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

P = PNP (Sourcing)
N = NPN (Sinking)

Blank = 2 m
Q = 4-pin integral QD
QP = 4-pin Euro pigtail QD

*For single color models with full brightness, use **XC2X** in model number (example, **K50LDXGXPXQP**).
For single color models with intensity control of one color, use same color for C1, C2, C3 (example, **K50LDGGGPQP**).
†1-color models are PNP/NPN selectable.*

HK01 • General Purpose (DC)
• Daylight Visible

4-Pin Euro

KEY
1 = Brown
2 = White
3 = Blue
4 = Black
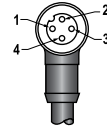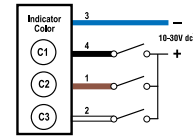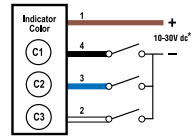
PNP   **NPN**

K50L and K80L voltage 18-30V dc

HK02 • General Purpose (AC)
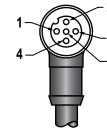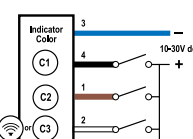

5-Pin Micro

Inputs 85 to 130V ac
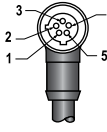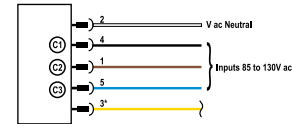
KEY
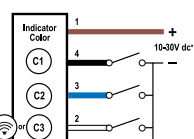1 = Brown
2 = White
3 = Yellow*
4 = Black
5 = Blue
* = Not Used

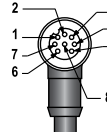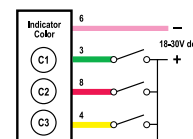### HK03 • 3- or 4-color, Multi-Function
• Segmented
• Audible

5-Pin Euro

KEY
1 = Brown
2 = White
3 = Blue
4 = Black
5 = Gray

PNP   **NPN**

K50L and K80L voltage 18-30V dc
NOTE: Hookup diagrams are for LED ON steady.
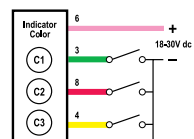*See data sheet for LED function information.*

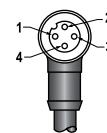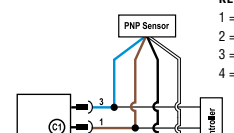
HK04 • 5-color, Multi-Function

8-Pin Euro

KEY
1 = White
2 = Brown
3 = Green
4 = Yellow
5 = Gray
6 = Pink
7 = Blue
8 = Red

PNP   **NPN**

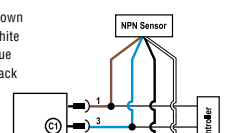*NOTE: Hookup diagrams are for LED ON steady.*
See data sheet for LED function information.

HK05 • Sensor Emulator

4-Pin Euro
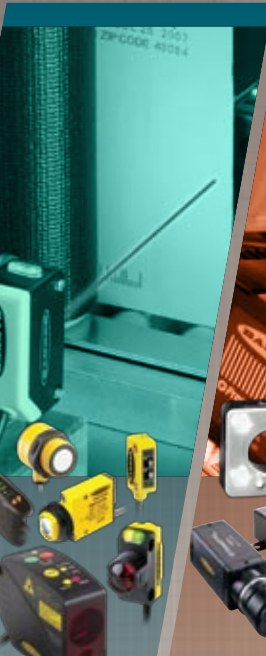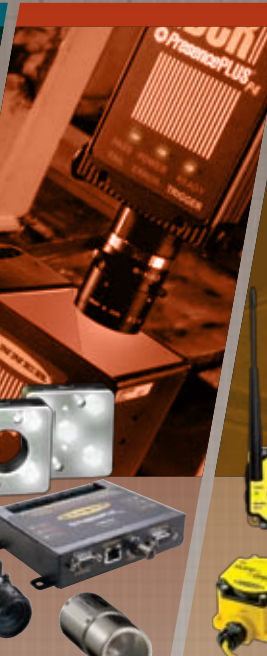
KEY
1 = Brown
2 = White
3 = Blue
4 = Black

PNP Sensor   NPN Sensor

PNP   **NPN**

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Sensors
- Presence
- Absence
- Inspection
- Gating
- Counting
- Measurement
- Position

Vision
- Pattern Recognition
- Complex Part Inspection
- Multi-Component Gauging
- Part ID/Orientation
- Assembly Verification
- Print Verification
- Traceability (Bar Code and Text)

Wireless
- Process Control & Monitoring
- Factory Automation
- Agriculture & Water Management
- Traffic Monitoring & Control
- Commercial & Consumer Monitoring

Indicator Lights
- Bin & Part Picking
- Error Proofing
- Pick-to-Light & Call for Parts
- Visual & Audible Indication
- Operator Guidance
- Visual Management
- Andon Indication
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