TL50 Pro Select Tower Light with IO-Link

Features

50 mm IO-Link Controlled Multicolor RGB Tower Light

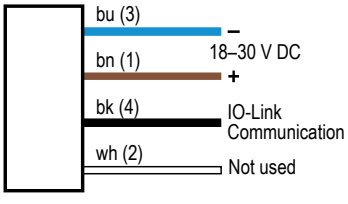


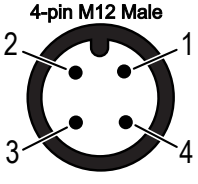
- Rugged, cost-effective, and easy-to-install 3- and 4-segment tower lights
- Illuminated segments provide easy-to-see operator guidance and indication of equipment status
- IO-Link gives full access to color, flashing, and dimming settings, as well as advanced animations like run and level modes that provide a dynamic response to changing machine conditions
- Audible models available with an omnidirectional audible element
- 18 V DC to 30 V DC operation
- No assembly required

Models

Family	Style	Number of Segments	Audible Alarm	Control	Connection
TL50	**PS**	**3**	**A**	**K**	**Q**
	PS = Pro Select	3 = 3 segments 4 = 4 segments	Blank = None A = Omnidirectional sealed audible	K = IO-Link	Q = Integral 4-pin M12 male quick-disconnect connector

Wiring Diagram





Key
1 = Brown
2 = White
3 = Blue
4 = Black

IO-Link Process Data Out (Master to Device)

IO-Link® is a point-to-point communication link between a master device and a sensor and/or light. It can be used to automatically parameterize sensors or lights and to transmit process data. For the latest IO-LINK protocol and specifications, please visit www.io-link.com.

For the latest IODD files, please refer to the Banner Engineering Corp website at: www.bannerengineering.com.

Basic Segment Mode
Use process data to set each segment to off, solid on, flash, or animation mode. Use parameter data to change color, intensity, flash speed, and select animation type.

Advanced Segment Mode
Use process data to activate each segment and control color, intensity, flash, and other animation types. Use parameter data to create custom colors, intensity, and flash speeds.

Run Mode
Use process data to control entire tower light and select color, intensity, flash and run mode animations. Use parameter data to create custom colors, intensity, and flash speeds.

Animation	Description
Off	Segment is off
Steady	Color 1 is solid on at defined intensity
Flash	Color 1 flashes at defined speed, color intensity, and pattern (normal, strobe, three pulse, SOS, or random)
Two Color Flash	Color 1 and Color 2 flash alternately at defined speed, color intensities, and pattern (normal, strobe, three pulse, SOS, or random)
Intensity Sweep	Color 1 repeatedly increases and decreases intensity between 0% to 100% at defined speed and color intensity

Level Mode
Use process data to set the level value. Use parameter data to set range, thresholds, colors, intensities, flash speeds, and animation types.

Original Instructions
07-Aug-26

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220690
p/n: 220690 Rev. B

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Animation	Description
Level Mode Value	Value of the level of the tower (between 0 to 65,535)
Full-Scale Value	Set the upper limit of the Level Mode Value (between 0 to 65535)
Threshold Type: None	Level Mode Values are displayed on tower as defined by Base color, intensity, and state (steady or flashing).
Threshold Type: Low	Level Mode Values below Low Threshold Value are displayed on segments defined by Low Threshold color, intensity, and state (steady or flashing). Level Mode Values above Low Threshold Value are displayed on segments defined by Base color, intensity, and state (steady or flashing).
Threshold Type: High	Level Mode Values below High Threshold Value are displayed on segments defined by Base color, intensity, and state (steady or flashing). Level Mode Values above High Threshold Value are displayed on segments defined by High Threshold color, intensity, and state (steady or flashing).
Threshold Type: High and Low	Level Mode Values below Low Threshold Value are displayed on segments defined by Low Threshold color, intensity, and state (steady or flashing). Level Mode Values between Low and High Threshold Values are displayed on segments defined by Base color, intensity, and state (steady or flashing). Level Mode Values above High Threshold Value are displayed on segments defined by High Threshold color, intensity, and state (steady or flashing).
Base, Low Threshold, High Threshold, and Background	Colors, Intensities, and States - Set the colors, intensities, and states (steady or flash) the tower will display if the Level Mode Value conforms to the defined threshold type
Dominance	If Non-Dominant is defined, segments display their defined threshold color; if Dominant is defined, all segments display the active threshold color
Segment Style	If Level Mode Value is a partial percentage of a segment, select if segment will be on steady, flashing, or analog dimmed to the partial percentage

Specifications

Supply Voltage and Current

18 V DC to 30 V DC
Maximum current per LED segment:
62 mA at 18 V DC
50 mA at 24 V DC
44 mA at 30 V DC
Maximum current for Omni-Directional Sealed Audible: 45 mA

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Environmental Rating

IP65, UL Type 4X

Vibration and Mechanical Shock

Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6
Shock: 30G 11 ms duration, half sine wave per IEC 60068-2-27

Audible Alarm

3.1 kHz ± 500 Hz oscillation frequency
Intensity: 93 dB at 1 m (typical)

Input Response Time

Indicator On/Off Response Time: 20 ms (maximum)

Connections

Integral 4-pin M12 male quick-disconnect connector

Construction

Bases, Covers, Light Segment: Polycarbonate

Operating Conditions

Non-Audible: –40 °C to +50 °C (–40 °F to +122 °F)
Audible: –25 °C to +50 °C (–13 °F to +122 °F)
95% at +50 °C maximum relative humidity (non-condensing)

Certifications

Banner Engineering BV
Park Lane, Culliganlaan 2F bus 3
1831 Diegem, BELGIUM

Required Overcurrent Protection

WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.
Supply wiring leads < 24 AWG shall not be spliced.
For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (A)	Supply Wiring (AWG)	Required Overcurrent Protection (A)
20	5.0	26	1.0
22	3.0	28	0.8
24	2.0	30	0.5

Indicator Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates[1]		Lumen Output Per Segment (Typical at 25 °C)
		X	Y	
Red	620	0.668	0.318	8.4
Green	522	0.195	0.71	15.5
Yellow	576	0.455	0.5	22.4
Blue	466	0.139	0.083	3.8
Magenta	–	0.37	0.185	10
Cyan	493	0.163	0.352	17.1
White	5700 K	0.326	0.347	24.4
Amber	589	0.539	0.431	15.1
Rose	–	0.494	0.238	8.4
Lime Green	562	0.367	0.567	18.8
Orange	599	0.6	0.382	11.6
Sky Blue	486	0.153	0.262	16.7
Violet	–	0.223	0.119	6.6
Spring Green	508	0.18	0.52	15.8

[1] Refer to CIE 1931 chromaticity diagram or color chart to show equivalent color with indicated color coordinates

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FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(b)) This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Industry Canada ICES-003(B)

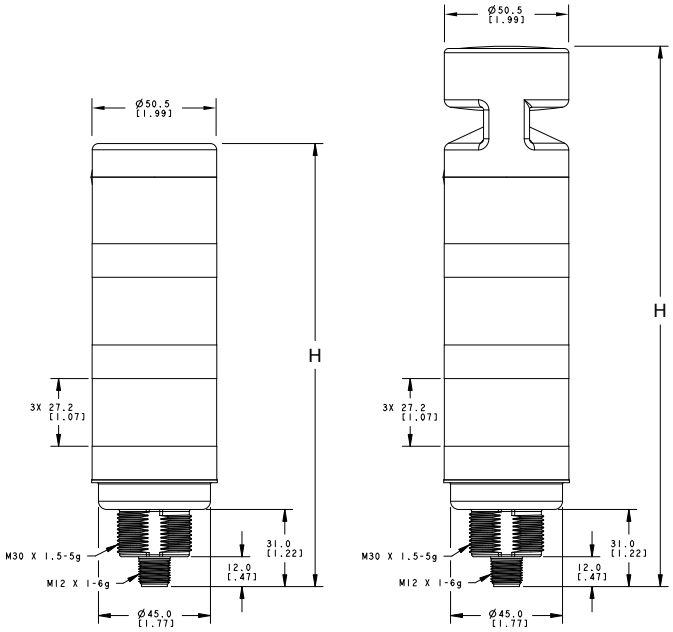
This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

Three segment models shown - dimensions are functionally identical to two and four segment models



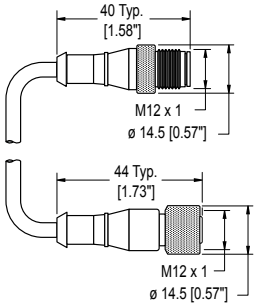
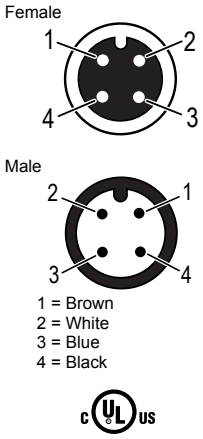
Standard non-audible and audible (dimension H)

Segments	Standard Non-Audible Models (H)	Audible Models (H)
Two	137.4 mm (5.41 in)	171.5 mm (6.75 in)
Three	178.1 mm (7.01 in)	217.2 mm (8.55 in)
Four	219.1 mm (8.63 in)	257.2 mm (10.13 in)

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Accessories

Cordsets

4-Pin Double-Ended M12 Female to M12 Male Cordsets				
Model	**Length**	**Style**	**Dimensions**	**Pinout**
MQDEC-401SS	0.31 m (1 ft)	Male Straight/Female Straight		
MQDEC-403SS	0.91 m (2.99 ft)			
MQDEC-406SS	1.83 m (6 ft)			
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-415SS	4.58 m (15 ft)			
MQDEC-420SS	6.10 m (20 ft)			
MQDEC-430SS	9.14 m (30.2 ft)			
MQDEC-450SS	15.2 m (49.9 ft)			

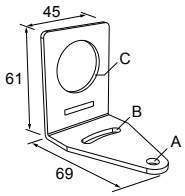
Mounting Brackets

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

SMB30A

- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-gauge stainless steel
- CAD Files: DXF, PDF, IGS, STP

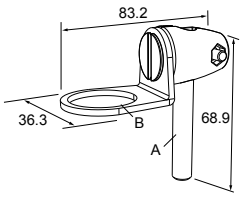
Hole center spacing: A to B=40
Hole size: A=ø 6.3, B= 27.1 × 6.3, C=ø 30.5



SMB30FA

- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-gauge 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric- and inch-size bolt available
- CAD Files: DXF, PDF, IGS, STP

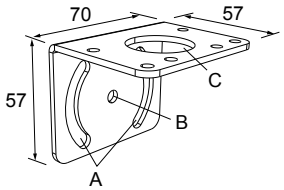
Bolt thread: SMB30FA, A=3/8 - 16 × 2 in; SMB30FAL, A=3/8 - 16 × 4 in; SMB30FAM10, A=M10 - 1.5 × 50
Hole size: B=ø 30.1



SMB30MM

- 12-gauge stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- CAD Files: DXF, PDF, IGS, STP

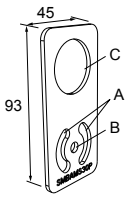
Hole center spacing: A=51, A to B=25.4
Hole size: A=42.6 × 7, B=ø 6.4, C=ø 30.1



SMBAMS30P

- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-gauge 300 series stainless steel
- CAD Files: DXF, PDF, IGS, STP

Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 × 7.0, B=ø 6.5, C=ø 31.0

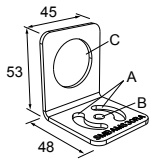


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SMBAMS30RA

- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-gauge (2.6 mm) cold-rolled steel
- CAD Files: DXF, PDF, IGS, STP

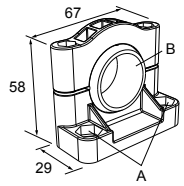
Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 × 7.0, B=ø 6.5, C=ø 31.0



SMB30SC

- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included
- CAD Files: DXF, PDF, IGS, STP

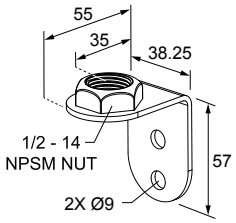
Hole center spacing: A=ø 50.8
Hole size: A=ø 7.0, B=ø 30.0



LMBE12RA35

- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 35 mm
- CAD Files: DXF, PDF, IGS, STP

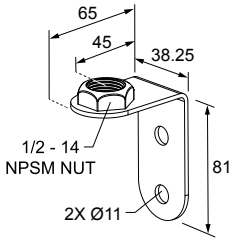
Hole center spacing: 20.0



LMBE12RA45

- Direct mounting of stand-off pipe, with common bracket type
- Zinc-plated steel
- 1/2-14 NPSM nut
- Mounting distance from the wall to the center of the 1/2-14 NPSM nut is 45 mm
- CAD Files: DXF, PDF, IGS, STP

Hole center spacing: 35.0



LMB Sealed Right-Angle Bracket

Model	Description	
LMB30RA - Black polycarbonate CAD Files: DXF, PDF, IGS, STP **LMB30RAC** - Gray polycarbonate CAD Files: DXF, PDF, IGS, STP	• **Direct-Mount Models** • Bracket kit with base, 30 mm adapter, set screw, fasteners, O-rings, and gaskets.	
LMBE12RA - Black polycarbonate CAD Files: DXF, PDF, IGS, STP **LMBE12RAC** - Gray polycarbonate CAD Files: DXF, PDF, IGS, STP	• **Pipe-Mount Models** • Bracket kit with base, ½-14 pipe adapter, set screw, fasteners, O-rings, and gaskets • For use with stand-off pipe (listed and sold separately)	

Elevated Mount System

Adapter/Cover

Adapter/Cover Model	Description	
SA-M30TE12 - Black acetal **SA-M30TE12C** - White UHMW	• Streamlined black acetal or white UHMW stand-off pipe adapter/cover • Adapter from 30 mm light base to ½ in. NPSM/DN15 pipe • Typically used for the CL50 Column Light, TL50 Tower Light, and K50 series • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	

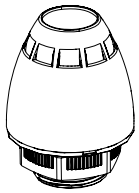
Pipes

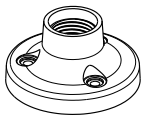
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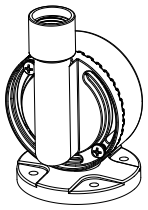
Black Anodized Aluminum, ½ in. NPT Pipe Models	Clear Anodized Aluminum, ½ in. NPT Pipe Models	Description
SOP-E12-150A, 150 mm (6 in) long	**SOP-E12-150AC**, 150 mm (6 in) long	• Elevated-use stand-off pipe • Threaded at both ends • Compatible with most industrial environments • CAD Files: ◦ **SOP-E12-150A**: DXF, PDF, IGS, STP ◦ **SOP-E12-300A**: DXF, PDF, IGS, STP ◦ **SOP-E12-600A**: DXF, PDF, IGS, STP ◦ **SOP-E12-900A**: DXF, PDF, IGS, STP
SOP-E12-300A, 300 mm (12 in) long	**SOP-E12-300AC**, 300 mm (12 in) long	
SOP-E12-600A, 600 mm (24 in) long	-	
SOP-E12-900A, 900 mm (36 in) long	**SOP-E12-900AC**, 900 mm (36 in) long	

304 Stainless Steel, ½ in. NPT Pipe Models	Description
SOP-E12-150SS, 150 mm (6 in) long	• Elevated-use stand-off pipe • Threaded at both ends • Compatible with most industrial environments • CAD Files: ◦ **SOP-E12-150x**: DXF, PDF, IGS, STP ◦ **SOP-E12-300x**: DXF, PDF, IGS, STP ◦ **SOP-E12-600x**: DXF, PDF, IGS, STP ◦ **SOP-E12-900x**: DXF, PDF, IGS, STP
SOP-E12-300SS, 300 mm (12 in) long	
SOP-E12-600SS, 600 mm (24 in) long	
SOP-E12-900SS, 900 mm (36 in) long	

Mounting Bases

Mounting Base Model	Description	
SA-E12M30 - Black acetal	• Streamlined black acetal or white UHMW mounting base adapter/cover • Adapter from ½ in. NPSM/DN15 pipe to 30 mm (1-3/16 in) drilled hole • Mounting hardware included • CAD files: DXF, PDF, IGS, STP	
SA-E12M30C - White UHMW		

Mounting Base Model	Description	
SA-F12-3	• Black polycarbonate • Elevated-use stand-off pipes (½ in, NPSM/DN15) • M4 mounting hardware and nitrile blend gasket included • CAD files: DXF, PDF, IGS, STP	

Mounting Base Model	Description	
SA-FFB12 - Black polycarbonate	• For use with ½ in. stand-off pipes • 110° rotation • Stainless steel hardware • CAD files: DXF, PDF, IGS, STP	
SA-FFB12C - Gray polycarbonate		

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