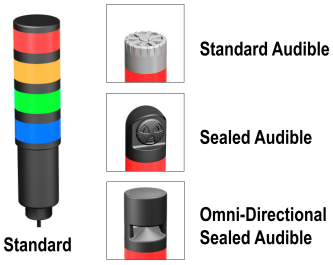
EZ-LIGHT® TL50HZ High Brightness Universal AC Voltage Tower Light

Datasheet

Multi-Color General-Purpose or Audible Indicators



- Similar in design and construction to standard TL50 Tower Lights, but more than 4 times brighter, improving visibility in areas with high levels of ambient light.
- Rugged, cost-effective, and easy-to-install multi-segment indicators
- Illuminated segments provide easy-to-see operator guidance and indication of equipment status
- Displays up to 5 colors
- Available in black or light gray housing
- Audible models available with standard, sealed, or omni-directional audible element
- Compact devices are completely self-contained - no controller needed
- 85 to 264 V ac operation
- No assembly required

Non-Audible Models

Model[1]	# of LED Colors	LED Function[2]	Connection[3]	Inputs
TL50HZR	1	Red	4-wire PVC cable	85-264 V ac
TL50HZGR	2	Green, Red		
TL50HZGYR	3	Green, Yellow, Red		
TL50HZBGYR	4	Blue, Green, Yellow, Red	5-wire PVC cable	
TL50HZWBGYR	5	White, Blue, Green, Yellow, Red	6-wire PVC cable	

NOTE: Audible Models are listed on the next page.

For additional models and colors, visit Banner Engineering website at *www.bannerengineering.com*.

1 Cabled Black models only are listed. For gray housing, add suffix C at the end of the model number (cabled models) or before the QP (pigtail models), for example, TL50HZRC or TL50HZRCQP.

2 The first color listed is the bottom color, going up in successive order. Contact the factory for other colors and color combinations. Five color options are only available in non-audible cabled models. Four color options are only available in audible cabled models.

3 Cabled models only are listed; mating cordset required for pigtail models (see *Cordsets* on page 4). For 150 mm (5.9 in) PVC pigtail with QD, add QP to the end of the model number, for example, TL50HZRQP.

Audible Models

Standard Audible Models[4]	# of LED Colors	LED Function[5]	Connection[6]	Inputs
TL50HZRA	1	Red	4-wire PVC cable	85-264 V ac
TL50HZGRA	2	Green, Red		
TL50HZGYRA	3	Green, Yellow, Red	5-wire PVC cable	
TL50HZBGYRA	4	Blue, Green, Yellow, Red	6-wire PVC cable	

Sealed Audible Models[4]			# of LED Colors	LED Function[5]	Connection[6]	Inputs
Continuous	Pulsed at 1.6 Hz	Staccato				
TL50HZRALS	TL50HZRALS3	TL50HZRALS4	1	Red	4-wire PVC cable	85-264 V ac
TL50HZGRALS	TL50HZGRALS3	TL50HZGRALS4	2	Green, Red		
TL50HZGYRALS	TL50HZGYRALS3	TL50HZGYRALS4	3	Green, Yellow, Red	5-wire PVC cable	
TL50HZBGYRALS	TL50HZBGYRALS3	TL50HZBGYRALS4	4	Blue, Green, Yellow, Red	6-wire PVC cable	

Omni-Directional Sealed Audible Models[4]			# of LED Colors	LED Function[5]	Connection[6]	Inputs
Continuous	Pulsed at 1.6 Hz	Staccato				
TL50HZRAOS	TL50HZRAOS3	TL50HZRAOS4	1	Red	4-wire PVC cable	85-264 V ac
TL50HZGRAOS	TL50HZGRAOS3	TL50HZGRAOS4	2	Green, Red		
TL50HZGYRAOS	TL50HZGYRAOS3	TL50HZGYRAOS4	3	Green, Yellow, Red	5-wire PVC cable	
TL50HZBGYRAOS	TL50HZBGYRAOS3	TL50HZBGYRAOS4	4	Blue, Green, Yellow, Red	6-wire PVC cable	

Omni-Directional Sealed Audible Models with Intensity Adjustment[4]			# of LED Colors	LED Function[5]	Connection[6]	Inputs
Continuous	Pulsed at 1.6 Hz	Staccato				
TL50HZRAOSI	TL50HZRAOS3I	TL50HZRAOS4I	1	Red	4-wire PVC cable	85-264 V ac
TL50HZGRAOSI	TL50HZGRAOS3I	TL50HZGRAOS4I	2	Green, Red		
TL50HZGYRAOSI	TL50HZGYRAOS3I	TL50HZGYRAOS4I	3	Green, Yellow, Red	5-wire PVC cable	
TL50HZBGYRAOSI	TL50HZBGYRAOS3I	TL50HZBGYRAOS4I	4	Blue, Green, Yellow, Red	6-wire PVC cable	

Specifications

Supply Voltage and Current
85–264 V ac; 50 or 60 Hz
Indicators—maximum current per LED color:

80 mA at 85 V ac
60 mA at 120 V ac
40 mA at 240 V ac
35 mA at 264 V ac

Standard Audible Alarm: 30 mA maximum current
Sealed Audible Alarm: 35 mA maximum current
Omni-Directional Sealed Audible Alarm: 45 mA maximum current

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Input Response Time
Indicator On/Off: 500 ms (maximum)

Connections
4-wire, 5-wire, or 6-wire 2 m (6.5 ft) integral cable; 4-pin or 5-pin 150 mm (6 in) PVC pigtail with QD, depending on model

Indicators
LEDs are independently selected; 1 to 5 colors (Green, Red, Yellow, Blue, White) depending on model

4 Cabled Black models only are listed. For gray housing, add suffix C at the end of the model number (cabled models) or before the QP (pigtail models), for example, TL50HZRC or TL50HZRCQP.
5 The first color listed is the bottom color, going up in successive order. Contact the factory for other colors and color combinations. Five color options are only available in non-audible cabled models. Four color options are only available in audible cabled models.
6 Cabled models only are listed; mating cordset required for pigtail models (see *Cordsets* on page 4). For 150 mm (5.9 in) PVC pigtail with QD, add QP to the end of the model number, for example, TL50HZRQP.

Audible Adjustment

Standard Audible Alarm: Unscrew the cover (up to 1.5 turns maximum) to adjust the audible intensity. (Do not exceed 1.5 turns or the cover may detach during operation.) For maximum intensity, rotate the center plug 180° counterclockwise to remove it.

Sealed Audible Alarm and Omni-Directional Sealed Audible Alarm with Intensity Adjustment: Rotate the front cover until the desired intensity is reached.

Omni-Directional Sealed Audible Alarm: No adjustment.

Leakage Current Immunity

500 µA

Application Note: The use of relay output PLC is recommended since there is no leakage current. Solid state output PLCs often have leakage current above 1 mA and, therefore, turn the light on in the off state. To counteract the leakage current, a shunt resistor must be used. A resistor must be applied from the neutral wire of the device to the hot wire of each channel of the device.

Operating Conditions

Non-Audible:−40 °C to +50 °C (−40 °F to +122 °F)

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

95% at +50 °C maximum relative humidity (non-condensing)

Vibration and Mechanical Shock

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

Environmental Rating

Non-Audible and Sealed Audible: IEC IP67

Standard Audible: IEC IP50

Certifications

Audible Alarm

Standard Audible Alarm: 2.7 kHz ± 500 Hz oscillation frequency; maximum intensity 92 dB at 1 m (3.3 ft) (typical)

Sealed Audible Alarm: 2.9 kHz ± 250 Hz oscillation frequency; maximum intensity 94 dB at 1 m (3.3 ft) (typical)

Omni-Directional Sealed Audible Alarm: 2.1 kHz ± 250 Hz oscillation frequency; maximum intensity 99 dB at 1 m (3.3 ft) (typical)

Omni-Directional Sealed Audible Alarm with Intensity Adjustment: 2.1 kHz ± 250 Hz oscillation frequency; maximum intensity 95 dB at 1 m (3.3 ft) (typical)

Construction

Bases and Covers: ABS

Light Segment: Polycarbonate

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.

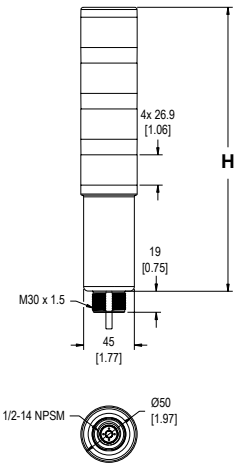
Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to *http://www.bannerengineering.com*.

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

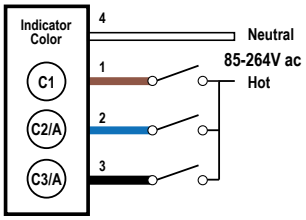
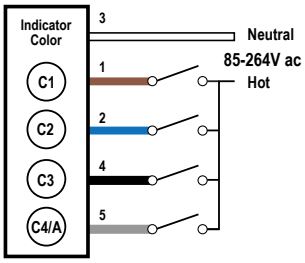
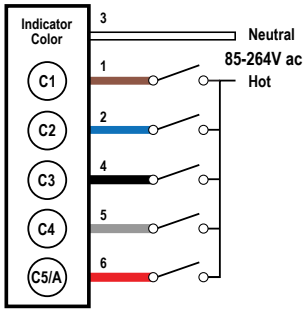
Dimensions



# of Colors	Tower Height (H)			
	Non-Audible	Standard Audible*	Sealed Audible	Omni-Directional Sealed Audible
1	130.2 mm (5.1 in)	161.0 mm (6.3 in)	184.1 mm (7.2 in)	198.1 mm (7.8 in)
2	170.9 mm (6.7 in)	201.7 mm (7.9 in)	224.8 mm (8.9 in)	238.8 mm (9.4 in)
3	211.6 mm (8.3 in)	242.4 mm (9.5 in)	265.5 mm (10.5 in)	279.5 mm (11.0 in)
4	252.3 mm (9.9 in)	283.1 mm (11.1 in)	306.2 mm (12.1 in)	320.2 mm (12.6 in)
5	293.0 mm (11.5 in)	-	-	-

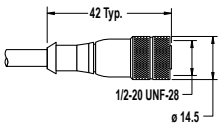
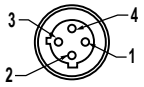
* Tower height (H) with top unscrewed approximately 3.5 mm to allow sound to escape

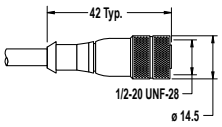
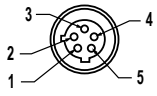
Wiring Diagram

4-wire	5-wire	6-wire
		
1 = Brown 2 = Blue 3 = Black 4 = White C1 = Color 1 C2 = Color 2 C3 = Color 3 A = Audible	1 = Brown 2 = Blue 3 = White 4 = Black 5 = Gray C1 = Color 1 C2 = Color 2 C3 = Color 3 C4 = Color 4 A = Audible	1 = Brown 2 = Blue 3 = White 4 = Black 5 = Gray 6 = Red C1 = Color 1 C2 = Color 2 C3 = Color 3 C4 = Color 4 C5 = Color 5 A = Audible

Accessories

Cordsets

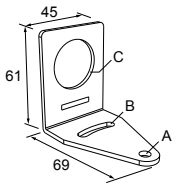
4-Pin Micro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout (Female)
MQAC2-406	1.83 m (6 ft)	Straight		 1 = Brown 2 = Blue 3 = Black 4 = White
MQAC2-415	4.57 m (15 ft)			
MQAC2-430	9.14 m (30 ft)			

5-Pin Micro-Style Cordsets				
Model	Length	Style	Dimensions	Pinout
MQAC2-506	1.83 m (6 ft)	Straight		 1 = Brown 2 = Blue 3 = White 4 = Black 5 = Gray
MQAC2-515	4.57 m (15 ft)			
MQAC2-530	9.14 m (30 ft)			

Mounting Brackets

SMB30A

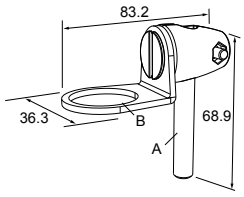
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel



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

SMB30FA

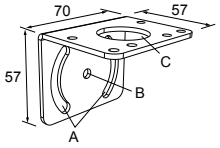
- Swivel bracket with tilt and pan movement for precise adjustment
- Mounting hole for 30 mm sensor
- 12-ga. 304 stainless steel
- Easy sensor mounting to extrude rail T-slot
- Metric and inch size bolt available



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

SMB30MM

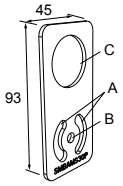
- 12-ga. stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor



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

SMBAMS30P

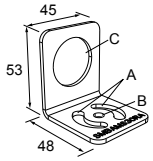
- Flat SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. 300 series stainless steel



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

SMBAMS30RA

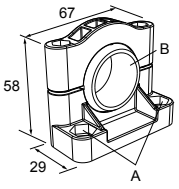
- Right-angle SMBAMS series bracket
- 30 mm hole for mounting sensors
- Articulation slots for 90°+ rotation
- 12-ga. (2.6 mm) cold-rolled steel



Hole center spacing: A=26.0, A to B=13.0
Hole size: A=26.8 x 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



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

All measurements are listed in millimeters (inches), unless noted otherwise.

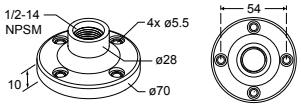
LMB Sealed Right-Angle Bracket

Model	Description	Construction	
LMB30RA	Direct-Mount Models: Bracket kit with base, 30 mm adapter, set screw, fasteners, o-rings, and gaskets	Black polycarbonate	
LMB30RAC		Gray polycarbonate	
LMBE12RA	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)	Black polycarbonate	
LMBE12RAC		Gray polycarbonate	

Elevated Mount System

<table>
<tr><th colspan="3">Model</th><th>Features</th><th>Components</th></tr>
<tr><td colspan="3">SA-M30TE12 - Black Acetal</td><td rowspan="2">• Streamlined black acetal or white UHMW stand-off pipe adapter/cover
• Connects between 30 mm light base and ½ in. NPSM/DN15 pipe
• Mounting hardware included</td><td rowspan="2">  </td></tr>
<tr><td colspan="3">SA-M30TE12C - White UHMW</td></tr>
<tr><td>Polished 304 Stainless Steel</td><td>Black Anodized Aluminum</td><td>Clear Anodized Aluminum</td><td rowspan="4">• Elevated-use stand-off pipe (½ in. NPSM/DN15)
• Polished 304 stainless steel, black anodized aluminum, or clear anodized aluminum surface
• ½ in. NPT thread at both ends
• Compatible with most industrial environments</td><td rowspan="4">  </td></tr>
<tr><td>SOP-E12-150SS
150 mm (6 in) long</td><td>SOP-E12-150A
150 mm (6 in) long</td><td>SOP-E12-150AC
150 mm (6 in) long</td></tr>
<tr><td>SOP-E12-300SS
300 mm (12 in) long</td><td>SOP-E12-300A
300 mm (12 in) long</td><td>SOP-E12-300AC
300 mm (12 in) long</td></tr>
<tr><td>SOP-E12-900SS
900 mm (36 in) long</td><td>SOP-E12-900A
900 mm (36 in) long</td><td>SOP-E12-900AC
900 mm (36 in) long</td></tr>
<tr><td colspan="3">SA-E12M30 - Black Acetal</td><td rowspan="2">• Streamlined black acetal or white UHMW mounting base adapter/cover
• Connects between ½ in. NPSM/DN15 pipe and 30 mm (1-3/16 in) drilled hole
• Mounting hardware included</td><td rowspan="2">  </td></tr>
<tr><td colspan="3">SA-E12M30C - White UHMW</td></tr>
</table>

Pipe Mounting Flange

<table>
<tr><th colspan="4">Pipe Mounting Flange</th></tr>
<tr><th>Model</th><th>Features</th><th>Construction</th><th></th></tr>
<tr><td>SA-F12</td><td>• For use elevated stand-off pipes (½ in, NPSM/DN15)
• M5 mounting hardware and nitrile gasket included</td><td>Die-cast zinc base with black paint</td><td> 
</td></tr>
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Banner Engineering Corp. Limited Warranty

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

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

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