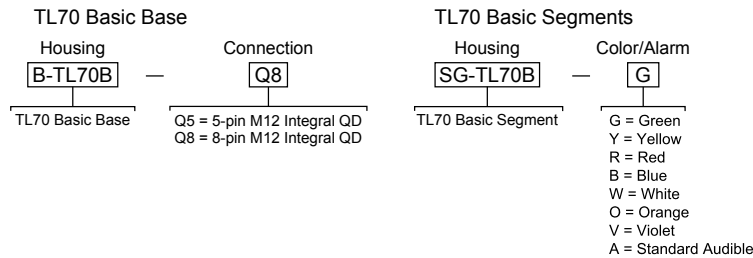# TL70 Basic Modular Tower Light Instruction Manual

Features

Banner's TL70 Basic Tower Light is a 70 mm, modular LED indicator with 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 indicator segments, or four indicator segments 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
- Simple and fast connection with M12 quick-disconnect connector

Models

TL70 Basic Base

Housing	Connection
B-TL70B	Q8
TL70 Basic Base	Q5 = 5-pin M12 Integral QD Q8 = 8-pin M12 Integral QD

TL70 Basic Segments

Housing	Color/Alarm
SG-TL70B	G
TL70 Basic Segment	G = Green Y = Yellow R = Red B = Blue W = White O = Orange V = Violet A = Standard Audible

Select the 5-pin base for tower light configurations of up to 4 modules. Select the 8-pin base for tower light configurations of up to 5 modules.
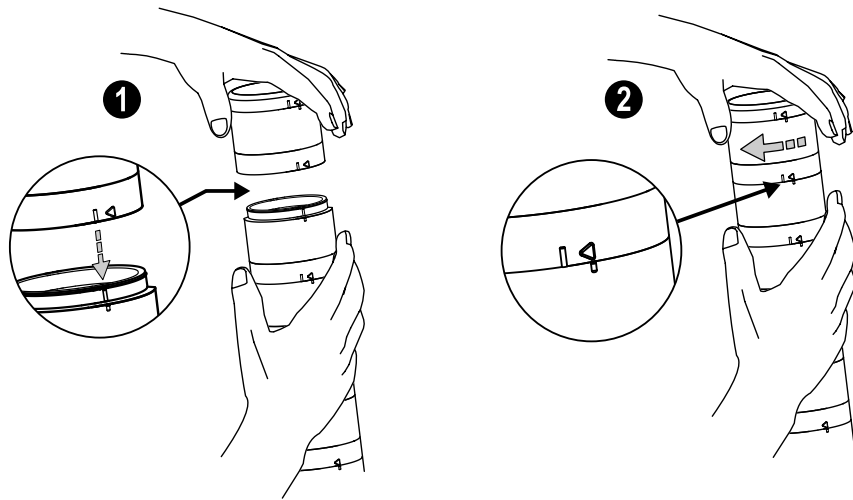- Example base model number: B-TL70B-Q5
- Example light segment model number: SG-TL70B-G
- Example audible segment model number: SG-TL70B-A

TL70 Basic Pre-Assembled Models

Part Number	Model
814501	TL70B-GYRQ
814502	TL70B-GYRAQ
814503	TL70B-BGYRQ
814504	TL70B-BGYRAQ
814505	TL70B-WBGYRQ

Assembling the Modules

To assemble the modules:

1. Align the notches on each module and press together.
2. Rotate the top module clockwise to lock into place (notches shown in the locked position).

Wiring

Diagram	5-Pin Pinout	8-Pin Pinout
	  1 = Brown (Position 2) 2 = White (Position 3) 3 = Blue (Ground) 4 = Black (Position 1) 5 = Gray (Position 4)	 1 = White (Position 3) 2 = Brown (Position 2) 3 = Green (Not used) 4 = Yellow (Position 5) 5 = Gray (Position 4) 6 = Pink (Position 1) 7 = Blue (Ground) 8 = Red (Not used)

Flash/Pulse Control

The DIP switch is located in the TL70B base segment. DIP switch numbers 1-5 correlate to Positions 1-5 (see diagram above). DIP switch number 7 sets a global speed for the flashing function. DIP switch numbers 6 and 8 are not used.

Diagram	DIP Switch Number	Function	Light Segment		Audible Segment	
			On	Off	On	Off
	1-5	Toggle Flash ON/OFF	Flash	Steady	Pulse	Continuous
	7	Toggle Flash Speed	1.5 Hz	3 Hz	1.5 Hz	3 Hz

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Adjustable audible baffle - for audible models only

Adjustable Baffle
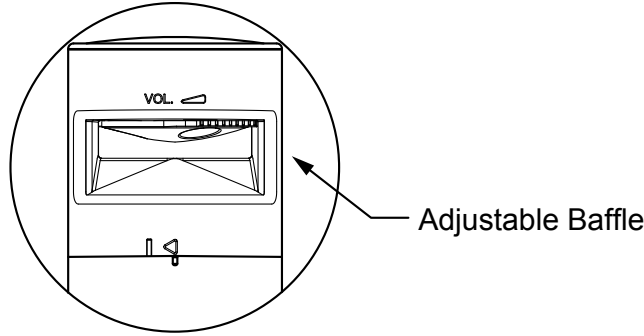
Specifications

Supply Voltage and Current

12 V DC to 30 V DC

Indicator Color or Audible Model	Maximum Current (mA)		
	at 12 V DC	at 24 V DC	at 30 V DC
Blue, White	204	102	82
Red, Yellow, Green	141	71	57
Standard Audible	33	17	14

Supply Protection Circuitry

Protected against transient voltages

Indicators

1 to 5 colors depending on model (Green, Red, Yellow, Blue, and White)

Flash Rates: 1.5 Hz ±10% and 3 Hz ±10%

Indicator Response Time

Off Response: 25 µs (maximum) at 12 V DC to 30 V DC

On Response: 2 ms (maximum) at 12 V DC to 30 V DC

Connections

Integral 5-pin M12 male quick-disconnect connector, integral 8-pin M12 male quick-disconnect connector

Operating Conditions

–40 °C to +50 °C (–40 °F to +122 °F)

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

Environmental Rating

IP65

Audible Alarm

2.7 kHz ± 250 Hz oscillation frequency; maximum intensity (typical) 104 dB at 1 m (3.3 ft)

Audible Adjustment

Rotate the audible baffle until the desired volume is reached

Typical Reduction in Sound Intensity with Audible Adjustment (maximum to minimum): 13 dB

Construction

Bases, Segments, Covers: polycarbonate

Vibration and Mechanical Shock

Vibration: 10 Hz to 55 Hz, 0.5 mm peak-to-peak amplitude per IEC 60068-2-6

Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27

Indicator Characteristics

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Color Coordinates[1]		Lumen Output (Typical at 25 °C)
		x	y	
Green	525 nm	–	–	67
Red	625 nm	–	–	24
Yellow	590 nm	–	–	55
Blue	475 nm	–	–	25
White	5000 K	–	–	107

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	1.0	30	0.5

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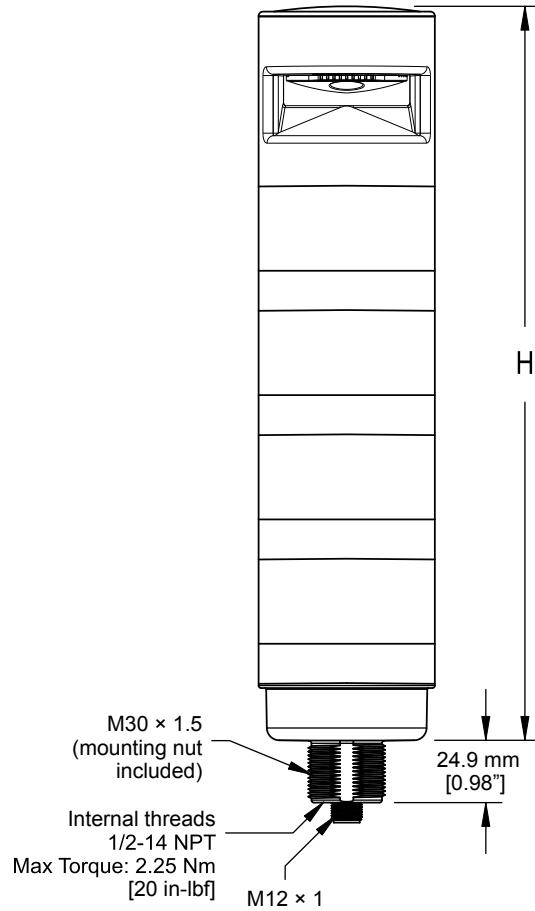
Certifications

CE

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

UKCA

Turck Banner LTD Blenheim House
Blenheim Court
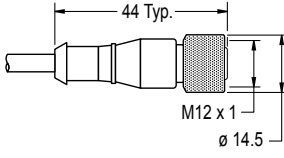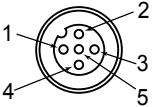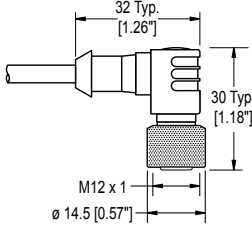Wickford, Essex SS11 8YT
GREAT BRITAIN

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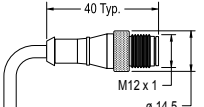
Dimensions

M30 × 1.5
(mounting nut
included)

Internal threads
1/2-14 NPT
Max Torque: 2.25 Nm
[20 in-lbf]

M12 × 1

24.9 mm
[0.98"]

H
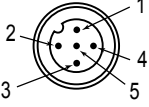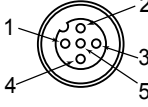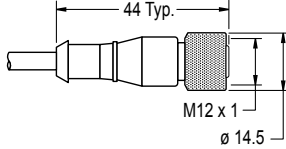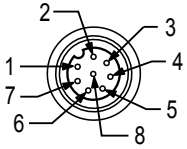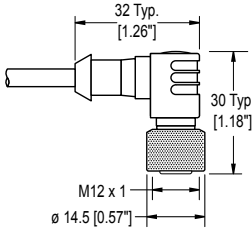
Model	Height (H)
1 light module	87.6 mm (3.45 in)
1 light module, 1 audible module	144.3 mm (5.68 in)
2 light modules	137.3 mm (5.41 in)
2 light modules, 1 audible module	194 mm (7.64 in)
3 light modules	187 mm (7.36 in)
3 light modules, 1 audible module	243.7 mm (9.59 in)
4 light modules	236.7 mm (9.32 in)
4 light modules, 1 audible module	293.4 mm (11.55 in)
5 light modules	286.4 mm (11.28 in)

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Accessories

Cordsets

5-Pin Threaded M12 Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC1-501.5	0.5 m (1.5 ft)	Straight		
MQDC1-503	0.9 m (2.9 ft)			
MQDC1-506	2 m (6.5 ft)			
MQDC1-515	5 m (16.4 ft)			
MQDC1-530	9 m (29.5 ft)			
MQDC1-560	18 m (59 ft)			
MQDC1-5100	31 m (101.7 ft)			1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray
MQDC1-506RA	2 m (6.5 ft)	Right-Angle		
MQDC1-515RA	5 m (16.4 ft)			
MQDC1-530RA	9 m (29.5 ft)			
MQDC1-560RA	19 m (62.3 ft)			

5-Pin Threaded M12 Cordsets—Double Ended					
Model	Length	Style	Dimensions	Pinout (Male)	Pinout (Female)
MQDEC-501SS	0.31 m (1.02 ft)	Male Straight/ Female Straight			
MQDEC-503SS	0.91 m (2.99 ft)				
MQDEC-506SS	1.83 m (6 ft)				
MQDEC-512SS	3.66 m (12 ft)			1 = Brown 2 = White 3 = Blue	4 = Black 5 = Gray
MQDEC-515SS	5 m (16.4 ft)				
MQDEC-530SS	9 m (29.5 ft)				
MQDEC-550SS	15 m (49.2 ft)				

8-Pin Threaded M12 Cordsets—Single Ended				
Model	Length	Style	Dimension	Pinout (Female)
MQDC1-803	1 m (3.2 ft)	Straight		
MQDC1-806	2 m (6.5 ft)			
MQDC1-815	5 m (16.4 ft)			
MQDC1-830	9 m (29.5 ft)			
MQDC1-850	15 m (49.2 ft)			
MQDC1-806RA	2 m (6.5 ft)	Right-Angle		1 = White 2 = Brown 3 = Green 4 = Yellow
MQDC1-815RA	5 m (16.4 ft)			5 = Gray 6 = Pink 7 = Blue 8 = Red
MQDC1-830RA	9 m (29.5 ft)			
MQDC1-850RA	15 m (49.2 ft)			

	8-Pin Threaded M12 Cordsets—Double Ended			
Model	**Length**	**Style**	**Dimensions**	**Pinout**
MQDEC1-803SS	1 m (3.28 ft)	Male Straight / Female Straight		1 = White 2 = Brown 3 = Green 4 = Yellow 5 = Gray 6 = Pink 7 = Blue 8 = Red
MQDEC1-806SS	2 m (6.56 ft)			
MQDEC1-810SS	3 m (9.84 ft)			
MQDEC1-815SS	5 m (16.4 ft)			
MQDEC1-830SS	9 m (29.5 ft)			
MQDEC1-850SS	15 m (49.2 ft)			
MQDEC1-8100SS	30.5 m (100 ft)			
MQDEC1-8200SS	61 m (200 ft)			

Mounting Brackets

All measurements are listed in millimeters, unless noted otherwise.

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

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

SSA-MBK-EEC1
- Single 30 mm hole
- 8 gauge steel, black finish (powder coat)
- Front surface for customer-applied labels

Hole size: A = ø 7 , B = ø 30

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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

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

Hole center spacing: 35.0

Elevated Mount System

Model			Features	Components
SA-M30 - Black Polycarbonate			• Streamlined black PC or Gray PC thread cover • Covers M30 thread on the light base • Mounting hardware included	
Polished 304 Stainless Steel	**Black Anodized Aluminum**	**Clear Anodized Aluminum**	• 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	
SOP-E12-150SS 150 mm (6 in) long	SOP-E12-150A 150 mm (6 in) long	SOP-E12-150AC 150 mm (6 in) long		
SOP-E12-300SS 300 mm (12 in) long	SOP-E12-300A 300 mm (12 in) long	SOP-E12-300AC 300 mm (12 in) long		
SOP-E12-900SS 900 mm (36 in) long	SOP-E12-900A 900 mm (36 in) long	SOP-E12-900AC 900 mm (36 in) long		
SA-E12M30 - Black Acetal			• 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	

Pipe Mounting Flange			
Model	**Features**	**Construction**	
SA-F12	• Elevated-use stand-off pipes (½ in, NPSM/DN15) • M5 mounting hardware and nitrile gasket included	Die-cast zinc base with black paint	
SA-F12-3	• Elevated-use stand-off pipes (½ in, NPSM/DN15) • M4 mounting hardware and nitrile blend gasket included	Black Polycarbonate	

Foldable Mounting Brackets			
Model	**Features**	**Construction**	
SA-FFB12	• For use with 1/2 inch stand-off pipes • Stainless steel hardware	Black polycarbonate	

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	
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	

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