

# TL70 Modular Tower Light



## Datasheet

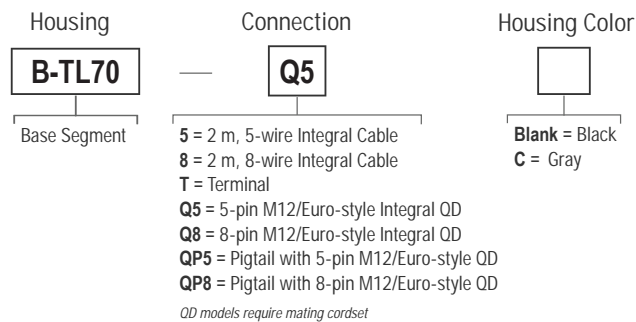


Banner's TL70 Tower Light is a 70 mm, modular LED indicator with extremely bright and uniform light. The modularity gives the user flexibility to customize tower lights as needed and change positions in the field. The TL70 is also available preassembled for easy installation.

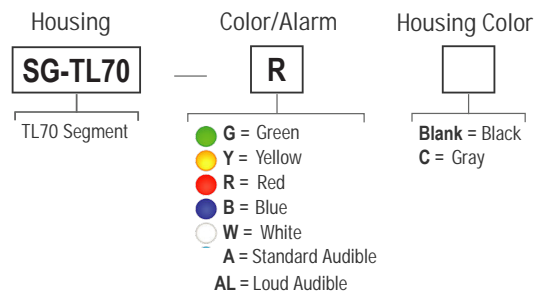
- Light segments have user-selectable solid ON or flashing
- Up to five colors plus audible in one device
- Rugged, water-resistant IP65 housing with UV-stabilized material
- Bright, uniform indicator segments appear gray when off to eliminate false indication from ambient light
- Several connection options to choose from including M12/Euro-style quick disconnect, cabled, and terminal-wired

### Models Key

#### TL70 Base



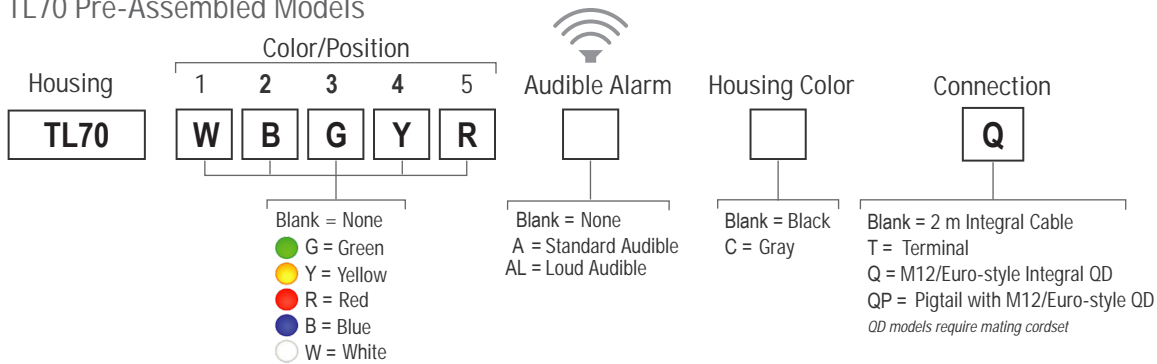
#### TL70 Segments



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 6 modules.

- Example base model number: B-TL70-Q5
- Example light segment model number: SG-TL70-G
- Example audible segment model number: SG-TL70-A

### TL70 Pre-Assembled Models



- Example pre-assembled model number: TL70GYRAQ.

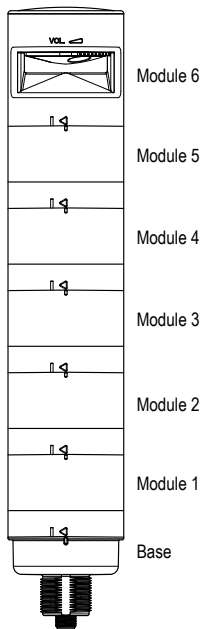


Use a 5-pin cordset for 1 to 4 modules. Use a 8-pin cordset for 5 or 6 modules.

## Configuring the Modules



Turn on the appropriate DIP switch to set the order of the components, counting up from the tower light's base.



| Assembly Options                      |          | DIP Switches |    |    |    |    |    |   |   |
|---------------------------------------|----------|--------------|----|----|----|----|----|---|---|
|                                       |          | 1            | 2  | 3  | 4  | 5  | 6  | 7 | 8 |
| Light and Standard Audible Components | Module 1 | ON           |    |    |    |    |    |   |   |
|                                       | Module 2 |              | ON |    |    |    |    |   |   |
|                                       | Module 3 |              |    | ON |    |    |    |   |   |
|                                       | Module 4 |              |    |    | ON |    |    |   |   |
|                                       | Module 5 |              |    |    |    | ON |    |   |   |
|                                       | Module 6 |              |    |    |    |    | ON |   |   |

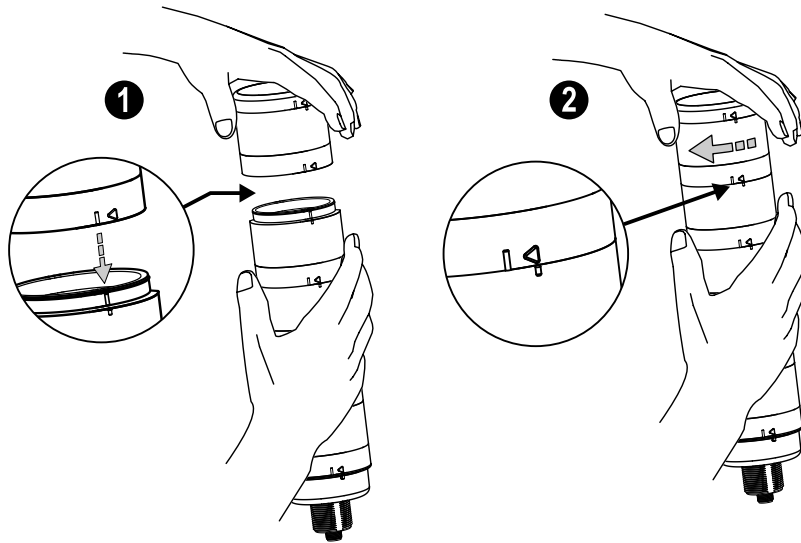
| Light Module Flash Rate | 3 Hz      |  |  |  |  |  |  | ON  | OFF |
|-------------------------|-----------|--|--|--|--|--|--|-----|-----|
|                         | 1.5 Hz    |  |  |  |  |  |  | ON  | ON  |
|                         | Solid On* |  |  |  |  |  |  | OFF | OFF |

| Standard Audible Module Settings | Pulse 1.5 Hz      |  |  |  |  |  |  | ON  | OFF |
|----------------------------------|-------------------|--|--|--|--|--|--|-----|-----|
|                                  | Chirp Alarm       |  |  |  |  |  |  | ON  | ON  |
|                                  | Siren Alarm       |  |  |  |  |  |  | OFF | ON  |
|                                  | Continuous Alarm* |  |  |  |  |  |  | OFF | OFF |

| Assembly Options             |                     | DIP Switches |   |   |   |   |   |     |     |     |     |
|------------------------------|---------------------|--------------|---|---|---|---|---|-----|-----|-----|-----|
|                              |                     | 1            | 2 | 3 | 4 | 5 | 6 | 7   | 8   | 9   | 10  |
| Loud Audible Module Settings | Pulse 1.5 Hz        |              |   |   |   |   |   | ON  | OFF |     |     |
|                              | Chirp Alarm         |              |   |   |   |   |   | ON  | ON  |     |     |
|                              | Siren Alarm         |              |   |   |   |   |   | OFF | ON  |     |     |
|                              | Continuous Alarm*   |              |   |   |   |   |   | OFF | OFF |     |     |
|                              | Low Intensity       |              |   |   |   |   |   |     |     | OFF | OFF |
|                              | Med. Intensity      |              |   |   |   |   |   |     |     | ON  | OFF |
|                              | Med./Loud Intensity |              |   |   |   |   |   |     |     | OFF | ON  |
|                              | Loud Intensity      |              |   |   |   |   |   |     |     | ON  | ON  |

\* Factory default setting

## Assembling the Modules



To assemble the modules:

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

## Specifications

Supply Voltage and Current  
12 to 30 V dc

| Indicator Color or Audible Model | Maximum Current (mA) |            |
|----------------------------------|----------------------|------------|
|                                  | at 12 V dc           | at 30 V dc |
| Blue, Green, White               | 420                  | 145        |
| Red, Yellow                      | 285                  | 120        |
| Standard Audible                 | 30                   | 30         |
| Loud Audible (Intensity 1)       | 18                   | 14         |
| Loud Audible (Intensity 2)       | 40                   | 28         |
| Loud Audible (Intensity 3)       | 160                  | 70         |
| Loud Audible (Intensity 4)       | 350                  | 110        |

Supply Protection Circuitry  
Protected against transient voltages

Indicator Response Time  
Off Response: 150  $\mu$ s (maximum) at 12 to 30 V dc  
On Response: 180 ms (maximum) at 12 V dc; 50 ms (maximum) at 30 V dc

Alarm  
Standard Audible: 2.6 kHz  $\pm$  250 Hz oscillation frequency; maximum intensity (typical) 92 dB at 1 m (3.3 ft)  
Loud Audible: 2.6 kHz  $\pm$  250 Hz oscillation frequency; maximum intensity (typical) at 1 m (3.3 ft) (see table)

| DIP Switches |     | Max I Intensity (Loud Audible) |
|--------------|-----|--------------------------------|
| 9            | 10  |                                |
| ON           | ON  | Intensity 4: 101 dB            |
| OFF          | ON  | Intensity 3: 99 dB             |
| ON           | OFF | Intensity 2: 92 dB             |
| OFF          | OFF | Intensity 1: 85 dB             |

Standard Audible Adjustment  
Mechanical adjustment: Rotate the cover until the desired volume is reached  
Change in sound intensity from fully open to fully closed is 8 dB

Loud Audible Adjustment  
Electronic adjustment: Select the desired volume using DIP switches 9 and 10  
Change in sound intensity from maximum to minimum is 16 dB

Construction  
Bases, segments, covers: polycarbonate

Indicators  
1 to 5 colors depending on model: Green, Red, Yellow, Blue, and White  
Flash rates: 1.5 Hz  $\pm$  10% and 3 Hz  $\pm$  10%  
LEDs are independently selected

Terminal Block Model  
14 to 28 AWG wire

Connections  
5-pin M12/Euro-style quick disconnect connector, 8-pin M12/Euro-style quick disconnect connector, 150 mm (5.9 in) PVC cable with an M12/Euro-style quick disconnect connector, terminal block, or 2 m (6.5 ft) unterminated cable, depending on model

Segment Lumens

| Color  | Typical Wavelength or Color Temp | Typical Intensity (lm) |
|--------|----------------------------------|------------------------|
| Green  | 525 nm                           | 92                     |
| Red    | 625 nm                           | 40                     |
| Yellow | 590 nm                           | 22                     |
| Blue   | 470 nm                           | 32                     |
| White  | 5000 K                           | 125                    |

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                                    |

Operating Conditions

-40 °C to +50 °C (-40 °F to +122 °F)  
 95% at +50 °C maximum relative humidity (non-condensing)

Environmental Rating

IEC IP65

Vibration and Mechanical Shock

Vibration 10 Hz to 55 Hz 0.5 mm p-p amplitude per IEC 60068-2-6  
 Shock 15G 11 ms duration, half sine wave per IEC 60068-2-27

Certifications

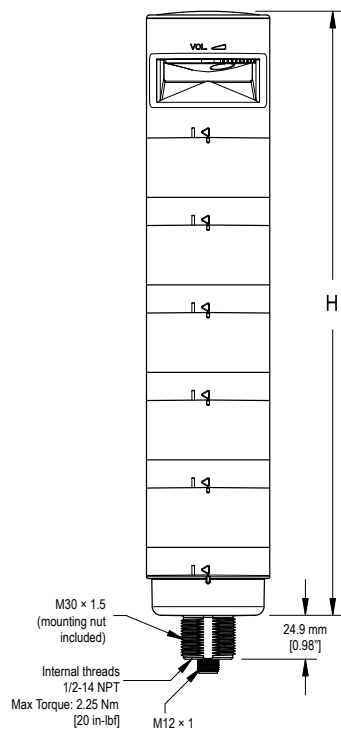
Standard Audible:



Loud Audible:



Dimensions



| 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) |
| 5 light modules, 1 audible module | 343.1 mm (13.5 in)  |

## Wiring Diagrams

| Sourcing (PNP) Input | Sinking (NPN) Input | Euro-style Male Pinouts | Key   |
|----------------------|---------------------|-------------------------|---|
|                      |                     |                         | <p>1 = brown<br/>2 = white<br/>3 = blue<br/>4 = black<br/>5 = gray</p> <p>M1 = Module 1<br/>M2 = Module 2<br/>M3 = Module 3<br/>M4 = Module 4</p>   |
|                      |                     |                         | <p>1 = white<br/>2 = brown<br/>3 = green<br/>4 = yellow<br/>5 = gray<br/>6 = pink<br/>7 = blue<br/>8 = red</p> <p>M1 = Module 1<br/>M2 = Module 2<br/>M3 = Module 3<br/>M4 = Module 4<br/>M5 = Module 5<br/>M6 = Module 6</p> |

| Wiring Terminal Block | Terminal Block Key   |
|-----------------------|--|
|                       | <p>0 = dc common<br/>1 = Module 1<br/>2 = Module 2<br/>3 = Module 3<br/>4 = Module 4<br/>5 = Module 5<br/>6 = Module 6</p> |

## Accessories

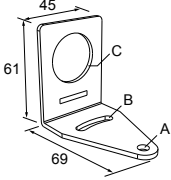
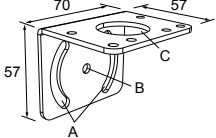
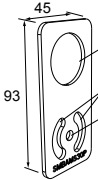
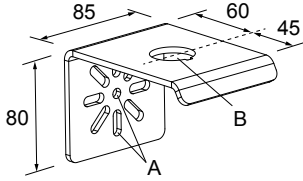
### Cordsets

| 5-Pin Threaded M12/Euro-Style Cordsets—Single Ended |                 |             |            |  |
|---|-----------------|-------------|------------|--|
| Model   | Length          | Style       | Dimensions | Pinout (Female)  |
| MQDC1-501.5   | 0.50 m (1.5 ft) | Straight    |            | <p>1 = Brown<br/>2 = White<br/>3 = Blue<br/>4 = Black<br/>5 = Gray</p> |
| MQDC1-506   | 1.83 m (6 ft)   |             |            |  |
| MQDC1-515   | 4.57 m (15 ft)  |             |            |  |
| MQDC1-530   | 9.14 m (30 ft)  |             |            |  |
| MQDC1-506RA   | 1.83 m (6 ft)   | Right-Angle |            |  |
| MQDC1-515RA   | 4.57 m (15 ft)  |             |            |  |
| MQDC1-530RA   | 9.14 m (30 ft)  |             |            |  |

| 8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield |                |             |            |  |
|---|----------------|-------------|------------|--|
| Model   | Length         | Style       | Dimensions | Pinout (Female)  |
| MQDC2S-806  | 1.83 m (6 ft)  | Straight    |            | <p>1 = White<br/>2 = Brown<br/>3 = Green<br/>4 = Yellow<br/>5 = Gray<br/>6 = Pink<br/>7 = Blue<br/>8 = Red</p> |
| MQDC2S-815  | 4.57 m (15 ft) |             |            |  |
| MQDC2S-830  | 9.14 m (30 ft) |             |            |  |
| MQDC2S-850  | 15.2 m (50 ft) |             |            |  |
| MQDC2S-806RA  | 1.83 m (6 ft)  | Right-Angle |            |  |
| MQDC2S-815RA  | 4.57 m (15 ft) |             |            |  |
| MQDC2S-830RA  | 9.14 m (30 ft) |             |            |  |
| MQDC2S-850RA  | 15.2 m (50 ft) |             |            |  |




All measurements are listed in millimeters, unless noted otherwise.

Mounting Brackets

|   |  |
|---|--|
| <p><b>SMB30A</b></p> <ul style="list-style-type: none"> <li>• Right-angle bracket with curved slot for versatile orientation</li> <li>• Clearance for M6 (¼ in) hardware</li> <li>• Mounting hole for 30 mm sensor</li> <li>• 12-ga. stainless steel</li> </ul>  <p>Hole center spacing: A to B=40<br/>Hole size: A=∅ 6.3, B= 27.1 x 6.3, C=∅ 30.5</p> | <p><b>SMB30MM</b></p> <ul style="list-style-type: none"> <li>• 12-ga. stainless steel bracket with curved mounting slots for versatile orientation</li> <li>• Clearance for M6 (¼ in) hardware</li> <li>• Mounting hole for 30 mm sensor</li> </ul>  <p>Hole center spacing: A = 51, A to B = 25.4<br/>Hole size: A = 42.6 x 7, B = ∅ 6.4, C = ∅ 30.1</p> |
| <p><b>SMBAMS30P</b></p> <ul style="list-style-type: none"> <li>• Flat SMBAMS series bracket</li> <li>• 30 mm hole for mounting sensors</li> <li>• Articulation slots for 90° + rotation</li> <li>• 12-ga. 300 series stainless steel</li> </ul>  <p>Hole center spacing: A=26.0, A to B=13.0<br/>Hole size: A=26.8 x 7.0, B=∅ 6.5, C=∅ 31.0</p>        | <p><b>SSA-MBK-EEC1</b></p> <ul style="list-style-type: none"> <li>• Single 30 mm hole</li> <li>• 8 gauge steel, black finish (powder coat)</li> <li>• Front surface for customer applied labels</li> </ul>  <p>Hole size: A = ∅ 7 , B = ∅ 30</p>  |

All measurements are listed in millimeters, unless noted otherwise.

Elevated Mount System

| Model                                |                                     |                                      | Features  | Components  |
|--------------------------------------|-------------------------------------|--------------------------------------|---|---|
| SA-M30 - Black Polycarbonate         |                                     |                                      | <ul style="list-style-type: none"> <li>• Streamlined black PC or Gray PC thread cover</li> <li>• Covers M30 thread on the light base</li> <li>• Mounting hardware included</li> </ul>   |  |
| SA-M30C - Gray Polycarbonate         |                                     |                                      |   |   |
| Polished 304 Stainless Steel         | Black Anodized Aluminum             | Clear Anodized Aluminum              | <ul style="list-style-type: none"> <li>• Elevated-use stand-off pipe (½ in. NPSM/DN15)</li> <li>• Polished 304 stainless steel, black anodized aluminum, or clear anodized aluminum surface</li> <li>• ½ in. NPT thread at both ends</li> <li>• Compatible with most industrial environments</li> </ul> |  |
| SOP-E12-150SS<br>150 mm (6 in) long  | SOP-E12-150A<br>150 mm (6 in) long  | SOP-E12-150AC<br>150 mm (6 in) long  |   |   |
| SOP-E12-300SS<br>300 mm (12 in) long | SOP-E12-300A<br>300 mm (12 in) long | SOP-E12-300AC<br>300 mm (12 in) long |   |   |
| SOP-E12-900SS<br>900 mm (36 in) long | SOP-E12-900A<br>900 mm (36 in) long | SOP-E12-900AC<br>900 mm (36 in) long |   |   |
| SA-E12M30 - Black Acetal             |                                     |                                      | <ul style="list-style-type: none"> <li>• Streamlined black acetal or white UHMW mounting base adapter/cover</li> <li>• Connects between ½ in. NPSM/DN15 pipe and 30 mm (1-3/16 in) drilled hole</li> <li>• Mounting hardware included</li> </ul>  |  |
| SA-E12M30C - White UHMW              |                                     |                                      |   |   |

| Pipe Mounting Flange |  |                                     |  |
|----------------------|--|-------------------------------------|--|
| Model                | Features   | Construction                        |  |
| SA-F12               | <ul style="list-style-type: none"> <li>For use elevated stand-off pipes (½ in, NPSM/DN15)</li> <li>M5 mounting hardware and nitrile gasket included</li> </ul> | Die-cast zinc base with black paint |  |

| Foldable Mounting Brackets |   |                     |  |
|----------------------------|---|---------------------|--|
| Model                      | Features  | Construction        |  |
| SA-FFB12                   | <ul style="list-style-type: none"> <li>For use with 1/2 inch stand-off pipes</li> <li>Stainless steel hardware</li> </ul> | Black polycarbonate |  |
| SA-FFB12C                  |   | Gray polycarbonate  |  |

### LMB Sealed Right-Angle Brackets

| 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  |  |

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