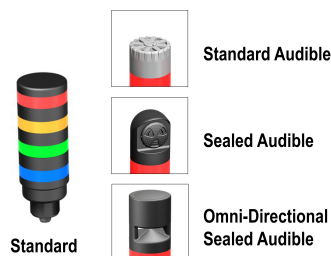


# TL50C Compact Tower Light



## Datasheet

### Multi-Color General-Purpose or Audible Indicators



- Bright, uniform lighted segments at only half the height of the standard TL50 models
- Rugged, cost-effective, and easy-to-install multi-segment indicators
- Illuminated segments provide easy-to-see operator guidance and indication of equipment status
- Up to 7 stacked colors available
- 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
- 12 V dc to 30 V dc or 24 V ac operation
- No assembly required

## Models

| Non-Audible Models <sup>1</sup> | # of LED Colors | LED Colors <sup>2</sup>         | Connection <sup>3</sup>                        |
|---------------------------------|-----------------|---------------------------------|------------------------------------------------|
| TL50CRQ                         | 1               | Red                             | Integral 4-pin M12/Euro-style quick disconnect |
| TL50CGRQ                        | 2               | Green, Red                      |                                                |
| TL50CGYRQ                       | 3               | Green, Yellow, Red              |                                                |
| TL50CBGYRQ                      | 4               | Blue, Green, Yellow, Red        | Integral 5-pin M12/Euro-style quick disconnect |
| TL50CWBGYRQ                     | 5               | White, Blue, Green, Yellow, Red | Integral 8-pin M12/Euro-style quick disconnect |

| Standard Audible Models <sup>1</sup> | # of LED Colors | LED Colors <sup>2</sup>         | Connection <sup>3</sup>                        |
|--------------------------------------|-----------------|---------------------------------|------------------------------------------------|
| TL50CRAQ                             | 1               | Red                             | Integral 4-pin M12/Euro-style quick disconnect |
| TL50CGRAQ                            | 2               | Green, Red                      |                                                |
| TL50CGYRAQ                           | 3               | Green, Yellow, Red              | Integral 5-pin M12/Euro-style quick disconnect |
| TL50CBGYRAQ                          | 4               | Blue, Green, Yellow, Red        | Integral 8-pin M12/Euro-style quick disconnect |
| TL50CWBGYRAQ                         | 5               | White, Blue, Green, Yellow, Red |                                                |

| Sealed Audible Models <sup>1</sup> |                  |                 | # of LED Colors | LED Colors <sup>2</sup>         | Connection <sup>3</sup>                        |
|------------------------------------|------------------|-----------------|-----------------|---------------------------------|------------------------------------------------|
| Continuous                         | Pulsed at 1.6 Hz | Staccato        |                 |                                 |                                                |
| TL50CRALSQ                         | TL50CRALS3Q      | TL50CRALS4Q     | 1               | Red                             | Integral 4-pin M12/Euro-style quick disconnect |
| TL50CGRALSQ                        | TL50CGRALS3Q     | TL50CGRALS4Q    | 2               | Green, Red                      |                                                |
| TL50CGYRALSQ                       | TL50CGYRALS3Q    | TL50CGYRALS4Q   | 3               | Green, Yellow, Red              | Integral 5-pin M12/Euro-style quick disconnect |
| TL50CBGYRALSQ                      | TL50CBGYRALS3Q   | TL50CBGYRALS4Q  | 4               | Blue, Green, Yellow, Red        | Integral 8-pin M12/Euro-style quick disconnect |
| TL50CWBGYRALSQ                     | TL50CWBGYRALS3Q  | TL50CWBGYRALS4Q | 5               | White, Blue, Green, Yellow, Red |                                                |

- <sup>1</sup>
- Models with black housing are listed. For gray housing, add the suffix "C" at the end of the cabled model number or before the "Q" in quick disconnect model numbers. For example, TL50CRAC or TL50CRACQ.
- <sup>2</sup>
- All models have Bimodal (NPN or PNP) inputs.
  - The first color listed is the bottom color, going up in successive order.
  - Available colors include: Green (G), Red (R), Yellow (Y), Blue (B), Orange (O), White (W), Turquoise (T), Violet (V), Magenta (M) and Sky Blue (S).
- <sup>3</sup>
- Contact Banner Engineering for other colors and color combinations.
  - To order the 150 mm (6 in) PVC cable model with a M12/Euro-style quick disconnect, replace the suffix "Q" with "QP" in the model number. For example, TL50CRAQP.
  - To order the 2 m (6.5 ft) PVC cable model, omit the suffix "Q" in the model number. For example, TL50CRA.
  - Models with a quick disconnect require a mating cordset.

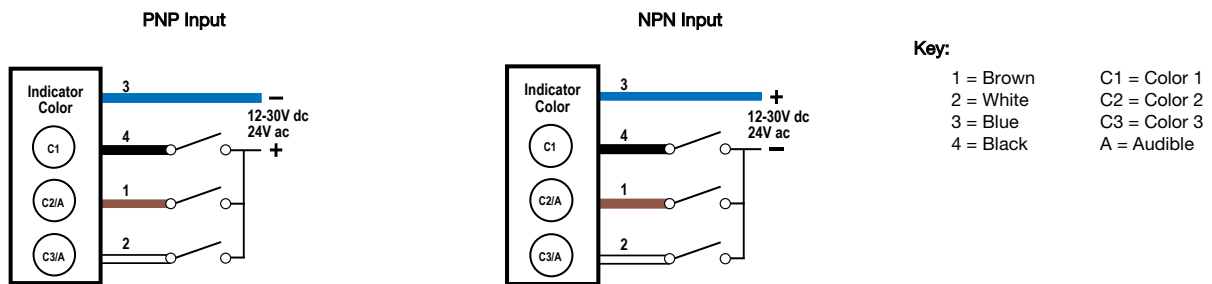


| Omni-Directional Sealed Audible Models <sup>1</sup> |                  |                 | # of LED Colors | LED Colors <sup>2</sup>         | Connection <sup>3</sup>                        |
|-----------------------------------------------------|------------------|-----------------|-----------------|---------------------------------|------------------------------------------------|
| Continuous                                          | Pulsed at 1.6 Hz | Staccato        |                 |                                 |                                                |
| TL50CRAOSQ                                          | TL50CRAOS3Q      | TL50CRAOS4Q     | 1               | Red                             | Integral 4-pin M12/Euro-style quick disconnect |
| TL50CGRAOSQ                                         | TL50CGRAOS3Q     | TL50CGRAOS4Q    | 2               | Green, Red                      |                                                |
| TL50CGYRAOSQ                                        | TL50CGYRAOS3Q    | TL50CGYRAOS4Q   | 3               | Green, Yellow, Red              | Integral 5-pin M12/Euro-style quick disconnect |
| TL50CBGYRAOSQ                                       | TL50CBGYRAOS3Q   | TL50CBGYRAOS4Q  | 4               | Blue, Green, Yellow, Red        | Integral 8-pin M12/Euro-style quick disconnect |
| TL50CWBGYRAOSQ                                      | TL50CWBGYRAOS3Q  | TL50CWBGYRAOS4Q | 5               | White, Blue, Green, Yellow, Red |                                                |

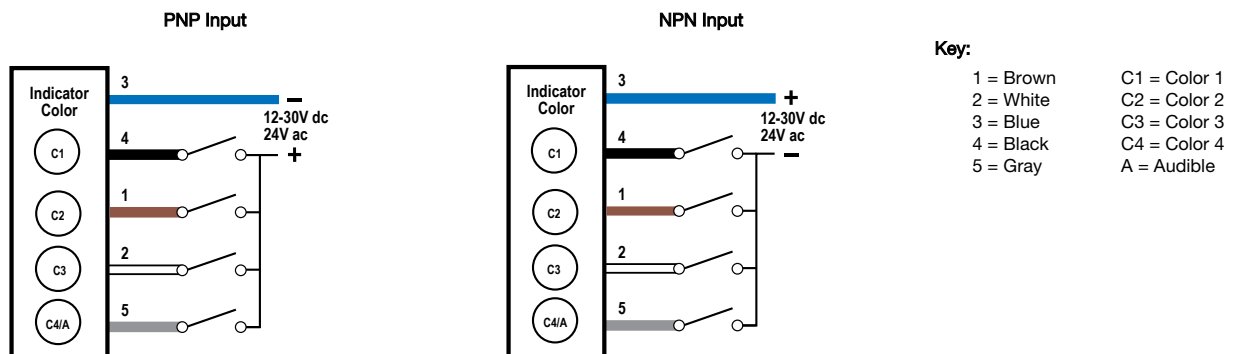
| Omni-Directional Sealed Audible Models with Intensity Adjustment <sup>1</sup> |                  |                  | # of LED Colors | LED Colors <sup>2</sup>         | Connection <sup>3</sup>                        |
|-------------------------------------------------------------------------------|------------------|------------------|-----------------|---------------------------------|------------------------------------------------|
| Continuous                                                                    | Pulsed at 1.6 Hz | Staccato         |                 |                                 |                                                |
| TL50CRAOSIQ                                                                   | TL50CRAOS3IQ     | TL50CRAOS4IQ     | 1               | Red                             | Integral 4-pin M12/Euro-style quick disconnect |
| TL50CGRAOSIQ                                                                  | TL50CGRAOS3IQ    | TL50CGRAOS4IQ    | 2               | Green, Red                      |                                                |
| TL50CGYRAOSIQ                                                                 | TL50CGYRAOS3IQ   | TL50CGYRAOS4IQ   | 3               | Green, Yellow, Red              | Integral 5-pin M12/Euro-style quick disconnect |
| TL50CBGYRAOSIQ                                                                | TL50CBGYRAOS3IQ  | TL50CBGYRAOS4IQ  | 4               | Blue, Green, Yellow, Red        | Integral 8-pin M12/Euro-style quick disconnect |
| TL50CWBGYRAOSIQ                                                               | TL50CWBGYRAOS3IQ | TL50CWBGYRAOS4IQ | 5               | White, Blue, Green, Yellow, Red |                                                |

## Wiring Diagrams — 4-Pin Models with 1 to 3 Segments



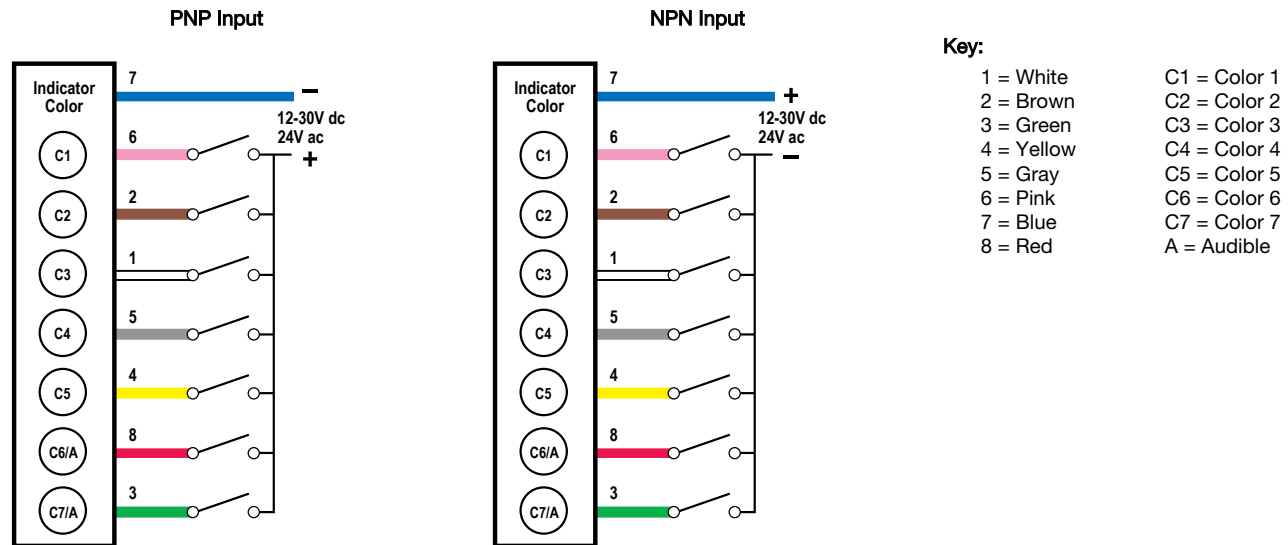
Pins 1 and 2 could activate the corresponding color or the audible function, if available.

## Wiring Diagrams — 5-Pin Models with 4 Segments



Pin 5 could activate the corresponding color or the audible function, if available.

## Wiring Diagrams — 8-Pin Models with 5 to 7 Segments



Pins 3 and 8 can activate the corresponding color or the audible function, if available.

## Specifications

**Supply Voltage and Current**

12 V dc to 30 V dc; or 24 V ac ( $\pm 3$  V) at 50 Hz to 60 Hz

**Indicators—maximum current per LED color:**

- 135 mA at 12 V dc
- 45 mA at 30 V dc
- 60 mA at 24 V ac

**Standard Audible Alarm:** 25 mA maximum current

**Sealed Audible Alarm:** 35 mA maximum current

**Omni-Directional Sealed Audible Alarm:** 45 mA maximum current

**Supply Protection Circuitry**

Protected against transient voltages

**Input Response Time**

Indicator On/Off: 10 milliseconds maximum

**Audible Alarm**

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

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

**Omni-Directional Sealed Audible Alarm:** 2.1 kHz  $\pm$  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  $\pm$  250 Hz oscillation frequency; maximum intensity 95 dB at 1 m (3.3 ft) (typical)

**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.

**Typical Reduction in Sound Intensity with Audible Adjustment (maximum to minimum)**

- **Standard Audible:** 30 dB
- **Sealed Audible:** 20 dB
- **Omni-Directional Sealed Audible:** 12 dB

**Indicators**

LEDs are independently selected; 1 to 7 colors depending on model

**Indicator Characteristics**

| Color     | Dominant Wavelength (nm)<br>or Color Temperature (CCT) | Color Coordinates <sup>#</sup> |      | Lumen Output<br>(Typical at 25 °C) |
|-----------|--------------------------------------------------------|--------------------------------|------|------------------------------------|
|           |                                                        | x                              | y    |                                    |
| Green     | 528 nm                                                 | —                              | —    | 27.0                               |
| Red       | 625 nm                                                 | —                              | —    | 9.0                                |
| Yellow    | 590 nm                                                 | —                              | —    | 6.0                                |
| Blue      | 470 nm                                                 | —                              | —    | 4.5                                |
| Orange    | 608 nm                                                 | —                              | —    | 18.5                               |
| White     | 6000 K                                                 | —                              | —    | 25.0                               |
| Turquoise | —                                                      | 0.19                           | 0.37 | 6.5                                |
| Violet    | —                                                      | 0.20                           | 0.08 | 3.0                                |
| Magenta   | —                                                      | 0.35                           | 0.15 | 3.5                                |
| Sky Blue  | —                                                      | 0.19                           | 0.26 | 14.5                               |

**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)

**Environmental Rating**

UL Type 4X Indoor and UL Type 13

**Non-Audible and Sealed Audible:** IEC IP67

**Standard Audible:** IEC IP50

<sup>#</sup> Refer to CIE 1931 chromaticity diagram or color chart, to show equivalent color with indicated color coordinates.

**Connections**

Integral 4-pin, 5-pin, or 8-pin M12/Euro-style quick disconnect, or 2 m (6.5 ft) integral PVC cable, depending on model  
Models with a quick disconnect require a mating cordset

**Construction**

**Bases and Covers:** ABS

**Light Segment:** Polycarbonate

**Vibration and Mechanical Shock**

Meets IEC 60068-2-6 requirements (Vibration: 10 Hz to 55 Hz, 1.0 mm amplitude, 5 minutes sweep, 30 minutes dwell)

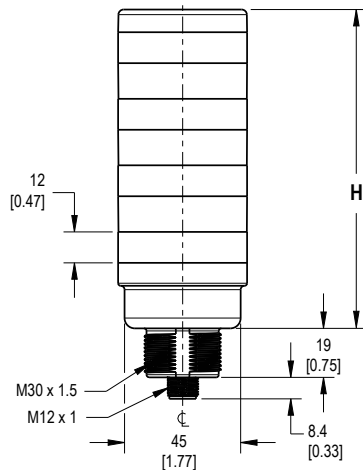
Meets IEC 60068-2-27 requirements (Shock: 30G 11 ms duration, half sine wave)

**Certifications****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](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**

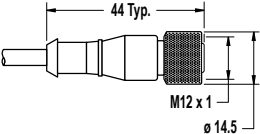
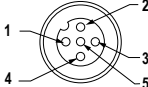
| # of Colors | Tower Height (H)  |                   |                   |                                 |
|-------------|-------------------|-------------------|-------------------|---------------------------------|
|             | Non-Audible       | Standard Audible* | Sealed Audible    | Omni-Directional Sealed Audible |
| 1           | 46.2 mm (1.8 in)  | 77.1 mm (3.1 in)  | 100.2 mm (4.0 in) | 114.2 mm (4.48 in)              |
| 2           | 72.0 mm (2.83 in) | 102.9 mm (4.1 in) | 126.0 mm (5.0 in) | 140.0 mm (5.5 in)               |
| 3           | 97.8 mm (3.85 in) | 128.7 mm (5.1 in) | 151.8 mm (6.0 in) | 165.8 mm (6.5 in)               |
| 4           | 123.6 mm (4.9 in) | 154.5 mm (6.1 in) | 177.6 mm (7.0 in) | 191.6 mm (7.54 in)              |
| 5           | 149.4 mm (5.9 in) | 180.3 mm (7.1 in) | 203.4 mm (8.0 in) | 217.4 mm (8.56 in)              |
| 6           | 175.2 mm (6.9 in) | 206.1 mm (8.1 in) | 229.2 mm (9.0 in) | 243.4 mm (9.58 in)              |
| 7           | 201.0 mm (7.9 in) | -                 | -                 | -                               |

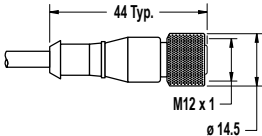
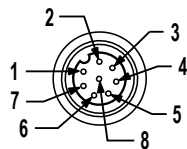
\*Tower height (H) with top unscrewed approximately 3.5 mm to allow sound to escape

All measurements are listed in millimeters [inches], unless noted otherwise.

**Accessories****Cordsets**

| 4-Pin Threaded M12/Euro-Style Cordsets—Single Ended |                |          |            |                                                           |
|-----------------------------------------------------|----------------|----------|------------|-----------------------------------------------------------|
| Model                                               | Length         | Style    | Dimensions | Pinout (Female)                                           |
| MQDC-406                                            | 1.83 m (6 ft)  | Straight |            | <p>1 = Brown<br/>2 = White<br/>3 = Blue<br/>4 = Black</p> |
| MQDC-415                                            | 4.57 m (15 ft) |          |            |                                                           |
| MQDC-430                                            | 9.14 m (30 ft) |          |            |                                                           |
| MQDC-450                                            | 15.2 m (50 ft) |          |            |                                                           |

| 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    |  | <br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black<br>5 = Gray |
| 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)  |             |                                                                                    |                                                                                                                                                    |

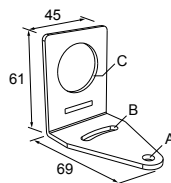
| 8-Pin Threaded M12/Euro-Style Cordsets with Open-Shield |                |             |                                                                                     |                                                                                                                                                                                              |
|---------------------------------------------------------|----------------|-------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Model                                                   | Length         | Style       | Dimensions                                                                          | Pinout (Female)                                                                                                                                                                              |
| MQDC2S-806                                              | 1.83 m (6 ft)  | Straight    |  | <br><br>1 = White<br>2 = Brown<br>3 = Green<br>4 = Yellow<br>5 = Gray<br>6 = Pink<br>7 = Blue<br>8 = Red |
| 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) |             |                                                                                     |                                                                                                                                                                                              |

## Mounting Brackets

All measurements are listed in millimeters [inches], unless noted otherwise.

### SMB30A

- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (1/4 in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel

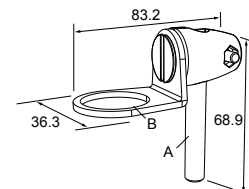


Hole center spacing: A to B=40

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



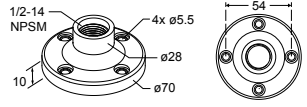
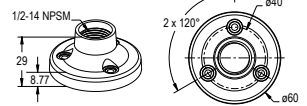
Bolt thread: SMB30FA, A= 3/8 - 16 x 2 in; SMB30FAM10, A= M10 - 1.5 x 50

Hole size: B= ø 30.1



| Model                                       |                                            |                                             | Features                                                                                                                                                                                                                               | Components                                                                          |
|---------------------------------------------|--------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>SOP-E12-900SS</b><br>900 mm (36 in) long | <b>SOP-E12-900A</b><br>900 mm (36 in) long | <b>SOP-E12-900AC</b><br>900 mm (36 in) long |                                                                                                                                                                                                                                        |                                                                                     |
| <b>SA-E12M30</b> - 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> |  |
| <b>SA-E12M30C</b> - White UHMW              |                                            |                                             |                                                                                                                                                                                                                                        |                                                                                     |

## Pipe Mounting Flange

| Pipe Mounting Flange |                                                                                                                                                                  |                                     |                                                                                     |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------|
| Model                | Features                                                                                                                                                         | Construction                        |                                                                                     |
| <b>SA-F12</b>        | <ul style="list-style-type: none"> <li>Elevated-use 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 |  |
| <b>SA-F12-3</b>      | <ul style="list-style-type: none"> <li>Elevated-use stand-off pipes (½ in, NPSM/DN15)</li> <li>M4 mounting hardware and nitrile blend gasket included</li> </ul> | Black Polycarbonate                 |  |

## 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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