

# WLS15 BSZ High-Intensity LED Strip Light Instruction Manual



## WLS15 BSZ Features

Banner's WLS15 BSZ High Intensity LED Strip Lights have sturdy aluminum inner frames, encased in polycarbonate shells, making them ideal for indoor and outdoor applications.

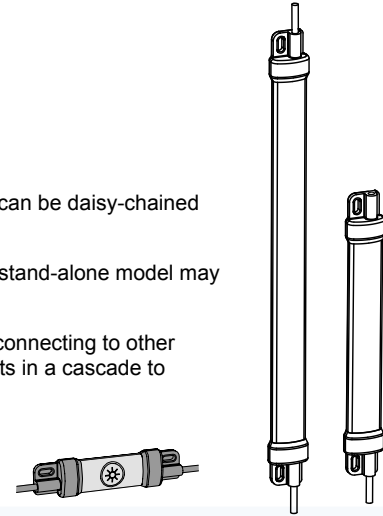
- Low-profile, space-saving design
- Rugged, water-resistant design
- Available in four lengths from 360 mm to 1200 mm
- Daisy chain power to multiple lights
- Optional snap clips for easy installation and repositioning
- Capability to dim lights using the wiring pinout (Hi/Lo/Off)

These Work Light Strips are available as either stand-alone models, or as cascade models that can be daisy-chained together for longer lighting runs, with a minimum of wiring.

Stand-alone models have one end for power connection and no connections at opposite end. A stand-alone model may be used as the last in the cascade series.

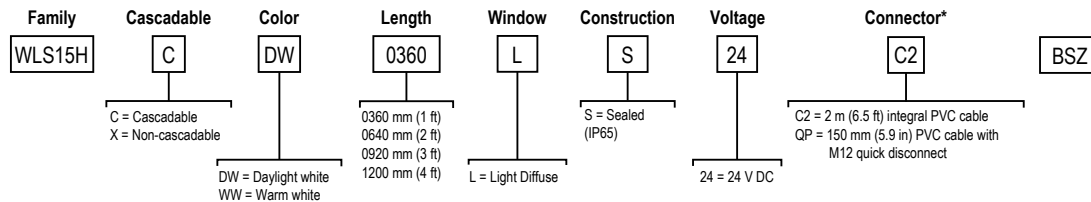
Cascade models have one end for power connection, and a connection at the opposite end for connecting to other lights in the cascade. A double-ended accessory cordset may be used between each pair of lights in a cascade to extend the distance between lights.

For PWM dimming, use with the LC15T-127AP2RBGQP dimmer module. For more information, refer to the LC15T In-Line Touch Switch datasheet, p/n 217460.



**IMPORTANT:** Read the following instructions before operating the light. Please download the complete WLS15 High Intensity LED Strip Light technical documentation, available in multiple languages, from [www.bannerengineering.com](http://www.bannerengineering.com) for details on the proper use, applications, Warnings, and installation instructions of this device.

## WLS15 BSZ Models



\*Models with a quick disconnect require a mating cordset

## Wiring

| Pinout (Male) | Pinout (Female) | Pin | Wire Color | Connection   |
|---------------|-----------------|-----|------------|--|
|               |                 | 1   | brown      | 24 V DC  |
|               |                 | 3   | blue       | DC common  |
|               |                 | 4   | black      | Connect to 24 V DC for 50% of maximum intensity. For 100% maximum intensity, leave the black wire floating or connected to common. |
|               |                 | 2   | white      | Not used   |

## WLS15 BSZ Specifications

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages  
See electrical characteristics on product label

### Supply Voltage

24 V DC (+20%/-10%)  
Use only with a suitable Class 2 power supply (UL) or a SELV power supply (CE)

**Supply Current**

| Light Length | Typical Current (A) at 25°C <sup>(1)</sup> | Max. Current (A) at -40°C |
|--------------|--|---------------------------|
| 0360 mm      | 0.285                                      | 0.360                     |
| 0640 mm      | 0.570                                      | 0.720                     |
| 0920 mm      | 0.855                                      | 1.080                     |
| 1200 mm      | 1.140                                      | 1.440                     |

**Light Characteristics**

Daylight White Efficacy: 110 lumens/watt typical at 24 V DC at 25 °C (77 °F)

CRI: 80, minimum

| Color          | Dominant Wavelength (nm) or Color Temperature | Lighted Length Lumens (Typical at 25°C) <sup>(1)</sup> |        |        |         |
|----------------|---|--|--------|--------|---------|
|                |   | 360 mm   | 640 mm | 920 mm | 1200 mm |
| Daylight White | 5000K (±300K)                                 | 750  | 1500   | 2250   | 3000    |
| Warm White     | 3000K (±200K, -100K)                          | 700  | 1400   | 2100   | 2800    |

**Spacing Criterion**

Vertical: 1.26

Horizontal: 1.26

**Connections**

2 m (6.5 ft) integral PVC-jacketed cable or 150 mm (6 in) PVC-jacketed cable with a 4-pin M12 male quick-disconnect connector

Models with a quick disconnect require a mating cordset

Do not spray cable with a high-pressure sprayer or cable damage will result.

**Environmental Rating**

Rated IP65

**Vibration and Mechanical Shock**

Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6

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

<sup>(1)</sup> Values shown at 25°C - current and lumen values decrease 0.4% per 1°C from ambient. For example, a 1200 mm unit will have a maximum current of 1.440 A at -40°C and 1.026 A at +50°C.

<sup>(1)</sup> Values shown at 25°C - current and lumen values decrease 0.4% per 1°C from ambient. For example, a 1200 mm unit will have a maximum current of 1.440 A at -40°C and 1.026 A at +50°C.

**Construction**

Clear anodized aluminum housing; Polycarbonate outer housing, Polyamide end caps

**Application Note**

When connecting cascadable lights in series, it is important not to exceed maximum current limitations:

- Maximum length of light at 24 V DC: 3.0 m (9.8 ft)
- At 50% intensity, double the lengths

**LED Lifetime**

Lumen Maintenance - L70

When operating within specifications, output will decrease less than 30% after 70,000 hours.

**Mounting**

Integral mounting slots for M4 (#8) screws, tighten to 5 in·lb max torque

Multiple bracket options available

Secure cables within 150 mm (5.9 inches) of the light

**NOTE:** For 920 mm and 1200 mm models in environments that vary more than 10 °C (18 °F), it is recommended to use one of the mounting bracket options instead of the endcap slots. If using the LMBWLS15 clip bracket and additional attachment is desired, only one end may be fastened using one of the spacers provided in the LMBWLS15 hardware packet to allow the opposite end to expand and contract. See "[Mounting Accessories](#)" on page 6 for bracket and tape options that allow expansion and contraction over temperature variations.

**Operating Temperature**

-40 °C to +50 °C (-40 °F to +122 °F)

**Storage Temperature**

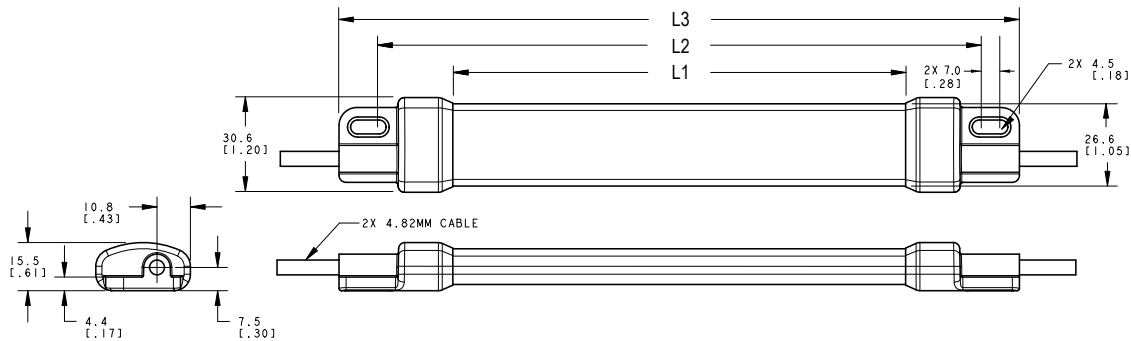
-40 °C to +70 °C (-40 °F to +158 °F)

**Certifications**



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

**Dimensions**



| Models        | L1                      | L2                    | L3                    |
|---------------|-------------------------|-----------------------|-----------------------|
| WLS15..0360.. | 286.4 mm (11.28 inches) | 334 mm (13.15 inches) | 360 mm (14.17 inches) |
| WLS15..0640.. | 566.4 mm (22.3 inches)  | 614 mm (24.17 inches) | 640 mm (25.2 inches)  |

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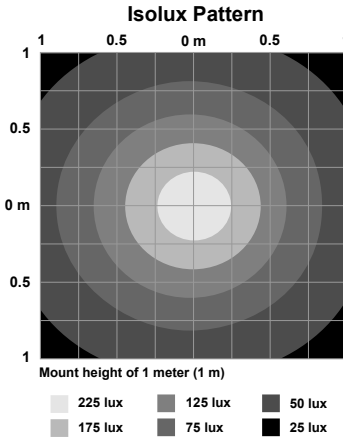
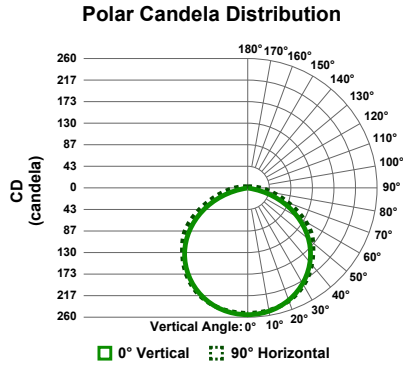
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| Models        | L1                       | L2                     | L3                     |
|---------------|--------------------------|------------------------|------------------------|
| WLS15..0920.. | 846.4 mm (33.32 inches)  | 894 mm (35.2 inches)   | 920 mm (36.22 inches)  |
| WLS15..1200.. | 1126.4 mm (44.35 inches) | 1174 mm (46.22 inches) | 1200 mm (47.24 inches) |

## Performance Curves

Optical data shown below is for daylight white only. To get lux and candela values for warm white multiply the values shown on the charts by 0.933.

360 mm Models

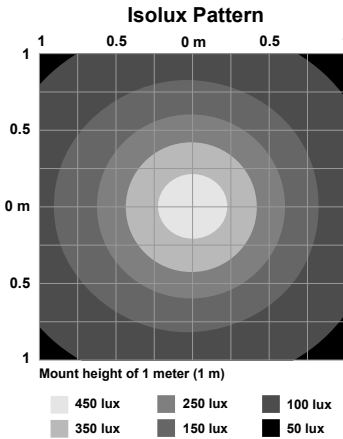
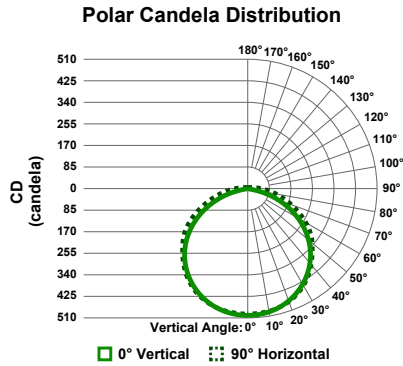


Illuminance at a Distance

| Center Beam (lux) | Beam Width (m) |
|-------------------|----------------|
| 5837 lux          | 0.76 m 0.82 m  |
| 2041 lux          | 1.21 m 1.34 m  |
| 1000 lux          | 1.68 m 1.88 m  |
| 561 lux           | 2.16 m 2.42 m  |
| 361 lux           | 2.61 m 2.94 m  |
| 250 lux           | 3.08 m 3.48 m  |

Vert.  Horiz.
   
 ▲ Vertical Spread: 109.0°
   
 ▲ Horizontal Spread: 116.6°

640 mm Models



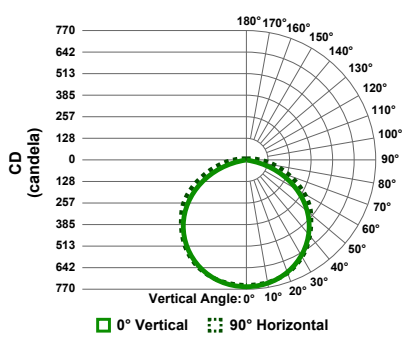
Illuminance at a Distance

| Center Beam (lux) | Beam Width (m) |
|-------------------|----------------|
| 7286 lux          | 1.04 m 1.10 m  |
| 3205 lux          | 1.49 m 1.62 m  |
| 2000 lux          | 1.96 m 2.16 m  |
| 1122 lux          | 2.44 m 2.70 m  |
| 722 lux           | 2.89 m 3.22 m  |
| 500 lux           | 3.36 m 3.76 m  |

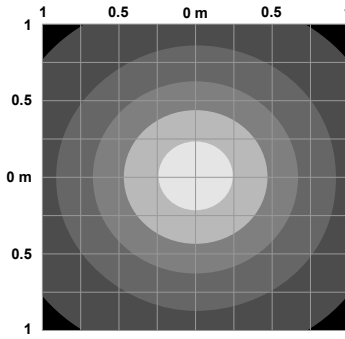
Vert.  Horiz.
   
 ▲ Vertical Spread: 109.0°
   
 ▲ Horizontal Spread: 116.6°

920 mm Models

Polar Candela Distribution



Isolux Pattern



|         |         |         |
|---------|---------|---------|
| 675 lux | 375 lux | 150 lux |
| 525 lux | 225 lux | 75 lux  |

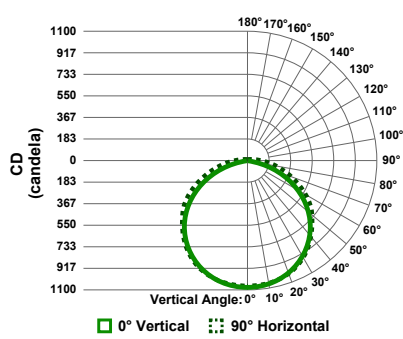
Illuminance at a Distance

|        | Center Beam (lux) | Beam Width (m) |        |
|--------|-------------------|----------------|--------|
| 0.17 m | 7743 lux          | 1.32 m         | 1.38 m |
| 0.33 m | 3744 lux          | 1.77 m         | 1.90 m |
| 0.50 m | 2142 lux          | 2.24 m         | 2.44 m |
| 0.67 m | 1682 lux          | 2.72 m         | 2.98 m |
| 0.83 m | 1082 lux          | 3.17 m         | 3.50 m |
| 1.00 m | 750 lux           | 3.64 m         | 4.04 m |

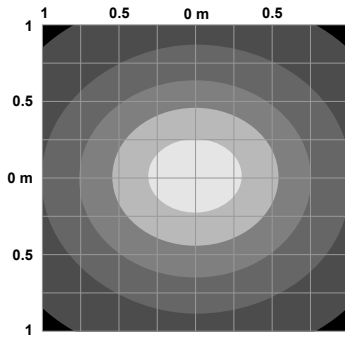
Vertical Spread: 109.0°  
Horizontal Spread: 116.6°

1200 mm Models

Polar Candela Distribution



Isolux Pattern



|         |         |         |
|---------|---------|---------|
| 900 lux | 500 lux | 200 lux |
| 700 lux | 300 lux | 100 lux |

Illuminance at a Distance

|        | Center Beam (lux) | Beam Width (m) |        |
|--------|-------------------|----------------|--------|
| 0.17 m | 7767 lux          | 1.60 m         | 1.66 m |
| 0.33 m | 3944 lux          | 2.05 m         | 2.18 m |
| 0.50 m | 2362 lux          | 2.52 m         | 2.72 m |
| 0.67 m | 1585 lux          | 3.00 m         | 3.26 m |
| 0.83 m | 1264 lux          | 3.45 m         | 3.78 m |
| 1.00 m | 1000 lux          | 3.92 m         | 4.32 m |

Vertical Spread: 109.0°  
Horizontal Spread: 116.6°

## Accessories

### Cordsets

Use single-ended cordsets between the power source and the quick-disconnect connection of a stand-alone light or the first light in a cascade. Use double-ended cordsets between lights in a cascade.

| 4-Pin Threaded M12 Cordsets—Single Ended |                |          |            |                 |
|--|----------------|----------|------------|-----------------|
| Model                                    | Length         | Style    | Dimensions | Pinout (Female) |
| MQDC-406                                 | 2 m (6.56 ft)  | Straight |            |                 |
| MQDC-415                                 | 5 m (16.4 ft)  |          |            |                 |
| MQDC-430                                 | 9 m (29.5 ft)  |          |            |                 |
| MQDC-450                                 | 15 m (49.2 ft) |          |            |                 |

1 = Brown  
2 = White  
3 = Blue  
4 = Black  
5 = Unused

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4-Pin Threaded M12 Cordsets—Single Ended

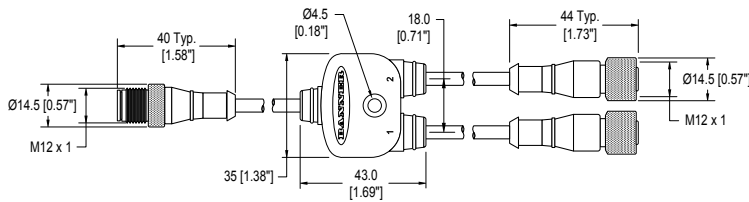
| Model      | Length         | Style       | Dimensions | Pinout (Female) |
|------------|----------------|-------------|------------|-----------------|
| MQDC-406RA | 2 m (6.56 ft)  | Right-Angle |            |                 |
| MQDC-415RA | 5 m (16.4 ft)  |             |            |                 |
| MQDC-430RA | 9 m (29.5 ft)  |             |            |                 |
| MQDC-450RA | 15 m (49.2 ft) |             |            |                 |

4-Pin Threaded M12 Cordsets—Double Ended

| Model       | Length           | Style                         | Dimensions | Pinout  |
|-------------|------------------|-------------------------------|------------|---|
| MQDEC-401SS | 0.31 m (1 ft)    | Male Straight/Female Straight |            | Female  |
| MQDEC-403SS | 0.91 m (2.99 ft) |                               |            | Female  |
| MQDEC-406SS | 1.83 m (6 ft)    |                               |            | Female  |
| MQDEC-412SS | 3.66 m (12 ft)   |                               |            | Female  |
| MQDEC-415SS | 4.58 m (15 ft)   |                               |            | Female  |
| MQDEC-420SS | 6.10 m (20 ft)   |                               |            | Female  |
| MQDEC-430SS | 9.14 m (30.2 ft) |                               |            | Female  |
| MQDEC-450SS | 15.2 m (49.9 ft) | Female                        |            |   |
|             |                  |                               |            | Male  |
|             |                  |                               |            | <p>1 = Brown<br/>2 = White<br/>3 = Blue<br/>4 = Black</p> |

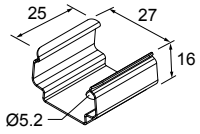
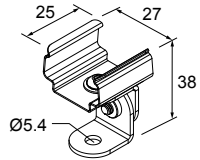
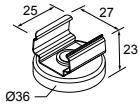



4-Pin Threaded M12 Splitter Cordsets—Flat Junction

| Model           | Branches (Female) | Trunk (Male)                | Pinout  |
|-----------------|-------------------|-----------------------------|---|
| CSB-M1240M1240  | No branch         | No trunk                    |   |
| CSB-M1240M1241  | 2 × 0.3 m (1 ft)  | No trunk                    |   |
| CSB-M1241M1241  |                   | 0.31 m (1 ft)               |   |
| CSB-M1248M1241  |                   | 2.44 m (8 ft)               |   |
| CSB-M12415M1241 |                   | 4.57 m (15 ft)              |   |
| CSB-M12425M1241 |                   | 7.60 m (25 ft)              |   |
| CSB-UNT425M1241 |                   | 7.60 m (25 ft) Unterminated |   |
| CSB-M1243M1243  |                   | 2 × 1 m (3.28 ft)           |   |
|                 |                   |                             | Male  |
|                 |                   |                             | <p>1 = Brown<br/>2 = White<br/>3 = Blue<br/>4 = Black</p> |




## Mounting Accessories

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

|   |   |
|---|---|
| <p><b>LMBWLS15</b></p> <ul style="list-style-type: none"> <li>• Stainless steel clip bracket</li> <li>• Includes 3 clip brackets and 2 plastic spacers</li> <li>• Clearance hole for M5 hardware</li> </ul>   |    |
| <p><b>LMBWLS15-150S</b></p> <ul style="list-style-type: none"> <li>• Set of 2 stainless steel swivel brackets, allows for 150° of movement</li> <li>• Clearance hole for M5 button head screw</li> </ul>  |    |
| <p><b>LMBWLS15MAG</b></p> <ul style="list-style-type: none"> <li>• Set of 2 brackets</li> <li>• Magnetic mounting bracket for attachment to steel and iron surfaces</li> </ul>  |    |
| <p><b>LMBWLS15TD</b></p> <ul style="list-style-type: none"> <li>• Includes 4 100 mm (4 in) strips of 3M™ Dual Lock™ reclosable fasteners</li> <li>• Recommended for mounting to metal and plastic surfaces</li> <li>• Strong, pressure-sensitive adhesive bonds on contact</li> </ul>                                     |    |
| <p><b>LMBWLS15TF</b></p> <ul style="list-style-type: none"> <li>• Includes 2 100 mm (4 in) strips of double-sided foam urethane strips</li> <li>• Acrylic adhesive provides high bond strength to most surfaces</li> <li>• Bonds to low surface energy plastics such as polypropylene and powder-coated paints</li> </ul> |  |
| <p><b>ACC-CAP M12-10</b></p> <ul style="list-style-type: none"> <li>• 10 Caps</li> <li>• Seal and protect exposed, unterminated cascade quick-disconnect connectors</li> </ul>  |  |

## Power Supplies

For use with cascades of lights that do not exceed a total maximum operating current of 4A (refer to maximum current specifications):

|  |   |
|--|---|
| <p><b>PSD-24-4</b></p> <ul style="list-style-type: none"> <li>• 90 to 264 V AC 50/60 Hz input</li> <li>• Includes a 1.8 m (6 ft) US-style 5-15P input plug</li> <li>• 24 V DC UL Listed Class 2 M12 connector output</li> <li>• 4 A total current</li> </ul> |  |
|--|---|

For use with all non-cascaded lights or cascades of lights that do not exceed a total maximum operating current of 1A (refer to maximum current specifications):

|  |   |
|--|---|
| <p><b>PSW-24-1</b></p> <ul style="list-style-type: none"> <li>• 24 V DC, 1 A Class 2 UL Listed power supply</li> <li>• 100 V AC to 240 V AC 50/60 Hz input</li> <li>• 2 m (6.5 ft) PVC cable with M12 quick disconnect</li> <li>• Includes Type A (US, Canada, Japan, Puerto Rico, Taiwan), Type C (Germany, France, South Korea, Netherlands, Poland, Spain, Turkey), Type G (United Kingdom, Ireland, Singapore, Vietnam), and Type I (China, Australia, New Zealand) AC detachable input plugs</li> </ul> |  |
|--|---|

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For patent information, see [www.bannerengineering.com/patents](http://www.bannerengineering.com/patents).

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