# WLS15 LED Strip Light Product Manual

Original Instructions
p/n: 197493 Rev. I
03-Nov-25
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ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

# Contents

**Chapter 1 Features ..... 3**
Single Color Models ..... 4
Dual Color Models ..... 4

**Chapter 2 Wiring ..... 5**

**Chapter 3 Specifications ..... 6**
Dimensions ..... 7
Optical Data ..... 7

**Chapter 4 Accessories ..... 10**
Cordsets ..... 10
Single Color Only Cordsets ..... 12
Mounting Accessories ..... 12
Power Supplies ..... 13

**Chapter 5 Product Support and Maintenance ..... 14**
Clean with Mild Detergent and Warm Water ..... 14
Repairs ..... 14
Contact Us ..... 14
Banner Engineering Corp Limited Warranty ..... 14
Mexican Importer ..... 14

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Chapter Contents

Single Color Models ..... 4
Dual Color Models ..... 4

# Chapter 1 Features



Banner's WLS15 LED Strip Lights have sturdy aluminum inner frames, encased in shatter-resistant, UV-stabilized, polycarbonate shells, making them ideal for indoor and outdoor applications.

- Low-profile, space-saving design
- Rugged, water-resistant design
- Available in six lengths from 220 mm to 1200 mm
- Daisy-chain power to multiple lights
- Optional snap clips for easy installation and repositioning
- Capability to dim lights using PWM input
- Operates on 12 V DC or 24 V DC in one model
- Models are available with two colors in one device

These strip lights are available as either stand-alone models, or as cascade models that can be connected in series or "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 LC65P2T 2-wire dimmer module. For more information, refer to the LC65 LED Dimmer Module datasheet, p/n 177086. This module can only be used with the single color models.

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

**IMPORTANT:** Lea el siguiente instructivo antes de operar el luminario. Por favor descargue desde www.bannerengineering.com toda la documentación técnica de los WLS15 LED Strip Light, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, advertencias, y las instrucciones de instalación de estos dispositivos.

**IMPORTANT:** Lisez les instructions suivantes avant d'utiliser le luminaire. Veuillez télécharger la documentation technique complète des WLS15 LED Strip Light sur notre site www.bannerengineering.com pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et les instructions de montage.


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# Single Color Models

*Model Key*

| Family | Cascadable | Color | Length | Window | Construction | Connector[1] |
|---|---|---|---|---|---|---|
| **WLS15** | **C** | **DW** | **0360** | **D** | **S** | **C2** |
| | C = Cascadable<br>X = Non-cascadable | DW = Daylight white<br>WW = Warm white | 0220 mm (6 in)<br>0360 mm (1 ft)<br>0500 mm (1.5 ft)<br>0640 mm (2 ft)<br>0920 mm (3 ft)<br>1200 mm (4 ft) | D = Diffuse | S = Sealed (IP66, IP67) | C2 = 2 m (6.5 ft) integral PVC cable<br>C4 = 4 m (13 ft) integral PVC cable<br>C5 = 5 m (16.4 ft) integral PVC cable<br>C30 = 9 m (30 ft) integral PVC cable<br>QP = 150 mm (5.9 in) PVC cable with M12 quick-disconnect connector<br>QS = 150 mm (5.9 in) PVC cable with Deutsch DTM connector |

# Dual Color Models

*Model Key*

| Family | Cascadable | Color 1 | Color 2 | Length | Window | Construction | Connector[2] |
|---|---|---|---|---|---|---|---|
| **WLS15** | **C** | **W** | **R** | **0360** | **D** | **S** | **C2** |
| | C = Cascadable<br>X = Non-cascadable | W = Daylight white<br>B = Blue<br>G = Green<br>R = Red<br>Y = Yellow<br>A = Amber | | 0220 mm (6 in)<br>0360 mm (1 ft)<br>0500 mm (1.5 ft)<br>0640 mm (2 ft)<br>0920 mm (3 ft)<br>1200 mm (4 ft) | D = Diffuse | S = Sealed (IP66, IP67) | C2 = 2 m (6.5 ft) integral PVC cable<br>C4 = 4 m (13 ft) integral PVC cable<br>C5 = 5 m (16.4 ft) integral PVC cable<br>C30 = 9 m (30 ft) integral PVC cable<br>QP = 150 mm (5.9 in) PVC cable with M12 quick-disconnect connector<br>QS = 150 mm (5.9 in) PVC cable with Deutsch DTM connector |

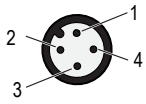
[1] Models with a quick-disconnect or Deutsch DTM connector require a mating cordset.
[2] Models with a quick-disconnect connector require a mating cordset.


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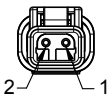
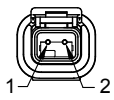
Chapter Contents

# Chapter 2 Wiring

*QP Models*

| 4-pin M12 Male Pinout | 4-pin M12 Female Pinout | Pin | Wire Color | Single Color Models | Dual Color Models |
|---|---|---|---|---|---|
|  |  | 1 | Brown | 12 V DC or 24 V DC | Color 1: 12 V DC or 24 V DC |
| | | 2 | White | Not used | Not used |
| | | 3 | Blue | DC common | DC common |
| | | 4 | Black | Not used | Color 2: 12 V DC or 24 V DC (color 2 overrides color 1) |

*QS Models: Single Color Models Only*

| 2-pin Deutsch DTM Male Pinout | 2-pin Deutsch DTM Female Pinout | Pin | Wire Color | Connection |
|---|---|---|---|---|
|  |  | 1 | Brown | 12 V DC or 24 V DC |
| | | 2 | Blue | DC common |


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Chapter Contents

Dimensions ..... 7
Optical Data ..... 7

# Chapter 3 Specifications

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Supply Voltage

12 V DC or 24 V DC nominal

Absolute operational limits of 10 V DC to 15 V DC and 20 V DC to 27 V DC

Use only with a suitable Class 2 power supply (UL) or a SELV power supply (CE)

Single Color Light Models can be PWM dimmed between 25% to 100% with a frequency up to 1000 Hz

See electrical characteristics on the product's label

### Supply Current

| Light Length | Typical Current (A) at 25°C (3) | | Max. Current (A) at -40°C | |
|---|---|---|---|---|
| | 12 V DC | 24 V DC | 12 V DC | 24 V DC |
| 0220 mm | 0.19 | 0.1 | 0.24 | 0.12 |
| 0360 mm | 0.38 | 0.2 | 0.48 | 0.24 |
| 0500 mm | 0.57 | 0.3 | 0.72 | 0.36 |
| 0640 mm | 0.76 | 0.4 | 0.96 | 0.48 |
| 0920 mm | 1.14 | 0.6 | 1.44 | 0.72 |
| 1200 mm | 1.52 | 0.8 | 1.92 | 0.96 |

### Connections

2 m (6.5 ft) integral PVC-jacketed cable, 150 mm (6 in) PVC-jacketed cable with a 4-pin M12 quick-disconnect connector, or 150 mm (5.9 in) 2-pin Deutsch DTM series sealed cable; models with a quick-disconnect connector or Deutsch DTM connector require a mating cordset

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

### Mounting

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

Multiple bracket options available

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

### Construction

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

### Environmental Rating

Rated IP66 and IP67

Suitable for wet locations per UL 2108

### 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

(3) Typical current values are 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 1.92 A at -40 °C and 1.33 A at +60 °C.

### Operating Temperature

–40 °C to +60 °C (–40 °F to +140 °F)

95% at +60 °C maximum relative humidity (non-condensing)

### Storage Temperature

–40 °C to +70 °C (–40 °F to +158 °F)

### Application Note

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

- Maximum length of light at 12 V DC: 2.4 m (7.9 ft)
- Maximum length of light at 24 V DC: 6 m (19.7 ft)

### Light Characteristics

| Color | Dominant Wavelenth (nm) or Color Temperature | Lighted Length Lumens (Typical at 25°C)(4) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 220 mm | 360 mm | 500 mm | 640 mm | 920 mm | 1200 mm |
| Daylight White | 5000K (±300K) | 175 | 350 | 525 | 700 | 1050 | 1400 |
| Warm White | 3000K (±200K, -100K) | 170 | 340 | 510 | 680 | 1020 | 1360 |
| Green | 525 nm | 105 | 210 | 315 | 420 | 630 | 840 |
| Red | 625 nm | 55 | 110 | 165 | 220 | 330 | 440 |
| Yellow | 580 nm | 165 | 330 | 495 | 660 | 990 | 1320 |
| Blue | 470 nm | 25 | 50 | 75 | 100 | 150 | 200 |
| Amber | 590 nm | 55 | 110 | 165 | 220 | 330 | 440 |

### Certifications

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1831 Diegem, BELGIUM

E476617

(4) 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 1.92 A at -40°C and 1.33 A at +60°C.


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### 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.

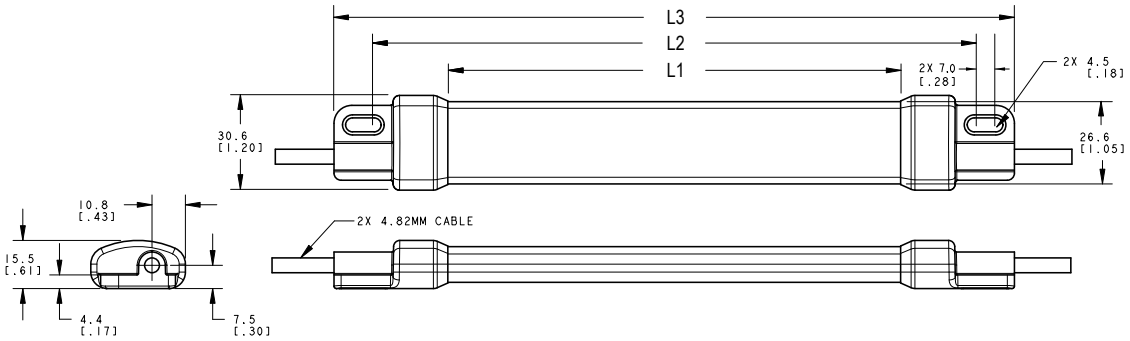
Supply wiring leads < 24 AWG shall not be spliced.

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 | 2.0 | 30 | 0.5 |

# Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.




| Models | L1 | L2 | L3 |
|---|---|---|---|
| WLS15..0220.. | 146.4 mm (5.76 inches) | 194 mm (7.64 inches) | 220 mm (8.66 inches) |
| WLS15..0360.. | 286.4 mm (11.28 inches) | 334 mm (13.15 inches) | 360 mm (14.17 inches) |
| WLS15..0500.. | 426.4 mm (16.79 inches) | 474 mm (18.66 inches) | 500 mm (19.69 inches) |
| WLS15..0640.. | 566.4 mm (22.3 inches) | 614 mm (24.17 inches) | 640 mm (25.2 inches) |
| 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) |

# Optical Data

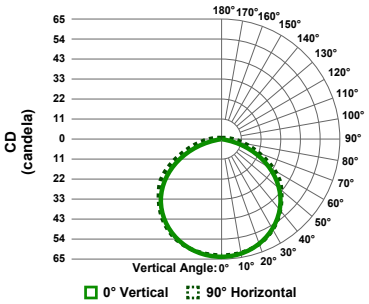
Optical data shown below is for daylight white only. To get lux and candela values for warm white, green, red, yellow, blue, and amber, multiply the values shown on the charts by the following factors:

- Warm white: 0.971
- Green: 0.6
- Red: 0.314
- Yellow: 0.943
- Blue: 0.143
- Amber: 0.314

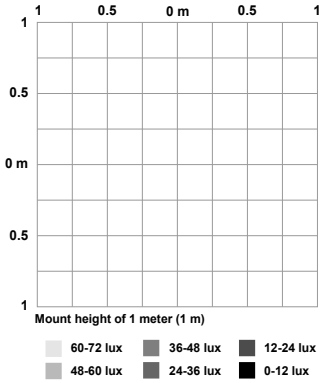

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*220 mm Models*

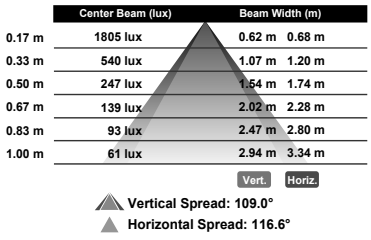
**Polar Candela Distribution**




**Isolux Pattern**

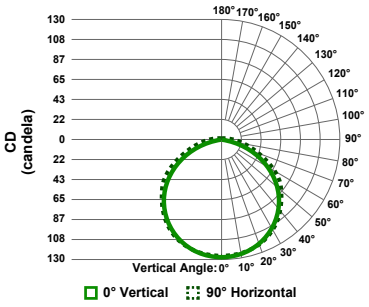



**Illuminance at a Distance**

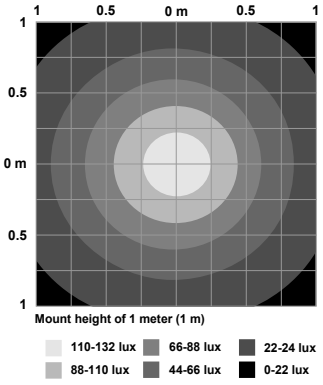



*360 mm Models*

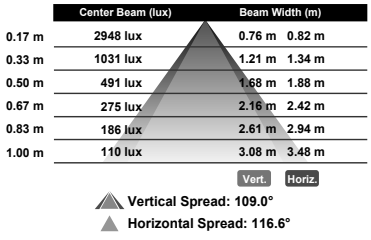
**Polar Candela Distribution**




**Isolux Pattern**

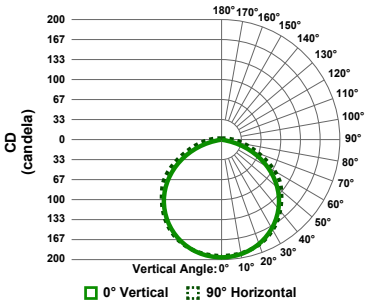



**Illuminance at a Distance**

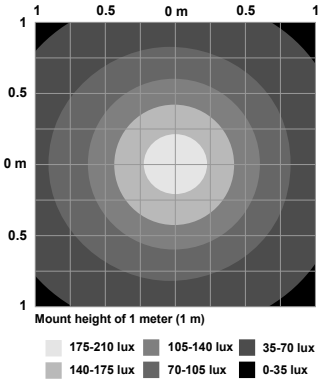



*500 mm Models*

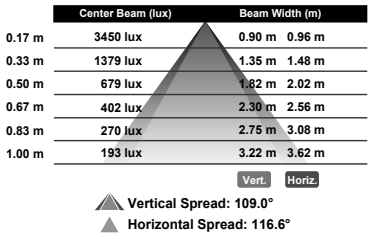
**Polar Candela Distribution**




**Isolux Pattern**




**Illuminance at a Distance**

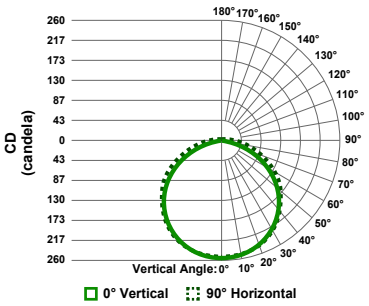




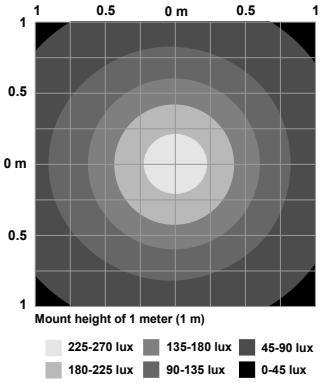
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*640 mm Models*

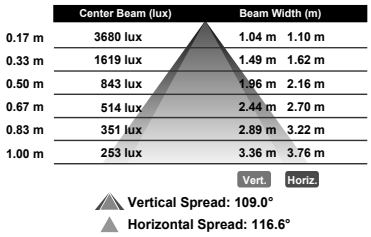
**Polar Candela Distribution**




**Isolux Pattern**

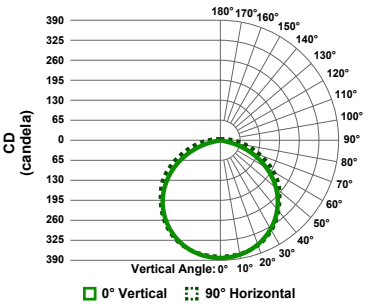



**Illuminance at a Distance**

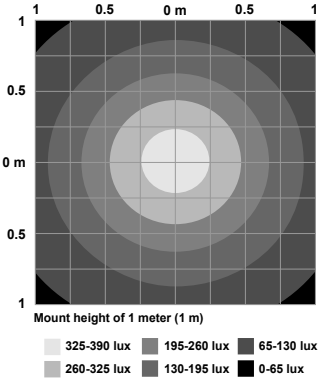



*920 mm Models*

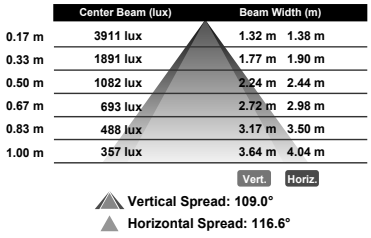
**Polar Candela Distribution**




**Isolux Pattern**

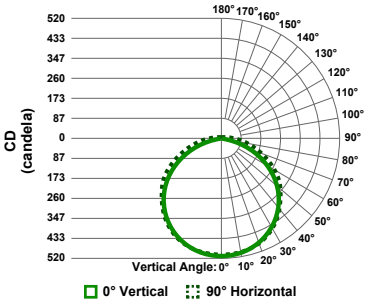



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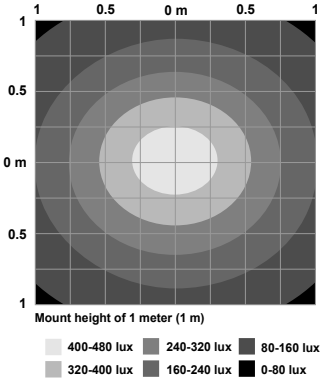



*1200 mm Models*

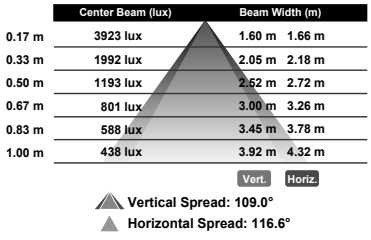
**Polar Candela Distribution**




**Isolux Pattern**




**Illuminance at a Distance**





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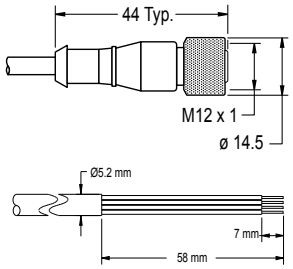
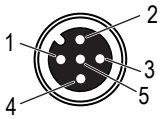
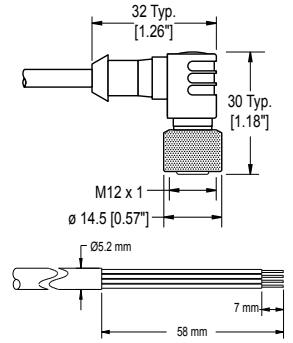
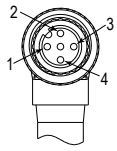
Chapter Contents

Cordsets ..... 10
Mounting Accessories ..... 12
Power Supplies ..... 13

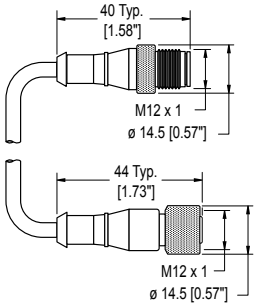
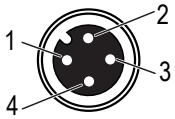
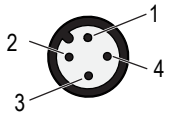
# Chapter 4 Accessories

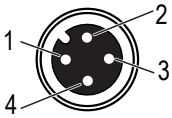
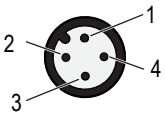
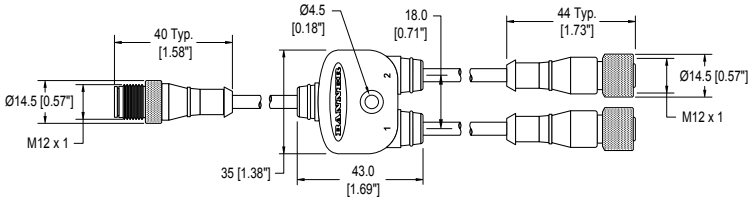
## Cordsets

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 Single-Ended M12 Female Cordsets | | | | | |
|---|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Female)** | |
| **MQDC-406** | 2 m (6.56 ft) | Straight |  |  | 1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black<br>5 = Not used |
| **MQDC-415** | 5 m (16.4 ft) | | | | |
| **MQDC-430** | 9 m (29.5 ft) | | | | |
| **MQDC-450** | 15 m (49.2 ft) | | | | |
| **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) | | | | |

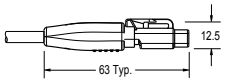
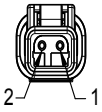
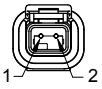

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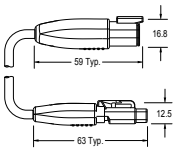
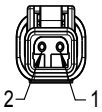
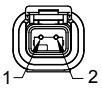
| 4-Pin Double-Ended M12 Female to M12 Male Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout** |
| **MQDEC-401SS** | 0.31 m (1 ft) | Male Straight/Female Straight |  | Female<br><br>Male<br><br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black |
| **MQDEC-403SS** | 0.91 m (2.99 ft) | | | |
| **MQDEC-406SS** | 1.83 m (6 ft) | | | |
| **MQDEC-412SS** | 3.66 m (12 ft) | | | |
| **MQDEC-415SS** | 4.58 m (15 ft) | | | |
| **MQDEC-420SS** | 6.10 m (20 ft) | | | |
| **MQDEC-430SS** | 9.14 m (30.2 ft) | | | |
| **MQDEC-450SS** | 15.2 m (49.9 ft) | | | |

| 4-Pin Flat Junction M12 Female Branch to M12 MaleTrunk Splitter Cordsets | | | |
|---|---|---|---|
| **Model** | **Branches (Female)** | **Trunk (Male)** | **Pinout** |
| **CSB-M1240M1240** | No branch | No trunk | Female<br><br>Male<br><br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black |
| **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) | 1 m (3.28 ft) | |
|  | | | |


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## Single Color Only Cordsets

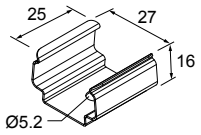
| 2-Pin Single-Ended Deutsch Female to Male Cordset | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout** |
| **DTMC-206** | 1.83 m (6 ft) | Straight |  | Male  Female  1 = Brown<br>2 = Blue |
| **DTMC-215** | 4.57 m (15 ft) | | | |
| **DTMC-230** | 9.15 m (30 ft) | | | |

| 2-Pin Double-Ended Deutsch Female to Male Cordset | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout** |
| **DTMEC-2005** | 0.16 m (0.5 ft) | Straight |  | Male  Female  1 = Brown<br>2 = Blue |
| **DTMEC-201** | 0.31 m (1 ft) | | | |
| **DTMEC-203** | 0.91 m (3 ft) | | | |
| **DTMEC-206** | 1.83 m (6 ft) | | | |
| **DTMEC-212** | 3.66 m (12 ft) | | | |
| **DTMEC-220** | 6.10 m (20 ft) | | | |
| **DTMEC-230** | 9.15 m (30 ft) | | | |

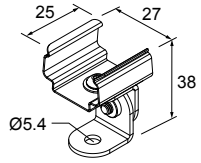
# Mounting Accessories

All measurements are listed in millimeters [inches], unless noted otherwise. The measurements provided are subject to change.

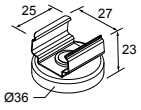
**LMBWLS15**
- Stainless steel clip bracket
- Includes 3 clip brackets and 2 plastic spacers
- Clearance hole for M5 hardware




**LMBWLS15-150S**
- Set of 2 stainless steel swivel brackets, allows for 150° of movement
- Clearance hole for M5 button head screw




**LMBWLS15MAG**
- Set of 2 brackets
- Magnetic mounting bracket for attachment to steel and iron surfaces





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**LMBWLS15TD**

- Includes 4 100 mm (4 in) strips of 3M™ Dual Lock™ reclosable fasteners
- Recommended for mounting to metal and plastic surfaces
- Strong, pressure-sensitive adhesive bonds on contact



**LMBWLS15TF**

- Includes 2 100 mm (4 in) strips of double-sided foam urethane strips
- Acrylic adhesive provides high bond strength to most surfaces
- Bonds to low surface energy plastics such as polypropylene and powder-coated paints



**ACC-CAP M12-10**

- 10 Caps
- Seal and protect exposed, unterminated M12 quick-disconnect connectors



# Power Supplies

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

**PSD-24-4**

- 90 to 264 V AC 50/60 Hz input
- Includes a 1.8 m (6 ft) US-style 5-15P input plug
- 24 V DC UL Listed Class 2 M12 connector output
- 4 A total current



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

**PSW-24-1**

- 24 V DC, 1 A Class 2 UL Listed power supply
- 100 V AC to 240 V AC 50/60 Hz input
- 2 m (6.5 ft) PVC cable with M12 quick disconnect
- 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




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Chapter Contents

Clean with Mild Detergent and Warm Water ..... 14
Repairs ..... 14
Contact Us ..... 14
Banner Engineering Corp Limited Warranty ..... 14

# Chapter 5 Product Support and Maintenance

## Clean with Mild Detergent and Warm Water

Wipe down the device with a soft cloth dampened with a mild detergent and warm water solution. Do not use any other chemicals for cleaning.

## Repairs

Contact Banner Engineering for troubleshooting of this device. **Do not attempt any repairs to this Banner device; it contains no field-replaceable parts or components.** If the device, device part, or device component is determined to be defective by a Banner Applications Engineer, they will advise you of Banner's RMA (Return Merchandise Authorization) procedure.

> **IMPORTANT:** If instructed to return the device, pack it with care. Damage that occurs in return shipping is not covered by warranty.

## Contact Us

Banner Engineering Corp. | 9714 Tenth Avenue North | Plymouth, MN 55441, USA | Phone: + 1 888 373 6767

For worldwide locations and local representatives, visit www.bannerengineering.com.

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