

# WLS27 LED Strip Light - PWM Dimmable



## Instruction Manual

Banner's WLS27 LED Strip Light has a sturdy aluminum housing and is encased in a shatterproof, UV-stabilized, copolyester shell, making it ideal for harsh indoor and outdoor applications.

- Intensity can be controlled from 0 to 100% using Pulse Width Modulation (PWM) on an input control wire
- Rugged, water-resistant IP69K rating
- Available in eight lengths from 145 mm to 1130 mm
- Daisy chain power to multiple lights to control intensity simultaneously
- Automatic temperature protection built into the unit. Above 50 °C, the light dims to manage heat and protect product lifetime



For PWM dimming, use with the LC65 Dimmer Module. For more information, refer to the LC65 LED Dimmer Module datasheet, p/n [177086](#).

Figure 1. Stand-Alone Light or End Light in a Cascade—QD

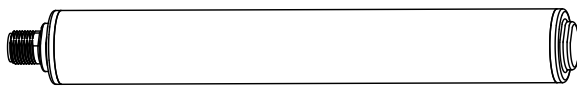


Figure 2. First or Middle of a Cascade—QD



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

Stand-alone models have a male quick disconnect at 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 a male quick disconnect at one end for power connection, and a female quick disconnect at the opposite end for connecting to other lights in the cascade. A double-ended accessory cordset must be used between each pair of lights in a cascade.

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



**Important:** Read the following instructions before operating the light. Please download the complete WLS27 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.

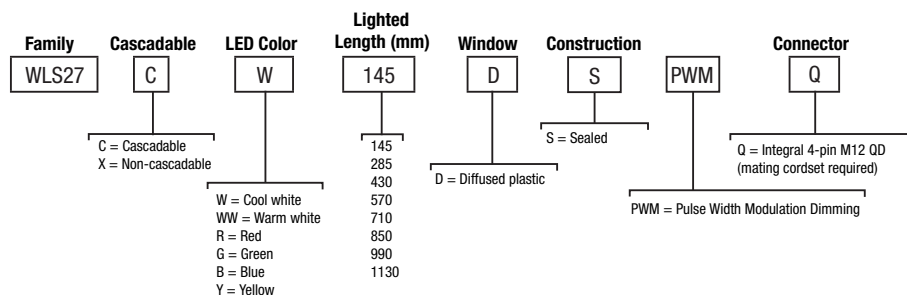


**Important:** Lea el siguiente instructivo antes de operar el luminario. Por favor descargue desde [www.bannerengineering.com](http://www.bannerengineering.com) toda la documentación técnica de los WLS27 LED Strip Light, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, 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 WLS27 LED Strip Light sur notre site [www.bannerengineering.com](http://www.bannerengineering.com) pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et les instructions de montage.

## Models



Stand-Alone	Cascade	Lighted Length	Power Connector
WLS27XW145DSPWMQ	WLS27CW145DSPWMQ	145 mm	Integral 4-pin M12 male quick-disconnect connector
WLS27XW285DSPWMQ	WLS27CW285DSPWMQ	285 mm	
WLS27XW430DSPWMQ	WLS27CW430DSPWMQ	430 mm	
WLS27XW570DSPWMQ	WLS27CW570DSPWMQ	570 mm	
WLS27XW710DSPWMQ	WLS27CW710DSPWMQ	710 mm	
WLS27XW850DSPWMQ	WLS27CW850DSPWMQ	850 mm	
WLS27XW990DSPWMQ	WLS27CW990DSPWMQ	990 mm	
WLS27XW1130DSPWMQ	WLS27CW1130DSPWMQ	1130 mm	

## Specifications

### Operating Voltage

12 V DC to 30 V DC  
 Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)  
 See electrical characteristics on product label.

### Pulse Width Modulation (PWM)

Frequency: Up to 1000 Hz  
 Voltage: 8 to 30 V DC  
 Current: 4 mA max. per foot

### Supply Protection Circuitry

Protected against reverse polarity and transient voltages

### Light Characteristics

Cool White  
 Color Temperature (CCT): 6500K (+500K, -400K)  
 Lumen output: 800 (± 5%) per foot, typical at 25 °C (77 °F)  
 Luminous efficacy: 90 lumens/Watt typical at 24 V DC at 25 °C (77 °F)  
 CRI: 85, typical  
 Warm white: 3000K (+200K, -100K)  
 Green: 525 nm  
 Red: 618 nm  
 Yellow: 590 nm  
 Blue: 460 nm

### LED Lifetime

Lumen Maintenance - L<sub>70</sub>  
 When operating within specifications, output will decrease less than 30% after 75,000 hours.

### Construction

Clear anodized aluminum housing; FDA -grade copolyester outer housing

### Mounting

Bracket LMBWLS27EC included (2 for lights up to 570 mm or 3 for lights 710 mm and longer)

### Certifications



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

**Turck Banner LTD** Blenheim House,  
 Blenheim Court, Wickford, Essex SS11 8YT,  
 Great Britain

### Connections

Integral 4-pin M12 male quick-disconnect connector (4-pin connecting cordset required)

### Storage Temperature

-40 °C to +70 °C (-40 °F to +158 °F)

### Operating Temperature

-40 °C to +70 °C (-40 °F to +158 °F)  
 Light output begins to decrease above 50 °C (122 °F) and will be approximately 65% of max intensity at 60 °C (140 °F) and 30% of max intensity at 70 °C (158 °F)

### Application Note

When connecting cascading lights in series it is important not to exceed maximum current limitations:  
 Maximum length of light at 12 V DC: 1.4 m (4.6 ft)  
 Maximum length of light at 24 V DC: 3.0 m (9.8 ft)  
 Maximum length of light at 30 V DC: 3.1 m (10.2 ft)  
 At 50% intensity, double the lengths



**Note:** Do not spray cable with high-pressure sprayer, or cable damage will result.

### Environmental Rating

Rated IP66, IP67, and IP69K per DIN 40050-9

### Vibration and Mechanical Shock

Vibration 10-55 Hz 1.0 mm p-p amplitude per IEC 60068-2-6  
 Shock 15G 11 ms duration, half sine wave per IEC 60068-2-27

Light Length	Typical Current			Max. Current	Lumens (Typical @25 °C)					
	12 V DC	24 V DC	30 V DC	A	Cool White	Warm White	Green	Red	Yellow	Blue
145 mm	0.33 A	0.15 A	0.12 A	0.4	400	400	180	55	50	40
285 mm	0.66 A	0.30 A	0.24 A	0.8	800	800	360	110	100	80
430 mm	1.01 A	0.46 A	0.36 A	1.2	1200	1200	540	165	150	120
570 mm	1.36 A	0.61 A	0.48 A	1.6	1600	1600	720	220	200	160
710 mm	1.75 A	0.77 A	0.60 A	2.0	2000	2000	900	275	250	200

Light Length	Typical Current			Max. Current	Lumens (Typical @25 °C)					
	12 V DC	24 V DC	30 V DC	A	Cool White	Warm White	Green	Red	Yellow	Blue
850 mm	2.13 A	0.92 A	0.73 A	2.4	2400	2400	1080	330	300	240
990 mm	2.59 A	1.08 A	0.85 A	2.8	2800	2800	1260	385	350	280
1130 mm	3.04 A	1.24 A	0.97 A	3.2	3200	3200	1440	440	400	320

## Dimensions

Figure 3. Quick Disconnect Models

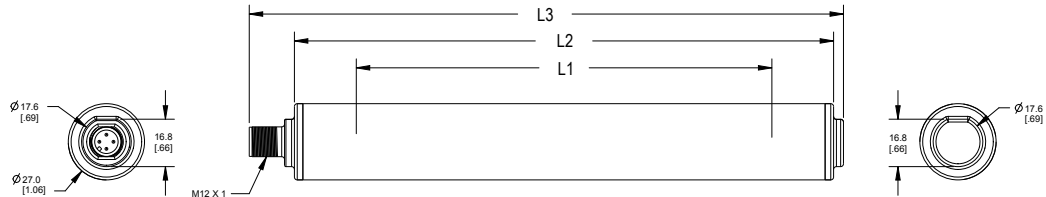
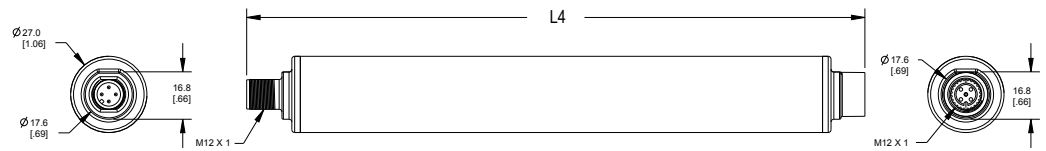


Figure 4. Cascade Models



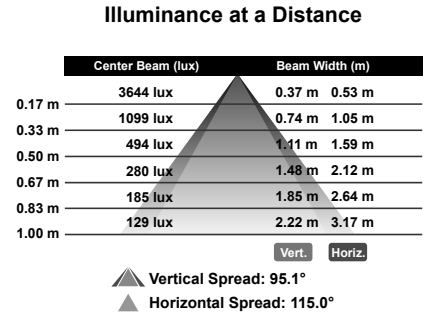
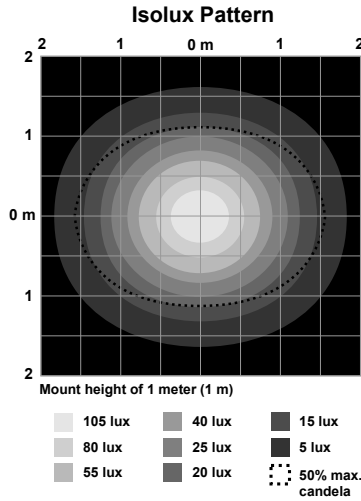
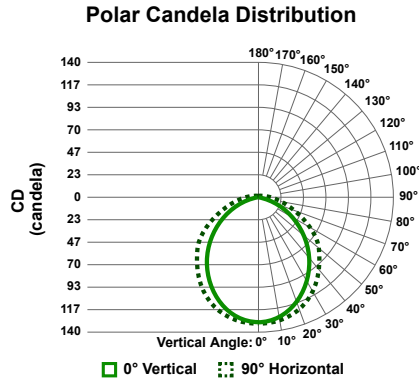
Models	L1	L2	L3	L4
WLS27..145..	145 mm (5.7 in)	191 mm (7.5 in)	210.5 mm (8.3 in)	219 mm (8.6 in)
WLS27..285..	286 mm (11.3 in)	332 mm (13.1 in)	351.5 mm (13.8 in)	360 mm (14.2 in)
WLS27..430..	427 mm (16.8 in)	473 mm (18.6 in)	492.5 mm (19.4 in)	501 mm (19.7 in)
WLS27..570..	568 mm (22.4 in)	614 mm (24.2 in)	633.5 mm (24.9 in)	642 mm (25.3 in)
WLS27..710..	709 mm (27.9 in)	755 mm (29.7 in)	774.5 mm (30.5 in)	783 mm (30.8 in)
WLS27..850..	850 mm (33.5 in)	896 mm (35.3 in)	915.5 mm (36 in)	924 mm (36.4 in)
WLS27..990..	991 mm (39 in)	1037 mm (40.8 in)	1056.5 mm (41.6 in)	1065 mm (41.9 in)
WLS27..1130..	1132 mm (44.6 in)	1178 mm (46.4 in)	1197.5 mm (47.1 in)	1206 mm (47.5 in)

## Performance

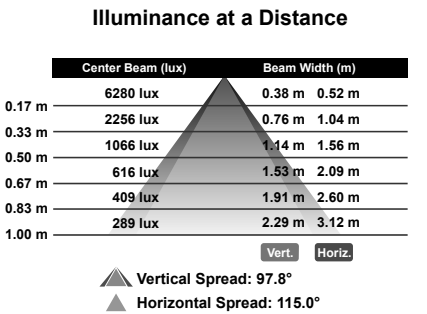
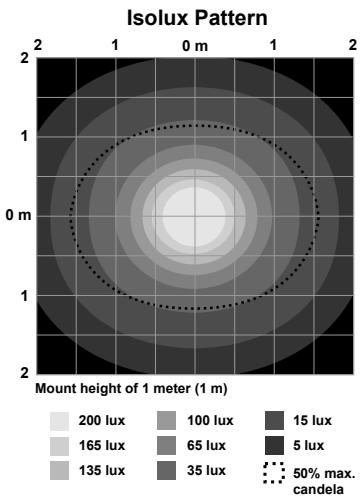
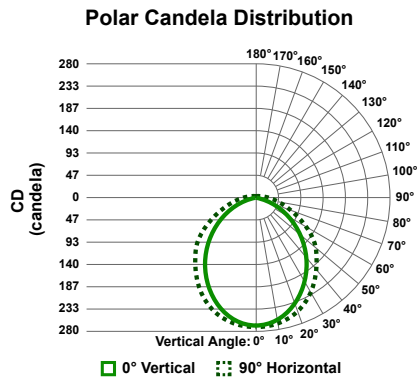
Optical data shown below is for cool white only. To get lux and candela values for other colors, multiply the values shown on the charts by the following factors:

<b>Warm White:</b>	1.000
<b>Green:</b>	0.450
<b>Red:</b>	0.138
<b>Yellow:</b>	0.125
<b>Blue:</b>	0.100

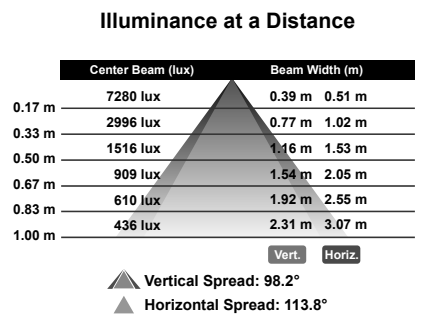
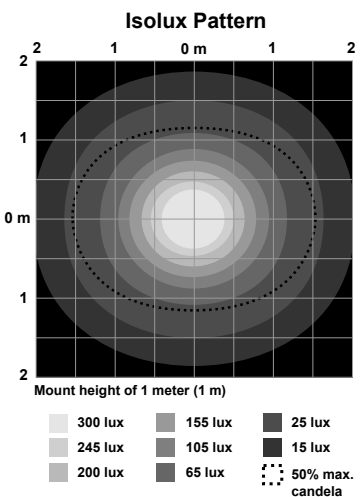
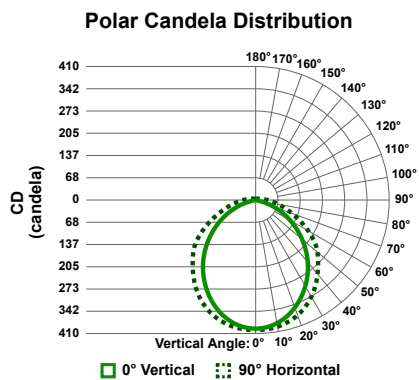
### 145 mm Models



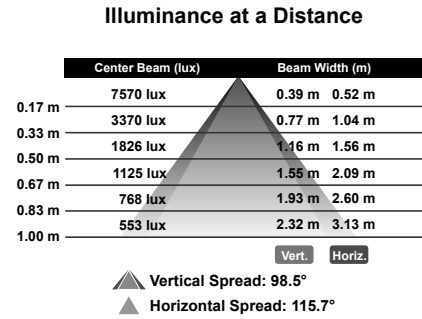
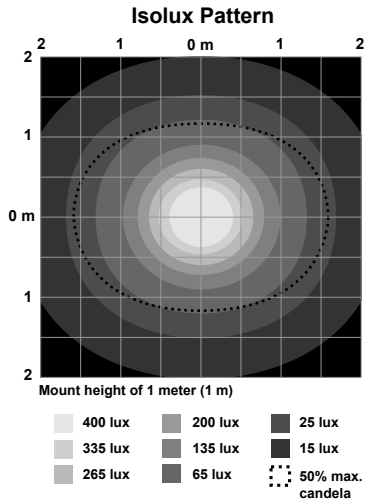
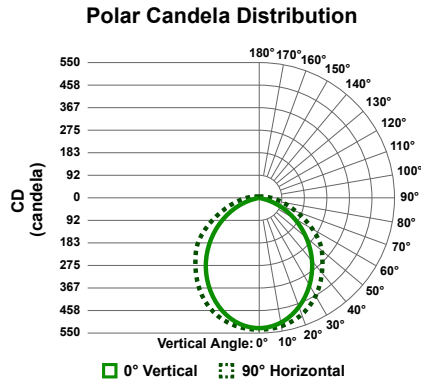
### 285 mm Models



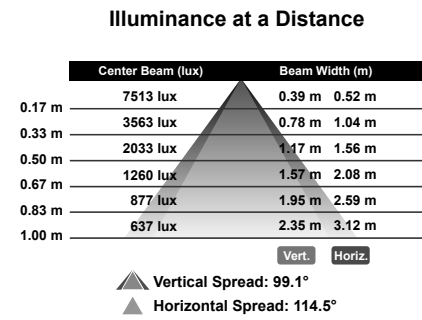
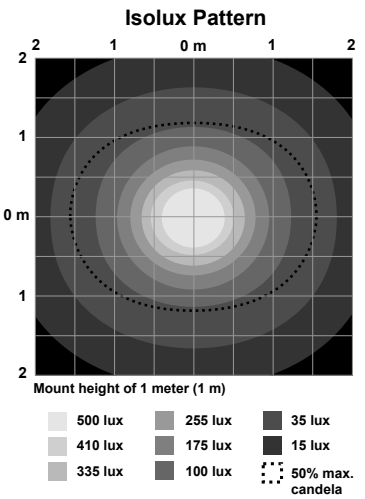
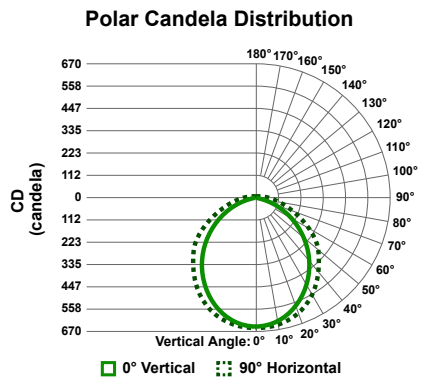
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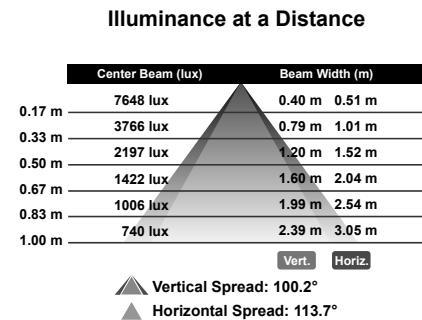
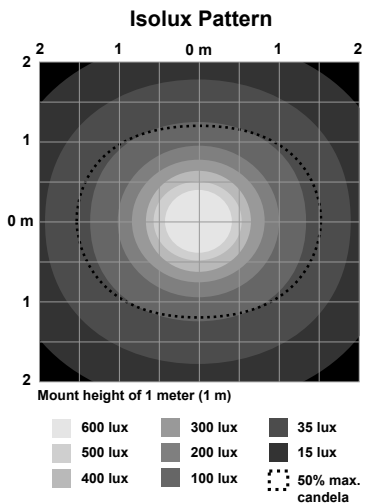
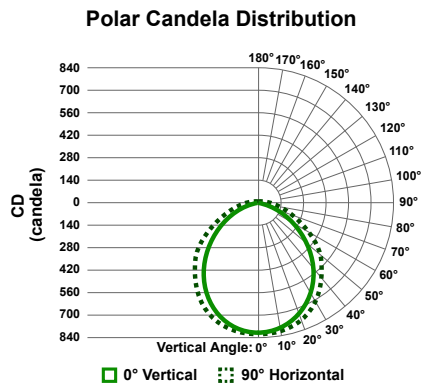
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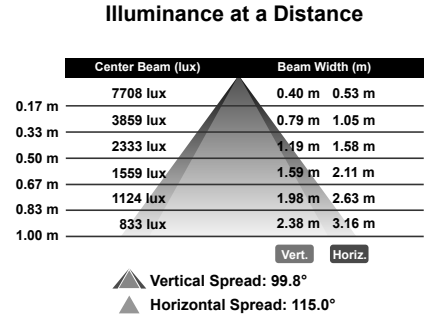
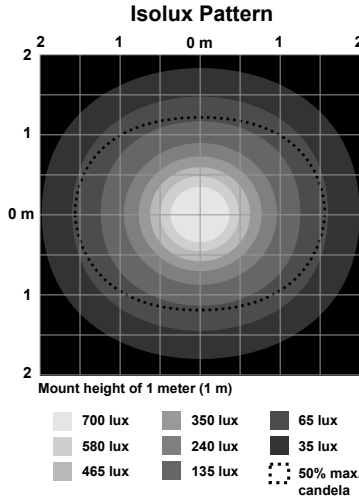
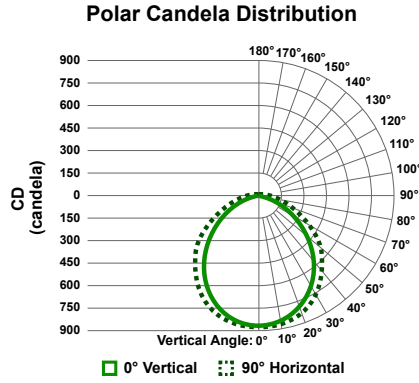
### 710 mm Models



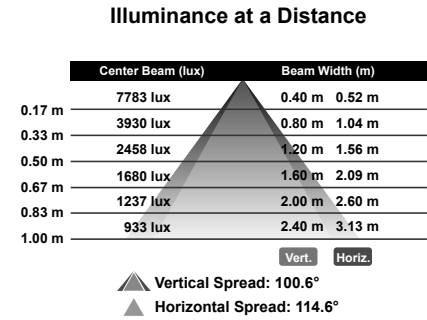
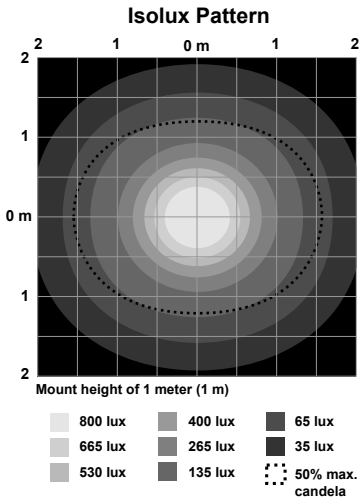
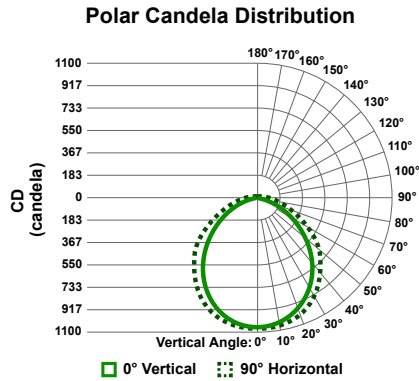
### 850 mm Models



### 990 mm Models



### 1130 mm Models



### Wiring Diagram

Male	Female	Pin	Wire Color	Connection
		1	brown	12 V DC to 30 V DC
		3	blue	DC common
		4	black	Pulse width modulation (PWM) input. For maximum intensity, leave the black wire floating or connected to common. Connecting to 12 V DC to 30 V DC causes LEDs to shut off.
		2	white	Not used

## Accessories

### Cordsets

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)			
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)			

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

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)			
MQDEC-406SS	1.83 m (6 ft)			Male
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-420SS	6.10 m (20 ft)			
MQDEC-430SS	9.14 m (30.2 ft)			
MQDEC-450SS	15.2 m (49.9 ft)			

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

4-Pin Threaded M12 Cordsets—Washdown, Stainless Steel, Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-WDSS-0406	2 m (6.56 ft)	Straight		
MQDC-WDSS-0415	5 m (16.4 ft)			
MQDC-WDSS-0430	9 m (29.5 ft)			

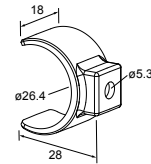
1 = Brown  
 2 = White  
 3 = Blue  
 4 = Black



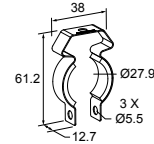


**LMBWLS27SP**

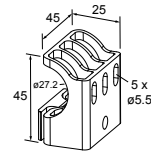
- Clear copolyester
- Clearance for M5 or #10 hardware
- Snap bracket for light duty applications

**LMBWLS27T**

- Stainless steel mounting brackets with rubber grips
- M5 stainless steel hardware included
- Clearance for M5 or #10 hardware

**LMBWLS27U**

- Clear copolyester
- Clearance for M5 or #10 hardware
- Clamps securely around the light body



## 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.

**THIS LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED (INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND WHETHER ARISING UNDER COURSE OF PERFORMANCE, COURSE OF DEALING OR TRADE USAGE.**

This Warranty is exclusive and limited to repair or, at the discretion of Banner Engineering Corp., replacement. **IN NO EVENT SHALL BANNER ENGINEERING CORP. BE LIABLE TO BUYER OR ANY OTHER PERSON OR ENTITY FOR ANY EXTRA COSTS, EXPENSES, LOSSES, LOSS OF PROFITS, OR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES RESULTING FROM ANY PRODUCT DEFECT OR FROM THE USE OR INABILITY TO USE THE PRODUCT, WHETHER ARISING IN CONTRACT OR WARRANTY, STATUTE, TORT, STRICT LIABILITY, NEGLIGENCE, OR OTHERWISE.**

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

## FCC Part 15 Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Industry Canada

This device complies with CAN ICES-3 (B)/NMB-3(B). Operation is subject to the following two conditions: 1) This device may not cause harmful interference; and 2) This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme NMB-3(B). Le fonctionnement est soumis aux deux conditions suivantes : (1) ce dispositif ne peut pas occasionner d'interférences, et (2) il doit tolérer toute interférence, y compris celles susceptibles de provoquer un fonctionnement non souhaité du dispositif.

## Mexican Importer

Banner Engineering de México, S. de R.L. de C.V.  
David Alfaro Siqueiros 103 Piso 2 Valle oriente  
San Pedro Garza Garcia Nuevo León, C. P. 66269  
81 8363.2714



more sensors, more solutions