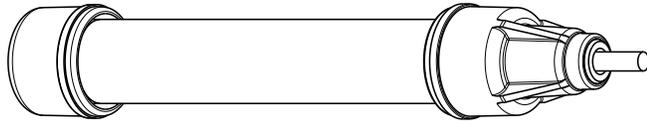


HLS27 Hazardous Location Multicolor LED Strip Light with EZ-STATUS™



Datasheet

Banner's HLS27 Hazardous Location Multicolor LED Strip Light has a sturdy aluminum housing and is encased in a shatterproof, UV-stabilized, polycarbonate shell, making it ideal for harsh indoor and outdoor applications.



- EZ-STATUS combines lighting and indication in one device to illuminate an area or machine, and show status change
- Models with 3 or 5 colors available, all with only 3 inputs
- Rugged, water-resistant IP66, IP67 design
- Standard and optional 300 series stainless steel mounting brackets protect against impact
- Certification for cULus and ATEX/UKCA/IECEX, see details in specifications



Important: Read the following instructions before operating the light. Please download the complete HLS27 Hazardous Location Multicolor 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.

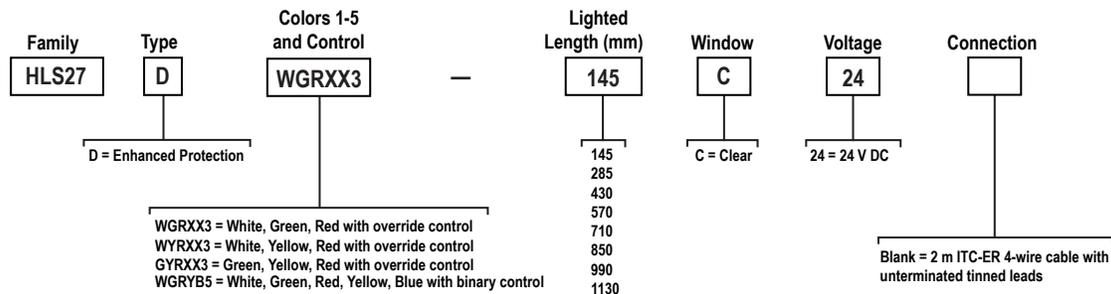


Important: Lea el siguiente instructivo antes de operar el luminario. Por favor descargue desde www.bannerengineering.com toda la documentación técnica de los HLS27 Hazardous Location Multicolor LED Strip Light, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, advertencias, y las instrucciones de instalación de estos dispositivos.



Important: Lisez les instructions suivantes avant d'utiliser le luminare. Veuillez télécharger la documentation technique complète des HLS27 Hazardous Location Multicolor 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.

Models



Type	Protection	Suitable for ATEX / UKCA / IECEx	Suitable for NEC & CEC
D	Enhanced Protection	Gas Zone: 2 Dust Zone: 22	Gas Zone: 2 Dust Zone: 22 Class I Division 2 Class II Division 2 Class III Division 1 and 2

Installation Instructions

Hazardous Location Applications



WARNING:

- **Hazardous Locations**
- It is the user's responsibility to ensure that all local, state, and national laws, rules, codes, or regulations relating to the installation and use of this device in any particular application are satisfied. This device must be installed by Qualified Persons, in accordance with this document and applicable regulations.
- A Qualified Person is a person who, by possession of a recognized degree or certificate of professional training, or who, by extensive knowledge, training and experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work.



WARNING: The hazardous location mounting hardware is designed to help protect the HLS27 light from damage during impact and must be used in all hazardous location applications. Failure to use the Banner supplied mounting hardware correctly will void the hazardous location rating of the light.



CAUTION:

- **Electrostatic Discharge (ESD) Special Conditions for Safe Use**
- Parts of the enclosure are non-conducting and can generate an ignition-capable level of ESD.
- Clean the equipment with only a damp cloth.

General Notes and Conditions for Safe Use:



- See Specifications and Wiring Diagrams for important information concerning entity parameters, permissible locations, electrical connections and certifications.
- In addition to the warning above concerning user responsibility, the installation must comply with the following:
 - All installations must comply with all manufacturer's instructions.
 - This device is provided with a PLTC-ER/ITC-ER cable and must be installed in accordance with the following:
 - NEC Article 501.10 (B) for Class I Division 2
 - NEC Article 502.10 (B) for Class II Division 2
 - NEC Article 503.10 (A) or (B) for Class III Division 1 or 2 respectively
 - Canadian Electrical Code (CSA C22.1) for Canadian Installations
 - Section 9 of IEC 60079-14 for ATEX/UKCA/IECEx locations
 - The PLTC-ER/ITC-ER cable shall be installed in accordance with the provisions of NEC Article 725 (PLTC-ER) or 727.4 (ITC-ER) for Class I Division 2, Class II Division 2, and Class III Division 1 and 2 locations.
 - The 7/8 Turck Minifast connector must be used with a mating female 7/8 Minifast connector manufactured by Turck and certified for the appropriate location classification and installed following the requirements of Turck Control Drawing Ni-2.422. Examples of an appropriate mating connector are shown in and are available for purchase separately from Banner.
 - All connections in the hazardous location must be secured by a locking device. An example of appropriate locking device is shown in . One locking device is provided with each model that is fitted with a Turck Minifast connector. Locking devices are also available for purchase separately from Banner.
 - The cable shall be terminated with a fitting certified for the appropriate location classification
 - The device must be powered by a suitable Class 2 power supply (UL) or a SELV power supply (CE)
- Do not attempt any repairs to this device; it contains no field-replaceable parts or components. Tampering and/or replacement with non-factory components may adversely affect the safe use of the system.
- The nonconducting materials of this device may be susceptible to ignition-capable level of electrostatic charging and precautions must be taken to avoid this. The user/installer shall ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which are conducive to creating a build-up of electrostatic charges.
- The user/installer must take suitable precautions to prevent the device from being adversely affected by aggressive substances, such as acidic liquids or gases that may attack metals, or solvents that may affect polymeric (plastic) materials. Suitable precautions include routine inspection or maintenance procedures require replacement of damaged devices or establishing from the materials data sheet that the device is resistant to specific chemicals. These precautions must ensure that the type of protection is not compromised.

Wiring Diagrams

Unterminated	Wire Color	Description
	Brown	Input 1
	White	Input 3
	Blue	DC common
	Black	Input 2

Input 1: Brown Wire	Input 2: Black Wire	Input 3: White Wire	LED Color
—	—	—	Light OFF
+24 V DC	—	—	Color 1 ON
—	+24 V DC	—	Color 2 ON
+24 V DC	+24 V DC	—	Color 2 ON
—	—	+24 V DC	Color 3 ON
+24 V DC	—	+24 V DC	Color 3 ON
—	+24 V DC	+24 V DC	Color 3 ON
+24 V DC	+24 V DC	+24 V DC	Color 3 ON

Input 1: Brown Wire	Input 2: Black Wire	Input 3: White Wire	LED Color
—	—	—	Light OFF
+24 V DC	—	—	Color 1 ON
—	+24 V DC	—	Color 2 ON
—	—	+24 V DC	Color 3 ON
+24 V DC	+24 V DC	—	Color 4 ON
+24 V DC	—	+24 V DC	Color 5 ON
—	+24 V DC	+24 V DC	Light OFF
+24 V DC	+24 V DC	+24 V DC	Light OFF

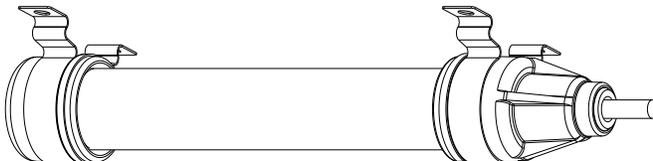
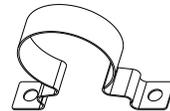
Mounting Instructions

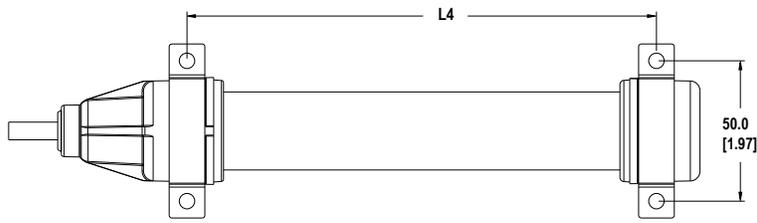
Multiple mounting options are available for the HLS27 in hazardous locations. In the two options listed below, the mounting brackets must be spaced a distance of (L4) apart to ensure the device meets impact protection standards for hazardous locations.

Included Mounting Hardware (LMBHLS27S – 2 Brackets)

When using the standard mounting hardware, the mounting hole centers for each individual bracket must be spaced 50.0 mm (1.97 inches) from one another. This spacing is critical for the bracket to provide the required impact protection and prevent rotation of the light within the bracket.

The stainless-steel bracket is designed to be used with M5 or #10 stainless-steel hardware.





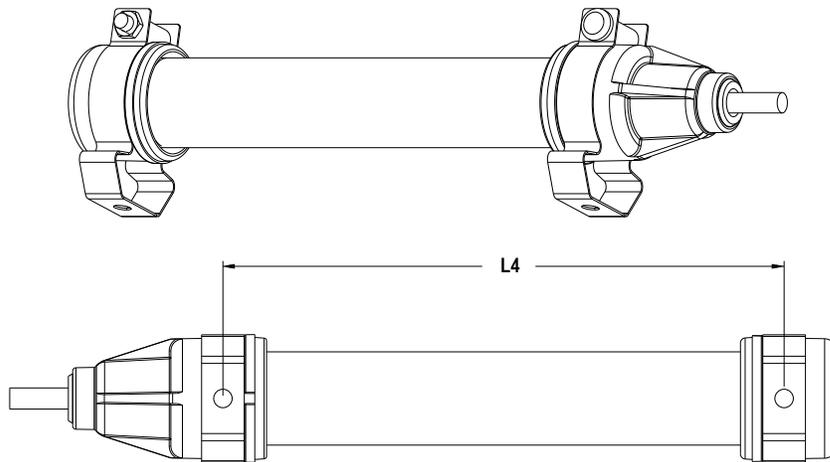
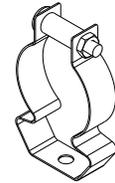
Models	L4
HLS27..145..	168 mm (6.6 in)
HLS27..285..	309 mm (12.2 in)
HLS27..430..	450 mm (17.7 in)
HLS27..570..	591 mm (23.3 in)
HLS27..710..	732 mm (28.8 in)
HLS27..850..	873 mm (34.4 in)
HLS27..990..	1014 mm (39.9 in)
HLS27..1130..	1155 mm (45.5 in)

Optional Mounting Hardware (LMBHLS270 – 2 Brackets and Hardware) Purchased Separately

When using the optional mounting hardware, the head of the fastener used must not exceed 5.0 mm (0.2 inches) in height. Fasteners exceeding this height could damage the light housing during impact situations.

When using the optional mounting hardware, the supplied spacer must be used with the bolt to maintain the correct bracket shape. This shape is critical for the bracket to provide the required impact protection.

The stainless-steel bracket is designed to be used with M5 or #10 stainless-steel hardware.



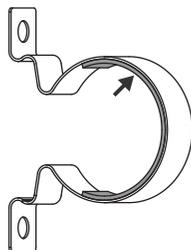
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HLS27..1130..	1155 mm (45.5 in)

Light Anti-Rotation Pads

In applications where vibration is a concern or when light orientation is critical, use anti-rotation pads to prevent the light from rotating within the mounting brackets. Light rotation caused by vibration may be more pronounced with longer length lights.

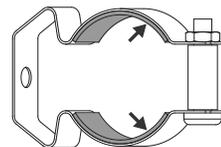
Attach the anti-rotation pads to the brackets, as shown in the figures, with the adhesive side applied to the bracket.

Figure 1. Included Mounting Hardware with Anti-Rotation Pads



Note: When using the optional mounting hardware, cut the anti-rotation pad and apply it to both sides of the mounting bracket as shown.

Figure 2. Optional Mounting Hardware with Anti-Rotation Pads



Specifications

Supply Voltage

24 V DC (+ 20% / - 10%)

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

See electrical characteristics on product label

Lighted Length	Typical Current (A) at 25° C ¹	Maximum Current (A) at -40 °C
145mm	0.160	0.200
285 mm	0.315	0.400
430 mm	0.525	0.600
570 mm	0.630	0.800
710 mm	0.840	1.000
850 mm	0.945	1.200
990 mm	1.155	1.400
1130 mm	1.260	1.600

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

LED Lifetime

Lumen Maintenance - L₇₀

When operating within specifications, output decreases less than 30% after 50,000 hours

Mounting

Bracket kit LMBHLS27S included (2 brackets for use with HLS27 Hazardous Location LED Strip Light)

Optional bracket kit LMBHLS27O (2 brackets and hardware for use with HLS27 Hazardous Location LED Strip Light)

Construction

Clear anodized aluminum housing

UV stabilized polycarbonate outer housing

Connections

2 m (6.3 ft) long, 5.3 mm (0.21 inch) diameter UL type PLTC-ER or ITC-ER cable with unterminated leads; PVC jacket, paper separator

Environmental Rating

IP66, IP67

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

Operating Conditions

-35 °C to +50 °C (-31 °F to +122 °F)

90% maximum relative humidity (non-condensing)

Storage Temperature: -35 °C to +70 °C (-31 °F to +158 °F)

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 (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Light Characteristics

CRI: 80, minimum

Color	Dominant Wavelength (nm) or Color Temperature (CCT)	Lighted Length Lumens (Typical at 25 °C) ¹							
		145 mm	285 mm	430 mm	570 mm	710 mm	850 mm	990 mm	1130 mm
Daylight White	5000 K (±300 K)	260	690	1035	1380	1725	2070	2415	2760
Green	525 nm	160	425	638	850	1063	1275	1488	1700
Red	625 nm	75	195	293	390	488	585	683	780
Yellow	580 nm	225	605	908	1210	1513	1815	2118	2420
Blue	470 nm	45	115	173	230	288	345	403	460

Approvals

Models with 2 m ITC-ER cable and unterminated tinned leads:

NEC and CEC:

-40°C ≤ T_a ≤ +50°C

Gas & Vapors: Class I Zone 2 IIC T4 / Class I Div 2 Groups ABCD T4

Dust: Class II Zone 22 IIIC T100°C / Class II Div 2 Groups FG T5

Fibers: Class III Div 1 and Div 2 T5

ATEX/UKCA/IECEX:

-40°C ≤ T_a ≤ +50°C

Gas & Vapors: II 3 G Ex ec IIC T4 Gc (Group IIC Zone 2)

Dust: II 3 D Ex tc IIIC T85°C Dc (Group IIIC Zone 22)



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



UL/cULus
E467619



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

DEMKO 18 ATEX 2122X
IECEX UL 18.0115X

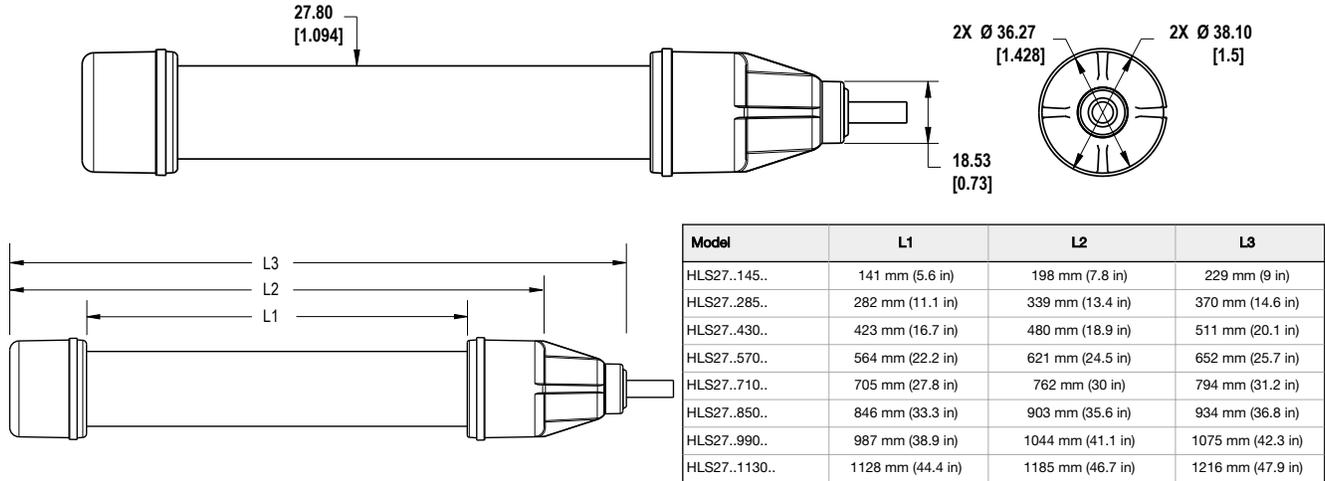
IEC 60079-0:2017

IEC 60079-7:2017

IEC 60079-31:2013

¹ Values shown at 25 °C - current and lumen values decrease 0.4% per 1 °C from ambient. For example, a 1130 mm unit will have a maximum current of 1.600 A at -40 °C and 1.134 A at +50 °C.

Dimensions



Performance Curves

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

- Green: 0.615
- Red: 0.285
- Yellow: 0.875
- Blue: 0.195

For models with heavy diffused housing, multiply lumen values by 0.8.

Figure 3. 145 mm Models

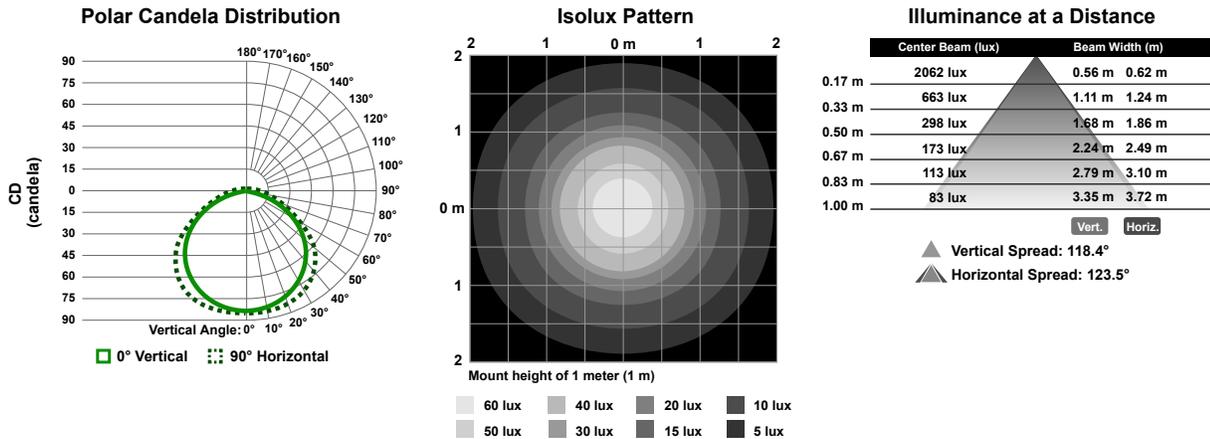


Figure 4. 285 mm Models

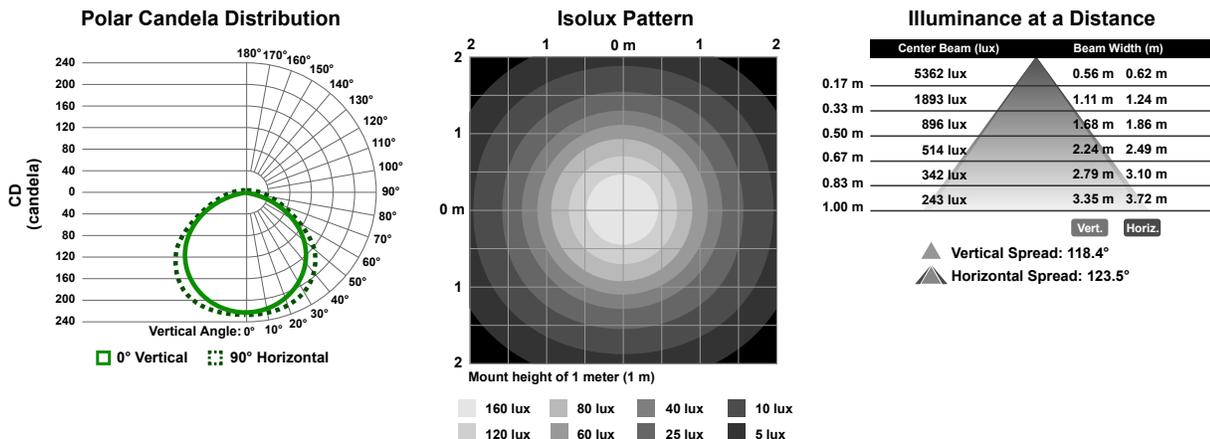


Figure 5. 430 mm Models

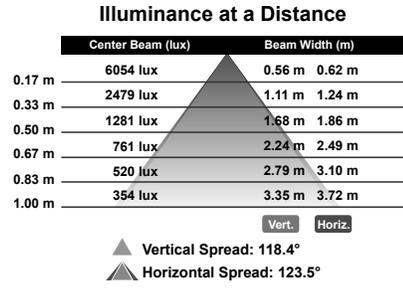
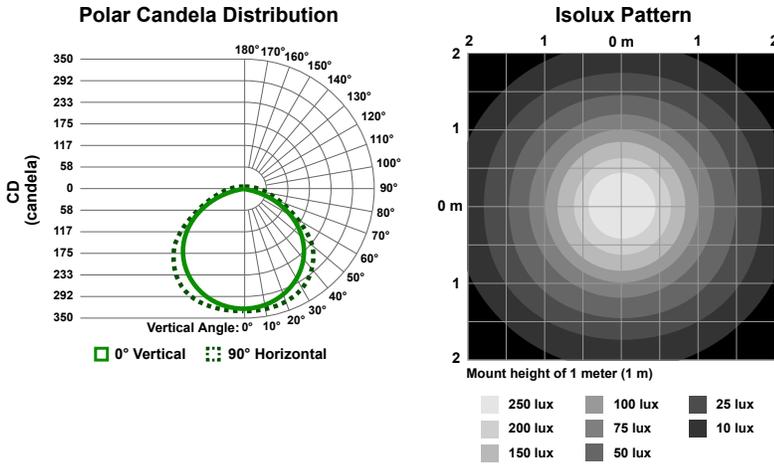


Figure 6. 570 mm Models

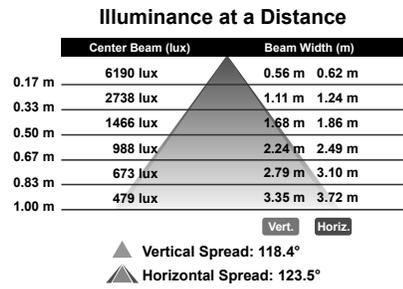
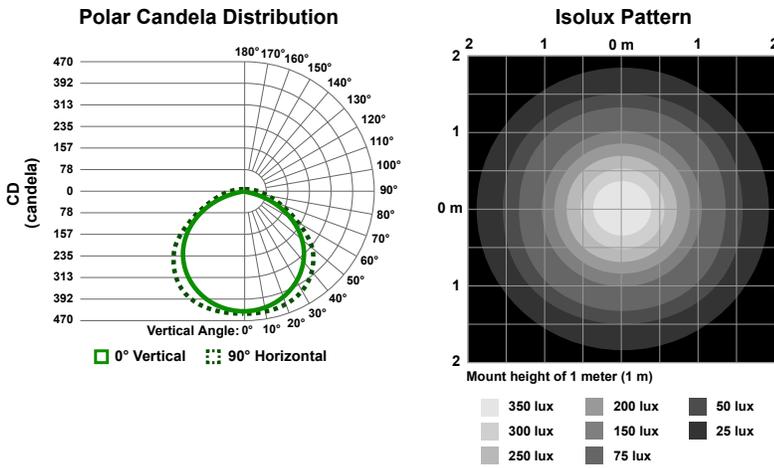


Figure 7. 710 mm Models

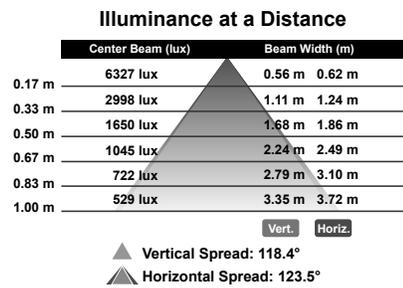
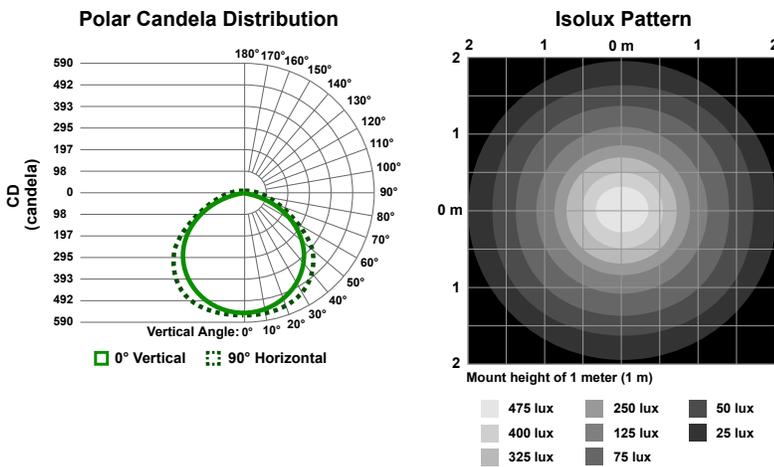


Figure 8. 850 mm Models

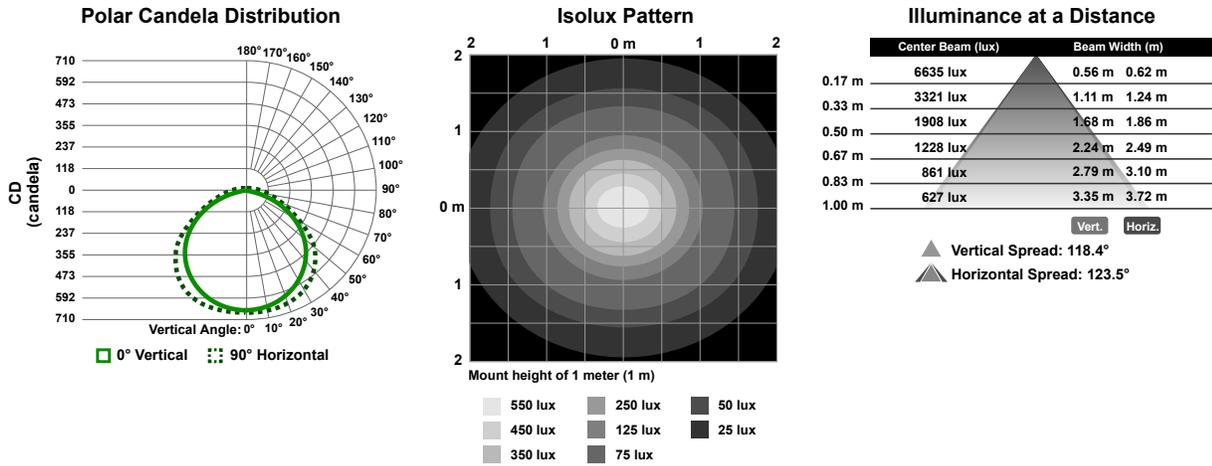


Figure 9. 990 mm Models

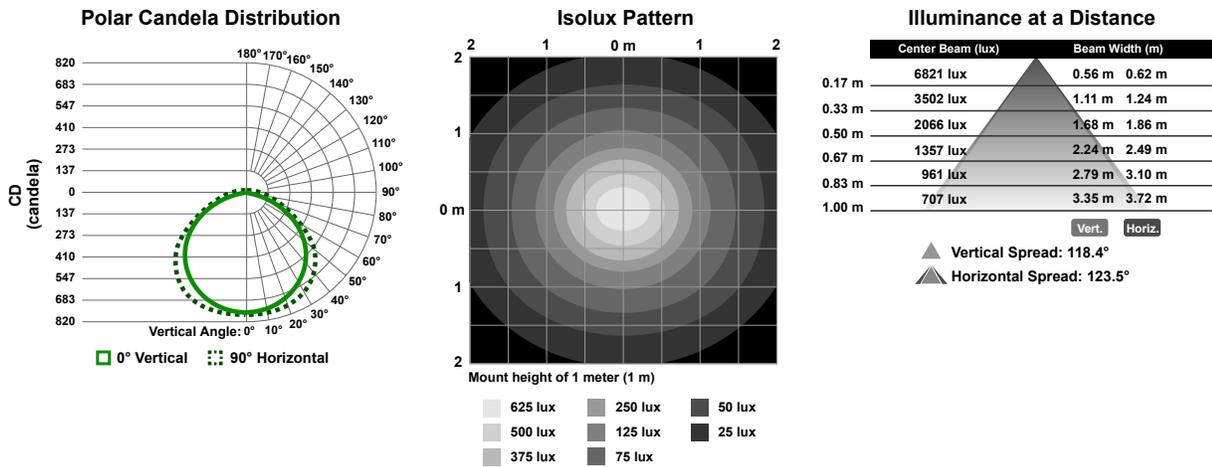
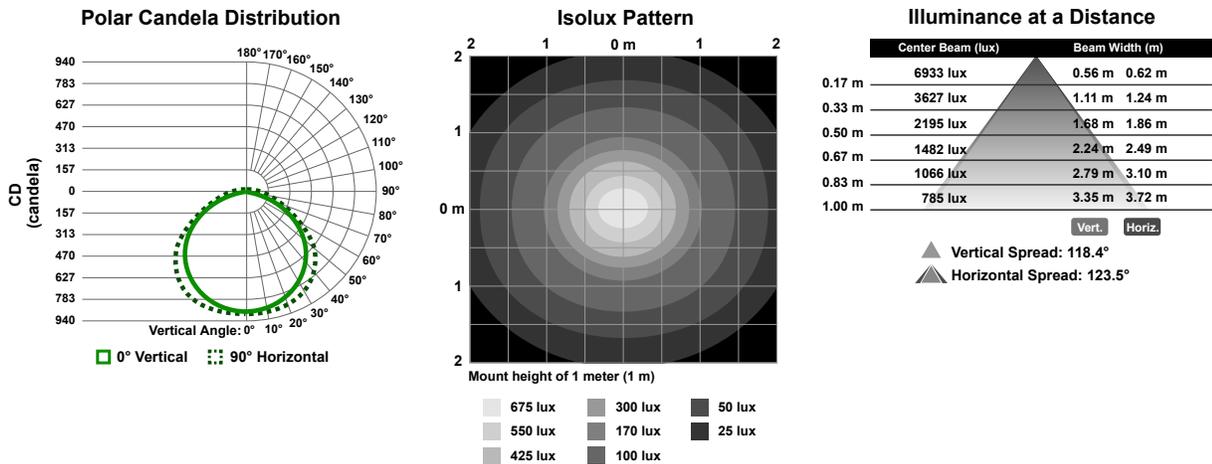


Figure 10. 1130 mm Models



Accessories

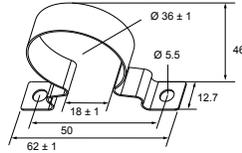
Brackets

All measurements are listed in millimeters, unless noted otherwise.

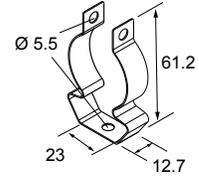
The following brackets (LMBHLS27S, LMBHLS27O) can be used with the HLS27 Hazardous Location Multicolor LED Strip Light.

LMBHLS27S

- Set of 2 brackets
- Impact absorbing
- 300 series stainless steel
- Clearance for M5 or #10 hardware

**LMBHLS27O**

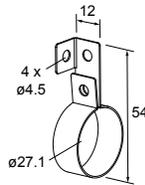
- Set of 2 brackets
- Impact absorbing clamp
- 300 series stainless steel
- M5 stainless steel hardware included



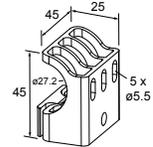
The following brackets (LMBWLS27H, LMBWLS27U) can be used with the HLS27 Hazardous Location Multicolor LED Strip Light for North America applications, but will not meet the required specifications for ATEX/UKCA/IECEX.

LMBWLS27H

- 300 series stainless steel mounting brackets
- M4 stainless steel hardware included

**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.

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For patent information, see www.bannerengineering.com/patents.

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.

Mexican Importer

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

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