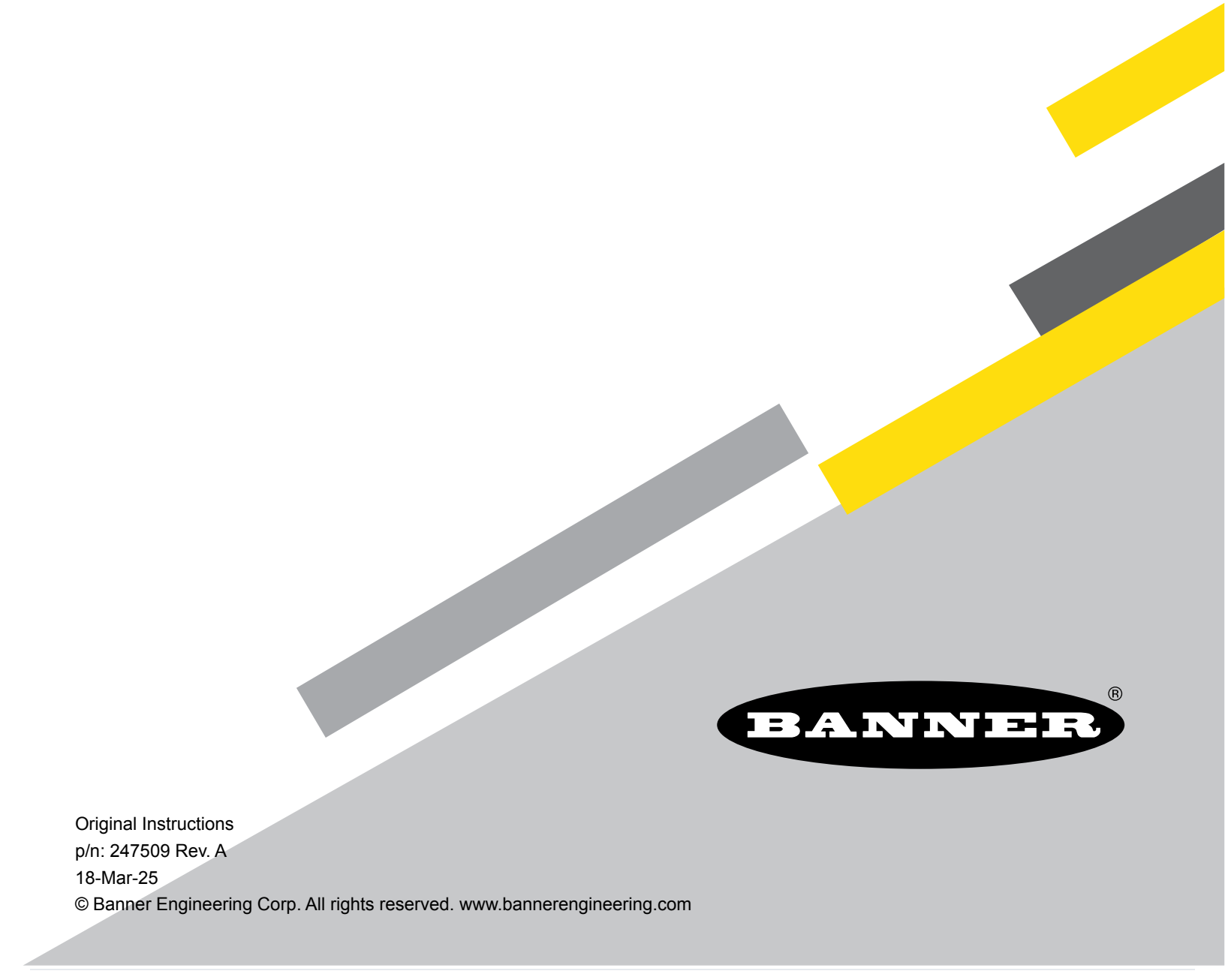
# WLB32 Industrial Pro PoE LED Light Product Manual



Original Instructions
p/n: 247509 Rev. A
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ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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# Chapter 1 Features



Banner's WLB32 is an ultra-bright LED fixture with an even light output for a no-glare 'glow'. Suitable for a variety of environments and applications, including workstations, machine lighting, control cabinets, and manufacturing lines, the WLB32 uses advanced LED lighting technology to provide a high-quality and maintenance-free industrial lighting solution for years.

- Cost-effective luminaire for use when AC power or a DC power supply are not available
- Connect directly to a Power over Ethernet (PoE) enabled port on a managed or unmanaged Ethernet switch
- Control intensity and flashing animations with Modbus TCP/IP communication
- 285 mm and 570 mm models compliant with PoE (Class 0 - 802.3af, 802.3at Type 1) hardware negotiation
- 850 mm and 1130 mm models compliant with PoE+ (Class 4 - 802.3at Type 2) hardware negotiation
- Metal housing, shatterproof window
- Easy installation with snap clips included

**IMPORTANT:** Read the following instructions before operating the light. Please download the complete WLB32 Industrial Pro PoE LED 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 WLB32 Industrial Pro PoE LED 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 WLB32 Industrial Pro PoE LED 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

| Models | Lighted Length (mm) | Window | Connector | Lumens |
|---|---|---|---|---|
| WLB32PEX285QP | 285 | Standard | 475 mm (18.7 in) PVC-jacketed cable with a 4-pin D-Code M12 female quick-disconnect connector | 750 |
| WLB32PEX570QP | 570 | | | 1500 |
| WLB32PEX850QP | 850 | | | 2250 |
| WLB32PEX1130QP | 1130 | | | 3000 |
| WLB32PEX285EQP | 285 | Eye Shield | | 750 |
| WLB32PEX570EQP | 570 | | | 1500 |
| WLB32PEX850EQP | 850 | | | 2250 |
| WLB32PEX1130EQP | 1130 | | | 3000 |


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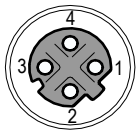
# Chapter 2 Wiring

| Pinout | Pin | Connection (802.3af mode A, mixed DC and data) |
|---|---|---|
| **475 mm (18.7 in) cable with 4-pin D-Code M12 Female Quick-Disconnect Connector**   | 1 | TX+ / DC- |
| | 2 | RX+ / DC+ |
| | 3 | TX- / DC- |
| | 4 | RX- / DC+ |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# Chapter 3 Modbus TCP/IP Register Map

*Holding Registers to Configure Run Mode*

| Address without Offset | Address with Offset | Description | Holding Register Representation | Default Value | Saved | Access |
|---|---|---|---|---|---|---|
| 3300 | 3301 | Animation | 0 = Off<br>1 = Steady<br>2 = Flash<br>3 = Intensity Sweep | 1 | Yes | RW |
| 3301 | 3302 | Light Intensity | 0 = High<br>1 = Medium<br>2 = Low<br>3 = Off<br>4 = Custom | 0 | Yes | RW |
| 3302 | 3303 | Flash Speed | 0 = Standard<br>1 = Slow<br>2 = Fast<br>3 = Custom Flash Rate | 0 | Yes | RW |
| 3303 | 3304 | Flash Pattern | 0 = Normal<br>1 = Strobe<br>2 = Reserved<br>3 = Reserved<br>4 = Random | 0 | Yes | RW |

*Holding Registers to Configure Custom Settings*

| Address without Offset | Address with Offset | Description | Holding Register Representation | Default Value | Saved | Access |
|---|---|---|---|---|---|---|
| 3400 | 3401 | Custom Intensity (%) | 10-100 | 100 | Yes | RW |
| 3401 | 3402 | Custom Speed (dHz) | 5-255 | 15 | Yes | RW |

*Holding Registers to Configure Ethernet Communication*

| Setting | Value |
|---|---|
| Server Port | 502 |

| Address without Offset | Address with Offset | Description | Holding Register Representation | Default Value | Saved | Access |
|---|---|---|---|---|---|---|
| 5050 | 5051 | Address Command | 1 = Write IP<br>2 = Write Subnet<br>3 = Write IP & Subnet | 0 | Yes | WO |
| 5051 | 5052 | IP_1 | 0-255 | 192 | Yes | WO |
| 5052 | 5053 | IP_2 | 0-255 | 168 | Yes | WO |

Continued on page 6


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Continued from page 5

| Address without Offset | Address with Offset | Description | Holding Register Representation | Default Value | Saved | Access |
|---|---|---|---|---|---|---|
| 5053 | 5054 | IP_3 | 0-255 | 0 | Yes | WO |
| 5054 | 5055 | IP_4 | 0-255 | 1 | Yes | WO |
| 5055 | 5056 | Subnet_1 | 0-255 | 255 | Yes | WO |
| 5056 | 5057 | Subnet_2 | 0-255 | 255 | Yes | WO |
| 5057 | 5058 | Subnet_3 | 0-255 | 255 | Yes | WO |
| 5058 | 5059 | Subnet_4 | 0-255 | 0 | Yes | WO |

*Holding Registers for Device Identification*

| Address without Offset | Address with Offset | Description | Holding Register Representation | Default Value | Saved | Access |
|---|---|---|---|---|---|---|
| 40606-40615 | 40607-40616 | Banner Name | Banner Engineering | | Yes | RO |
| 40617-40623 | 40618-40624 | Product Name | WLB32 Ethernet | | Yes | RO |


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# Chapter 4 Specifications

**Supply Voltage**
42.5 V DC to 57 V DC

**Supply Protection Circuitry**
Protected against reverse polarity and transient voltages

**Light Characteristics**
Color: Daylight white
Color temperature (CCT): 5000K (±300K)
Lumen output: 750 (±5%) per foot, typical at 25 °C (77 °F)
CRI: 80, minimum

**Spacing Criterion**
Vertical: 1.22
Horizontal: 1.32

**Mounting**
Snap clips; optional magnetic mount or swivel bracket accessories available

**Connections**
475 mm (18.7 in) PVC-jacketed cable with a 4-pin D-Code M12 female quick-disconnect connector (4-pin connecting cordset required)
Integral 4-pin M12 female quick-disconnect connector (see Application Note)

**Environmental Rating**
IP40

**LED Lifetime**
Lumen Maintenance - $L_{70}$
When operating within specifications, output will decrease less than 30% after 70,000 hours.

**Construction**
Anodized aluminum housing; polycarbonate window and end caps; stainless steel mounting brackets

**Vibration and Mechanical Shock**
Vibration 10-55 Hz 1.0 mm p-p amplitude per IEC60068-2-6
Shock 15G 11 ms duration, half sine wave per IEC60068-2-27

**Operating Temperature**
–40 °C to +50 °C (–40 °F to +122 °F)

**Storage Temperature**
–40 °C to +70 °C (–40 °F to +158 °F)

**Test Data**
LM-79, LM-80, TM-21

**Supply Current**

| Lighted Length (mm) | Typical Current (A) | | | Max Current (A) | Max Wattage (W) | Power over Ethernet Specification |
|---|---|---|---|---|---|---|
| | 42.5 V DC | 50 V DC | 57 V DC | | | |
| 285 | 0.155 | 0.14 | 0.13 | 0.17 | 7.25 | PoE (Class 0 - 802.3af, 802.3at Type 1) |
| 570 | 0.29 | 0.245 | 0.23 | 0.305 | 12.95 | |
| 850 | 0.445 | 0.375 | 0.34 | 0.455 | 19.45 | PoE+ (Class 4 - 802.3at Type 2) |
| 1130 | 0.58 | 0.485 | 0.44 | 0.59 | 25 | |

**Application Note**
To reset the IP address to 192.168.0.1, perform the following steps:

1. Plug the light into an ethernet switch and wait for the light to illuminate.
2. Remove the cap on the integral 4-pin M12 female quick-disconnect connector.
3. Attach a 4-pin M12 male cordset to the female connector, momentarily connect the brown wire (Pin 1) to the blue wire (Pin 3), and then remove the male cordset.
4. Unplug the light from the ethernet switch, and then plug it back into the switch to finish resetting the light.

**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 | 1.0 | 30 | 0.5 |


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**Certifications**

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

E476617

# FCC Part 15 Class B for Unintentional Radiators

(Part 15.105(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.

(Part 15.21) Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

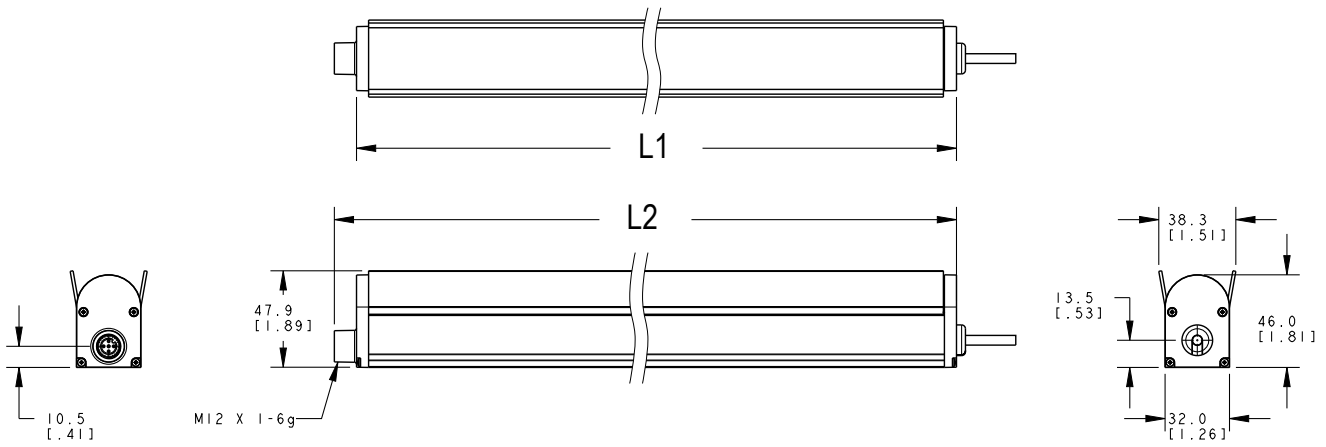
# Industry Canada ICES-003(B)

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.

# Dimensions

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




| Models | L1 | L2 |
|---|---|---|
| WLB32PEXW285..QP | 298 mm (11.7 in) | 313 mm (12.3 in) |
| WLB32PEXW570..QP | 580 mm (22.8 in) | 595 mm (23.4 in) |
| WLB32PEXW850..QP | 862 mm (33.9 in) | 877 mm (34.6 in) |
| WLB32PEXW1130..QP | 1144 mm (45.0 in) | 1159 mm (45.7 in) |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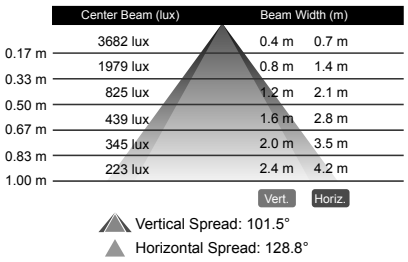
# Light Characteristics

*285 mm Models*

Illuminance at a Distance

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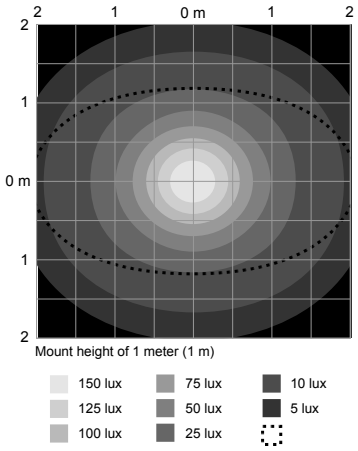
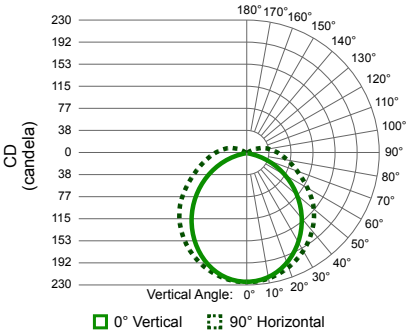
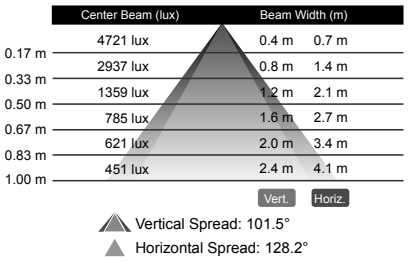



Polar Candela Distribution




*570 mm Models*

Illuminance at a Distance

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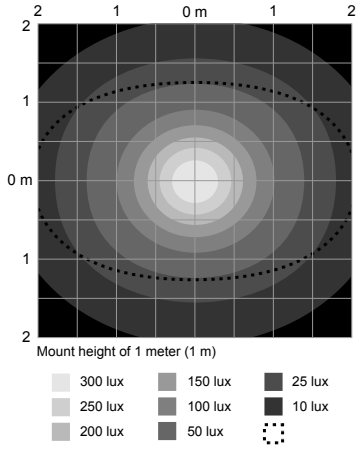


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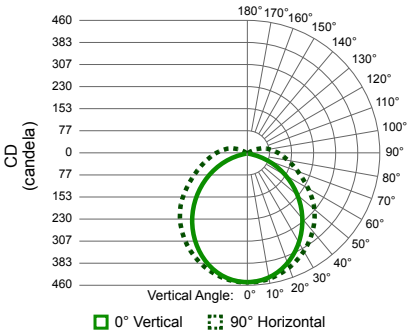
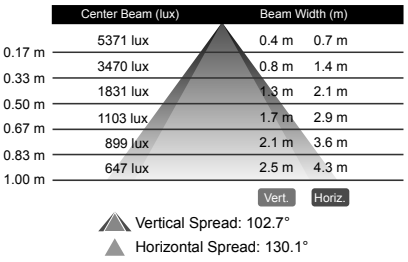



*850 mm Models*

Illuminance at a Distance

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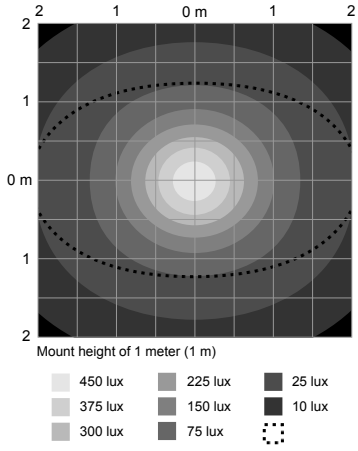


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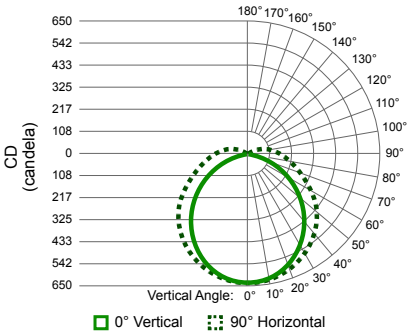


Illuminance at a Distance


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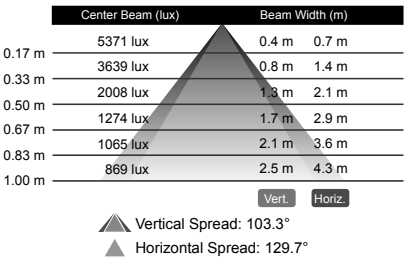
*1130 mm Models*

Illuminance at a Distance

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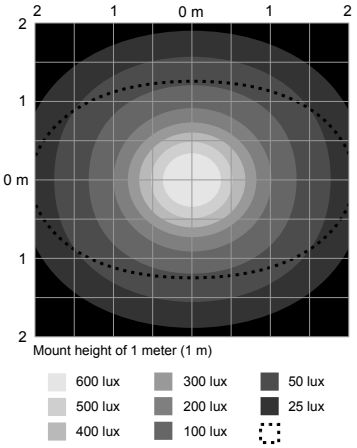
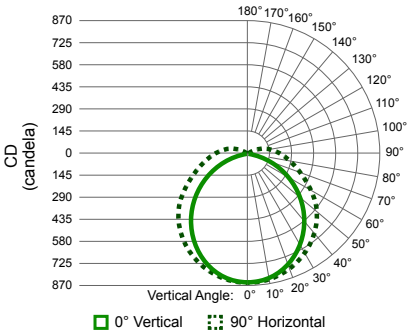
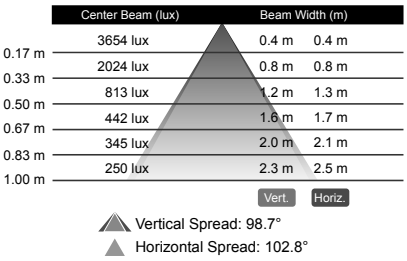



Polar Candela Distribution




*285 mm Models with Eye Shields*

Illuminance at a Distance

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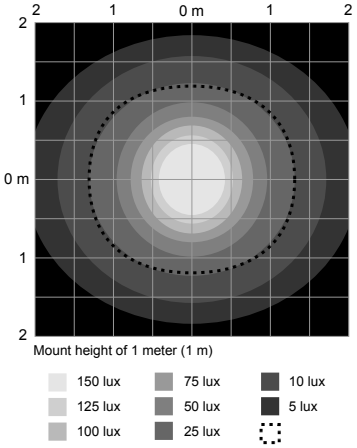


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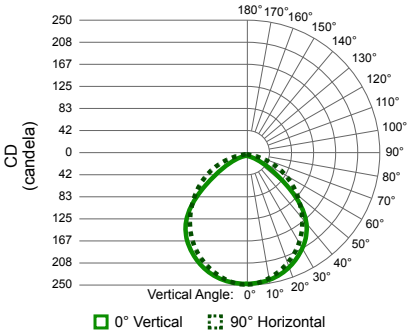
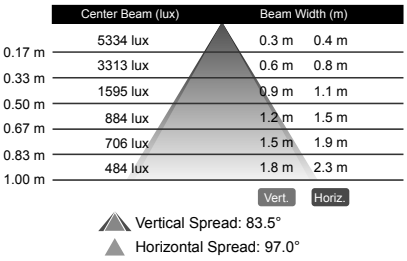
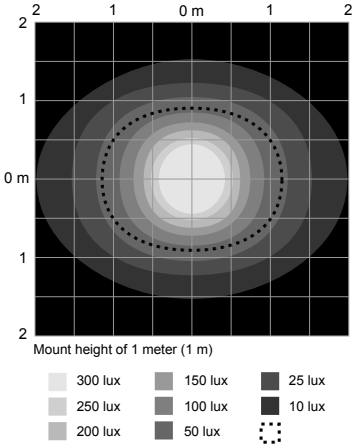



*570 mm Models with Eye Shields*

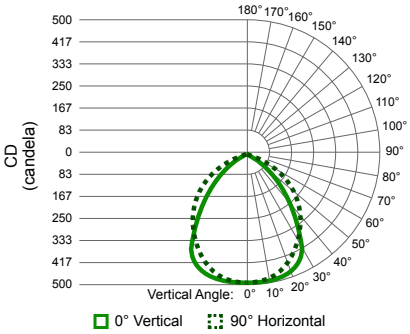
Illuminance at a Distance




Isolux Pattern




Polar Candela Distribution





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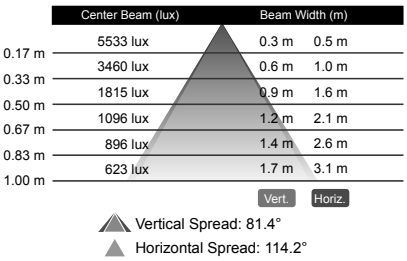
*850 mm Models with Eye Shields*

Illuminance at a Distance

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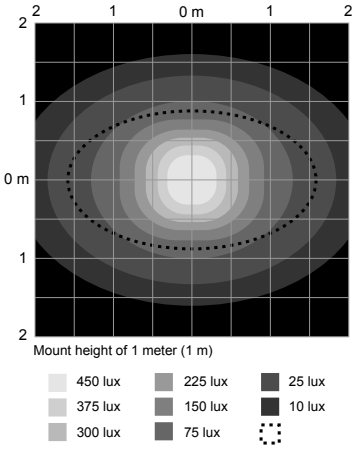
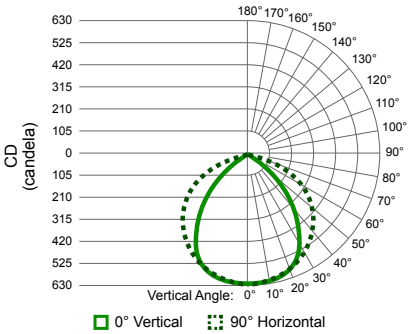
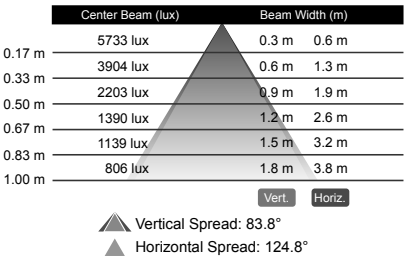



Polar Candela Distribution

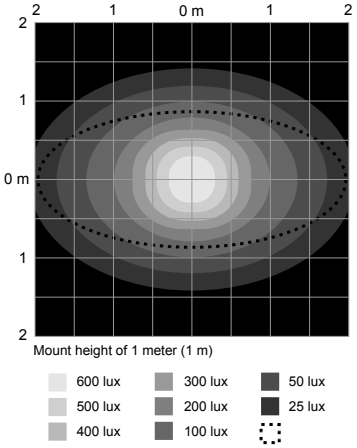



*1130 mm Models with Eye Shields*

Illuminance at a Distance




Isolux Pattern

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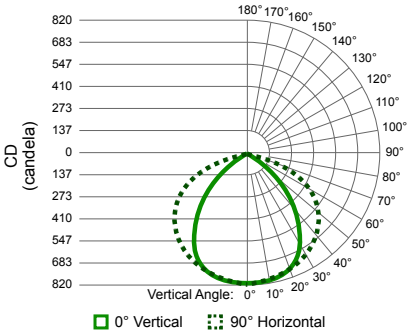



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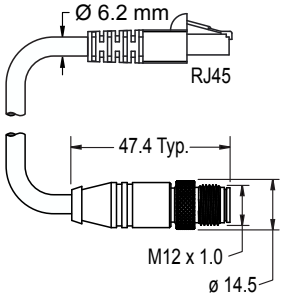
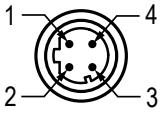
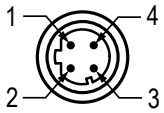
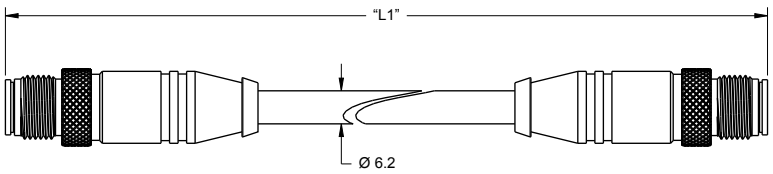
# Chapter 5 Accessories

## Cordsets

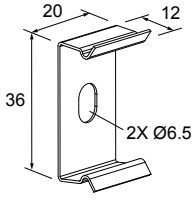
| Double-Ended 4-pin M12 Male D-code to 8-Pin RJ45 Male Shielded Ethernet Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Dimensions** | **RJ45 Pinout (Male)** | **M12 Pinout (Male)** |
| **STP-M12D-403** | 0.9 m (2.95 ft) |  | <br>1 = White/Orange<br>2 = Orange<br>3 = White/Blue<br>6 = Blue | <br>1 = White/Orange<br>2 = White/Blue<br>3 = Orange<br>4 = Blue |
| **STP-M12D-406** | 1.83 m (6 ft) | | | |
| **STP-M12D-415** | 4.57 m (15 ft) | | | |
| **STP-M12D-430** | 9.14 m (30 ft) | | | |

| 4-Pin D-Code Double-Ended M12 Male to M12 Male Shielded Cordset | | | | |
|---|---|---|---|---|
| **Model** | **Length "L1"** | **Style** | **Pinout** | |
| **M12D-M12D-4M** | 4 m (13.1 ft) | Male Straight / Male Straight |  | 1 = White / Orange<br>2 = White / Blue<br>3 = Orange<br>4 = Blue |
|  | | | | |

## Mounting Brackets

**LMBWLB32**

- Replaces the bracket that ships with the WLB32 light
- Stainless steel
- Includes 4 snap clips, 4 screws, and 2 insulator caps





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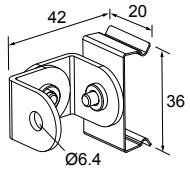
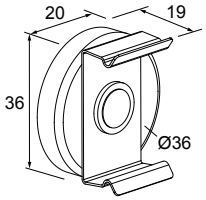
**LMBWLB32-180S**

- Swivel bracket kit allows 180° of movement



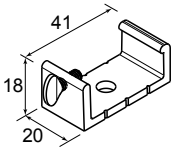

**LMBWLB32MAG**

- Magnetic mounting bracket for easy attachment to steel and iron surfaces



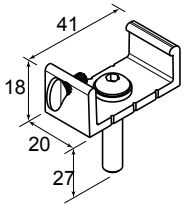

**LMBWLB32U**

- Die-cast bracket for rugged applications
- Secured to light with included thumb screw
- Clearance hole for 6 mm (1/4 in) button head screw




**LMBWLB32UT**

- Die-cast bracket for rugged applications
- Secured to light with included thumb screw
- Integral 1/4-20 stud for mounting





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# Chapter 6 Product Support and Maintenance

## Clean with Mild Detergent and Water

Wipe down the device with a soft cloth that has been dampened with a mild detergent and warm water solution.

## 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. headquarters is located at: 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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## Mexican Importer

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