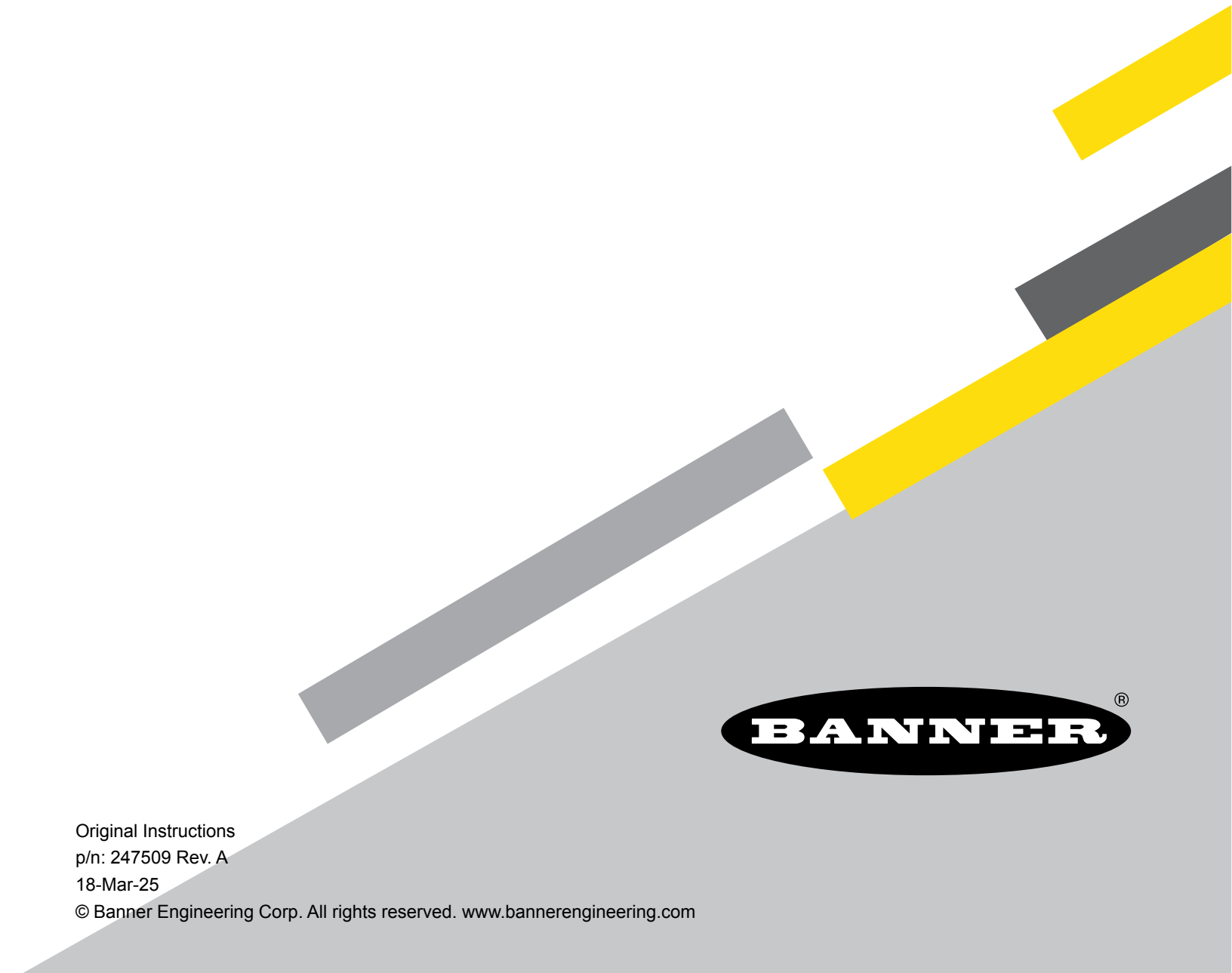
WLB32 Industrial Pro PoE LED Light Product Manual



Original Instructions
p/n: 247509 Rev. A
18-Mar-25

Contents

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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.

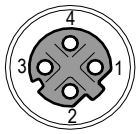
IMPORTANT: Lisez les instructions suivantes avant d'utiliser le luminaire. Veuillez télécharger la documentation technique complète des WLB32 Industrial Pro PoE LED Light sur notre site www.bannerengineering.com pour les détails sur leur utilisation correcte, les applications, les notes de sécurité et 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

Chapter Contents

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+

Chapter Contents

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 1 = Steady 2 = Flash 3 = Intensity Sweep	1	Yes	RW
3301	3302	Light Intensity	0 = High 1 = Medium 2 = Low 3 = Off 4 = Custom	0	Yes	RW
3302	3303	Flash Speed	0 = Standard 1 = Slow 2 = Fast 3 = Custom Flash Rate	0	Yes	RW
3303	3304	Flash Pattern	0 = Normal 1 = Strobe 2 = Reserved 3 = Reserved 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 2 = Write Subnet 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

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

Chapter Contents

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

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

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.

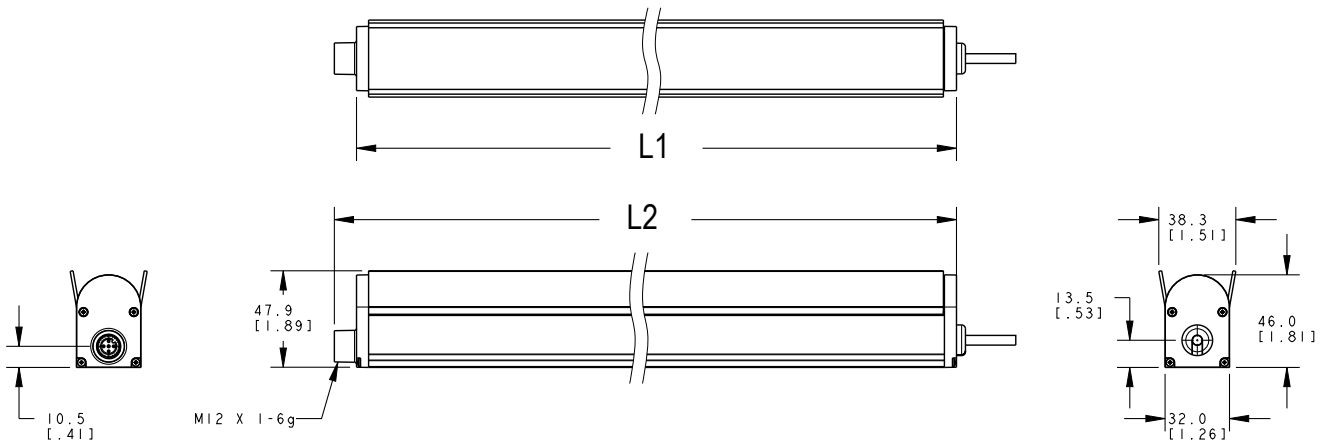
Industry Canada ICES-003(B)

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.

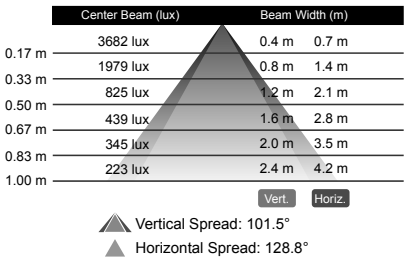


Models	L1	L2
WLB32PEXW285..QP	298 mm (11.7 in)	313 mm (12.3 in)
WLB32PEXW570..QP	580 mm (22.8 in)	595 mm (23.4 in)
WLB32PEXW850..QP	862 mm (33.9 in)	877 mm (34.6 in)
WLB32PEXW1130..QP	1144 mm (45.0 in)	1159 mm (45.7 in)

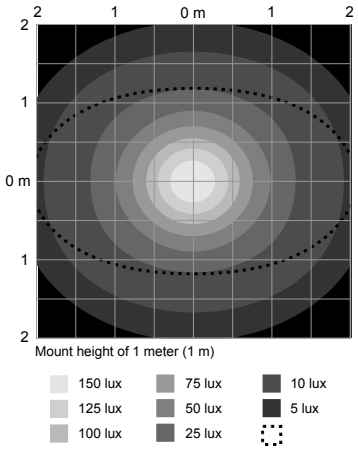
Light Characteristics

285 mm Models

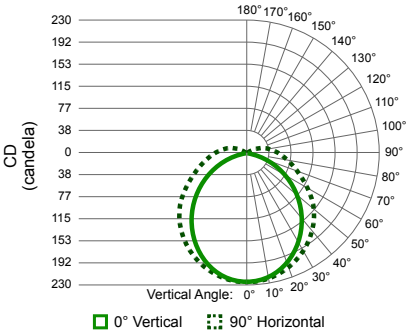
Illuminance at a Distance



Isolux Pattern

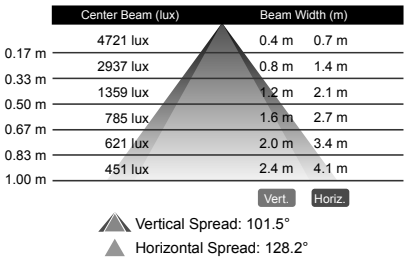


Polar Candela Distribution



570 mm Models

Illuminance at a Distance



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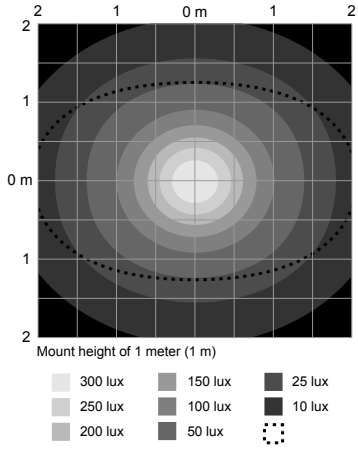
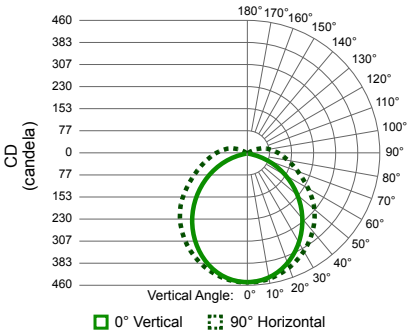
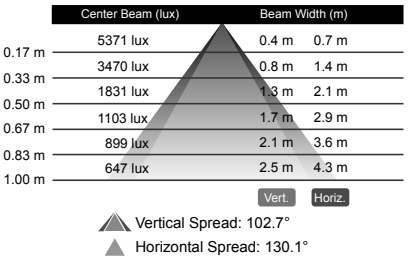


Polar Candela Distribution



850 mm Models

Illuminance at a Distance



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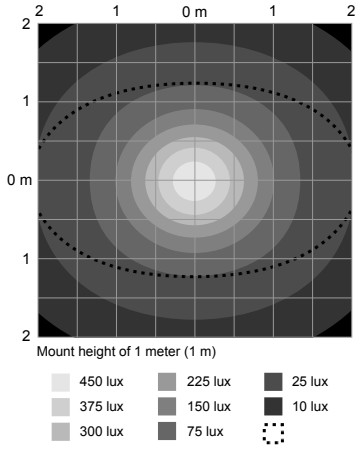

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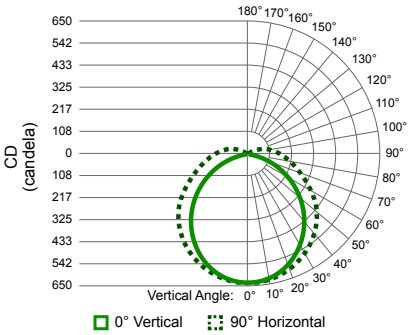
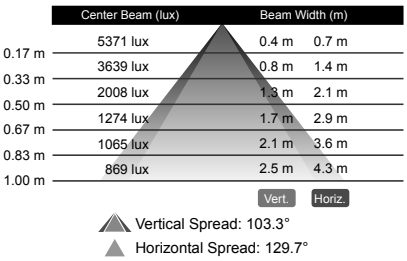


Illuminance at a Distance

1130 mm Models

Illuminance at a Distance



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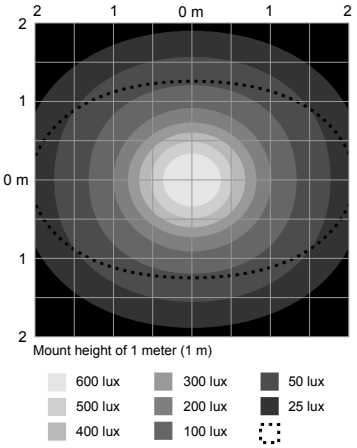

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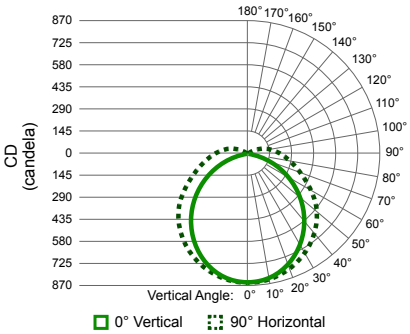
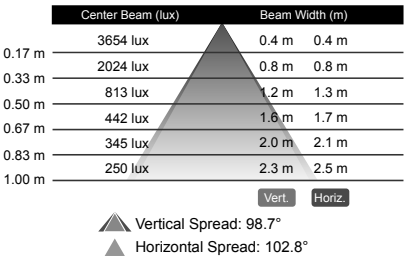


285 mm Models with Eye Shields

Illuminance at a Distance



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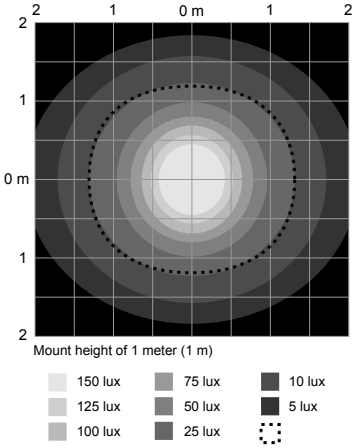

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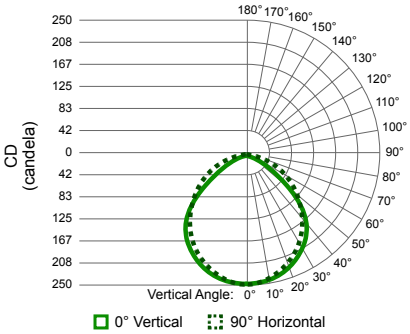
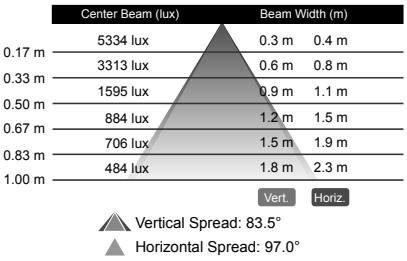


570 mm Models with Eye Shields

Illuminance at a Distance



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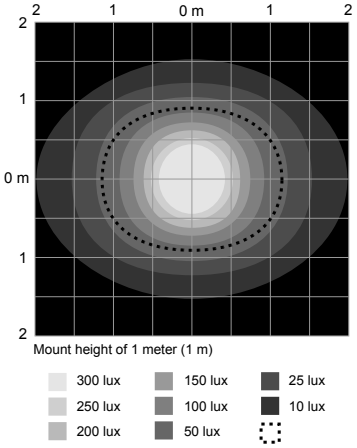

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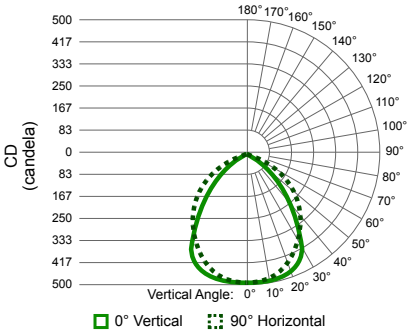
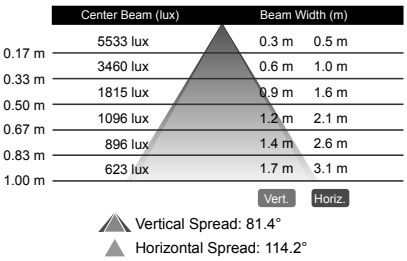


850 mm Models with Eye Shields

Illuminance at a Distance



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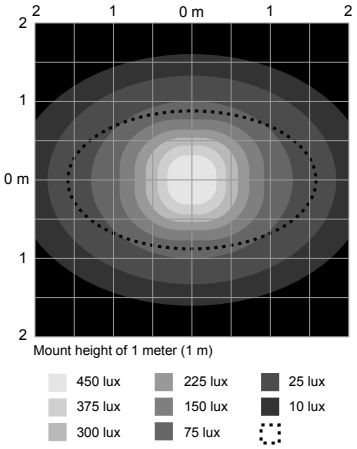

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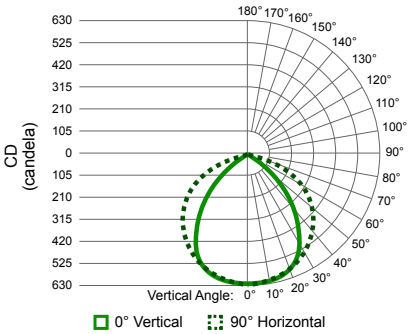
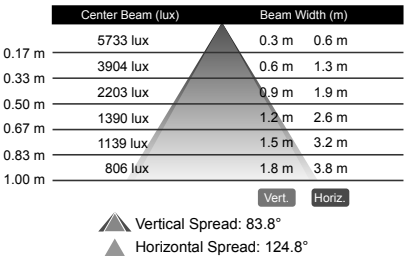


1130 mm Models with Eye Shields

Illuminance at a Distance



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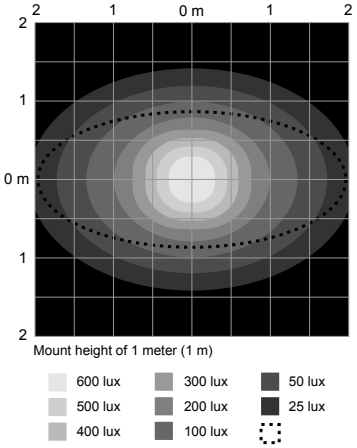

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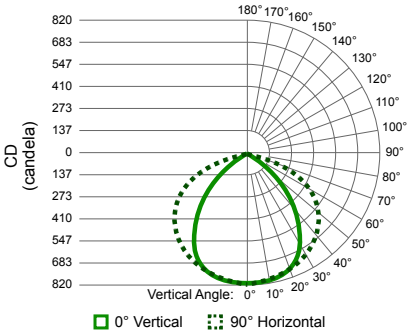
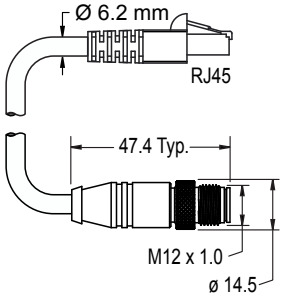
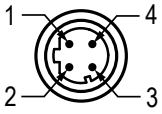
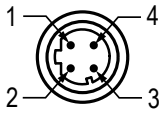
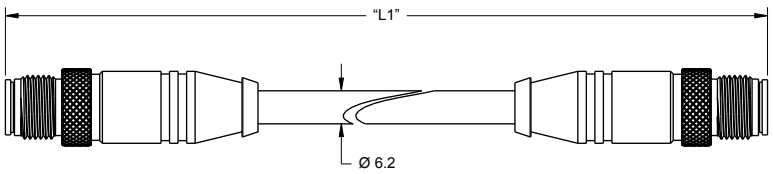


Chapter Contents

Chapter 5 Accessories

Cordsets

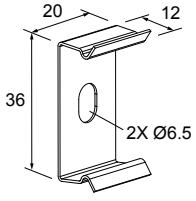
Double-Ended 4-pin M12 Male D-code to 8-Pin RJ45 Male Shielded Ethernet Cordsets				
Model	**Length**	**Dimensions**	**RJ45 Pinout (Male)**	**M12 Pinout (Male)**
STP-M12D-403	0.9 m (2.95 ft)		 1 = White/Orange 2 = Orange 3 = White/Blue 6 = Blue	 1 = White/Orange 2 = White/Blue 3 = Orange 4 = Blue
STP-M12D-406	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 2 = White / Blue 3 = Orange 4 = Blue
				

Mounting Brackets

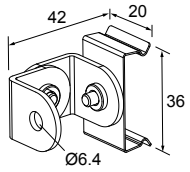
LMBWLB32

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



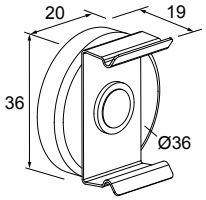
LMBWLB32-180S

- Swivel bracket kit allows 180° of movement



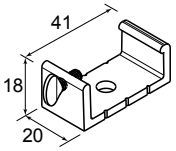
LMBWLB32MAG

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



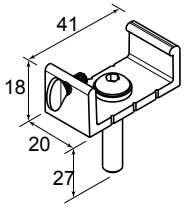
LMBWLB32U

- 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



Chapter Contents

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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