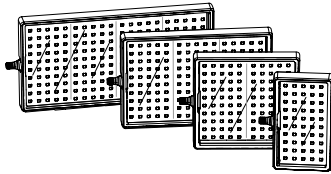


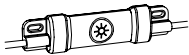
WLA-2 LED Area Light



Product Manual



- Designed for illuminating industrial work cells and in areas with exposure to liquid, such as food and beverage processing applications
- An LED-dense array with high output ideal for area lighting, machine lighting, and machine vision
- Illuminates a large area with an even pattern of light and no shadows
- Rugged thermoplastic housing rated to IP69K per DIN 40050-9 for heavy duty washdown
- Encapsulated housing option rated IP68 for prolonged exposure to water and submersion
- Lensed models available for intense, close-range inspection or long-range projection
- Available in four sizes



For PWM dimming, use with the LC15T-127AP1RBGQP dimmer module. For more information, refer to the LC15T In-Line Touch Switch datasheet, p/n [217460](#).



Important: Read the following instructions before operating the light. Please download the complete WLA-2 Area 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 WLA-2 Area 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 WLA-2 Area 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

Standard models shown. Contact factory for other options. Other colors are available by request.

Family	Color	Array Size	Window	Lensing *	Control	Connector
WLA-2	W	105x180	D			Q
W = Daylight White WW = Warm White ** 105x180 190x180 275x180 360x180 Blank = Clear D = Diffuse E = Encapsulated Blank = No lenses L30 = ± 30 degree lenses Blank = High/Low/Off PWM = Pulse Width Modulation Q = Integral 4-pin M12 QD						

* No lens option on encapsulated or diffuse window models

** No warm white option on encapsulated models

Wiring Diagram

Male	Pin	Wire Color	Connection
	1	Brown	12 V DC to 30 V DC
	3	Blue	DC common
	4	Black	High/Low/Off Models: Connect to 12 V DC to 30 V DC for 50% maximum intensity. For maximum intensity, leave the black wire floating or connected to common. PWM Models: 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 the LEDs to shut off.
	2	White	Not used



Specifications

Supply Voltage

12 V DC to 30 V DC

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

See electrical characteristics on product label

Supply Current

Housing Length (mm)	Max Current (A)	Typical Current Draw (A)		
		12 V DC	24 V DC	30 V DC
105	0.875	0.830	0.325	0.260
190	1.750	1.660	0.650	0.520
275	2.625	2.490	0.975	0.780
360	3.500	3.320	1.300	1.040

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Construction

Standard models: PBT housing, polycarbonate window, nickel-plated brass connector

Encapsulated models: PBT housing, nickel-plated brass connector, polyurethane encapsulated

Connections

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

LED Lifetime

Lumen Maintenance - L₇₀

When operating within specifications, output will decrease less than 30% after 70,000 hours.

Dimming

High/Low/Off Models: 100/50/0% intensity, dependent on wiring

PWM Models: Compatible with PWM LED dimming, dimmable to 5% intensity

Pulse Width Modulation (PWM):

Frequency: Up to 1000 Hz

Voltage: 12 V DC to 30 V DC

Current: 4 mA max.

Vibration and Mechanical Shock

Vibration: Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6

Shock: Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27

Impact: IK07 (IEC 60068-2-75)

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



Operating Temperature

Clear and Diffuse Window Models:

–40 °C to +70 °C (–40 °F to +158 °F)

Light output begins to decrease above 50 °C (122 °F), and decreases to approximately 65% of max intensity

Encapsulated Models:

–20 °C to +50 °C (–4 °F to +122 °F)

Storage Temperature

–40 °C to +70 °C (–40 °F to +158 °F)

Mounting

(4) integrated M5 × 1 threads in housing. No hardware provided. Optional mounting brackets are available (see Accessories)



Note: When mounting the light to combustible or insulating surfaces, a minimum of 1 inch of clearance around all sides is suggested. Optional standoffs or an alternative mounting method to achieve spacing.

Environmental Rating

Suitable for wet locations per UL 2108

Clear and Diffuse Window Models:

Rated IP67 and IP69K per DIN 40050-9

Encapsulated Models:

Rated IP67, IP68, and IP69K per DIN 40050-9

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

Daylight White Efficacy: up to 131 lumens/watt typical at 24 V AC at 25 °C (77 °F) ¹

CRI: 80, minimum

Color	Color Temperature (CCT) ²	Size			
		105	109	275	360
Daylight White	5000K (± 300K)	1025	2050	3075	4100
Warm White	3000K (± 200K)				

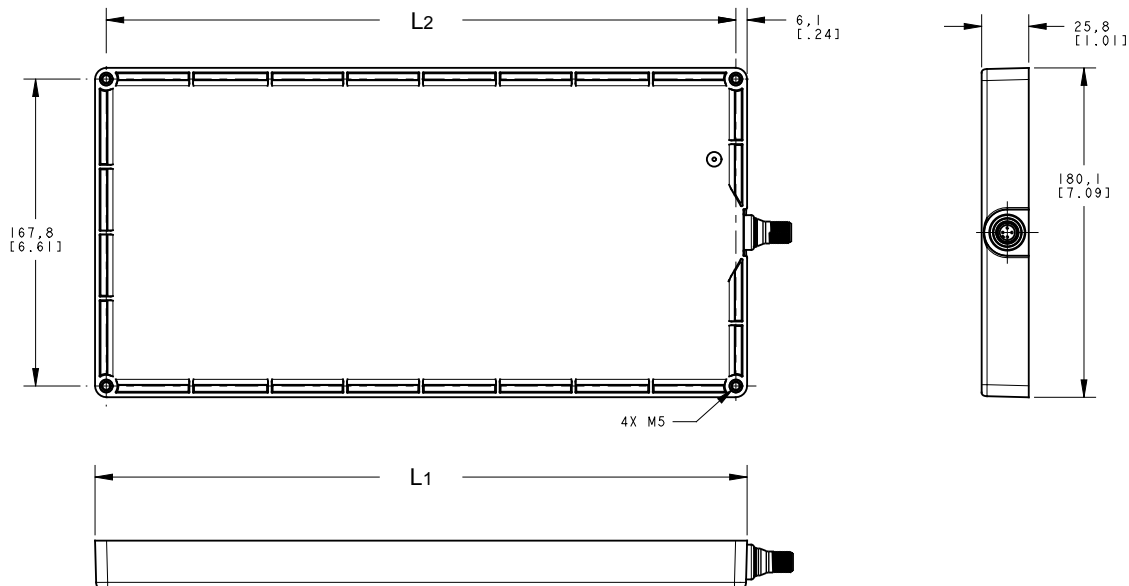
¹ Lumen values are reduced by 20% on diffused window models.

² The color temperature of encapsulated models is 4500K (±300K).



Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise.



Model	L1	L2
WLA-2..105X	105.1 mm (4.14 in)	92.8 mm (3.66 in)
WLA-2..190X	188.9 mm (7.44 in)	176.7 mm (6.96 in)
WLA-2..275X	272.7 mm (10.74 in)	260.3 mm (10.25 in)
WLA-2..360X	356.6 mm (14.04 in)	344.3 mm (13.55 in)

Photometric Data

Optional data shown below are for cool white models with a clear window only. To get lux and candela values for models with a diffuse window and/or other colors, multiply the values shown on the charts by the following factors:

Warm White	Green	Red	Yellow	Blue
1.00	1.00	0.43	1.0	0.29

Clear Window, No Lens

Figure 1. 105 mm Models

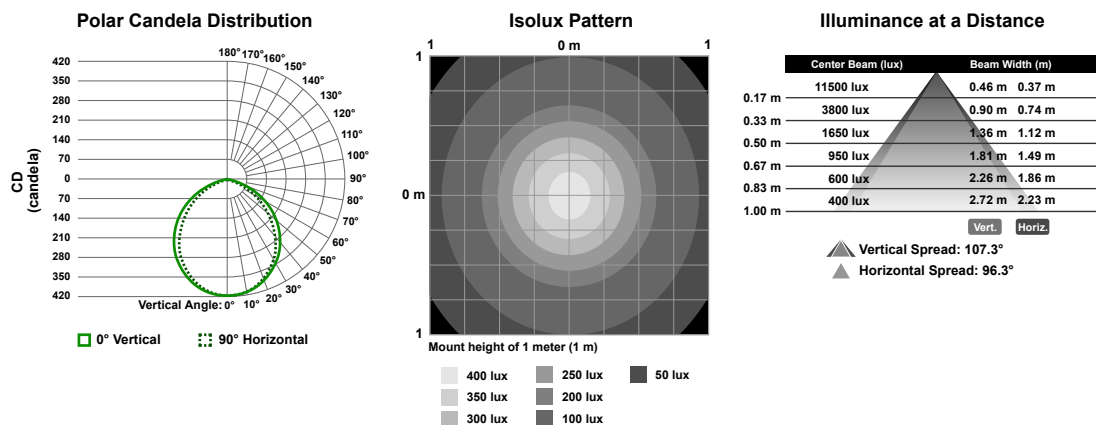


Figure 2. 190 mm Models

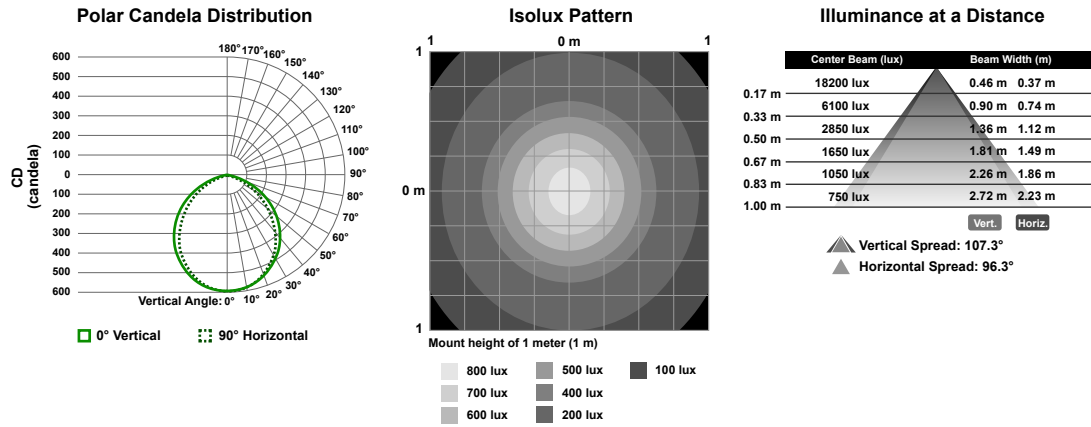


Figure 3. 275 mm Models

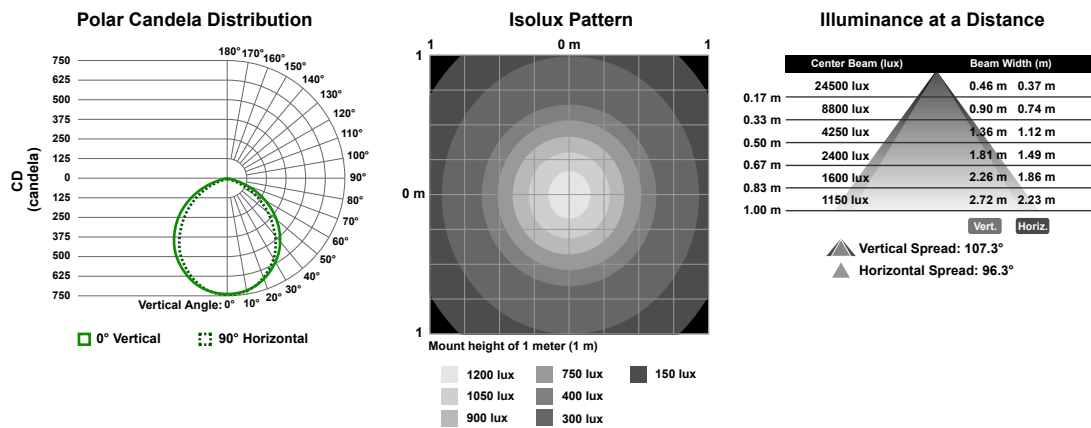
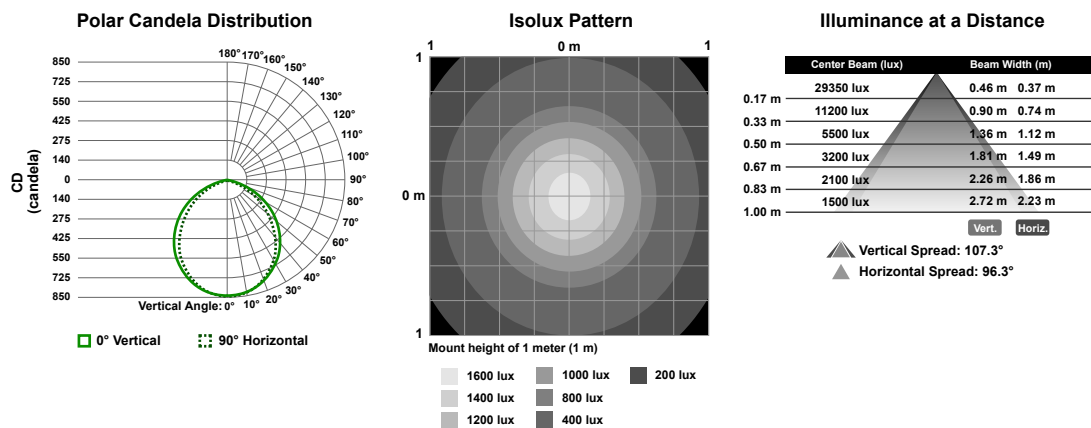


Figure 4. 360 mm Models



Clear Window, L30

Figure 5. 105 mm Models

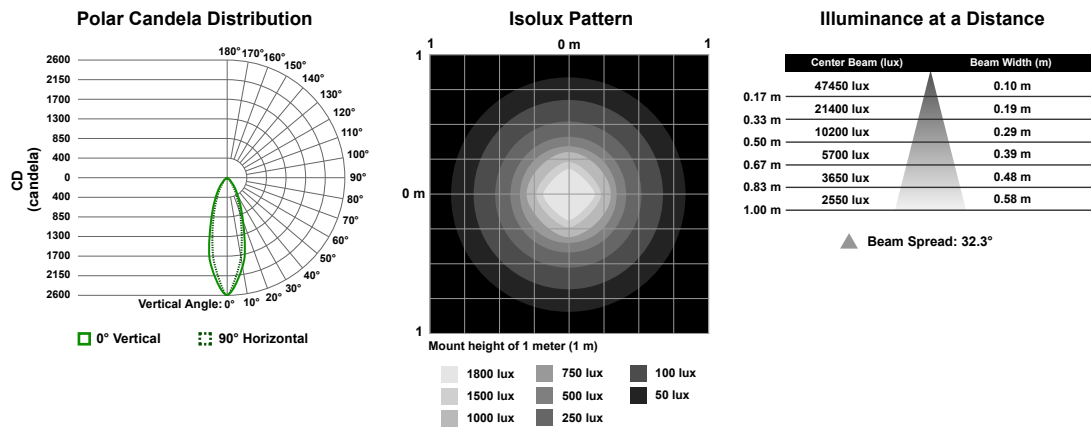


Figure 6. 190 mm Models

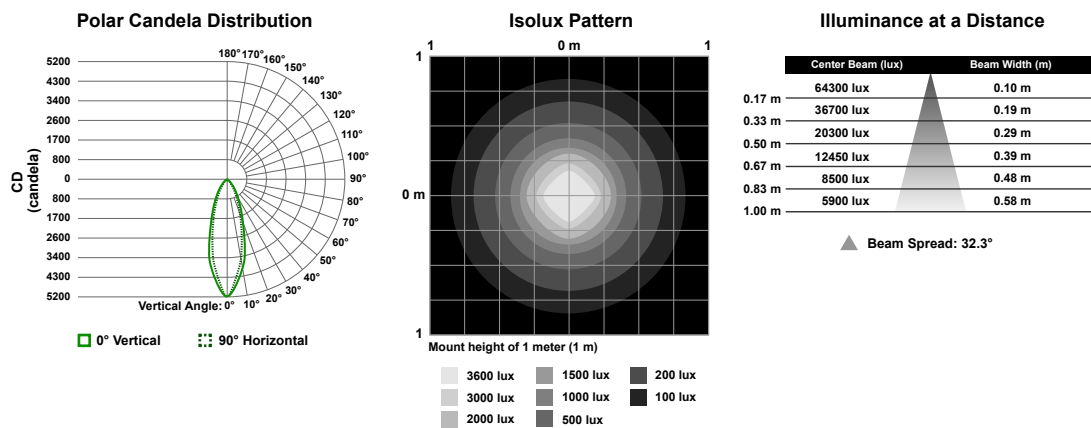


Figure 7. 275 mm Models

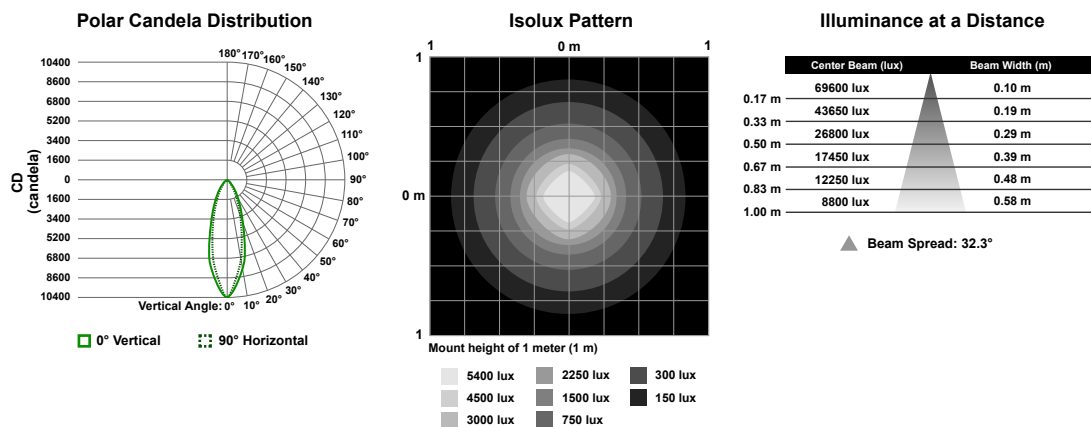
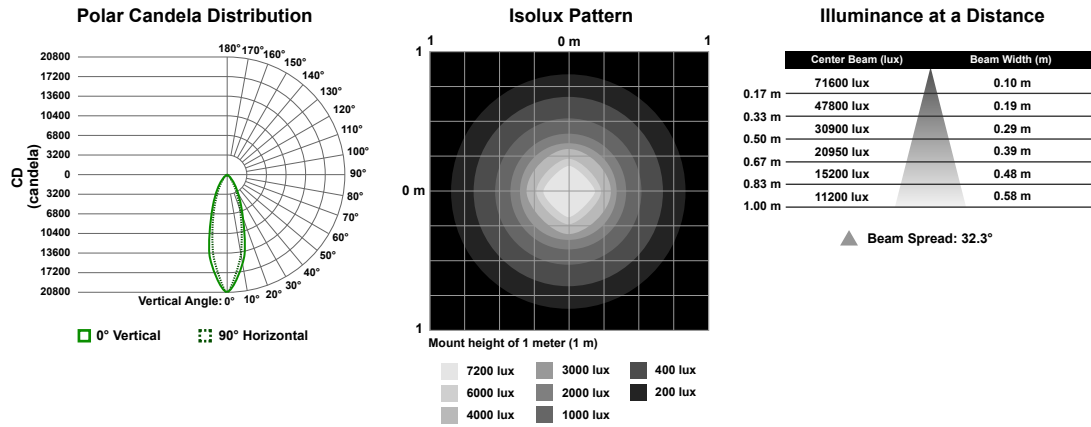


Figure 8. 360 mm Models



Diffuse Window, No Lens

Figure 9. 105 mm Models

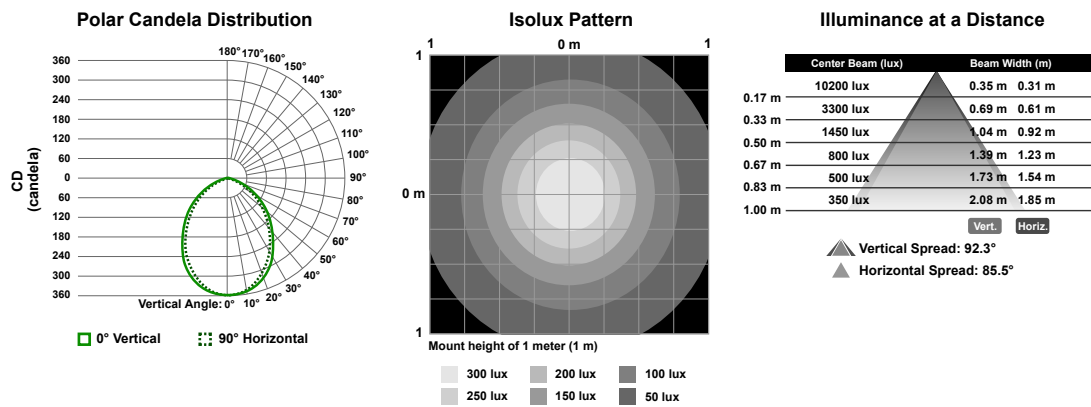


Figure 10. 190 mm Models

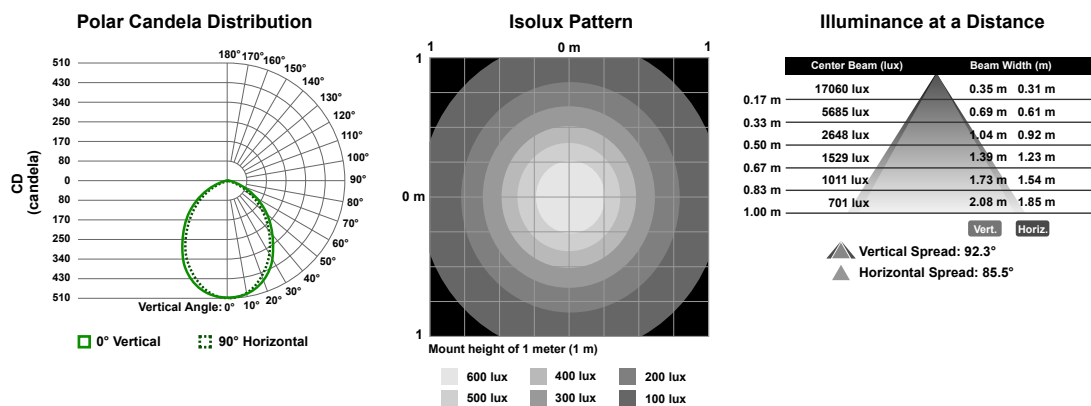


Figure 11. 275 mm Models

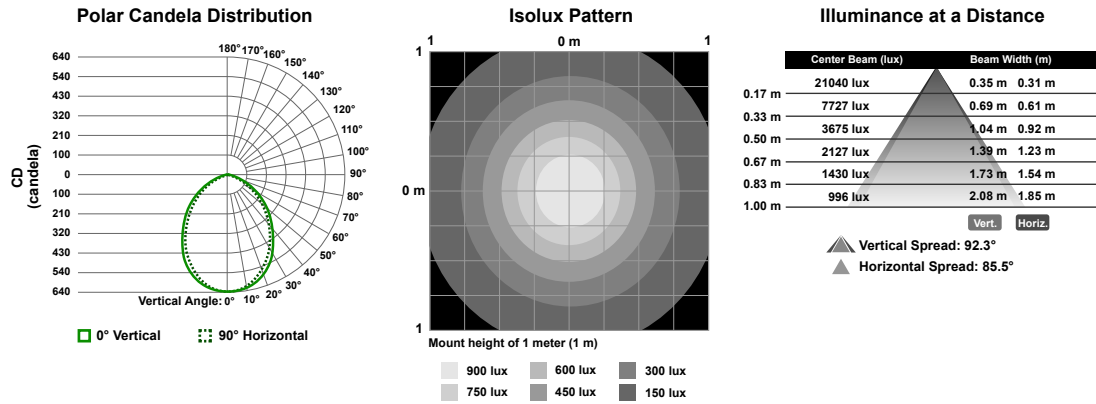
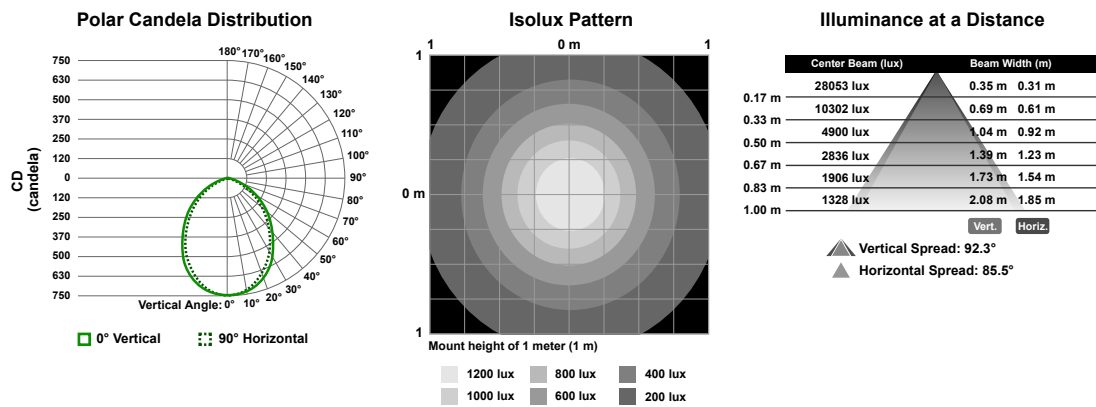


Figure 12. 360 mm Models



Accessories

Cordsets

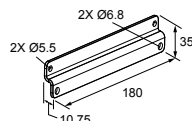
4-Pin Threaded M12 Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	2 m (6.56 ft)	Straight		
MQDC-415	5 m (16.4 ft)			
MQDC-430	9 m (29.5 ft)			
MQDC-450	15 m (49.2 ft)	Right-Angle		
MQDC-406RA	2 m (6.56 ft)			
MQDC-415RA	5 m (16.4 ft)			
MQDC-430RA	9 m (29.5 ft)			
MQDC-450RA	15 m (49.2 ft)			

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

Brackets

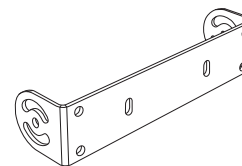
SMBBSSM

- 316 stainless steel bracket and hardware
- Includes 2 brackets; four M5 socket drive, button head screws to attach to light



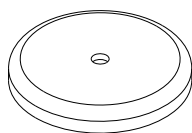
SMBBSRA

- 316 stainless steel bracket and hardware
- Right-angle swivel bracket for versatile orientation



SMBWLMAG

- Kit includes four magnets, four M5 phillips head screws, and two M5 nuts with lock rings
- $\phi = 51.8$ mm (2.04 in)



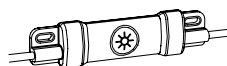
ACC-WLA STANDOFFS

- Kit includes two nylon spacers, two M5 phillips head screws, and two M5 nuts with lock rings
- Inner diameter = 5.56 mm (0.22 in), outer diameter = 12.7 mm (0.50 in), length = 25.4 mm (1.00 in)

Dimmers

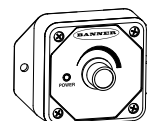
LC15T Series

- **LC15T-127AL2RGQP** model with On/Off control and illuminated indication
- **LC15T-127AP1RBGQP** model with On/Off/Dimming control and illuminated indication
- In-line capacitive touch switch with M12 connectors
- Rated for up to 30 V DC and 4 A maximum output current
- Rugged and waterproof IP67 housing



LC65P1T

- Potentiometer with terminal and M12 connector options
- PWM control
- Rated for up to 30 V DC and 4 A maximum output current
- Unsealed IP20 housing



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.**

Banner Engineering Corp. reserves the right to change, modify or improve the design of the product without assuming any obligations or liabilities relating to any product previously manufactured by Banner Engineering Corp. Any misuse, abuse, or improper application or installation of this product or use of the product for personal protection applications when the product is identified as not intended for such purposes will void the product warranty. Any modifications to this product without prior express approval by Banner Engineering Corp will void the product warranties. All specifications published in this document are subject to change; Banner reserves the right to modify product specifications or update documentation at any time. Specifications and product information in English supersede that which is provided in any other language. For the most recent version of any documentation, refer to: www.bannerengineering.com.

For patent information, see 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 García Nuevo León, C. P. 66269
81 8363.2714



more sensors, more solutions