# High-Power Unsealed Linear Array Lights

## Features

*Lighting for use with Vision Systems*

To view or download the latest technical information about this product, including specifications, dimensions, accessories, and wiring, go to www.bannerengineering.com.



- Four high-intensity, visible wavelengths, plus IR and UV
- The following array lengths are available:
  - 145 mm (5.7 in)
  - 290 mm (11.4 in)
  - 435 mm (17.7 in)
  - 580 mm (22.8 in)
  - 870 mm (34.2 in)
  - 1160 mm (45.6 in)
- High-power, solid-state LED array; continuous or strobed operation is selectable via sensor software (P4 models) or via hookup
- Optically isolated strobe signal
- Active High or Active Low strobe models available
- LEDs directly illuminate target
- Lens angle of ±6.5º on visible and IR models, lens angle of ±5º on UV 395 nm models, reflector cup angle of ±15º on UV 365 nm models
- Three window materials from which to choose: clear acrylic, clear glass, and clear diffusing acrylic
- Maintenance-free, rugged construction
- Built-in constant current regulation
- Very even light pattern as close as 76.2 mm (3 in)

**IMPORTANT:** Read the following instructions before operating the light. Please download the complete High-Power Unsealed Linear Array Lights 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 High-Power Unsealed Linear Array Lights, 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 High-Power Unsealed Linear Array Lights 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

*Model Key*

| Light Source | LED Color | Linear Array | Array Length | Housing | Window Material[1] | Relative Intensity | Intensity Control | Connector |
|---|---|---|---|---|---|---|---|---|
| LED | R | LA | 145 | X | P | 6 — | X | Q |

Continued on page 2

[1] UV365 is only available in models with a glass window.

Original Instructions
08-Oct-26

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151466
p/n: 151466 Rev. J

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Continued from page 1

| Light Source | LED Color | Linear Array | Array Length | Housing | Window Material | Relative Intensity | Intensity Control | Connector |
|---|---|---|---|---|---|---|---|---|
| | R = Red<br>W = White<br>B = Blue<br>G = Green<br>I = Infrared (IR)<br>UV365 = Ultraviolet, 365 nm<br>UV395 = Ultraviolet, 395 nm | | 145 mm<br>290 mm<br>435 mm<br>580 mm<br>870 mm<br>1160 mm | X = IP50 | P = Clear plastic<br>G = Glass<br>D = Diffuse plastic | | X = Not adjustable | Q = Integral 5-pin M12 male quick-disconnect connector |

The following caution applies to UV365 nm models:

**CAUTION:**
**Risk Group 1: UV Emitted from this product.**

Minimize exposure to eyes or skin. Use appropriate shielding and eye protection. Risk Group 1 (RG 1) products are safe for most use applications, except for very prolonged exposures where direct ocular exposures may be expected.

- IEC 62471

The following caution applies to UV395 nm models:

**CAUTION:**
**Risk Group 2: UV Emitted from this product.**

Eye or skin irritation may result from exposure. Use appropriate shielding and eye protection. Risk Group 2 (RG 2) products generally do not pose a realistic optical hazard if aversion responses limit the exposure duration or where lengthy exposures are unrealistic.

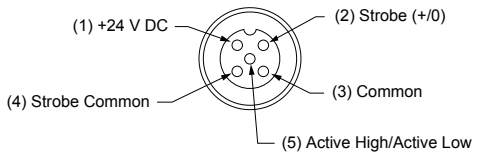
- IEC 62471

For a list of discontinued models, see Discontinued Models.

# Wiring

| Wire Purpose | Cable Wire Color[2] | Wire Connections | | *Presence*PLUS Pro Controller Terminal Block |
|---|---|---|---|---|
| Power Wires | Brown (1) | +24 V DC | | Pin 01[3] |
| | Blue (3) | common | | Pin 02 |
| Strobe Polarity Control | Gray (5) | **Active Low:** open | | Pin 02 or open |
| | | **Active High:** connect to common (Blue wire) | | |
| Strobe Voltage Wires | White (2) | **Active Low:** 0 V DC = ON | +5 V DC to 24 V DC = OFF | Pin 04 |
| | | **Active High:** 0 V DC = OFF | +5 V DC to 24 V DC = ON | |
| | Black (4) | Strobe common | | Pin 02 |

*Pinouts for Mating Cable*




(2) For Banner-supplied wire.
(3) When connecting the light to a *Presence*PLUS Pro controller terminal block, the controller supply must be 24 V DC ± 10%.


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**NOTE:** Connection to earth ground recommended.

# Specifications

**Supply Voltage and Current**

**145 mm Models:** 24 V DC ± 10% at 500 mA maximum
**290 mm Models:** 24 V DC ± 10% at 1 A maximum
**435 mm Models:** 24 V DC ± 10% at 1.5 A maximum
**580 mm Models:** 24 V DC ± 10% at 2 A maximum
**870 mm Models:** 24 V DC ± 10% at 3 A maximum
**1160 mm Models:** 24 V DC ± 10% at 4 A maximum
**Strobe Voltage:** 5 V DC to 24 V DC
Built-in constant current regulator for LEDs
Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)
See the electrical characteristics on the product label.

**Light Source**

| LED Color | Wavelength |
|---|---|
| Infrared | 850 nm |
| Red | 620 nm to 630 nm |
| Blue | 465 nm to 485 nm |
| Green | 520 nm to 535 nm |
| White | 5000 K to 8300 K |
| UV | 365 nm |
| | 395 nm |

**Certification**

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

**Operating Conditions**

0 °C to +50 °C (+32 °F to +122 °F)

**Connections**

Integral 5-pin M12 male quick-disconnect connector, accessory cordset required

**Construction**

**Housing:** black anodized aluminum
**Window:** acrylic or glass, depending on model

**Mounting**

4 M5 T-nuts included, brackets available

**Useful Life**

When operated within specifications, output will decrease less than 30% after 50,000 hours for visible and IR models; 20,000 hours for UV models

**Environmental Rating**

IP50

**Required Overcurrent Protection**

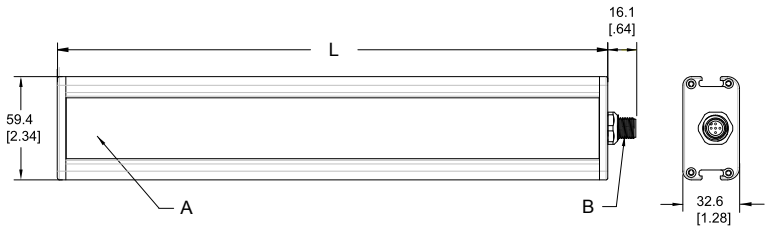
**WARNING:** Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

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 | 2.0 | 30 | 0.5 |

# Dimensions

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




| Array Length | Length L" |
|---|---|
| 145 mm | 171 mm (6.73 in) |
| 290 mm | 316.5 mm (12.46 in) |
| 435 mm | 462 mm (18.19 in) |
| 580 mm | 607.5 mm (23.92 in) |
| 870 mm | 898.5 mm (35.37 in) |
| 1160 mm | 1189.5 mm (46.83 in) |

A = Window (glass or acrylic, depending on model)
B = 5-pin M12 male connector

# Optical Data

### Light Characteristic: Clear and Diffuse Window

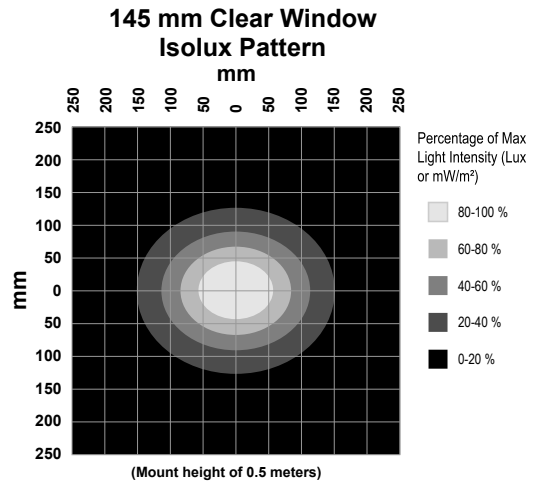
Values shown are typical at 25°C.

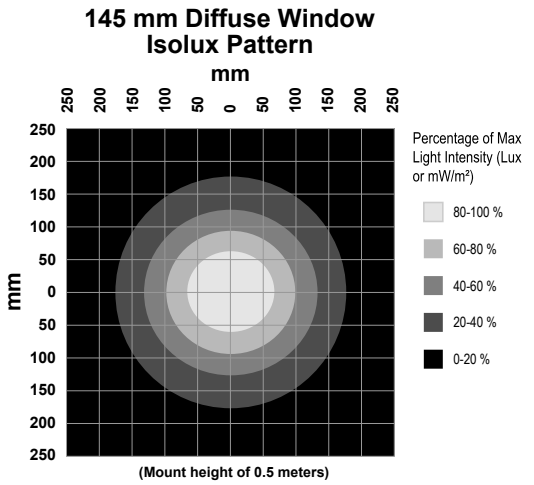
| Lighted Length (mm) | Lumens | | | | mWatts | | |
|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[4] |
| 145 | 580 | 445 | 275 | 205 | 895 | 1165 | 610 |
| 290 | 1160 | 890 | 550 | 410 | 1790 | 2330 | 1220 |
| 435 | 1740 | 1335 | 825 | 615 | 2685 | 3495 | 1830 |
| 580 | 2320 | 1780 | 1100 | 820 | 3580 | 4660 | 2440 |
| 870 | 3480 | 2670 | 1650 | 1230 | 5370 | 6990 | 3660 |
| 1160 | 4640 | 3560 | 2200 | 1640 | 7160 | 9320 | 4880 |

[4] Only available in models with a glass window.


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### 145 mm Models

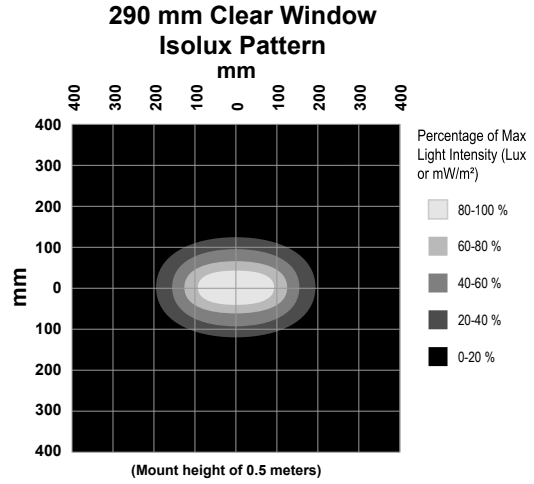


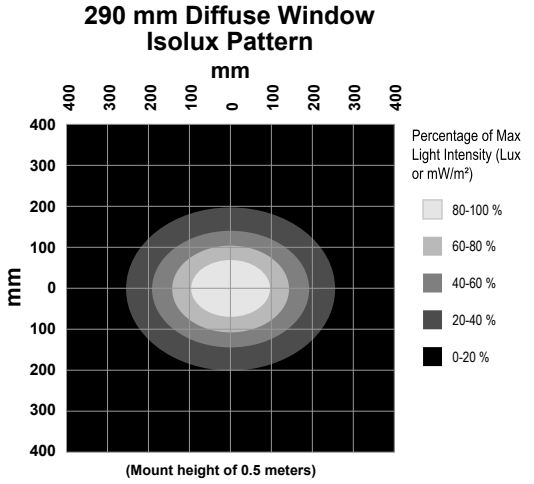




Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[5] | Vertical (Spread 13.8°) | Horizontal (Spread 21.4°) |
| 0.25 | 41,560 | 31,887 | 19,705 | 14,689 | 64,131 | 83,478 | 43,710 | 0.06 | 0.09 |
| 0.5 | 17,020 | 13,058 | 8,070 | 6,016 | 26,264 | 34,187 | 17,900 | 0.12 | 0.19 |
| 1 | 5,220 | 4,005 | 2,475 | 1,845 | 8,055 | 10,485 | 5,490 | 0.24 | 0.38 |

### 290 mm Models



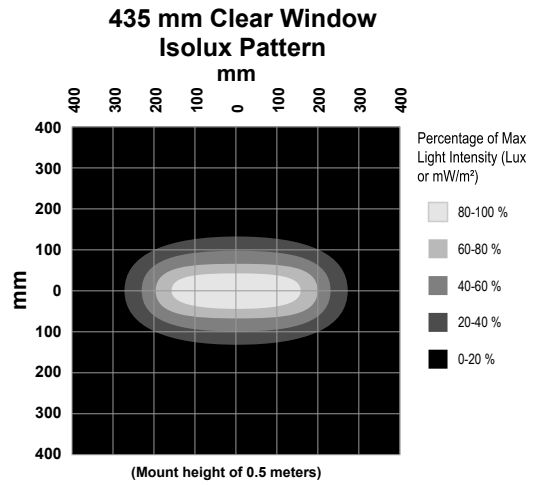

Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

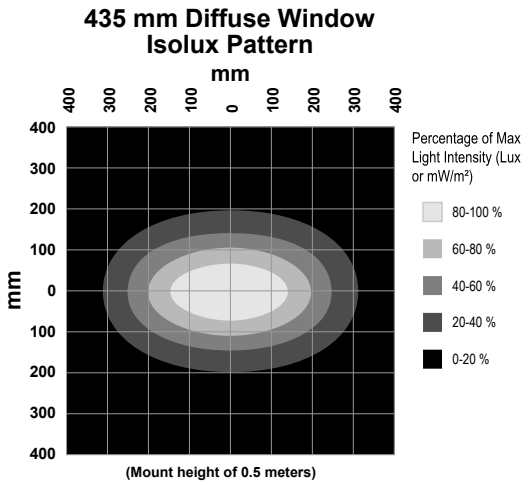
| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[6] | Vertical (Spread 13.8°) | Horizontal (Spread 21.4°) |
| 0.25 | 45,220 | 34,695 | 21,441 | 15,983 | 69,779 | 90,830 | 47,559 | 0.06 | 0.09 |
| 0.5 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1 | 8,930 | 6,851 | 4,234 | 3,156 | 13,780 | 17,937 | 9,392 | 0.24 | 0.38 |

[5] Only available in models with a glass window.
[6] Only available in models with a glass window.


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### 435 mm Models

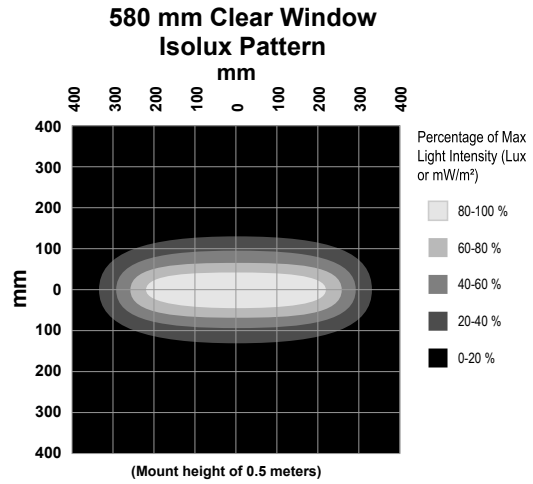


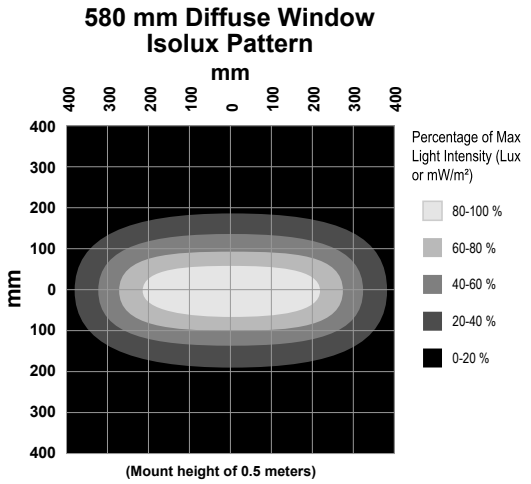




Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[7] | Vertical ( Spread 13.8°) | Horizontal ( Spread 21.4°) |
| 0.25 | 45,220 | 34,695 | 21,441 | 15,983 | 69,779 | 90,830 | 47,559 | 0.06 | 0.09 |
| 0.5 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1 | 9,740 | 7,473 | 4,618 | 3,443 | 15,030 | 19,564 | 10,244 | 0.24 | 0.38 |

### 580 mm Models



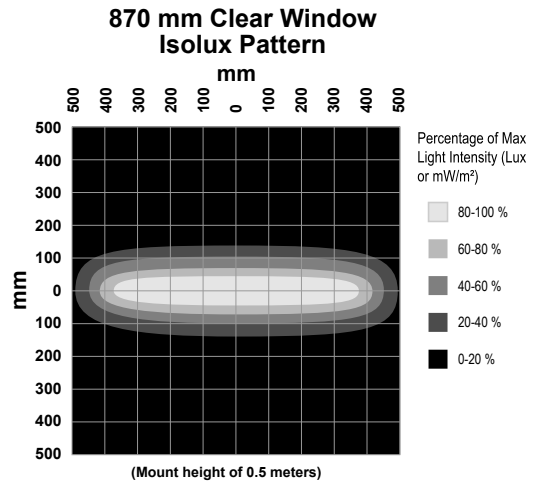

Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

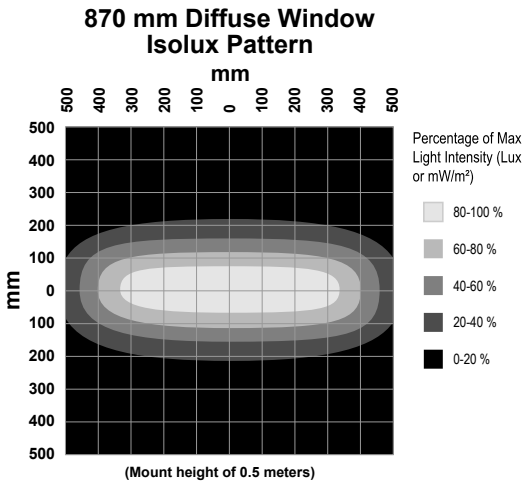
| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[8] | Vertical ( Spread 13.8°) | Horizontal ( Spread 21.4°) |
| 0.25 | 45,220 | 34,695 | 21,441 | 15,983 | 69,779 | 90,830 | 47,559 | 0.06 | 0.09 |
| 0.5 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1 | 11,550 | 8,862 | 5,476 | 4,082 | 17,823 | 23,200 | 12,147 | 0.24 | 0.38 |

[7] Only available in models with a glass window.
[8] Only available in models with a glass window.


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### 870 mm Models

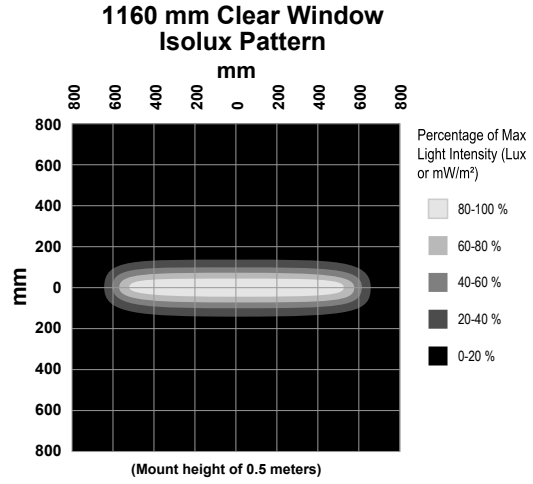


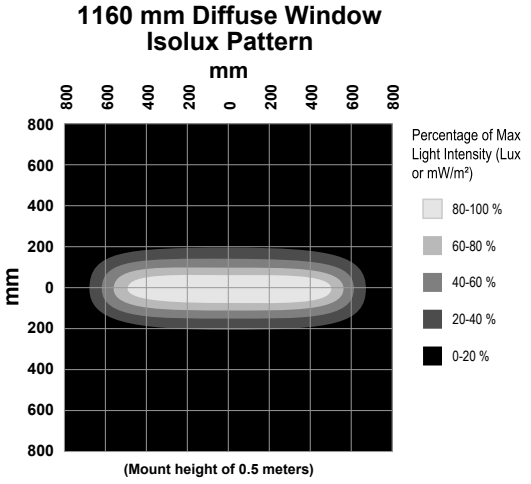




Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[9] | Vertical (Spread 13.8°) | Horizontal ( Spread 21.4°) |
| 0.25 | 45,220 | 34,695 | 21,441 | 15,983 | 69,779 | 90,830 | 47,559 | 0.06 | 0.09 |
| 0.5 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1 | 11,800 | 9,053 | 5,595 | 4,171 | 18,209 | 23,702 | 12,410 | 0.24 | 0.38 |

### 1160 mm Models




Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

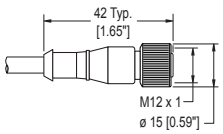
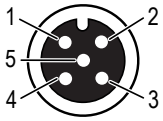
| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[10] | Vertical (Spread 13.8°) | Horizontal (Spread 21.4°) |
| 0.25 | 45,220 | 34,695 | 21,441 | 15,983 | 69,779 | 90,830 | 47,559 | 0.06 | 0.09 |
| 0.5 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1 | 12,330 | 9,460 | 5,846 | 4,358 | 19,026 | 24,766 | 12,968 | 0.24 | 0.38 |

[9] Only available in models with a glass window.
[10] Only available in models with a glass window.


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# Accessories

## Cordsets

| 5-Pin Single-Ended M12 Female Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Female)** |
| **MQDC20-506** | 2 m (6.56 ft) | Straight |  | <br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black<br>5 = Gray |
| **MQDC20-515** | 5 m (16.4 ft) | | | |
| **MQDC20-530** | 9 m (29.5 ft) | | | |

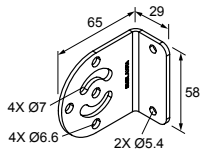
## Brackets

**SMBLAXRA**

- Right-angle stainless steel bracket
- May be used individually or in combination with **SMBLAXU** to provide swivel adjustment
- CAD Files: DXF, PDF, IGS, STP

Includes:

- 2 Brackets
- 4 M5 screws (socket drive, button head)
- 4 M5 T-nuts

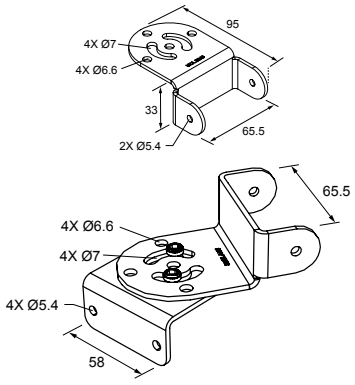



**SMBLAXU**

- U-shaped stainless steel bracket
- For use with **SMBLAXRA** to provide swivel adjustment
- CAD Files: DXF, PDF, IGS, STP

Includes:

- 2 Brackets
- 4 M5 screws (socket-drive, button head)
- 4 M5 T-nuts
- Four each stainless steel ¼-20 screws (socket drive, button head), lock nuts, washers



Combination View

## Filters (Optional)

Light filters are available in red, white, blue, green, infrared, and other options. Visit http://www.bannerengineering.com to determine which filter is best for your application and Vision system.

## Replacement Windows

| Array Length | Clear Glass | Clear Acrylic | Diffuse Acrylic | White Diffuse Acrylic |
|---|---|---|---|---|
| 145 mm | **LEDLA145XW-G** | **LEDLA145XW-P** | **LEDLA145XCDW-P** | **LEDLA145XWDW-P** |
| 290 mm | **LEDLA290XW-G** | **LEDLA290XW-P** | **LEDLA290XCDW-P** | **LEDLA290XWDW-P** |
| 435 mm | **LEDLA435XW-G** | **LEDLA435XW-P** | **LEDLA435XCDW-P** | **LEDLA435XWDW-P** |
| 580 mm | **LEDLA580XW-G** | **LEDLA580XW-P** | **LEDLA580XCDW-P** | **LEDLA580XWDW-P** |
| 870 mm | **LEDLA870XW-G** | **LEDLA870XW-P** | **LEDLA870XCDW-P** | **LEDLA870XWDW-P** |
| 1160 mm | **LEDLA1160XW-G** | **LEDLA1160XW-P** | **LEDLA1160XCDW-P** | **LEDLA1160XWDW-P** |

# Product Support and Maintenance

## Discontinued Models

The following models are no longer available for order but are still covered by the information in this document.


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- LEDRLA145XG6-XQ
- LEDRLA290XG6-XQ
- LEDRLA435XG6-XQ
- LEDRLA580XG6-XQ
- LEDRLA870XP6-XQ
- LEDRLA870XG6-XQ
- LEDRLA1160XP6-XQ
- LEDRLA1160XG6-XQ
- LEDWLA145XG6-XQ
- LEDWLA435XG6-XQ
- LEDWLA580XG6-XQ
- LEDWLA870XG6-XQ
- LEDWLA1160XP6-XQ
- LEDWLA1160XG6-XQ
- LEDBLA435XG6-XQ
- LEDBLA580XP6-XQ
- LEDBLA580XG6-XQ
- LEDBLA870XG6-XQ
- LEDBLA870XD6-XQ
- LEDBLA1160XP6-XQ
- LEDGLA145XP6-XQ
- LEDGLA145XG6-XQ
- LEDGLA290XP6-XQ
- LEDGLA290XG6-XQ
- LEDGLA290XD6-XQ
- LEDGLA435XP6-XQ
- LEDGLA435XG6-XQ
- LEDGLA435XD6-XQ
- LEDGLA580XP6-XQ
- LEDGLA580XD6-XQ
- LEDGLA870XP6-XQ
- LEDGLA870XG6-XQ
- LEDGLA870XD6-XQ
- LEDGLA1160XP6-XQ
- LEDGLA1160XG6-XQ
- LEDGLA1160XD6-XQ
- LEDILA145XG6-XQ
- LEDILA290XG6-XQ
- LEDILA435XG6-XQ
- LEDILA580XP6-XQ
- LEDILA580XG6-XQ
- LEDILA870XP6-XQ
- LEDILA870XG6-XQ
- LEDILA1160XG6-XQ
- LEDUV365LA435XG6-XQ
- LEDUV365LA870XG6-XQ
- LEDUV365LA1160XG6-XQ
- LEDUV395LA580XP6-XQ
- LEDUV395LA580XD6-XQ
- LEDUV395LA870XP6-XQ
- LEDUV395LA870XG6-XQ
- LEDUV395LA870XD6-XQ
- LEDUV395LA1160XP6-XQ
- LEDUV395LA1160XG6-XQ
- LEDUV395LA1160XD6-XQ

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