

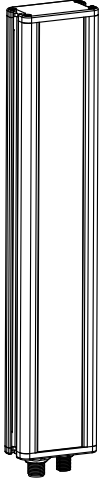
Linear Array with Intensity Adjustment



Datasheet

High-Power Lighting with Intensity Adjustment for use with Vision Systems

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



- Four high-intensity, visible wavelengths, plus IR and UV
- The following array lengths are available:
 - 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)
- Dual intensity control: potentiometer and Analog wire
- 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 $\pm 6.5^\circ$ on visible and IR models, lens angle of $\pm 5^\circ$ on UV 395 nm models, reflector cup angle of $\pm 15^\circ$ 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: Lea el siguiente instructivo antes de operar el luminario. Por favor descargue desde www.bannerengineering.com toda la documentación técnica de los Linear Array with Intensity Adjustment, disponibles en múltiples idiomas, para detalles del uso adecuado, aplicaciones, advertencias, y las instrucciones de instalación de estos dispositivos.

Model Key

| Light Source | LED Color | Linear Array | Array Length | Housing | Window Material ¹ | Relative Intensity | Intensity Control | Strobe Polarity | Connector |
|--------------|---|--------------|---|----------|---|--------------------|-----------------------|---------------------|-----------|
| LED | R | LA | 290 | X | P | 6 — | P | L | Q |
| | R = Red W = White B = Blue G = Green I = IR UV365 = UV365 nm UV395 = UV395 nm | | 290 mm 435 mm 580 mm 870 mm 1160 mm | X = IP50 | P=Clear Plastic G = Glass D = Diffuse Plastic | | P = Pot & analog wire | L = Low H = High | Q = QD |

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

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



Dual Intensity Control

The LED..LA..X..6-P..Q Series Linear Array Lights have a potentiometer and an analog wire that control the intensity of the light from maximum brightness (0 V DC) to dark (10 V DC). The potentiometer set to full counter-clockwise is equivalent to 10 V DC; set to full clockwise it is equivalent to 0 V DC. Generally, users will control the intensity using either the potentiometer or the analog (gray) wire independently. If using the potentiometer to control intensity, apply 0 V DC to the analog (gray) wire; if using the analog (gray) wire to control intensity, set the potentiometer to maximum intensity in its full clockwise position.

If using the potentiometer and analog (gray) wire together to control intensity, it is important to note that, either control applying any voltage greater than 0 to the light reduces the maximum achievable intensity. For example, assume you want a maximum light intensity of 50%, with further adjustability down to dark:

| Initial Setting | Available Adjustment for Other Control |
|--|---|
| Potentiometer sets maximum intensity to 50% (midway point between clockwise and counter-clockwise) | Analog (gray) wire can adjust between 5 V DC and 10 V DC |
| Analog (gray) wire sets maximum intensity to 50% (5 V DC) | Potentiometer can adjust from ½ counter-clockwise to full counter-clockwise |



Note: The range of intensity of the light is from 100%, down to just below 10% before the light goes completely dark.

Wiring

| Wire Purpose | Cable Wire Color ² | Wire Connections | PresencePLUS Pro Controller Terminal Block |
|---|-------------------------------|--|--|
| Power Wires | Brown (1) | +24 V DC | Pin 01 ³ |
| | Blue (3) | common | Pin 02 |
| Intensity | Gray (5) | 0 V DC to 10 V DC Intensity Control | N/A |
| Strobe Voltage Wires | White (2) | Active Low: 0 V DC = ON Active High: 0 V DC = OFF | Pin 04 |
| | Black (4) | +5 V DC to 24 V DC = OFF +5 V DC to 24 V DC = ON | Pin 02 |
| <p>Figure 1. Pinouts for Mating Cable</p> | | | |



Note: Connection to earth ground recommended.

Specifications

Supply Voltage and Current

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 |

Operating Conditions

0 °C to +50 °C (+32 °F to +122 °F)

Connections

Integral 5-pin M12/Euro-style male quick disconnect, 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

IEC IP50

Certification



² For Banner-supplied wire.

³ When connecting the light to a PresencePLUS Pro controller terminal block, the controller supply must be 24 V DC ± 10%.

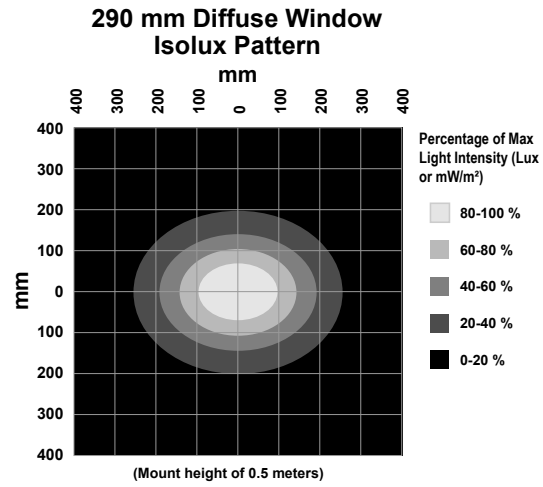
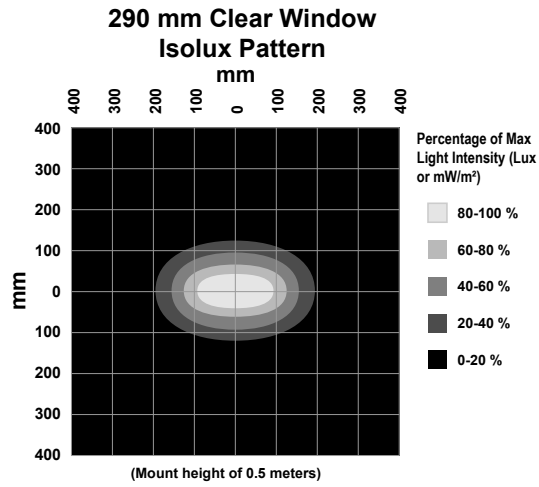
Optical Data

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 |
| 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 |

290 mm Models

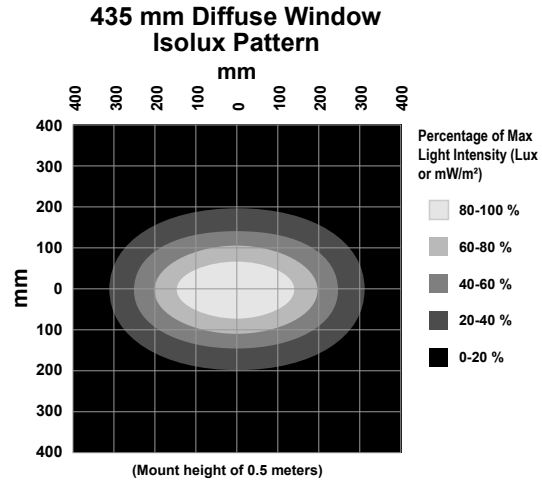
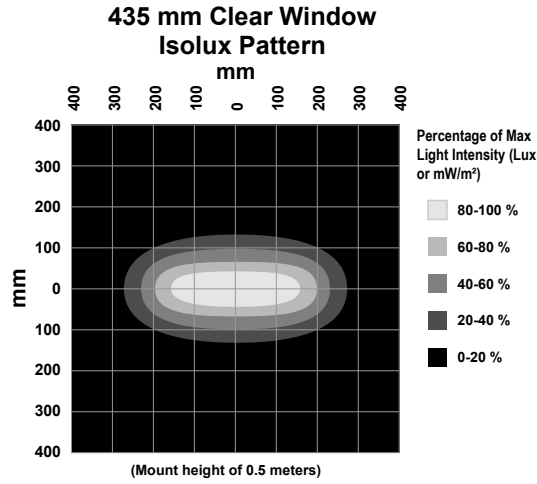


Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m ²) | | | Beam Width (m) | |
|--------------|---------------------------|--------|--------|--------|---|--------|--------------------|-------------------------|---------------------------|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365 ⁵ | 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 |
| 0.50 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1.00 | 8,930 | 6,851 | 4,234 | 3,156 | 13,780 | 17,937 | 9,392 | 0.24 | 0.38 |

⁴ Only available in models with a glass window.
⁵ Only available in models with a glass window.

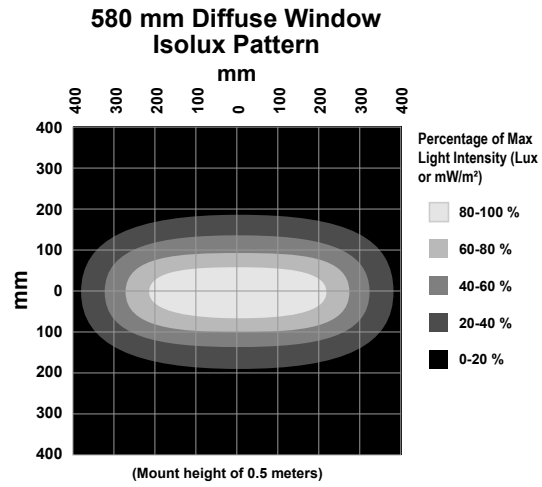
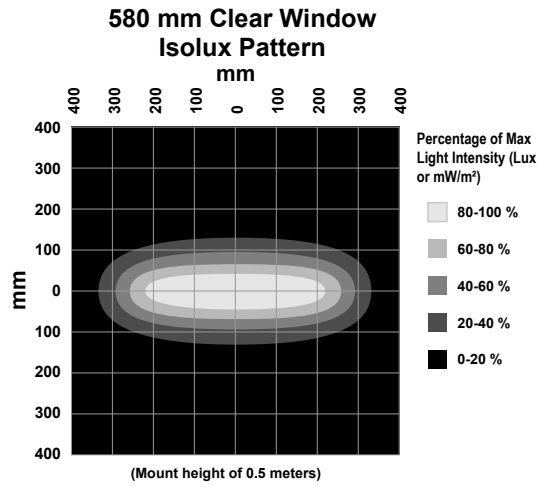
435 mm Models



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/m ²) | | | 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 |
| 0.50 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1.00 | 9,740 | 7,473 | 4,618 | 3,443 | 15,030 | 19,564 | 10,244 | 0.24 | 0.38 |

580 mm Models

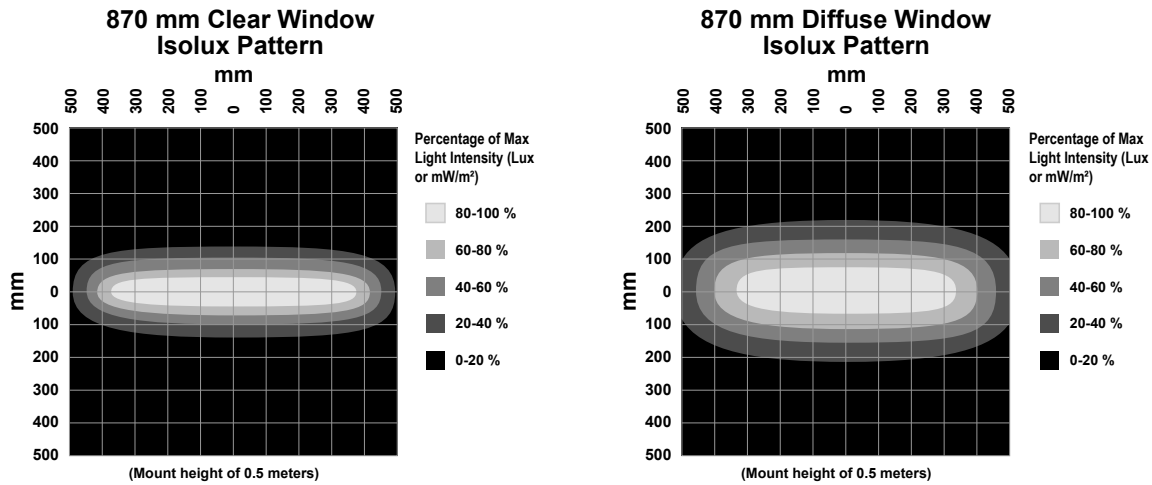


Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m ²) | | | 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 |
| 0.50 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1.00 | 11,550 | 8,862 | 5,476 | 4,082 | 17,823 | 23,200 | 12,147 | 0.24 | 0.38 |

⁶ Only available in models with a glass window.
⁷ Only available in models with a glass window.

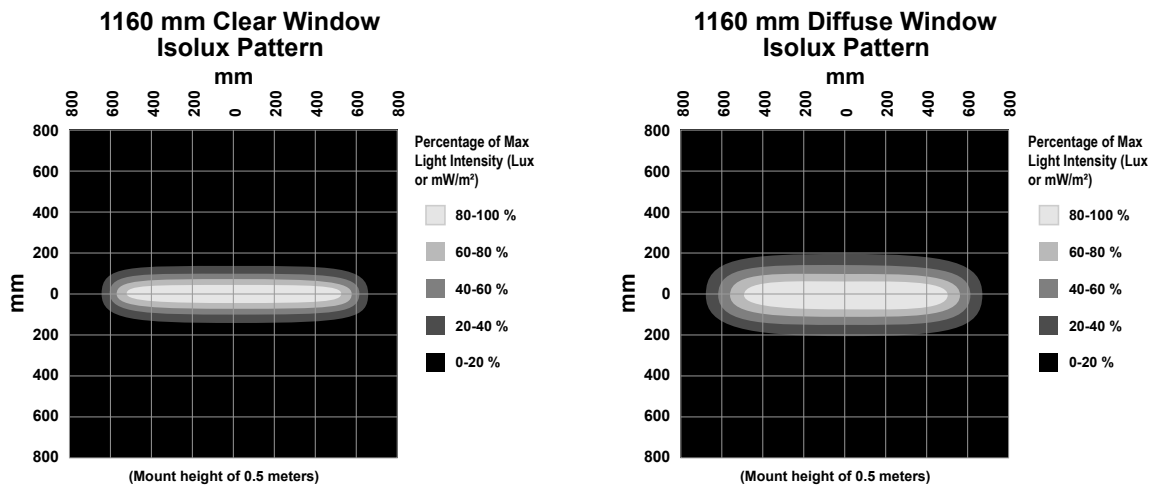
870 mm Models



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/m ²) | | | 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 |
| 0.50 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1.00 | 11,800 | 9,053 | 5,595 | 4,171 | 18,209 | 23,702 | 12,410 | 0.24 | 0.38 |

1160 mm Models



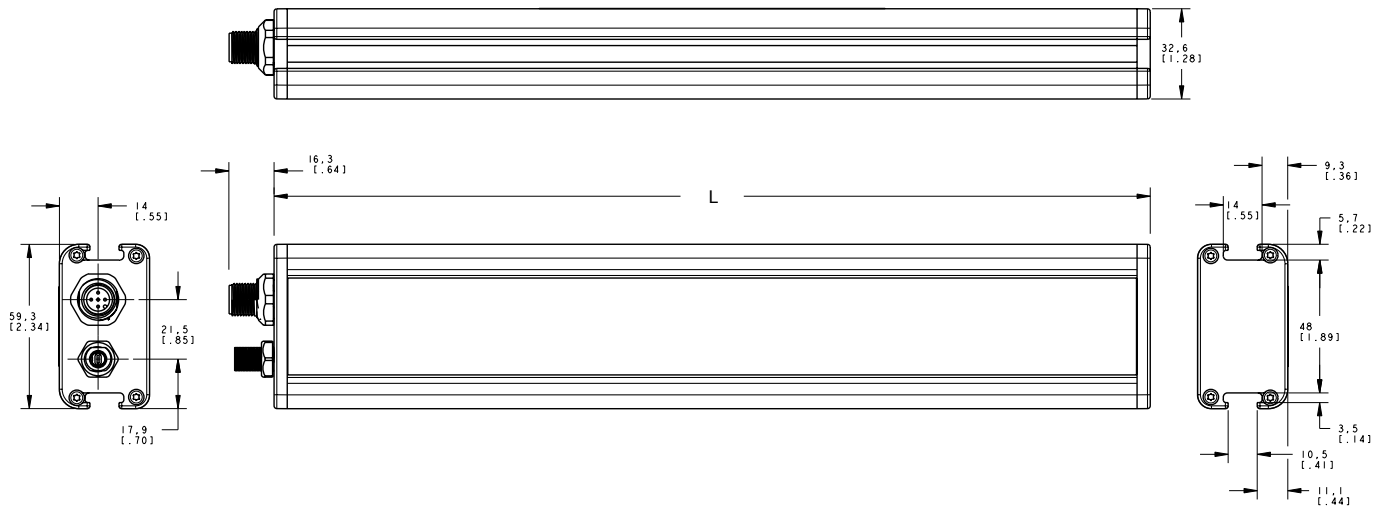
Lux and irradiance values shown are typical at 25 °C and with clear windows; light intensity lowered by 40% on diffuse window models.

| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m ²) | | | 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 |
| 0.50 | 23,420 | 17,969 | 11,104 | 8,278 | 36,139 | 47,042 | 24,631 | 0.12 | 0.19 |
| 1.00 | 12,330 | 9,460 | 5,846 | 4,358 | 19,026 | 24,766 | 12,968 | 0.24 | 0.38 |

⁸ Only available in models with a glass window.
⁹ Only available in models with a glass window.

Dimensions

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



| Array Length | Length "L" |
|--------------|----------------------|
| 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) |

Accessories

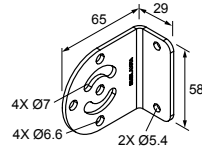
Cordsets

| 5-Pin Threaded M12/Euro-Style Cordsets—Single Ended | | | | |
|---|----------------|----------|------------|--|
| Model | Length | Style | Dimensions | Pinout (Female) |
| MQDC20-506 | 1.83 m (6 ft) | Straight | | <p>1 = Brown 2 = White 3 = Blue 4 = Black 5 = Gray</p> |
| MQDC20-515 | 4.57 m (15 ft) | | | |
| MQDC20-530 | 9.14 m (30 ft) | | | |

Accessory Brackets

SMBLAXRA

- Right-angle stainless steel bracket
- May be used individually or in combination with **SMBLAXU** to provide swivel adjustment

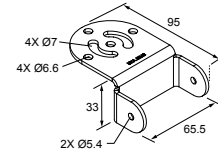


Includes:

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

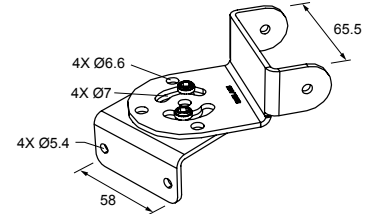
SMBLAXU

- U-shaped stainless steel bracket
- For use with **SMBLAXRA** to provide swivel adjustment



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 |
|--------------|---------------|---------------|-----------------|-----------------------|
| 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 |

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