# LED Series Sealed High-Intensity Area Lights

## Features

*High-Power Lighting for use with Banner Vision Systems*

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



- Rugged, waterproof housing, rated IP68
- Compact area light for Banner Vision systems
- Five extremely bright LEDs for illumination of targets from 0.15 m to beyond 2 m
- Smooth exterior for easy cleaning during washdown
- Optically isolated strobe signal
- Available with 316 stainless steel or nickel-plated aluminum housing and a choice of either acrylic or tempered optical glass windows
- Fixed or adjustable intensity, depending on model
- Selectable Active High or Active Low strobe option

**IMPORTANT:** Read the following instructions before operating the light. Please download the complete LED Sealed High-Intensity 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 LED Sealed High-Intensity 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 LED Sealed High-Intensity 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

| Models | Housing Material | Window Material | Intensity | LED Color |
|---|---|---|---|---|
| **LEDRA70AP5-XQ** | Nickel-plated aluminum | Acrylic | Fixed | Red, 620 nm to 630 nm |
| **LEDRA70AD5-XQ** | | Diffuse acrylic | | |
| **LEDRA70AP5-PQ** | | Acrylic | Adjustable | |
| **LEDWA70AP5-PQ** | | Acrylic | Adjustable | White, 5000 K to 8300 K |
| **LEDBA70AP5-XQ** | | Acrylic | Fixed | Blue, 465 nm to 485 nm |
| **LEDBA70AD5-XQ** | | Diffuse acrylic | | |
| **LEDIA70AP5-XQ** | | Acrylic | Fixed | Infrared, 850 nm |
| **LEDUV365A70AG5-XQ** | | Glass | Fixed | UV, 365 nm |
| **LEDUV395A70AP5-XQ** | | Acrylic | Fixed | UV, 395 nm |
| **LEDIA70SSD5-XQ** | Stainless steel | Diffuse acrylic | Fixed | Infrared, 850 nm |

For a list of discontinued models, see Discontinued Models.

The following caution applies to UV, 365 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 UV, 395 nm models:



© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

153957
p/n: 153957 Rev. I

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

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

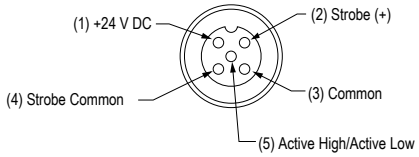
Eye or skin irritation may result from exposure. Use appropriate shielding and eye protection. Risk Group 2 (RG 2) products generally do not pose a realistic optical hazard if aversion responses limit the exposure duration or where lengthy exposures are unrealistic.

- IEC 62471

# Wiring

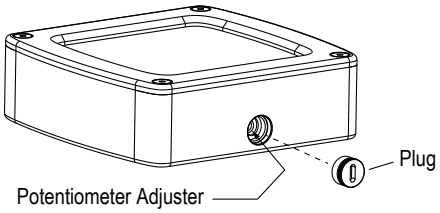
| Wire Purpose | Cable Wire Color[1] | Continuous On Mode | Strobed Mode | | *Presence*Plus Pro Controller Terminal Block |
|---|---|---|---|---|---|
| **Power Wires** | **Brown (1)** | +24 V DC | +24 V DC | | Pin 01[2] |
| | **Blue (3)** | common | common | | Pin 02 |
| **Strobe Polarity Control** |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

*Pinouts for Mating Cordsets*




# Light Adjustment (Adjustable Intensity Models Only)

*Potentiometer Adjuster*




1. Remove the plug as shown in the figure, using a small flat-blade screwdriver.
2. Adjust the light's intensity by turning the 270° Intensity potentiometer with the screwdriver. Apply power to the light and turn the potentiometer all the way clockwise for maximum intensity.
3. If the object to be sensed is too bright at maximum intensity, turn the potentiometer down a little at a time, testing with the object, until the correct brightness is achieved.
4. When the adjustment is complete, reinsert the plug.

# Specifications

**Supply Voltage and Current**

Operating Voltage: 24 V DC ± 10%
Strobe Voltage: 5 V DC to 24 V DC at 15 mA max.
Current Draw at Full Intensity: 500 mA max.
Built-in constant current regulator for LEDs
Adjustable intensity control varies intensity for "P" models
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**

Five high-intensity LEDs; see models table for wavelengths

**Illumination**

610 mm (24 in) diameter usable light pattern at 1 m

**Strobe**

Optically isolated

**Connections**

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

**Construction**

Nickel-plated aluminum or stainless steel housing, depending on model; acrylic or glass window, depending on model

**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

**Operating Conditions**

0 °C to +50 °C (+32 °F to +122 °F)
95% maximum relative humidity (non-condensing)

**Environmental Rating**

Nickel-plated models: IP68
Stainless steel models: NEMA 4X;IP68

**Certifications**

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

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


© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

**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.

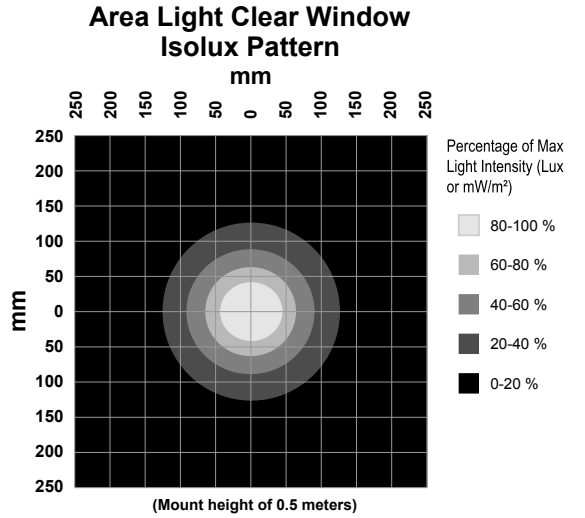
| Supply Wiring (AWG) | Required Overcurrent Protection (A) | Supply Wiring (AWG) | Required Overcurrent Protection (A) |
|---|---|---|---|
| 20 | 5.0 | 26 | 1.0 |
| 22 | 3.0 | 28 | 0.8 |
| 24 | 2.0 | 30 | 0.5 |

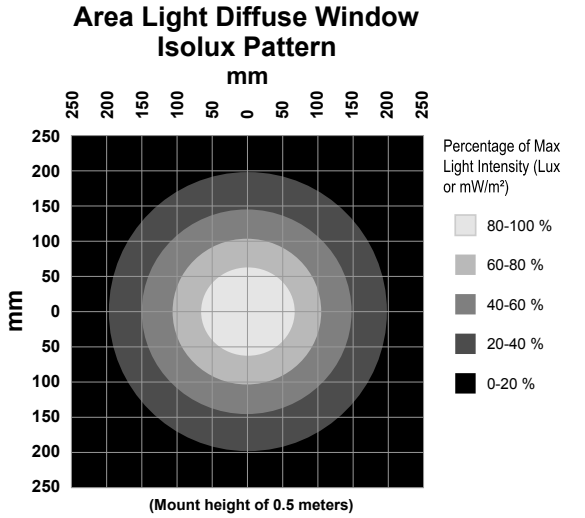
## Light Characteristics: Clear and Diffuse Window

Values shown are typical at 25 °C.

| | Lumens | | | | mWatts | | |
|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[3] |
| LEDxA70 | 575 | 450 | 225 | 165 | 1170 | 630 | 440 |

## Optical Data




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

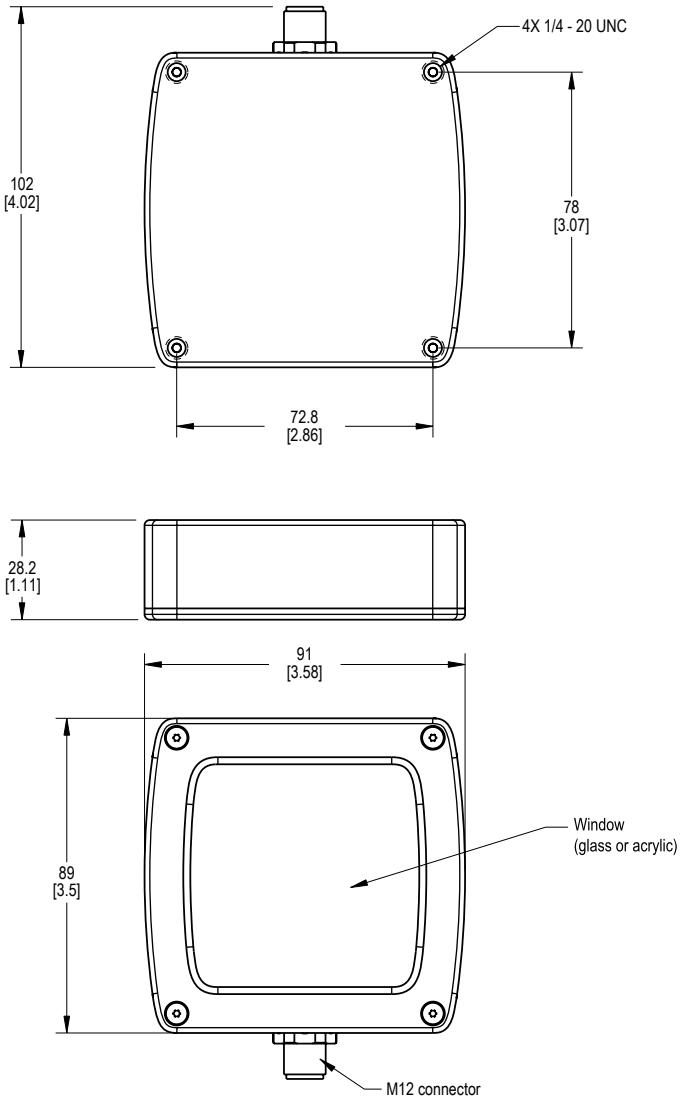
| Distance (m) | Max Center Beam Lux (lux) | | | | Max Center Beam Irradiance (mW/m²) | | | Beam Width (m) | |
|---|---|---|---|---|---|---|---|---|---|
| | Cool White | Green | Red | Blue | IR | UV395 | UV365[4] | Vertical (Spread 29.1°) | Horizontal (Spread 30.7°) |
| 0.25 | 51,440 | 40,257 | 20,129 | 14,761 | 104,669 | 39,363 | 56,360 | 0.13 | 0.14 |
| 0.5 | 18,550 | 14,517 | 7,259 | 5,323 | 37,745 | 14,195 | 20,324 | 0.26 | 0.27 |
| 1 | 5,110 | 3,999 | 2,000 | 1,466 | 10,398 | 3,910 | 5,599 | 0.52 | 0.55 |

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


© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

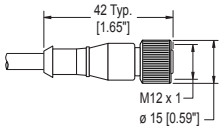
## Dimensions

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

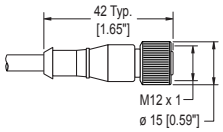
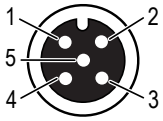



# Accessories

## Cordsets

| 5-Pin Single-Ended M12 Female Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Female)** |
| **MQDC20-506** | 2 m (6.56 ft) | Straight |   |   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) | | | |


© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

| 5-Pin Single-Ended M12 Female Stainless Steel Nut Cordsets | | | | |
|---|---|---|---|---|
| **Model** | **Length** | **Style** | **Dimensions** | **Pinout (Female)** |
| **MQDC20SS-506** | 2 m (6.52 ft) | Straight |  | <br>1 = Brown<br>2 = White<br>3 = Blue<br>4 = Black<br>5 = Gray |
| **MQDC20SS-515** | 5 m (16.4 ft) | | | |
| **MQDC20SS-530** | 9 m (29.5 ft) | | | |

## Brackets

**SMBASCM**
- 316 stainless steel column-mounting bracket with 430 stainless steel threaded insert
- Four ¼-20 stainless steel screws included
- CAD Files: DXF, PDF, IGS, STP



**SMBAMS70AS**
- 316 stainless steel right-angle bracket
- Articulated slots for 90+ degrees rotation
- Four ¼-20 stainless steel screws included
- CAD Files: DXF, PDF, IGS, STP



## 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 Window Kits

| Model | Description |
|---|---|
| **LEDA70SW-P** | Clear acrylic |
| **LEDA70SW-G** | Clear glass |
| **LEDA70SCDW-P** | Clear diffuse acrylic |
| **LEDA70SWDW-P** | White diffuse acrylic |

# 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.

*Models with Nickel-Plated Aluminum Housing*

| Models | | | Intensity | LED Color |
|---|---|---|---|---|
| **Acrylic Window** | **Glass Window** | **Diffuse Window (acrylic)** | | |
| **–** | **LEDRA70AG5-XQ** | **–** | Fixed | Red, 620 nm to 630 nm |
| **–** | **LEDRA70AG5-PQ** | **LEDRA70AD5-PQ** | Adjustable | |
| **LEDWA70AP5-XQ** | **LEDWA70AG5-XQ** | **LEDWA70AD5-XQ** | Fixed | White, 5000 K to 8300 K |
| **–** | **LEDWA70AG5-PQ** | **LEDWA70AD5-PQ** | Adjustable | |
| **–** | **LEDBA70AG5-XQ** | **–** | Fixed | Blue, 465 nm to 485 nm |
| **LEDBA70AP5-PQ** | **LEDBA70AG5-PQ** | **LEDBA70AD5-PQ** | Adjustable | |
| **LEDGA70AP5-XQ** | **LEDGA70AG5-XQ** | **LEDGA70AD5-XQ** | Fixed | Green, 520 nm to 535 nm |
| **LEDGA70AP5-PQ** | **LEDGA70AG5-PQ** | **LEDGA70AD5-PQ** | Adjustable | |
| **–** | **LEDIA70AG5-XQ** | **LEDIA70AD5-XQ** | Fixed | Infrared, 850 nm |
| **LEDIA70AP5-PQ** | **LEDIA70AG5-PQ** | **LEDIA70AD5-PQ** | Adjustable | |
| **–** | **LEDUV365A70AG5-PQ** | **–** | Adjustable | UV, 365 nm |

Continued on page 6


© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com

Continued from page 5

| Models | | | Intensity | LED Color |
|---|---|---|---|---|
| Acrylic Window | Glass Window | Diffuse Window (acrylic) | | |
| – | LEDUV395A70AG5-XQ | LEDUV395A70D5-XQ | Fixed | UV, 395 nm |
| LEDUV395A70AP5-PQ | LEDUV395A70AG5-PQ | LEDUV395A70D5-PQ | Adjustable | |

*Models with 316 Stainless Steel Housing*

| Models | | | Intensity | LED Color |
|---|---|---|---|---|
| Acrylic Window | Glass Window | Diffuse Window (acrylic) | | |
| LEDRA70SSP5-XQ | LEDRA70SSG5-XQ | LEDRA70SSD5-XQ | Fixed | Red, 620 nm to 630 nm |
| LEDRA70SSP5-PQ | LEDRA70SSG5-PQ | LEDRA70SSD5-PQ | Adjustable | |
| LEDWA70SSP5-XQ | LEDWA70SSG5-XQ | LEDWA70SSD5-XQ | Fixed | White, 5000 K to 8300 K |
| LEDWA70SSP5-PQ | LEDWA70SSG5-PQ | LEDWA70SSD5-PQ | Adjustable | |
| LEDBA70SSP5-XQ | LEDBA70SSG5-XQ | LEDBA70SSD5-XQ | Fixed | Blue, 465 nm to 485 nm |
| LEDBA70SSP5-PQ | LEDBA70SSG5-PQ | LEDBA70SSD5-PQ | Adjustable | |
| LEDGA70SSP5-XQ | LEDGA70SSG5-XQ | LEDGA70SSD5-XQ | Fixed | Green, 520 nm to 535 nm |
| LEDGA70SSP5-PQ | LEDGA70SSG5-PQ | LEDGA70SSD5-PQ | Adjustable | |
| LEDIA70SSP5-XQ | LEDIA70SSG5-XQ | – | Fixed | Infrared, 850 nm |
| LEDIA70SSP5-PQ | LEDIA70SSG5-PQ | LEDIA70SSD5-PQ | Adjustable | |
| – | LEDUV365A70SSG5-XQ | – | Fixed | UV, 365 nm |
| – | LEDUV365A70SSG5-PQ | – | Adjustable | |
| LEDUV395A70SSP5-XQ | LEDUV395A70SSG5-XQ | LEDUV395A70SSD5-XQ | Fixed | UV, 395 nm |
| LEDUV395A70SSP5-PQ | LEDUV395A70SSG5-PQ | LEDUV395A70SSD5-PQ | Adjustable | |

# 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.

## Mexican Importer

Banner Engineering de Mèxico, S. de R.L. de C.V. | David Alfaro Siqueiros 103 Piso 2 Valle oriente | San Pedro Garza Garcia Nuevo Leòn, C. P. 66269

81 8363.2714


© Banner Engineering Corp. All rights reserved.
www.bannerengineering.com