

# AL325 Series

## Modular Bar Light | Product Datasheet



### Best-in-Class Intensity

Utilizes industrial grade high performance LEDs, efficient TIR lenses and optimal thermal management, enabling best-in-class intensity.

### Embedded Control Capable

Designed with the simplicity of embedded control technology capable of hassle-free continuous and overdrive strobe operation.

### M6 Mounting Channel

Equipped with three M6 mounting channels on the sides and bottom, allowing for highly adjustable and stable positioning.

### Field Adjustable Optics and Light Conditioning Materials

Engineered with field swappable optical components, allowing users to test which lens and light conditioning configurations work best in their specific application environments.

## AL325 Series Description

Solve your unique machine vision lighting challenges with the AL325 Modular Bar Light Series. This innovative modular system offers best-in-class performance and unmatched flexibility through its user-swappable efficient optical components. Eliminate the guesswork of selecting the correct optics.

Easily transition between narrow and wide beam angles, or experiment with different light conditioning materials, directly in the field. Embedded control options provide hassle-free continuous and overdrive strobe functionality. The AL325 adapts to your evolving needs, delivering optimal illumination for applications ranging from detailed component gauging to logistics scan tunnel lighting, all with industry-leading build-to-order lead times of one to two weeks.



**High Intensity**



**Scalable Design**



**16 Wavelengths Available**



**Polarization and Oblique Films Available**



**1-2 Week BTO Lead Times**

## General Information

## General Specifications

| Category      | Specification                  |          |                                                                                                                                                                                                       | Detail                                                                                                                                 |                        |
|---------------|--------------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| Optical       | Available Wavelengths          |          |                                                                                                                                                                                                       | White, 365 nm, 375 nm, 385 nm, 395 nm, 405 nm, 455 nm, 470 nm, 505 nm, 530 nm, 590 nm, 625 nm, 660 nm, 730 nm, 850 nm, 940 nm          |                        |
|               | Available Lensing Options      |          |                                                                                                                                                                                                       | Narrow (14°), Medium (25°), Wide (36°), Extra Wide (55°), Elliptical (45°+15°), Non Lensed                                             |                        |
|               | Available Light Conditioning   |          |                                                                                                                                                                                                       | Homogenizer, Diffuser, Polarizer, Transversal Oblique, Longitudinal Oblique                                                            |                        |
| Electrical    | Power Consumption Info         |          |                                                                                                                                                                                                       | See Page 11 for Details                                                                                                                |                        |
|               | Cable Info                     |          |                                                                                                                                                                                                       | Cable not included for EC/ES and 24V Variants<br>All others: 80" -0/+6" Long (2 m -0/+150 mm), 105 °C Rated, Foil Shield w/ Drain, 24V |                        |
| Mechanical    | Sizing Info                    | Standard | Length                                                                                                                                                                                                | 6.27" (159.3 mm) to 84.53" (2147.1 mm)                                                                                                 | See Page 9 for Details |
|               |                                |          | Width                                                                                                                                                                                                 | 1.57" (39.8 mm)                                                                                                                        |                        |
|               |                                |          | Height                                                                                                                                                                                                | 1.78" (45.2 mm)                                                                                                                        |                        |
|               |                                | Sealed   | Length                                                                                                                                                                                                | TBD                                                                                                                                    |                        |
|               |                                |          | Width                                                                                                                                                                                                 | TBD                                                                                                                                    |                        |
|               |                                |          | Height                                                                                                                                                                                                | TBD                                                                                                                                    |                        |
|               | Weight Info (Standard)         |          |                                                                                                                                                                                                       | ~ 1.16 lbs (~526 g) per 300mm Unit Length                                                                                              |                        |
| Mounting Info |                                |          | M6 Mounting Nut Channel                                                                                                                                                                               |                                                                                                                                        |                        |
| Material Info |                                |          | Anodized Aluminum Housing, Acrylic Window, Nylon Strain Relief, PVC Cable Jacket, Steel Black Oxide & Zinc Plated Steel Fasteners, Optional Silicone Sealant, Optional Neoprene Gasket/ Nylon Washers |                                                                                                                                        |                        |
| Thermal       | Operating Case Temperatures    |          |                                                                                                                                                                                                       | 25 °C to 60 °C                                                                                                                         |                        |
|               | Operating Ambient Temperatures |          |                                                                                                                                                                                                       | 0 °C to 35 °C                                                                                                                          |                        |
| Certification | Compliance                     |          |                                                                                                                                                                                                       | CE, RoHS, IEC 62471                                                                                                                    |                        |
|               | IP Rating                      |          |                                                                                                                                                                                                       | TBD                                                                                                                                    |                        |
|               | Lumen Maintenance - White Only |          |                                                                                                                                                                                                       | L70 (50,000 Hours)                                                                                                                     |                        |

**General Information - Continued**

**Part Number Key**

| Model                    | Lens           | Emitting Length (mm)            | - | Peak Wavelength (nm) | Connector/Control | - | Window Material              | Light Conditioning 1 (Optional) | Light Conditioning 2 (Optional) | - | IP Rating (Optional)    |
|--------------------------|----------------|---------------------------------|---|----------------------|-------------------|---|------------------------------|---------------------------------|---------------------------------|---|-------------------------|
| AL325                    | X              | XXXX                            | - | XXX                  | XX                | - | X                            | X                               | X                               | - |                         |
| AL325                    | N (Narrow)     | 0150 to 2100                    |   | 365 <sup>4</sup>     | EC                |   | A (Clear)                    | P (Polarizer) <sup>3</sup>      | T (Transversal Oblique)         |   | W (IP65) <sup>2,3</sup> |
|                          | M (Medium)     | (scalable in 150 mm increments) |   | 375 <sup>4</sup>     | ES                |   | H (Homogenizer) <sup>2</sup> |                                 | L (Longitudinal Oblique)        |   |                         |
|                          | W (Wide)       |                                 |   | 385 <sup>4</sup>     | 24                |   | D (Diffuser) <sup>1</sup>    |                                 |                                 |   |                         |
|                          | Z (Extra Wide) |                                 |   | 395 <sup>4</sup>     | C1                |   |                              |                                 |                                 |   |                         |
|                          | E (Elliptical) |                                 |   | 405 <sup>4</sup>     | C5                |   |                              |                                 |                                 |   |                         |
|                          | X (No Lens)    |                                 |   | 455                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 470                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 505                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 530                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 590                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 625                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 660                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 730                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 850                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | 940                  |                   |   |                              |                                 |                                 |   |                         |
|                          |                |                                 |   | WHI                  |                   |   |                              |                                 |                                 |   |                         |
| more information on page |                | 10                              |   | 5                    | 11                |   |                              | 6                               |                                 |   |                         |

**Example Part Numbers:**  
**AL325M0300-WHIES-H**  
**AL325N0600-660EC-APT**

<sup>1</sup> The diffuser is available up to 900 mm in emitting length  
<sup>2</sup> The homogenizer is available up to 600 mm in emitting length when configured with the IP65 rating  
<sup>3</sup> The polarizer is available up to 900mm in emitting length when configured with the IP65 rating  
<sup>4</sup> Only available with narrow, medium, wide or no lensing

**Lead Times**

Build-to-Order products ship within one to two weeks.

**Configurator**

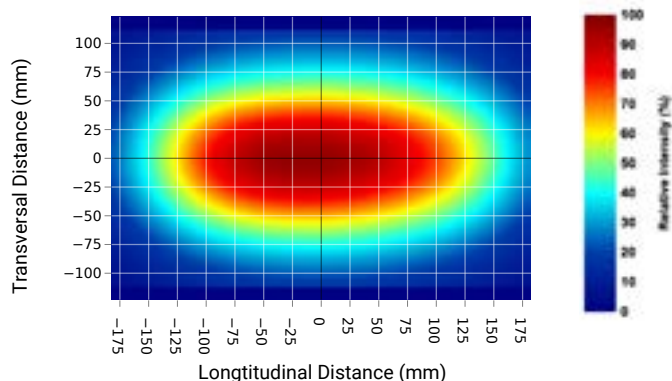


Need a build-to-order custom lighting solution in 2 weeks or less? Advanced Illumination's online configurator helps you tailor our AL325 Modular Bar Light Series to your specific needs. For a guided configuration, [visit our online configurator](#).

## Optical Information

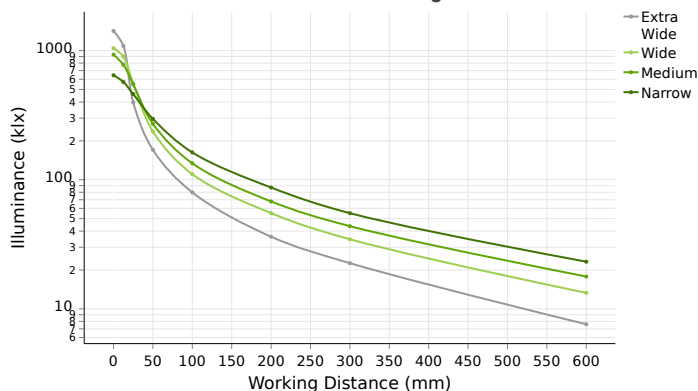
### Intensity Characteristics

Intensity Distribution at 300 mm Working Distance



Intensity distribution sample image above taken with a 300 mm white medium lensed AL325 unit w/ a homogenizer.

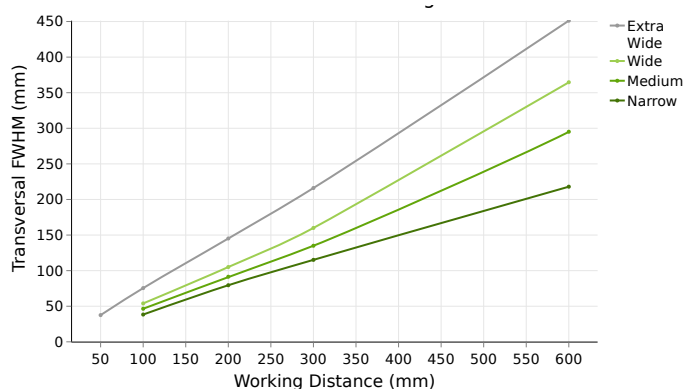
Illuminance vs Working Distance



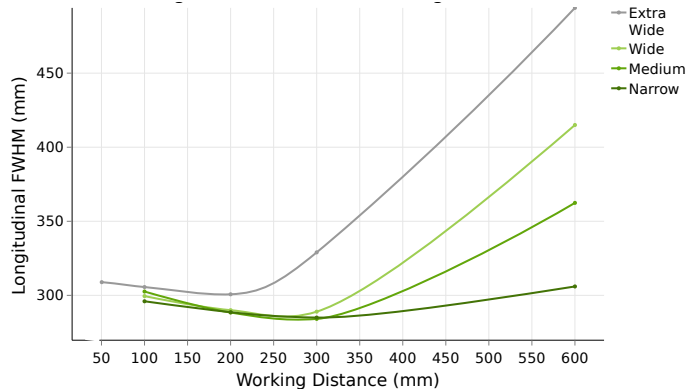
Data shown above have been collected using a 300 mm white AL325 unit w/ a homogenizer.

### FWHM vs Working Distance

Transversal FWHM vs Working Distance

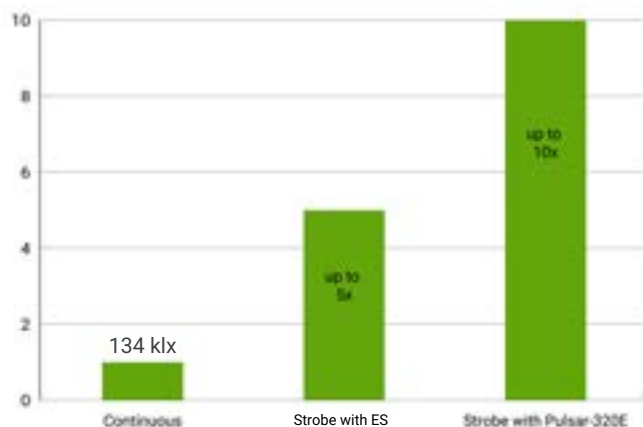


Longitudinal FWHM vs Working Distance



Both Full Width Half Maximum (FWHM) vs Working Distance plots shown above have been measured using a 300 mm white AL325 unit w/ a homogenizer.

### Continuous vs Pulsed Intensity

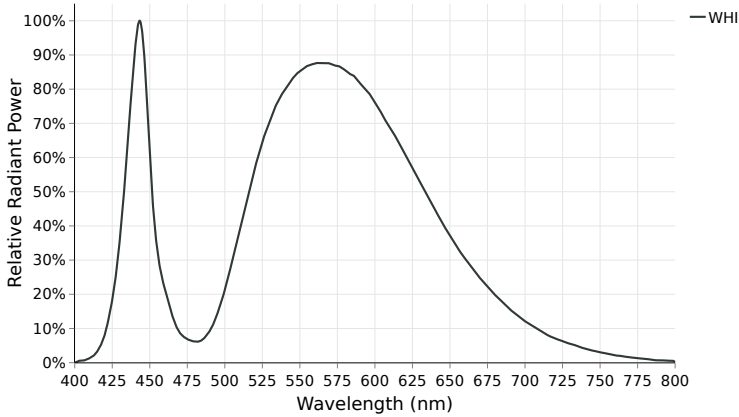


Under continuous operation, a 300 mm white medium lensed AL325 unit with a homogenizer will output an **illuminance of 134 klx** and an **irradiance of 427 W/m<sup>2</sup>** at a 100 mm working distance. For applications that require higher output, the AL325 Series has been engineered to be overdrive strobe capable. When configured with AI's strobe enabled embedded control option (ES), the AL325 is capable of outputting up-to 5X continuous levels. When configured with a C5 connector, compatible with AI's Pulsar 320E, an AL325 can be **strobed up-to 10X continuous intensity levels**.

Disclaimer: The measurements provided above are for approximations only and may vary depending on the method of measurement and the specific configuration being measured.

## Optical Information - Continued

### White Spectral Profile

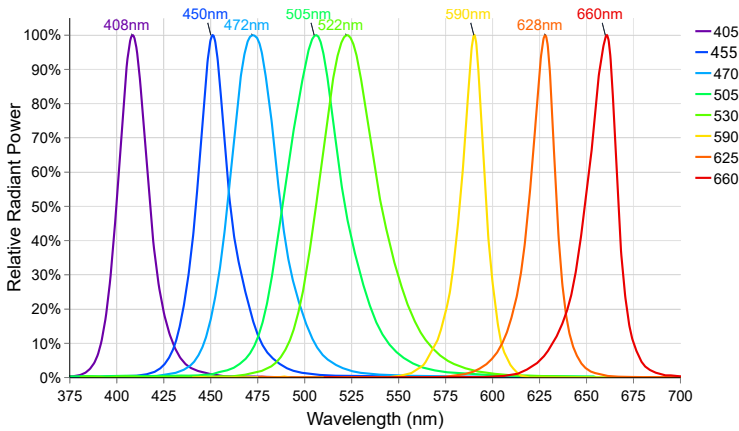


White LED illumination is the most commonly used machine vision lighting configuration. It is often the default choice when specific features of interest do not require color-based highlighting. However, **white LEDs can vary in color temperature, which can impact machine vision systems**, specifically when matching white light sources.

The AL325 Series white LEDs have a relatively neutral color correlated temperature (CCT) of **5500k**.

For a more detailed look at the white spectral data, download the [csv file of the raw spectral values](#) and refer to our [Product Spectra Distribution Charts PDF](#).

### Visible Spectral Profiles

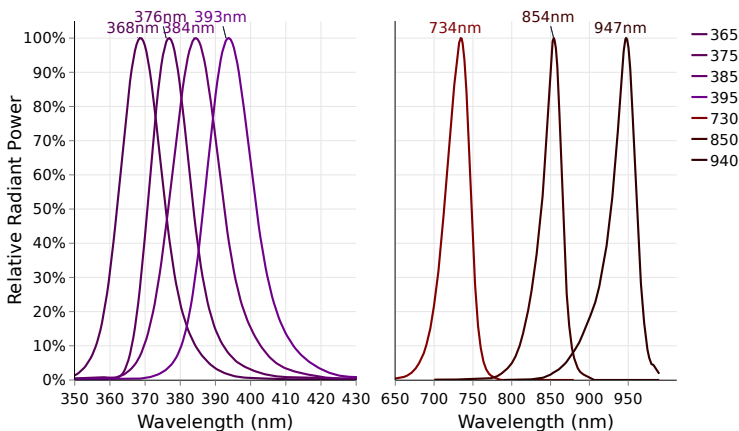


Visible color illumination consists of using wavelengths between 400-700 nm to either create or eliminate contrast on an inspection subject based on differences in a features color hue. When referring to a color wheel, simply remember the following; like colors reflect and brighten surfaces; conversely, opposing colors absorb and darken surfaces.

The A325 is available in **405 nm, 455 nm, 470 nm, 505 nm, 530 nm, 590nm, 625 nm, and 660 nm** visible color configurations.

For a more detailed look at the visible color spectral data, download the [csv file of the raw spectral values](#) and refer to our [Product Spectra Distribution Charts PDF](#).

### Non-Visible Spectral Profiles



Near-infrared (NIR) and ultraviolet A (UVA) imaging are machine vision techniques that utilize wavelengths outside the visible spectrum. NIR light, with wavelengths between 700-1000 nm, can penetrate certain materials opaque to visible light, making it ideal for circuit board analysis, food safety inspection, and medical imaging. In contrast, UVA light, typically ranging between 315-400 nm, interacts with specific materials to induce fluorescence or highlight surface features, useful in applications like counterfeit detection, leak detection, and contamination detection.

The AL325 Series is available in **365 nm, 375 nm, 385 nm, 395 nm, 730nm, 850 nm and 940 nm** configurations.

For a more detailed look at the NIR or UVA spectral data, download the [csv file of the raw spectral values](#) and refer to our [Product Spectra Distribution Charts PDF](#).

Disclaimer: The measurements provided above are for approximations only and may vary depending on the method of measurement and the specific configuration being measured.

Optical Information - Continued

Polarization Option Detail

Non-polarized



Polarized



Polarization has various applications, but it is most commonly used to reduce glare on specular surfaces when imaging reflective materials like plastic, metal, glass, or wet surfaces. By placing a linear polarizer over the light source and another over the camera lens, oriented perpendicularly, reflected light that causes glare can be selectively blocked. This allows for the observation of details that would otherwise be obscured by the reflection, such as printed text on packaging. However, since polarization inherently blocks some light, you may need to increase exposure to compensate for the reduced intensity, or consider alternative lighting geometries to lessen glare without polarization.

Photobiological Risk Factors

| Group   | Description                                                                           | Affected Wavelengths                                                |
|---------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Exempt  | No Photobiological Hazard                                                             | 850 nm, 940 nm                                                      |
| Group 1 | No Photobiological hazard under normal behavioral limitations                         | 455 nm, 470 nm, 505 nm, 530 nm, 590 nm, 625 nm, 660 nm, 730 nm, WHI |
| Group 2 | Does not pose a hazard due to aversion response to bright light or thermal discomfort | 365 nm, 375 nm, 385 nm, 395 nm, 405 nm                              |

Advanced Illumination’s lighting products have been tested and classified to IEC standards by accredited testing services. For more information on photobiological risk factors, please view the following PDF: <https://www.advancedillumination.com/wp-content/uploads/2019/04/IEC-040119.pdf>

Cleaning Guidelines



To clean our light’s optics, it is best to only clean when necessary. Dusting is always the first step in cleaning your optics. Wiping a dusty optic is like cleaning it with sandpaper. So always dust with a canned air duster or compressed and filtered air before wiping any optic. If the dusted optic has no visible stains after you dust it, then remember: “If it’s not dirty, don’t clean it.” Avoid wiping optics when possible.

If dusting did not clean the lens or the lens has stains, use only de-ionized water and mild dish soap with a low lint cloth designed for optics to avoid damage to the optic by any harsh chemicals.

Polarizers, beam splitters and collimated films should never be wiped with any type of cloth or solvent, only use the air dusting method to clean these types of optics.

The aluminum housing can be wiped down when dusting is not a sufficient means to thoroughly clean.

Disclaimer: The measurements provided above are for approximations only and may vary depending on the method of measurement and the specific configuration being measured.

**Bar Light Comparison Matrix - Continued**

Not finding the optical specifications you are looking for with the AL325 Series? Refer to the bar light comparison matrix below to compare and contrast Advanced Illumination's comprehensive product offering:

| Attributes                     | AL325                |                      |                      |                      |                | AL295                |                      | LL174                |                      |                      |
|--------------------------------|----------------------|----------------------|----------------------|----------------------|----------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Lens Type                      | Narrow (N)           | Medium (M)           | Wide (W)             | Extra Wide (Z)       | Elliptical (E) | Medium (M)           | Wide (W)             | Narrow (N)           | Medium (M)           | Wide (W)             |
| Beam Angle                     | 14°                  | 25°                  | 36°                  | 56°                  | 45° + 15°      | 20°                  | 32°                  | 10°                  | 25°                  | 40°                  |
| Beam Direction                 | Normal or Oblique    |                      |                      |                      |                | Normal               |                      | Normal               |                      |                      |
| Intensity at 100 mm WD         | 163 klx              | 134 klx              | 110 klx              | 80 klx               | TBD            | 88 klx               | 65 klx               | 75 klx               | 57 klx               | 45 klx               |
|                                | 456 W/m <sup>2</sup> | 427 W/m <sup>2</sup> | 352 W/m <sup>2</sup> | 254 W/m <sup>2</sup> | TBD            | 288 W/m <sup>2</sup> | 208 W/m <sup>2</sup> | 250 W/m <sup>2</sup> | 187 W/m <sup>2</sup> | 146 W/m <sup>2</sup> |
| Transversal FWHM at 600 mm WD  | 8.54 in (217 mm)     | 11.73 in (298 mm)    | 14.25 in (362 mm)    | 17.12 in (450 mm)    | TBD            | 12.79 in (325 mm)    | 15.12 in (384 mm)    | 9.06 in (230 mm)     | 13.90 in (353 mm)    | 16.06 in (408 mm)    |
| Longitudinal FWHM at 600 mm WD | 12.05 in (306 mm)    | 14.25 in (362 mm)    | 16.34 in (415 mm)    | 19.45 in (494 mm)    | TBD            | 15.95 in (405 mm)    | 17.72 in (450 mm)    | 13.50 in (343 mm)    | 16.69 in (424 mm)    | 18.35 in (466 mm)    |
| Minimum Working Distance       | 3.94 in (100 mm)     | 3.94 in (100 mm)     | 3.94 in (100 mm)     | 1.97 in (50 mm)      | TBD            | 0.98 in (25 mm)      | 0.79 in (20 mm)      | 3.94 in (100 mm)     | 1.97 in (50 mm)      | 1.46 in (37 mm)      |
| Light Width                    | 1.57 in (39.8 mm)    |                      |                      |                      |                | 0.79 in (20.0 mm)    |                      | 1.33 in (33.8 mm)    |                      |                      |
| Light Height                   | 1.78 in (45.2 mm)    |                      |                      |                      |                | 0.79 in (20.1 mm)    |                      | 1.12 in (28.4 mm)    |                      |                      |
| Longest Emitting Window Length | 84.28 in (2140 mm)   |                      |                      |                      |                | 41.61 in (1057 mm)   |                      | 96.72 in (2457 mm)   |                      |                      |
| Sizes Available                | 14                   | 14                   | 14                   | 14                   | 14             | 14                   | 14                   | 16                   | 16                   | 16                   |
| Visible Wavelengths Available  | 9                    | 9                    | 9                    | 8                    | 8              | 9                    | 8                    | 8                    | 9                    | 8                    |
| UV Wavelengths Available       | 4                    | 4                    | 4                    | 0                    | 0              | 4                    | 0                    | 0                    | 4                    | 0                    |
| IR Wavelengths Available       | 3                    | 3                    | 3                    | 3                    | 3              | 3                    | 3                    | 3                    | 3                    | 3                    |
| Polarization Available         | Yes                  | Yes                  | Yes                  | Yes                  | Yes            | No                   | No                   | Yes                  | Yes                  | Yes                  |
| Diffusion Available            | Yes                  | Yes                  | Yes                  | Yes                  | Yes            | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  |
| IP Rating                      | TBD                  |                      |                      |                      |                | IP50                 |                      | IP50                 |                      |                      |
| Price                          | \$\$                 | \$\$                 | \$\$                 | \$\$                 | \$\$           | \$\$                 | \$\$                 | \$\$                 | \$\$                 | \$\$                 |

To ensure consistent comparisons, all data presented above is based on 12-inch white LED models unless explicitly stated otherwise. Additionally, all measurements provided above are derived from "standard" configurations, excluding sealed models if available as optional.

If you are still not finding the optical specifications needed for your application, [inquire](#) about our semi-custom and full-custom capabilities.

Disclaimer: The measurements provided above are for approximations only and may vary depending on the method of measurement and the specific configuration being measured.



**Bar Light Comparison Matrix - Continued**

Not finding the optical specifications you are looking for with the AL325 Series? Refer to the continued bar light comparison matrix below to compare and contrast Advanced Illumination's comprehensive product offering:

| Attributes                            | AL247                |                      |                      | AL116                | AL126               | AL150                |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
| <b>Lens Type</b>                      | Narrow (N)           | Medium (M)           | Wide (W)             | No Lenses            | No Lenses           | Aimed                |
| <b>Beam Angle</b>                     | 10°                  | 25°                  | 40°                  | 70°                  | 60°                 | N/A                  |
| <b>Beam Direction</b>                 | Normal               |                      |                      | Normal               | Normal              | Oblique              |
| <b>Intensity at 100 mm WD</b>         | 84 klx               | 67 klx               | 48 klx               | 32 klx               | 14 klx              | 2.2 klx              |
|                                       | 277 W/m <sup>2</sup> | 218 W/m <sup>2</sup> | 155 W/m <sup>2</sup> | 110 W/m <sup>2</sup> | 48 W/m <sup>2</sup> | 8.5 W/m <sup>2</sup> |
| <b>Transversal FWHM at 600 mm WD</b>  | 9.57 in (243 mm)     | 11.38 in (289 mm)    | 15.87 in (403 mm)    | 31.54 in (801 mm)    | 23.31 in (592 mm)   | N/A                  |
| <b>Longitudinal FWHM at 600 mm WD</b> | 13.58 in (345 mm)    | 14.65 in (372 mm)    | 18.03 in (458 mm)    | 46.34 in (1177 mm)   | 31.26 in (794 mm)   | N/A                  |
| <b>Minimum Working Distance</b>       | 3.94 in (100 mm)     | 1.97 in (50 mm)      | 1.46 in (37 mm)      | 0.47 in (12 mm)      | 0.47 in (12 mm)     | 0.47 in (12 mm)      |
| <b>Light Width</b>                    | 1.69 in (42.9 mm)    |                      |                      | 0.79 in (20 mm)      | 1.27 in (32 mm)     | 1.33 in (34 mm)      |
| <b>Light Height</b>                   | 0.95 in (24.0 mm)    |                      |                      | 0.79 in (20 mm)      | 0.79 in (20 mm)     | 1.12 in (28 mm)      |
| <b>Longest Emitting Window Length</b> | 24 in (610 mm)       |                      |                      | 20.27 in (515 mm)    | 41.42 in (1052 mm)  | 82.12 in (2086 mm)   |
| <b>Sizes Available</b>                | 4                    | 4                    | 4                    | 10                   | 20                  | 80                   |
| <b>Visible Wavelengths Available</b>  | 8                    | 8                    | 8                    | 8                    | 8                   | 4                    |
| <b>UV Wavelengths Available</b>       | 0                    | 0                    | 0                    | 4                    | 4                   | 1                    |
| <b>IR Wavelengths Available</b>       | 3                    | 3                    | 3                    | 2                    | 2                   | 1                    |
| <b>Polarization Available</b>         | No                   | No                   | No                   | Yes                  | Yes                 | Yes                  |
| <b>Diffusion Available</b>            | No                   | No                   | No                   | Yes                  | Yes                 | Yes                  |
| <b>IP Rating</b>                      | IP69K                |                      |                      | IP50                 | IP50                | IP50                 |
| <b>Price</b>                          | \$\$\$               | \$\$\$               | \$\$\$               | \$\$                 | \$                  | \$\$\$\$             |

To ensure consistent comparisons, all data presented above is based on 12-inch white LED models unless explicitly stated otherwise. Additionally, all measurements provided above are derived from "standard" configurations, excluding sealed models if available as optional.

If you are still not finding the optical specifications needed for your application, [inquire](#) about our semi-custom and full-custom capabilities.

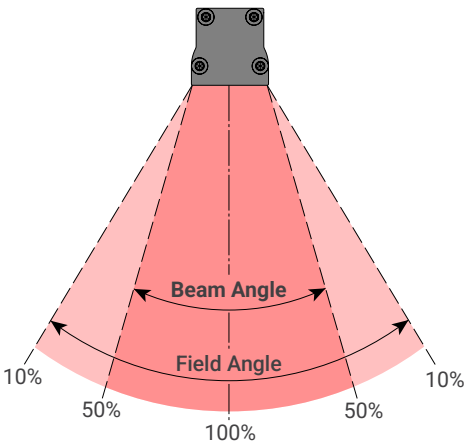
Disclaimer: The measurements provided above are for approximations only and may vary depending on the method of measurement and the specific configuration being measured.



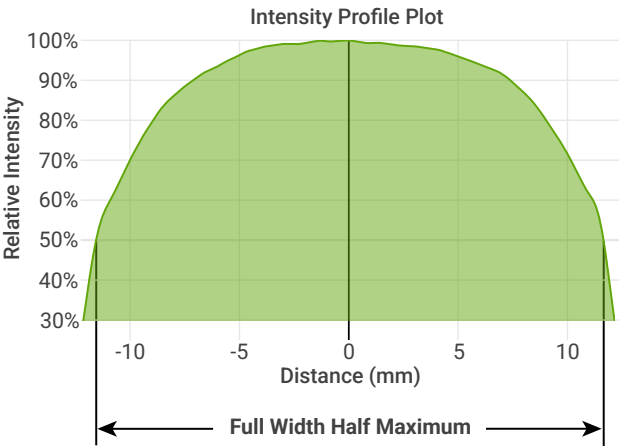
Bar Light Comparison Matrix - Definitions

For definitions on the terminology used on the previous page, please refer to the table below:

| Definitions |                                |
|-------------|--------------------------------|
| Beam Angle  | FWHM (Full Width Half Maximum) |

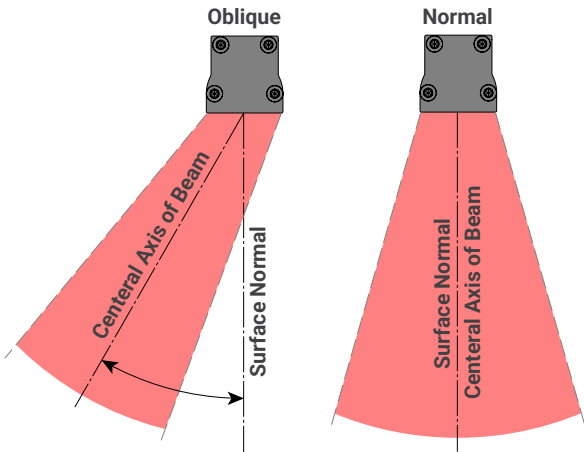


Beam Angle defines the spread of usable light from a projected machine vision light source. It's the angle where the intensity drops to 50% of its peak (FWHM). Beam angle dictates the concentrated, higher-intensity portion of the Field of View (FOV). Field angle is wider, encompassing the total spread of light down to 10% of peak intensity.

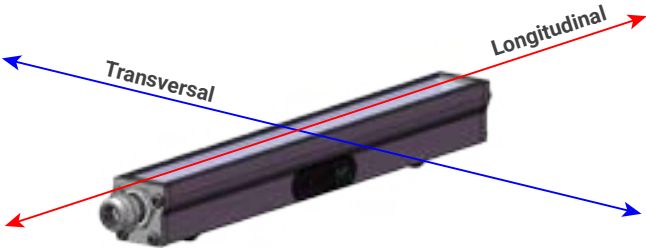


FWHM (Full Width Half Maximum) is a measure of the width of a light source's intensity distribution. Specifically, it defines the distance between the points on the intensity profile where the light intensity drops to 50% of its peak value. This FWHM distance is often used to determine the usable FOV (Field of View) when aiming a light at a surface for inspection.

| Beam Direction | Longitudinal vs Transversal |
|----------------|-----------------------------|
|----------------|-----------------------------|



A normal beam direction refers to light emitted perpendicular to the light source's emitting surface, in which the central optical axis is co-linear to the surface normal of the emitting window. An oblique beam direction describes light emitted at an angle relative to the light source's surface normal. Oblique sources can be useful when imaging specular surfaces, depending on system geometry.

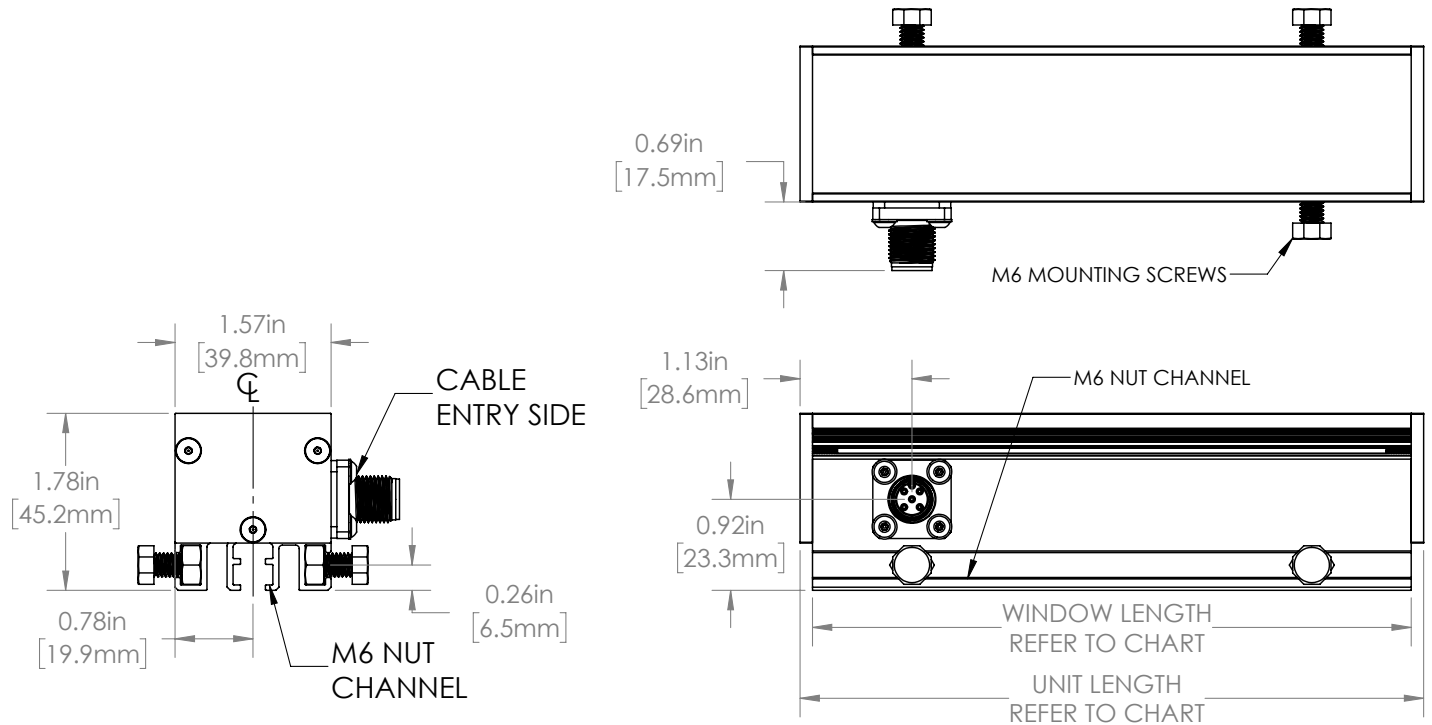


The longitudinal direction refers to the direction that runs parallel to the long axis of the light source. This is typically the longest dimension of the light source housing or emitting surface.

The transversal direction, in contrast, refers to any direction that is perpendicular to the longitudinal direction. It essentially describes any direction that "cuts across" the long axis of the light source.

## Mechanical Information

### Installation Drawing - Standard



For full installation drawings and complete CAD models of this configuration, please visit the downloads section of the product webpage.

### Sizing Chart - Standard

| Part Number | Length (Inches) |        | Length (Millimeters) |        |
|-------------|-----------------|--------|----------------------|--------|
|             | Unit            | Window | Unit                 | Window |
| AL325X0150  | 6.27            | 6.02   | 159.3                | 152.9  |
| AL325X0300  | 12.29           | 12.04  | 312.2                | 305.8  |
| AL325X0450  | 18.31           | 18.06  | 465.1                | 458.7  |
| AL325X0600  | 24.33           | 24.08  | 618.0                | 611.6  |
| AL325X0750  | 30.35           | 30.10  | 770.9                | 764.5  |
| AL325X0900  | 36.37           | 36.12  | 923.8                | 917.4  |
| AL325X1050  | 42.39           | 42.14  | 1076.7               | 1070.4 |
| AL325X1200  | 48.41           | 48.16  | 1229.6               | 1223.3 |
| AL325X1350  | 54.43           | 54.18  | 1382.5               | 1376.2 |
| AL325X1500  | 60.45           | 60.20  | 1535.4               | 1529.1 |
| AL325X1650  | 66.47           | 66.22  | 1688.3               | 1682.0 |
| AL325X1800  | 72.49           | 72.24  | 1841.2               | 1834.9 |
| AL325X1950  | 78.51           | 78.26  | 1994.2               | 1987.8 |
| AL325X2100  | 84.53           | 84.28  | 2147.1               | 2140.7 |

## Electrical Information

### Power Requirements

#### Current Required for Power Supply Sizing

| Wavelengths                                                                 | Configured w/ 24V Drive     | Configured w/ Standard Controller (EC, ES, C1, C5) |
|-----------------------------------------------------------------------------|-----------------------------|----------------------------------------------------|
| 365 nm, 375 nm, 385 nm, 395 nm, 405 nm, 455 nm, 475 nm, 505 nm, 530 nm, WHI | 0.350A per 150 mm increment | 0.450A per 150 mm increment                        |
| 590 nm, 625 nm, 660 nm                                                      | 0.250A per 150 mm increment | 0.300A per 150 mm increment                        |
| 730 nm, 850 nm, 940 nm                                                      | 0.350A per 150 mm increment | 0.450A per 150 mm increment                        |

Note: All Advanced Illumination lights and controllers are nominally powered by 24V DC unless otherwise noted. Strobe overdriving with controller based models may require more current and voltage overhead. The values above do not include background current draw from the controller (~100 mA total).

### Control Options

| Controller Image                                                                    | Controller Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Connector Image                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|   | <p><b>DCS Single Output Controller - Compatible with C1 Configurations</b><br/>PN: DCS-100E</p> <p>The DCS-100E is a compact, din-rail mounted general-purpose external controller with one C1 output connector, wired with three channels. Capable of providing single channel control or multi-channel control for RGB compatible lights.</p> <p><b>Output Power:</b> 90 W Max Continuous, 540 W Max Pulsed (Overdrive Strobe)<br/> <b>Output Current:</b> 4.5A Max Continuous, 15 A Max Pulsed<br/> <b>I/Os:</b> 3 External Trigger Inputs<br/> <b>Interface:</b> 10/100 Ethernet with Software and browser-based GUIs. SDKs are also available.</p> <p>For more information about our DCS-100E, please <a href="#">visit the controller product page</a>.</p> |   |
|  | <p><b>DCS Triple Output Controller - Compatible with C1 Configurations</b><br/>PN: DCS-103E</p> <p>The DCS-103E is a din-rail mounted general-purpose multi-light controller with three C1 output connectors. Capable of driving three lights in sync or asynchronously.</p> <p><b>Output Power:</b> 30 W Max Continuous / Output, 180 W Max Pulsed / Output<br/> <b>Output Current:</b> 1.5A Max Continuous / Output, 5 A Max Pulsed / Output<br/> <b>I/Os:</b> 3 External Trigger Inputs<br/> <b>Interface:</b> 10/100 Ethernet with Software and browser-based GUIs. SDKs are also available.</p> <p>For more information about our DCS-103E, please <a href="#">visit the controller product page</a>.</p>                                                    |  |
|  | <p><b>Embedded Controller - Continuous Only - EC Configurations</b><br/>PN: N/A</p> <p>The EC is an embedded controller (within the light head) engineered for continuous or gated continuous operation. Allows for analog dimming functionality.</p> <p><b>I/O:</b> 0 V - 10 V (10% to 100% intensity) Analog Dimming Input<br/> 2.5V Min - 30V Max, &lt;=5mA Gating Signal Input for Gated Continuous Operation<br/> <b>Modes:</b> Continuous and Gated Continuous<br/> <b>Interface:</b> Bulkhead Connector (M12 5-pin Male, A-Code)</p>                                                                                                                                                                                                                       |  |

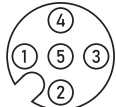
## Electrical Information - Continued

### Control Options - Continued

| Controller Image                                                                  | Controller Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Connector Image                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  | <p><b>Embedded Controller - Continuous and Strobe - ES Configurations</b><br/>PN: N/A</p> <p>The ES is an embedded controller (within the light head) engineered for overdrive strobe or continous operation. Allows for analog dimming functionality.</p> <p><b>I/O:</b> 0 V - 10 V (10% to 100% intensity) Analog Dimming Input<br/>2.5V Min - 30V Max, &lt;=5mA Gating Signal Input for Gated Overdrive Strobe Operation</p> <p><b>Modes:</b> Continuous and Gated Overdrive Strobe</p> <p><b>Interface:</b> Bulkhead Connector (M12 5-pin Male, A-Code)</p> |  |
|  | <p><b>24V Driver - Continuous Only - 24 Configurations</b><br/>PN: N/A</p> <p>24V option allows lights to operate continuous output with 24V connection and no additional controllers.</p> <p><b>Modes:</b> Continuous, can be wired to some 3rd party controllers or external relays for gated operation</p> <p><b>Interface:</b> Bulkhead Connector (M12 5-pin Male, A-Code)</p>                                                                                                                                                                              |  |

### Embedded Control Option Wiring Information

#### M12 Bulkhead Connector Pinout Functions and Optional Cable Flying Lead Functions

| Pin (M12) | Wire Color | 24V Functions | EC/ES Functions           | M12 Pinout                                                                                                                        |
|-----------|------------|---------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| 1         | BROWN      | 24V DC        | 24 V DC                   | <br><b>5-Position Male Connector, A-Code</b> |
| 2         | WHITE      | N/A           | N/A                       |                                                                                                                                   |
| 3         | BLUE       | DC GND        | DC GND                    |                                                                                                                                   |
| 4         | BLACK      | N/A           | PNP / Active High Trigger |                                                                                                                                   |
| 5         | GRAY       | N/A           | 0 - 10 V Analog Dimming   |                                                                                                                                   |

The functions above are only applicable when ordering an EC, ES or 24 power configuration.

**Accessories - Continued**

| Category        | Accessory Image                                                                     | Accessory Detail                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Supply    |    | <b>24 Volt DC Power Supply</b><br>PN: PS24-TL, up to 600mm<br>PN: PS24-4, up to 2100mm<br><p>This convenient power source is a universal AC input switching power supply with a regulated output DC current. The power supply comes with an LED Power Indicator, tinned leads marked Positive (+) and Negative (-) and 2 WAGO connectors for simplified assembly.</p> <p>For more information about our 24 Volt DC Power Supply, please <a href="#">visit this webpage</a>.</p>                                                                                        |
|                 |                                                                                     | <b>DCS-100E/103E Extension Cable, Single Light Power Cable - C1 Configuration</b><br>PN: LC5-M12-5-MX<br><p>This extension cable was designed for applications requiring power cables longer than the standard 2 meters provided with Ai lights. This single light cable features a single male and single female 7 pin locking connector (C1) and can be purchased in 3 - 15-meter lengths.</p> <p>For more information about our DCS-100E/103E Extension Cable, Single Output, please <a href="#">visit this webpage</a>.</p>                                        |
| Extension Cable |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Extension Cable |    | <b>DCS-100E/103E Extension Cable, Dual Light Power Cable - C1 Configuration</b><br>PN: LC10-M12-5-MX<br><p>This extension cable was designed for applications requiring two identical lights to be powered through a single controller. These Y cables feature a single male and dual female 7 pin locking connectors (C1) and can be purchased in 3 - 15-meter lengths. See attached spec sheet for compatible light configuration.</p> <p>For more information about our DCS-100E/103E Extension Cable, Split Output, please <a href="#">visit this webpage</a>.</p> |
|                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Filters         |  | <b>Camera Lens Band Pass Filters</b><br>PN: BPXXX-YYY<br><p>Eliminating all but a narrow band of light (+/- 40nm) centered on the specified wavelength, band pass filters are used to enhance colors, or to stop unwanted ambient light from reaching the camera. Filtering can replace existing shrouds, simplifying the physical set up of an inspection site. Ai offers 635nm and 660nm band pass filters to fit several different lens sizes.</p> <p>For more information about our Camera Lens Band Pass Filters, please <a href="#">visit this webpage</a>.</p>  |

## Additional Information

### Warranty

Every Advanced illumination, Inc. (Ai) product is thoroughly inspected and tested before leaving the factory. Products are warranted to be free of defects in workmanship and materials for a period of FIVE YEARS from the original date of purchase. Should a defect develop during this period, customers may return the complete product, freight prepaid, to one of Ai's distributors or to the Ai factory. All product warranty returns require a Return Merchandise Authorization (RMA) number which is obtained from Customer Service. The RMA number must be clearly marked on the outside of the package. Ai will inspect the unit, and if a defect is found will, at our option, repair or replace the product without charge. Ai disclaims liability for any implied warranties, including implied warranties of "merchantability" and "fitness for a specific purpose." For products under warranty that have since been discontinued, Ai will make an effort to replace with equivalent parts; for circumstances that do not allow for equivalent replacement, Ai reserves the right to repair or replace these products with an updated version. Ai cannot be held responsible for the unauthorized or inappropriate use of its products. Any unauthorized repair or modifications will result in a voided warranty. No Liability for Consequential Damages: In no event shall Ai be liable for any consequential, special, incidental, or indirect damages of any kind arising from the sale or use of the products.

### Compliance

Our lighting products are designed and tested to meet CE, RoHS, and IEC standards. As a global ISO 9001 certified company, we understand the importance of compliance and perform accelerated testing on every product before shipment. For more information on our compliance standards, please see our compliancy documentation here: <https://www.advancedillumination.com/services/compliance-statements/>

### Electromagnetic Compatibility

Our lighting products are designed and tested to meet CE, RoHS, and IEC standards. As a global ISO 9001 certified company, we understand the importance of compliance and perform accelerated testing on every product before shipment. For more information on our compliance standards, please see our compliancy documentation here: <https://www.advancedillumination.com/services/compliance-statements/>

### Customer Service

For information on existing orders, or to make an order adjustment, contact us Monday through Friday 8:00 am to 5:00 pm ET or send an email to [orders@advancedillumination.com](mailto:orders@advancedillumination.com).

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