

SpecBright™ LED Arealights

EXTREMELY BRIGHT LED ILLUMINATION
DESIGNED WITH VISION IN MIND

FEATURES

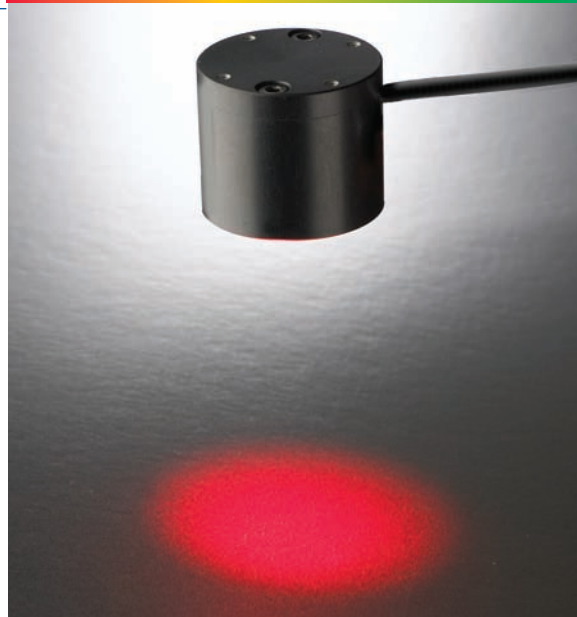
- Extremely bright, compact, and reliable
- Chip-on-board technology
- Superior uniformity
- Seamless integration and mounting
- UV, visible, and near-IR

APPLICATIONS

- Machine vision
- Fluorescence
- Biomedical
- Freeze frame

ACCESSORIES

- Power supplies
- Current mode drivers
- Heat sinks
- Strobe drivers



StockerYale SpecBright™ LED Arealights are the brightest LED illuminators in their class. Based on our patented chip-on-board technology, these modules are manufactured with a high LED packing density and excellent thermal management.

Compared to illuminators fabricated with T-Packs or other individually packaged LEDs, StockerYale SpecBright™ LED Arealights offer several times the brightness, for modules of comparable size. The illuminators combine up to 100 individually mounted LED chips with an aspherically corrected lens to produce a bright, highly uniform beam. These compact units provide the high-power illumination required in machine vision, biomedical, fluorescence, and strobing applications.

The illuminators are available in a wide range of wavelengths and with various divergence angles. They can be operated in continuous (CW) or pulsed mode. A **backlight configuration** is also available where the standard lens is replaced with a diffuser.

Custom-engineered LED solutions are also available to meet different optical or mechanical requirements.

Ask us about our SpecBright™ UV LED Arealights.

SPECTRAL CHARACTERISTICS¹

Color	Blue	Red	IR
Peak wavelength (nm)	470 ± 10	630 ± 10	740 ± 10
Spectral width FWHM (nm)	30	30	30

ILLUMINATION CHARACTERISTICS^{2,3,4}**SERIES 1 – Nominal beam cone angle (FWHM): 30 degrees**

Illumination diameter FWHM at working distance of 100 mm (mm)	45	45	45
Typical irradiance at 100 mm (W/m ²)	25	80	80
Typical illuminance at 100 mm (lux)	3,500	15,000	NA

SERIES 2 – Nominal beam cone angle (FWHM): 44 degrees

Illumination diameter FWHM at working distance of 100 mm (mm)	55	55	55
Typical irradiance at 100 mm (W/m ²)	20	60	60
Typical illuminance at 100 mm (lux)	1,500	10,000	NA

ELECTRICAL CHARACTERISTICS, LIFETIME & ENVIRONMENT⁵

Voltage mode (code "V")			
Operating current (mA) at 24 V	200	200	200
Current mode (code "I")			
Maximum operating current (mA)	400	400	400
Mean time before failure (MTBF)	100,000	100,000	100,000

1 For UV wavelengths, please refer to the SpecBright™ UV LED Arealight datasheet. 870 nm also available. Please contact us for details.

2 See Figures 1 and 2 for graphs of FWHM illumination diameter and irradiance, as a function of working distance (wd).

3 Beam divergence is measured with a rotation stage and a photo-detector at a distance where the beam is much larger than the detector aperture. It varies slightly as a function of the wavelength, due to the change in the refractive index of the lens material.

4 Irradiance and illuminance are measured at the center of the illumination field using a 4 mm diameter detector.

5 Case temperature should not exceed 45°C. Please consult StockerYale for details on lifetime measurements.

ILLUMINATION CHARACTERISTICS

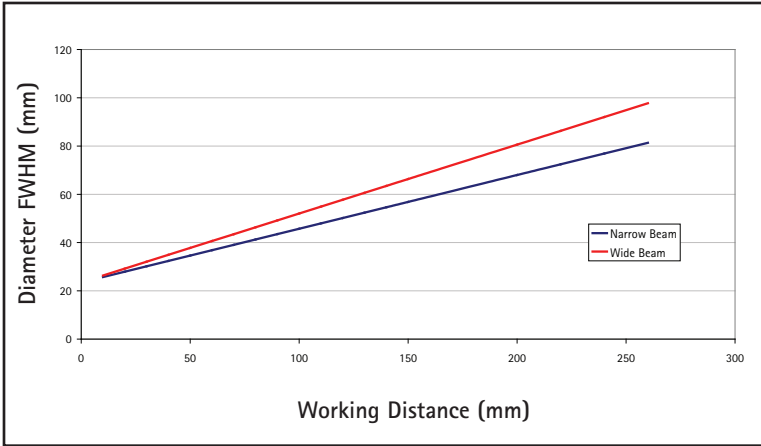


Figure 1 - Diameter of field of illumination vs. working distance for AF1-630 (narrow beam) and AF2-630 (wide beam).

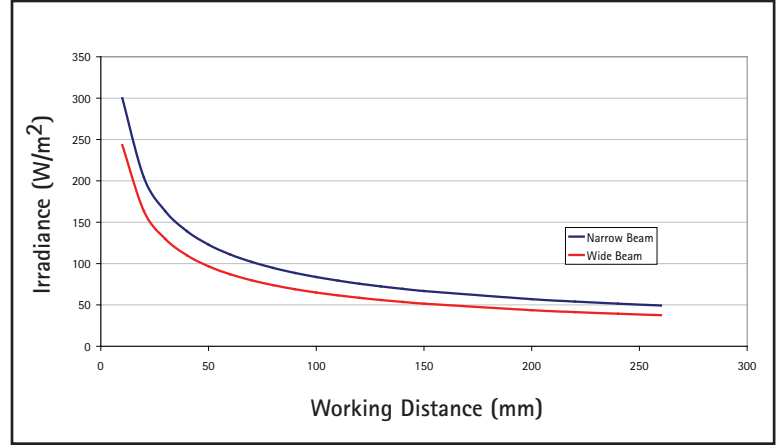


Figure 2 - Irradiance vs. working distance for AF1-630 (narrow beam) and AF2-630 (wide beam).

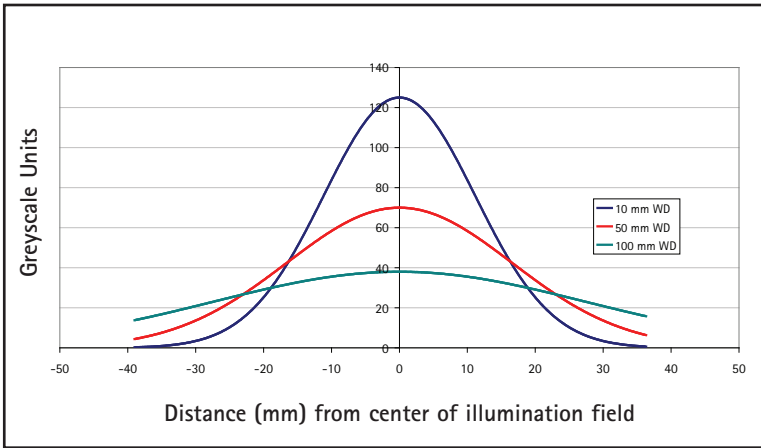


Figure 3 - Intensity profile for AF1-630. Working distances (WD) of 10, 50, and 100 mm.

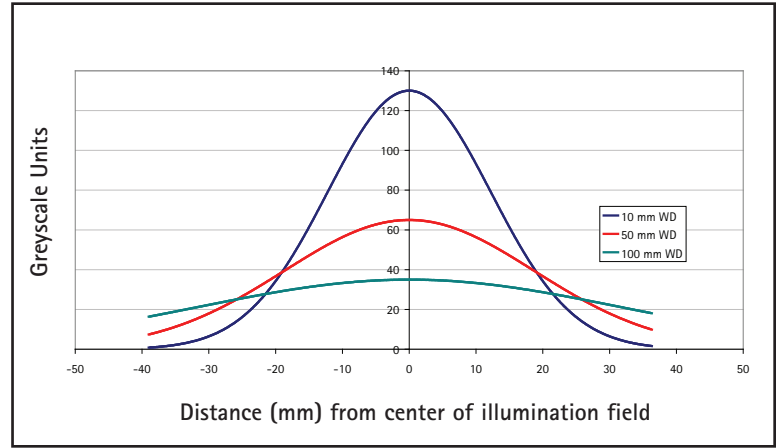


Figure 4 - Intensity profile for AF2-630. Working distances (WD) of 10, 50, and 100 mm.

PRODUCT PART NUMBERS

Product Code	Frontlight or Backlight	Series	- Wavelength	- Voltage or Current Source	Without or with Heat Sink	Connector or Flying Leads	Cable Length (in cm)
A	F or B	1 or 2	470 630 740	V or I	X or H	C or F	100 (standard)

Example: AF1-630-VXC100. Refer to website for complete part number matrix. For UV wavelengths, please refer to the SpecBright™ UV LED Arealight datasheet.

CONNECTORS / FLYING LEADS

- Mini Universal Mate-N-Lok connectors are standard for voltage source (V) modules. They provide a secure locking mechanism and reverse polarity protection. Voltage source (V) modules can also be manufactured with flying leads.
- Flying leads are standard for current source (I) modules.

POWER SUPPLIES

- 24 V wall plug-top power supply for voltage source (V) modules.
- Current mode driver and power supply for current source (I) modules.

Please visit our website for specifications and ordering information.

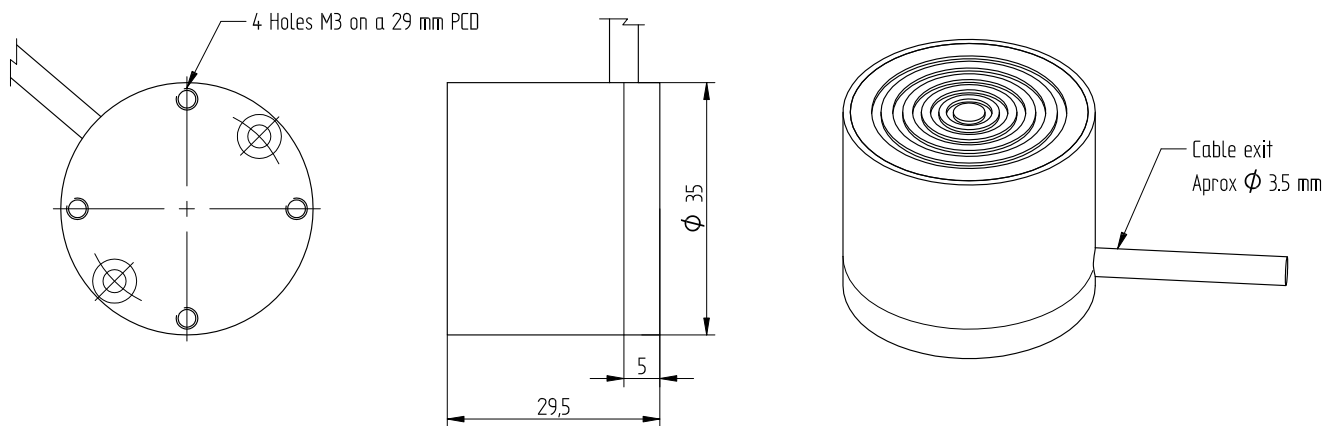
STROBE DRIVERS

Due to the thermally optimized design, peak optical powers up to 50 times the CW optical power can be obtained using pulsing. Contact us for more details.

HEAT SINKS

For best operation, the housing temperature should not exceed 45°C. StockerYale provides optimized heat sinks for use with our LED arealights. *Please visit our website for dimensional diagrams.*

DIMENSIONAL DIAGRAMS



All dimensions in [mm]

Information and specifications contained herein are deemed to be reliable and accurate. StockerYale reserves the right to change these specifications at any time without notice.

