

ILLUMINATION

# LED Spot Projectors

HIGH-INTENSITY LED PROJECTORS FOR INDUSTRIAL & BIOMEDICAL APPLICATIONS

## FEATURES

- High-intensity, uniform lighting
- Long lifetime
- Wide and narrow beams
- Fiber-coupled option
- Simplified mounting
- White, red, amber, green, and blue

## APPLICATIONS

- Machine vision
- Microscopy
- Biomedical



**S**tockerYale LED Spot Projectors are high-intensity LED spotlights that are designed to replace conventional halogen point-sources as well as fiber optic illumination solutions. Compact and lightweight in design, these illuminators offer long lifetimes and low power consumption when compared to traditional light sources.

The high-luminosity LED spot projectors are well suited for both industrial and scientific applications where high-output area illumination is required. The optional fiber-coupled configurations enable the users to bring light to their desired target using industry standard fiber components.

LED Spot Projectors can provide light at divergence angles of 10 or 25 degrees (series 1 and 2). In addition, the illuminators are available in a wide range of wavelengths including red, blue, green, amber, and broadband white. These products offer the high-intensity illumination required in many machine vision, microscopy, and biomedical applications.

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

**SPECTRAL CHARACTERISTICS**

Color	Blue	Green	Amber	Red	White
<sup>1</sup> Peak wavelength (nm) / color temp.	455 ± 10	530 ± 15	590 ± 10	630 ± 10	5500 K
Spectral width FWHM (nm)	40	40	40	40	NA

<sup>1</sup>Other wavelengths available.

**ILLUMINATION CHARACTERISTICS****SERIES 1 - Narrow beam - Divergence angle (FWHM): 10 degrees**

Typical irradiance at 10 mm (W/m <sup>2</sup> )	3,000	560	550	1,600	NA
Typical illuminance at 10 mm (lux)	100,000	330,000	285,000	285,000	330,000
Typical irradiance at 100 mm (W/m <sup>2</sup> )	900	150	155	450	NA
Typical illuminance at 100 mm (lux)	30,000	90,000	80,000	80,000	90,000

**SERIES 2 - Wide beam - Divergence angle (FWHM): 25 degrees**

Typical irradiance at 10 mm (W/m <sup>2</sup> )	2,500	530	525	1,500	NA
Typical illuminance at 10 mm (lux)	95,000	310,000	270,000	270,000	310,000
Typical irradiance at 100 mm (W/m <sup>2</sup> )	225	50	50	140	NA
Typical illuminance at 100 mm (lux)	7,500	30,000	25,000	25,000	30,000

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

**ELECTRICAL CHARACTERISTICS & LIFETIME**

Input voltage (V)	5-32	5-32	5-32	5-32	5-32
Output current (mA)	700	700	700	700	700
Lifetime (hours)	50,000	50,000	50,000	50,000	50,000

**Available options**

- Fan to drive LEDs at a higher current and thus have a higher optical output.
- Potentiometer on back of the module to manually adjust the optical output from 0 mA (min) to 700 mA (max).
- 0-5 V analog control to remotely adjust the optical output from 0 mA (min) to 700 mA (max).
- Alternate housing including thumbscrew to couple to industry standard fiber optic components.
- 3 mm mono jack connector instead of flying leads (flying leads are standard on all modules).

ILLUMINATION CHARACTERISTICS

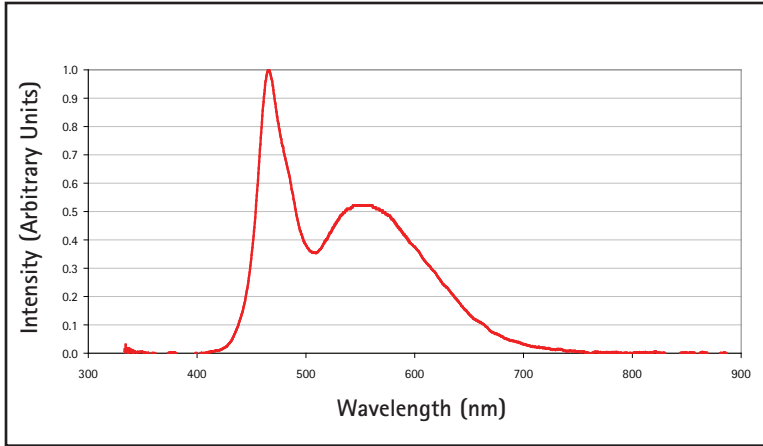


Figure 1 - Typical spectral distribution of a white LED projector.

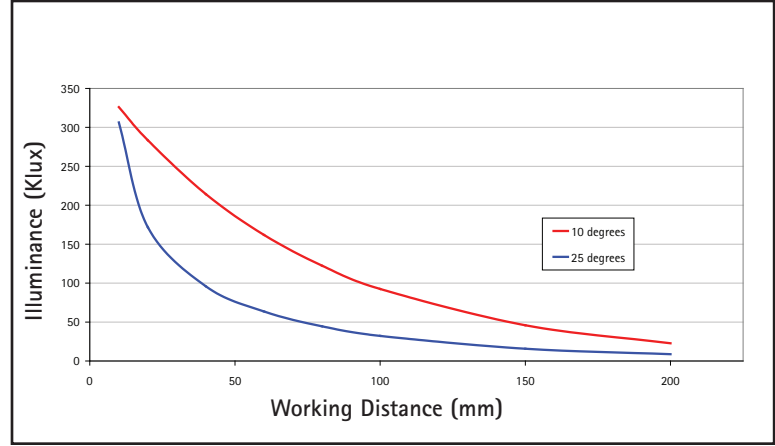


Figure 2 - Illuminance vs. working distance for a white LED projector.

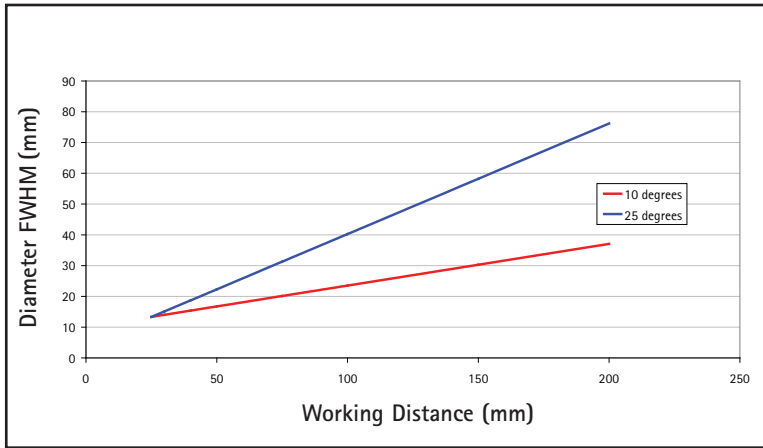


Figure 3 - Illumination diameter FWHM vs. working distance for a white LED projector.

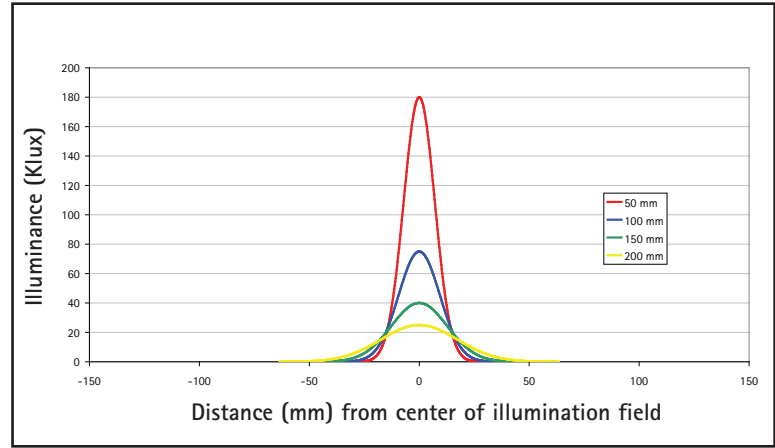


Figure 4 - Intensity profiles for LED projector with 10 degree divergence angle. Working distances of 50, 100, 150, and 200 mm.

**PRODUCT PART NUMBERS**

Product Code	Divergence Angle (10° or 25°)	Standard or Fiber-Coupled	Wavelength (nm)	-	Driver Configuration	Flying Leads or Connector	Cable Length (in cm)
LP	1 or 2	P or F	455 530 590 630 000 (white)		V, M, or A	F or C	40 (standard)

Example: LP1P000-VF40. Refer to website for complete part number matrix.  
Please contact us for other wavelengths. Power supplies and other accessories sold separately.

**FIBER-COUPLED OPTION**

- Fiber type: Industry standard fiber components with tip diameters up to Ø 0.625".
- Please consult factory for adapter accessories.

**DRIVER CONFIGURATION**

- V - Voltage driven; Fixed intensity
- M - Intensity control option; Manual
- A - Intensity control option; 0-5 V analog

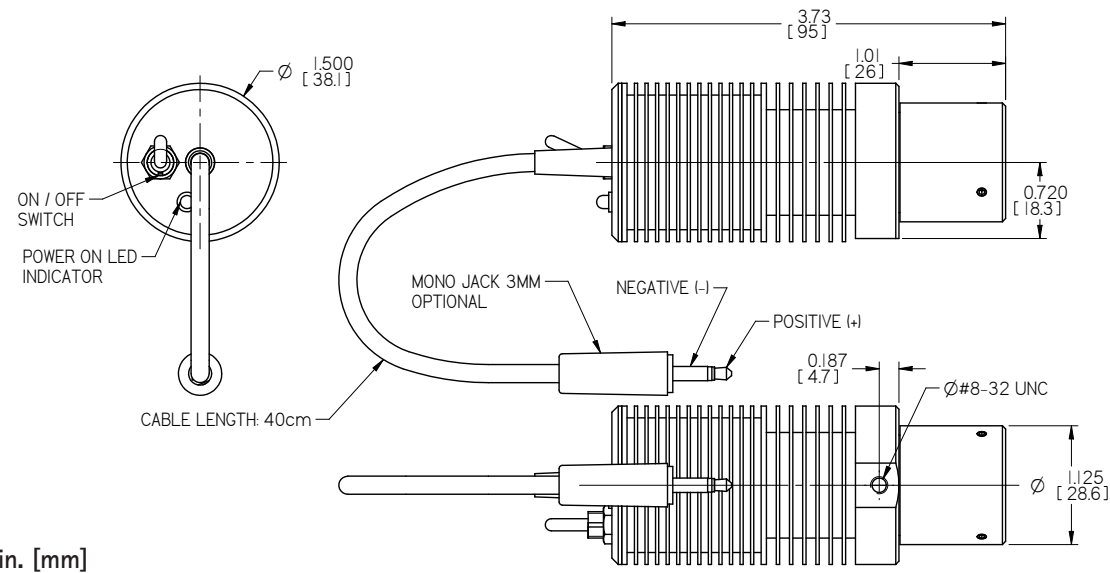
**FLYING LEADS / CONNECTORS**

- Flying leads (standard)
- Connector type: 3 mm mono jack connector

**POWER SUPPLY**

- Accepts 5-32 VDC. Consult factory for power supply accessories.

**DIMENSIONAL DIAGRAMS**



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.

