

SpecBright™ LED Ringlights

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, near-IR and white

APPLICATIONS

- Machine vision
- Fluorescence spectroscopy
- Microscopy

ACCESSORIES

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



StockerYale SpecBright™ LED Ringlights 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 Ringlights offer several times the brightness, for modules of comparable size. The illuminators combine up to 100 individually mounted LED chips with a single high quality aspherically corrected fresnel lens, to deliver a high level of illumination over a selected field of view with excellent uniformity.

These high performance ringlights are ideal for OEMs, system integrators and end users who require energy efficient, long lasting illumination sources.

The illuminators are available in a wide range of wavelengths, as well as white. They can be operated in continuous (CW) or pulsed mode.

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

SPECTRAL CHARACTERISTICS¹

Color	Blue	Red	IR	White
Peak wavelength / color temperature	470 ± 10 nm	630 ± 10 nm	740 ± 10 nm	6700 K
Typical spectral width FWHM (nm)	30	30	30	NA

ILLUMINATION CHARACTERISTICS^{2,3}**SERIES 1 - Inner diameter of housing: 27.5 mm**

Working distance range (mm) ⁴	25-200	25-200	25-200	30-350
Illumination diameter FWHM at 30 mm (mm)	45	45	45	65
Typical maximum irradiance (W/m ²) at 30 mm	50	110	110	NA
Typical maximum illuminance (lux) at 30 mm	9,000	20,000	NA	10,000

SERIES 2 - Inner diameter of housing: 47.5 mm

Working distance range (mm) ⁴	30-300	30-300	30-300	40-450
Illumination diameter FWHM at 40 mm (mm)	100	100	100	NA
Typical maximum irradiance (W/m ²) at 40 mm	40	80	80	NA
Typical maximum illuminance (lux) at 40 mm	7,000	15,000	NA	10,000

ELECTRICAL CHARACTERISTICS, LIFETIME & ENVIRONMENT⁵

Voltage mode (code "V")				
Operating current (mA) at 24 V	200	200	200	160
Current mode (code "I")				
Maximum operating current (mA)	400	400	400	240
Mean time before failure (MTBF)	100,000	100,000	100,000	100,000

1 375, 395 and 870 nm also available. Please contact us for details.

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

3 See Figure 2 for graph of FWHM illumination diameter, as a function of working distance.

4 Maximum working distance is where the power density has dropped to 10% of the optimal working distance measurement. Minimum working distance is the nearest point where the circular illumination pattern is complete.

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

ILLUMINATION CHARACTERISTICS

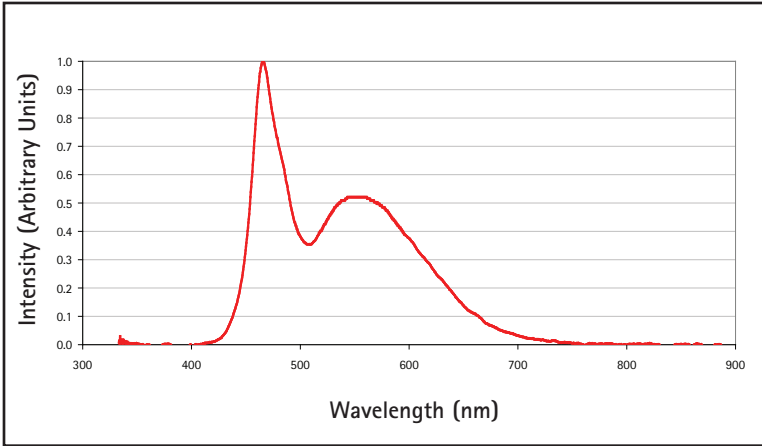


Figure 1 - Typical spectral distribution of a white LED ringlight (RF1-000).

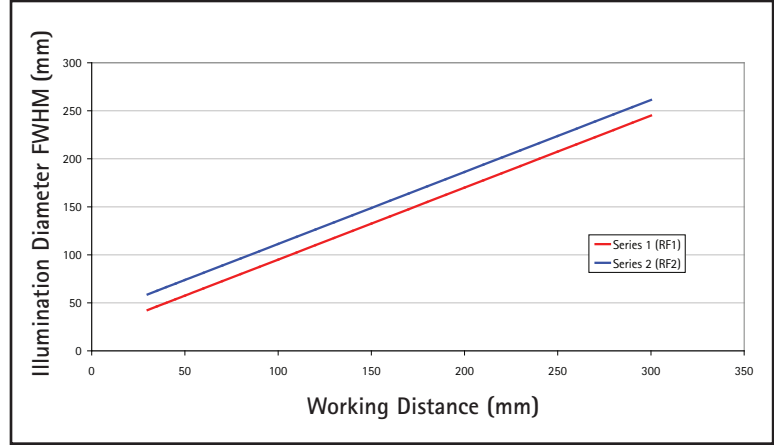


Figure 2 - Illumination diameter FWHM vs. working distance for RF1-630 and RF2-630.

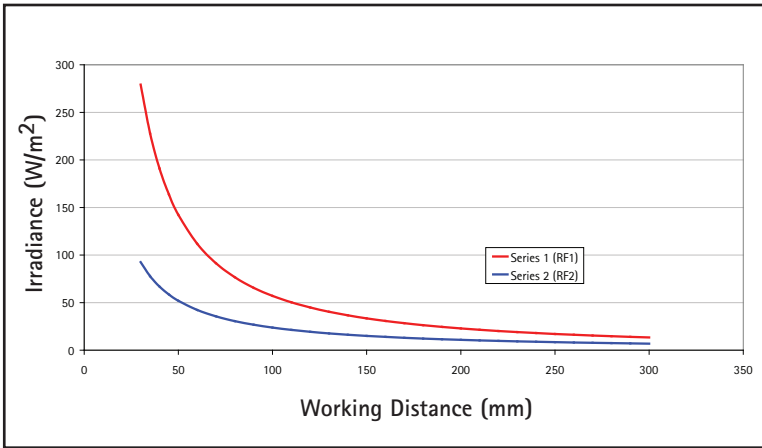


Figure 3 - Irradiance vs. working distance for RF1-630 and RF2-630.

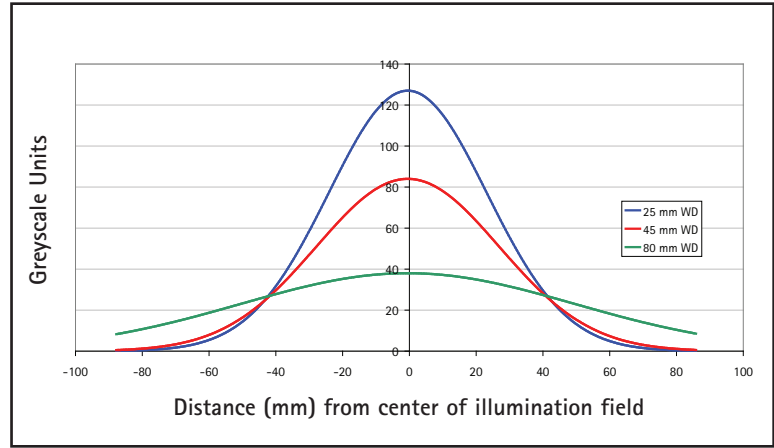


Figure 4 - Intensity profile for RF1-630. Working distances (WD) of 25, 45, and 80 mm.

PRODUCT PART NUMBERS

Product Code	Frontlight	Series	- Wavelength	- Voltage or Current Source	Without or With Heat Sink	Connector or Flying Leads	Cable Length (in cm)
R	F	1 or 2	470 630 740 000 (white)	V or I	X or H	C or F	100 (standard)

Example: RF1-630-VXC100. Refer to website for complete part number matrix. Please contact us for other wavelengths.

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

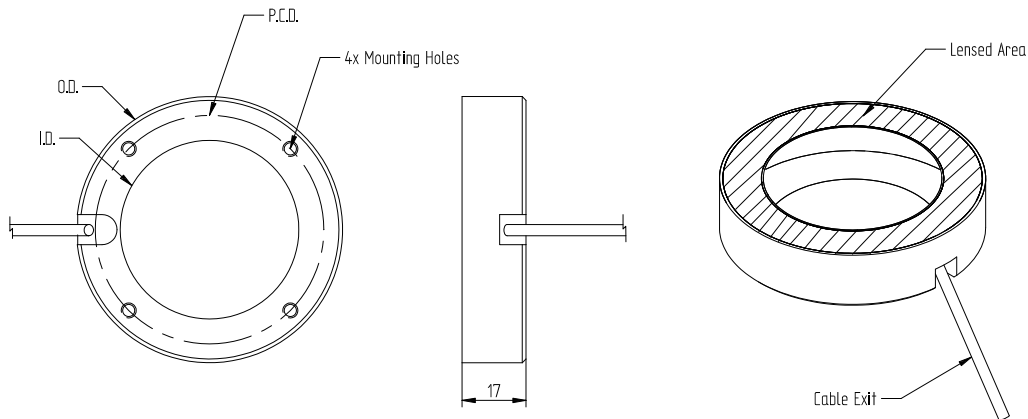
- 24 V wall plug-top power supply for voltage source (V) modules.
- Current mode driver and power supply for current source (I) modules.

Please visit our website for specifications and ordering information.

HEAT SINKS

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

DIMENSIONAL DIAGRAMS



PHYSICAL DIMENSIONS

	Outer Diameter (O.D.)		Inner Diameter (I.D.)	Pitch Circle Diameter (P.C.D.)	Threading mounting hole
	Color	White			
RF1	2.00" (50.8 mm)	2.13" (54.2 mm)	1.08" (27.5 mm)	1.70" (42.4 mm)	M3
RF2	2.79" (70.8 mm)	2.92" (74.2 mm)	1.87" (47.5 mm)	2.40" (60.8 mm)	M3

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.

