SpecBright™

LED Ringlights

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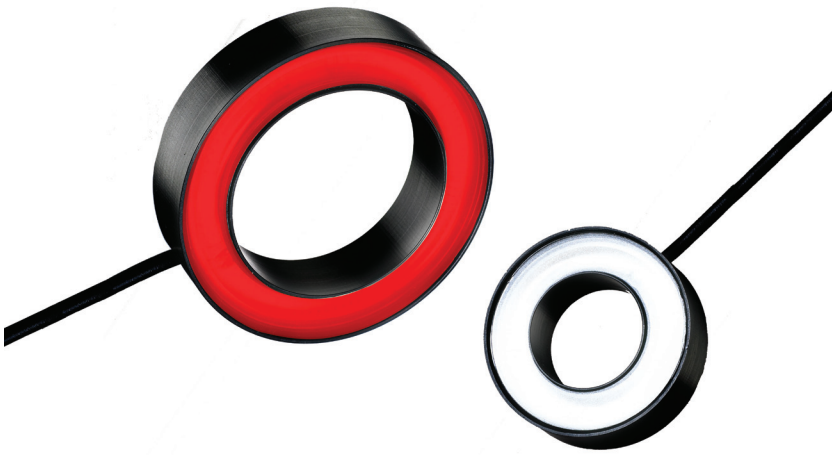


Extremely bright LED illumination

ProPhotonix 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 individually packaged LEDs, ProPhotonix 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 bright, uniform, long lasting illumination sources. SpecBright Ring Lights can be operated in continuous (CW) or pulsed mode. Custom solutions are also available to meet specific requirements.

PRO PHOTONIX
www.prophotonix.com

Key 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

Spectral Characteristics

Colour	UV	UV	Blue	Red	IR	White
Peak wavelength / Colour Temperature	365±10nm	395 ±10nm	470 ± 10nm	630 ± 10nm	740 ± 10nm	6700k
Typical Spectral width FWHM (nm)	11	11	26	17	24	115

Illumination Characteristics[1,2,3,4]

	UV (365)	UV (395)	Blue (470)	Red (630)	IR (740)	White
Series 1 - Inner diameter of housing : 27.5 mm						
Working Distance range (mm)[4]	35-190	32-122	30-115	30-130	45-165	35-150
Maximum Irradiance (W/m^2)	229	197	304	351	150	260
Maximum Illuminance (kLux)	NA	NA	19	74	NA	84
FWHM at Point of Max. Irradiance/Illuminance (mm)	52	48	46	46	46	48
FWHM at 100mm Working Distance	98	98	98	98	98	98
Series 2 - Inner diameter of housing: 47.5mm						
Working Distance Range (mm)[4]	41-223	37-142	35-132	35-151	53-193	45-170
Maximum Irradiance (W/m2)	155	134	207	239	102	141
Maximum Illuminance (kLux)	N/A	N/A	13	51	N/A	45
FWHM at Point of Max. Irradiance/Illuminance (mm)	53	49	46.5	46.5	66	142
FWHM at 100mm Working Distance	118	118	118	118	118	118

Electrical Characteristics, Lifetime & Environment[5]

	UV (365)	UV (395)	Blue (470)	Red (630)	IR (740)	White
Voltage mode (code "V") Operating current (mA) at 24V	200	200	200	200	200	160
Current mode (code "I") Maximum operating current (mA)	400	400	400	400	400	240
Mean time before failure (MTBF)	60,000	60,000	60,000	60,000	60,000	60,000

1 Irradiance and illuminance of blue, white, UV and IR units, for working distances other than that shown above, may be computed with reference to the Intensity vs Working Distance plot provided for the Red Ringlight. Values computed in this manner are valid within ± 10%
2 See Figure 2 for graph of FWHM illumination diameter, as a function of working distance.
3 Irradiance and Illuminance are measured at the centre of the illumination field, in continuous wave mode at maximum operating current (current mode)
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 ProPhotonix for details on lifetime measurements.

Illumination Characteristics

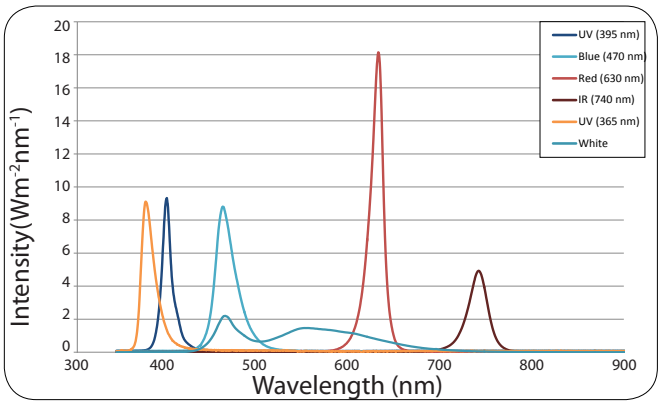


Figure 1 - Spectrum of available wavelengths for our LED Ring lights
Note: Intensity ($Wm^{-2}nm^{-1}$)is based on a RF1 unit used at the optimum working distance

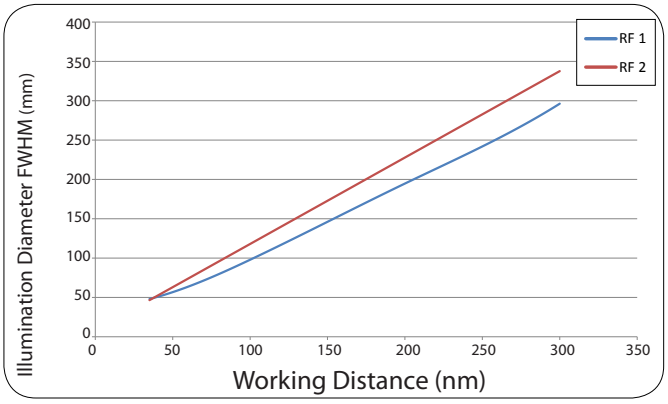


Figure 2- Diameter of field of illumination vs. working distance (Red Units)

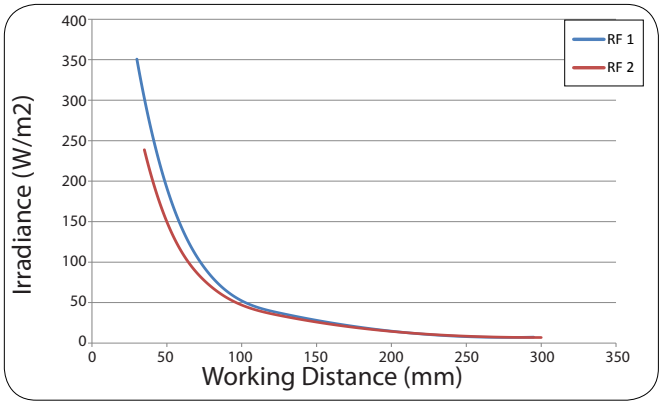


Figure 3- Irradiance vs. working distance for RF1 and RF2 (Red Units) measured at maximum operating current (current mode).

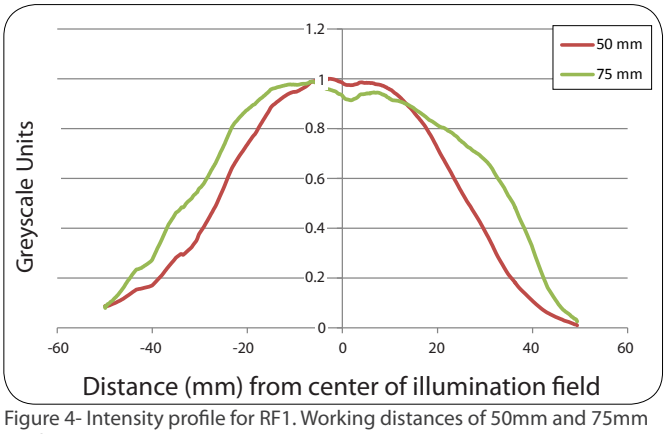


Figure 4- Intensity profile for RF1. Working distances of 50mm and 75mm (Red Units)

Custom Solutions

ProPhotonix specializes in the provision of custom solutions and can provide other wavelengths, diode powers and optics if required.

Product 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	365	V or I	X or H	C or F	100 (standard)
			395				
			470				
			630				
			740				
			870				
			000 (white)				

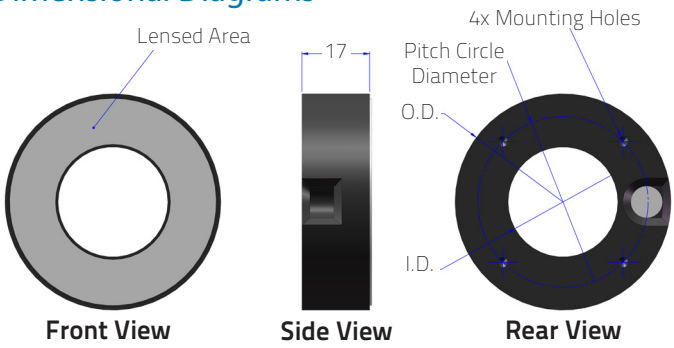
Connectors / Flying Leads

• Tyco Mini Universal Mate-N-Lok connectors are available for 24VDC voltage configured lights (i.e. P/N LF1-630-VXF100) and can be paired with the connectorized AC power adaptor (P/N PTS400-24C) for lab or bench top use. They provide a secure locking mechanism and reverse polarity protection.
• Flying leads are standard for current source (I) modules.

Power Supplies

We offer both universal AC-mains to 24VDC power (2W/500mA) adaptors and standard industrial 24VDC (240W/10A) switching power supplies (P/N PSU-24V-240W). The power adaptors are offered with connectors (P/N PTS400-24C) for easy connection or as flying leads (P/N PTS400-24F) for use with the CMP or application specific connections. Interchangeable plugs are included for use in any country.

Dimensional Diagrams

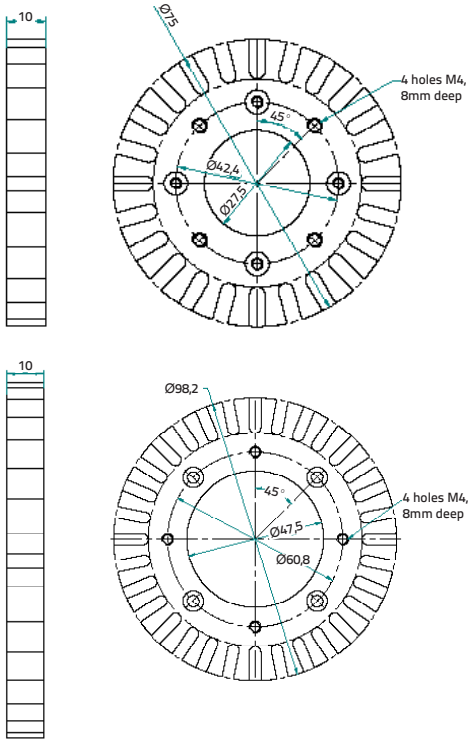


Front View **Side View** **Rear View**

Heat Sinks

For best operation, the housing temperature should not exceed 45°C. ProPhotonix provides optimized heat sinks for use with our LED ringlights.

For information on controllers and strobe drivers visit www.prophotonix.com



	Outer Diameter (O.D)		Inner Diameter (I.D)	Pitch Circle Diameter (P.C.D.)	Threading mounting hole
	Colour	White			
RF1	2.00" (50.8mm)	2.13" (54.2 mm)	1.08" (27.5 mm)	1.66" (42.4mm)	M3
RF2	2.79" (70.8 mm)	2.92" (74.2 mm)	1.87" (47.5 mm)	2.40" (60.8 mm)	M3

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