SpecBright™

LED Line Lights

Extremely bright line scan LED illumination

ProPhotonix SpecBright™ LED Line lights are uniquely uniform while maintaining a very high level of brightness not possible with conventional through-hole or surface mount LED based illuminators. This is achieved by placing up to 100 chip-on-board LEDs closely spaced in a 98-mm (3.88-in) line in a package designed for superior thermal management. This allows the LEDs to be driven to their potential, safely, for the longest possible lifetime and stability.

For optimal performance, the light is focused in a narrowly divergent beam by Fresnel aspherically corrected optics to create an extremely bright and uniform output for short and medium working distances. In addition, SpecBright Line lights enable users to create a continuous line of any length. The power can be interconnected and the end caps removed to allow seamless light mixing between modules with touching lenses.

These units are ideal for OEMs, system integrators and end users who require extremely compact and long lasting illumination sources for their high performance applications. Custom-engineered LED solutions are also available.

PRO PHOTONIX
www.prophotonix.com

Key Features

- Extremely compact, and reliable
- Chip-on-board technology
- Superior uniformity
- Modular for any length
- Easy integration and mounting
- UV, visible, near-IR and white

Applications

- Linescan illumination
- Linear backlight illumination

Accessories

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

Options

- UV, visible, near-IR and white
- CW or pulsed mode
- Backlight or Frontlight

Spectral Characteristics[1]

Colour	Blue	Red	IR	White
Peak wavelength / colour temperature	470 ± 10 nm	630 ± 10 nm	740 ± 10 nm	6700 K
Spectral width FWHM (nm)	30	30	30	NA

Illumination Characteristics[2,3]

Line Length FWHM at working distance of 100mm (mm)	80	80	80	80
Line width FWHM at 100 mm(mm)	5	5	5	10
Typical irradiance at 100 mm (W/m^2)	15	40	40	NA
Typical illuminance at 100 mm (Lux)	1,000	7,000	NA	10,000

Electrical Characteristics, Lifetime & Environment[4]

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 failue (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 Figures 3 and 4 for graphs of FWHM line width and line length, as a function of working distance (wd).
4 Case temperature should not exceed 45°C. Please consult ProPhotonix for details on lifetime measurements.

Custom Solutions

ProPhotonix specializes in providing customized solutions. Please enquire for other wavelengths, powers, optics, or mechanics.

Illumination Characteristics

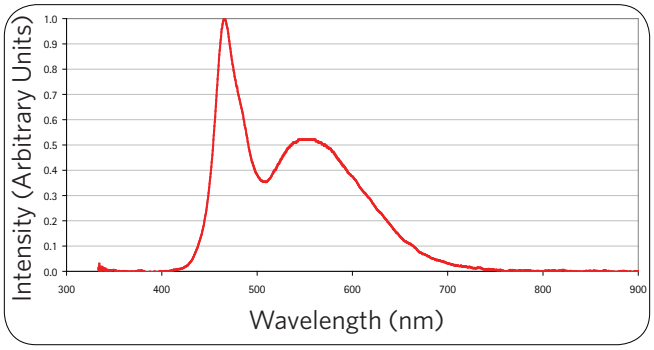


Figure 1 - Typical spectral distribution of a white LED linelight (LF1-000).

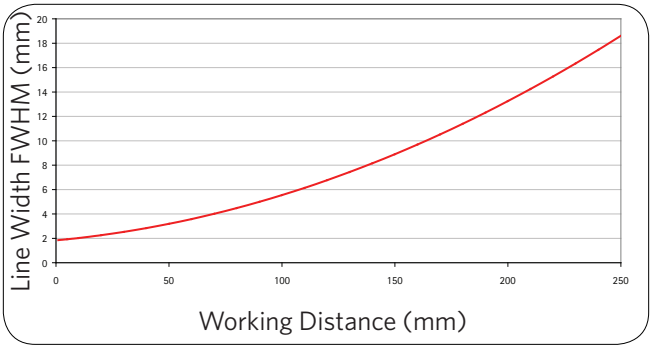


Figure 2 - Line width vs. working distance for LF1-630. For other wavelengths use ratio or irradiance of desired color to red from Illumination Characteristic table on previous page.

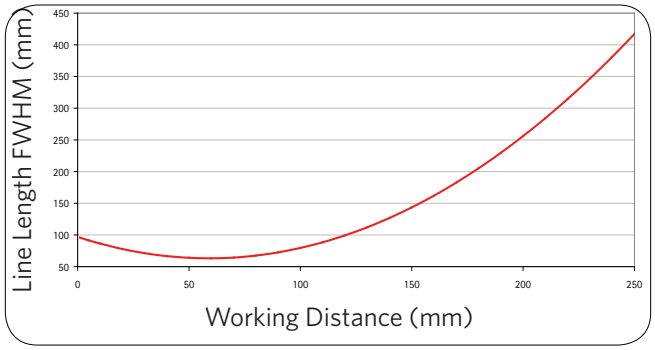


Figure 3 - Line length vs. working distance for LF1

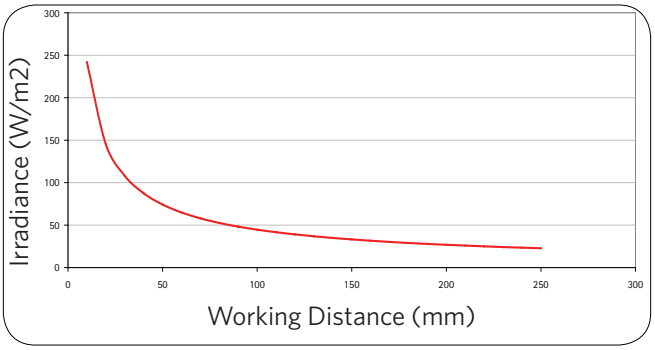


Figure 4 - Irradiance vs. working distance for LF1

NOTE: All measurements were taken in continuous(CW) mode

Part Numbers

Product Code	Frontlight	Series	Wavelength	Voltage or Current Source	Without or with Heat Sink	Connector or Flying Leads	Cable Length (in cm)
L	F or B	1	375	V or I	X or H	C or F	100 (standard)
			395				
			470				
			630				
			740				
			870				
			000 (white)				

Example: LF1-630-VXC100.
Please contact us for other wavelengths.

Connectors / Flying Leads

• Tyco Mini Universal Mate-N-Lok connectors are available for 24VDC voltage configured lights (i.e. P/N AF1-630-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.

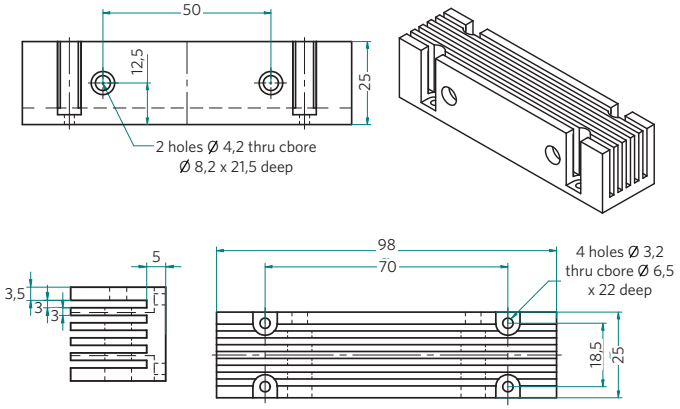
Heat Sinks

Ensure the housing temperature does not exceed 45°C. Heat sinking is highly recommended when LED lights are used at or near full power in continuous, high duty cycle, or long pulse width applications. ProPhotonix offers optimized heat sinks for use with our lights.

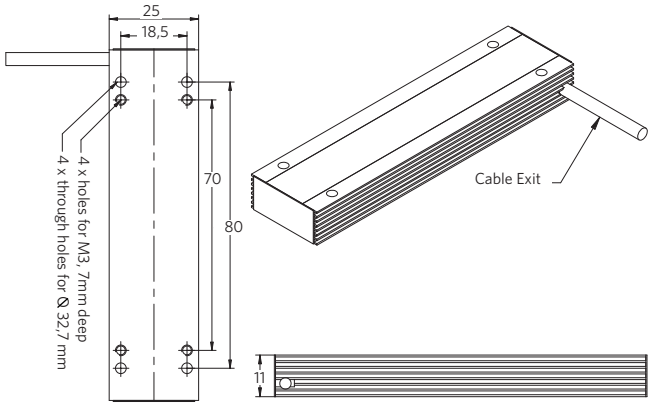
Controllers & Strobe Drivers

The Current Mode Power (CMP) controller drives SpecBright™ LED Illuminators, both constant current and 24VDC configured options. The CMP is a compact, DIN rail mountable controller requiring only 24VDC input (500-mA min) for easy integration. It features both manual intensity control—via a potentiometer—and remote control via analog inputs for intensity adjustment and a TTL input for fast, repeatable non-overdriven on/off/strobe control.
The SpecBright™ CMS-M2-10A series of LED Controllers and strobe drivers provides precise deterministic LED control for continuous, intermittent, and highly over-driven strobing applications. These are multi independent channel controllers with flexible power input requirements and current outputs in 5-mA increments up to several Amps continuous and up to 20 Amps pulsed. They feature push button manual control or communication via Ethernet or RS-232 for sophisticated integration needs. For high speed applications where motion must be stopped, over-driving LEDs can produce as many as 10-20x the light output for a short pulse time—generally 1msec or less—and small duty cycles—generally 10% or less. Overdriving is performed at your own risk. Please enquire for assistance.

Heat Sinks



Dimensional Diagrams



All dimensions in [mm]

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