SPECTRA III light engine®
The Next Generation Comes to Light

Integrated Array of Eight Powerful Solid-State Light Sources
More Power • More Colors • More Control

The next generation of solid-state illumination is here. In Lumencor's SPECTRA III light engine, eight individually addressable solid-state light sources deliver unprecedented performance. Each color band provides on the order of a half a watt of optical power at the end of a liquid light guide. The constituent light sources include LEDs, Lumencor's proprietary luminescent light pipes and lasers. The outputs of the sources are refined by bandpass filters and merged into a common optical train directed to the light output port on the front panel. The light output port has a built-in adapter for connection to microscopes and other bioanalytical instruments through a standard, 3 mm diameter liquid light guide, LLG.

The SPECTRA III light engine delivers substantial increases in output power compared to its SPECTRA® and SPECTRA X® predecessors. The advantages are clear: YFP and Cy7 excitation outputs are increased five-fold; GFP and Cy5 exception outputs are doubled. Not only are the outputs more intense but they are sustained by active stabilization. An onboard feedback loop continuously monitors the light output and maintains constant light output over time. SPECTRA III is not only bright but undeniably reliable, stable and consistent.

The SPECTRA III features an advanced control system based around an onboard computer with an embedded command library. This facilitates control using simple and intuitive commands. Command sets give access to the basic control functions of light source selection, on/off switching and output intensity adjustment. Additionally, there are an extensive panel of operating status reports and preference settings available in this new light engine model. A GUI, resident on the onboard computer and viewed using a web browser via a LAN connection, provides convenient access to many of the command library functions. SPECTRA III controls are also implemented in several image acquisition software packages. TTL trigger inputs are provided for all eight sources for applications requiring fast (10 microseconds) switching.
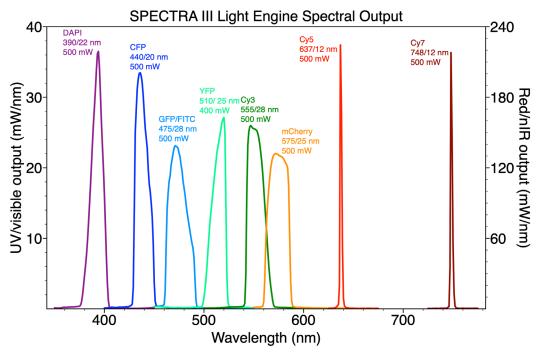
As with all Lumencor products, OEM customization is available upon request.

For more information on the SPECTRA III light engine, please contact us at info@lumencor.com. To receive a purchase quotation for a SPECTRA III light engine, please submit our online quotation request form.

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SPECTRA III Light Engine Spectral Output

Chart legend:
- DAPI 390/22 nm 500 mW
- CFP 440/20 nm 500 mW
- GFP/FITC 475/28 nm 500 mW
- YFP 510/ 25 nm 400 mW
- Cy3 555/28 nm 500 mW
- mCherry 575/25 nm 500 mW
- Cy5 637/12 nm 500 mW
- Cy7 748/12 nm 500 mW

Axes: UV/visible output (mW/nm) — left; Red/nIR output (mW/nm) — right; Wavelength (nm) — bottom.

Features and Operating Characteristics:

Features	Details
Sources	8 solid state sources including LEDs, lasers and proprietary luminescent light pipes
Wavelengths	380 – 750 nm
Bandpass Filters	Integrally installed bandpass filters for spectral output refinement
Output Power	~500 mW per color band ± 10% through a 3 mm liquid light guide (LLG)[1]
Light Delivery	3 mm diameter, 2 m length liquid light guide[2]
Control Interface	Source selection, light output on/off and intensity via serial interface (RS-232/USB or TCP). Source selection and light output on/off via TTL
Software	Onboard GUI or PC-based image acquisition software
Power Requirements	220 W (24V DC/9.2A) power supply included
Warranty	18 months
Dimensions (W x L x H)	145 mm x 340 mm x 203 mm (5.7 in x 13.4 in x 8.0 in)
Weight	8.7 kg /19.1 lbs
Optional Accessories	8-channel breakout cable for TTL triggering. Light engine control pod[3]

[1] Output power dependent on filter bandpass. [2] Output adapter is built-in. Ensure LLG or fiber output is correctly specified when ordering.
[3] Control pod connects to light engine USB port and controls source selection, light output on/off and intensity settings.

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