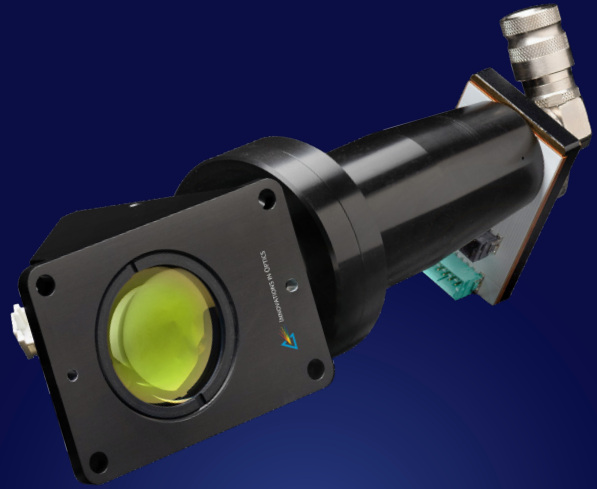


Lumi3D™ Modular 3D LED Illuminator



Features

- UV Powers of 25 - 32 Watts (15 die array)
- Designed for DLP9000
- Multispectral output in a single illuminator
- Non-imaging stendue preserving optics
- Bi-telecentric lens systems
- Recirculating liquid-cooled heat exchanger
- Field Replaceable Unit Light Engine - FRU

The Lumi3D™ Illuminator allows unprecedented speed and resolution for Ultraviolet DLP applications by providing highly uniform flux density over large areas. The patented, modular device couples a densely packed UV-LED array to a high efficiency, non-imaging collection optic integrated with a telecentric imaging optic optimized to the DLP chipset.

Applications

- 3D Polymer printing
- Micro 3D printing

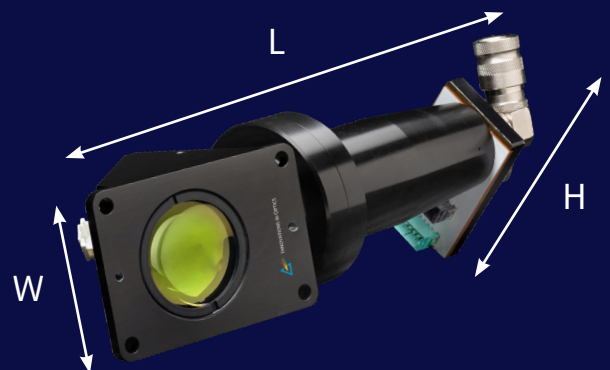
The Lumi3D™ is sold as a kit that includes the optics module and a driver. The optics module is easily mounted with kinematic registration on a flange mount. The field replaceable unit (FRU) provides fast, easy light engine replacement with no need for re-alignment or adjustment.

Lumi3D™ Specifications

Parameter	Specification	Comment
Optical power output @ 3A drive current	≥ 25 Watts	15 die array
Drive current per channel / die	Min 0.30 Apms Max 3.0 Amps	Continuous operation. Die can be driven individually
Uniformity	≥ 90%	At image plane over DMD active area
Available wavelength bins	365 to 405 nm	Contact Sales Engineer for additional bins
Output numerical aperture	NA = 0.208	Matches DLP +/- 12° micromirror tilt angle.
Numerical aperture overfill	5%	
Electrical power output	300W	Typical Maximum
Operating environment	15°C to 35°C	5% to 85%, relative to humidity, non-condensing
Thermal impedance	10 kΩ	At 25°C
Thermistor B _{25/85}	3435 - 3960 K	For 10 kΩ
Cooler fittings	Quick disconnect/No spill	Right angle (articulating) or in-line
Liquid cooling supply	Use in-line filter on inlet	Must be 20 μm rating
Mounting flange	Four through holes on 68mm diameter	10mm depth for M4 bolts
	Kinematic Hole/Slot	Locks position/rotations

Dimensions

Height	Width	Length
65.6 mm	59.0 mm	237.8 mm



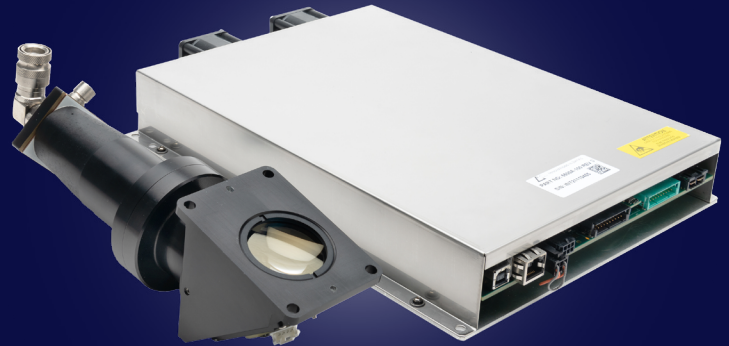
Multi-Channel Driver/Controller - 5500A

Features

- Single constant current source
- Uniform drive current across array for precise exposure control
- Up to 5A each for up to 18 UV-LED die (maximum recommended for Lumi3D™ is 3.0A / die)

Connectivity

- Command set for Ethernet and Modbus serial communication
- External trigger



Parameter	Specification	Comment
Type	Constant current, dimmable	1 to 18 channels
Output voltage	6.0 V DC compliance	Maximum, cathode ground
Output current	0 to 3 Amps (10 bit resolution)	Per channel, common cathode
Input voltage	+24 V DC @ 25A max	+/- 5%
Efficiency	80% minimum	At maximum load
Current ripple	0.5% RMS maximum	At maximum voltage (6.0 V DC)
Over temperature sensors	In both source and driver	LED status indicators (local)
Operating modes	Continuous mode (CM) or pulsed mode	User selectable
Dimming	Analog or PWM	Set remotely
External trigger	Instantaneous or with programmable	User enabled
LED module I/O	Thermistor, photosensor	Monitoring
Pulse repetition rate	15 kHz	Maximum
Pulse width	< 20 µsec	Minimum
Connectivity	USB 2.0 1-/100 Mbps ethernet RS-232 (TIA-232-F)	Standard-A type RJ-45 3-pin Molex Sherlock™
Programming	Command set for serial (USB) and telnet (Ethernet) communication	
Size and Weight	228 x 290 x 45 mm; 2.2 kg	

The products, their specifications and other information appearing in this document are subject to change by Innovations in Optics, Inc. (IOI) without notice. IOI assumes no liability for errors that may appear in this document, and no liability otherwise arising from the application or use of the product or information contained herein.