

OTFI-0275, 0285, 0295

LED Fiber Optic Light Module with Electronics



Excelitas' LED Fiber Optic Illuminator Module with Electronics provides a simple solution to the often-diverse requirements of endoscopy, surgical microscopy and medical headlight illumination applications.

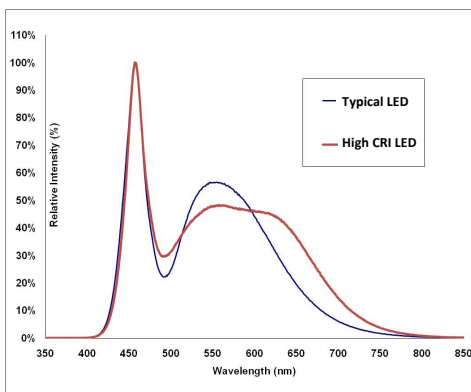
Combining superior optics with state-of-the-art LED technology, the illuminator module comes in a variety of output powers and CRI options, yielding brilliantly clear images for better visualization.

The Light Module has integrated electronic circuitry for safety alarms, error modes and power status indicators. It also provides circuitry for fiber presence safety interlocks, thermal monitoring and over temperature protection.

Equipped with multiple intensity control modes, the Light Module offers 0-100% intensity adjustment via 0-5V analog, RS-232 or auxiliary external control. Intensity can be varied by constant current and/or via an internal or external Pulse Width Modulation (PWM) signal. PWM enables users to control light output while maintaining a stable Correlated Color Temperature. The auxiliary external control port also permits direct communication with the illuminator's internal microprocessor.

Compliant with IEC/EN 60601-1, the Light Module can be powered with 12V or 24V DC.

Spectral Profile



Key Features

- Variety of lumenous output and CRI options, including a minimum CRI of 90, or an output of 2400 lumens
- Safe - Emits virtually no ultraviolet or infrared radiation and eliminates the need for filtering
- Pulse Width Modulation and/or adjustable current control for color temperature consistency across intensity settings
- Multiple dimming modes -Digital, analog, and remote dimming capabilities
- EMI-shielded
- Energy-efficient - Consumes less energy than Xenon
- On board temperature sensor for thermal monitoring
- Variable speed fan with fan speed monitor
- Accepts Universal 12V DC—24V DC input
- Compatible with 1 mm – 6 mm diameter fibers
- Circuitry equipped for status and safety indicators

Applications

- Endoscopy light sources
- Surgical microscopy
- Medical Headlights

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Physical Configuration

Parameter	Symbol	Min.	Typ.	Max	Unit	Remarks / Conditions
Optical Characteristics						
Luminous Flux (0275)			2000		Lumens	
Luminous Flux (0285)			1600		Lumens	
Luminous Flux (0295)			2400		Lumens	
Color Rendering (0285)	CRI	90	93		Lumens	
Color Temperature (OTFI-0275, -0295)	CCT	5500	6300	7500	Kelvin	
Angle of light exit	FWHM		76		degrees	At 50% intensity points
Fiber compatibility	Φ	1	5	6	mm	

Dimming and Control

External light control methods are configured through a 4-bit dip switch	Digital encoder / switch					
	0-5V Analog					
	External PWM accepted / Internal PWM 800 Hz to 25 KHz Dual-level, high/low output modulation					
	RS-232 control of LED via DC current and PWM					
LED Current range	380 mA to 18 A					
Temperature protection	Built-in temperature sensor sends advance warning signal and shuts down the LED if the LED junction temperature exceeds its maximum thermal rating					
Circuitry equipped for status indicators	Output signals for power status, error mode and thermal shutoff warning					
RS-232 communication port	Provides control over light intensity, fan speed and temperature warning					
Auxiliary external control	16 pin port; connector pitch 0.10"					
UART signal	Direct micro to micro communication					

Electrical Characteristics

Input Voltage	VDC	12		24	Volts	
Input Power	W	100			Watts	Use 100 W min. power supply
Internal Fuse	A	10			Amps	

Environmental Characteristics

Cooling method	DC fan				Fan is rated for 70K hours	
Operating Temperature	T _o	0°... +40°	Humidity: 85% or less		°C	
Storage Temperature	T _s	-20°... +65°	Humidity: 85% or less		°C	

Dimensions

Physical dimensions	99 mm x 110 mm x 165 mm (H x W x D) 3.9" x 4.3" x 6.5" (H x W x D)					
Weight	907 grams; 2 lbs.					
Safety						
Safety standards	Compliant with IEC/EN 60601-1, EN60601-1-2; CE Mark					

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