OTFI-0295

XLM Plus LED High Output Fiber Optic Light Module with Electronics



OTFI-0295

Key Features

- Bright – 20% more light output than our standard OTFI-0275
- 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

Overview

Excelitas' XLM Plus Fiber Optic High Output Illuminator Module with Electronics provides our highest light output solution to the often diverse requirements encountered in the fields of endoscopy, surgical microscopy, and medical headlight illumination applications.

Combining superior optics with state-of-the-art LED technology, the illuminator module yields brilliant clear images leading to better visualization of injuries and disease. This enables physicians to make accurate diagnoses and treatment, leading to shorter hospital stays for patients and faster returns to a better quality of life.

Designed to increase patient safety, the Light Module has integrated electronic circuitry for safety alarms, error modes and power status indicators. It also provides circuitry for connection to fiber safety interlocks. In the event a fiber is removed from the illuminator during use, it can be immediately shut off, protecting the vision of attending medical professionals.

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

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.

Should a fan intake become blocked, this maintenance-free illuminator includes thermal over-temp protection and will shut off the LED prior to exceeding its maximum operating temperature. Prior to shutdown, the circuitry sends error mode notifications and automatically reduces the intensity setting. This feature aids in preventing permanent damage to the LED, thereby ensuring long life.

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Physical Configuration

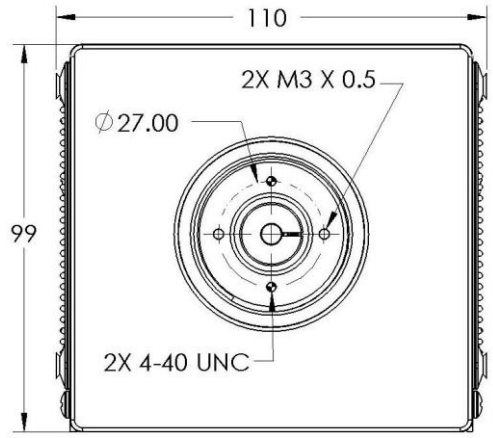
Parameter	Symbol	Min.	Typ.	Max	Unit	Remarks / Conditions
Optical Characteristics						
Luminous Flux			**2400**		Lumens	
Color Temperature	CCT	5500	6300	7800	Kelvin	
Angle of light exit	FWHM		76		degrees	At 50% intensity points
Fiber compatibility	Φ	1	5	6	mm	
Dimming and Control						
External light 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” x4.3” x 6.5” (H x W x D)					
Weight	907 grams; 2 lbs.					
Safety						
Safety standards	Compliant with 2nd and 3rd edition IEC 60601-1, EN60601-1-2, and RoHS					

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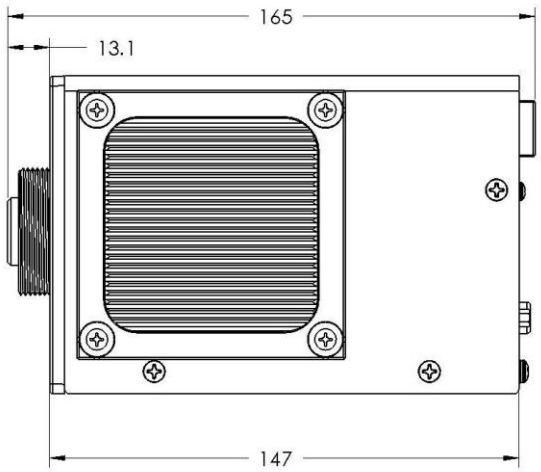
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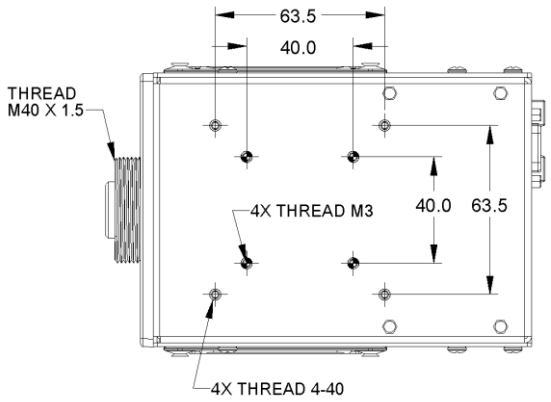
OTFI-0295 Front View



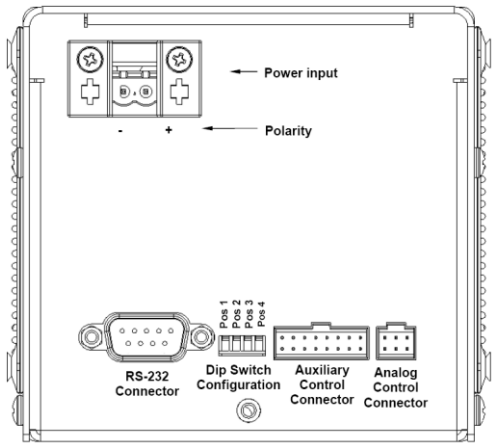
OTFI-0295 Side View



OTFI-0295 Bottom View



OTFI-0295 Rear View



*All dimensions shown in mm

Excelitas' XLM Plus LED Fiber Optic Light Module is a component-level module supplied to OEM medical device manufacturers for integration into the device manufacturer's endoscope, surgical microscope or medical headlight system. The XLM Plus includes: LEDs, optics, complete electronics for microprocessor control of LED and fan, heat sink with fan, temperature sensor, 12V DC and 24V DC electrical input terminal, RS232 input, 0-5V analog input, auxiliary serial port input, and a dip switch for configuration. It is enclosed in a sheet metal enclosure with fan guards.
The user shall provide the power supply, system enclosure, switches and mechanical interface for the fiber light guide.

Custom solutions are available. Please inquire with Excelitas Technologies.

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RS-232	
Pin Number	**Signal Name**
1	NC
2	Transmit data
3	Receive data
4	NC
5	Signal ground
6	NC
7	NC
8	NC
9	NC

Configuration Mode Dip Switch Setting				
Configuration	**Position 1**	**Position 2**	**Position 3**	**Mode Description**
Mode 1	0	0	--	Local control via rotary encoder
Mode 2	1	0	--	Local control via Up/Down switch
Mode 3	0	1	--	Remote control via RS232 commands
Mode 4	1	1	--	Remote control via analog input signal
Internal PWM	--	--	0	Internal PWM custom program
External PWM	--	--	1	External PWM
	0 = Switch in the down position			1= Switch in the up position
	-- = Any position is acceptable			Position 4 is not used

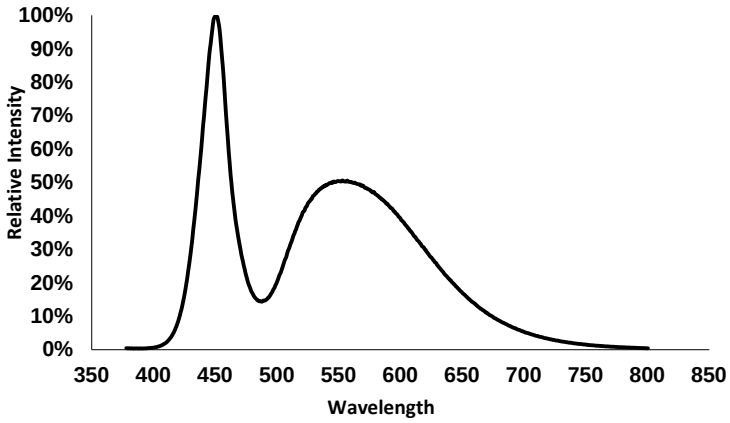
Auxiliary Pin Array			
Pin Number	**Signal Name**	**Pin Number**	**Signal Name**
1	LED enable out	2	RXD
3	LED enable in	4	TXD
5	Ground	6	Ground
7	External PWM - TTL Signal for PWM control	8	External potentiometer pin 1
9	Status indicator	10	External potentiometer pin 2
11	Ground	12	Ground
13	Led on	14	Monitor 1
15	Over temp alert	16	Monitor 2

Analog Pin Array	
1	Ground
2	LED on/off
3	Dimming switch input 1
4	0-5V
5	Dimming switch input 2
6	Ground

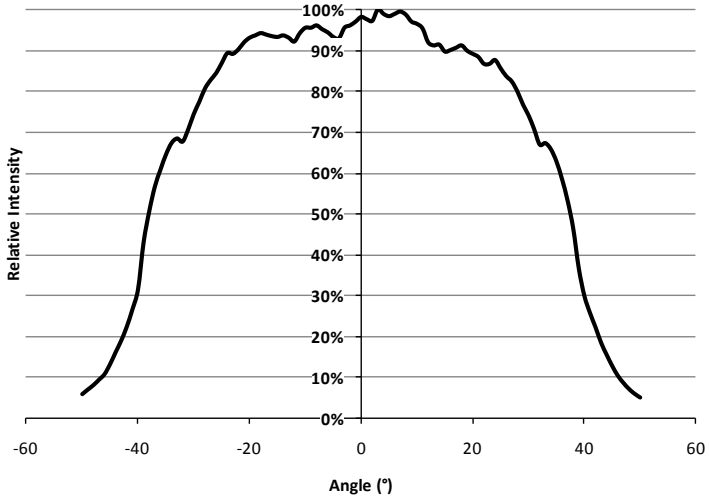
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Spectral Profile



Spatial Profile



About Excelitas Technologies

Excelitas Technologies is a global technology leader focused on delivering innovative, customized solutions to meet the lighting, detection and other high-performance technology needs of OEM customers.

From medical lighting to analytical instrumentation, clinical diagnostics, industrial, safety and security, and aerospace and defense applications, Excelitas Technologies is committed to enabling our customers' success in their specialty end-markets. Excelitas Technologies has approximately 3,000 employees in North America, Europe and Asia, serving customers across the world.

Limited warranty for 24 months from date of purchase.
U.S. and International patents pending.
Product improvements may result in specification or feature changes without notice.

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