

OTFI-0295

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.

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

Physical Configuration

Parameter	Symbol	Min.	Тур.	N	lax	Unit	Remarks / Conditions		
Optical Characteristics									
Luminous Flux			2400			Lumens			
Color Temperature	ССТ	5500	6300	78	300	Kelvin			
Angle of light exit	FWHM		76			degrees	At 50% intensity points		
Fiber compatibility	Φ	1	5		6	mm			
Dimming and Control									
	Digital encoder / switch								
External light control methods are configured through a 4-bit dip 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	А	10				Amps			
Environmental Charact	eristics								
Cooling method	DC fan						Fan is rated for 70K hours		
Operating Temperature	Τ _ο	0° +40°	+40° Humidity: 85% or less						
Storage Temperature	Ts	-20° +65°	5° Humidity: 85% or less			°C			
Dimensions	1								
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 2 nd and 3 rd edition IEC 60601-1, EN60601-1-2, and RoHS								

Physical Configuration



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.

RS-232 Pin NumberSignal Name1NC2Transmit data3Receive data4NC5Signal ground6NC7NC8NC9NConfiguration Mode Dip Switch Setting:Configuration Mode 100Mode 210Local control via trary encoderMode 301Remote control via Up/Down switchMode 411Remote control via BS232 commandsMode 411Remote control via analog input signalInternal PWM0Internal PWM01External PUM01External PUM1LED enable out2RXD3LED enable out2RXD3LED enable out4TxD5Ground6Ground7External PWM -TTL Signal for PWM control8External potentiometer pin 19Status indicator10External potentiometer pin 211Ground12Ground13Led on14Monitor 114Ground12Gro											
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	2										
3 Dimming switch input 1	3										
4 0-5V	4										
5 Dimming switch input 2	5	Dimming switch input 2									
6 Ground	6	Ground									





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 highperformance 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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