

Electro-Absorption Modulated Laser (EML)

12, 20GHz



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The EMLT Series Electro-Absorption Modulated Laser Transmitter is a semiconductor laser that integrates a distributed feedback (DFB) laser and an electro-absorption modulator (EAM) within a single package. This design eliminates the need for external modulators, reducing system complexity, power consumption, and size while improving thermal management. Capable of modulation speeds up to 20 GHz for both analog and digital responses, the EMLT delivers high-speed modulation with precise optical output control. The integrated EAM minimizes wavelength shifts during modulation, ensuring stable signal transmission over long distances, making the EMLT ideal for high-speed optical communication systems. Its compact and efficient design is well-suited for modern applications requiring reliable, high-performance data transmission. The laser wavelength can be made to match a specific ITU for a special order.

Features

- High Optical Output Power
- Low Modulation Voltage
- Wide Bandwidth
- Excellent Stability

Applications

- Optical Communication
- Quantum Optics
- DWDM Systems

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength (C-Band)	1520	1550	1590	nm
Laser Threshold Current		20		mA
Laser Current		40	60	mA
Laser Bias Voltage			2.5	V
Forward Voltage		2	3	V
Modulation Extinction Ratio	9.5	12		dB
Side Mode Suppression Ratio	30	40		dB
Output Power	1.5	3	10	mW
Bandwidth (3dB)	12	20	22	GHz
Return Loss	-27	-30		dB
Input 1 dB Compression	15			dBm
Relative Intensity Noise	-130			dB/Hz
Input RF Amplitude			2.5	V
RF Connector		2.92 SMA F		
Thermistor Resistance		10		K ohm
TEC Current*			1.5	A
Monitor PD Current			3	mA
Monitor Dark Current			100	nA
Operation Temperature	-40	25	85	°C
Storage Temperature	-40		85	°C



Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

Rev 12/26/24

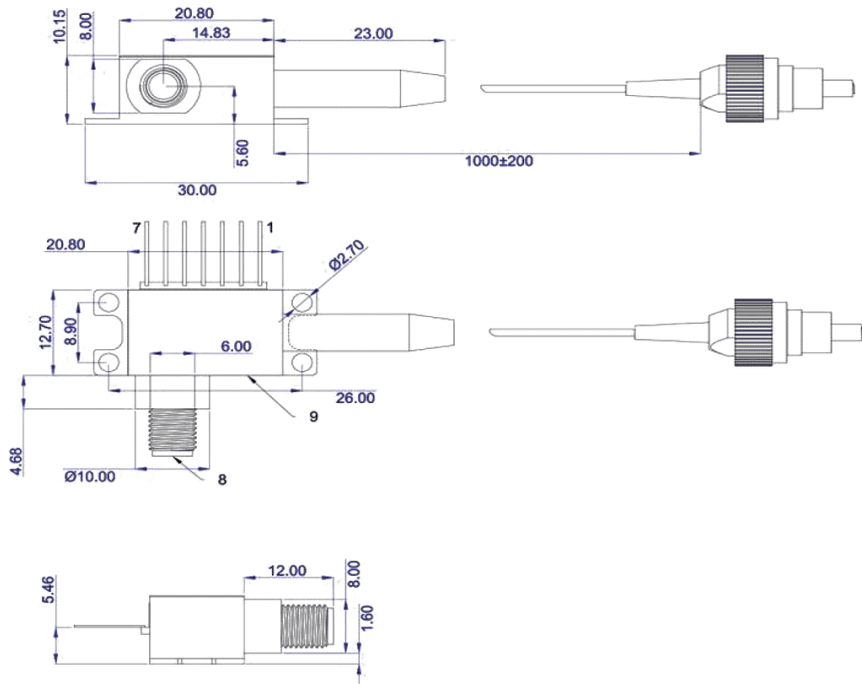
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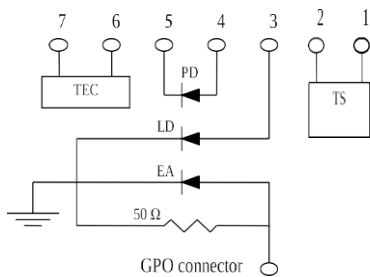
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Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Electrical Connection



Lead	Function
1	Thermistor
2	Thermistor
3	LD+
4	PD-
5	PD+
6	TEC+
7	TEC-
8	LD- (RF)
9	LD+ (GND)

Ordering Information

Prefix	Speed	Wavelength	Output Fiber	Cable	Fiber Length	Connector
EMLT-	10GHz = A 12GHz = 1 20GHz = 2 30GHz = 3	1549 nm = 1549 1550 nm = 1550 Special = 000	SM28 = 1 PM1550 = 2 PM1310 = 3	0.9mm tube = 1	0.5m = 1 Special = 0	SC/PC = 1 FC/PC = 2 LC/PC = 3 Special = 0

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Typical Performance

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Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots

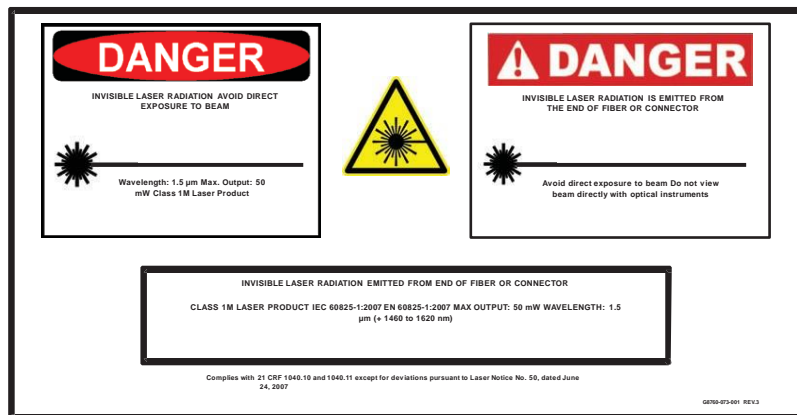


Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
*IEC is a registered trademark of the International Electrotechnical Commission.