2 µm Single Mode Laser

(Up to 10W SM or 5W PM, Benchtop)

The TMFL series of Thulium-Doped (Tm) Fiber Lasers are benchtop Fabry-Perot fiber laser sources featuring single mode fiber output in the 2 µm band and simple operation for test and measurement applications. Each fiber laser is constructed using a thulium-doped fiber as the gain medium and two fiber Bragg gratings to select the laser wavelength. The TMFL has narrow-bandwidth FBG reflectors and smaller longitudinal mode spacing (typically <200 MHz compared to >100 GHz for semiconductor lasers). This enables the RMS spectrum to be much narrower (≤0.2 nm versus a few nm) with both short-term and long-term spectral stability. These features make the Tm-doped fiber lasers ideal for applications where spectral stability or narrow spectral width is required. Four wavelength options are available from stock: 1850, 1940 nm, 2000 nm, and 2050 nm. Tm-doped fiber can also support other emission wavelengths from 1800 nm to 2050 nm. Custom fiber lasers with different emission wavelengths are available upon request by contacting sales. The laser output is accessible via a fiber connector bulkhead that is compatible with 2.0 mm narrow key FC/APC connectors. An integrated isolator at the output minimizes the impact of back reflections on the laser cavity. It has a front power control knob and USB computer interface. An emission switch adds safety.

Features

- Fiber Grating Stabilized
- Narrow Line Width <0.2nm
- Adjustable Output Power
- Single Mode and PM Mode
- USB
- Turn-Key Benchtop

Applications

- Lab
- OEM
- Sensor
- Instrumentation

Specifications

Parameters	Min	Typical	Max	Unit
Operation Wavelength	1850	1940	2050	nm
Operation Mode		CW		
Output Power	10		150	mW
Spectral Linewidth	0.1	0.5	1	nm
Output Isolation	30			dB
Polarization Extinction Ratio (PM Fiber)	20	26	35	dB
Output Power Adjust Range	10		100	%
Output Power Stability (within 8 hr)		0.05	0.1	dB
Operating Temperature	-5		35	°C
Storage Temperature	-40		85	°C
Electrical Power Consumption			5	W
Power Input	100		240	VAC
Computer Interface		USB		
Package Dimension				

* PM output maximum is 50mW

Rev 04/21/24

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Operation Manual

- Plug AC power
- Turn ON The Power Switch
- The Laser Can be Controlled By a Computer via The USB/GUI Interface
- Turn On The Emission Switch

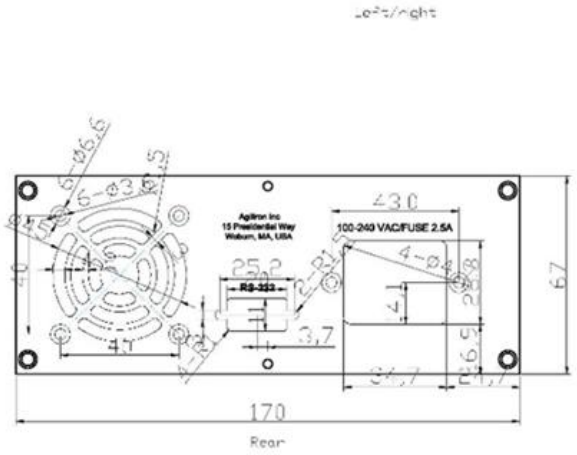
For Manual Operation (option)

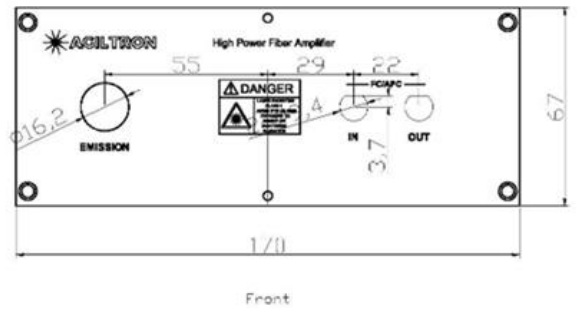
- Adjust The Output Power to Minimum by Turning The Knob All Way Counter Clockwise
- Increase The Out Put Power by Turning The Knob Clockwise

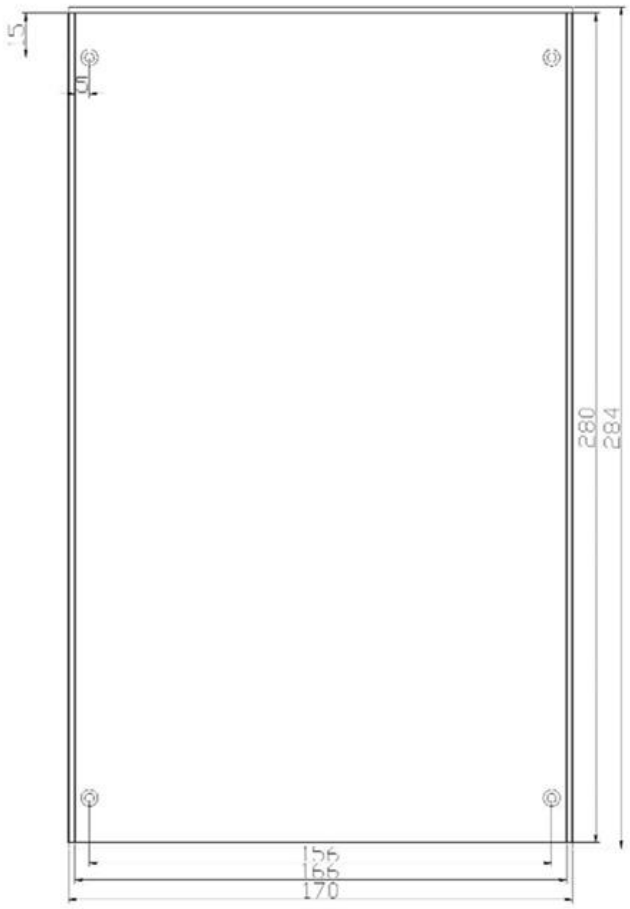
Special Feature

- To Modulator The Laser, Turn On The Modulation Switch at the Back, Input a 0-5V Modulation Signal Via The BNC Connector

Mechanical Dimension







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

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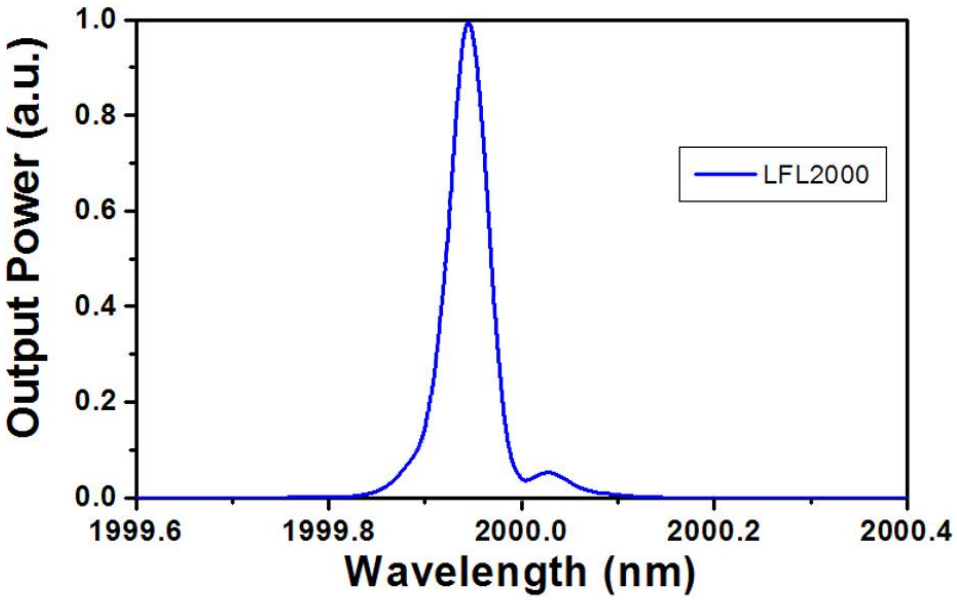
Typical Spectrum



Ordering Information

	☐	☐ ☐	☐	☐	☐	☐	☐	☐
Prefix	**Wavelength**	**Output Power**	**Mode [1]**	**Spectral Width**	**Power Supply**	**Interface**	**Connector**	**Front Control**
TMFL-	1850nm = 8 1940nm = 9 2000nm = 2 2050nm =3 Special = 0	15mW = 01 20mW = 02 50mW = 05 100mW = 10 5mW = 0A Special = 00	Random = 1 PMER18dB = 2 PMER25dB = 3 PMER30dB = 4	Broad = 1 4nm = 2 Special = 0	120-220V = 1	USB = 1 RS232 = 2	FC/APC = 3 Bare Fiber = 1 Special = 0	Non = 1 Yes = 2 Special = 0

[1] PMER- Polarization Maintaining Extinction Ratio

[2] Regular FC/PC is temporary that will burn. High-Power FC/PC must mate with the same High-Power FC/PC (we make patch cable)

Red is Special Order

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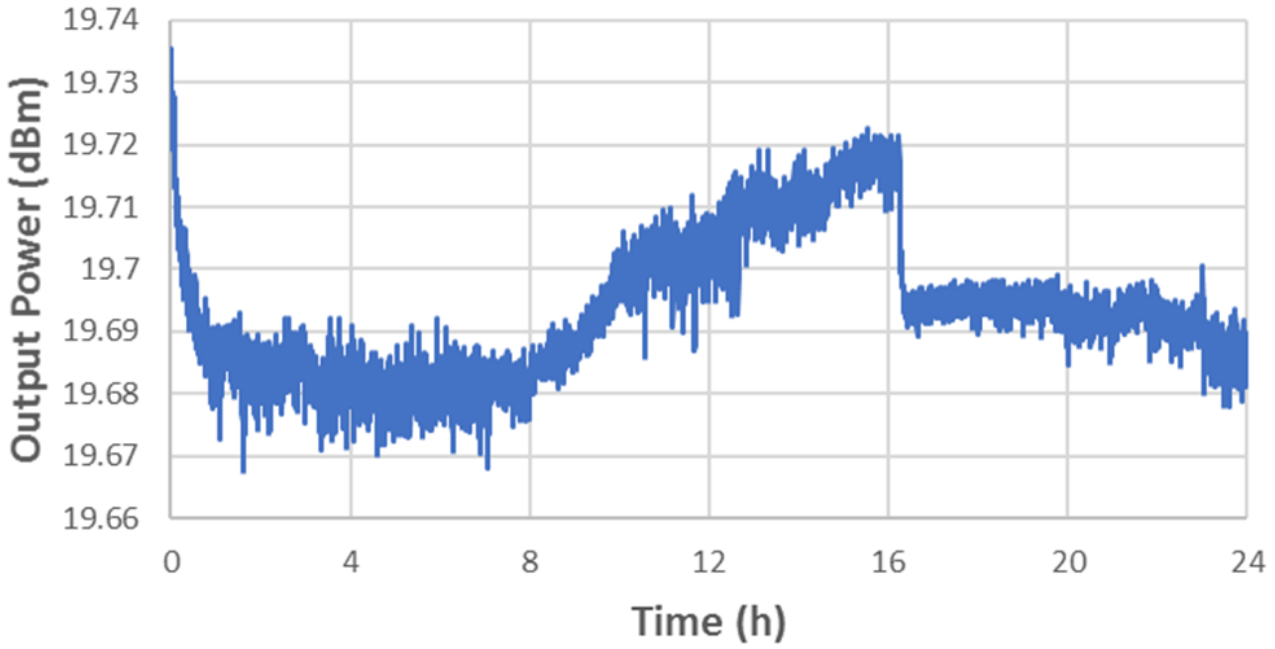
Typical Stability



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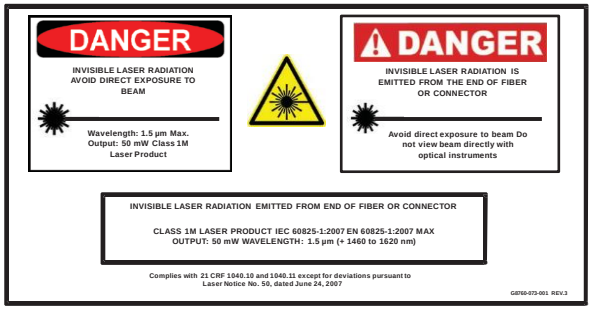
USB Command List

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.

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Questions and Answers

Q:

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