Compact Single Mode Laser Source -1550nm

(SM, PM, 1528 -1615nm, up to 2W)

DATASHEET

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The Compact Single Mode Laser Sources (CSML) deliver low-coherence, single-mode emission with output power up to 2 W, making them ideal for high-precision measurement applications. An optional polarization-maintaining output with an ultra-high polarization extinction ratio of up to 40 dB is available. The design utilizes rare-earth-doped fibers pumped by a cooled laser diode, offering enhanced reliability and longevity while reducing cost compared to high-power laser diodes. Precision feedback control ensures stable output power and polarization. The CSML is available in two wavelength ranges — C-band (1528–1563 nm) and extended band (1528–1615 nm) — with multiple output linewidth options. Designed as an OEM module, it includes an optional driver PCB for remote control. The unit requires a heat sink and should be mounted on a large metal surface for proper thermal management.

Applications

- Sensor
- Lidar
- Testing
- Instrumentation

Features

- High Stability
- Low Cost
- Ease to Use

Specifications

Standard		Min	Typical	Max	Unit
Operation Wavelength	C+L	1528		1610	nm
	C	1528		1563	nm
Output Power		0.2		2*	W
Polarization Dependence (SM)				0.01	dB
Polarization Extinction (PM)**		30	35	40	dB
Output Power Stability		0.05	0.1	0.2	dB
Spectral Ripple				0.1	dB
Spectral Flatness (with filter)		2	3	6	dB
Output Isolation		35			dB
Input Voltage		11	12	13	V
Computer Interface***			USB		
Operating Temperature		-5		55	°C
Storage Temperature		-45		85	°C

Notes:

***** Max power for PM output is 1W

** Without connector. 29PER connector is available at $390 ea

*** Need the optional adapting PCB for initial testing. Customer usually makes their own driver.

Rev 05/22/25

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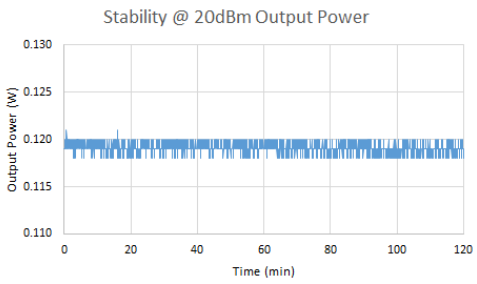
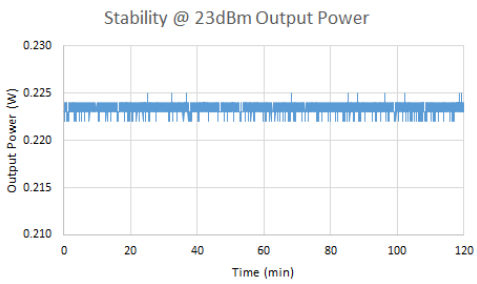
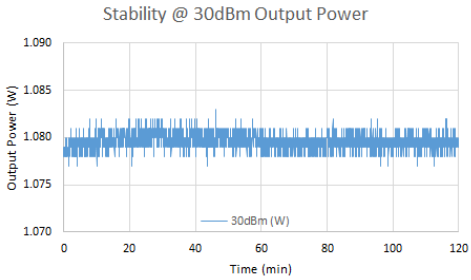
Output Power Stability (33dBm)



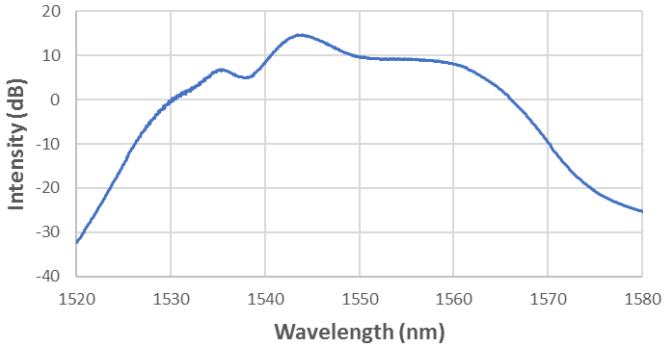




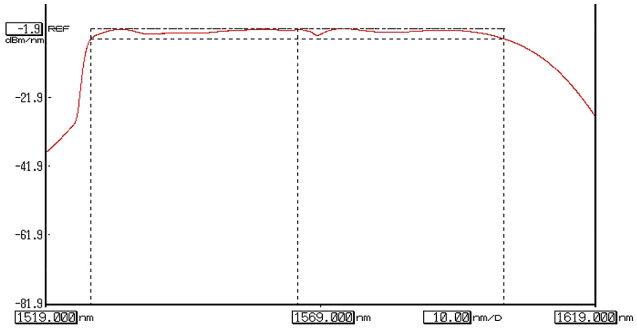
Typical Spectrums

- 4nm

- Broad



- Flat Broad



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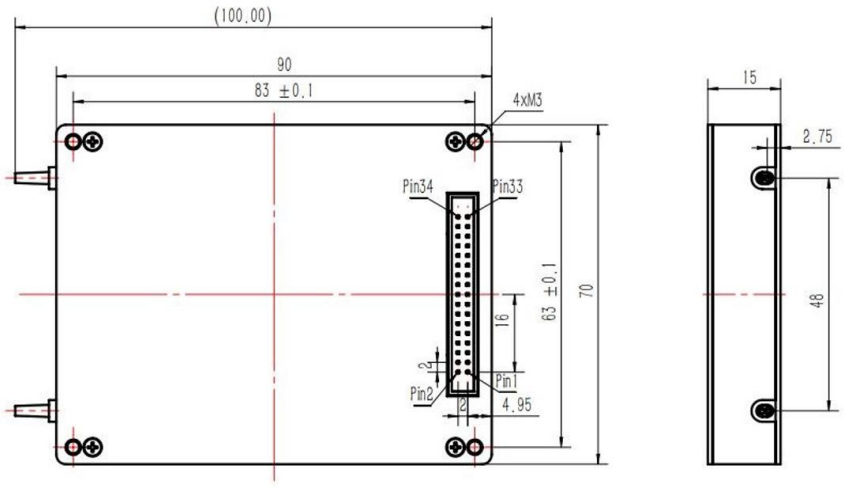
Mechanical Dimensions (mm) 30Pin 2.00mm pitch male socket



Pin #	Name	Attributes	Level Type
1	+5V	P	
2	+5V	P	
3	+5V	P	
4	+5V	P	
5	GND	P	
6	GND	P	
7	NC	F	
8	NC	F	
9	GND	p	
10	GND	p	
11	NC	F	
12	NC	F	
13	NC	F	
14	NC	F	
15	NC	F	
16	NC	F	
17	NC	F	
18	NC	F	
19	NC	F	
20	NC	F	
21	GND	P	
22	GND	P	
23	Serial port input	I	LVTTL
24	Serial port output	O	LVTTL
25	GND	P	
26	GND	P	
27	+5V	P	
28	+5V	P	
29	+5V	P	
30	+5V	P	

Parameter	Value	Unit
Baud rate	9600	Bit/s
Data bit	8	Bit
Stop bit	1	Bit
Parity bit	None	

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Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐
Prefix	**Power ***	**Wavelength**	**Polarization**	**Linewidth**	**Control PCB**	**Fiber Length**	**Connector ****
CSML-	100mW = 10 200mW = 20 500mW = 50 1W = 1W 2W = 2W	C = C C+L = B Special = 0	SM28 = 1 PM1550 = 2	0.4nm = 1 Broad = 2 Flat Broad = 3 Special = 0	Non = 1 USB = 2 Special = 0	0.5m = 1 1m = 2 1.5m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 High Power FC = H High Power FC/APC = L LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

* PM version max is 1W for one fiber. PM version has two fiber output with equal power

** Standard connectors support up to 0.5W; exceeding this limit may damage the connector and, in turn, the laser core due to strong reflections.

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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FUI Control PCB (attach to the device)