



Applications

- LIDAR Application, Development & Testing
- Research & Development

Features

- Wavelength: From 1545 nm to 1562 nm
- Mean Output Optical Power: 1W (Typ)
- Pulse Energy: 100 μ J (Max)
- Pulse Width: 4 ns (Typ)
- External Pulse Repetition Rate: 10 kHz (Min)
- ASE as low as 20 mW
- RS-232 Monitor and Control Interface
- Beam Divergence: <0.3 mrad (Max)
- Telcordia-Qualified Optical Components

The EMCORE High Power Optical Source for Light Detection And Ranging (LIDAR) is a pulsed, high power optical light source ideal for LIDAR system testing and development.

Housed in a self-contained, DC powered housing, it provides up to 1 W or more of mean power in the 1545 - 1562 nm wavelength region.

The unit integrates a high-performance 1550 nm directly modulated fiber optic laser and high power optical amplifier. By customer request an external (or adjustable internal) RF signal provides user control over the operating laser output pulse width and repetition rate. An RS-232 interface, along with some vital analog signals, provides user monitor and control of source laser and amplifier operation.

Optical Specifications

Parameter	Min	Typ	Max	Units
Operating Wavelength	1545	1550	1562	nm
Average Optical Output Power	-	1	-	W
Emission Bandwidth Energy	-	15	100	μ J in 5 nm
Output Waveform	N/A	Pulsed	N/A	
Optical Pulse Width (externally or internally controlled)	-	4	-	ns
Pulse Repetition Frequency	10	N/A	1,000	kHz
Amplified Spontaneous Emission (ASE)	-	20	-	mW (over 1550 \pm 7 nm)
Warm-Up Time	-	-	1	Minute
Output Polarization	N/A	Random	N/A	
Beam Quality	-	-	7.5	M ²
Optical Output Connector*	N/A	N/A	N/A	2 W average power capability (5 W peak)
Optical Output Fiber		50 μ m MM Fiber		

* - Any high power optical connector requested by customer (SC, FC, E2000 etc)

Physical Specifications

Parameters	Min	Typ	Max	Units
Operating Temperature	-40	-	55	°C
Storage Temperature	-55	-	85	°C
Operating Humidity	20	-	85	%, non-condensing
Exterior Dimensions*	-	9.5"W x 6.7"D x 1.5"H 24.13 cm W x 17.02 cm D x 3.81 cm H	-	
Housing Configuration	-	Self contained module (standard)	-	

* - Dimensions can vary depending on customer requirements

RF Specifications

Parameter	Min	Typ	Max	Units
Operating Bandwidth	-	50.0	1,000	kHz
RF Input Connector*	N/A	SMA Female	N/A	
RF Triggering Input Level	2.0	+3	+5	VDC (into 50Ω)

* - for external RF triggering signal

Electrical Specifications

Parameter	Min	Typ	Max	Units
Input Voltage	+5	+24	+36	VDC
Power Consumption	-	32	-	W
DC Power and Control Connector*	N/A	25 pin D connector	N/A	

* - Can be changed by customer request

Monitor and Control Parameters

Unit enable/disable

Unit/Lasers currents and temperature monitoring

Unit status summary alarm

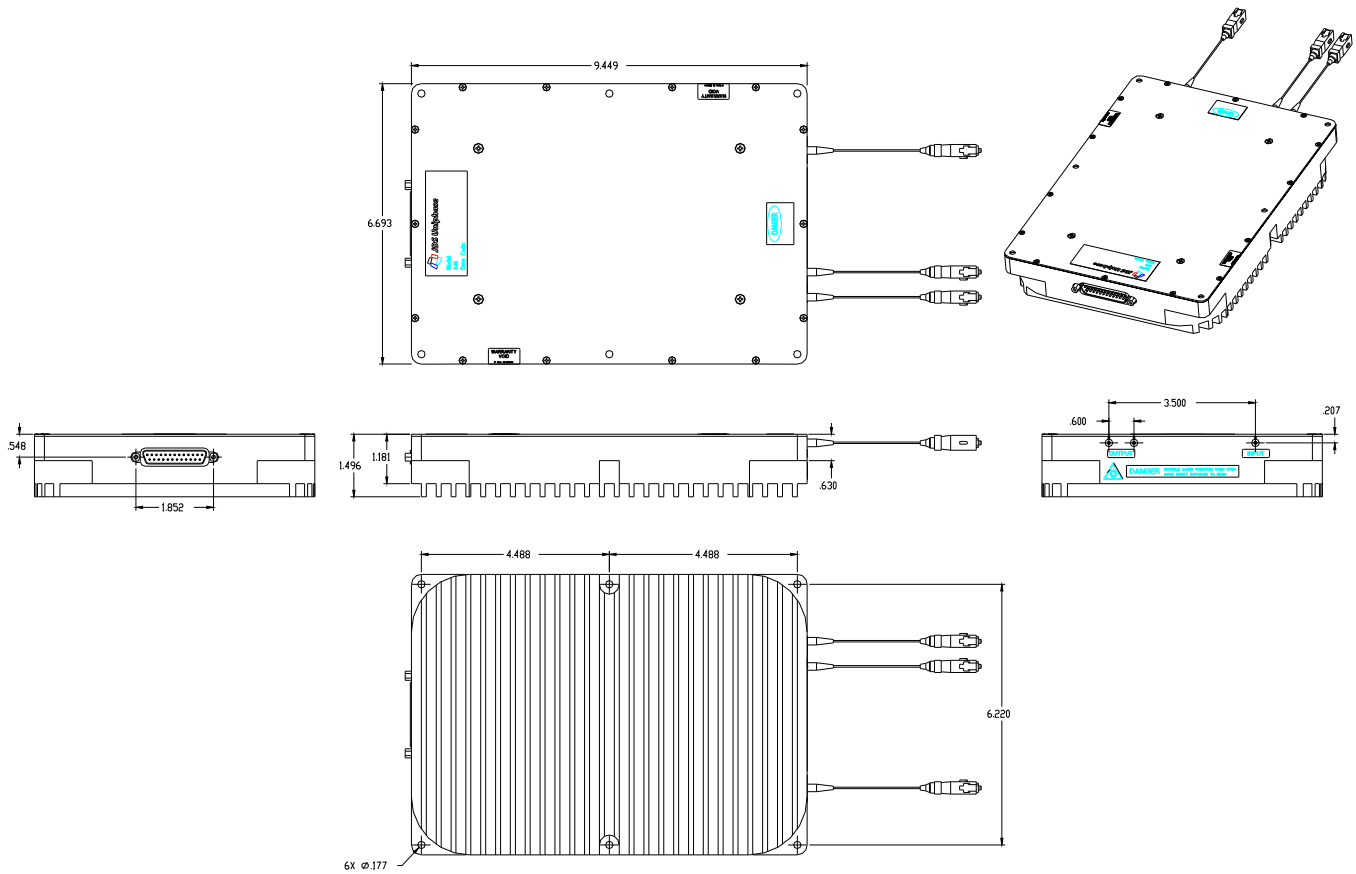
Any additional parameters are available for adjusting/monitoring per customer request.

Monitoring and Control can be performed via RS-232 computer interface or manually (via connector)

D-Connector Pin-Out (example)

Pin	Description
1,2,3,4,5	+24/+5 VDC
13,14,15,16,17	Ground
8	Unit Temperature
12	Laser Current Monitoring
9	Summary Alarm
10	RS-232 Tx
11	RS -232 Rx

Outline Drawing



Qualifications

All components meet Telcordia GR-1312 and GR-486 standards
Fit Rate: 90% level of confidence < 2000 @ 30°C

Laser Safety Information

This product meets the applicable requirements of 21 CFR 1010 & 1040 and is classified as a Class IV laser product based on the maximum optical output power shown below. During use as intended, the laser energy is fully contained within the fiber network such that there is no accessible laser radiation and would meet the requirements for a Class I laser product. The laser product report has been submitted to the CDRH and the accession number is expected by October 2006.

Wavelength = 1540 ~ 1562 nm (dependant on input source)

Maximum Average Output Power = 6.0 W (single output)



AVOID EXPOSURE - INVISIBLE LASER RADIATION IS
EMITTED FROM THIS APERTURE