



ExOptronics, Inc

www.exoptronics.com

Phone: 1-310-9286368

Fax: 1-310-579-6582

EX-UNL754-XX-XX 1550nm Narrow Linewidth Laser Module

REV 002

Description

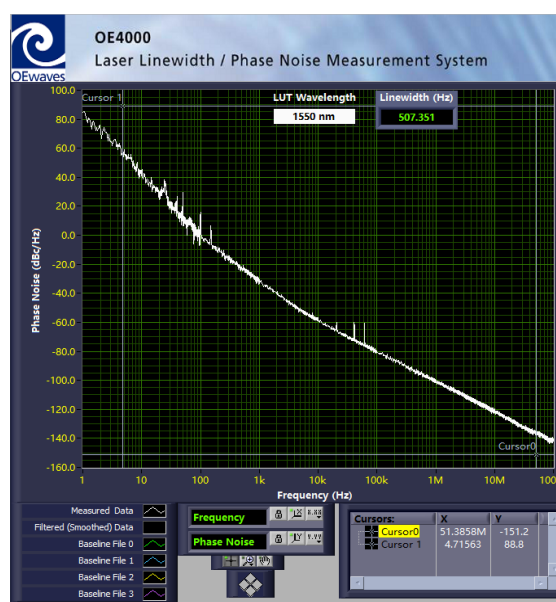
The **EX-UNL754-XX-XX** laser module features ultra narrow linewidth, excellent output stability over a wide temperature range. **EX-UNL754-XX-XX** combines narrow linewidth laser module and low noise current/temperature controller board in various form factors. With a single 5 V power supply, the control board provides up to 200 mA to LD and 1.7 A to TEC. It is interfaced in RS232 with flexible setting change and powerful monitoring.

Key features

- ☐ Ultra Narrow linewidth (lower < 1KHz)
- ☐ PM fiber
- ☐ Low noise current/temperature controller board
- ☐ Telcordia GR-468 compliant
- ☐ RoHS compliancy

Applications

- ☐ Coherent Communication
- ☐ Optical Sensing
- ☐ Coherent LiDAR
- ☐ Hydrophone
- ☐ Atomic Physics
- ☐ Seed Laser
- ☐ Laser Spectroscopy



Absolute Maximum Rating:

Parameter	Symbol	Condition	Min	Max	Unit
Storage Temperature	T_{stg}	--	-40	85	°C
Operating Case Temperature	T_c	$I=I_{op}$	-15	65	°C
Voltage Supply	V_{cc}	--	-4.7	5.5	V
Power Adjust Voltage	V_{pa}	--	0	3.5	V
Laser Reverse Bias	V_r	--	--	2	V
Photodiode Reverse Bias	V_{rpd}	--	--	V_{cc}	V
TEC Current	I_{TEC}	--	--	1.7	A
TEC Voltage	V_{TEC}	--	--	5	V

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Module electro-Optical Characteristics (Tc=25° C, unless stated otherwise)

Parameter	Sym	Condition	Min	Typ	Max	Units
Output Optical Power	P _f	CW	-	10		mW
Power stability over case temperature	dP _f	0 to 70 °C	-	±10	-	%
		10 to 55 °C	-	±5	-	
		< ±1 °C	-	-	±0.5	
Center Wavelength	λ _c	± 40 pm standard	See options			nm
Wavelength tuning by Temp	Δλ _T	TEC temperature change	100	-	190	pm
Side-mode Suppression ratio	SMSR	CW, at specified P _f	40	50	-	dB
Wavelength stability over case temperature range	dλ _c	0 to 70 °C	-	±10	-	pm
		10 to 55 °C	-	±5	-	
		< ±1 °C			±0.5	
Optical S/N Ratio	S/N	spontaneous noise levels at λ _c +/-1 nm	60	-	-	dB
Relative intensity noise	RIN	> 1kHz	-	-	-140	dB/Hz
		>500KHz	short noise limited			
Linewidth by Self-heterodyne Lorentzian linewidth model	ν	CW, at specified P _f	See options			KHz
Frequency Noise	FrN	@1 MHz offset freq	-	20	100	Hz ² /Hz
Optical Isolation	ISO	-	40	-	-	dB
Polarization Extinction Ratio	PER	E-field slow axis(aligned to connector key)	18	23	-	dB
Operating temperature range	T _c		0		70	°C

Linewidth is measured by in-house Self-heterodyne Linewidth Measurement setup

Module controller board Specs:

PARAMETERS	Min	Typical	Max	Unit
Laser Temperature Range	15	25	35	°C
Laser Temperature Stability	0.003	0.008	0.01	°C
TEC output Current	-1.7		1.7	A
TEC output Voltage	-5		5	V
Laser Current Range	1		200	mA
Power Supplies DC +5V			3	A

- Temperature set = 25 °C is on 10 kΩ thermistor
- 5V/6A DC power supply is included
- Heatsink is optional

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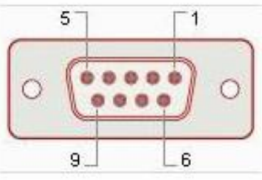
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Conn

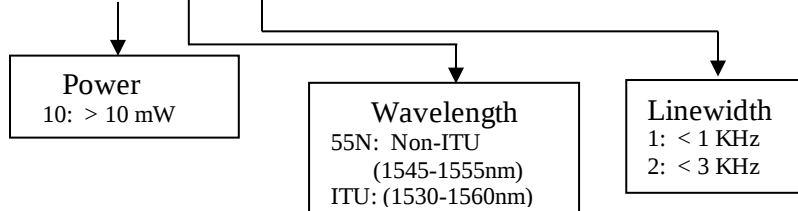
ector/Control interface:

	Pin number	Pin name	Pin function
	1	+5V	+5V DC Power interface
	5	GND	Ground interface
	2	TX	Transmit Data
	3	RX	Receive Data
	4、6、7、8、9	N/C	NA

1. Without software control, all parameters are preset to the default setting once 5V is applied.
2. With RS232 communication interfacing, flexible setting can be applied. (software will be provided)
3. RS232 communication code are provided, controller software is provided upon the request.

Ordering Options: (FC/APC connector is standard fiber connector)

EX-UNL754-XX-XX-X



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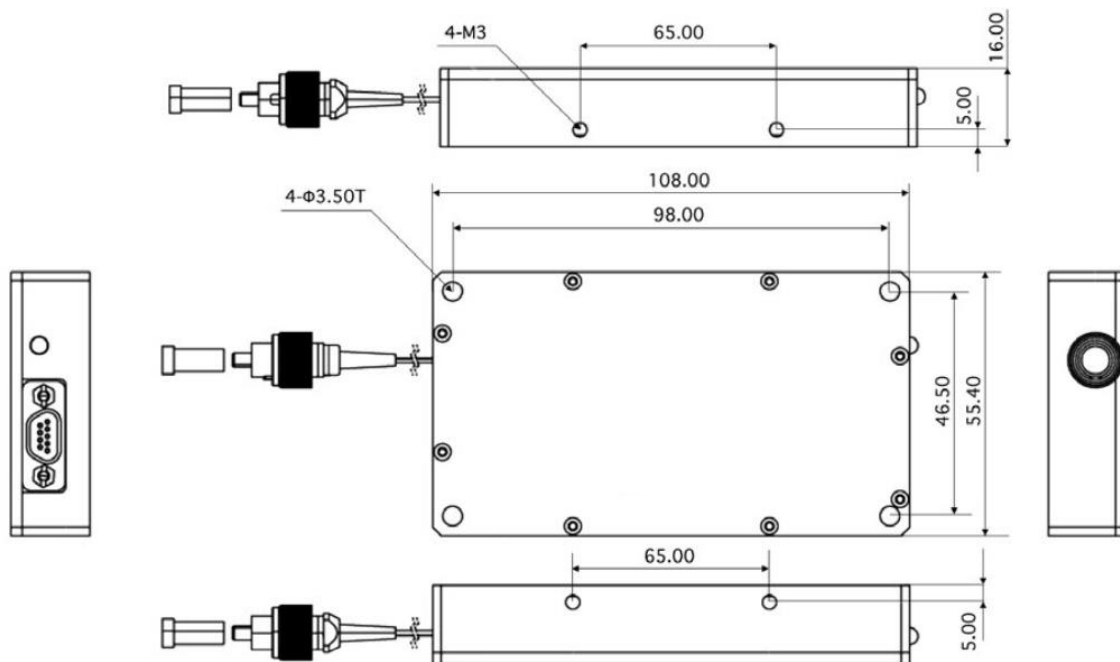
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Outline Drawing - Unit: mm



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