


980nm Pump Laser Module Grating Stabilized, 750mW LC962U P

Features:

- Fiber Bragg grating wavelength stabilization
- High output power, up to 750mW kink free
- Polarization maintaining fiber pigtail
- Internal thermoelectric heatpump and monitor photodiode
- Hermetically sealed 14 pin butterfly package
- Telcordia GR-468-CORE compliant
- Field-proven high reliability
- RoHS compliant 

Applications:

- Low noise EDFA
- Dense wavelength division multiplexing EDFA
- CATV



These lasers are designed as pump sources for erbium doped fiber amplifier (EDFA) applications. Processes and techniques of coupling the fiber to the laser allow high output powers that are very stable with both time and temperature. The grating is located in the pigtail to stabilize the wavelength.

The LC962U P series pump module utilizes a fiber Bragg grating design for enhanced wavelength and power stability performance. This product has been designed to ensure superior wavelength locking over drive current, temperature and optical feedback changes.

Devices are available with kink free output powers to 750mW.

Operating Characteristics

Conditions unless otherwise stated: Case temperature -20 to 75°C
 Submount temperature 20°C
 Monitor diode bias -5V
 Wavelength = 974nm, CW operation
 Operating power assumes a 10% ageing margin

Product Code	Operating Power	Kink Free Power
LC962UA74P-20R	570mW	625mW
LC962UB74P-20R	590mW	650mW
LC962UC74P-20R	615mW	675mW
LC962UD74P-20R	635mW	700mW
LC962UE74P-20R	660mW	725mW
LC962UF74P-20R	680mW	750mW

Parameter	Min	Typ	Max	Unit
Threshold current (I_{th})		40	55	mA
Operating drive current (I_f)			1200	mA
Forward voltage		2.2	2.6	V
Centre wavelength (λ_c)		974		nm
Spectral width (RMS @ -13dB)		0.2	1	nm
Spectrum stability ($t = 60$ secs)			± 0.2	nm
Signal to noise ratio	20			dB
Temperature dependence of peak wavelength			0.02	nm/°C
Wavelength tolerance			± 1	nm
Monitor detector responsivity	1		10	$\mu A/mW$
Monitor dark current			50	nA
Thermistor resistance (at 20°C)	9.5	10	10.5	k Ω
Thermistor BETA value ($\pm 1\%$)	3539	3575	3611	K
Intended laser submount operating temperature	18	20	22	°C
Power stability Peak-to-peak, $t = 60s$, DC to 50kHz sampling, $T_c = 25^\circ C$				
>30mW			0.15	dB
20 – 30mW			0.10	dB
10 – 20mW			0.20	dB
5 – 10mW			0.35	dB
Heatpump current ($\Delta T = 55^\circ C$, $I_f = 1200mA$)			2.2	A
Heatpump voltage ($\Delta T = 55^\circ C$, $I_f = 1200mA$)			3.3	V

Absolute Maximum Ratings

Parameter	Min	Max	Unit
Operating temperature	-20	75	°C
Storage temperature	-40	85	°C
Laser forward current		1500	mA
Laser reverse voltage		2	V
ESD Voltage (HBM, C = 100pF, R = 1.5kΩ)		500	V
Heatpump current		2.4	A
Lead soldering temperature (10s max)		350	°C
Fibre bend radius	20		mm

Package Outline Drawing and Dimensions

GENERAL TOLERANCE : ± 0.1
DIMENSIONS IN MM U.O.S

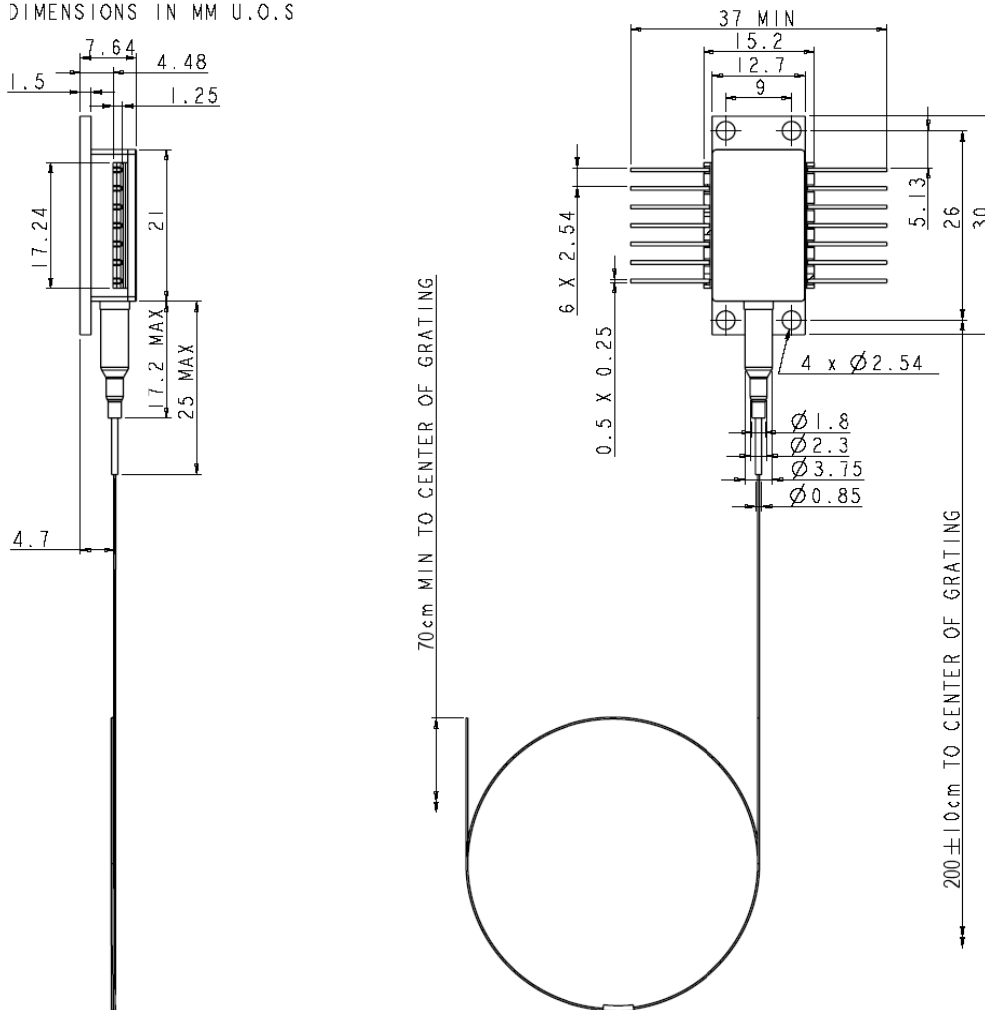


Figure 1: Package Outline Drawing and Dimensions (mm)

Fiber Specification

Parameter	Note	Min	Typ	Max	Unit
Fiber type	Nufern PM980-HP or equivalent, 250 μm				
Fiber termination	Bare fiber, rough cleave				
Cut-off wavelength		830	900	970	nm
Mode field diameter	@ 980nm	5.6	6.6	7.6	μm
Cladding diameter		124	125	126	μm
Fiber coating diameter	Acrylate material, mechanically strippable	230	245	260	μm
Grating recoat diameter		260	280	300	μm
Core/cladding concentricity				<0.5	μm
Coating-clad offset				≤ 5	μm
Fiber proof test		150			kpsi

Connections

Pin #	Description	Pin#	Description
1	Peltier cooler (+)	8	Not connected
2	Thermistor	9	Not connected
3	Monitor anode (-)	10	Laser anode (+)
4	Monitor cathode (+)	11	Laser cathode (-)
5	Thermistor	12	Not connected
6	Not connected	13	Case ground
7	Not connected	14	Peltier cooler (-)

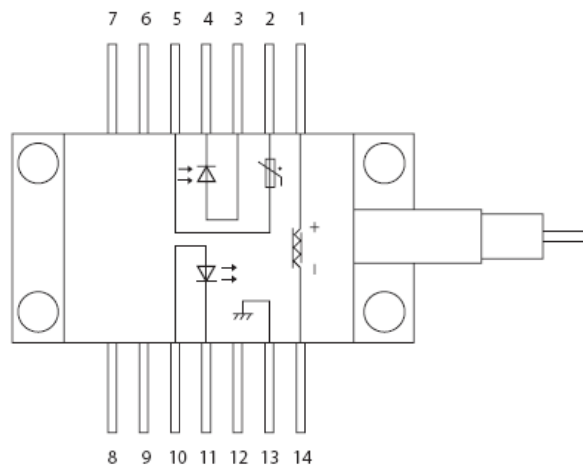


Figure 2: Connections

RoHS Compliance



Oclaro is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Contact Information

www.oclaro.com

Ordering Information

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Patents

This product is protected by US patent numbers 6,359,330, 6,528,329, 6,782,024, 6,798,815, 6,837,075, 7,173,953 and 7,218,659 and other patents and applications pending worldwide.

Contact Information

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Important Notice

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