High Power 980nm Pump Laser Module - Grating Stabilized, 600mW

LC96

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.

Devices are available with kink free output powers to 600mW.

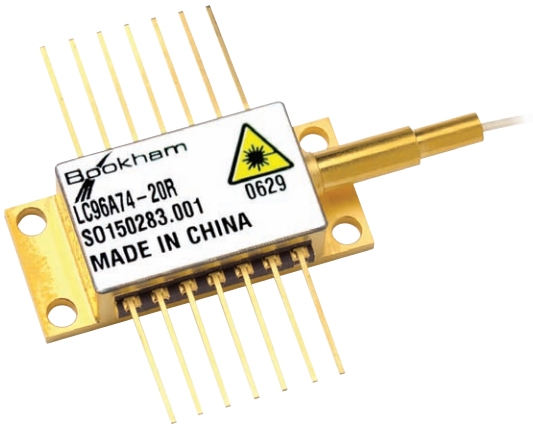
The LC96 series pump module utilises a double Fiber Bragg Grating design for enhanced wavelength and power stability performance. This product has been designed to ensure superior wavelength locking over drive current, temperature and optical feedback changes.

Features:

- Double Fiber Bragg Grating wavelength stabilization
- High output power, up to 600mW 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 erbium doped fiber amplifiers (EDFAs)
- Dense wavelength division multiplexing (DWDM) EDFAs
- CATV Applications



Characteristics

Conditions unless otherwise stated:

Case temperature -20 to +75°C
Submount temperature 25°C
Monitor diode bias -5V
CW operation

Kink-free fiber-coupled output power
LC96*74-20R – 974nm
LC96*76-20R – 976nm

LC96A7*-20R 400mW
LC96B7*-20R 410mW
LC96C7*-20R 420mW
LC96D7*-20R 430mW
LC96E7*-20R 440mW
LC96F7*-20R 450mW
LC96G7*-20R 460mW
LC96H7*-20R 470mW
LC96J7*-20R 480mW
LC96K7*-20R 490mW

LC96L7*-20R 500mW
LC96M7*-20R 510mW
LC96N7*-20R 520mW
LC96P7*-20R 530mW
LC96R7*-20R 540mW
LC96S7*-20R 550mW
LC96T7*-20R 560mW
LC96U7*-20R 570mW
LC96V7*-20R 580mW
LC96W7*-20R 590mW
LC96AA7*-20R 600mW

Parameter	Min	Typ	Max	Unit
Threshold current (I_{th})		40	55	mA
Operating drive current ($_{If}$)			950	mA
Forward voltage		2.2	2.5	V
Centre wavelength (λ_c)		974		nm
		976		nm
Spectrum stability (t = 60 secs)			±0.2	nm
Temperature dependence of peak wavelength			0.02	nm/°C
Wavelength tolerance			±1.0	nm
Monitor detector responsivity	1.0		10	µA/mW
Monitor dark current			50	nA
Thermistor resistance (at 25°C)	9.5	10	10.5	kΩ
Power Stability Peak-to-peak, T = 60s, DC to 50kHz sampling, T_c = 25°C >30mW 20 – 30mW 10 – 20mW			 0.15 0.25 0.50	 dB dB dB
Heatpump current (ΔT = 50°C, I_f = I_f max)			1.8	A
Heatpump voltage (ΔT = 50°C, I_f = I_f max)			3.0	V

Absolute Maximum Ratings

Parameter	Min	Max	Unit
Operating temperature	-20	75	°C
Storage temperature	-40	85	°C
Laser forward current		1200	mA
Centre wavelength λ_c		2	V
Heatpump current		2.2	A
Lead soldering temperature (10s max)		260	°C
Fibre bend radius	30		mm

Package Outline Drawing and Dimensions

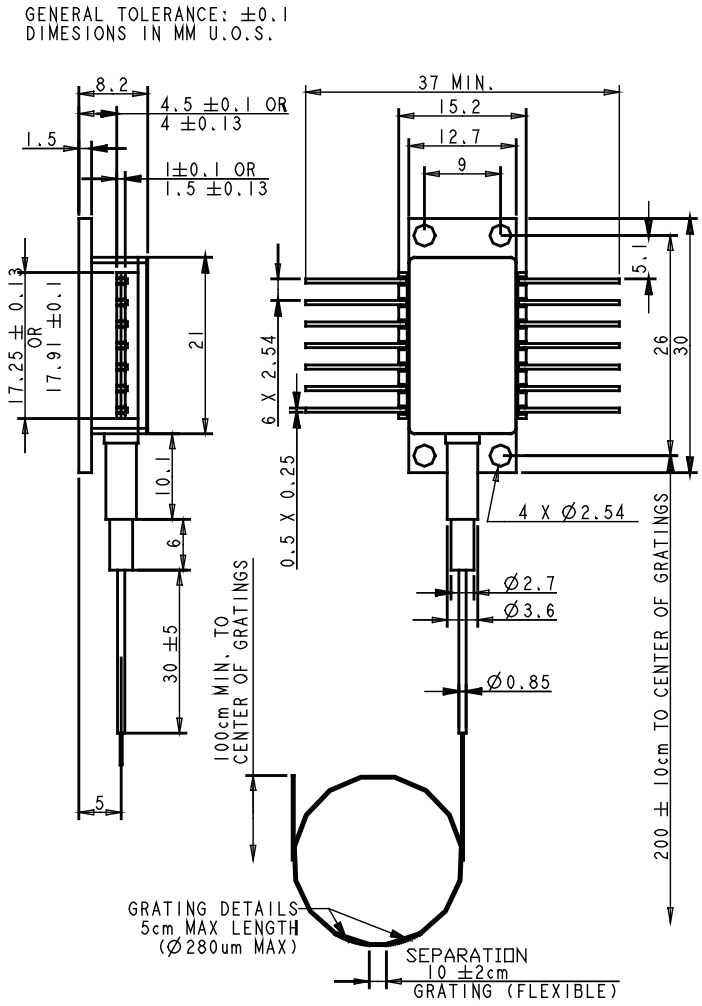


Figure 1: Package Outline Drawing and Dimensions (mm)

Fiber Specification

Nufern PM980-HP or equivalent 250µm primary coated.

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 (-)

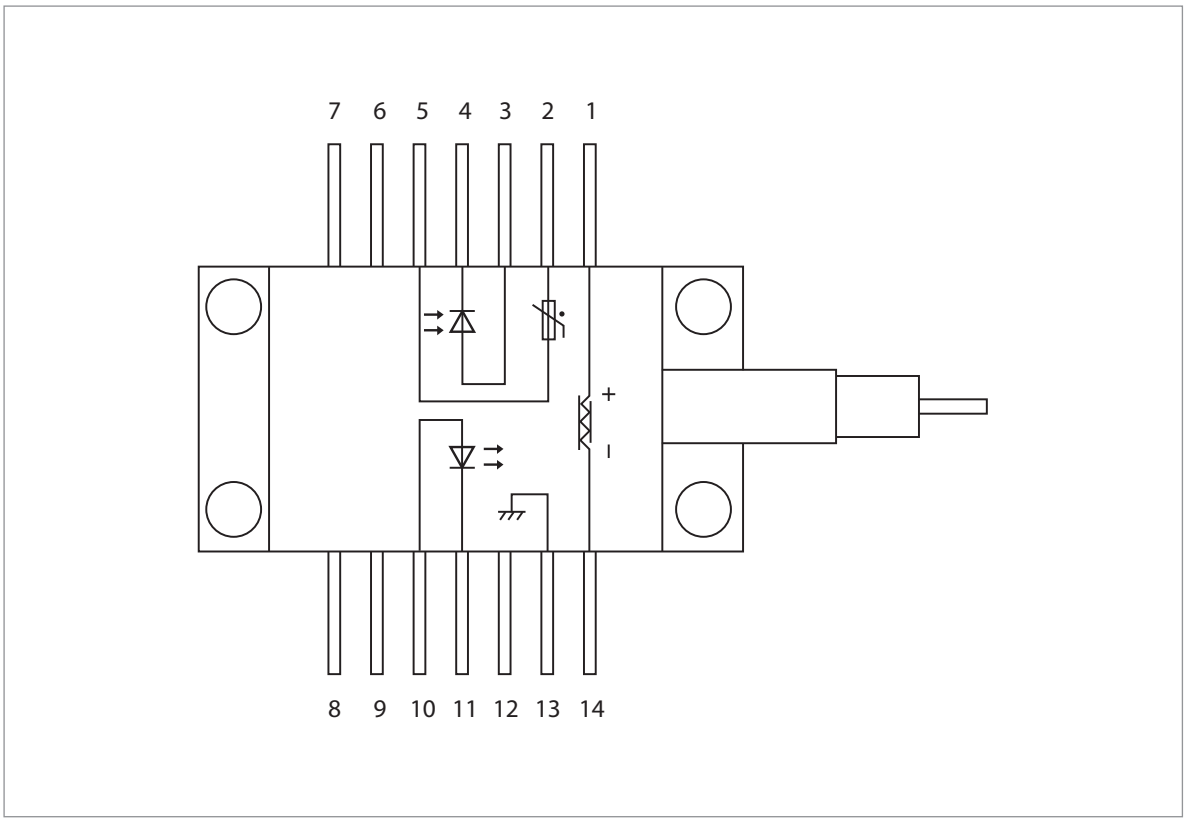


Figure 2: Connections

RoHS Compliance

Bookham 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.

Ordering Information:

LC96A74-20R 400mW
LC96B74-20R 410mW
LC96C74-20R 420mW
LC96D74-20R 430mW
LC96E74-20R 440mW
LC96F74-20R 450mW
LC96G74-20R 460mW
LC96H74-20R 470mW
LC96J74-20R 480mW
LC96K74-20R 490mW
LC96L74-20R 500mW
LC96M74-20R 510mW
LC96N74-20R 520mW
LC96P74-20R 530mW
LC96R74-20R 540mW
LC96S74-20R 550mW
LC96T74-20R 560mW
LC96U74-20R 570mW
LC96V74-20R 580mW
LC96W74-20R 590mW
LC96AA74-20R 600mW
LC96A76-20R 400mW
LC96B76-20R 410mW
LC96C76-20R 420mW
LC96D76-20R 430mW
LC96E76-20R 440mW
LC96F76-20R 450mW
LC96G76-20R 460mW
LC96H76-20R 470mW
LC96J76-20R 480mW
LC96K76-20R 490mW
LC96L76-20R 500mW
LC96M76-20R 510mW
LC96N76-20R 520mW
LC96P76-20R 530mW
LC96R76-20R 540mW
LC96S76-20R 550mW
LC96T76-20R 560mW
LC96U76-20R 570mW
LC96V76-20R 580mW
LC96W76-20R 590mW
LC96AA76-20R 600mW

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ISO14001:1996
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TL9000 Rev 3.0 (ISO9001:2000)
FM15040



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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