


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.

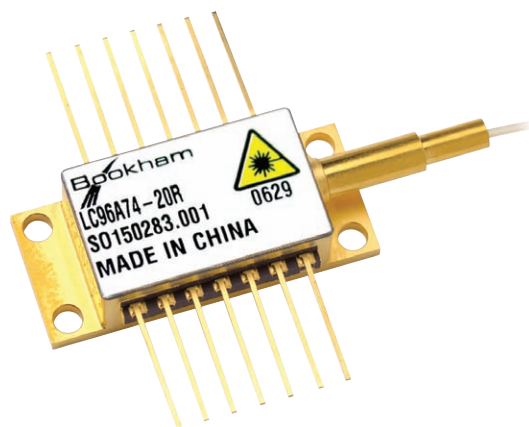
The LC96 series pump module utilises a double Fiber Bragg Grating design for enhanced wavelength and power stability performance. This product has been designed to ensure superior wavelength locking over drive current, temperature and optical feedback changes.

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

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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 (I_f)			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			0.15	dB
20 – 30mW			0.25	dB
10 – 20mW			0.50	dB
Heatpump current ($\Delta T = 50^\circ C, I_f = I_f \text{ max}$)			1.8	A
Heatpump voltage ($\Delta T = 50^\circ C, I_f = I_f \text{ max}$)			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

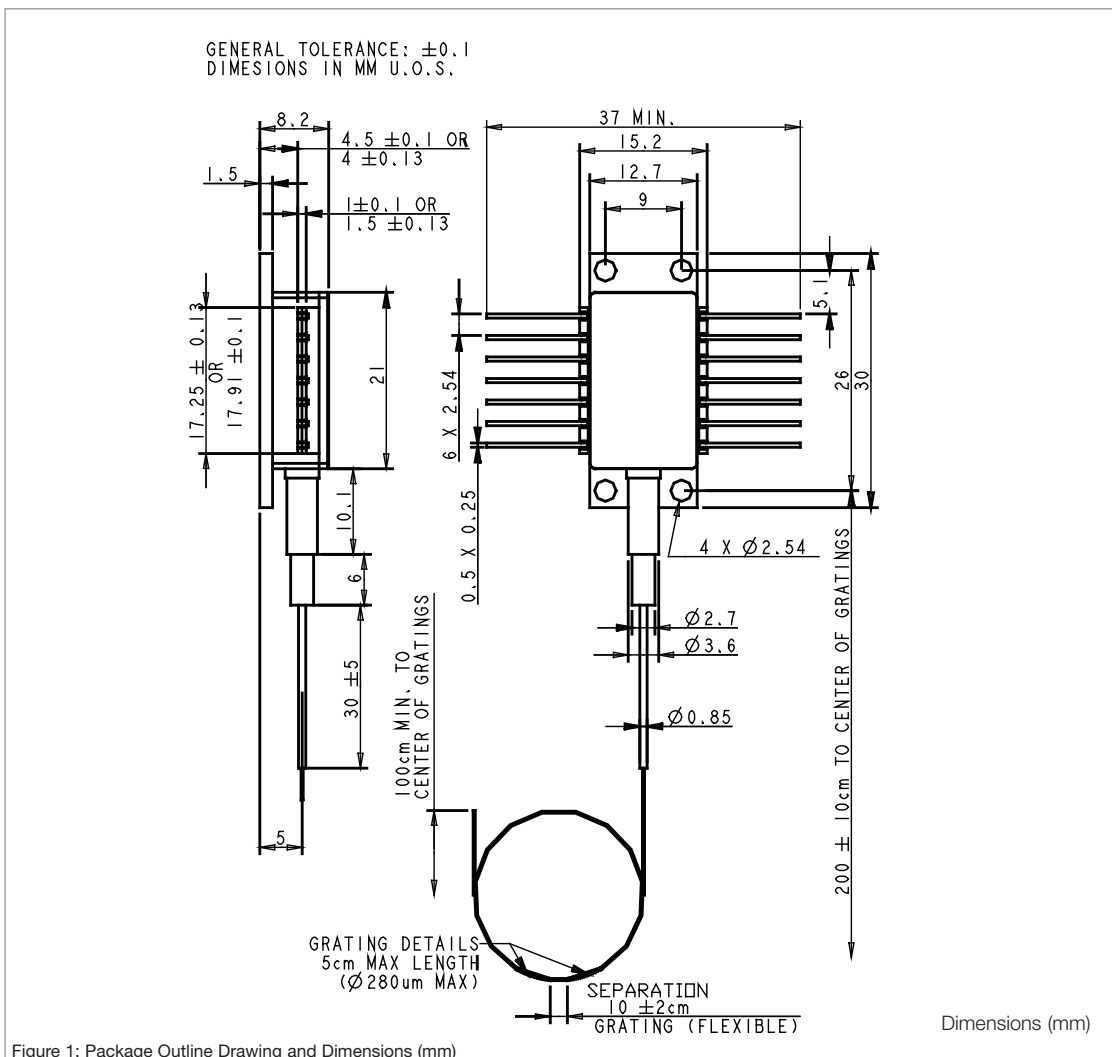


Figure 1: Package Outline Drawing and Dimensions (mm)

3 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 (-)

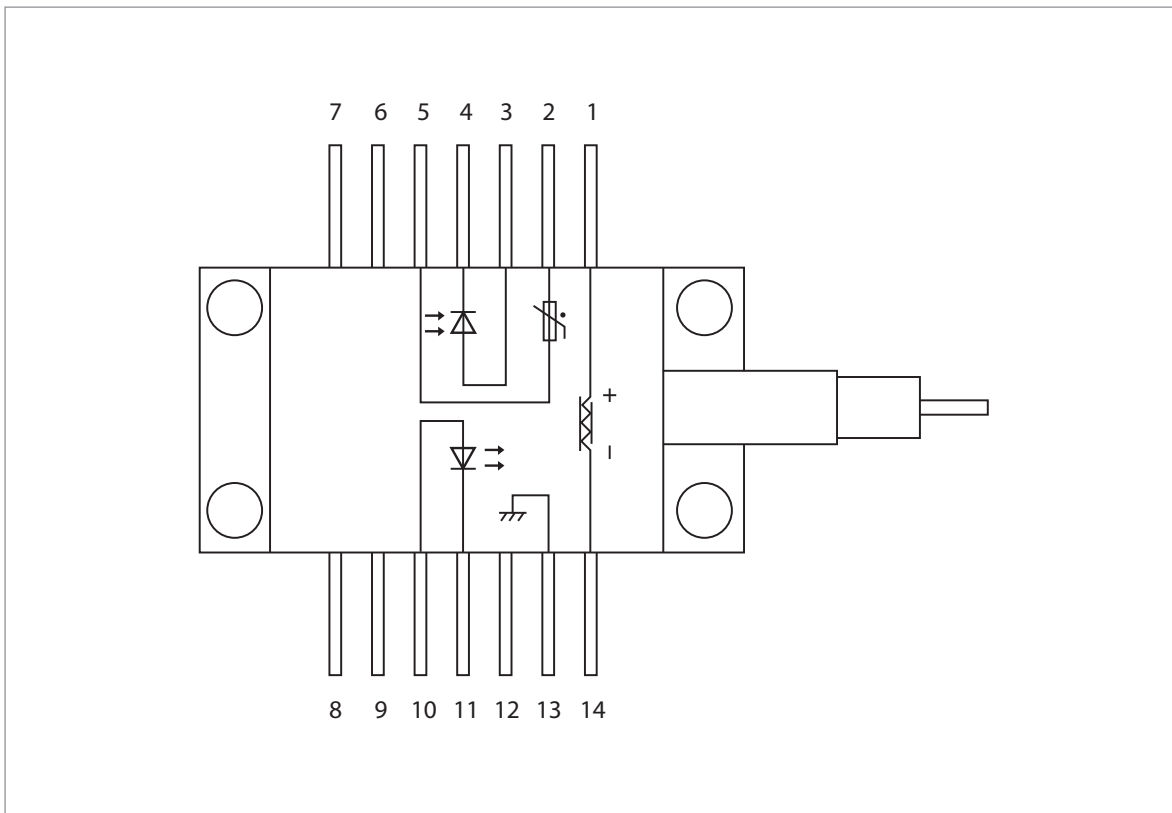


Figure 2: Connections

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

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Edition 1.2



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