980nm Pump Laser Module - Grating Stabilized, 300mW LC94

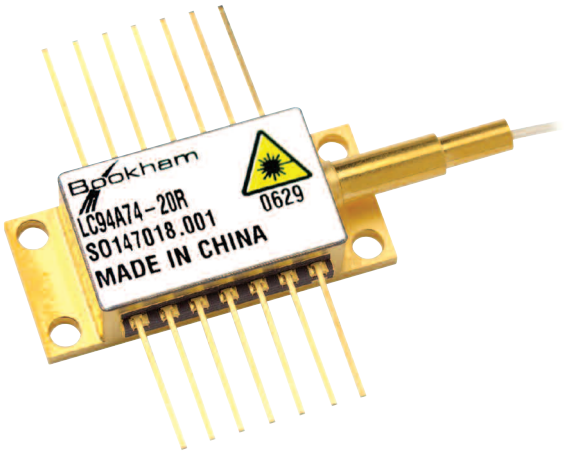
These lasers are designed as pump sources for Erbium-Doped Fiber Amplifier (EDFA) applications. Processes and techniques of coupling the fiber to the laser allow high output powers that are very stable with both time and temperature. The grating is located in the pigtail to stabilize the wavelength. Devices are available with kink free output powers to 300mW. The LC94 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 300mW kink free
- Single-mode 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 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:
(Wavelength = 974nm)

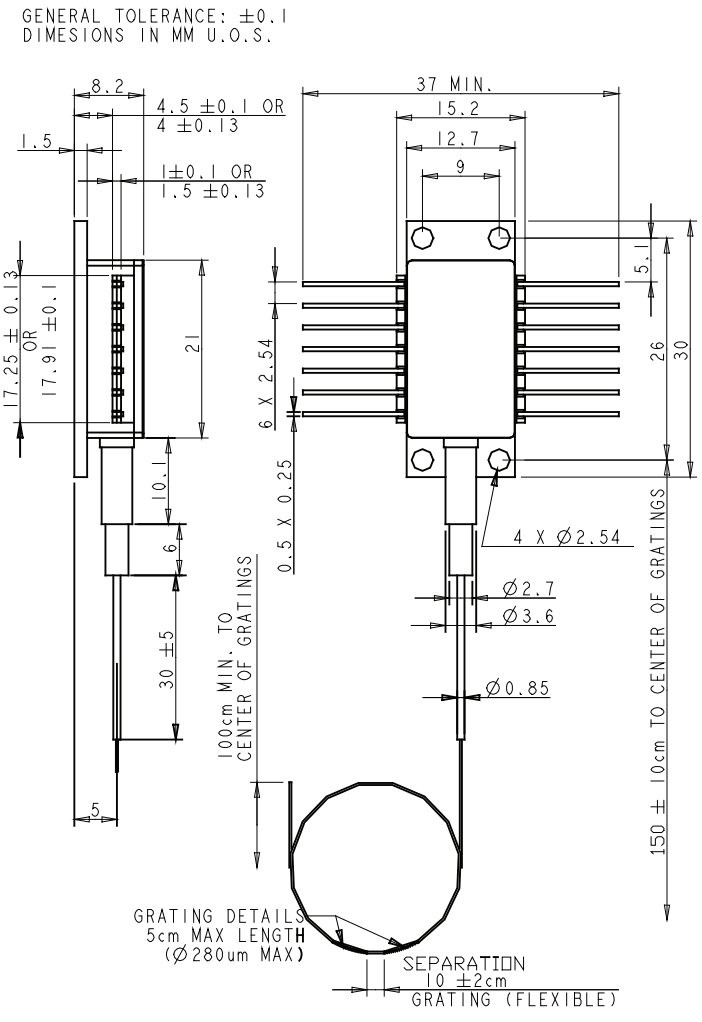
LC94ZC74-20R	100mW	LC94A74-20R	200mW
LC94ZD74-20R	110mW	LC94B74-20R	210mW
LC94ZE74-20R	120mW	LC94C74-20R	220mW
LC94ZF74-20R	130mW	LC94D74-20R	230mW
LC94ZG74-20R	140mW	LC94E74-20R	240mW
LC94ZH74-20R	150mW	LC94F74-20R	250mW
LC94ZJ74-20R	160mW	LC94G74-20R	260mW
LC94ZK74-20R	170mW	LC94H74-20R	270mW
LC94ZL74-20R	180mW	LC94J74-20R	280mW
LC94ZM74-20R	190mW	LC94K74-20R	290mW
		LC94L74-20R	300mW

Parameter		Min	Typ	Max	Unit
Threshold current (I_{th})			30	40	mA
Operating drive current (I_f)	ZC thru ZD			250	mA
	ZE thru ZF			300	mA
	ZG thru ZJ			350	mA
	ZK thru ZM			400	mA
	A thru B			450	mA
	C thru E			500	mA
	F thru K			550	mA
	L			600	mA
Forward voltage (V_f)			1.9	2.5	V
Centre wavelength (λ_c)			974		nm
Spectral width (RMS @ -13dB)			0.2	1	nm
Spectrum stability (t = 60s)				±0.5	nm
Temperature dependence of peak wavelength				0.02	nm/°C
Wavelength tolerance				±0.5	nm
Monitor detector responsivity		1.0	8	25	µA/mW
Monitor dark current				50	nA
Thermistor resistance (at 25°C)		9.5	10	10.5	kΩ
Intended laser submount operating temperature		20	25	30	°C
Power stability Peak-to peak, t = 60s, DC to 50kHz sampling, T_C = 25°C >20mW 10-20mW				 0.05 0.1	 dB dB
Laser temperature, R = 10kΩ		23.5		26.5	°C
Heatpump current (ΔT = 50°C, I_f = 500mA)				1.3	A
Heatpump voltage (ΔT = 50°C, I_f = 500mA)				2.8	V

Absolute Maximum Ratings

Parameter	Min	Max	Unit
Operating temperature	-20	75	°C
Storage temperature	-40	85	°C
Laser forward current		800	mA
Laser reverse voltage		2	V
Heatpump current		1.8	A
Lead soldering temperature (10s max)		260	°C
Fibre bend radius	30		mm

Package Outline Drawing and Dimensions

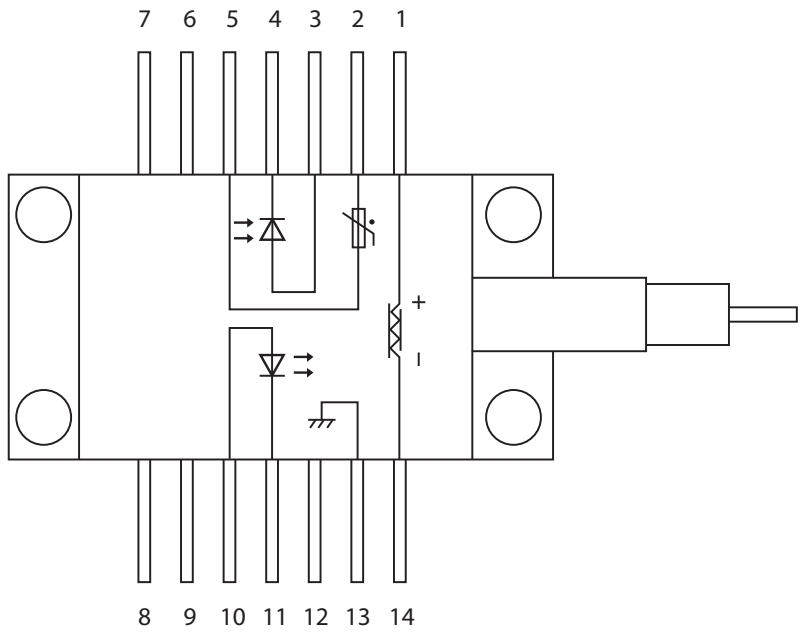


Fiber Specification

Puremode HI980 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 (-)



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:

LC94ZC74-20R for 100mW device
LC94ZD74-20R for 110mW device
LC94ZE74-20R for 120mW device
LC94ZF74-20R for 130mW device
LC94ZG74-20R for 140mW device
LC94ZH74-20R for 150mW device
LC94ZJ74-20R for 160mW device
LC94ZK74-20R for 170mW device
LC94ZL74-20R for 180mW device
LC94ZM74-20R for 190mW device
LC94A74-20R for 200mW device
LC94B74-20R for 210mW device
LC94C74-20R for 220mW device
LC94D74-20R for 230mW device
LC94E74-20R for 240mW device
LC94F74-20R for 250mW device
LC94G74-20R for 260mW device
LC94H74-20R for 270mW device
LC94J74-20R for 280mW device
LC94K74-20R for 290mW device
LC94L74-20R for 300mW device

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