

## 980nm Pump Laser Module - Grating Stabilised, 400 mW

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

Devices are available with kink free output powers to 400mW.

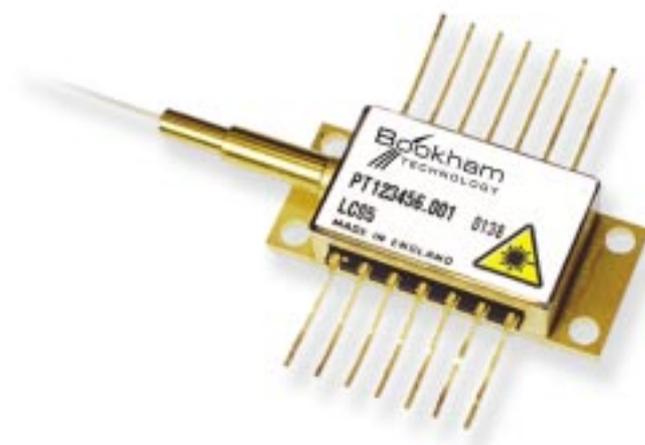
The LC95 series pump module utilises a double Fibre Bragg Grating design for enhanced wavelength and power stability performance. This product has been designed to ensure superior wavelength locking over drive current, temperature and optical feedback changes.

### Features

- Double Fibre Bragg grating stabilisation
- High output power, up to 400 mW kink free
- Single mode fibre pigtail
- Internal thermoelectric heatpump and monitor photodiode
- Hermetically sealed 14 pin butterfly package
- Telcordia GR-468-CORE in progress

### Applications

- Low noise erbium doped fibre 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	-5 V
	CW operation	

Kink free fibre coupled output power:	Wavelength	974 nm	Wavelength	974 nm
	LC95A74-20	300mW	LC95B74-20	310mW
	LC95C74-20	320mW	LC95D74-20	330mW
	LC95E74-20	340mW	LC95F74-20	350mW
	LC95G74-20	360mW	LC95H74-20	370mW
	LC95J74-20	380mW	LC95K74-20	390mW
	LC95L74-20	400mW		

Parameter	Min	Typ	Max	Unit
Threshold current ( $I_{th}$ )		35	45	mA
Operating drive current ( $I_f$ )			650 700	mA
	A thru F G thru L			
Forward voltage		1.9	2.5	V
Peak wavelength ( $\lambda_p$ )	974		980	nm
Spectrum stability (t = 60 secs)			±0.2	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, Tc = 25°C				
+20mW			0.2	dB
10 – 20mW			0.5	dB
3.5 – 10mW			1	dB
Heatpump current ( $\Delta T = 50^\circ C$ , $I_f = 700$ mA)			1.5	A
Heatpump voltage ( $\Delta T = 50^\circ C$ , $I_f = 700$ mA)			2.8	V

## Absolute Ratings

Parameter	Min	Max	Unit
Operating temperature	-20	75	°C
Storage temperature	-40	85	°C
Laser forward current		1000	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

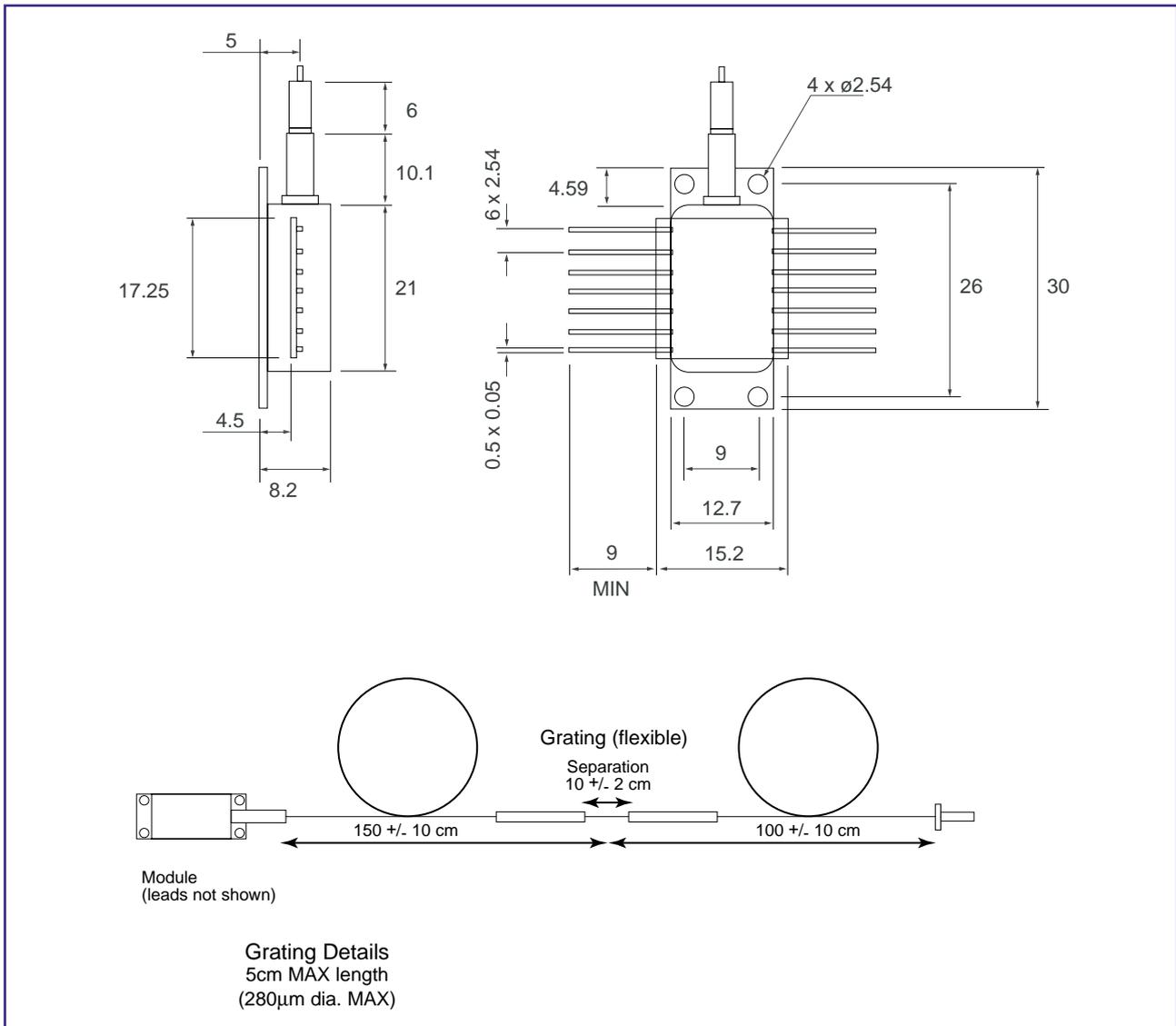


Figure 1: Package Outline Drawing and Dimensions (mm)

## 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 (-)

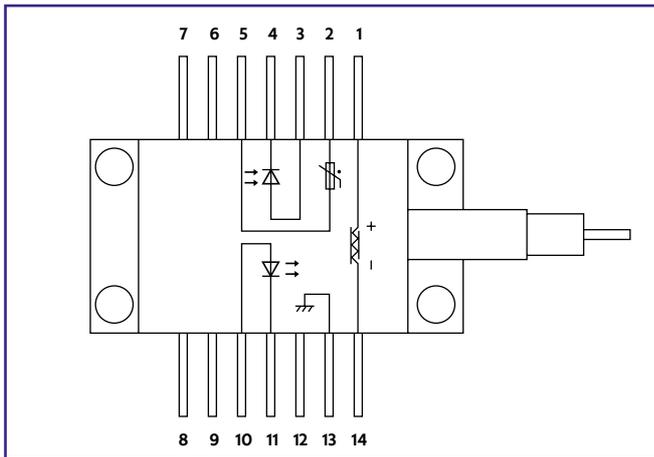


Figure 2: Connections

## Ordering Information

Order Code No:

LC95A74-20	300mW	LC95B74-20	310mW
LC95C74-20	320mW	LC95D74-20	330mW
LC95E74-20	340mW	LC95F74-20	350mW
LC95G74-20	360mW	LC95H74-20	370mW
LC95J74-20	380mW	LC95K74-20	390mW
LC95L74-20	400mW		

The above codes are for a 974 nm device.  
Other wavelengths may be supplied on request.



Thinking optical solutions

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