LC92 980nm Pump Laser Module

Grating Stabilized 80-220mW

Features

Wavelength stabilized.

High output power up to 220mW.

Single mode fiber pigtail.

Internal thermoelectric heatpump and monitor photodiode.

Hermetically sealed 14 pin butterfly package.

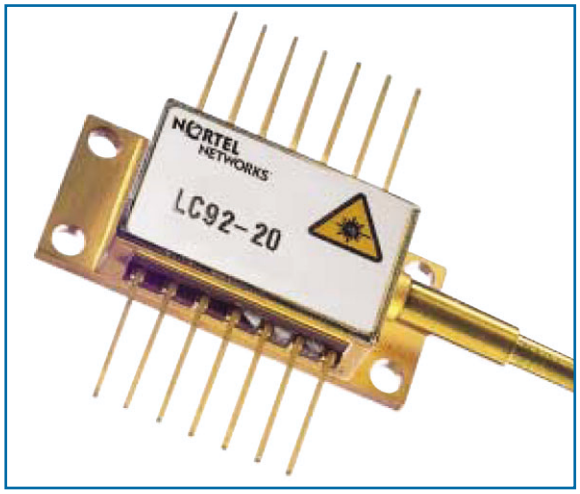
Telcordia GR-468-CORE Compliant.

Applications

Low noise EDFA, DWDM EDFA.

These lasers are designed as pump sources for Erbium-Doped Fiber Amplifier (EDFA) applications. Proprietary processes and techniques of coupling the fiber to the laser allow high output powers which 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 from 80mW to 220mW.

In order to ensure highly stable power and wavelength characteristics, Nortel recommends that the device is operated with dither applied to the laser drive current. The recommended dither conditions are 40mA peak-to-peak at 2MHz and can be achieved by applying a 2V pk-pk square wave modulation at 2MHz into 50Ω.



NORTEL NETWORKS™

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	Wavelength	974nm	Wavelength	974nm
LC92A74-20	80mW	LC92F74-20	130mW	LC92L74-20	180mW
LC92B74-20	90mW	LC92G74-20	140mW	LC92M74-20	190mW
LC92C74-20	100mW	LC92H74-20	150mW	LC92N74-20	200mW
LC92D74-20	110mW	LC92J74-20	160mW	LC92P74-20	210mW
LC92E74-20	120mW	LC92K74-20	170mW	LC92R74-20	220mW

Other Wavelengths may be supplied on request

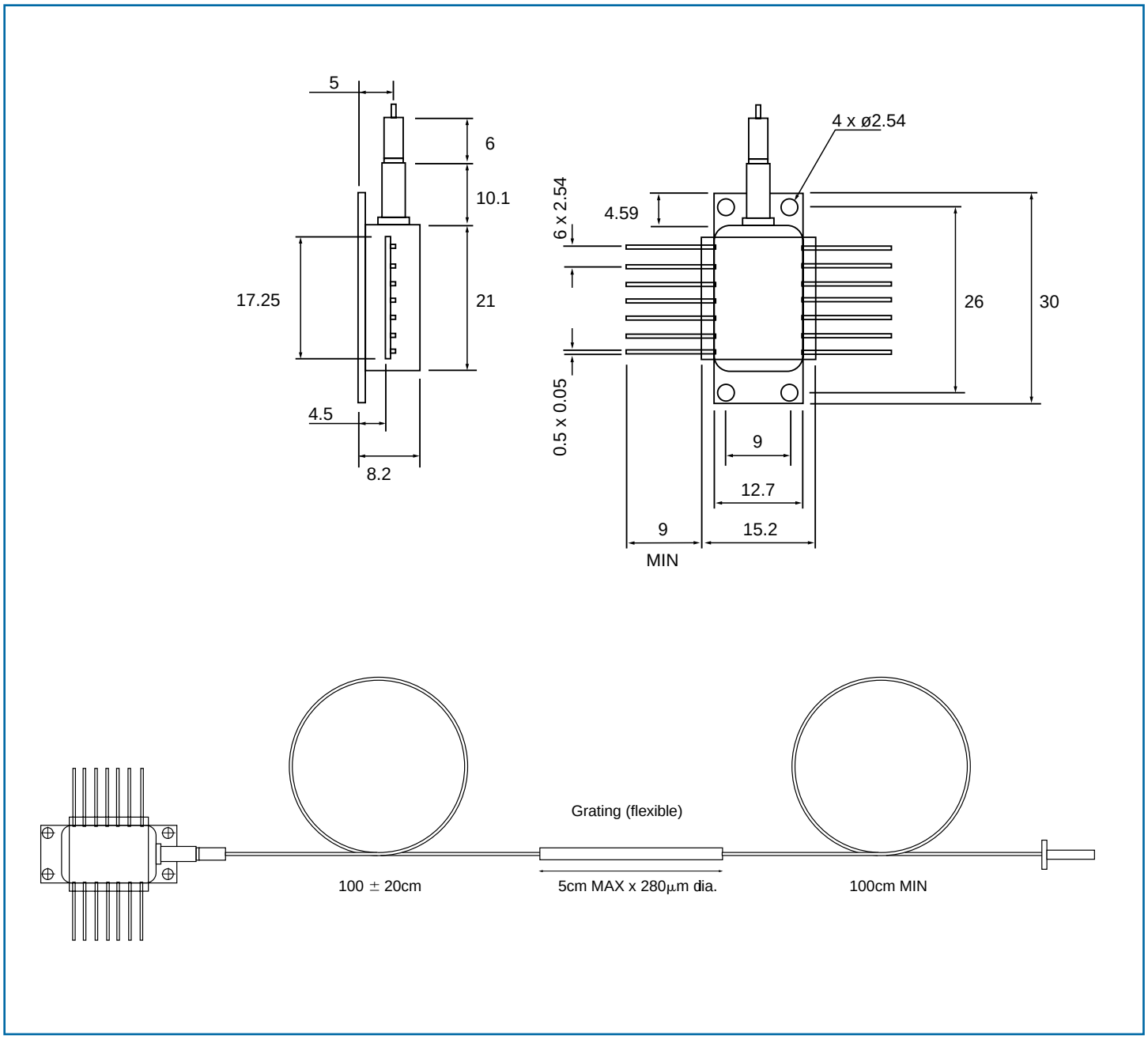
Parameter		Min	Typ	Max	Unit
Threshold current (1_{th})			25	35	mA
Operating drive current (1_f)	A, B,			210	mA
	C, D, E,			250	
	F, G,			300	
	H, J,			350	
	L, M, N,			400	
	P, R			450	
Forward voltage			1.8	2.5	V
Peak wavelength(λp)		974		980	nm
Spectrum stability (t = 60 secs)				±0.5	nm
Temperature dependence of peak wavelength				0.02	nm/°C
Monitor detector responsivity		1	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
Laser temperature, R = 10kΩ		23.5		26.5	°C
Heatpump current (ΔT = 50°C If = 300mA)				1.3	A
Heatpump voltage (ΔT = 50°C If = 300mA)				2.8	V
Wavelength tolerance				±0.5nm	

Absolute Ratings

Parameter	Min	Typ	Max	Unit
Operating temperature	-20		75	°C
Storage temperature	-40		75	°C
Laser forward current			700	mA
Laser reverse voltage			2	V
Heatpump current			1.5	A
Lead soldering temperature (10s max)			260	°C
Fiber bend radius	30			mm

Outline Drawing

Dimensions in mm

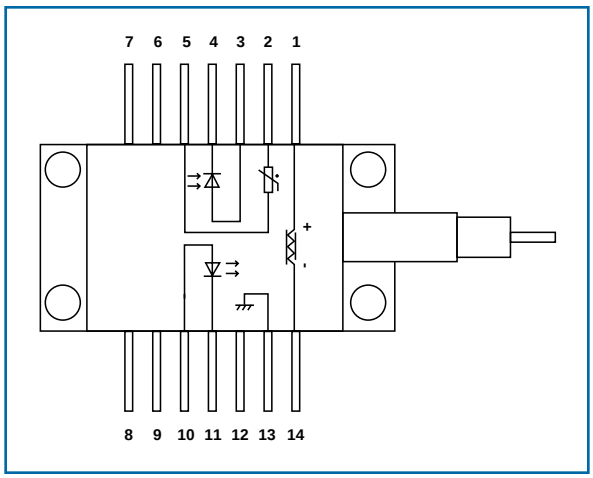


Fiber specification

Pure mode HI980 fiber or equivalent 250µm primary coated, length 2m min.
Fiber termination: Angled ceramic ferrule (CT connector).

Connections

Pin	1	Peltier cooler (+)	Pin	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 (-)



Device Ordering Information

Order Code No.

LC92A74-20 for 80 mW device	LC92J74-20 for 160 mW device
LC92B74-20 for 90 mW device	LC92K74-20 for 170 mW device
LC92C74-20 for 100 mW device	LC92L74-20 for 180 mW device
LC92D74-20 for 110 mW device	LC92M74-20 for 190 mW device
LC92E74-20 for 120 mW device	LC92N74-20 for 200 mW device
LC92F74-20 for 130 mW device	LC92P74-20 for 210 mW device
LC92G74-20 for 140 mW device	LC92R74-20 for 220 mW device
LC92H74-20 for 150 mW device	

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

www.nortelnetworks.com/opticalcomponents

Publication #84082.02/07-01 / Issue #2 / Dated 07/25/01

Nortel Networks
Optical Components
185 Corkstown Road
Ottawa, Ontario
Canada K2H 8V4

For more information, please contact your local Nortel Networks representative.
Tel: 800.4.NORTEL/800.466.7835
or outside North America 506.674.5471
E-mail:
sales-opticalcomponents@nortelnetworks.com