


# 980nm Pump Laser Module, Uncooled

## LU9\*\*X

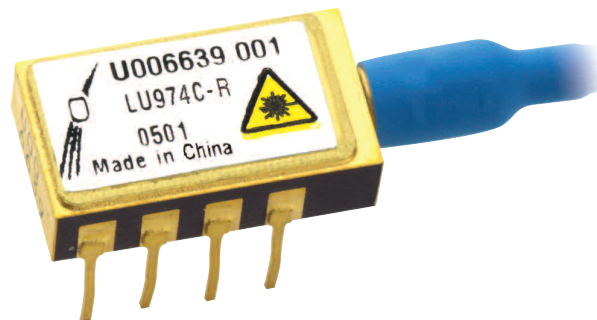
The Bookham LU9\*\*X 980nm Pump Laser Module is the second generation uncooled pump module providing higher power for highly reliable amplification for metro, cross-connect or other single/multi-channel amplification applications. The LU9\*\*X uses a Mini-DIL package enabling low-cost and small form-factor. The G07 ridge-waveguide laser diode inside has been designed for uncooled operation at high temperature and power levels. Submarine qualification of the G07 chip ensures high reliability even at 200mW, 70°C. External Fiber Bragg Grating (FBG) stabilization provides excellent wavelength and power stability over the entire temperature operating range.

### Features:

- Operating temperature range from 0°C to +70°C (case)
- 120 – 240mW linear power range over full temperature range
- Polarization maintaining (PM) fiber
- Low power dissipation
- Mini-DIL housing for small size
- G07 ridge-waveguide laser chip inside with Telecom reliability
- Wavelength stabilized by fiber Bragg grating over entire operating range
- Center wavelength at 974, 976 and 980nm
- Telecordia GR-468-CORE compliant
- RoHS compliant 

### Applications:

- EDFA's or EWDA's requiring low-to-medium power 980nm pump modules with low power consumption, small form-factor and low cost



## Characteristics

### Operating Characteristics at Beginning of Life (BOL)

Parameter	Min	Typ	Max	Unit	Conditions
<b>Laser diode</b>					
Operating case temperature	0		70	°C	
Threshold current		50	70	mA	70°C
Centre wavelength		974 976 980		nm	0 - 70°C (case) FBG Stabilized
Operating voltage		1.75	2.2	V	200 mW, 70°C
Operating current			320 345 370 395 420 445 475 500 525 550 550	mA	100 mW, 70°C 110 mW, 70°C 120 mW, 70°C 130 mW, 70°C 140 mW, 70°C 150 mW, 70°C 160 mW, 70°C 170 mW, 70°C 180 mW, 70°C 190 mW, 70°C 200 mW, 70°C
Total power consumption		0.8	1.2	W	200 mW, 70°C
Power variation		0.1	0.15	dB	0 - 70°C, 10 - 240 mW
Power-in-band ratio	90			%	9xx ± 1.5 nm, 0 - 70°C
<b>Monitor diode</b>					
Photodiode bias		-5		V	
Photodiode dark current			5	nA	
Photodiode responsivity	0.3	1.1	15	µA/mW	70°C

**Notes:**

Monitor diode for alarm and diagnostic purposes only.

## Absolute Maximum Ratings

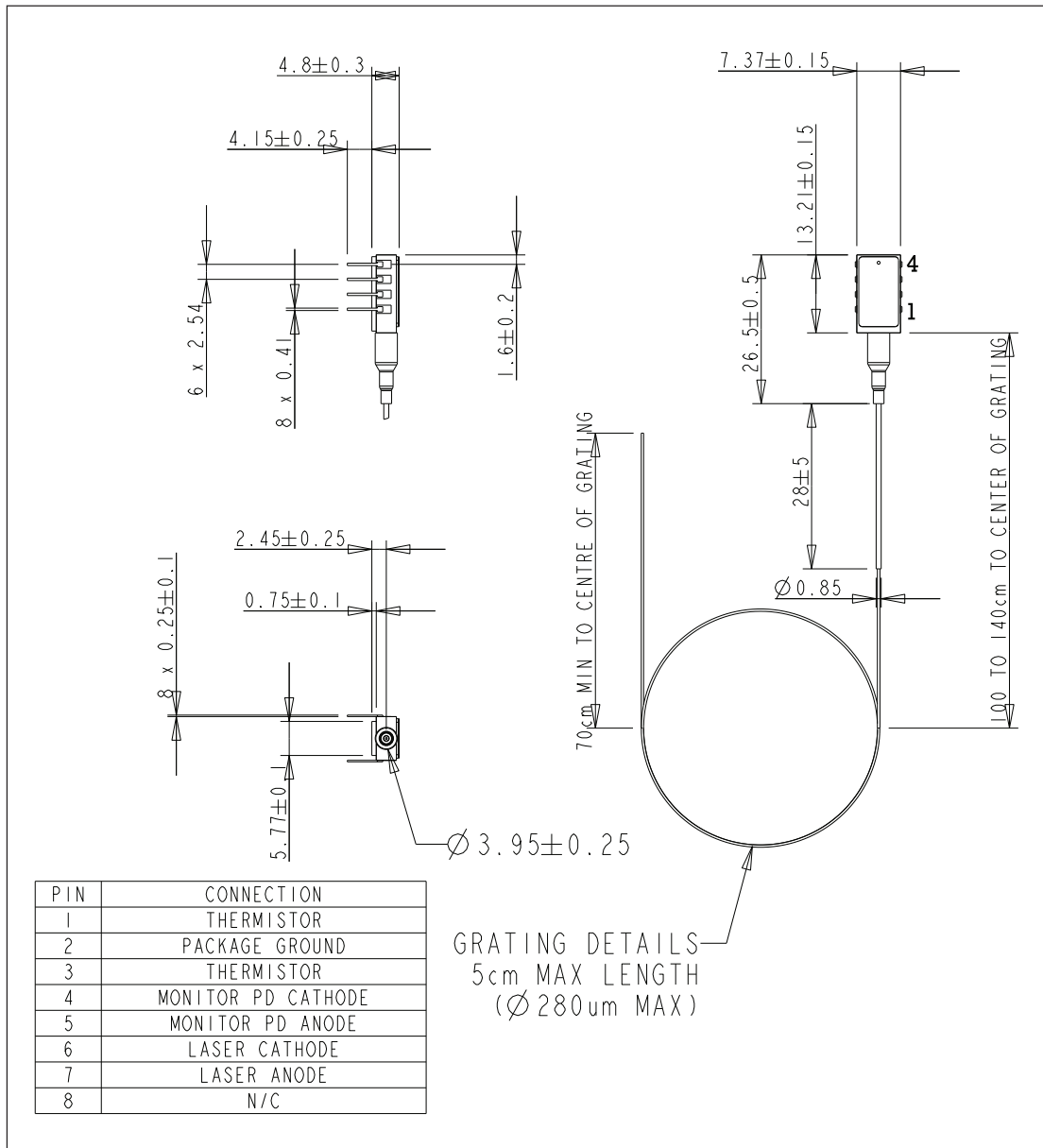
The absolute maximum ratings are conditions applied to the units for which the units are expected to recover fully their specified performance, unless otherwise stated. Typical test environment is normal laboratory or manufacturing area ambient conditions except as indicated differently.

Parameter	Min	Typ	Max	Unit	Conditions
Storage Temperature	-40		+85	°C	non-condensing
Lead Soldering Temperature			200	°C	For 10 seconds
ESD damage			500	V	HBM, C = 100 pF, R = 1.5 kW
LD forward drive current			900 900 800	mA mA mA	Tcase = 0°C Tcase = 25°C Tcase = 70°C
LD reverse voltage			2.5	V	
LD reverse current			0.01	mA	
LD operating temperature	0		70	°C	
PD reverse voltage			20	V	
PD reverse current			5	mA	
Relative Humidity	5		95	%	Storage
	5		85	%	Operating
Atmospheric Pressure	11			kPa	Storage
	85			kPa	Operating

## Fiber Pigtail

Parameter	Min	Typ	Max	Unit	Comments
Fiber type					Polarization Maintaining Nufern PM980-HP or equivalent
Buffer diameter	230	250	270	mm	
Recoating diameter			300	mm	
Pigtail length after FBG	0.7			m	
Module to FBG length	1.0	1.2	1.4	m	
Splice & FBG proof test	150			kpsi	
Fiber pull to housing	10			N	

### Package Outline Drawing and Dimensions



## Power Levels

Product Code	Operating Power (EOL) (mW)	Kink free power (mW)
LU9xxC-R	100	120
LU9xxD-R	110	132
LU9xxE-R	120	144
LU9xxF-R	130	156
LU9xxG-R	140	168
LU9xxH-R	150	180
LU9xxJ-R	160	192
LU9xxK-R	170	204
LU9xxL-R	180	216
LU9xxM-R	190	228
LU9xxN-R	200	240

## 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:

LU974C-R to LU974N-R	974nm Pump Laser Module, Uncooled – Mini-DIL series
LU976C-R to LU976N-R	976nm Pump Laser Module, Uncooled – Mini-DIL series
LU980C-R to LU980N-R	980nm Pump Laser Module, Uncooled – Mini-DIL series

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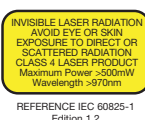
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