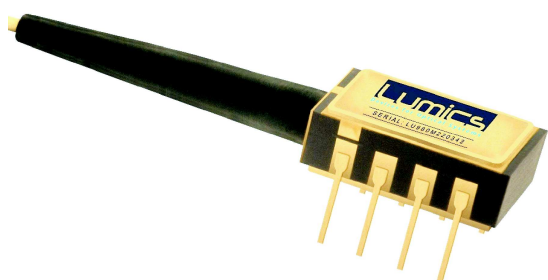


## LU0786M100-2 - Preliminary 100mW 786nm Laser Module, Narrow Width



The single mode fiber pigtailed laser diode module contains an optimized GaAs substrate based quantum well high power laser diode. The extremely stringent reliability requirements are achieved through our patent pending innovative technology. This includes careful design, exactly defined manufacturing and extensive testing. The qualification contains a set of optoelectronic, thermal and mechanical tests. Each laser diode module is individually serialized for traceability and is shipped with a specified set of test data.

### Features & Functions:

- Wavelength 786nm
- Up to 100 mW c.w. operating power
- Rise time < 5nsec
- Uncooled 0°C - 70°C operation

### Benefits:

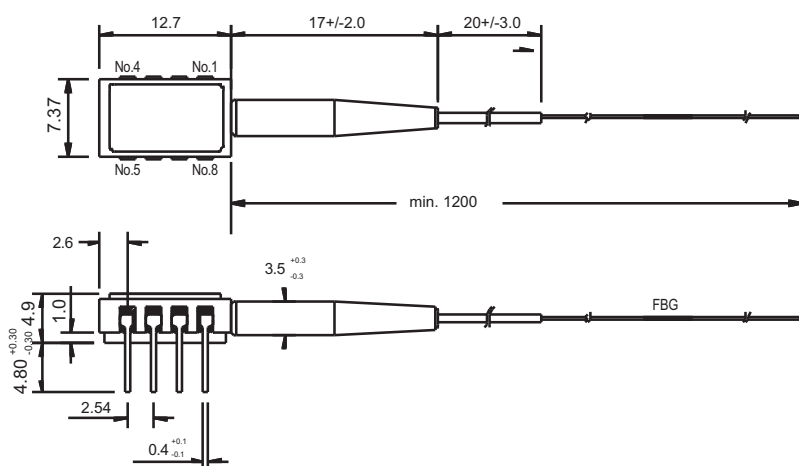
- All laser welded
- Hermetic sealing
- Telcordia compliant package
- RoHS compliant

### Applications:

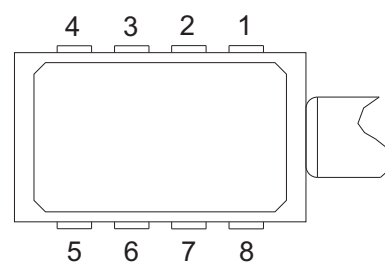
- Sensor applications
- Metrology
- Raman

### Module Drawing (dimensions in mm):

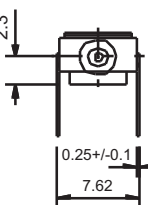
Dimensions in mm  
General tolerance  
(unless otherwise specified): +/-0.2



### Pin Connections:



Pin	Connection
1	Thermistor
2	Package ground
3	Thermistor
4	Photodiode (-)
5	Photodiode (+)
6	Laser diode (-)
7	Laser diode (+)
8	not connected



**We manufacture diode lasers.**

## Electrical and Optical Characteristics (at 25°C (T<sub>chip</sub> and T<sub>case</sub>) and Begin of Life (BOL)):

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Operating power (1)	c.w.	P <sub>op</sub>		100		mW
Operating current	c.w.	I <sub>op</sub>		200	250	mA
Rise and fall time				2.5		nsec
Threshold current		I <sub>th</sub>		75	90	mA
Forward voltage	at I <sub>op</sub>	V <sub>op</sub>		1.9		V
Peak wavelength λ <sub>peak</sub>	at P <sub>op</sub>	λ	785	786	787	nm
Spectral width (FWHM) (2)	at P <sub>op</sub> , with FBG	Δλ		0.15		pm
Polarization extinction ratio	PM fiber version		10			dB
Spectral shift with temp.	FBG Temp.	Δ / T			0.02	nm/ °C
Side mode suppression	at P <sub>op</sub> , with FBG		-20			dB
Monitor responsivity		R	0.5	2	10	μA / mW
Monitor dark current				5	40	nA
Thermistor resistance	T=25°C	R <sub>th</sub>	9.5	10	10.5	kOhm
Thermistor B constant		B	3850	3950	4050	K
Steinhart-Hart-Equation coefficients	C <sub>1</sub> = 1.1292E-03 / C <sub>2</sub> = 2.3411E-04 / C <sub>3</sub> = 8.7755E-08					

### Fiber Specifications

Fiber type PM Fiber, PM780, Type PANDA

(1) operating power shows jumps approx. every 10mA - 100mA in defined power range due to single longitudinal laser mode hopping

(2) λ.FWHM is valid in the current regime free of mode hopping

## Absolute Maximum Ratings: (T<sub>case</sub> = 0 to 70°C)

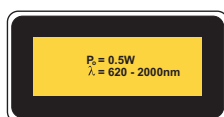
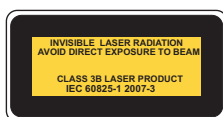
Parameter	Symbol	Min	Max	Unit
Storage temp.	T <sub>max</sub>	-40	85	°C
Operating case temp.	T <sub>op, case</sub>	10	50	°C
Lead soldering temp. (max. 10sec)			260	°C
LD forward current	I <sub>F, max</sub>		300	mA
LD reverse voltage	V <sub>R, max</sub>		2	V
ESD damage (1)			500	V
Maximum transient (<3μs) forward current			0.6	A

(1) A standard human body model (1.5kOhm, 1000pF) is used for ESD thresholds

### Note:

Absolute maximum rating for the laser diode operating current in cw mode may be applied for short period of time only (<10s). Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.

## User Safety



**We manufacture diode lasers.**