

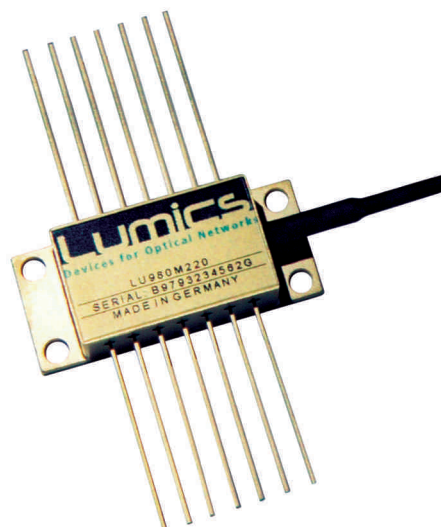
LU0980M250

## Pump Laser Module

# Up to 250mW operation power

### Features:

- Wavelength 976-984nm
- High kink-free power
- Proven reliability for high power operation
- Cooled 14-pin package
- Very powerful chip design
- Single mode fiber pigtail
- Optional FBG stabilisation



### Description / Applications:

The Lumics LU0980M250 laser diode module contains an optimized GaAs/AlGaAs/InGaAs quantum well high power laser. It has been specifically designed for applications in low noise high power Erbium Doped Fiber Amplifiers (EDFA). 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.

Reliability tests according to Telcordia GR-468-CORE are ongoing at present.

## Characteristics:

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Kink free (1) Power ex-fiber		$P_K$			300	mW
Operating Power (2)	spec.	$P_{op}$			250	mW
Operating Current		$I_{op}$		400		mA
Threshold Current		$I_{th}$		63	69	mA
Forward Voltage	at $I_{op}, T_{op}$	$V_{op}$		1.6	1.65	V
Peak Wavelength (with FBG=979nm)	at $I_{op}, T_{op}$	$\lambda_{peak}$	976	980	984	nm
Spectral Width (3) (with FBG=1nm)	at $I_{op}, T_{op}$	$\lambda_{rms}$		1.5	2	nm
Monitor Current		$I_m$	200		2000	$\mu$ A
Monitor Dark Current		$I_d$			100	nA
TEC Current		$I_c$			0.7	A
TEC Voltage		$V_c$			1.6	V
Thermistor Resistance	at $T=25^\circ\text{C}$	$R_{th}$	9.5	10	10.5	Kohm
Thermistor B constant	at $T=25^\circ\text{C}$	$B_{th}$		3900		K
Operating Case Temp.			-20		70	$^\circ\text{C}$
Storage Temp.			-40		85	$^\circ\text{C}$
PD Forward Current					5	mA
PD Reverse Voltage					20	V

(1) kink-free is defined as  $|dL/dl - \langle dL/dl \rangle| < 0.2$ , where  $\langle dL/dl \rangle$  is the average slope efficiency below kink

(2) Operating current (power) is the maximum current (power) where the slope efficiency does not decrease by more than 20% from average between 1.8x - 3.0x threshold to 120% of the maximum rated output power.

(3)  $\lambda_{rms}$  is defined as 95% power is in the central peak defined as  $\pm rms$

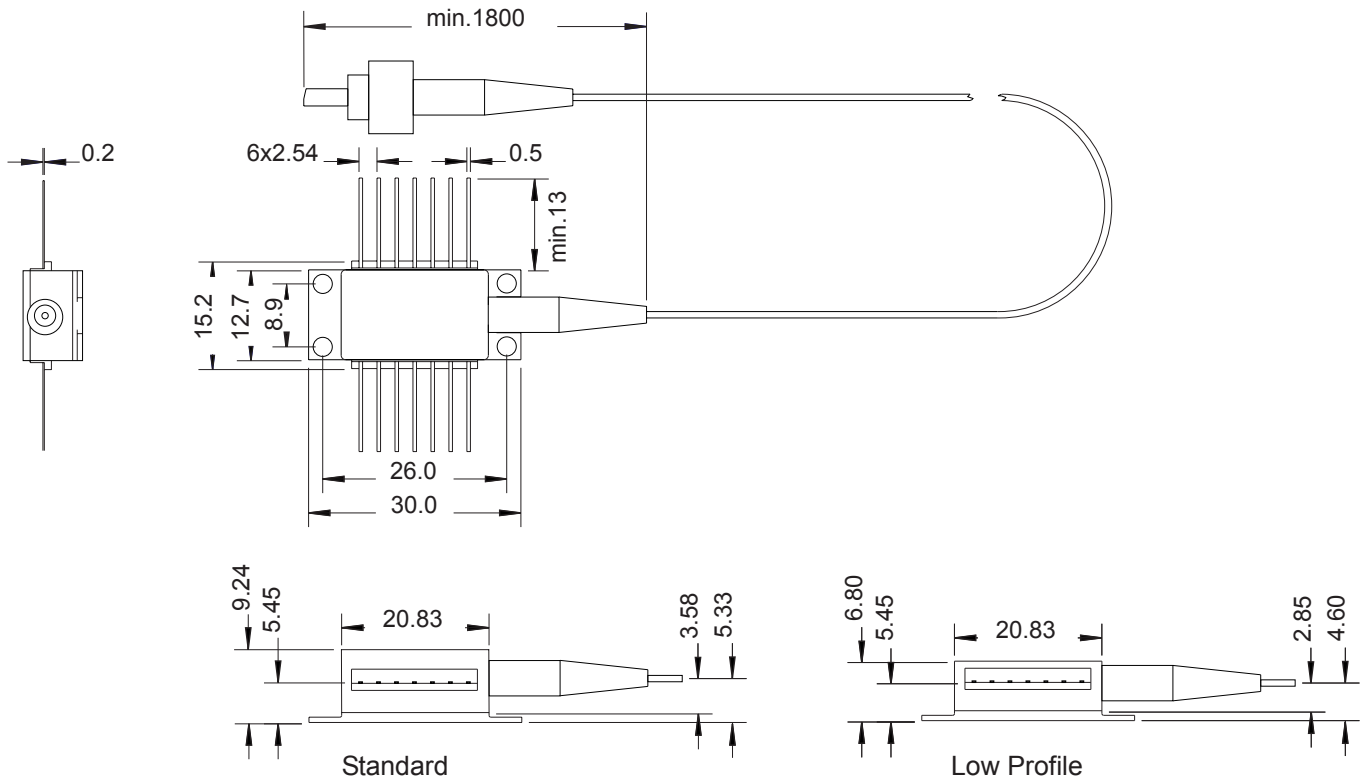
## Absolute Maximum Ratings:

Parameter	Symbol	Max	Unit
Forward Current	$I_{F,max}$	650	mA
Reverse Voltage	$V_{R,max}$	0.3	V
TEC Current	$I_{c,max}$	1.8	A
TEC Voltage	$V_{c,max}$	3	V

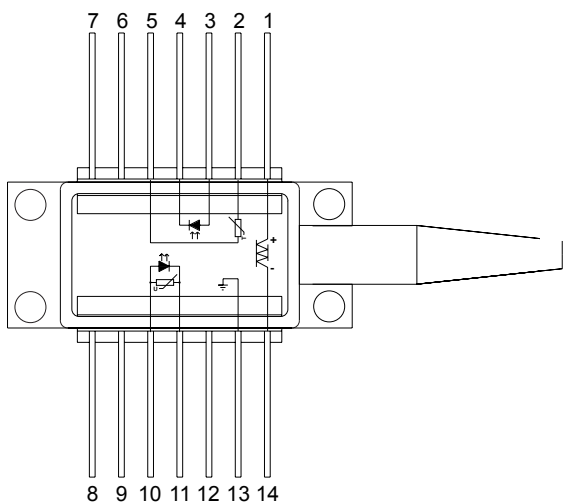
## Number Code:

LU	0980	M	250	xxx
Lumics	Wave-length	Modul	Power ( $P_{op}$ )	Version -Fiber type -Termination -FBG

## Module Drawing (dimensions in mm):

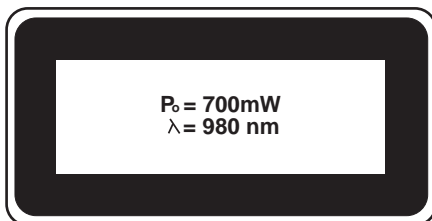
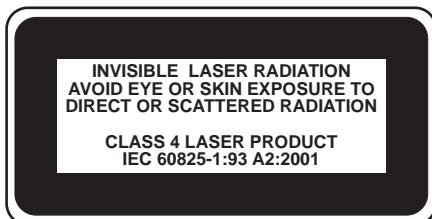


## Pin Connections:



Pin	Function	Pin	Function
1	Cooler (+)	8	nc
2	Thermistor	9	nc
3	PD anode (-)	10	LD anode (+)
4	PD cathode (+)	11	LD cathode (-)
5	Thermistor	12	nc
6	nc	13	Case ground
7	nc	14	Cooler (-)

## User Safety:



Complies with 21 CFR1040.10

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