



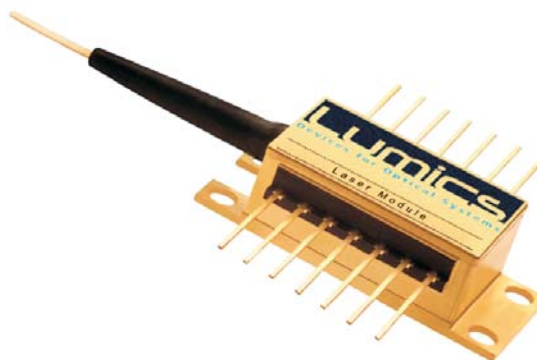
LU0980M200

Pump Laser Module FBG stabilized

Up to 200mW power

Features:

- Wavelength 972-985nm
- High kink-free power up to 220mW
- Proven reliability for high power operation
- Cooled 14-pin package
- Very powerful chip design
- Single mode fiber pigtail
- Fiber Bragg Grating stabilized
- Telcordia GR 468 CORE compliant



Description / Applications:

The Lumics LU0980M200 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 the Lumics patent 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.



Operating Parameters

Product code	Maximum Operating Power P_{op} [mW]	Maximum Operating Current I_{op} [mA] (2)	Minimum Kink Free Power P_k [mW] (1)	Kink Free Current I_k [mA] (1)
LU0980M100	100	215	110	235
LU0980M110	110	235	121	255
LU0980M120	120	255	132	275
LU0980M130	130	270	143	295
LU0980M140	140	290	154	315
LU0980M150	150	305	165	335
LU0980M160	160	325	176	355
LU0980M170	170	345	187	370
LU0980M180	180	360	198	390
LU0980M190	190	370	209	410
LU0980M200	200	380	220	425

Electrical and Optical Characteristics (at 977nm, 25°C (T_{chip} and T_{case}) and Begin of Life (BOL)):

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Threshold Current		I_{th}		50	70	mA
Forward Voltage	at I_{op}	V_{op}		1.7	2.0	V
Peak Wavelength	as specified +/- 2nm	λ_{peak}	972	980	985	nm
Spectral Width (3) (95% power)	at P_{op} , with FBG	λ_{P95}			2	nm
Optical Power Stability	at I_{op} , t = 60sec	P_{op} / t			0.5	%
Spectral Shift with Temp.	FBG Temp.	λ / T			0.02	nm/°C
Side Mode Suppression	at P_{op} , with FBG		-20			dB
Monitor Responsivity		R	0.1	1.9	10	$\mu A/mW$
Monitor Dark Current				5	40	nA
TEC Current	chip 25°C, case 70°C	I_{TEC}		0.9	1.3	A
TEC Voltage	chip 25°C, case 70°C	V_{TEC}		1.8	2.4	V
Thermistor Resistance	T=25°C	R_{th}	9.5	10	10.5	kOhm
Thermistor Constant		B	3850	3950	4050	K
Steinhart-Hart Equation Coefficients	$C_1 = 1.1292E-03 / C_2 = 2.3411E-04 / C_3 = 8.7755E-08$					
Fiber Type	single mode (similar to HI 1060)					

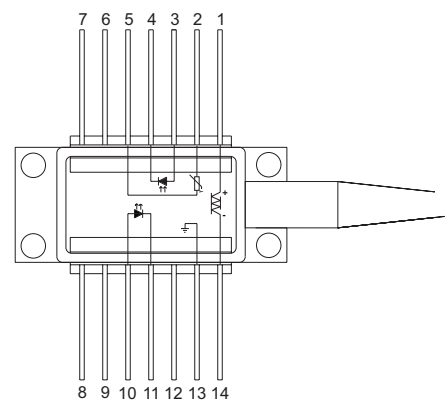
Important Notes:

- (1) Kink-free is defined as $|dL/dl| < 0.2$, where $<dL/dl>$ is the average slope efficiency below kink. The module is kink free (at least) up to a minimum kink-free power P_k that the module will achieve at a device-specific current, the kink-free current I_k . The individual value of I_k is noted on the hardcopy of the test report shipped with the device. All values of I_k are limited by values listed in Table 'Absolute Maximum Ratings' (see below)
- (2) Operating current (power) is the maximum current (power) where the slope efficiency does not decrease by more than 20% from average between 20mW and 110% of maximum operating power P_{op} . The maximum operating power P_{op} will be achieved at a device-specific current, the maximum operating current I_{op} . The individual value of I_{op} is noted on the hardcopy of the test report shipped with the device. All values of I_{op} are limited by the values listed in table 'Absolute Maximum Ratings'. The pump laser shall never be operated at a power higher than the maximum operating power P_{op} throughout its lifetime. At Begin of Life (BOL), the operating current shall never be higher than the device-specific maximum operating current I_{op} that is noted in the test report shipped with the device. At End of Life (EOL), the operating current shall never be higher than the device-specific kink free current I_k that is noted in the test report
- (3) λ_{P95} is defined as 95% of total spectral power
- (4) Please avoid rapid TEC on/off switching

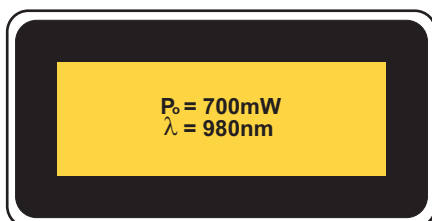
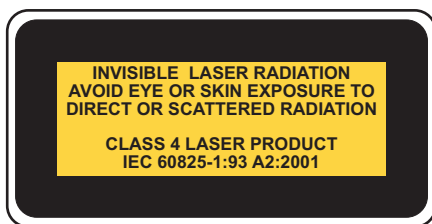


Pin Connections:

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

For further information and ordering details please contact Lumics at:

Lumics GmbH
 Carl-Scheele-Str. 16
 12489 Berlin
 Germany

Tel: +49. (0)30. 6 78 06 76 - 0
 Fax: +49. (0)30. 6 78 06 76 - 26
 Email: sales4@lumics.com
 www.lumics.com

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