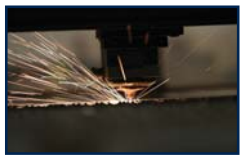
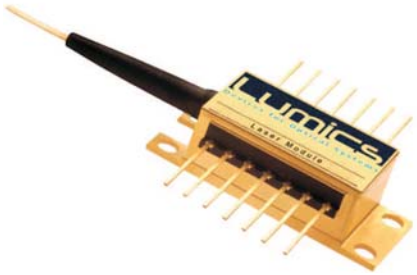
Lumics Member of scansonic Group



LU0976M300

300mW 976nm Laser Module, Narrow Line Width SHG Pump Laser



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.

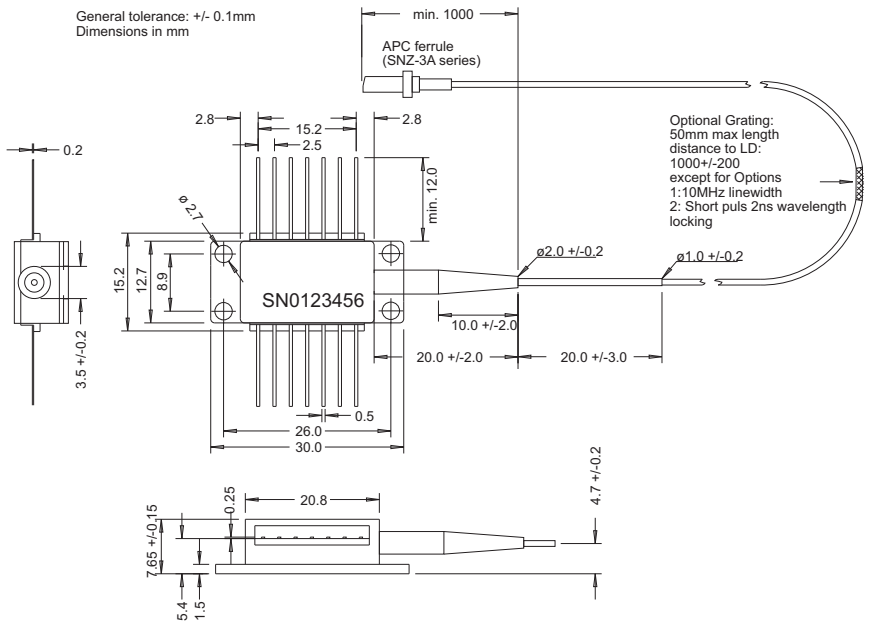
Features & Functions:
- Wavelength 976nm
- Narrow line width 0.15nm
- Up to 300 mW c.w. operating power
- Up to 1000 mW puls peak power
- Rise time < 2nsec
- internal TEC temperaure stabilisation

Options:
- PM fiber option

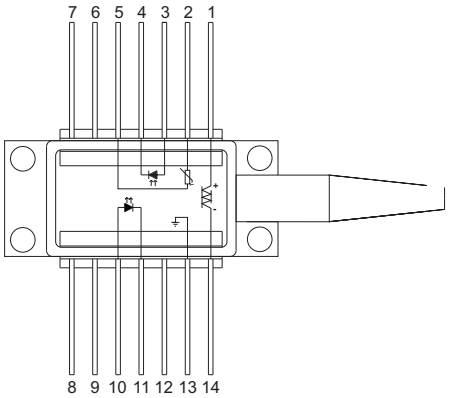
Benefits:
- All laser welded
- Field proven reliability
- Hermetic sealing
- Telcordia compliant package
- RoHS compliant

Applications:
- Fequency doubling
- Sensor applications

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 (-)

Kokyo 株式会社光響

住所：京都市下京区烏丸通四条下ル水銀屋町637番地 第5長谷ビル2階
Email : info@symphotony.com TEL : 070 - 6582 - 2430
Web : http://www.symphotony.com/ FAX : 075 - 320 - 1604

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Operating power	c.w.	P_{op}		300		mW
Operating current	c.w.	I_{op}		500		mA
Pulsed operating peak power	< 500ns / duty cycle <5%	P_{op}		1000		mW
Pulsed operating peak current	< 500ns / duty cycle <5%	I_{op}			2	A
Rise and fall time				2		nsec
Threshold current		I_{th}		60		mA
Forward voltage	at I_{op}	V_{op}		1.65		V
Peak wavelength λ_{peak}	at P_{op}	λ	975	976	977	nm
Spectral width (FWHM)	at P_{op} , with FBG	$\Delta\lambda$		0.1	0.2	nm
Optical power stability	at I_{op}, t = 60 sec	P_{op} / t			0.5	%
Polarization extinction ratio	PM fiber version		6	12		dB
Spectral shift with temp.	FBG Temp.	Δ / T			0.02	nm/ °C
Side mode suppression	at P_{op} , with FBG			20		dB
Monitor responsivity		R	0.1	0.5	10	µA / mW
Monitor dark current				5	40	nA
TEC current	chip 25°C, case 70°C	I_{TEC}		1.1		A
TEC voltage	chip 25°C, case 70°C	V_{TEC}		1.9		V
Thermistor resistance	T=25°C	R_{th}	9.5	10	10.5	kOhm
Thermistor B 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					

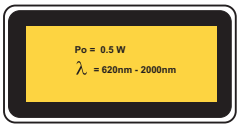
Fiber Specifications	
Fiber type	PM Fiber, PM980, Type PANDA

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage temp.	T_{max}	-40	85	°C
Operating case temp.	$T_{op, case}$	-20	70	°C
Operating chip temp.	$T_{op, chip}$	20	40	°C
Soldering temp. (max. 10sec)		260		°C
LD forward current (c.w.)	$I_{op\ max}$		1000	mA
LD forward current (Pulse 500ns 5% D.C.)			2.1	A
LD reverse voltage	$V_{R, max}$		2	V
Monitor forward current	$I_{F, PD}$		5	mA
Monitor reverse voltage	$V_{R, PD}$		20	V
TEC current	I_{TEC}		2.5	A
TEC voltage	V_{TEC}		3.2	V
ESD damage (2)			500	V
Fiber pigtail bend radius	PM 980		25	mm
Maximum transient (<3µs) forward current			1.5	A

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

User Safety



Kokyo 株式会社光響
住所：京都市下京区烏丸通四条下ル水銀屋町637番地 第5長谷ビル2階
Email : info@symphotony.com TEL : 070 - 6582 - 2430
Web : http://www.symphotony.com/ FAX : 075 - 320 - 1604

Kokyo 株式会社光響
住所：京都市下京区烏丸通四条下ル水銀屋町637番地 第5長谷ビル2階
Email : info@symphotony.com TEL : 070 - 6582 - 2430
Web : http://www.symphotony.com/ FAX : 075 - 320 - 1604