

LU0808D LuOcean™ Mini Diode Laser Up to 9W, 16W or 24W output power @ 808nm



Description:

The Lumics Medical Diode Laser series offers OEM integrators an excellent product to manufacture state-of-the-art end user laser systems. The easy integration and safe use of these medical laser components give the chance to be cost-efficient in development and manufacturing. Equipped with several accessories and features the Lumics diode lasers comply with CE & ROHS requirements. Lumics warranties highest reliability single emitter technology through careful design, extensive burn-in, long life-time & thermal testing.

Features & Functions:

- 9W, 16W or 24W optical power
- 808nm wavelength
- 400µm NA 0.22 fiber
- Temperature sensor

Options:

- Exchangeable window
- Red or green pilot laser
- Fiber sensor
- Monitor diode
- VBG

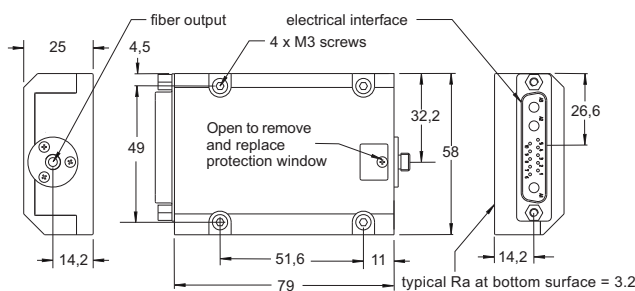
Benefits:

- Ultra long lifetime
- Passive cooling
- Sealed housing
- Small foot print
- SMA connector

Applications:

- Dental
- Dermatology
- Therapeutic
- Veterinary

Module Drawing (Dimensions in mm)



Pin Connections

Pin	Configuration
1	Fiber sensor signal 1 *
2	Fiber sensor signal 2 *
3	Fiber sensor / monitor diode cathode 12V
4	Fiber sensor (GND1) LM35 (GND1) Monitor diode (GND1)
5	LM35 signal or NTC or PT100/1000
6	Monitor diode signal 2 *
7	Monitor diode signal 1 *
8	Pilot laser (GND2)
9	LM35 5V or NTC or PT100/1000
10	Pilot laser 3.3V (red) * or <200mA (green) *

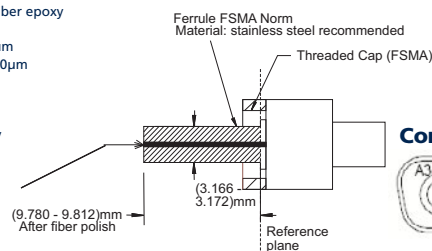
A1	Laser diode (+)
A2	Laser diode common cathode (-)
A3	N.C.

* = optional

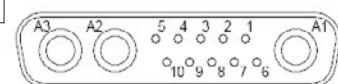
F-SMA Connector

Strict Recommendations

- (1) Use transparent and high temperature fiber epoxy (e.g. Epotek ND353)
- (2) 105µm fiber core max. excentricity +/- 5µm >105µm fiber core max. excentricity +/-10µm
- (3) For <=105µm fiber core: use a free standing or large cladding 105µm/600µm not free standing fiber
- (4) Check always for good fiber centricity by turning the fiber ferrule between 0°-180° to maximum output power at < 5W



Connector



We manufacture diode lasers.

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Electrical and Optical Characteristics

Typical laser specifications at 25°C

Parameter	Type / Conditions	808 nm 9W in 400µm	808 nm 16W in 400µm	808nm 24W in 400µm	Unit
Optical Characteristics					
Output power	P _{op} (c.w.)	9	16	24	W
Peak wavelength (at P _{op})	λ _{peak}	808 ±5	808 ±5	808 ±5	nm
Spectral width (FWHM)	λ _{FWHM}	6	6	6	nm
Conversion efficiency		44	45	45	%
Spectral shift with temp.	λ _{T-Shift}	0.3	0.3	0.3	nm / K
Fiber core diameter		400	400	400	µm
Fiber centricity		<10	<10	<10	µm
Numerical aperture	NA	0.22	0.22	0.22	
Fiber connector type		SMA905	SMA905	SMA905	
Electrical Characteristics					
Forward current at P _{op}	I _{op}	12.0	10.0	10.0	A
Abs. max. forward current	I _{max}	12.5	10.5	10.5	A
Forward voltage	V _{op}	1.7	3.4	5.1	V
Threshold current	I _{th}	3.0	3.0	3.0	A
Red Pilot Beam (Option)					
Pilot beam output power		1	1	1	mW
Pilot beam wavelength		635 ±10	635 ±10	635 ±10	nm
Pilot beam operating voltage		3 ±0.3	3 ±0.3	3 ±0.3	V
Pilot beam operating current		45 ±10	45 ±10	45 ±10	mA
Green Pilot Beam (Option)					
Pilot beam output power		>5	>5	>5	mW
Pilot beam wavelength		520 ±10	520 ±10	520 ±10	nm
Pilot beam operating voltage		7.0	7.0	7.0	V
Pilot beam operating current		200	200	200	mA
Sensors					
Power monitor operating voltage (Option)		12	12	12	V
Power monitor signal voltage		0 - 4	0 - 4	0 - 4	V
Fiber detection sensor operating voltage (Option)		12	12	12	V
Fiber detection sensor signal voltage		12 / 0	12 / 0	12 / 0	V
Temperature sensor		LM35 or NTC or PT100/1000			

Remarks:

- (1) Proper function of fiber sensor requires FSMA ferrules made of steel oder ARCAP. Do not use copper made ferrules.
- (2) Required flatness of customer heat sink 0.05mm over 200mm.
- (3) VBG (Volume Bragg Grating) ensures that 95% of optical output power is within +/-0.5 nm of specified wavelength.

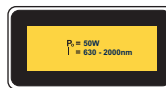
Important Note

Read and carefully follow operating manual instructions. Especially - whenever power supply is switched on or off, always disconnect from laser module. See manual for details. Uncontrolled on / off switching may cause spikes and result in fatal device damage.

General Parameters / Accessories

Parameter	Symbol	Min	Typ	Max	Unit
Storage temperature	T _s	0		50	°C
Operation temperature	T _{op}	15		35	°C
Humidity / non-condensing atmosphere				90	%
Recommended thermal heatsink resistance				0.1	K / W
Weight			ca. 200		g
Compliance			CE, ROHS		
Standard Accessories					
Interface connector			13W3 Female		
Mounting screws / metric			4 x M3 x 10		
Further Options					
2nd monitor diode / 2nd fiber detection sensor (Please ask for quotation if needed)					
Optical fiber patchcord with SMA connectors					
Laser diode drivers on request					

User Safety



We manufacture diode lasers.

Lumics GmbH Berlin. This specification is subject to change without notice.