



## LUxxxxDyyy-D Medical Diode Laser Dual wavelength, 808nm, 980nm, or 1064nm



### 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, FDA & ROHS requirements. Lumics warranties highest reliability single emitter technology through careful design, extensive burn-in, long life-time & thermal testing.

### Features & Functions:

- 808nm + 980nm or 808nm + 1064nm
- 105µm NA 0.22 fiber
- 3 single, burn-in tested laser diode emitters
- Temperature sensor

### Options:

- Exchangeable window
- Red pilot
- Fiber sensor
- Monitor diode

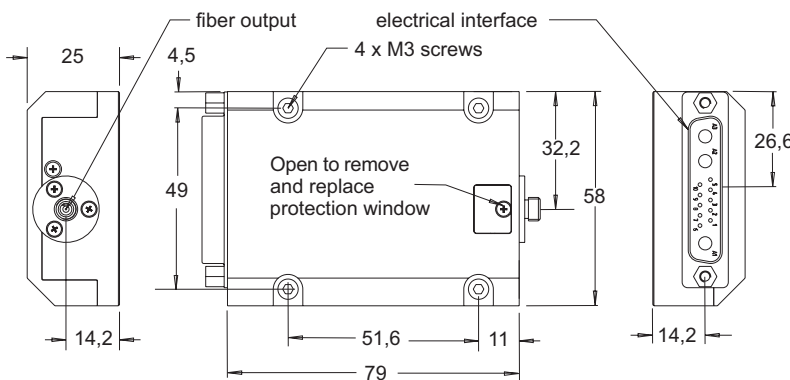
### Benefits:

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

### Applications:

- Dental
- Dermatology
- Therapeutic
- Veterinary

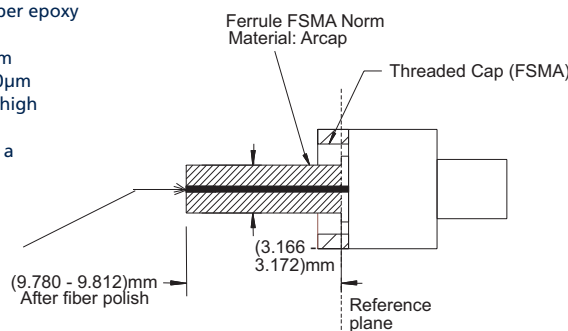
### Module Drawing (Dimensions in mm)



### F-SMA Connector

Strict Recommendations

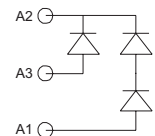
- (1) Use transparent and high temperature fiber epoxy (e.g. Epotek ND353)
- (2) 105µm fiber core max. excentricity +/- 5µm  
>105µm fiber core max. excentricity +/- 10µm
- (3) Above 60W: use free standing fiber with high power connector
- (4) Below 60W and <math>\leq 105\mu\text{m}</math> fiber core: use a free standing or large cladding 105µm/600µm not free standing fiber
- (5) Check always for good fiber centricity by turning the ferrule between 0°-180° to maximum output power at <math>< 5\text{W}</math>



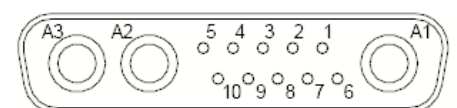
### Pin Connections

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 3V *
A1	808nm Laser Diode (+)
A2	Laser Diode common cathode (-)
A3	980 or 1064nm Laser Diode (+)

\* = optional



### Connector



Your ideas are welcome.

## Electrical and Optical Characteristics Typical laser specifications at 25°C

Parameter	Conditions	Min	Typ	Max	Unit
<b>Version 1: 808 + 980 nm</b>					
Output Power	P <sub>op</sub> 808nm (c.w.)		8		W
	P <sub>op</sub> 980nm (c.w.)		9		W
Peak Wavelength (at P <sub>op</sub> )	λ <sub>peak</sub> @ 808nm	798	808	818	nm
	λ <sub>peak</sub> @ 980nm	970	980	990	nm
Spectral Width (FWHM)	λ <sub>FWHM</sub> @ 808 and 980nm		6		nm
Forward Current / Voltage	I <sub>op</sub> / V <sub>op</sub> @ 808nm		5 / 4.0		A / V
	I <sub>op</sub> / V <sub>op</sub> @ 980nm		11 / 1.7		A / V
Threshold Current	I <sub>th</sub> @ 808nm		0.9		A
	I <sub>th</sub> @ 980nm		0.5		A
<b>Version 2: 808 + 1064 nm</b>					
Output Power	P <sub>op</sub> 808nm (c.w.)		8		W
	P <sub>op</sub> 1064nm (c.w.)		7.5		W
Peak Wavelength (at P <sub>op</sub> )	λ <sub>peak</sub> @ 808nm	798	808	818	nm
	λ <sub>peak</sub> @ 1064nm	1054	1064	1074	nm
Spectral Width (FWHM)	λ <sub>rms</sub> @ 808 and 1064nm		6		nm
Forward Current / Voltage	I <sub>op</sub> / V <sub>op</sub> @ 808nm		5.0 / 4.0		A / V
	I <sub>op</sub> / V <sub>op</sub> @ 1064nm		9.5 / 2.2		A / V
Threshold Current	I <sub>th</sub> @ 808nm		0.9		A
	I <sub>th</sub> @ 1064nm		0.5		A
<b>Other General Features</b>					
Conversion Efficiency			40		%
Spectral Shift with Temp.	λ <sub>T_shift</sub>		0.3		nm / K
Fiber Core Diameter			105		μm
Fiber Centricity			<=5		μm
Numerical Aperture	NA		0.22		
Fiber Connector Type			SMA905		
Pilot Beam Output Power				1	mW
Pilot Beam Wavelength		625	635	645	nm
Pilot Beam Operating Voltage			3	3.3	V
Pilot Beam Operating Current			30	55	mA
Power Monitor Operating Voltage (Option)			12		V
Power Monitor Signal Voltage			0 - 4		V
Fiber Detection Sensor Operating Voltage (Option)			12		V
Fiber Detection Sensor Signal Voltage			12 / 0		V
Temperature Sensor			LM35, or NTC (10k), 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.

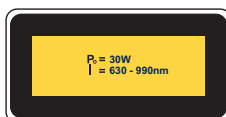
### Important Note

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 <sub>s</sub>	0		50	°C
Operation Temperature	T <sub>op</sub>	15		35	°C
Humidity / Non-condensing Atmosphere				90	%
Recommended Thermal Heatsink Resistance				0.1	K / W
Weight			179		g
Compliance			CE, FDA, ROHS		
<b>Standard Accessories</b>					
Interface Connector			13W3 Female		
Mounting Screws / metric			4 x M3 x 10		
<b>Further Options</b>					
2nd Monitor Diode / 2nd Fiber Detection Sensor (Please ask for quotation if needed)					
Optical Fiber Patchcord with SMA Connectors					
Laser diode drivers for each individual wavelenth (on request)					

## User Safety



Your ideas are welcome.