



## LU09xxDyyy-D LuOcean™ Mini Diode Laser Up to 12W, 20W or 30W output power in 200µm fiber



### Description:

The Lumics LuOcean™ Mini 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 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:

- 12W, 20W or 30W power
- 915 or 980nm wavelength
- 200µm NA 0.22 fiber
- Temperature sensor

### Options:

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

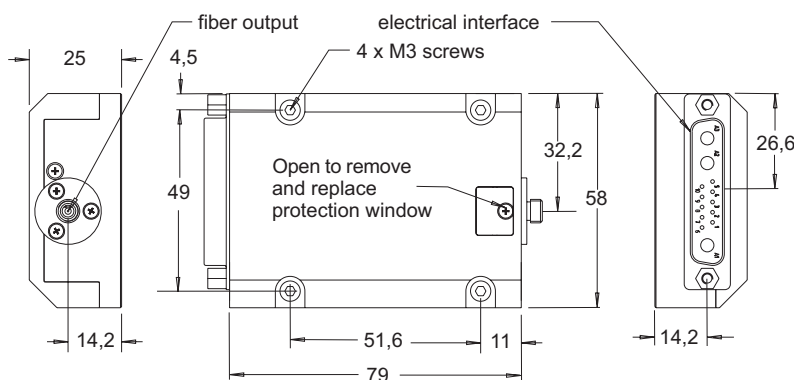
### Benefits:

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

### Applications:

- Soldering
- Plastic processing
- Medical

### Module Drawing (Dimensions in mm)



### Pin Connections

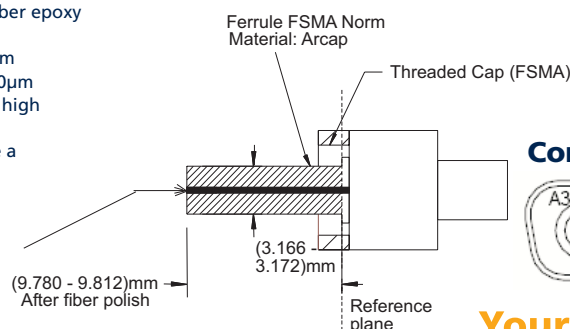
Pin	Configuration
1	Fiber Sensor Signal 1 *
2	Fiber Sensor Signal 2 *
3	Fiber Sensor / Monitor Diode 12V
4	Fiber Sensor (GND) LM35 (GND) Monitor Diode (GND)
5	LM35 Signal or NTC or PT100/1000
6	Monitor Diode Signal 2 *
7	Monitor Diode Signal 1 *
8	Pilot Laser (GND)
9	LM35 5V or NTC or PT100/1000
10	Pilot Laser 3V *
A1	980nm Laser Diode (+)
A2	Laser Diode GND (-)
A3	N.C.

\* = optional

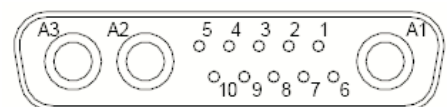
### F-SMA Connector

#### 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) 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 fiber ferrule between 0°-180° to maximum output power at <math>< 5\text{W}</math>



### Connector



Your ideas are welcome.


## Electrical and Optical Characteristics

Parameter	Type / Conditions	Min	Typ	Max	Unit
<b>Optical Characteristics</b>					
Output Power	LU09xxD120-D / P <sub>op</sub> (c.w.)		12		W
	LU09xxD200-D / P <sub>op</sub> (c.w.)		20		W
	LU09xxD300-D / P <sub>op</sub> (c.w.)		30		W
Peak Wavelength (at P <sub>op</sub> )	LU0915Dyyy-D / λ <sub>peak</sub>	905	915	925	nm
	LU0980Dyyy-D / λ <sub>peak</sub>	970	980	990	nm
Spectral Width (FWHM)	λ <sub>rms</sub>		4		nm
Conversion Efficiency			40		%
Spectral Shift with Temp.	λ <sub>T_shift</sub>		0.3		nm / K
Fiber Core Diameter			200		μm
Fiber Centricity			<10		μm
Numerical Aperture	NA		0.22		
Fiber Connector Type			SMA905		
<b>Electrical Characteristics</b>					
Forward Current at P <sub>op</sub>	I <sub>op</sub>		15.5		A
Forward Voltage	LU09xxD120-D / V <sub>op</sub>		1.7		V
	LU09xxD200-D / V <sub>op</sub>		3.3		V
	LU09xxD300-D / V <sub>op</sub>		5.0		V
Threshold Current	I <sub>th</sub>		1.1		A
<b>Red Pilot Beam (Option)</b>					
Pilot Beam Output Power			1		mW
Pilot Beam Wavelength		630	635	640	nm
Pilot Beam Operating Voltage			3	3.3	V
Pilot Beam Operating Current			30	55	mA
<b>Sensors</b>					
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 or PT100/1000		

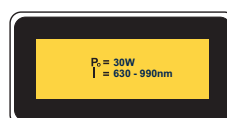
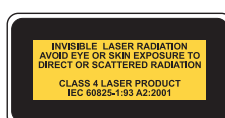
### Important Note

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			from our partner FCC GmbH, <a href="http://www.fibercableconnect.de">www.fibercableconnect.de</a>		
Laser diode drivers on request					

## User Safety



Your ideas are welcome.