



LU09xxDyyy LuOcean™ Mini Diode Laser 9W, 18W or 25W output power in 105µm 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:

- 9W, 18W or 25W power
- 915, 940 or 980nm wavelength
- 105µm NA 0.22 fiber
- Temperature sensor

Options:

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

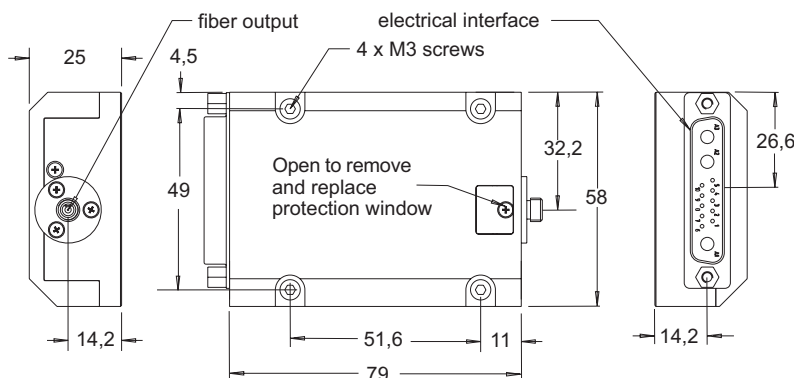
Benefits:

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

Applications:

- Soldering
- Plastic processing
- Medical

Module Drawing (Dimensions in mm)



Pin Connections

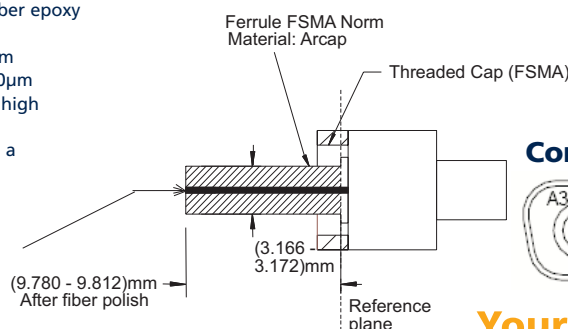
Pin	Configuration
1	Fiber Sensor Signal 1 *
2	Fiber Sensor Signal 2 *
3	Fiber Sensor / Monitor Diode Cathode 12V
4	Fiber Sensor (GND1) LM35 (GND1) Monitor Diode (GND1)
5	LM35 Signal or NTC or PT100/1000
6	Monitor Diode Signal 2 *
7	Monitor Diode Signal 1 *
8	Pilot Laser (GND2)
9	LM35 5V or NTC or PT100/1000
10	Pilot Laser 3V *
A1	9xx nm Laser Diode (+)
A2	Laser Diode common cathode (-)
A3	N.C.

* = optional

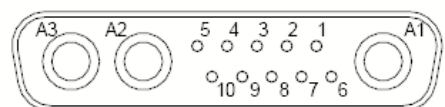
F-SMA Connector

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) Above 60W: use free standing fiber with high power connector
- (4) Below 60W and <=105µm 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 < 5W



Connector



Your ideas are welcome.

Electrical and Optical Characteristics

Typical laser specifications at 25°C

Parameter	Type / Conditions	Min	Typ	Max	Unit
Optical Characteristics					
Output Power	LU09xxD090-D / P _{op} (c.w.)		9		W
	LU09xxD180-D / P _{op} (c.w.)		18		W
	LU09xxD250-D / P _{op} (c.w.)		25		W
Peak Wavelength (at P _{op})	LU0915Dyyy-D / λ _{peak}	905	915	925	nm
	LU0980Dyyy-D / λ _{peak}	928	938	948	nm
	LU0980Dyyy-D / λ _{peak}	970	980	990	nm
Spectral Width (FWHM)	λ _{FWHM}		6		nm
Conversion Efficiency			45		%
Spectral Shift with Temp.	λ _{T_shift}		0.3		nm / K
Fiber Core Diameter			105		μm
Fiber Centricity			<10		μm
Numerical Aperture	NA		0.22		
Fiber Connector Type			SMA905		
Electrical Characteristics					
Forward Current at P _{op}	I _{op}		12		A
Forward Voltage	LU09xxD090-D / V _{op}		1.7		V
	LU09xxD180-D / V _{op}		3.3		V
	LU09xxD250-D / V _{op}		5.0		V
Threshold Current	I _{th}		0.6		A
Red Pilot Beam (Option)					
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
Sensors					
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		

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.

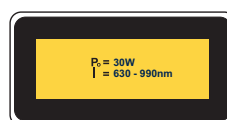
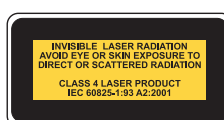
Important Note

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 _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			179		g
Compliance			CE, FDA, 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



Your ideas are welcome.