



## LUOcean P2

### LU0975C150-M Diode Laser Up to 150W c.w. Operating Power @ 975nm



#### Description:

The LU0975C150-M LuOcean P2 series offers an optical output power of 150W in c.w. operation from a 400µm core diameter, NA 0.22 fiber, respectively. The device consists of multiple single emitter laser diodes in a rugged industrial package. Long lifetime is ensured due to laser diode facet passivation, extensive burn-in testing and screening of the individual single emitters. The performance makes it a valuable tool for various applications.

#### Features & Functions:

- Wavelength 975nm
- burn-in tested single emitters
- Fiber: 400µm
- SMA905 (or D80 connector)
- Sealed housing
- Temperature sensor

#### Options:

- Power monitor
- Fiber sensor
- Red pilot laser
- Water cooling plate
- Backreflection filter
- VBG

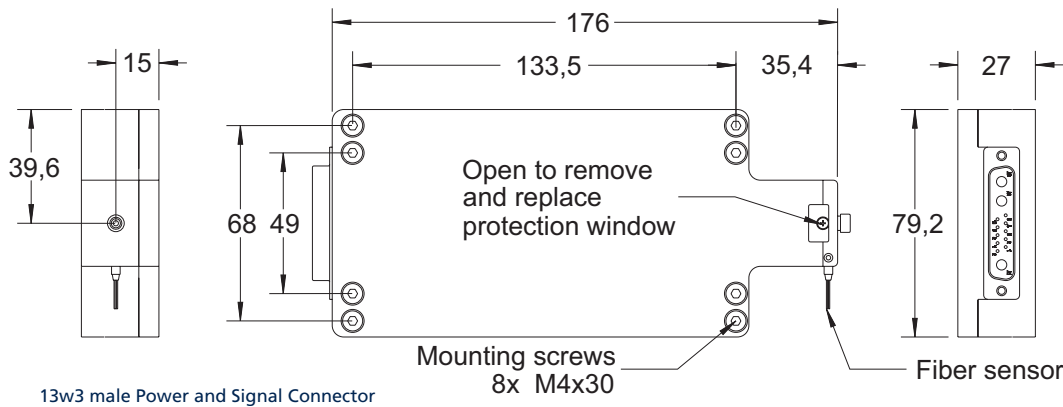
#### Benefits:

- Small foot print
- Ultra long lifetime
- Cost effective
- High efficiency
- Exchangeable protective exit window option

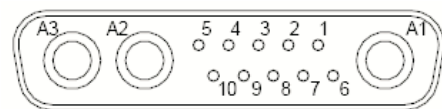
#### Applications:

- Medical treatment
- Illumination

#### Module Drawing (Dimensions in mm)



13w3 male Power and Signal Connector

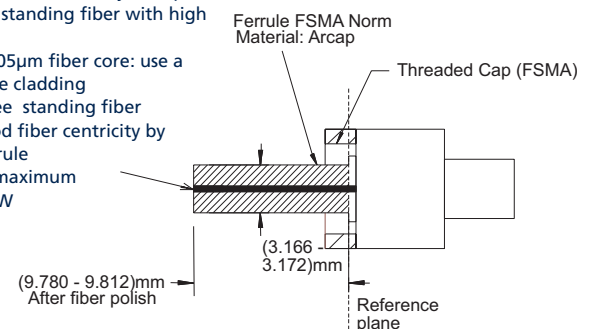


Pin	Configuration
1	N.C.
2	N.C.
3	Monitor Diode (5-12)V *
4	LM35 (GND) Monitor Diode (GND)
5	LM35 Signal or NTC or PT100/1000 *
6	N.C.
7	Monitor Diode Signal *
8	Pilot Laser (GND)
9	LM35 5V or NTC or PT100/1000
10	Pilot Laser 3V *
A1	Laser Diode (+)
A2	Laser Diode GND (-)
A3	N.C.
* Optional	

#### 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 <=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



Your ideas are welcome.

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

Parameter	Conditions	Symbol	LU0975C150	Unit
<b>LU0975C150-M</b>				
Output power (1)	c.w.	$P_{op}$	150	W
Operating current	c.w.	$I_{op}$	23	A
Absolut maximum forward current	c.w.	$I_{max}$	25	A
Peak wavelength	LU0975Cyyy	$\lambda$	975+/-10	nm
Spectral width (FWHM)		$\Delta\lambda$	6	nm
Spectral width (90%)		$\Delta\lambda_{90\%}$	9	nm
Threshold current		$I_{th}$	<2	A
Operating voltage		$V_f$	15	V
Conversion efficiency			43	%
Wavelength tuning vs. temperature		$\lambda / T$	0.3	nm/K
Wavelength tuning vs. operating current		$\lambda / I$	0.6	nm/A
Weight		m	1400	g
Output fiber (SMA905 or D80 connector on module)				
Core diameter of output fiber		$d_{core}$	400	$\mu m$
Fiber centricity			10	$\mu m$
Numerical aperture		NA	0.22	
Temperature sensor	LM35, NTC (10k) or PT100/1000 (please specify)			
Power monitor		PD	10-30	mV/W
<b>Options</b>				
Option 1: Red pilot laser				
C.w. output power			1	mW
Peak wavelength			650+/-15	nm
Operating voltage			3-5	V
Option 2: Water Cooling Base Plate w/o cap				
Water temperature		T	<18°	°C
Water quality	Industrial water, no DI-water, filtered particle size <0.1mm			
Minimum water flux			1.5	l/min
Option 5: Fiber sensor PNP IFRM 03P1503/Q or NPN IFRM 03N1503/Q				

**Remarks:**

- (1) Power is measured ex fiber according to given fiber specifications including precision and measures of fiber and ferrules for uncoated fiber facets
- (2) Light version for pulsed operation d. c. 20% with 750g on request.

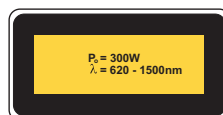
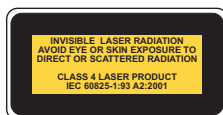
**Important Note**

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 as well as over temperature, hard shocks or dirt on the sealing window behind the fiber flange.

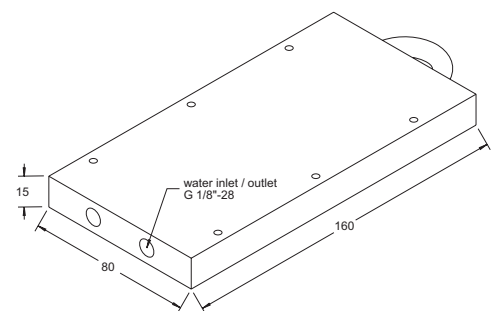
## Absolute Maximum Ratings / General Informations

Parameter	Symbol	Min	Max	Unit
Storage Temperature	$T_{max}$	-15	+55	°C
Operating Temp. c.w.-operation	$T_{op.c.w.}$	+5	+30	°C
pulsed operation	$T_{op.pulse}$	+5	+40	°C
Humidity / non Condensing Atmosphere			90	%
Recommended Thermal Heatsink Resistance			0.03	K/W
LD Reverse Voltage	$V_{R,max}$		10	V
Max fiber flange temperature			45	°C
Mounting Screws / metric		8 x M4 x 12		mm
Max. back reflection of intrinsic pump wavelength output power			10	%
Max. back reflection any other than $\lambda$ of this diode laser			10	$\mu J$

## User Safety



Option 2 water cooling base plate:



Your ideas are welcome.