



## LU09xxT090 Industrial Laser Diode Up to 9W Operation Power



### Description:

The LU09xxT090 series offers an optical power of 9W at 915, 940 or 975nm from a 105µm core, NA 0.15 or NA 0.22 multi-mode fiber. At this common wavelength our Laser Diode offers a very competitive price-performance value for applications in materials processing, illumination and medicine.

### Features & Functions:

- Burn-in tested single emitter
- Hermetically sealed
- 105µm MM Fiber, NA 0.15 or 0.22
- Wavelength 915, 940, 960 or 975nm
- Floating anode / cathode
- Direct modulation up to 100 MHz

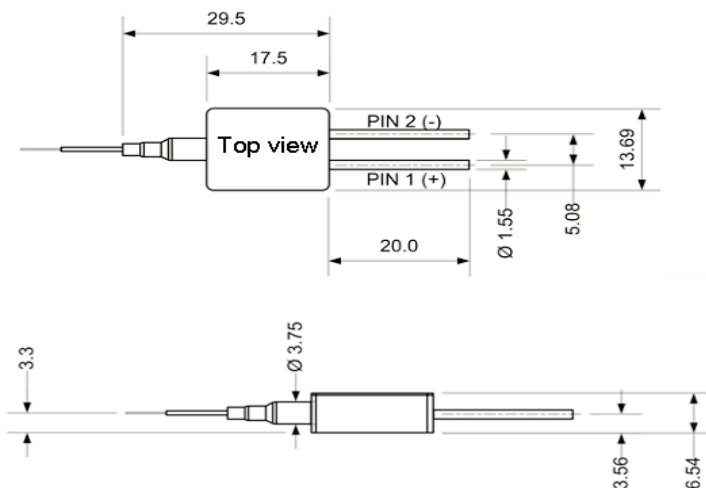
### Benefits:

- Ultra long lifetime
- Cost-effective
- Robust
- RoHS compliant

### Applications:

- Materials processing
- Illumination
- Pumping
- Medical treatment

### Module Drawing (dimensions in mm)



### Pin Connections

Pin	Function	Pin	Function
1	LD Anode (+)	2	LD Cathode (-)

Your ideas are welcome.

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

Parameter	Symbol	Typical	Unit
Output Power c.w.	$P_{op}$ (c.w.)	9	W
Peak Wavelength at $P_{op}$	$\lambda_{peak}$	915, 940, 960, 975+/-10	nm
Spectral Width (95% Power)	$\lambda_{rms}$	6	nm
Threshold Current	$I_{th}$	600	mA
Operating Current	$I_{op}$	11.0	A
Operating Voltage	$V_{op}$	1.9	V
Connector Type (*optional)		APC ferrule (*SMA, FC/APC, FC/PC connector)	
Heat Resistance LD to bottom of base plate	$R_H$	3.5	K / W
Power Conversion Efficiency		48	%
Recommended Case Temperature		20 - 30	°C
Wavelength Shift vs. Temperature		0.35	nm / K
Wavelength Shift vs. Power		1.1	nm / W

### Fiber Specifications

Fiber Core Diameter		105	$\mu\text{m}$
Fiber Numerical Aperture	NA	0.15 or 0.22	
Fiber Cladding Diameter		125	$\mu\text{m}$
Fiber Buffer Diameter		250	$\mu\text{m}$
Fiber Length		1	m
Min. Bend Radius		50	mm

### Application Note:

- (1) For pulsed operation max peak power can be  $1.5 \times P_{op}$  if pulse time is  $< 5 \mu\text{sec}$  and average power is lower than  $P_{op}$  (c.w.)
- (2) Keep the heat sink at  $\leq 30^\circ$
- (3) We recommend a standard heatsink with thermal resistance of  $< 0.5 \text{K/W}$  using forced air flow cooling. Use thermal interface material rated for a thermal contact resistance of less than  $1.3 \text{cm}^2 \text{K/W}$

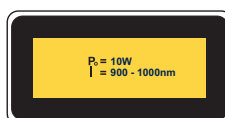
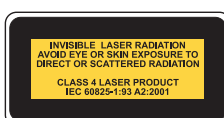
## Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	$T_{max}$	-40	85	°C
Operating Case Temp.	$T_{op, case temp.}$	15	60	°C
Maximum Processing Temp.-max 10sec.	$T_{op, Processing}$		250	°C
LD Forward Current c.w.	$I_{op, max}$		12	A
LD Reverse Voltage	$V_{R, max}$		2	V
Rel. Humidity		5	85	%

### Note:

Absolute Maximum Ratings may be applied to the laser module for short periods of time only. Exposure to maximum ratings for extended periods of time or exposure above one or more maximum ratings may cause damage or affect the reliability of the device.

## User Safety



Your ideas are welcome.