



## LU0808T040 Industrial Laser Diode Up to 4W Operation Power @ 808nm



### Description:

The LU0808T040 series offers an optical power of 4W 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.

Very high life time is achieved due to the Lumics proprietary laser diode facet passivation technology and due to extensive burn-in testing

### Features & Functions:

- Wavelength 808nm
- 105µm core, NA 0.15 or 0.22 fiber
- Hermetically sealed single emitter
- Floating Anode / Cathode
- Direct Modulation up to 10 MHz

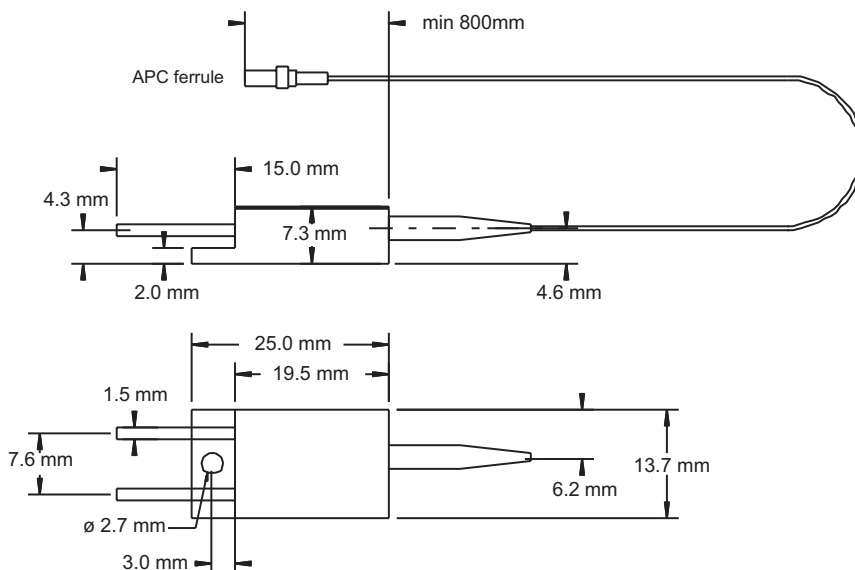
### Benefits:

- Ultra long Lifetime
- burn-in tested
- Cost-effective
- Robust design
- Easy to mount

### Applications:

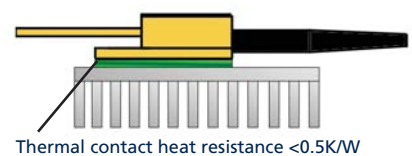
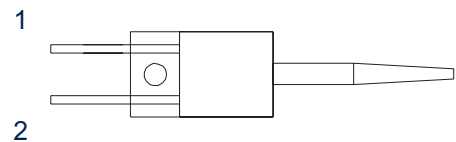
- Printing
- Pumping
- Materials Processing
- Illumination
- Medical Laser Treatment

### Modul Drawing (dimensions in mm)



### Pin Connections

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



Your ideas are welcome.

## Typical Electrical and Optical Characteristics

Parameter	Symbol	Typical	Unit
Output Power c.w.	$P_{op}$ (c.w.)	4	W
Peak Wavelength at $P_{op}$	$\lambda_{peak}$	808 +/-10	nm
Spectral Width (FWHM)	$\lambda_{rms}$	3	nm
Threshold Current	$I_{th}$	900	mA
Operating Current	$I_{op}$	4.8	A
Operating Voltage	$V_{op}$	1.82	V
Rise and Fall Time	$t_r$	20	nsec
Connector Type (optional)		SMA	
Heat Resistance LD to bottom of base plate	$R_H$	3.5	K / W
Power Conversion Efficiency		45	%
Recommended Case Temperature	$T_{op}$	20 - 30	°C
Wavelength Shift vs. Temperature		0.35	nm / K
Wavelength Shift vs. Power		1.2	nm / W

### Fiber Specifications

Type		AFS 105 / 125 Y	
Fiber Core Diameter		105	µm
Fiber Numerical Aperture	NA	0.15 or 0.22	
Fiber Cladding Diameter		125	µm
Fiber Buffer Diameter		250	µm
Fiber Length		1	
Min. Bend Radius		50	mm

### Application Note:

- (1) For pulsed operation max peak power can be  $2 \times P_{op}$  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 TO-220 heatsink with thermal resistance of  $< 0.5 \text{K/W}$  using forced air flow cooling. There is no heat film required, since the base is electrically isolated from laser cathode and anode.

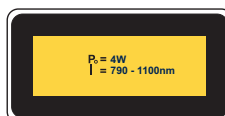
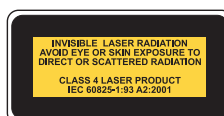
## Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	$T_{max}$	-30	70	°C
Operating Case Temp.	$T_{op, case temp.}$	-10	40	°C
Maximum Processing Temp.-max 10sec.	$T_{op, Processing}$		180	°C
LD Forward Current c.w.	$I_{op, max}$		6	A
LD Reverse Voltage	$V_{R, max}$		2	V
Rel. Humidity		0	85	%

### Note:

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

## User Safety



Your ideas are welcome.