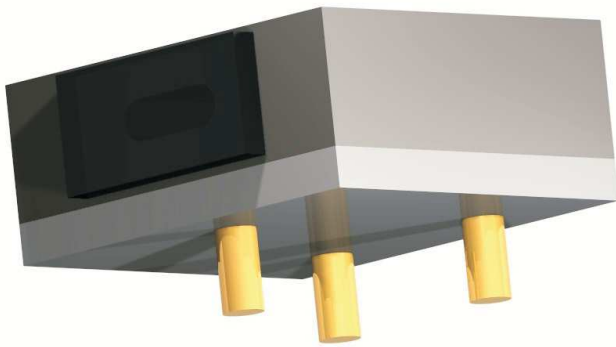




## LU0670P012-FNN5V03C

670nm Laser Diode in a Flat Package with Sealing Cap  
**Up to 1.2W Power at 25°C**



### Description:

The LU0670P012 offers high optical output power of up to 1.2W cw from a single emitter in a flat package for PCB mounting. Long lifetime is ensured due to the Lumics proprietary laser diode facet passivation technology. This performance makes them a valuable tool for highly efficient medical laser treatment. Further important applications are micro material processing with exceptional power densities and

### Features & Functions:

- 94µm emitter
- Wavelength 670nm
- PCB surface mountable
- Laser diode is electrically isolated from the case

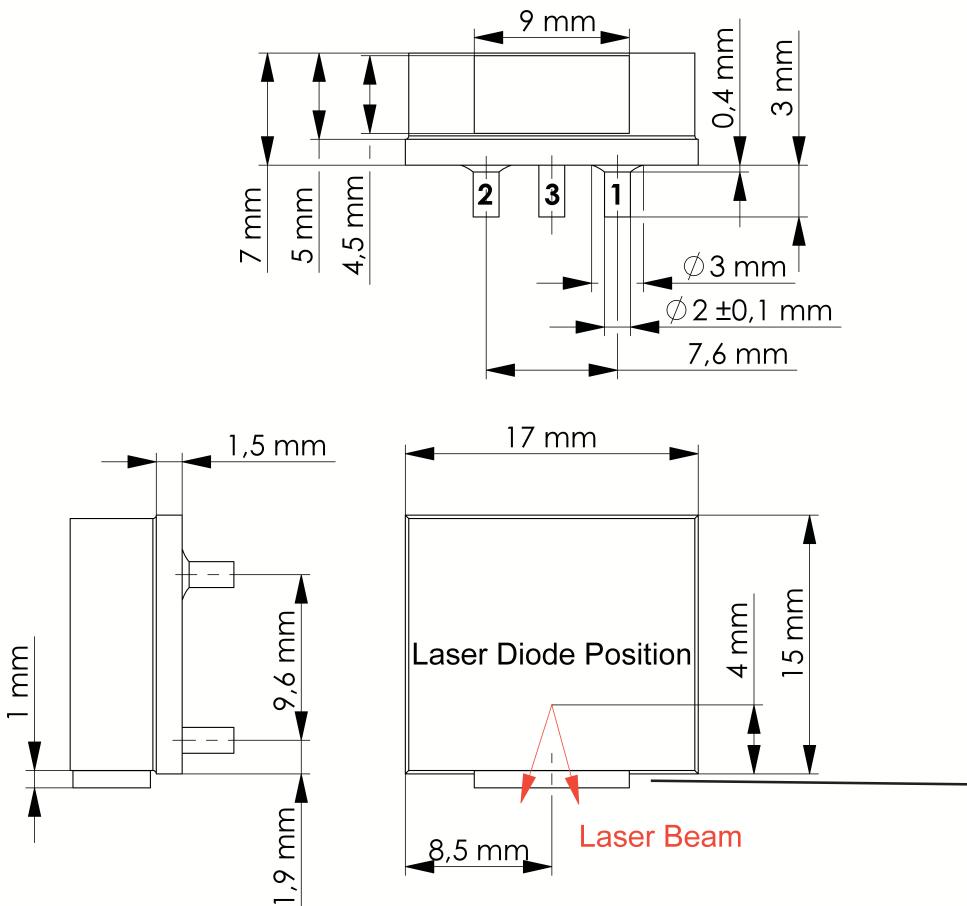
### Benefits:

- Small footprint
- High reliability
- Hermetic sealing
- Getter inside

### Applications:

- Pumping (SSL)
- Plastic welding
- Marking
- Illumination
- Medical treatment

### Drawing (dimensions in mm)



### Connections

Contact Pin	Function
1	LD Anode (+)
2	LD Cathode (-)
3	LD Case

### Notes

- 1: Thermal grease with thermal resistance to heat sink of <0.2 K/W for cw operation required**
- 2: A heat sink with thermal resistance of <1 K/W is recommended and may be achieved using:**
- PCB with thermal vias
  - PCB with metal core

### Exit Window

**Laser diode position as shown at**  
**Vertical: (4.0 +- 0.2)mm**  
**Horizontal: (8.5 +- 0.2)mm**

**We manufacture diode lasers.**

## Typical Electrical and Optical Characteristics at 25 °C (1)

Parameter	Symbol	Min	Typ	Max	Unit
Emitter Width	W		94		µm
c.w. Operating Power (1)	P <sub>op (cw)</sub>	1.2			W
c.w. Operating Current	I <sub>op (cw)</sub>		1.7	2	A
Threshold Current	I <sub>th</sub>		0.5		A
Forward Voltage	V <sub>op</sub>		2.1		V
Slope Efficiency	λ <sub>diff</sub>		1.05		W / A
Peak Wavelength at 25°C at P <sub>op (c.w)</sub>	λ <sub>peak</sub>		670+/-10		nm
Spectral Width (FWHM) at P <sub>op (c.w)</sub>	λ <sub>FWHM</sub>		1.5	2	nm
AR Reflectivity	r <sub>f</sub>		10		%
HR Reflectivity	r <sub>r</sub>		95		%
Spectral Shift with Temp.	λ <sub>T_Shift</sub>		0.3		nm / K
Spectral Shift with Current	λ <sub>P_Shift</sub>		1.3		nm / A
Fast axis (vertical) divergence	NA		<= 2		mrad
Vertical width of the beam			<= 0.8		mm
Slow axis (horizontal) divergence	NA		<= 0.14		rad
Thermal Resistance (2)	R <sub>th</sub>		5		K/W

- Notes:**  
 (1) Temperature measured at heat sink with contact thermal resistance <0.2K/W from bottom of LD package to heat sink required  
 (2) Thermal resistance between laser diode junction and bottom of package

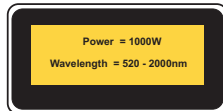
## General Parameters / Accessories

Parameter	Symbol	Min	Typ	Max	Unit
Storage Temperature	T <sub>S</sub>	-10		55	°C
Internal operating and (Ambient) temp , c.w.-operation *	T <sub>op c.w.</sub>	10(5)		35(40)	°C
Humidity / Non-condensing Atmosphere				90	%
Thermal heat sink resistance				0.2	k/W
Maximum processing temperature				250	°C
Maximum solder processing time pins				5	s
Weight			6		g
Compliance			ROHS		

\* we recommend to operate the laser above dew point. Below dew point water condensation on the exit window may damage the window when laser is switched on. If the module was stored below dew point before operation dry the window by pre-heating the module to 25°C

- Notes:**  
 (1) Storage in the shipping GEL PAK container in non condensing atmosphere between 0°C and 55°C supports storage time of >10 years. Humidity : Avoid condensing atmosphere to the exit window.  
 (2) This product contains <0.05% of solid metallized InAlGaAsSb crystal

## User Safety



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. This product is not certified by with IEC 60825-1 or 21CFR1040.10/ 21CFR1040.11 and and must comply with the applicable regulations by the Purchaser if sold as laser product.

**We manufacture diode lasers.**