Laser Diodes

SHEAUMANN

LASER COMPONENTS

Features

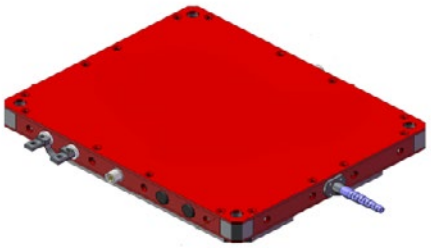
- Up to 150 W CW output power
- 976nm 105 µm emitter size
- High Quality, Reliability, & Performance

Applications

- Solid State Pumping
- Fiber Lasers
- Material Processing
- Medical
- Defense

Product Specifications

SMP-976-3-1022-150



Description:

High brightness, high quality, and high reliability are the foundation of our multi mode product line. Axcel's 976nm multi mode laser modules are available with up to 150W of continuous output power from fiber couple hermetically sealed package. Axcel's trademark laser chip design creates un-measurable degradation and long lifetimes that make our chips among the most reliable in the industry today. Our 976nm multi mode line serves a broad range of applications including solid state pumping, material processing, graphics, medical, and defense.

Please view our website for mechanical drawings of all of our module packages.

Performance Data for Multi-Mode 976nm High Power Module

Parameter	Symbol/Version Number	Min	Typ	Max	Units
Output Power 1	Pop	*140*	*150*	160	W
Threshold Current	Ith		1		A
Operating Current 1	Iop		12-14		A
Operating Voltage	Vop		36		V
Power Conversion Efficiency	ηep		>1		%
Slope Efficiency	$\eta_o = P_{o/(I_{op} - I_{th})}$				(W/A)
Peak Wavelength	λp	973	976	979	nm
Wavelength Tolerance	Nm/°C		0.35°C		°C
Spectral Width (FWHM)	Δλ		<6.0		nm
Lifetime	hours		*Minimum requirement*		hours
Storage Temp.	TStorage	-20		*80*	°C
Operating Temp.	Top	10	25	*40*	°C
Lead Soldering (with parts mounted to Heat sink)	TLS		250		°C 10 Seconds
Fiber Core Diameter			200		µm
Fiber Length			2.0		M
Numerical Aperture			.22		NA
Feedback Protection (1030-1100nm)	FP		>40		dB

Note: 1) Specifications are subject to change without notice.
2) All Axcel Photonics products are TE polarized

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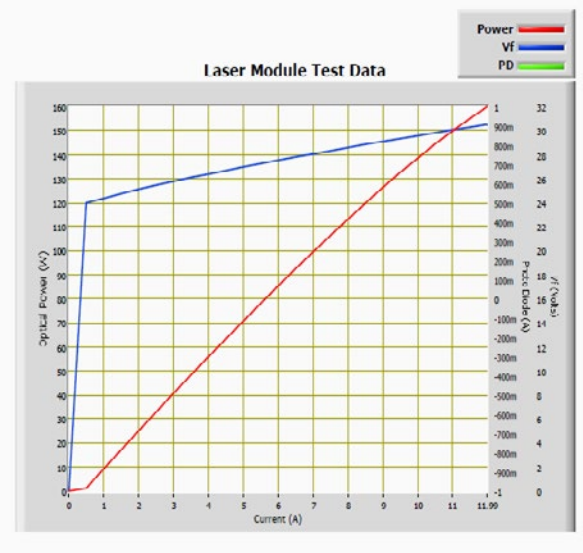
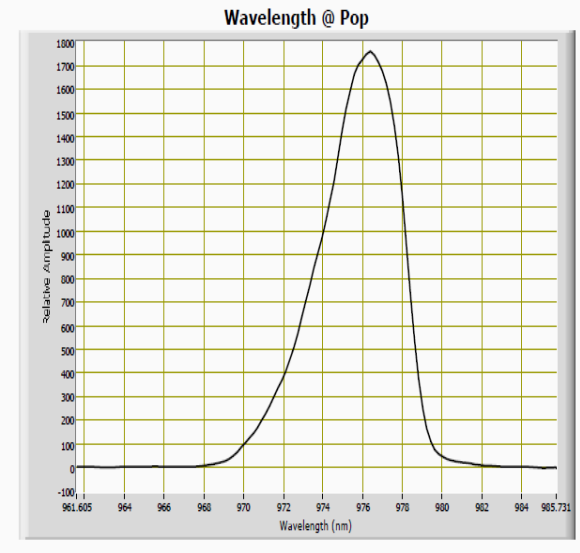
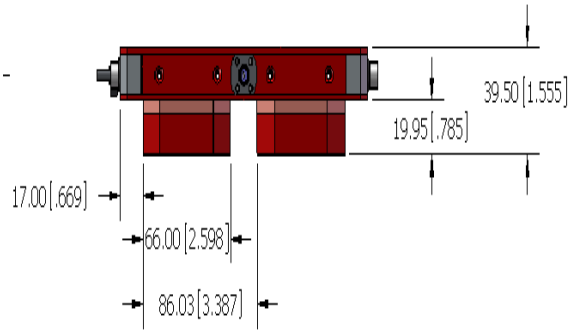
LASER COMPONENTS

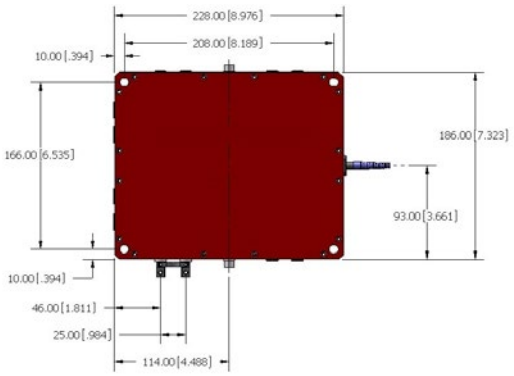
LIV Curve for 976nm, 150W





Package Dimensions(mm)





Safety

Caution: Laser light emitted from any diode laser is invisible and may be harmful to the human eye. Avoid looking directly into the diode laser aperture when the device is in operation.

Note: The use of optical instruments with this product will increase eye hazard.

ESD Caution

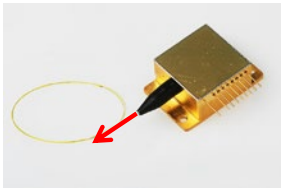
Always handle diode lasers with extreme care to prevent electrostatic discharge, the primary cause of unexpected diode failure. You can prevent ESD by always wearing wrist straps, grounding all applicable work surfaces, and following

Operating Considerations

Operating the diode laser outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum peak optical power cannot be exceeded. CW diode lasers may be damaged by excessive drive current or switching transients. When using power supplies, the diode laser should be connected with the main power on and the output voltage at zero. The current should be increased slowly while monitoring the diode laser output power and the drive current. Device degradation accelerates with increased temperature, and therefore careful attention to minimize the case temperature

Power Output Danger Label

WARNING! Invisible laser radiation is emitted from devices as shown below



21 CFR 1040.10 Compliance

Because of the small size of these devices, each of the labels shown are attached to the individual shipping container. They are illustrated here to comply with 21 CFR 1040.10 as applicable under the Radiation Control for Health and Safety Act of 1968.

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