

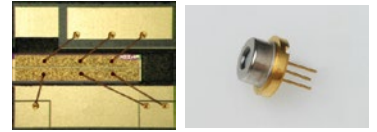
### Features

- Up to 500mW CW output power.
- High Quality, Reliability, & Performance

### Applications

- Telecommunication
- Cable TV
- Graphics

## Product Specifications 980nm Single-Mode Laser Diodes



### Description:

High brightness, high quality, and high reliability are the foundation of our single mode product line. Axcel's 980nm single mode laser diodes are available with up to 500mW of continuous output power from a single emitter chip. Axcel's trademark laser chip design offers un-measurable degradation and long lifetimes that make our chips among the most reliable in the industry today. Our 980nm single mode line serves a broad range of applications including telecommunication, Cable TV, and graphics.

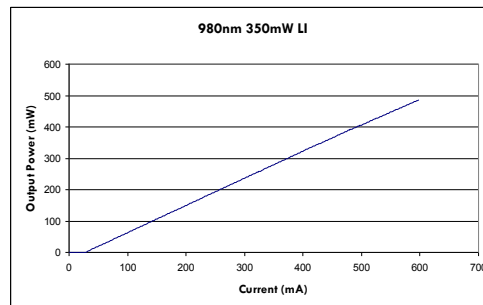
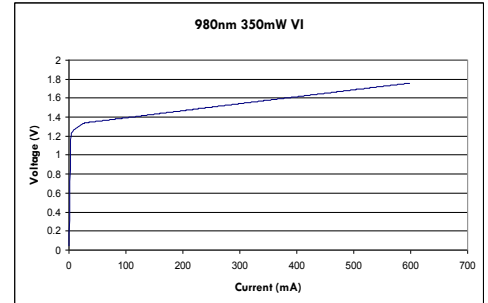
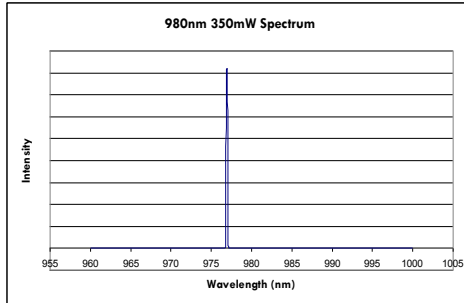
Packaging options include a 9mm TO-can or chip on sub-mount package. More options are available upon request. Please view our website for mechanical drawings of all of our sub-mounts.

### Standard Product Specifications for 980nm Single-mode Diodes

Parameter	Unit	500mW Series			350mW Series			300mW Series			250mW Series		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Wavelength	nm	975	980	985	975	980	985	975	980	985	975	980	985
Spectrum FWHM	nm	-	0.5	2.0	-	0.5	2.0	-	0.5	2.0	-	0.5	2.0
Operating Power (P <sub>o</sub> )	mW	-	500	-	-	350	-	-	300	-	-	250	-
Operating Current (I <sub>o</sub> )	mA	-	700	850	-	400	450	-	370	420	-	300	340
Operating Voltage (V <sub>o</sub> )	V	-	1.7	2.0	-	1.7	2.0	-	1.8	2.0	-	1.7	2.0
Kink-Free Power	mW	550	-	-	385	-	-	345	-	-	275	-	-
Lifetime	years	10	-	-	25	-	-	25	-	-	25	-	-
Vertical Far Field	deg, FWHM	-	28	30	-	28	30	-	28	30	-	28	30
Parallel Far Field	deg, FWHM	-	8	10	-	8	10	-	8	10	-	8	10
Threshold (I <sub>th</sub> )	mA	-	30	50	-	30	50	-	30	50	-	30	50
Slope Efficiency (dP/dI)	W/A	0.65	0.80	-	0.80	0.90	-	0.80	0.90	-	0.80	0.90	-
Storage Temperature	°C	-40	-	80	-40	-	80	-40	-	80	-40	-	80
Operating Temperature (T <sub>op</sub> )	°C	-20	25	50	-20	25	50	-20	25	50	-20	25	50
Lead Soldering Temperature (5 sec)	°C	-	-	250	-	-	250	-	-	250	-	-	250

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

### 980nm Single Mode Performance Data Graphs



**Determining Your Product number:** MM—WWW—PPP—XYZ—(custom add-ons)  
(wavelength)-(package)-(power)-(options)

**Package:**

C2	2.1mm COS
C3	3.0mm COS
M9	9mm TO-can

**Wavelength:**

980	980nm
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**Power Options:**

0250	250mW
0300	300mW
0350	350mW
0500	500mW

**X Option (aperture size)**

S	single-mode (cathode ground)
D	w/ photodiode (anode ground)

**Y Option (wavelength tolerance)**

5	±5nm
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**Z Option (additional options)**

O	none
D	w/ photodiode (anode ground)
P	w/ photodiode (cathode ground)

Please note: These are our standard product configura-

**Standard Product Configurations**

**250mW Series**

C2-980-0250-S50
M9-980-0250-S50
M9-980-0250-S5D
M9-980-0250-D5P
M9-980-0250-S5D
M9-980-0250-S5D
M9-980-0250-S5D
M9-980-0250-S5D
M9-980-0250-S5D
M9-980-0250-S5D

**350mW Series**

C2-980-0350-S50
M9-980-0350-S50
M9-980-0350-S5D
M9-980-0350-D5P

**500mW Series**

C3-980-0500-S50
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**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.

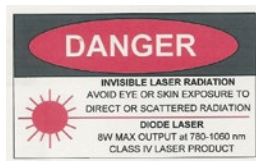
**ESD Caution**

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 extremely rigorous anti-static techniques when handling diode lasers.

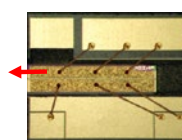
**Operating Considerations**

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 is advised. A proper heat-sink for the diode laser on a thermal radiator will greatly enhance laser life.

**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.