

## Features

- 1W CW output power.
- High Quality, Reliability, & Performance

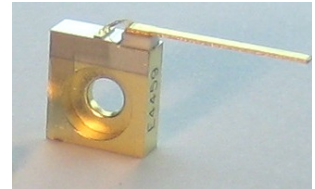
## Applications

- Raman Spectroscopy
- Laser Pumping
- Laser Therapy

# Product Specifications

## 785nm Multi-Mode Laser Diodes

### 100 $\mu$ m emitter (1W Lambda Lok Option)



## Description:

High brightness, high quality, and high reliability are the foundation of our multi mode product line. Axcel's 785nm multi mode laser diodes are available with 1W of continuous output power from a single emitter chip. 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. The 785nm multi mode has an Lambda-Lok option, which would allow the tolerance to be as small as  $\pm 0.5$ nm! Our 785nm multi mode line serves a broad range of applications including Raman Spectroscopy, laser pumping, and medical laser therapy.

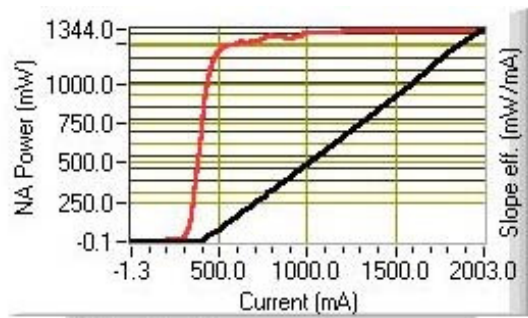
Packaging options include industry standard C-mounts.. More product options are available upon request. Please view our website for mechanical drawings of our sub-mounts.

## Standard Product Specifications for 785nm Multi-mode Diodes

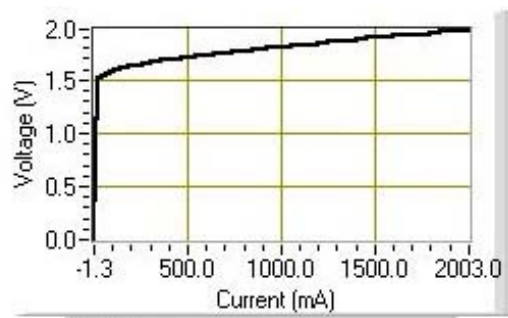
### 1W Series

Parameter	Unit	Min	Typ	Max
Wavelength	nm	780	785	790
Spectrum FWHM	nm	-	.2	.5
Operating Power (P <sub>o</sub> )	W	-	1.0	-
Operating Current (I <sub>o</sub> )	A	-	1.5	1.9
Operating Voltage (V <sub>o</sub> )	V	-	1.9	2.2
Lifetime	hour	10,000	-	-
Vertical Far Field	deg, FWHM	-	.8	1.2
Parallel Far Field	deg, FWHM	-	8	11
Threshold (I <sub>th</sub> )	mA	-	400	700
Slope Efficiency (dP/dI)	W/A	1.0	1.2	-
Storage Temp.	°C	-40	-	80
Operating Temp. (T <sub>op</sub> )	°C	-20	25	30
Lead Soldering Temp.(5 sec)	°C	-	-	250

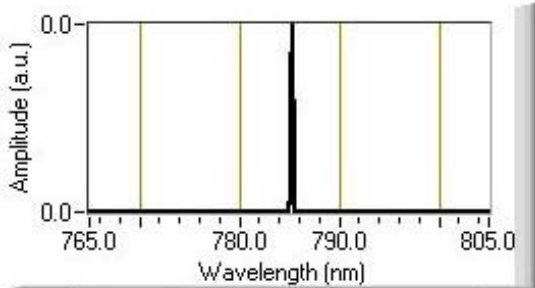
- Note:**
- 1) Specifications are subject to change without notice.
  - 2) All Axcel Photonics products are TE polarized
  - 3) Lambda-Lok model has a spectral shift due to temp of 0.005-0.01 nm/°C and a spectral shift due to current of 0.1-



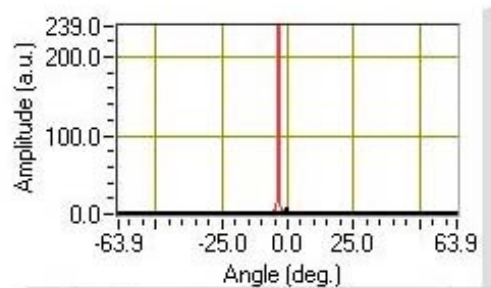
CW L-I, dL/dI curve



CW V-I curve



CW spectrum at 1000mW



CW far field at 2000mA

**Determining Your Product number:**

MM—WWW—PPP—XYZ—(custom add-ons)  
(package)-(wavelength)-(power)-(options)

**Standard Product Configurations**

**1W Series**  
CM-785-1000-1L0

**Package:**

CM C-mount

**Wavelength:**

785 785nm

**Power Options:**

1W

**X Option (aperture size)**

1 100µm aperture

**Y Option (wavelength tolerance)**

L Lamda-Lok (±0.5nm)

**Z Option (additional options)**

0 none

Please note: These are our standard product configurations. Other options may be available, please inquire about any additional options that you may require when contacting our Sales Team.

**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.

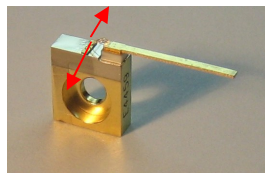
**Operating Considerations**

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.