

To request any additional information please contact us at:

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Phone: (508) 481-9200



## Features

- Up to 2W CW output power.
- High Quality, Reliability, & Performance

## Applications

- Raman Spectroscopy
- Laser Pumping
- Laser Therapy

# Product Specifications

**785nm Multi-Mode Laser Diodes  
100µm emitter (1W-2W)**



## 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 up to 2W 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. 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 9mm TO-can, C-mount, B-mount, and Q-mount. More product options are available upon request. Please view our website for mechanical drawings of all of our sub-mount, mount, and module packages.

Contact us today and learn how Axcel Photonics can accelerate your research and production!

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

Parameter	Unit	2W Series			1.5W Series			1W Series		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Wavelength	nm	780	785	790	780	785	790	780	785	790
Spectrum FWHM	nm	-	2	4	-	2	4	-	2	4
Operating Power (P <sub>o</sub> )	W	-	2.0	-	-	1.5	-	-	1.0	-
Operating Current (I <sub>o</sub> )	A	-	2.1	2.5	-	1.8	2.2	-	1.4	1.8
Operating Voltage (V <sub>o</sub> )	V	-	1.9	2.2	-	1.9	2.2	-	1.9	2.2
Lifetime	hour	10,000	-	-	10,000	-	-	10,000	-	-
Vertical Far Field	deg, FWHM	-	25	30	-	25	30	-	25	30
Parallel Far Field	deg, FWHM	-	8	11	-	8	11	-	8	11
Threshold (I <sub>th</sub> )	mA	-	400	700	-	400	700	-	400	700
Slope Efficiency (dP/dI)	W/A	1.0	1.2	-	1.0	1.2	-	1.0	1.2	-
Storage Temp.	°C	-40	-	80	-40	-	80	-40	-	80
Operating Temp. (T <sub>op</sub> )	°C	-20	25	50	-20	25	50	-20	25	50
Lead Soldering Temp.(5 sec)	°C	-	-	250	-	-	250	-	-	250

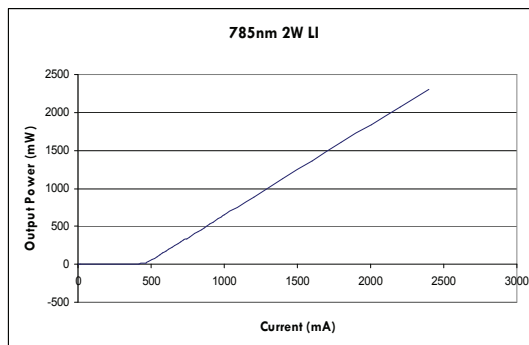
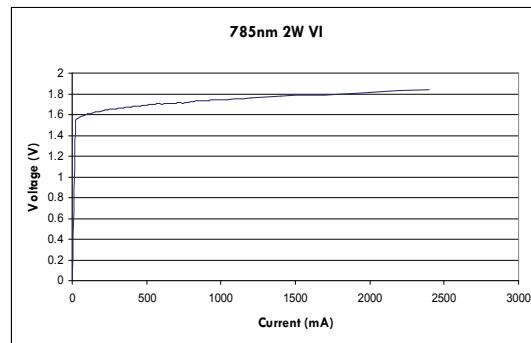
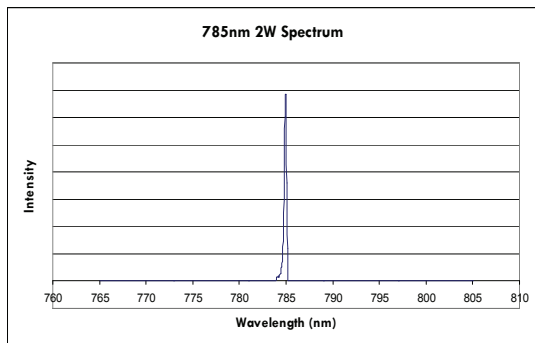
Note: 1) Specifications are subject to change without notice.

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 0.1-0.3nm/A.

**Axcel Photonics, Inc. 45 Bartlett Street, Marlborough, MA 01752 USA [www.axcelphotonics.com](http://www.axcelphotonics.com)**

## 785nm Multi-Mode Product Performance Data Graphs



### Determining Your Product number:

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

### Standard Product Configurations

#### Package:

CM	C-mount
BM	B-mount
QM	Q-mount
M9	9mm TO-can

#### Wavelength:

785	785nm
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#### Power Options:

1000	1W
1500	1.5W
2000	2W

#### X Option (aperture size)

1	100µm aperture
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#### Y Option (wavelength tolerance)

5	±5 nm
L	Lambda-Lok (±0.5nm)

#### Z Option (additional options)

0	none
P	w/ photodiode

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.

#### 1W Series

CM-785-1000-1L0
CM-785-1000-150
BM-785-1000-150
QM-785-1000-150
M9-785-1000-150
M9-785-1000-15P

#### 2W Series

CM-785-2000-150
BM-785-2000-150
QM-785-2000-150

<b>1.5W Series</b>
CM-785-1500-150
BM-785-1500-150
QM-785-1500-150

### 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.

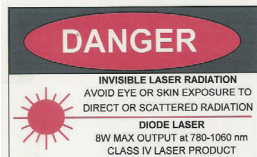
### ESD Caution

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.

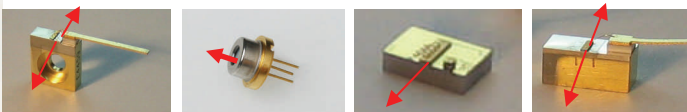
### Operating Considerations

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.