

### Features

- Up to 1.4W CW output power.
- Internal thermistor, TEC, and photodiode
- High Quality, Reliability, & Performance

### Applications

- Raman Spectroscopy
- Laser Pumping
- Laser Therapy

## Product Specifications

### 785nm Multi-Mode 14-Pin Butterfly Module Laser Diodes



### Description

High brightness, high quality, and high reliability are the foundation of our multi mode product line. Sheaumann's 785nm multi mode laser diodes are available with up to 1.4W of continuous output power from a 14-pin butterfly package with 100µm fiber core. All modules come standard with an internal thermistor, TEC, and photodiode. Sheaumann'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.

### Performance Data for Multi-Mode 785nm Butterfly Modules

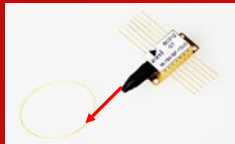
Parameter	Unit	1W Series			1.4W Series		
		Min	Typ	Max	Min	Typ	Max
Wavelength	nm	780	785	790	780	785	790
Spectrum FWHM	nm	-	2	4	-	2	4
Operating Power (P <sub>o</sub> )	W	-	1	-	-	1.4	-
Operating Current (I <sub>o</sub> )	mA	-	1.5	1.8	-	2.2	2.6
Operating Voltage (V <sub>o</sub> )	V	-	2.1	2.5	-	2.2	2.7
Lifetime	hours	10,000	-	-	10,000	-	-
Threshold (I <sub>th</sub> )	mA	-	400	700	-	500	800
Slope Efficiency (dP/dI)	W/A	0.8	0.9	-	0.8	0.9	-
Storage Temp.	°C	-40	-	80	-40	-	80
Operating Temp. (T <sub>op</sub> )	°C	-20	25	70	-20	25	70
Lead Soldering Temp.(5 sec)	°C	-	-	250	-	-	250
TEC Voltage	V	-	-	3.2	-	-	3.2
TEC Current	A	-	-	2.0	-	-	2.0

**Note:** Specifications are subject to change without notice. All Sheaumann Laser products are TE polarized

**Power Output  
Danger Label**



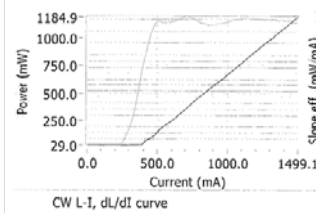
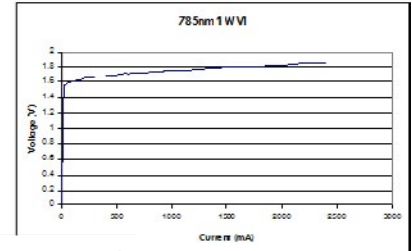
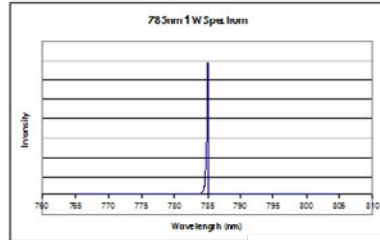
**WARNING!**  
Invisible laser radiation  
is emitted from devices  
as shown below



**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.

**Product Performance Data Graphs**



**Determining Your Product number**

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

**Standard Product  
Configurations**

**Package:**

B1 14-pin butterfly

**X Option (fiber core diameter)**

1 100µm fiber

**1W Series**

B1-785-1000-150

**Wavelength:**

785 785nm

**Y Option (wavelength tolerance)**

5 ±5 nm  
L ±.5 nm

**1.4W Series**

B1-785-1400-150

**Power Options:**

1000 1W  
1400 1.4W

**Z Option (additional options)**

0 none  
A Connector (FC/PC or FC/APC)

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

**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.