To request any additional information please contact us at:

Email: sales@axcelphotonics.com

Phone: (508) 481-9200

Features

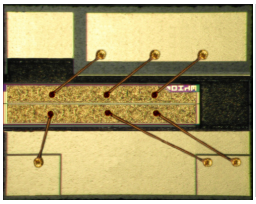
- Up to 150mW CW output power.
- High Quality, Reliability, and Performance

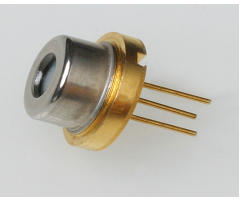
Applications

- Sanyo Replacement
- Spectral Analysis
- Graphics
- Printing
- Laser Ranging
- Gaming

Product Specifications

830nm Single-Mode Laser Diodes (50-150mW)





Description:

High brightness, high quality, and high reliability are the foundation of our single mode product line. Axcel's 830nm single mode laser diodes are available with up to 150mW of continuous output power from a single emitter chip. Axcel's trademark laser chip design offers unmeasurable degradation and long lifetimes that make our chips among the most reliable in the industry today. Our 830nm single mode line serves a broad range of applications including Sanyo replacement, gaming, printing, laser ranging, spectral analysis, 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.

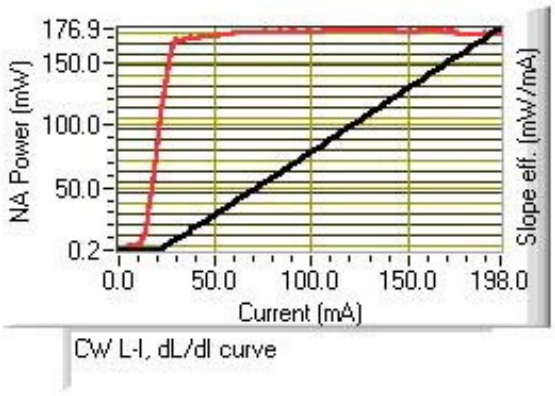
Standard Product Specifications for 830nm Single-mode Diodes

		50mW Series			100mW Series			150mW Series		
Parameter	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Wavelength	nm	825	830	835	825	830	835	825	830	835
Spectrum FWHM	nm		0.5	2.0	-	0.5	2.0	-	0.5	2.0
Operating Power (P_o)	mW	-	50	-	-	100	-	-	150	-
Operating Current (I_o)	mA	-	70	100	-	120	170	-	170	220
Operating Voltage (V_o)	V	-	1.9	2.2	-	1.9	2.2	-	1.9	2.2
Kink-Free Power	mW	60	-	-	110	-	-	160	-	-
Lifetime	hour	100,000	-	-	100,000	-	-	100,000	-	-
Vertical Far Field	deg, FWHM	-	18	23	-	18	23	-	18	23
Parallel Far Field	deg, FWHM	-	8	10	-	8	10	-	8	10
Threshold (I_{th})	mA	-	20	40	-	20	40	-	20	40
Slope Efficiency (dP/dI)	W/A	0.9	1.0	-	0.9	1.0		0.9	1.0	-
Storage Temperature	°C	-40	-	80	-40	-	80	-40	-	80
Operating Temperature (T_{op})	°C	-20	25	50	-20	25	50	-20	25	50
Lead Soldering Temperature (5 sec)	°C	-	-	250	-	-	250	-	-	250

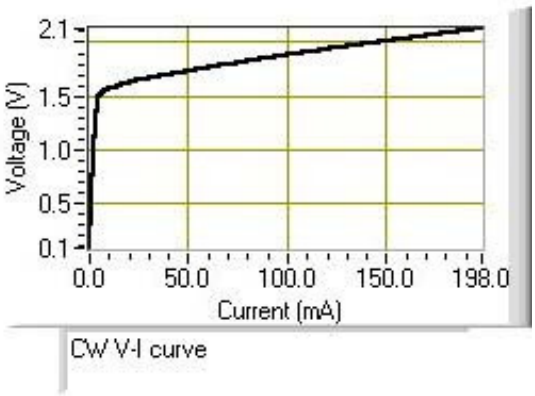
Note: 1) Specifications are subject to change without notice.

2) All Axcel Photonics products are TE polarized

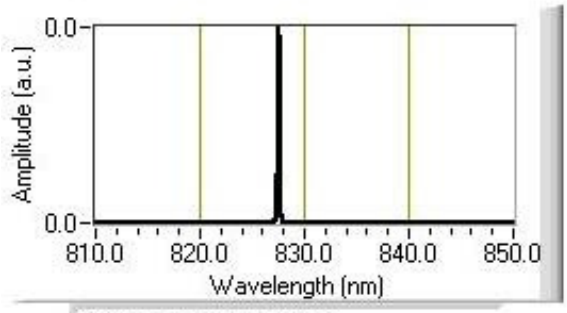
830nm Single Mode Performance Data Graphs



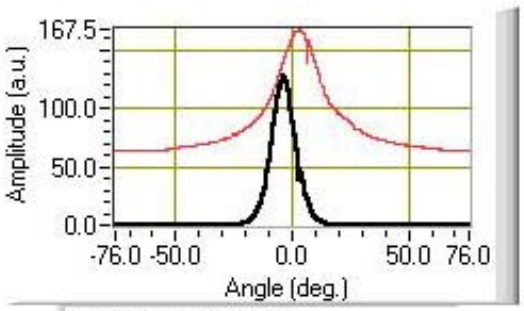
CW L-I, dL/dI curve



CW V-I curve



CW spectrum at 150mW



CW far field at 200mA

Determining Your Product number:

MM—WWW—PPPP—XYZ—(custom add-ons)

(package)-(wavelength)-(power)-(options)

Package:

C2	2.1mm COS
M5	5.6mm TO-can
M9	9mm TO-can

Wavelength:

830	830nm

Power Options:

0050	50mW
0100	100mW
0150	150mW

X Option (aperture size)

S	single-mode (cathode ground)
D	single-mode (anode ground)

Y Option (wavelength tolerance)

5	±5nm

Z Option (additional options)

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

Please note: These are our standard product configurations.

Standard Product Configurations

50mW Series

C2-830-0050-S50
M5-830-0050-S50
M5-830-0050-S5D
M5-830-0050-D5P
M9-830-0050-S50
M9-830-0050-S5D
M9-830-0050-D5P

100mW Series

C2-830-0100-S50
M5-830-0100-S50
M5-830-0100-S5D
M5-830-0100-D5P
M9-830-0100-S50
M9-830-0100-S5D
M9-830-0100-D5P

150mW Series

C2-830-0150-S50
M5-830-0150-S50
M5-830-0150-S5D
M5-830-0150-D5P
M9-830-0150-S50
M9-830-0150-S5D

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

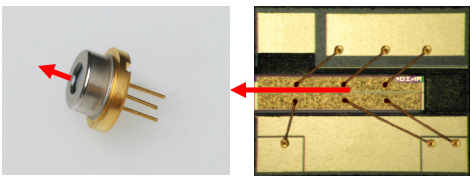
Always handle diode lasers with extreme care to prevent electrostatic discharge, the primary cause of unexpected diode failure. You can prevent ESD by always wearing wrist straps, grounding all applicable work surfaces, and following extremely rigorous anti-static

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.