Laser Diodes

SHEAUMANN

LASER COMPONENTS

Features

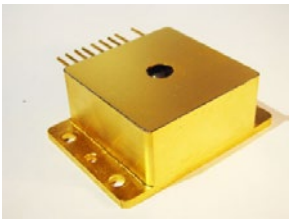
- Up to 10W CW output power.
- High Quality, Reliability, & Performance

Applications

- Solid State Pumping
- Material Processing
- Graphics
- Medical
- Defense

Product Specifications

975nm Multi-Mode High-Heat-Load Modules w/ Windowed Package (3-10W)



Description:

High brightness, high quality, and high reliability are the foundation of our multi mode product line. Sheaumann's 975nm multi mode laser diodes are available with up to 10W of continuous output power from a high-heat-load module with window output. 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 975nm multi mode line serves a broad range of applications including solid state pumping, material processing, graphics, medical, and defense.

Please view our website for mechanical drawings of all of our module packages.

Performance Data for Multi-Mode 975nm HHL Window Modules

		3W Series			4W Series			5W Series			6W Series		
Parameter	Unit	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Wavelength	nm	970	975	980	970	975	980	970	975	980	970	975	980
Spectrum FWHM	nm	-	3	5	-	3	5	-	3	5	-	3	5
Operating Power (P_o)	W	-	3.0	-	-	4.0	-	-	5	-	-	6.0	-
Operating Current (I_o)	mA	-	3.6	4.0	-	5.0	5.8	-	6.1	7.1	-	7.2	8.3
Operating Voltage (V_o)	V	-	1.7	2.0	-	1.5	2.0	-	1.5	2.0	-	1.5	2.0
Lifetime	hour	10,000	-	-	10,000	-	-	10,000	-	-	10,000	-	-
Vertical Far Field	°	-	30	40	-	30	35	-	30	35	-	30	35
Parallel Far Field	°	7	8	10	7	8	11	7	8	11	7	8	11
Threshold (I_{th})	A	-	0.25	0.55	-	0.50	0.80	-	0.50	0.80	-	0.50	0.80
Slope Efficiency (dP/dI)	W/A	0.8	0.9	-	0.8	0.9	-	0.8	0.9	-	0.8	0.9	-
Storage Temperature	°C	-40	-	80	-40	-	80	-40	-	80	-40	-	80
Operating Temperature (T_{op})	°C	-20	25	50	-20	25	50	0	25	50	-20	25	50
Lead Soldering Temperature (5 sec)	°C	-	-	250	-	-	250	-	-	250	-	-	250
TEC Voltage	V	-	-	8.6	-	-	8.6	-	-	8.6	-	-	8.6
TEC Current	A	-	-	3.8	-	-	3.8	-	-	3.8	-	-	3.8

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

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Performance Data for Multi-Mode 980nm HHL Window Modules cont...

Parameter	Unit	8W Series			10W Series		
		Min	Typ	Max	Min	Typ	Max
Wavelength	nm	970	975	980	970	975	980
Spectrum FWHM	nm	-	3	5	-	3	5
Operating Power (P_o)	W	-	8.0	-	-	10.0	-
Operating Current (I_o)	mA	-	10.0	11.0	-	12.6	14.0
Operating Voltage (V_o)	V	-	1.3	2.0	-	1.6	2.2
Lifetime	hour	10,000	-	-	10,000	-	-
Vertical Far Field	°	-	30	35	-	30	35
Parallel Far Field	°	-	8	11	-	8	11
Threshold (I_{th})	A	-	1.0	1.4	-	1.5	1.8
Slope Efficiency (dP/dI)	W/A	0.8	0.9	-	0.8	0.9	-
Storage Temperature	°C	-40	-	80	-40	-	80
Operating Temperature (T_{op})	°C	-20	25	50	-20	25	50
Lead Soldering Temperature (5 sec)	°C	-	-	250	-	-	250
TEC Voltage	V	-	-	8.6	-	-	8.6
TEC Current	A	-	-	3.8	-	-	3.8

Determining Your Product number:

MM—WWW—PPPP—XYZ—(custom add-ons)

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

Package:

HW	HHL package (9pin, window, TEC, PD thermistor)

Wavelength:

975	975nm

Power Options:

3000	3W
4000	4W
5000	5W
6000	6W
8000	8W
010W	10W

X Option (aperture size)

1	100µm
2	200µm
4	400µm

Y Option (wavelength tolerance)

5	±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.

Standard Product Configurations

3W Series
HW-975-3000-150

4W Series
HW-975-4000-250

5W Series
HW-975-5000-250

6W Series
HW-975-6000-250

8W Series
HW-975-8000-450

10W Series
HW-975-010W-450

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

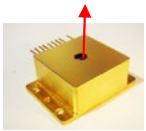
Always handle diode lasers with extreme care to prevent electrostatic discharge, the primary cause of unexpected diode failure. You can prevent ESD by always wearing wrist straps, grounding all applicable work surfaces, and following extremely rigorous anti-static techniques when handling diode lasers.

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.

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