



CS

Chip on Submount, CS-Mount

MULTIMODE
LASER DIODES

DESCRIPTION

High brightness, high quality, and high reliability are the foundation of our product lines. Sheumann's multimode laser diodes are available with up to 30W of output power from a single emitter chip. Sheumann's trademark laser chip design offers un-measurable degradation and long lifetimes that make our chips among the most reliable in the industry today.



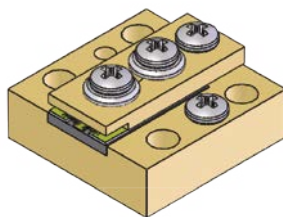
FEATURES

- Indium bonding, Cu submounts

APPLICATIONS

- Raman Spectroscopy
- Laser Therapy
- Laser Pumping
- Medical
- Defense

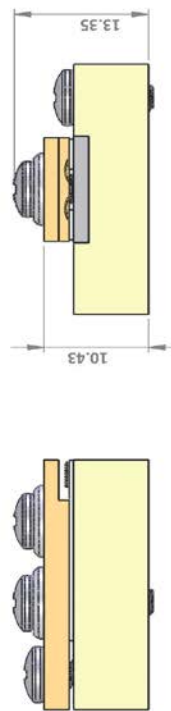
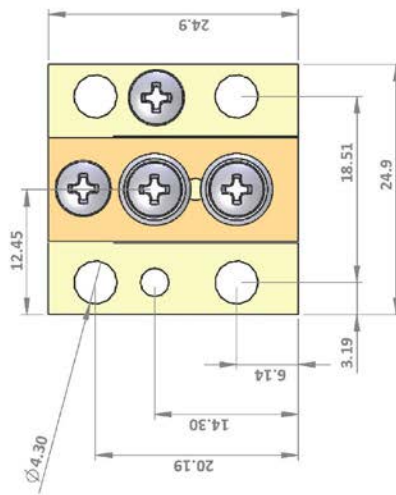
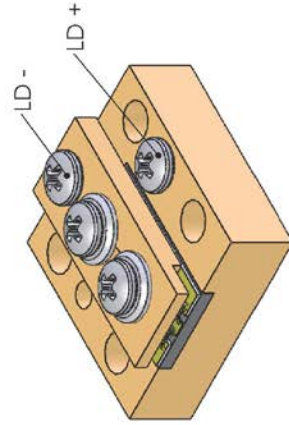
RENDERING & LASER OUTPUT




WARNING!
Invisible laser radiation is emitted
from devices as shown above

 CS-Mount

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/16/2016	BP



DIMENSIONS mm [in]	NAME	DATE	SHEAUMANN TITLE: Laser Diode on CS Mount		
UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:	BP	7/22/2014			
ANGULAR: ± 30 MINUTES	CHECKED				
X, X, X ± 0.13 [0.005]	ENG APPR.				
X, X, X ± 0.05 [0.002]	MFG APPR.				
X, X, X ± 0.025 [0.001]	Q.A.				
PROPERTY AND CONFIDENTIAL	THIRD ANGLE PROJECTION 		SIZE DWG. NO. REV A RDW 840030 Rev A A		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF SHEAUMANN, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF SHEAUMANN, INC. IS PROHIBITED.	TOLERANCING PRELIMINARY 14-30-1894 MATERIAL		SCALE: 2:1 SHEET 1 OF 1		
DO NOT SCALE DRAWING	1	2	3	4	5

782nm *1000µm emitter*

SPECIFICATIONS

Parameter	Unit	20W series		
		Min	Typ	Max
Wavelength ¹	nm	-	782	-
Operating Power	W	-	20	-
Operating Current	A	-	24	27
Operating Voltage	V	-	2	2.5
Threshold	mA	-	4.5	5.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	35	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-785-020W-95M	CS-Mount 785±5nm 20W, 1000µm emitter, microlens (8x8 square beam)
CS-785-020W-95U	CS-Mount 785±5nm 20W, 1000µm emitter, microlens (collimated, 2°)
CS-785-020W-95S	CS-Mount 785±5nm 20W, 1000µm emitter, ultra low AR coating (<0.5%)
CS-785-020W-95V	CS-Mount 785±5nm 20W, 1000µm emitter, high AR Coating (>4%)



808nm 600µm emitter

SPECIFICATIONS

Parameter	Unit	20W series		
		Min	Typ	Max
Wavelength ¹	nm	-	808	-
Operating Power	W	-	20	-
Operating Current	A	-	22.6	25.5
Operating Voltage	V	-	2	2.5
Threshold	mA	-	4.5	5.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	30	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-808-020W-65M	CS-Mount 808±5nm 20W, 600µm emitter, microlens (8x8 square beam)
CS-808-020W-65U	CS-Mount 808±5nm 20W, 600µm emitter, microlens (collimated, 2°)
CS-808-020W-65S	CS-Mount 808±5nm 20W, 600µm emitter, ultra low AR coating (<0.5%)
CS-808-020W-65V	CS-Mount 808±5nm 20W, 600µm emitter, high AR Coating (>4%)

808nm 1000µm emitter

SPECIFICATIONS

Parameter	Unit	25W series		
		Min	Typ	Max
Wavelength ¹	nm	-	808	-
Operating Power	W	-	25	-
Operating Current	A	-	27	30.5
Operating Voltage	V	-	2	2.5
Threshold	mA	-	4.5	5.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	30	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-808-025W-95M	CS-Mount 808±5nm 25W, 1000µm emitter, microlens (8x8 square beam)
CS-808-025W-95U	CS-Mount 808±5nm 25W, 1000µm emitter, microlens (collimated, 2°)
CS-808-025W-95S	CS-Mount 808±5nm 25W, 1000µm emitter, ultra low AR coating (<0.5%)
CS-808-025W-95V	CS-Mount 808±5nm 25W, 1000µm emitter, high AR Coating (>4%)



808nm 1000µm emitter

SPECIFICATIONS

Parameter	Unit	30W series		
		Min	Typ	Max
Wavelength ¹	nm	-	808	-
Operating Power	W	-	30	-
Operating Current	A	-	32	35.5
Operating Voltage	V	-	2	2.5
Threshold	mA	-	4.5	5.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	30	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-808-030W-95M	CS-Mount 808±5nm 30W, 1000µm emitter, microlens (8x8 square beam)
CS-808-030W-95U	CS-Mount 808±5nm 30W, 1000µm emitter, microlens (collimated, 2°)
CS-808-030W-95S	CS-Mount 808±5nm 30W, 1000µm emitter, ultra low AR coating (<0.5%)
CS-808-030W-95V	CS-Mount 808±5nm 30W, 1000µm emitter, high AR Coating (>4%)

852nm *1000µm emitter*

SPECIFICATIONS

Parameter	Unit	25W series		
		Min	Typ	Max
Wavelength ¹	nm	-	852	-
Operating Power	W	-	25	-
Operating Current	A	-	28	31.5
Operating Voltage	V	-	-	2.5
Threshold	mA	-	5.5	6.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	35	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, I _{op} , CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-852-025W-95M	CS-Mount 852±5nm 25W, 1000µm emitter, microlens (8x8 square beam)
CS-852-025W-95U	CS-Mount 852±5nm 25W, 1000µm emitter, microlens (collimated, 2°)
CS-852-025W-95S	CS-Mount 852±5nm 25W, 1000µm emitter, ultra low AR coating (<0.5%)
CS-852-025W-95V	CS-Mount 852±5nm 25W, 1000µm emitter, high AR Coating (>4%)



975nm *600µm emitter*

SPECIFICATIONS

Parameter	Unit	20W series		
		Min	Typ	Max
Wavelength ¹	nm	-	975	-
Operating Power	W	-	20	-
Operating Current	A	-	24	28
Operating Voltage	V	-	-	2
Threshold	mA	-	2	2.5
Slope Efficiency	W/A	1	-	-
Vertical Far Field @ FWHM	deg. FWHM	-	30	-
Horizontal Far Field @ FWHM	deg. FWHM	-	10	-
Operational Temp ²	°C	-20°C	-	50°C
Storage Temp	°C	-40°C	-	80°C
Lifetime (based at 25°C, Iop, CW) ³	hour	>10,000	-	-

NOTES

- 1) Wavelength options at ±3, 5 and 10nm.
- 2) All specifications are tested at 25°C.
- 3) Lifetime is quoted on accelerated CW testing.

STANDARD PACKAGE CONFIGURATIONS

CS-975-020W-65M	CS-Mount 975±5nm 20W, 600µm emitter, microlens (8x8 square beam)
CS-975-020W-65U	CS-Mount 975±5nm 20W, 600µm emitter, microlens (collimated, 2°)
CS-975-020W-65S	CS-Mount 975±5nm 20W, 600µm emitter, ultra low AR coating (<0.5%)
CS-975-020W-65V	CS-Mount 975±5nm 20W, 600µm emitter, high AR Coating (>4%)

CUSTOMIZATION OPTIONS

PACKAGE - WAVELENGTH - POWER - OPTIONS

(CS) - (780-1080nm) - (Up to 30W) - (123)

PACKAGE

WAVELENGTH


POWER

OPTIONS

OPTIONS*

Option 1	
I	25µm aperture
Q	50µm aperture (submounts, window modules) OR 50µm fiber, 0.22NA (fiber-coupled packages)
A	100µm aperture (submounts, window modules) OR 100µm fiber, 0.22NA (fiber-coupled packages)
M	145µm aperture (submounts, window modules) OR 145µm fiber, 0.22NA (fiber-coupled packages)
Z	200µm aperture (submounts, window modules) OR 200µm fiber, 0.22NA (fiber-coupled packages)
3	300µm aperture (submounts, window modules) OR 300µm fiber, 0.22NA (fiber-coupled packages)
4	400µm aperture (submounts, window modules) OR 400µm fiber, 0.22NA (fiber-coupled packages)
6	600µm aperture (submounts, window modules) OR 600µm fiber, 0.22NA (fiber-coupled packages)
9	1000µm aperture (submounts, window modules)
D	5M chip, p-down (submounts)
E	50µm fiber, -12NA (fiber-coupled packages)
F	50µm fiber, -15NA (fiber-coupled packages)
G	100µm fiber, -15NA (fiber-coupled packages)
H	100µm fiber, -22NA (fiber-coupled packages)
I	200µm fiber, -15NA (fiber-coupled packages)
J	62.5µm fiber, -22NA (fiber-coupled packages)
K	PM fiber for module
S	5M chip, p-up (submounts)
Option 2	
3	wavelength ±3nm
5	wavelength ±5nm
9	wavelength ±10nm
F	5M-FBG ±0.5nm
N	5M narrow bandwidth FBG
R	5M PM-FBG ±0.5nm
Option 3	
0	standard submount/chip OR fiber without connector OR welded cap for M9
A	FC/PC connector for 0.22NA, PVC jacket
E	FC/PC connector for 0.27NA or 0.39NA, PVC jacket
F	FC/PC 8° connector for 0.22NA, PVC jacket
G	FC/PC 8° connector for 0.37NA or 0.39NA, PVC jacket
Q	ST connector, PVC jacket
J	ST connector, 3mm jacket
C	SMA connector, PVC jacket
H	SMA connector, 3mm jacket
I	SMA connector, armored cable
M	microlens (8x8 square beam)
U	microlens (collimated, <2°)
D	5.6mm or 9.0mm TO-Can with PD-welded cap (PD anode ground)
R	5.6mm or 9.0mm TO-Can with PD-welded cap (PD cathode ground)
Q	5.6mm or 9.0mm TO-Can, taped or loose cap, no PD
F	5.6mm or 9.0mm TO-Can, taped or loose cap, PD
R	thermistor
S	Ultra low AR coating (<0.5%)
V	High AR coating (>4%)
A	Bar with fill length >15 chips per bar
B	2-chip bar
3	3-chip bar
4	4-chip bar
5	5-chip bar
6	6-chip bar
9	10-chip bar

*options listed in gray are currently unavailable for this product.

 CS-Mount

Alternate package configurations and options may be available. Please inquire about additional options when contacting our sales team.

OPERATING CONSIDERATIONS

Operating the diode laser outside of its maximum ratings may present a safety hazard or cause a device failure. Additionally, CW diode lasers may be damaged by excessive drive current or switching transients. When using a power supply with the component, it must be used within the specified parameters. DO NOT exceed the maximum peak optical power. Before turning the power supply on, connect the component to the power supply and ensure the output voltage value is zero. After the component has been successfully connected, increase the current slowly and monitor both the output power and drive current. Device degradation accelerates with increased temperature; 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.

ESD CAUTION

The primary cause of diode failure is unexpected electrostatic discharge. To help prevent device failures, be sure to handle devices with extreme care. The user should always wear an ESD wrist strap, ground all applicable work surfaces and follow anti-static techniques when handling diode lasers.

FDA 21 CFR 1040.10

All devices are manufactured, tested and labeled in compliance with FDA 21 CFR 1040.10 regulations, as applicable under the Radiation Control for Health and Safety Act of 1968. For smaller devices, the appropriate compliance labeling may be affixed to the shipping container.

All products comply with 21 CFR Chapter 1, Subchapter J.

SAFETY

Caution: Laser light emitted from a diode 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.

NOTE

Specifications are subject to change without

Alternate package configurations and options may be available. Please inquire about additional options when contacting our sales team.

POWER OUTPUT DANGER LABEL



DOC 820017 REV A