Diode Laser Components

HIGH-POWER SINGLE EMITTER DIODE LASERS

780 to 830 nm

Based on Coherent's legendary Aluminum-free Active Area (AAA™) epitaxy, Coherent 780-830 nm devices provide unsurpassed reliability and performance. Standard options include 808 nm 3.5 W 100 µm, 5 W 140 µm, and 7 W 200 µm-wide emitters packaged on c-mounts, rated to >20 k hours lifetime. Specifications and options —including power, wavelength, and package design— can be tailored to your demands.

FEATURES

- Unique AAA™ epitaxial technology for highest reliability and lifetime
- 7 W from a 200 µm wide emitter
- 5 W from a 150 µm wide emitter
- 3.5 W from a 100 µm wide emitter
- Lifetime >20,000 hours
- ROHS compliant

APPLICATIONS

- Laser Pumping
- Medical
- Materials Processing
- Illumination

COHERENT

Device Specifications[1,2]		
Optical Output Power (W) (unlensed)	1.6	3.5
Optical Output Power (W) (lensed)	1.6	3.5
Emitter Width (µm)	100	100
Centroid Wavelength Available[3] (nm)	780 to 830	
Centroid Wavelength, Standard (nm) (at 25°C)	808 ±3	
Spectral Width, Standard (nm)	≤3	
Wavelength Temperature Coefficient (nm/°C)	0.28	
Polarization	TM	TE
Fast Axis Divergence (degrees) (unlensed) (FWHM)	31	29
Fast Axis Divergence (degrees) (lensed) (FWHM)	≤4	≤4
Slow Axis Divergence (degrees) (FWHM)	≤10	≤11
Threshold Current (A) (typical)	0.3	0.5
Operating Current (A)	≤2.0 (1.7 typical)	≤3.5 (3.3 typical)
Operating Voltage (V)	≤2.0	
Operating Temperature[4] (°C)	25	
Operating Temperature Range (°C)	+15 to +40	
Storage Temperature Range (°C)	-40 to +60	

Notes:
1. Specifications listed here apply at beginning of life. Operating current at end of life is 120 % the operating current at beginning of life.
2. Please consult the factory for any requirements not listed, including the following options:
   - Centroid wavelength and spectral width requirements other than listed here.
   - Optical output powers other than listed here.
   - Emitter aperture widths other than listed here.
3. Contact factory for availability.
4. Operating temperature is measured at the base of the package. The recommended operating temperature range is 15-40°C. Specifications listed here apply at 25°C.

Operation Notes:

ESD precautions must be taken when handling unit.

Negative current transients greater than 25 µA and/or reverse voltages >3 V can destroy the unit.

Unit requires an adequate heat sink. Failure to supply an adequate heat sink will destroy the unit.

A dry environment should be provided when storing or operating a device with an open diode laser facet at temperatures below the ambient dew point.

Failure to do so will cause condensation on the unit and can destroy it.

Device Specifications[1,2]		
Optical Output Power (W) (unlensed)	2.5	5
Optical Output Power (W) (lensed)	2.5	5
Emitter Width (µm)	150	140
Centroid Wavelength Available[3] (nm)	780 to 830	
Centroid Wavelength, Standard (nm) (at 25°C)	808 ±3	
Spectral Width, Standard (nm)	≤3	
Wavelength Temperature Coefficient (nm/°C)	0.28	
Polarization	TM	TE
Fast Axis Divergence (degrees) (unlensed) (FWHM)	31	29
Fast Axis Divergence (degrees) (lensed) (FWHM)	≤4	≤4
Slow Axis Divergence (degrees) (FWHM)	≤10	≤11
Threshold Current (A) (typical)	0.5	0.8
Operating Current (A)	≤3.0 (2.8 typical)	≤5.5 (4.8 typical)
Operating Voltage (V)	≤2.0	
Operating Temperature[4] (°C)	25	
Operating Temperature Range (°C)	+15 to +40	
Storage Temperature Range (°C)	-40 to +60	

Notes:
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2. Please consult the factory for any requirements not listed, including the following options:
   - Centroid wavelength and spectral width requirements other than listed here.
   - Optical output powers other than listed here.
   - Emitter aperture widths other than listed here.
3. Contact factory for availability.
4. Operating temperature is measured at the base of the package. The recommended operating temperature range is 15-40°C. Specifications listed here apply at 25°C.

Operation Notes:

ESD precautions must be taken when handling unit.

Negative current transients greater than 25 µA and/or reverse voltages >3 V can destroy the unit.

Unit requires an adequate heat sink. Failure to supply an adequate heat sink will destroy the unit.

A dry environment should be provided when storing or operating a device with an open diode laser facet at temperatures below the ambient dew point.

Failure to do so will cause condensation on the unit and can destroy it.

Device Specifications[1,2]	
Optical Output Power (W) (unlensed)	7
Optical Output Power (W) (lensed)	7
Emitter Width (µm)	200
Centroid Wavelength Available[3] (nm)	780 to 830
Centroid Wavelength, Standard (nm) (at 25°C)	808 ±3
Spectral Width, Standard (nm)	≤3
Wavelength Temperature Coefficient (nm/°C)	0.28
Polarization	TE
Fast Axis Divergence (degrees) (unlensed) (FWHM)	29
Fast Axis Divergence (degrees) (lensed) (FWHM)	≤4
Slow Axis Divergence (degrees) (FWHM)	≤11
Threshold Current (A) (typical)	1.1
Operating Current (A)	≤8.5 (8.0 typical)
Operating Voltage (V)	≤2.0
Operating Temperature[4] (°C)	25
Operating Temperature Range (°C)	+15 to +40
Storage Temperature Range (°C)	-40 to +60

Notes:
1. Specifications listed here apply at beginning of life. Operating current at end of life is 120 % the operating current at beginning of life.
2. Please consult the factory for any requirements not listed, including the following options:
   - Centroid wavelength and spectral width requirements other than listed here.
   - Optical output powers other than listed here.
   - Emitter aperture widths other than listed here.
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4. Operating temperature is measured at the base of the package. The recommended operating temperature range is 15-40°C. Specifications listed here apply at 25°C.

Operation Notes:

ESD precautions must be taken when handling unit.

Negative current transients greater than 25 µA and/or reverse voltages >3 V can destroy the unit.

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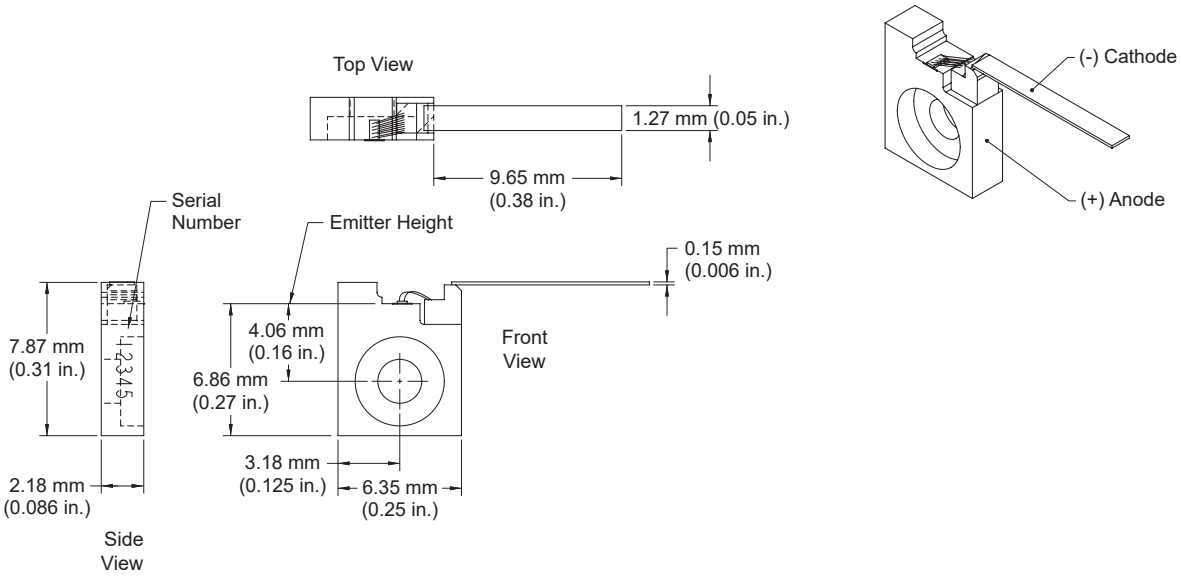
MECHANICAL SPECIFICATIONS

780 nm to 830 nm C-Mount



For more information:
www.coherent.com