



Single Emitter Diode Lasers, 780-830 nm

High Power Single Emitters for Pumping and Direct-Diode Applications

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 3.2W 90 μm , 5W 140 μm , and 7W 200 μm -wide emitters packaged on c-mounts, rated to >20k hours lifetime. Specifications and options—including power, wavelength, and package design—can be tailored to your demands.

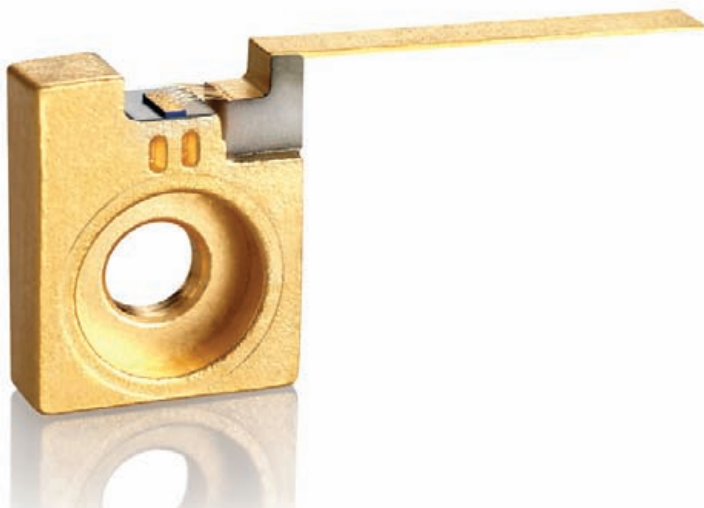
Please contact Coherent to discuss your unique requirements.

Single Emitter Diode Lasers, 780-830 nm Features:

- Unique AAA epitaxial technology for highest reliability and lifetime
- 7W from a 200 μm wide emitter
- 5W from a 150 μm wide emitter
- 3.2W from a 90 μm wide emitter
- Lifetime >20,000 hours
- ROHS compliant

Single Emitter Diode Lasers, 780-830 nm Applications:

- Laser Pumping
- Medical
- Materials Processing
- Illumination



Superior Reliability & Performance

www.Coherent.com/SingleEmitterDL780-830

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Device Specifications ^{1,2}	90-100 μm emitter width	
	1.6W 100 μm	3.2W 90 μm
Optical Output Power (W)(unlensed)	1.6	3.2
Optical Output Power (W)(lensed)	1.6	3.2
Emitter Width (μm)	100	90
Centroid Wavelength Available ³ (nm)	780 to 830	780 to 830
Centroid Wavelength, Standard (nm)(at 25°C)	808 ± 3	808 ± 3
Spectral Width, Standard (nm)	<3	<3
Wavelength Temperature Coefficient (nm/°C)	0.28	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	<10
Threshold Current (A)(typical)	0.3	0.5
Operating Current (A)	<2.0 (1.7 typical)	<3.5 (3.0 typical)
Operating Voltage (V)	<2.0	<2.0
Operating Temperature ⁴	25°C	25°C
Operating Temperature Range	15 to 40°C	15 to 40°C
Storage Temperature Range	-40 to +60°C	-40 to +60°C

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 $>3\text{V}$ 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.

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Device Specifications ^{1,2}	140-150 μm emitter width	
	2.5W 150 μm	5W 140 μm
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	780 to 830
Centroid Wavelength, Standard (nm)(at 25°C)	808 ± 3	808 ± 3
Spectral Width, Standard (nm)	<3	<3
Wavelength Temperature Coefficient (nm/°C)	0.28	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	<10
Threshold Current (A)(typical)	0.5	0.8
Operating Current (A)	<3 (2.8 typical)	<5.5 (4.8 typical)
Operating Voltage (V)	<2.0	<2.0
Operating Temperature ⁴	25°C	25°C
Operating Temperature Range	15 to 40°C	15 to 40°C
Storage Temperature Range	-40 to +60°C	-40 to +60°C

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Device Specifications ^{1,2}	200 μm emitter width 7W 200 μm
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 \pm 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)	<10
Threshold Current (A)(typical)	1.1
Operating Current (A)	<8.5 (8.0 typical)
Operating Voltage (V)	<2.0
Operating Temperature ⁴	25°C
Operating Temperature Range	15 to 35°C
Storage Temperature Range	-40 to +60°C

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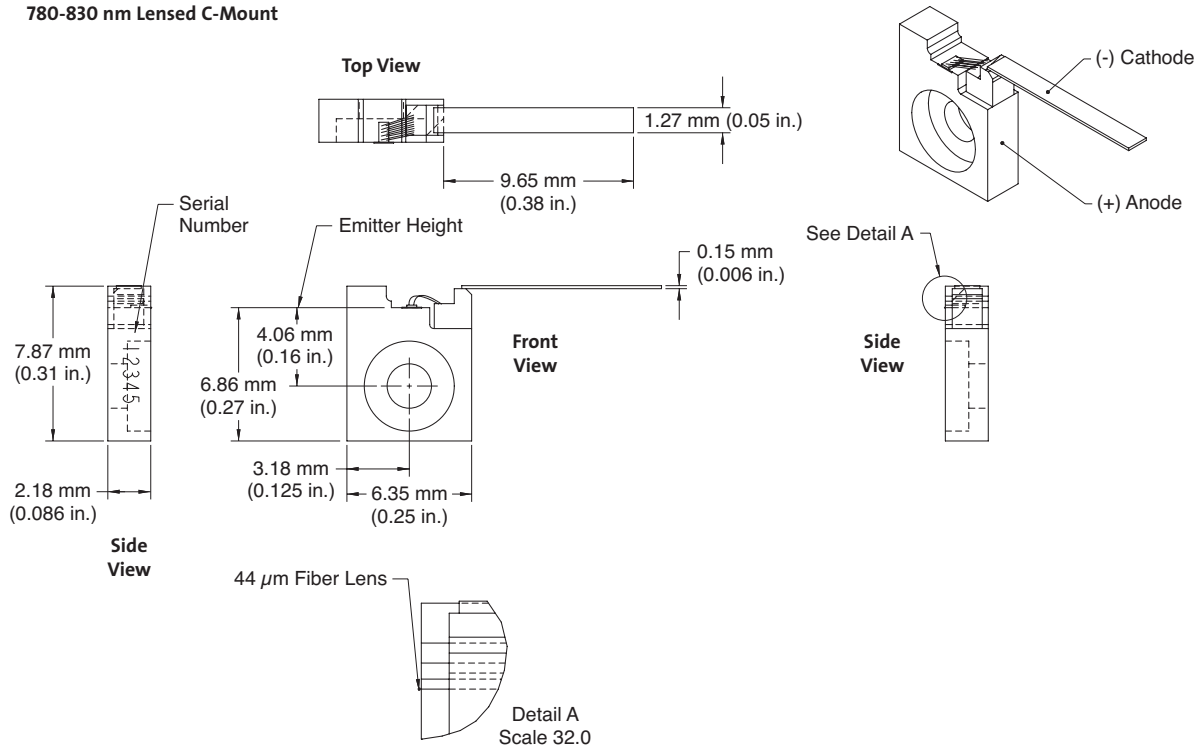
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Mechanical Specifications

780-830 nm Lensed C-Mount



COHERENT®

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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice.

Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all Single Emitter Devices. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative.