



Genesis MX MTM-Series

High-Power Optically Pumped Semiconductor Lasers (OPSL)

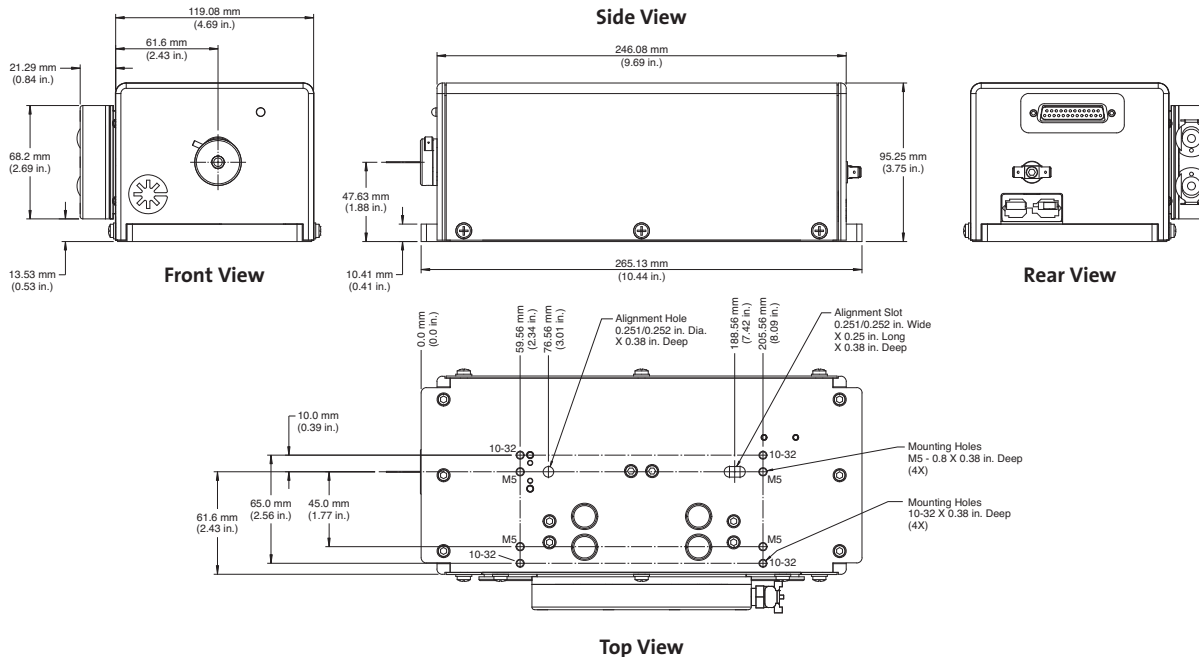
Features

- End user, turn key solution
- OPSL reliability
- Compact, efficient design
- Optimum wavelengths and power for superior results
 - 1W and 2W at 460 nm
 - 2W at 480 nm
 - 3W and 5W at 488 nm
 - 3W and 5W at 514 nm
 - Up to 8W at 532 nm for strong absorption by retinal pigment epithelium
 - 2W at 561 nm
 - Up to 5W at 577 nm matches peak absorption in oxyhemoglobin
- Choice of air or water-cooled solutions



Mechanical Specifications

MX-Series MTM
Water-cooled version



Superior Reliability & Performance

Genesis™ MX MTM-Series

High-Power Optically Pumped Semiconductor Lasers (OPSL)

Optical Specifications¹

Genesis	PRELIMINARY MX 460-1000/2000	PRELIMINARY MX 480-2000	PRELIMINARY MX 488-3000/5000
Wavelength (nm)	460 ±3	480 ±3	488 ±3
Pulse Format		CW	
Spectral Purity (%)		>99	
Output Power (mW)	1000, 2000	2000	3000, 5000
Spatial Mode		Multimode	
Beam Quality ⁹ (M ²)			
Horizontal		<7	
Vertical		<7	
Beam Circularity ^{2,9,10}		1.25	
Beam Waist Diameter ^{9,10} (mm)(FW, 1/e ²)	1.4	1.6	1.6
Beam Divergence ^{9,10} (mrad)(FW, 1/e ²)	1.3	1.5	1.5
Beam Waist Location ^{3,9,10} (nm)		0.25 ±0.25	
Beam Pointing Stability ^{4,9} (μrad/°C)		<5	
Horizontal Beam Position Tolerance ⁵ (mm)		±1.0	
Vertical Beam Position Tolerance ⁵ (mm)		±1.0	
Beam Pointing Tolerance ⁵ (mrad)		<5	
Polarization Ratio		Linear, >100:1	
Polarization Direction		Vertical, ±5°	
Noise			
10 Hz to 10 MHz (% rms)		<1	
10 Hz to 5 kHz (% peak-to-peak)		<10	
Power Stability ⁶ (%)(pk-pk)		±1	
Warm-Up Time (minutes)		<10	
CDRH Compliant		Yes	

Electrical Specifications

Operating Voltage (VAC)	100 to 240
Frequency (Hz)	50 to 60
Power Consumption (W)	500

Environmental Conditions

Ambient Temperature (°C)	
Operating	10 to 40 water-cooled, 10 to 35 air-cooled
Non-Operating	-10 to 60
Relative Humidity ⁷ (%)	5 to 95
CE Marking	IEC 61010-1/EN 61010-1
Dimensions (L x W x H)	
Laser Head ⁸	281 x 156 x 85 mm (11.06 x 6.14 x 3.35 in.)
Cables (laser head to controller)	2m (6.5 ft.)

¹ Optical parameters measured at the output plane of the laser head. Unless noted all parameters valid for the lifetime of the unit.

² Circularity defined as vertical diameter divided by horizontal diameter.

³ Negative value corresponds to a location inside head.

⁴ After 2-hour warm-up.

⁵ Measured at the output window.

⁶ Measured over 8 hrs.

⁷ Non-condensing.

⁸ Back connector not included in laser head length dimension.

⁹ Contact Coherent for any specific application requirements.

¹⁰ Typical value.

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Optical Specifications¹

Genesis	MX 514-3000/5000	MX 532-3000/5000/8000
Wavelength (nm)	514 ±3	532 ±3
Pulse Format		CW
Spectral Purity (%)		>99
Output Power (mW)	3000, 5000	3000, 5000, 8000
Spatial Mode		Multimode
Beam Quality ⁹ (M ²)		
Horizontal		<7
Vertical		<7
Beam Circularity ^{2,9,10}		1.25
Beam Waist Diameter ^{9,10} (mm)(FW, 1/e ²)		1.8
Beam Divergence ^{9,10} (mrad)(FW, 1/e ²)		<1.4
Beam Waist Location ^{3,9,10} (nm)		0.25 ±0.25
Beam Pointing Stability ^{4,9} (μrad/°C)		<5
Horizontal Beam Position Tolerance ⁵ (mm)		±1.0
Vertical Beam Position Tolerance ⁵ (mm)		±1.0
Beam Pointing Tolerance ⁵ (mrad)		<5
Polarization Ratio		Linear, >100:1
Polarization Direction		Vertical, ±5°
Noise		
10 Hz to 10 MHz (% rms)		<1
10 Hz to 5 kHz (% peak-to-peak)		<10
Power Stability ⁶ (%)(pk-pk)		±1
Warm-Up Time (minutes)		<10
CDRH Compliant		Yes

Electrical Specifications

Operating Voltage (VAC)	100 to 240
Frequency (Hz)	50 to 60
Power Consumption (W)	500

Environmental Conditions

Ambient Temperature (°C)	
Operating	10 to 40 water-cooled, 10 to 35 air-cooled
Non-Operating	-10 to 60
Relative Humidity ⁷ (%)	5 to 95
CE Marking	IEC 61010-1/EN 61010-1
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³ Negative value corresponds to a location inside head.

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⁵ Measured at the output window.

⁶ Measured over 8 hrs.

⁷ Non-condensing.

⁸ Back connector not included in laser head length dimension.

⁹ Contact Coherent for any specific application requirements.

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Optical Specifications¹

Genesis	PRELIMINARY MX 561-2000	MX 577-3000/5000
Wavelength (nm)	561 ±3	577 ±3
Pulse Format		CW
Spectral Purity (%)		>99
Output Power (mW)	2000	3000, 5000
Spatial Mode		Multimode
Beam Quality ⁹ (M ²)		
Horizontal		<7
Vertical		<7
Beam Circularity ^{2,9,10}		1.25
Beam Waist Diameter ^{9,10} (mm)(FW, 1/e ²)		1.8
Beam Divergence ^{9,10} (mrad)(FW, 1/e ²)		<1.4
Beam Waist Location ^{3,9,10} (nm)		0.25 ±0.25
Beam Pointing Stability ^{4,9} (μrad/°C)		<5
Horizontal Beam Position Tolerance ⁵ (mm)		±1.0
Vertical Beam Position Tolerance ⁵ (mm)		±1.0
Beam Pointing Tolerance ⁵ (mrad)		<5
Polarization Ratio		Linear, >100:1
Polarization Direction		Vertical, ±5°
Noise		
10 Hz to 10 MHz (% rms)		<1
10 Hz to 5 kHz (% peak-to-peak)		<10
Power Stability ⁶ (%)(pk-pk)		±1
Warm-Up Time (minutes)		<10
CDRH Compliant		Yes

Electrical Specifications

Operating Voltage (VAC)	100 to 240
Frequency (Hz)	50 to 60
Power Consumption (W)	500

Environmental Conditions

Ambient Temperature (°C)	
Operating	10 to 40 water-cooled, 10 to 35 air-cooled
Non-Operating	-10 to 60
Relative Humidity ⁷ (%)	5 to 95
CE Marking	IEC 61010-1/EN 61010-1
Dimensions (L x W x H)	
Laser Head ⁸	281 x 156 x 85 mm (11.06 x 6.14 x 3.35 in.)
Cables (laser head to controller)	2m (6.5 ft.)

¹ Optical parameters measured at the output plane of the laser head. Unless noted all parameters valid for the lifetime of the unit.

² Circularity defined as vertical diameter divided by horizontal diameter.

³ Negative value corresponds to a location inside head.

⁴ After 2-hour warm-up.

⁵ Measured at the output window.

⁶ Measured over 8 hrs.

⁷ Non-condensing.

⁸ Back connector not included in laser head length dimension.

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Optical Specifications ¹	Genesis	PRELIMINARY MX 920-4000	PRELIMINARY MX 1064-10000	PRELIMINARY MX 1154-6000
	Wavelength (nm)		920 ±10	1064 ±10
Output Power (mW)		4000	10,000	6000
Spatial Mode		Multimode		
Bandwidth (nm)		<5.0		
Beam Waist Dimensions (mm)				
Horizontal Size ² (FW, 1/e ² , mm)		0.6		
Vertical Size ² (FW, 1/e ² , mm)		0.6		
Location ^{2,3} (mm)		-150		
Beam Divergence				
Horizontal ⁴ (FW, 1/e ² , mrad)		3.5		
Vertical ⁴ (FW, 1/e ² , mrad)		3.5		
M ²				
Horizontal		<2		
Vertical		<2		
Pointing Stability ⁴ (μrad/°C)		<5		
Noise				
10 Hz to 10 MHz (% rms)		<0.5		
10 Hz to 100 kHz (% peak-to-peak)		<10		
Polarization Ratio		Vertical, >100:1		
Utility and Environmental Requirements				
Operating Diode Current (A)		<30	<38	<32
Maximum Diode Current (A)		<36	<45	<38.5
Diode Voltage (V)		1.5 to 2.2		
Cooling Requirements ⁵		Active cooling required		
Case Temperature (°C)		25 ±2		
Humidity		Non-condensing		
Dimensions (L x W x H)				
Laser Head ⁵		256 x 49 x 71 mm (10.07 x 1.93 x 2.76 in.)		
Weight				
Laser Head (g)		730 ±10		

¹ Optical parameters measured at the output plane of the laser head. Unless noted all parameters valid for the lifetime of the unit.

² Typical value.

³ Measured from the output face, negative value corresponds to a location inside the head; positive outside.

⁴ Measured at the output window: tolerance relative to the nominal center of the output window and perpendicular to the mounting plane.

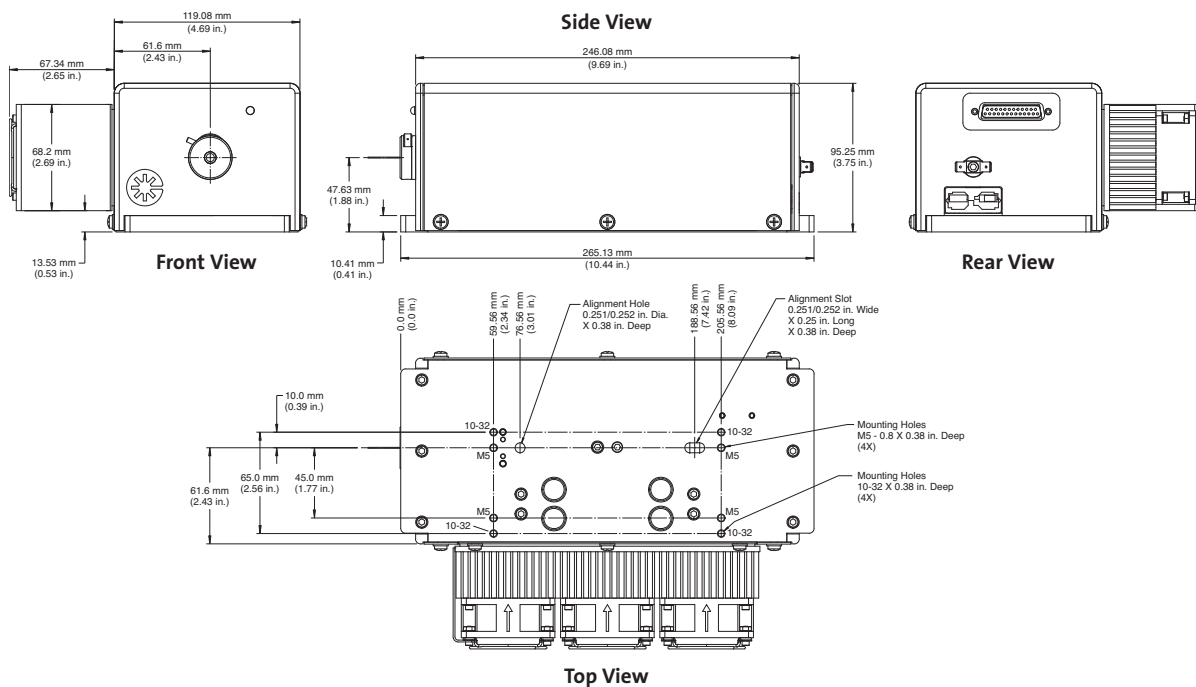
⁵ Contact integration support for options on air-cooling TEC or waterplate.

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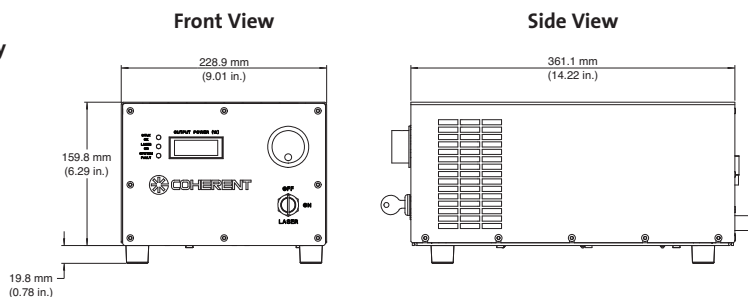
High-Power Optically Pumped Semiconductor Lasers (OPSL)

Mechanical Specifications

MX-Series MTM Air-cooled version



Genesis MX-Series Benchtop Power Supply



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 Genesis MX-Series lasers. 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.



www.Coherent.com

Coherent, Inc.
 5100 Patrick Henry Drive
 Santa Clara, CA 95054
 phone (800) 527-3786
 (408) 764-4983
 fax (408) 764-4646
 e-mail tech.sales@Coherent.com

Benelux +31 (30) 280 6060
 China +86 (10) 8215 3600
 France +33 (0)1 8038 1000
 Germany +49 (6071) 968 333
 Italy +39 (02) 31 03 951
 Japan +81 (3) 5635 8700
 Korea +82 (2) 460 7900
 UK +44 (1353) 658 833

