

Genesis MX SLM-Series

Single Frequency Visible OEM and End-User OPS Laser Systems

Applications like Flow Cytometry, Particle Counting, DNA Sequencing and Microscopy are enabled by low noise, visible true CW lasers. The Genesis MX SLM-Series provides up to 1W of visible laser light from either OEM or CDRH-compliant end-user systems.

Based on Coherent's unique Optically Pumped Semiconductor Laser (OPSL) technology, the Genesis MX SLM-Series features single frequency operation for the most demanding applications. This, combined with stable beam parameters across output powers, a diffraction-limited beam, low noise and high stability, provides unparalleled laser performance in a convenient package.

Genesis MX SLM-Series is the perfect match for customers in need of the highest performing CW laser technology for research and instrumentation in life science and biological applications.

Genesis MX SLM-Series Features:

- All Genesis MX advantages with single-frequency output
- OEM or end-user versions
- Air- or water-cooled solutions

Genesis MX SLM-Series Applications:

- Flow Cytometry
- Particle Counting
- DNA Sequencing
- Microscopy

Genesis MX SLM-Series
OEM version



Superior Reliability & Performance

Genesis MX SLM-Series

Single Frequency Visible OEM and End-User OPS Laser Systems

Optical Specifications ¹	Genesis MX 460	Genesis MX 480	Genesis MX 488
Wavelength (nm)	460 ±3	480 ±3	488 ±3
FWHM Linewidth (MHz)		<5	
Pulse Format		CW	
Spectral Purity (%)		>99	
Output Power (mW)	500	500	500, 1000
Spatial Mode		TEM ₀₀	
Beam Quality (M ²)		<1.1	
Beam Circularity ²		1.0 ±0.1	
Beam Waist Diameter (mm)(FW, 1/e ²)		1.0 ±0.1	
Beam Divergence (mrad)(FW, 1/e ²)		0.7 ±0.1	
Beam Waist Location ³ (m)		±0.25	
Beam Pointing Stability ^{4,5} (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 (% rms)(10 Hz to 10 MHz)		<0.1	
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	
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.

Genesis MX SLM-Series

Single Frequency Visible OEM and End-User OPS Laser Systems

Optical Specifications ¹	Genesis MX 514	Genesis MX 532	Genesis MX 561	Genesis MX 577	Genesis MX 590
Wavelength (nm)	514 ±3	532 ±3	561 ±3	577 ±3	590 ±3
FWHM Linewidth (MHz)			<5		
Pulse Format			CW		
Spectral Purity (%)			>99		
Output Power (mW)	500,1000	500,1000	500	500,1000	500,1000
Spatial Mode			TEM ₀₀		
Beam Quality (M ²)			<1.1		
Beam Circularity ²			1.0 ±0.1		
Beam Waist Diameter (mm)(FW, 1/e ²)			1.0 ±0.1		
Beam Divergence (mrad)(FW, 1/e ²)			0.7 ±0.1		
Beam Waist Location ³ (m)			±0.25		
Beam Pointing Stability ^{4,5} (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 (% rms)(10 Hz to 10 MHz)			<0.1		
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.)		

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Single Frequency Visible OEM and End-User OPS Laser Systems

Optical Specifications ¹	Genesis MX 460 OEM	Genesis MX 480 OEM	Genesis MX 488 OEM
Wavelength (nm)	460 ±3	480 ±3	488 ±3
Output Power (mW)	500	500	500, 1000
Spatial Mode		TEM ₀₀	
FWHM Linewidth (MHz)		<5	
Pulse Format		CW	
Beam Circularity		1.0 ±0.1	
Beam Position Tolerance (mm)			
Horizontal		±<1.0	
Vertical		±<1.0	
Beam Waist Diameter (mm)(FW, 1/e ²)		1.0 ±0.1	
Beam Divergence (mrad)(FW, 1/e ²)		0.7 ±0.1	
Beam Waist Location ^{2,3} (m)		±0.25	
M ²			
Horizontal		<1.1	
Vertical		<1.1	
Pointing Stability ⁴ (μrad/°C)		<5	
Noise			
10 Hz to 10 MHz (% rms)		<0.1	
10 Hz to 5 kHz ⁵ (% peak-to-peak)		<1	
Polarization Ratio		Horizontal, >100:1	
CDRH Compliance		No	
Warm-up Time (minutes)		<10	
Direct Modulation ⁶		Available	
Utility and Environmental Requirements			
Operating Diode Current (A)	<10	<10	<10, <12
Maximum Diode Current (A)	<12	<12	<12, <15
Diode Voltage (V)		1.5 to 2.2	
Cooling Requirements ⁷		Active cooling required	
Case Temperature (°C)		25 ±2	
Humidity		Non-condensing	
Dimensions (L x W x H)			
Laser Head		121 x 44 x 65 mm (4.76 x 1.73 x 2.56 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 Measured at the output of the laser head.

³ Negative value corresponds to a location within the head.

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

⁵ Over 8 hours.

⁶ Theoretical limit is >1 MHz; actual performance will be limited by the diode-driver (not included).

⁷ Contact integration support for options on air-cooling TEC or waterplate.

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Wavelength (nm)	514 ±3	532 ±3	561 ±3	577 ±3	590 ±3
Output Power (mW)	500,1000	500,1000	500	500,1000	500,1000
Spatial Mode			TEM ₀₀		
FWHM Linewidth (MHz)			<5		
Pulse Format			CW		
Beam Circularity			1.0 ±0.1		
Beam Position Tolerance (mm)					
Horizontal			±<1.0		
Vertical			±<1.0		
Beam Waist Diameter (mm)(FW, 1/e ²)			1.0 ±0.1		
Beam Divergence (mrad)(FW, 1/e ²)			0.7 ±0.1		
Beam Waist Location ^{2,3} (m)			±0.25		
M ²					
Horizontal			<1.1		
Vertical			<1.1		
Pointing Stability ⁴ (μrad/°C)			<5		
Noise					
10 Hz to 10 MHz (% rms)			<0.1		
10 Hz to 5 kHz ⁵ (% peak-to-peak)			<1		
Polarization Ratio			Horizontal, >100:1		
CDRH Compliance			No		
Warm-up Time (minutes)			<10		
Direct Modulation ⁶			Available		
Utility and Environmental Requirements					
Operating Diode Current (A)			<10		
Maximum Diode Current (A)			<12		
Diode Voltage (V)			1.5 to 2.2		
Cooling Requirements ⁷			Active cooling required		
Case Temperature (°C)			25 ±2		
Humidity			Non-condensing		
Dimensions (L x W x H)					
Laser Head			121 x 44 x 65 mm (4.76 x 1.73 x 2.56 in.)		
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Laser Head (g)			730 ±10		

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⁵ Over 8 hours.

⁶ Theoretical limit is >1 MHz; actual performance will be limited by the diode-driver (not included).

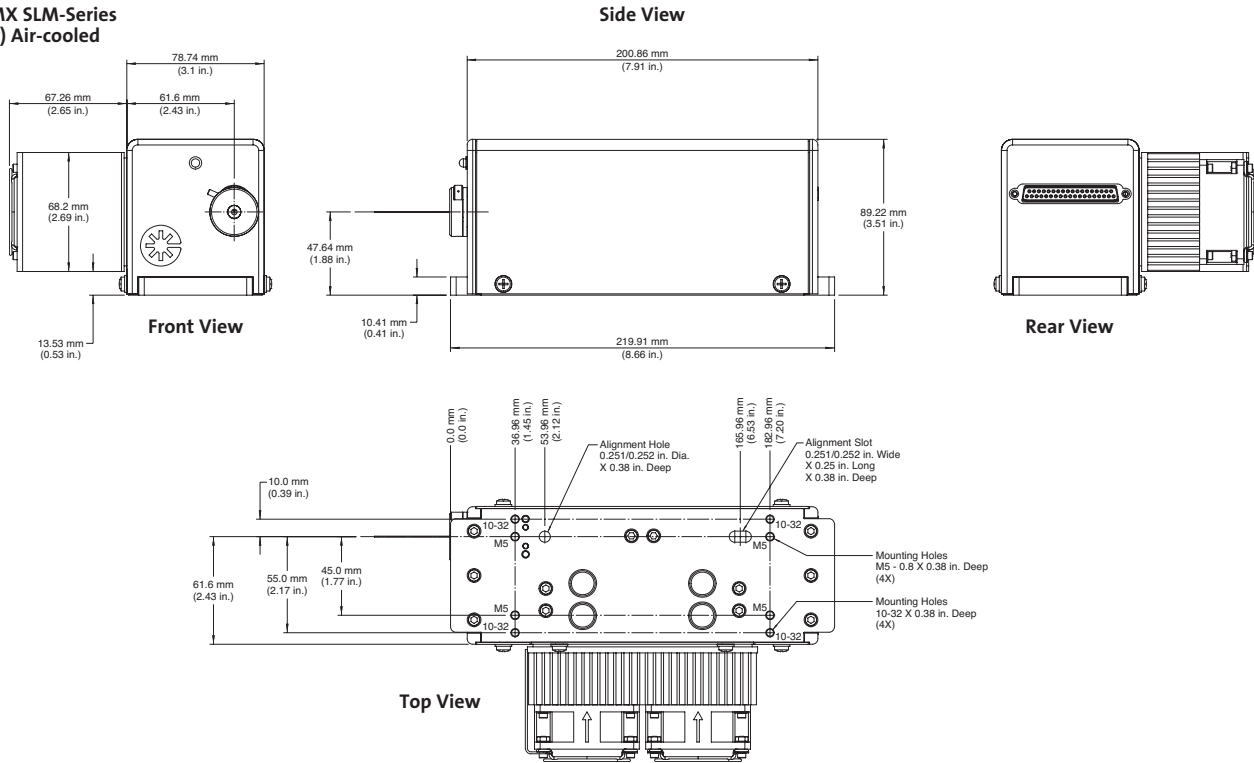
⁷ Contact integration support for options on air-cooling TEC or waterplate.

Genesis MX SLM-Series

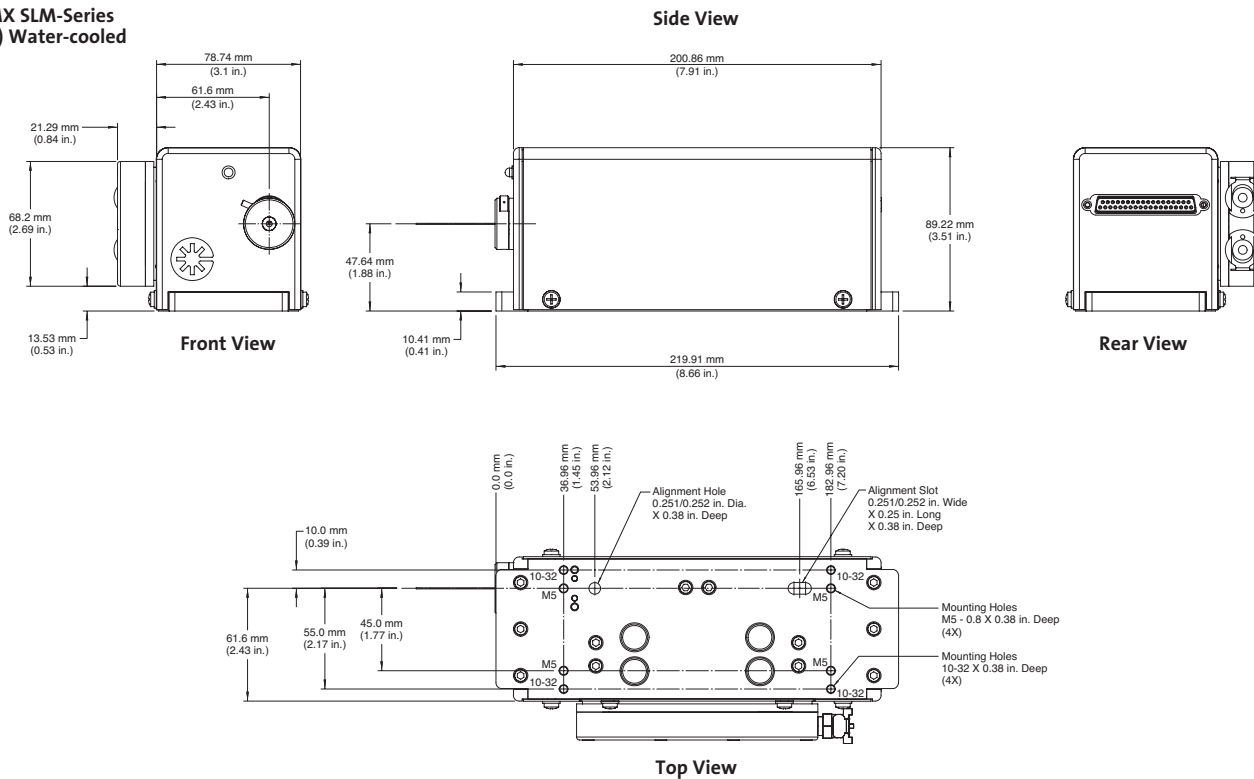
Single Frequency Visible OEM and End-User OPS Laser Systems

Mechanical Specifications

Genesis MX SLM-Series (End-User) Air-cooled version



Genesis MX SLM-Series (End-User) Water-cooled version

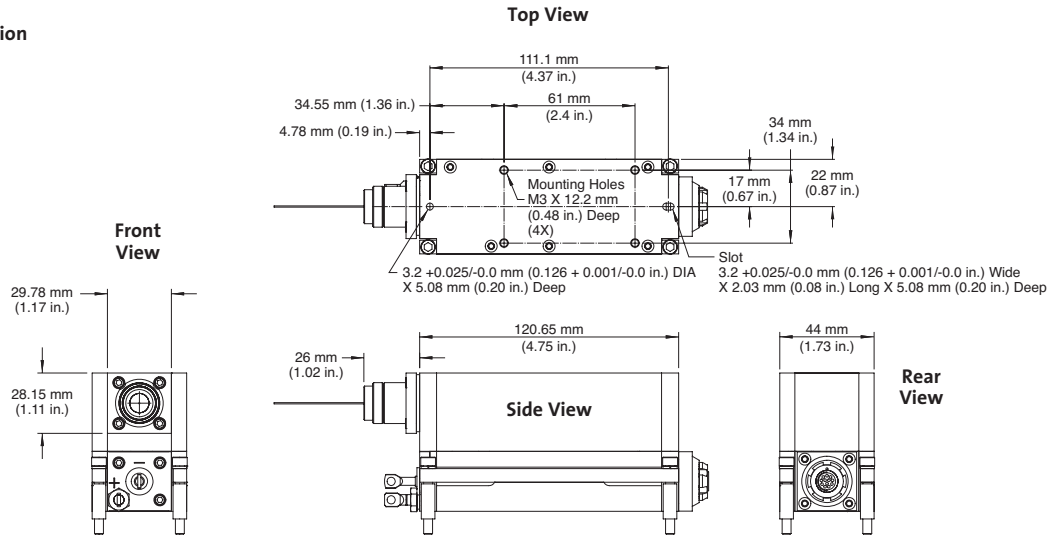


Genesis MX SLM-Series

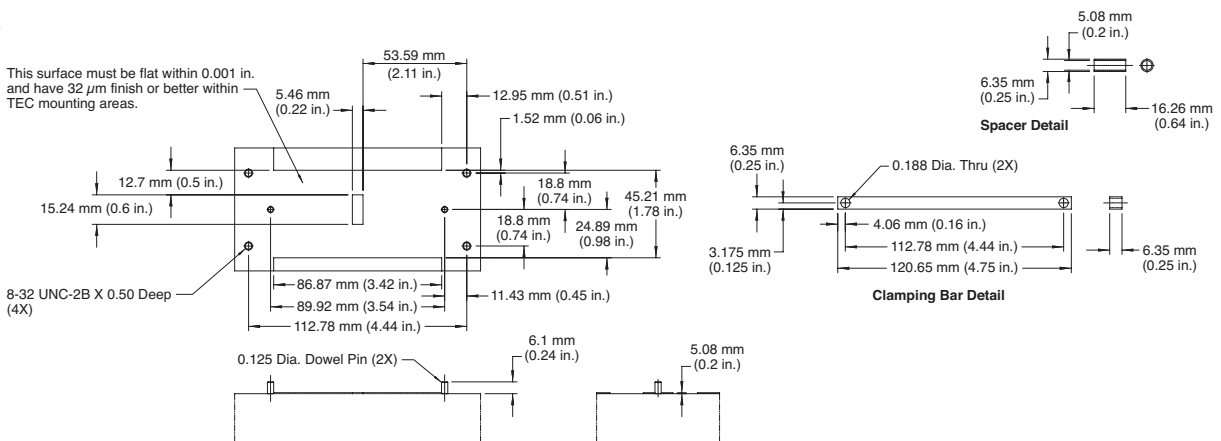
Single Frequency Visible OEM and End-User OPS Laser Systems

Mechanical Specifications

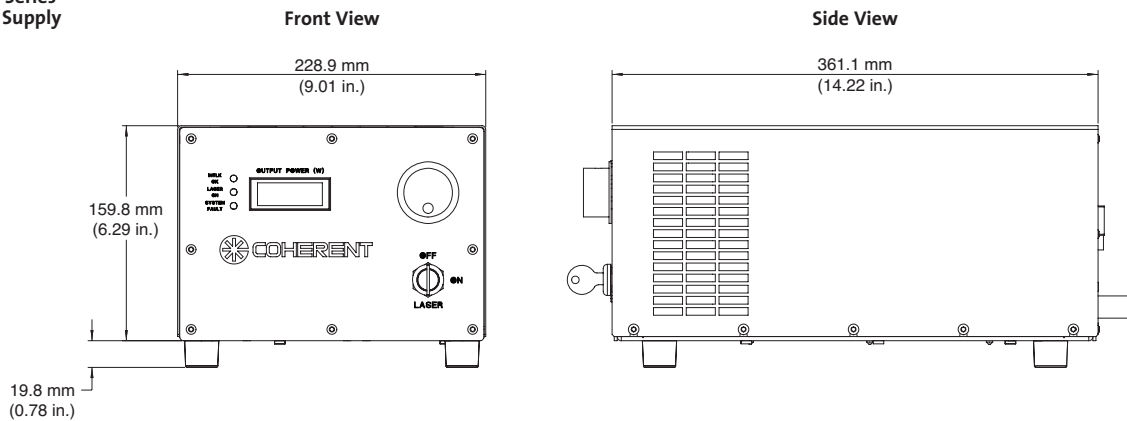
Genesis MX SLM-Series
(OEM) Water-cooled version



Base Plate Requirements



Genesis MX SLM-Series Benchtop Power Supply

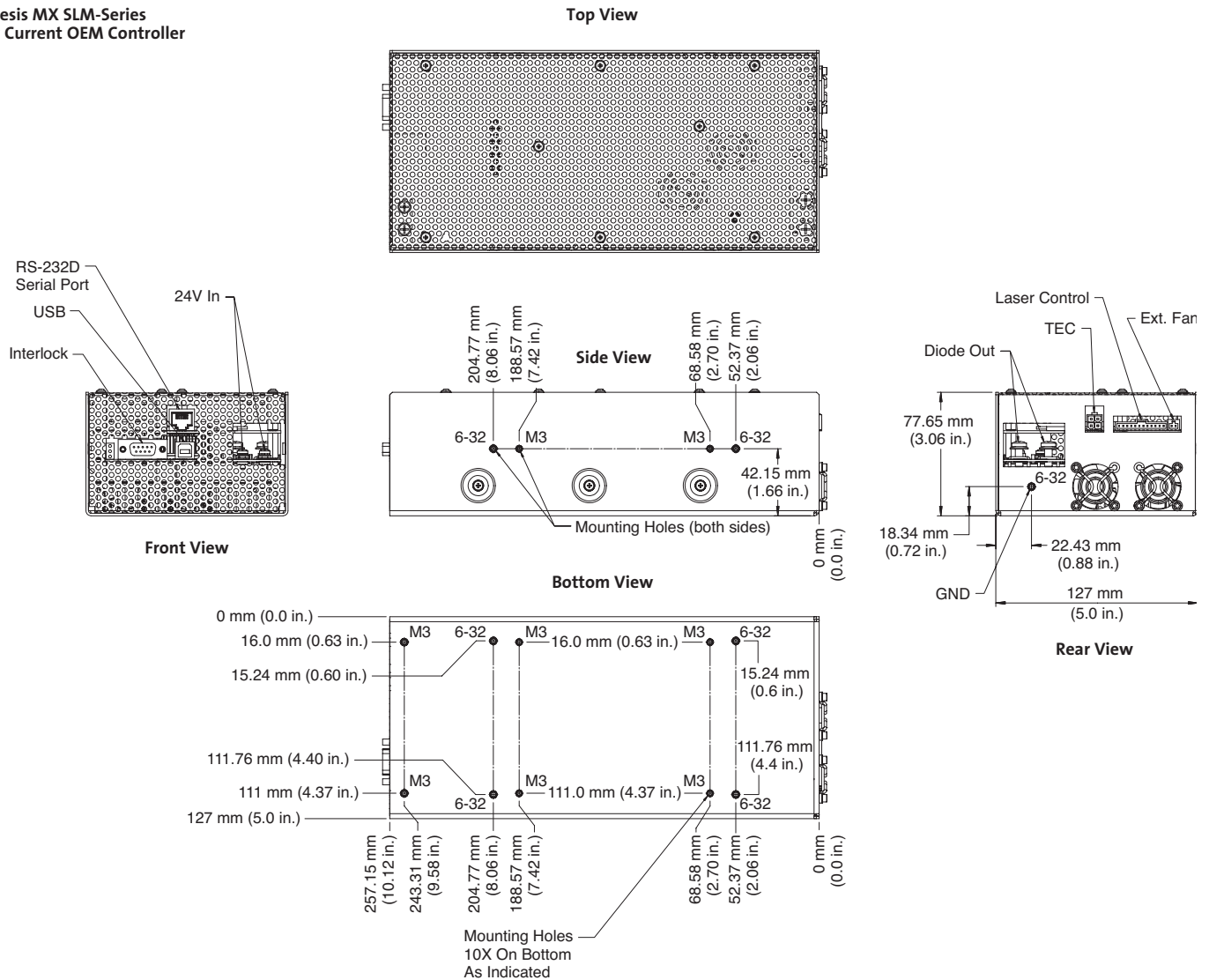


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Mechanical Specifications

Genesis MX SLM-Series
Low Current OEM Controller



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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 Genesis MX SLM-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.