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 enable by low noise, visible true CW lasers. The Genesis MX SLM-Series provides up to 1 W 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.

FEATURES & BENEFITS

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

APPLICATIONS

- Flow Cytometry
- Particle Counting
- DNA Sequencing
- Microscopy

COHERENT®
Superior Reliability & Performance

SPECIFICATIONS[1]	Genesis MX-460	Genesis MX-480	Genesis MX-488	Genesis MX-514
Wavelength (nm)	460 ±3	480 ±3	488 ±3	514 ±3
FWHM Linewidth (MHz)	<5			
Pulse Format	CW			
Spectral Purity (%)	>99			
Output Power (mW)	500	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] (mm)	±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 Operating Non-Operating	 10 to 40°C (50 to 104°F) -10 to 60°C (14 to 140°F)			
Relative Humidity[7] (%)	5 to 95			
CE Marking	IEC 61010-1/EN 61010-1			
Dimensions (L x W x H) Laser Head[8] Cables (laser head to controller)	 281 x 156 x 85 mm (11.06 x 6.14 x 3.35 in.) 2 m (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.

SPECIFICATIONS[1]	Genesis MX 532	Genesis MX 561	Genesis MX 577	Genesis MX 590
Wavelength (nm)	532 ±3	561 ±3	577 ±3	590 ±3
FWHM Linewidth (MHz)	<5			
Pulse Format	CW			
Spectral Purity (%)	>99			
Output Power (mW)	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] (mm)	±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 Operating Non-Operating	 10 to 40°C (50 to 104°F) -10 to 60°C (14 to 140°F)			
Relative Humidity[7] (%)	5 to 95			
CE Marking	IEC 61010-1/EN 61010-1			
Dimensions (L x W x H) Laser Head[8] Cables (laser head to controller)	 281 x 156 x 85 mm (11.06 x 6.14 x 3.35 in.) 2 m (6.5 ft.)			

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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.

SPECIFICATIONS[1]	Genesis MX 460 OEM	Genesis MX 480 OEM	Genesis MX 488 OEM	Genesis MX 514 OEM
Wavelength (nm)	460 ±3	480 ±3	488 ±3	514 ±3
Output Power (mW)	500	500	500, 1000	500, 1000
Spatial Mode	TEM_{00}			
FWHM Linewidth (MHz)	<30			
Pulse Format	CW			
Beam Circularity	1.0 ±0.1			
Beam Position Tolerance (mm) Horizontal Vertical	 ±<1.0 ±<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 Vertical	 <1.1 <1.1			
Beam Pointing Stability[4] (µrad/°C)	<5			
Noise 10 Hz to 10 MHz (%) (rms) 10 Hz to 5 kHz[5] (%) (pk-pk)	 <0.1 <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)	<12.5	<10	<10, <12.5	<10, <12.5
Maximum Diode Current (A)	<15	<12	<12, <15	<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.

SPECIFICATIONS[1]	Genesis MX 532 OEM	Genesis MX 561 OEM	Genesis MX 577 OEM	Genesis MX 590 OEM
Wavelength (nm)	532 ±3	561 ±3	577 ±3	590 ±3
Output Power (mW)	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 Vertical	 ±<1.0 ±<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 Vertical	 <1.1 <1.1			
Beam Pointing Stability[4] (µrad/°C)	<5			
Noise 10 Hz to 10 MHz (%) (rms) 10 Hz to 5 kHz[5] (%) (pk-pk)	 <0.1 <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, <12.5	<10	<10, <12.5	<10, <12.5
Maximum Diode Current (A)	<12, <15	<12	<12, <15	<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			

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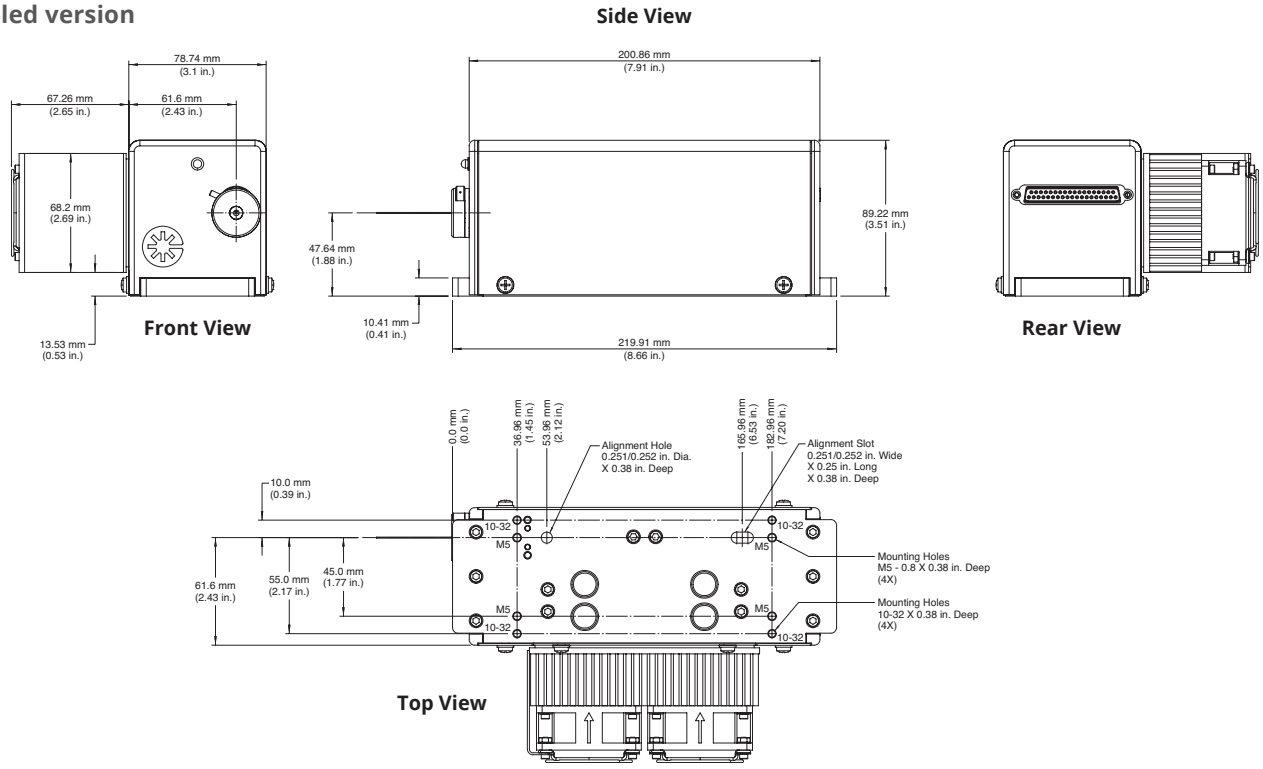
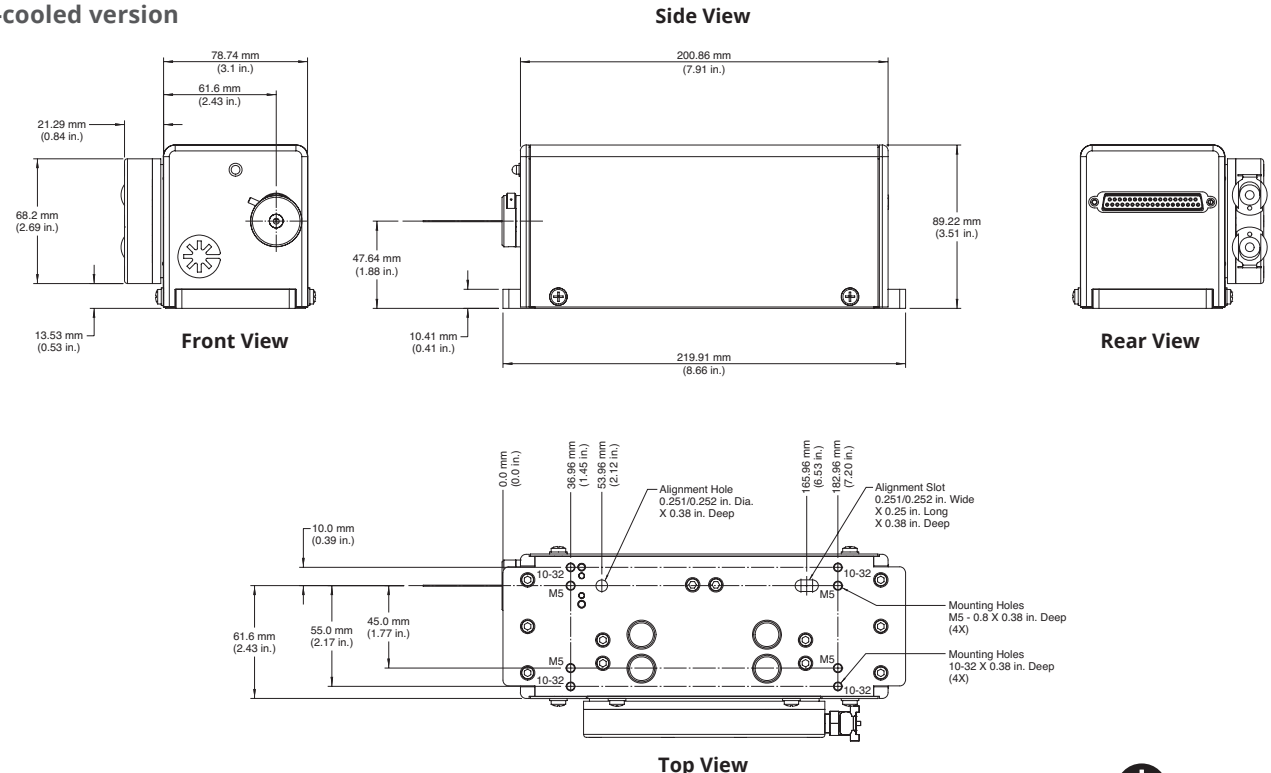
2 Measured at the output of the laser head.
3 Negative value corresponds to a location within the head.
4 Measured at the output window: tolerance relative to the nominal center of the output window and perpendicular to the mounting plane. 5 Over 8 hours.
6 Theoretical limit is >1 MHz; actual performance will be limited by the diode-driver (not included).
7 Contact integration support for options on air-cooling TEC or waterplate.

MECHANICAL SPECIFICATIONS

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



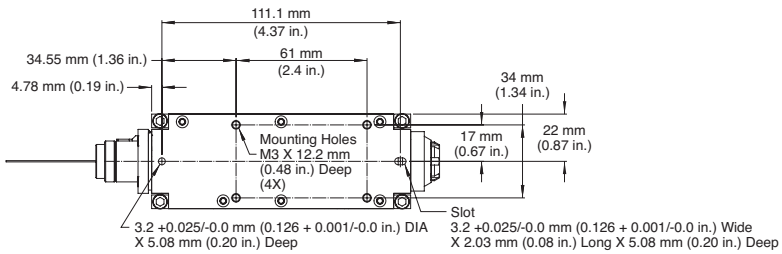
Genesis MX SLM-Series (End-User)
Water-cooled version



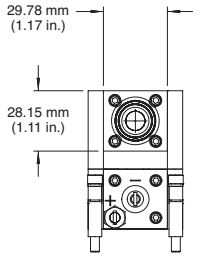
MECHANICAL SPECIFICATIONS

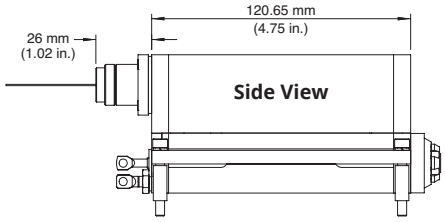
Genesis MX SLM-Series (OEM) Water-cooled version

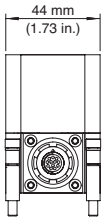
Top View



Front View

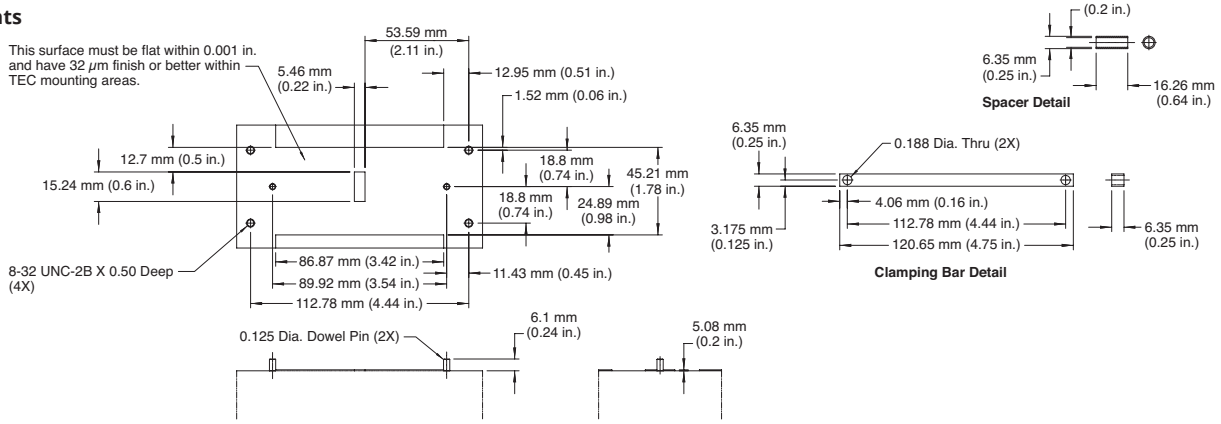






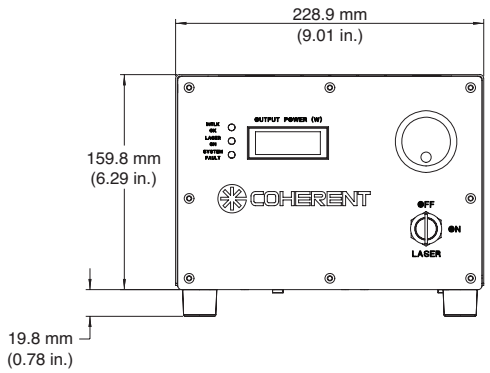
Rear View

Base Plate Requirements

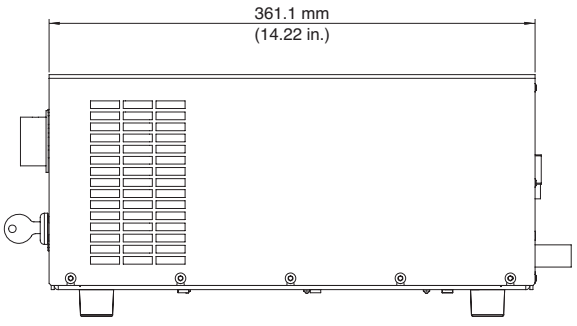


Genesis MX SLM-Series Benchtop Power Supply

Front View

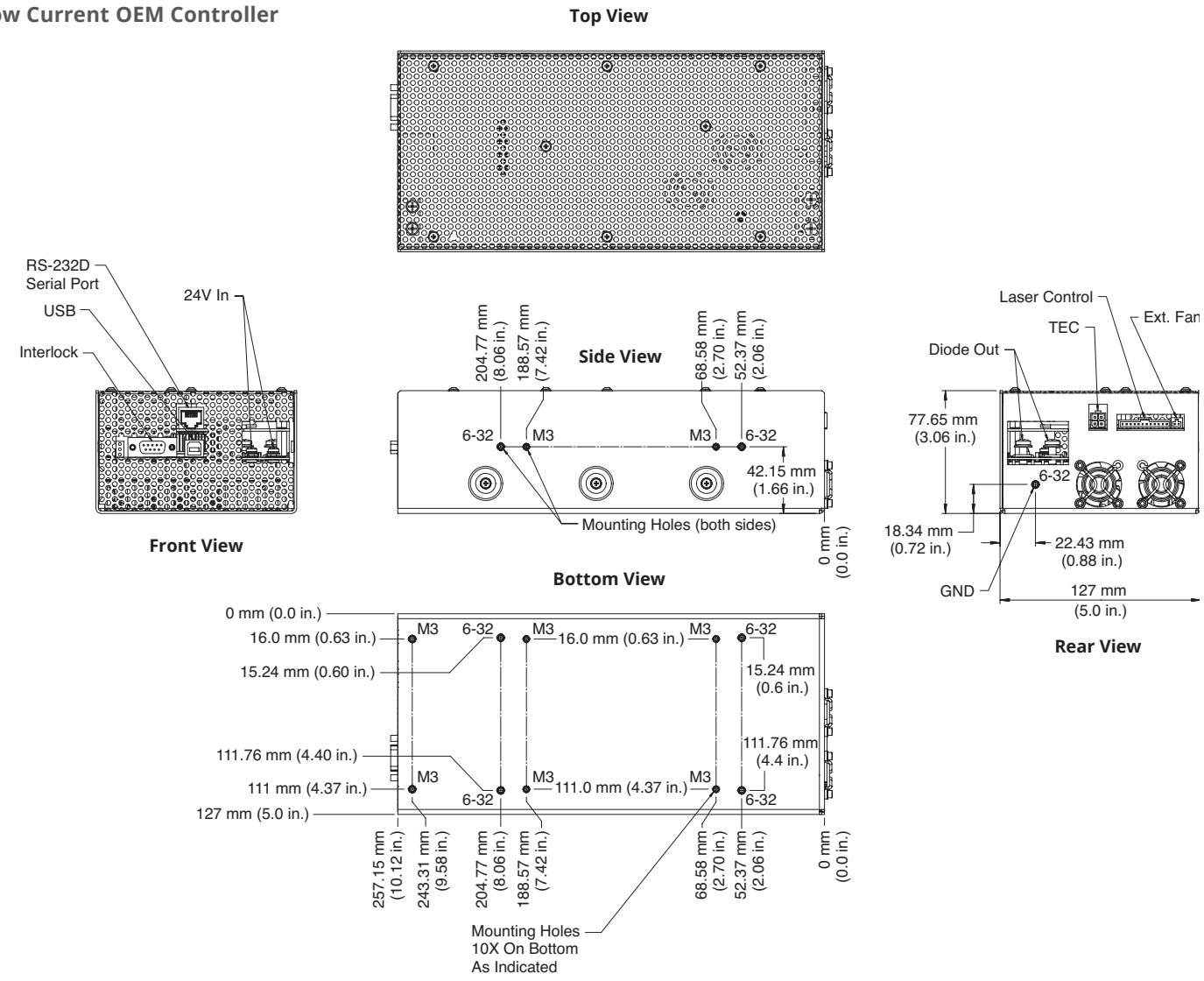


Side View



MECHANICAL SPECIFICATIONS

Genesis MX SLM-Series
Low Current OEM Controller



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