

SN GRN Series

SN Sub-nanosecond Lasers

TEM₀₀, Infrared, Sub-Nanosecond Lasers

Photonics Industries' SN Series sub-nanosecond lasers combine high pulse energy, flexible repetition rates, and adjustable pulse widths from 5 nanoseconds down to 100 picoseconds in a compact, all-in-one design.

The SN Series is available in **two optimized configurations: 100 kHz or 1 MHz**. Both configurations provide the full operating range from single shot to 2 MHz, with the laser optimized for maximum performance at the selected operating point. This allows users to choose the configuration best suited to their application while retaining the flexibility to operate across the full repetition-rate range.

With high pulse energies and adjustable pulse widths, the SN Series is designed for demanding applications including advanced micromachining, materials processing, and scientific applications such as airborne laser ranging (LIDAR).



APPLICATIONS

- Laser Scribing and Texturing
- Laser-Induced Fluorescence and Imaging (LIF)
- PCB & Polymer Cutting & Drilling
- Glass Cutting and Shaping
- Time-Resolved Spectroscopy and Diagnostics
- High-Precision Marking
- Resistor Trimming
- Medical Micro structuring

FEATURES

- Up to 1.75mJ Pulse Energy at 100kHz
- True TEM₀₀ Output, M² < 1.3
- Exceptional point stability (<25urad)
- Ultra-Short Pulse Widths (100ps-5ns)
- Burst Mode for Pulse Control
- Robust & Compact Form Factor
- Dynamic Pulse Energy Control - PEC
- Power Monitoring and Self-Calibration

Specifications – SN Series					
	SN-532-25	SN-532-70	SN-532-100	SN-532-150	SN-532-175
Wavelength (nm)	532				
Average Power (W) ¹					
@1MHz	25	70	100	150	175
@ 100kHz	25	70	100	150	175
Max Pulse Energy (μJ) ¹					
@1MHz	25	70	100	150	175
@100kHz	250	700	1000	1500	1750
Pulse Width ³	100ps – 5ns				
Pulse repetition rate ⁴	Single shot to 2MHz				
Pulse-to-pulse stability (% RMS) ⁵	<2				
Long-term power stability (% RMS) ²	≤1				
Beam spatial mode & M ²	TEM ₀₀ - M ² <1.3				
Beam divergence (nominal) (mrad)	<2				
Beam bore sight accuracy	≤ 1 mm lateral (to specified exit location), ≤ 5 mrad angular (to specified exit direction)				
Beam roundness (%)	>90				
Beam pointing stability (μrad)	<20				
Polarization ratio	Horizontal; >100:1				
	Operational Specifications and Characteristics				
Interface	RS232, Ethernet, Software GUI, External TTL Triggering				
Warm-up time	< 5 minutes from standby, <15 minutes from cold start				
Electrical requirement	100-240 V AC				200-240 V AC
Line frequency (Hz)	50-60				
Power consumption (W) ⁶	<500	<900	<1300	<1800	<2000
Dimensions ⁷	Please Refer to Drawings Below				
Weight	~38lbs [17.2kg]	~47lbs [21.3kg]	~57lbs [25.9kg]	~65lbs [29.5kg]	~100lbs [45.4kg]
	Environmental Requirements				
Ambient temperature ²	Ambient 15°C to 30°C (59°F to 86°F) Operating Range				
	Relative humidity 0% to 80% max, non-condensing				
Storage conditions	-10°C to 40°C; sea level to 12000 m				
	0% to 80% relative Humidity, non-condensing				
Cooling system	Water-Cooled				

Notes:

[1] Output power is specified at different pulse repetition rates. Lower rep-rate/higher pulse energy options are available upon request.

[2] Measured over 8 hours ± 1°C.

[3] Specifiable pulse width. Pulse energy varies depending on the specified pulse width.

[4] Lower pulse repetition rate operation, down to single shot, achieved by utilizing POD features. Higher pulse repetition rates are available

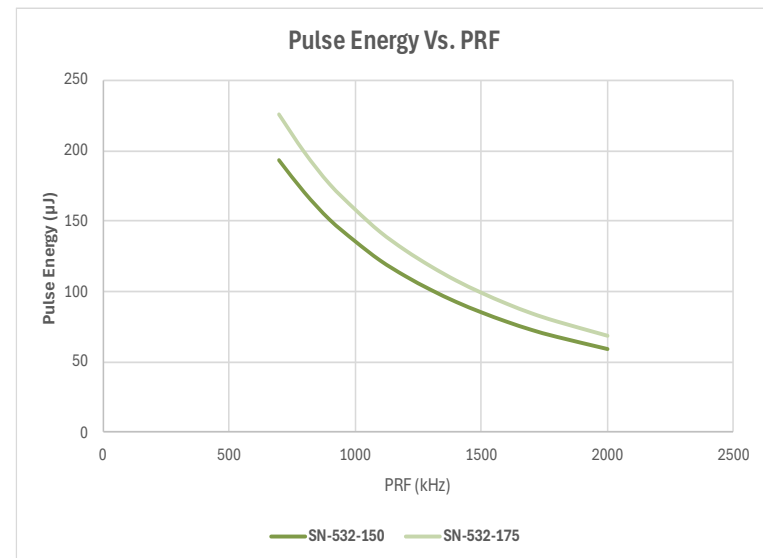
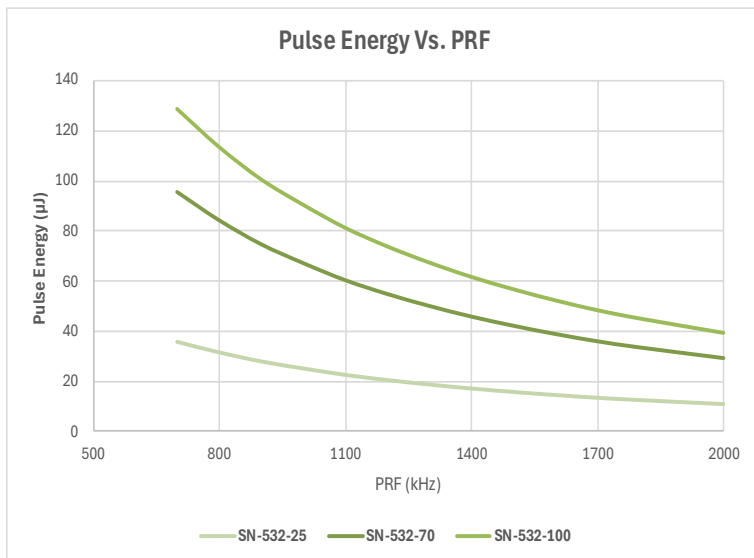
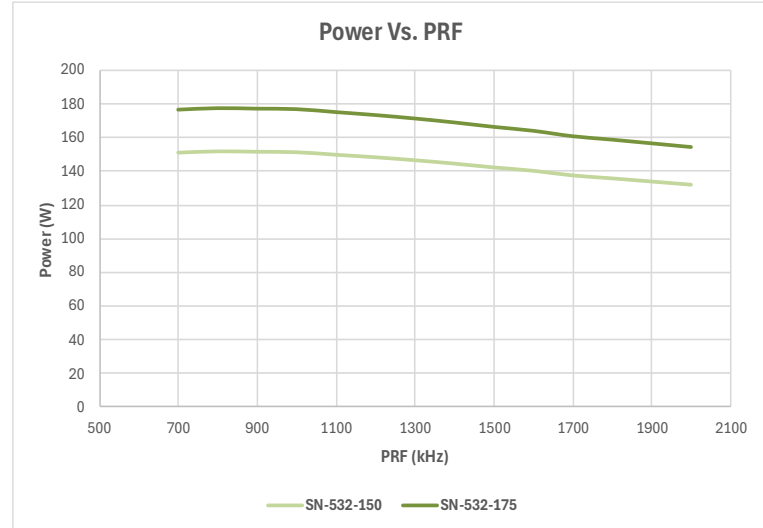
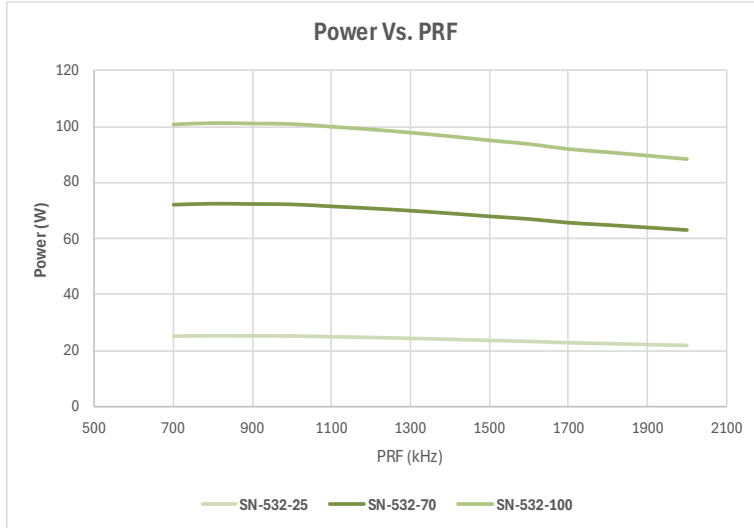
[5] Measured at ambient temperature ± 2°C.

[6] Power consumption data does not include an external chiller's power consumption.

[7] SN Series sub-nanosecond lasers are all-in-one (AIO) and do not require a separate controller or utility module. All connections for operation and control of the laser can be found on the back panel of the AIO laser.

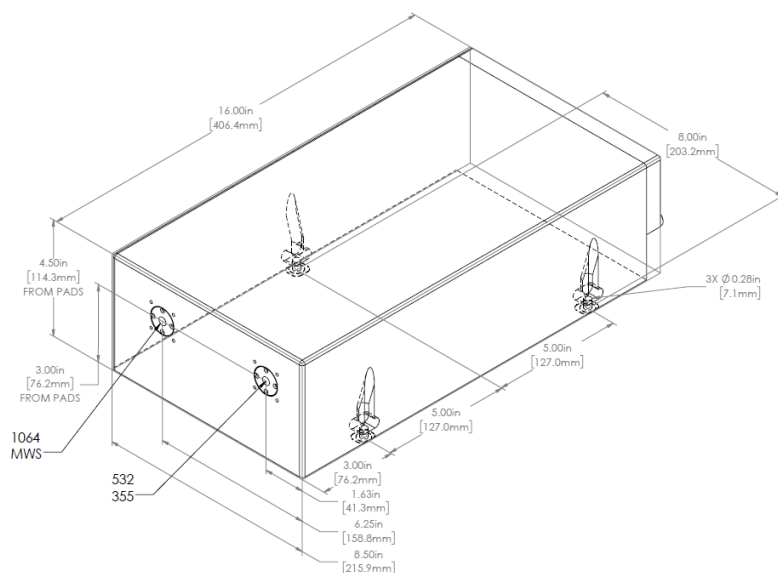
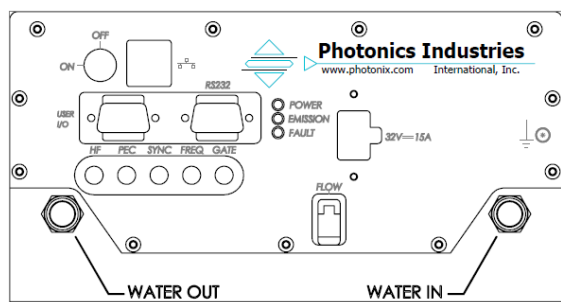
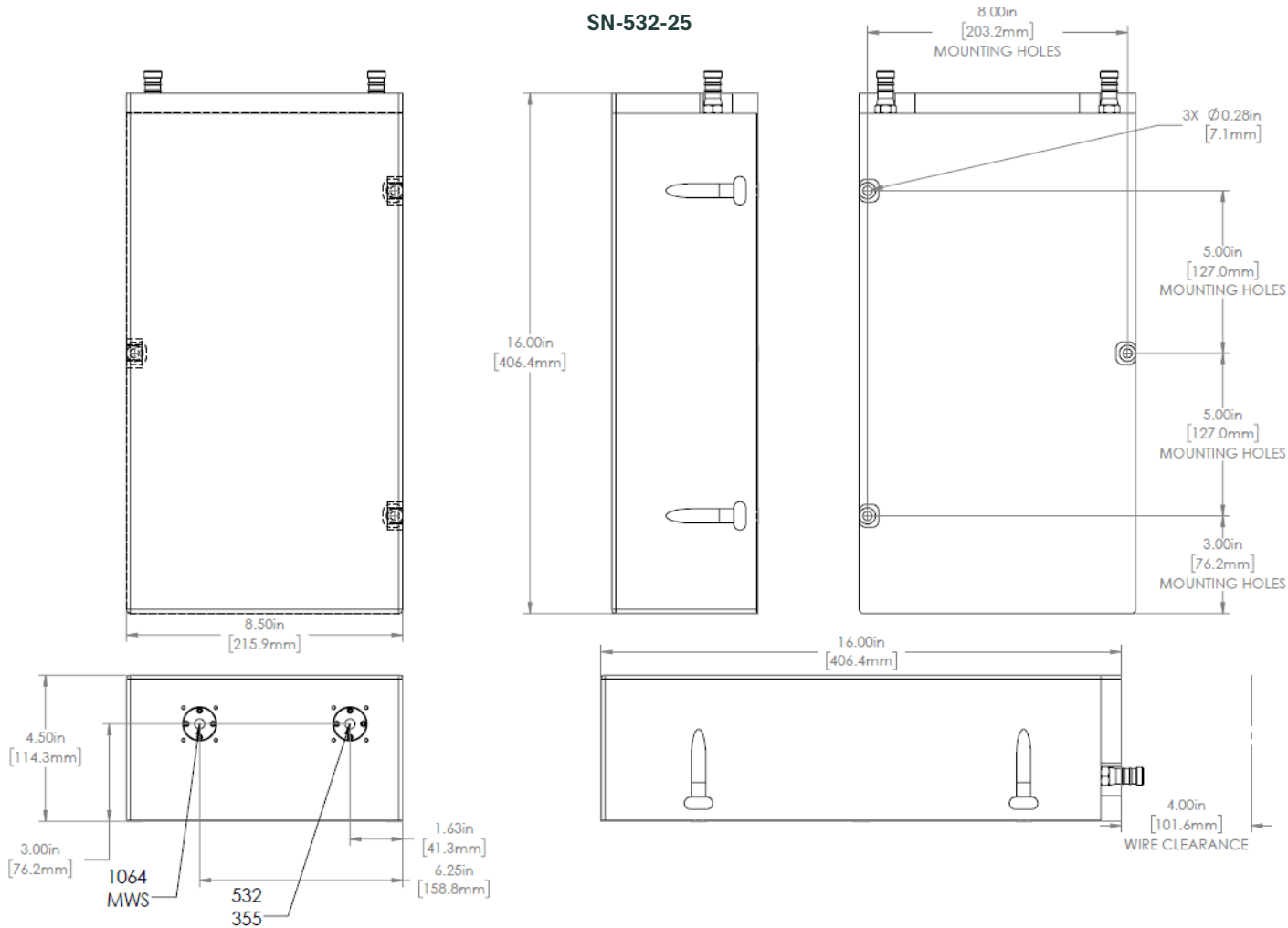
Power and Pulse Energy vs. PRF Graph

1MHz Model

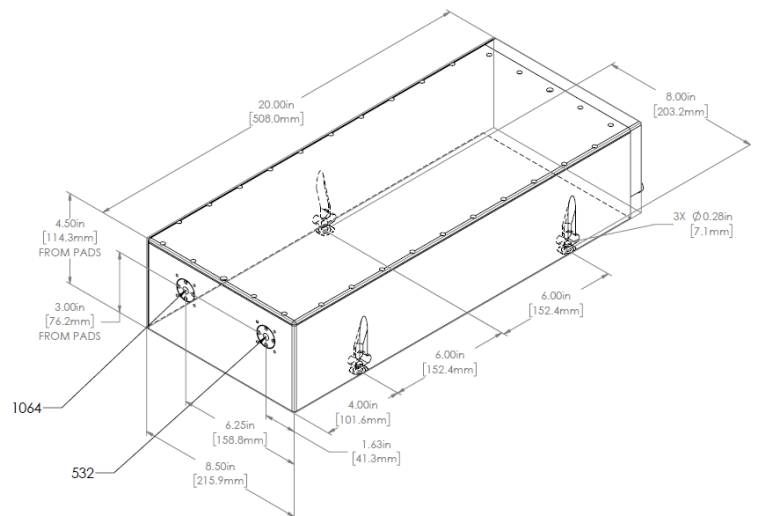
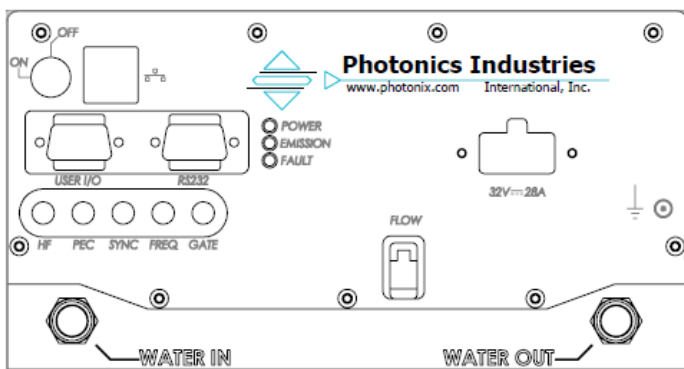
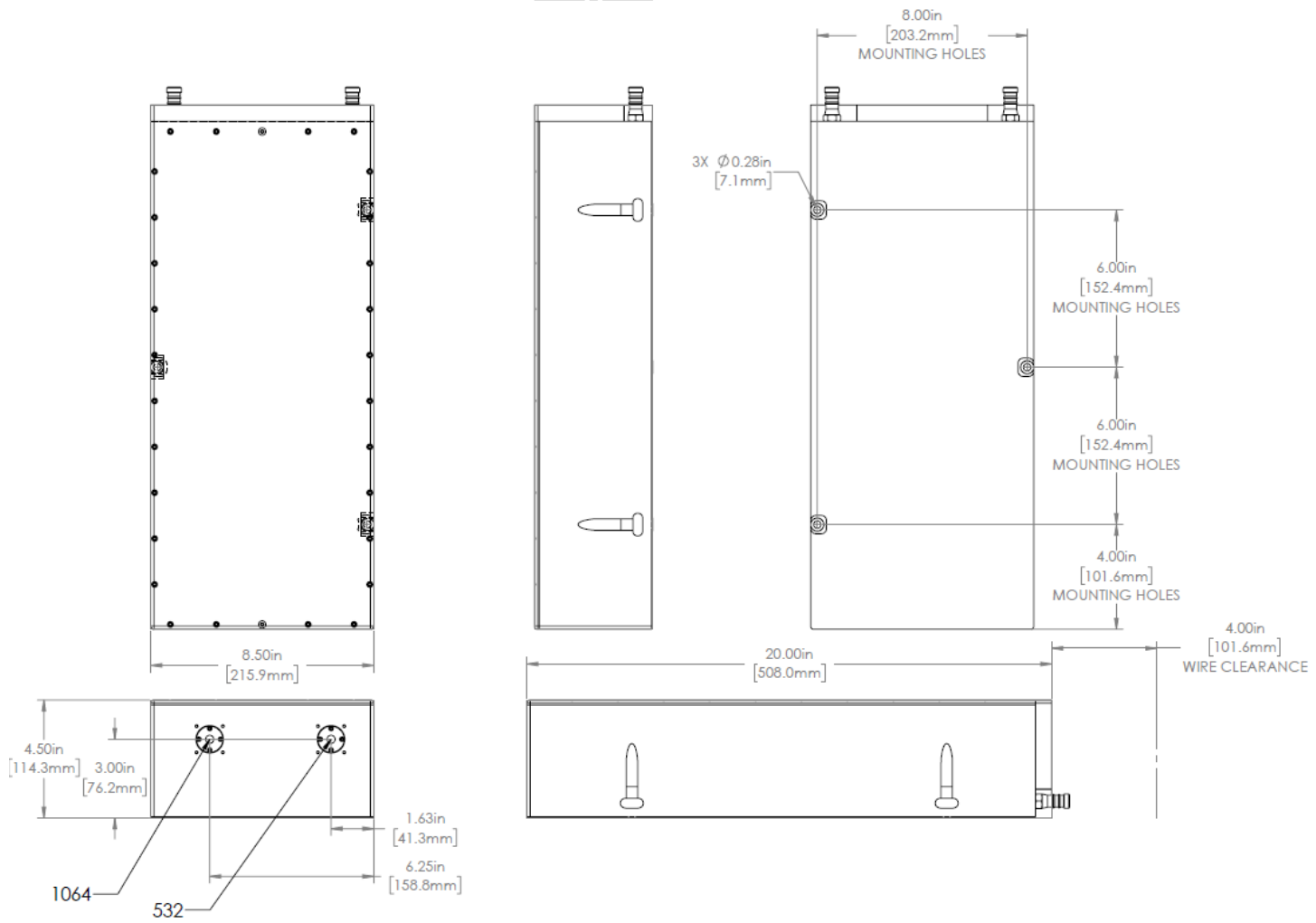


Dimensional Drawings

SN-532-25

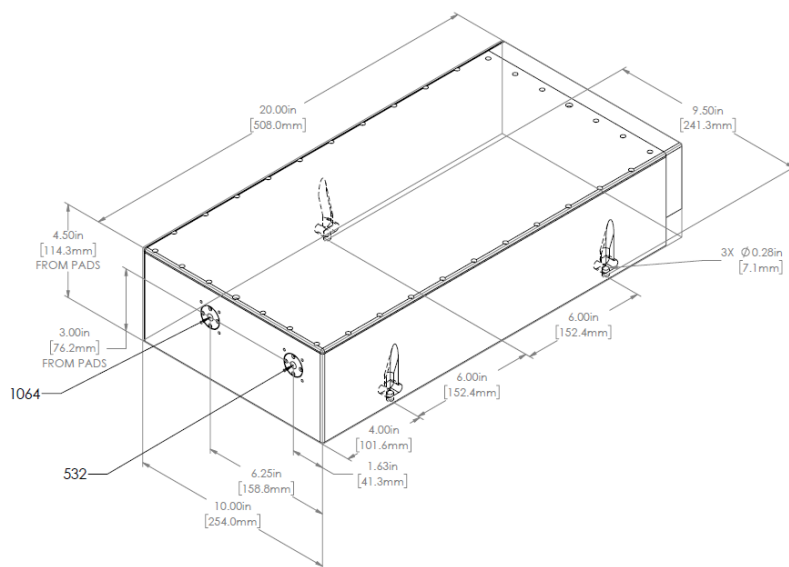
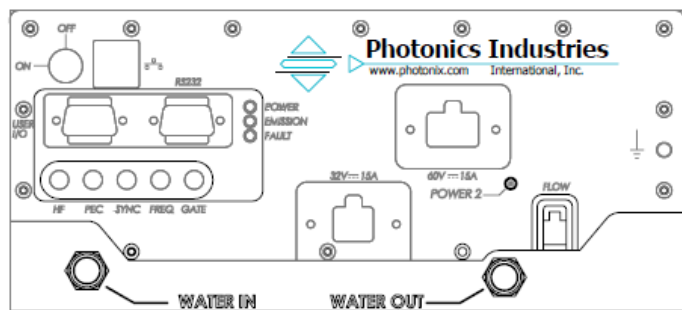
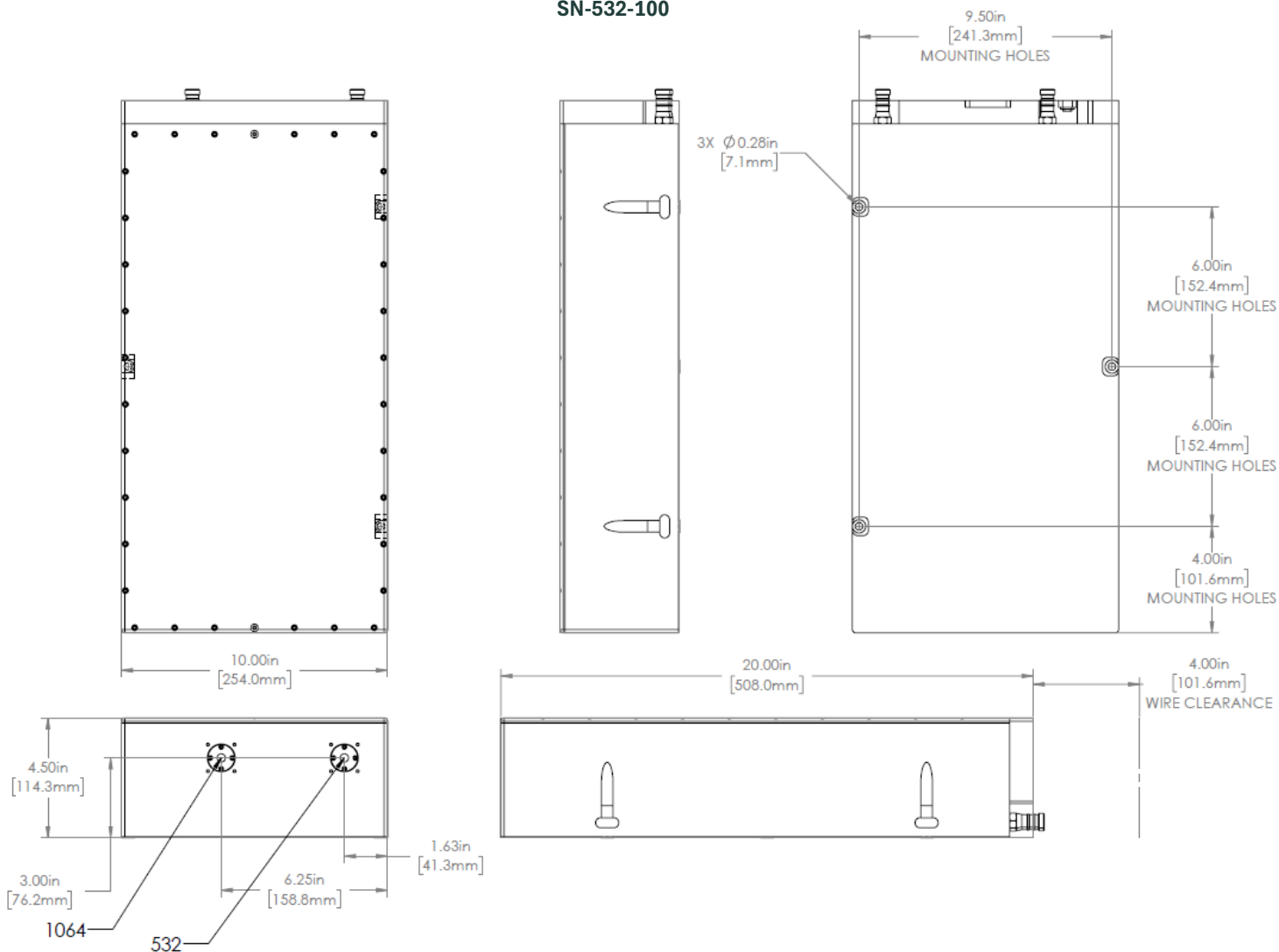


Dimensional Drawings SN-532-70



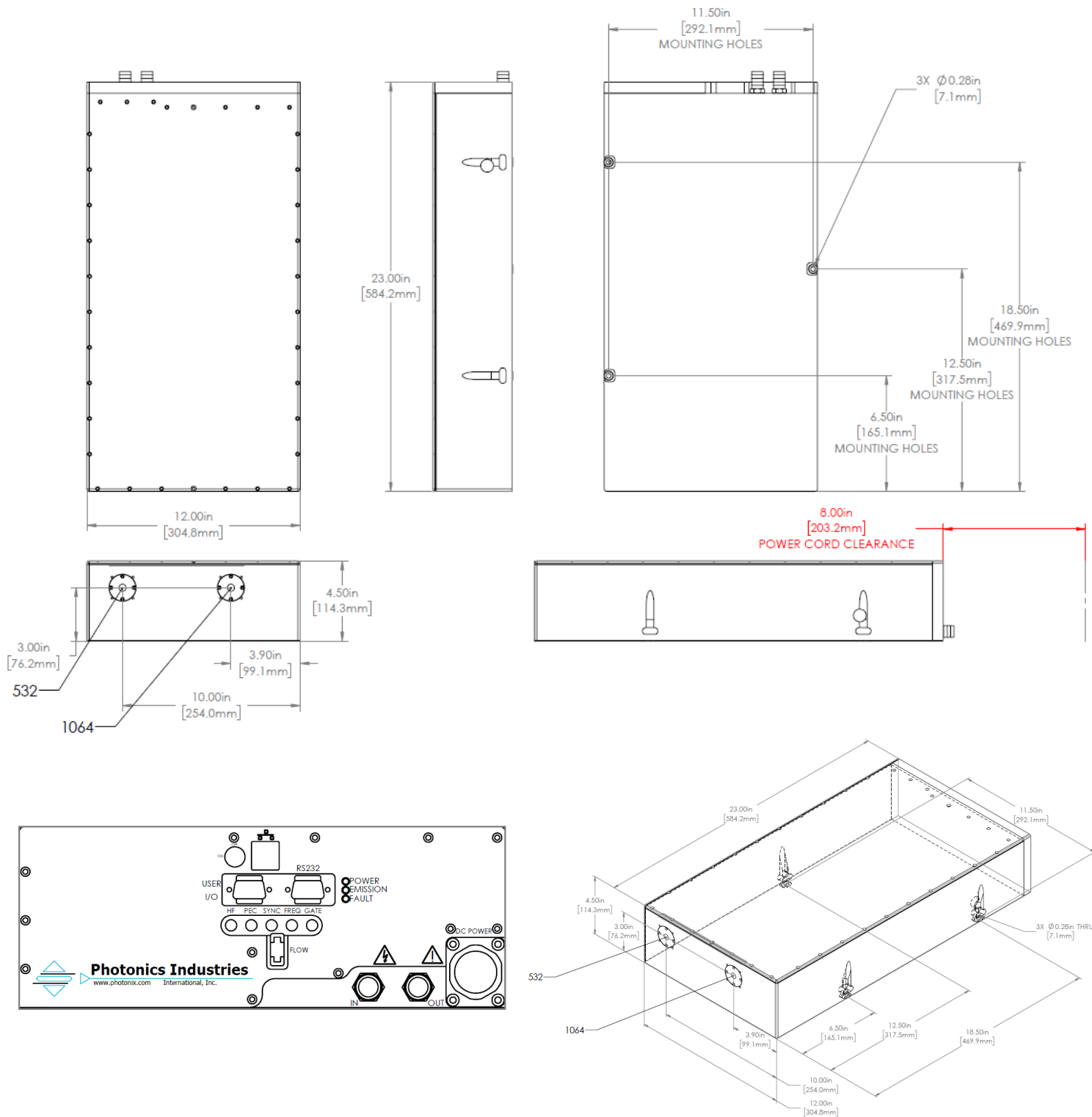
Dimensional Drawings

SN-532-100

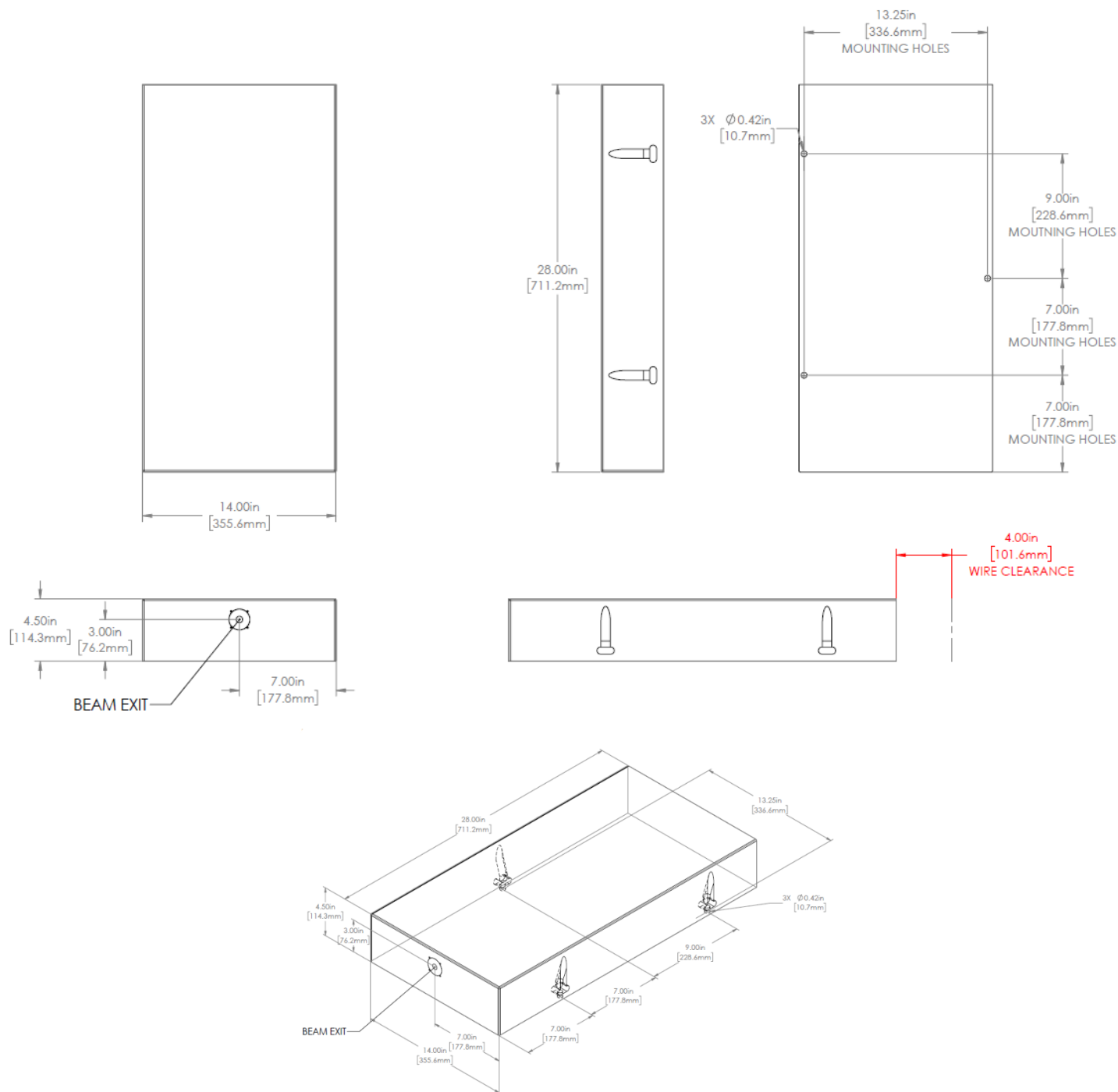


Dimensional Drawings

SN-532-150



Dimensional Drawings SN-532-175



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Photonics Industries International Inc. is the pioneer of intracavity harmonic lasers and is at the forefront of developing, manufacturing, and marketing a wide range of nanosecond, sub-nanosecond, picosecond, and femtosecond lasers for the industrial, scientific, defense and medical industries.

For more information www.photonix.com

