

SN **IR** Series

SN Sub-nanosecond Lasers

TEM₀₀, Infrared, Sub-Nanosecond Lasers

Photonics Industries' SN Series sub-nanosecond lasers redefine precision and power in a compact, all-in-one design. With industry-leading high pulse energies and adjustable pulse widths from 100 nanoseconds to an ultra-fast 100 picoseconds, these lasers deliver unparalleled performance for your most demanding applications.

Unlock the potential of the SN Series in diverse applications, from advanced micro processing to cutting-edge scientific innovations like airborne laser ranging (LIDAR). Achieve faster, more accurate results with high-energy pulses tailored to your needs. Elevate your processes with the SN Series—where performance meets possibility.



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 2.5mJ Pulse Energy at 100kHz
- True TEM₀₀ Output, $M^2 < 1.3$
- Exceptional point stability ($< 25 \mu\text{rad}$)
- Ultra-Short Pulse Widths (100ps-5ns @1064nm)
- Burst Mode for Pulse Control
- Robust & Compact Form Factor
- Dynamic Pulse Energy Control - **PEC**
- Power Monitoring and Self-Calibration

Specifications – SN Series					
	SN-1064-40	SN-1064-100	SN-1064-150	SN-1064-200	SN-1064-250
Wavelength (nm)	1064				
Average Power (W) @1MHz	40	100	150	200	250
Max Pulse Energy (mJ) ¹ @ 100kHz	0.4	1	1.5	2	2.5
Pulse Width ³	100ps –5ns				
Pulse repetition rate ⁴	Single shot to 2MHz				
Pulse-to-pulse stability (% RMS) ²	<2				
Long-term power stability (% RMS) ²	≤1				
Beam spatial mode & M ²	TEM ₀₀ - M ² <1.2				
Beam divergence (nominal) (mrad)	<1.5				
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)	<25				
Polarization ratio	Vertical; >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] Standard power optimization is at 1000kHz. Output power is specifiable at different pulse repetition rates. Pulse energy varies depending on the repetition rate optimization and specified pulse width. > 3 mJ single pulse energy optimization is available.

[2] Measured over 8 hours ± 1°C

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

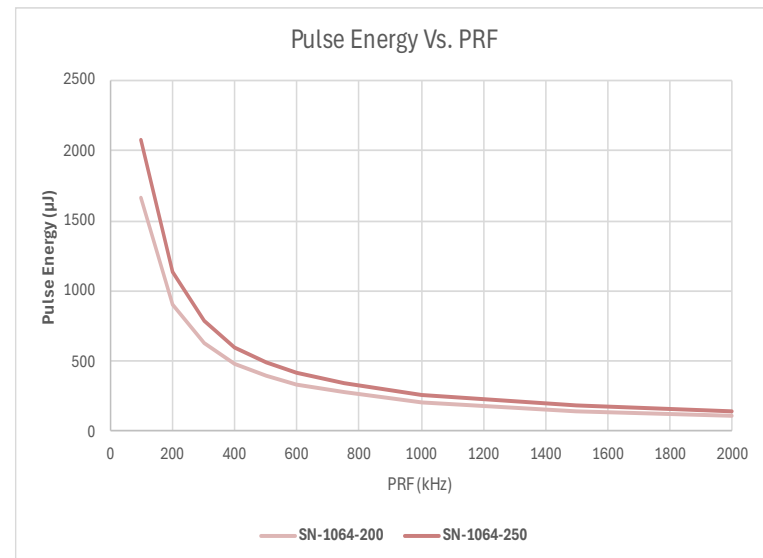
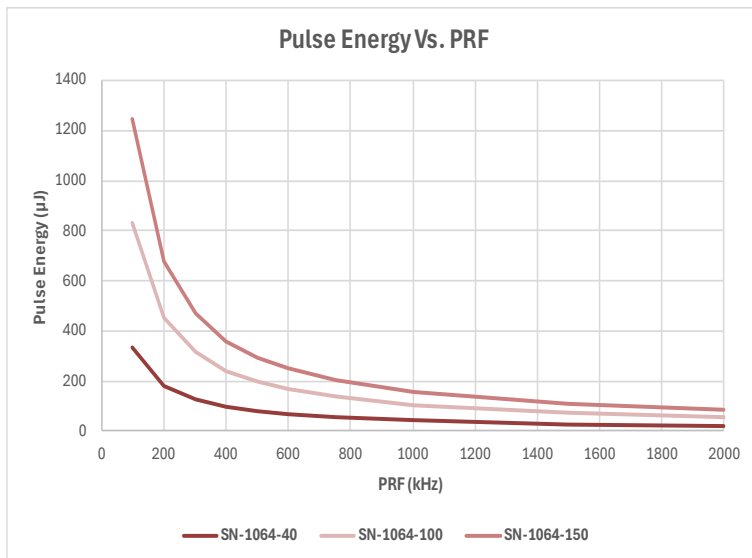
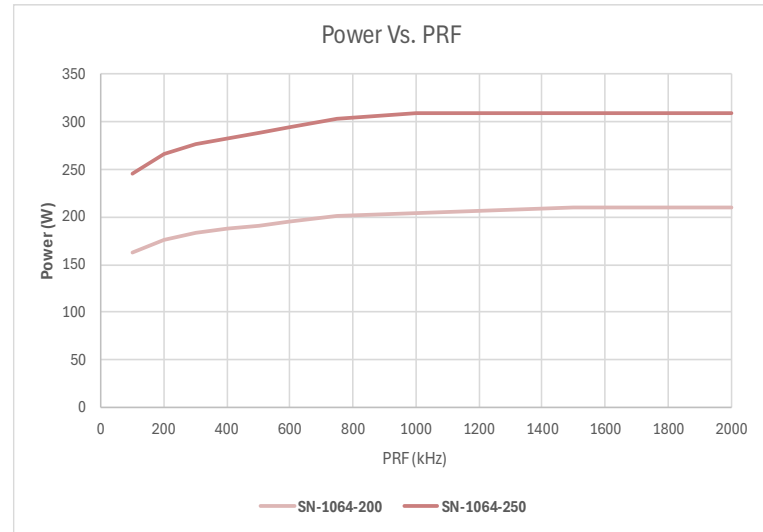
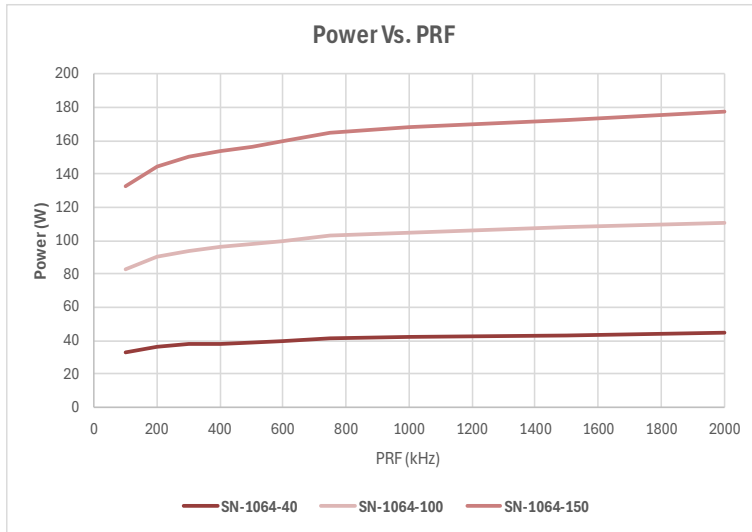
[4] Lower pulse repetition rate operation, down to single shot, achieved by utilizing POD features. Higher pulse repetition rates are available

[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.

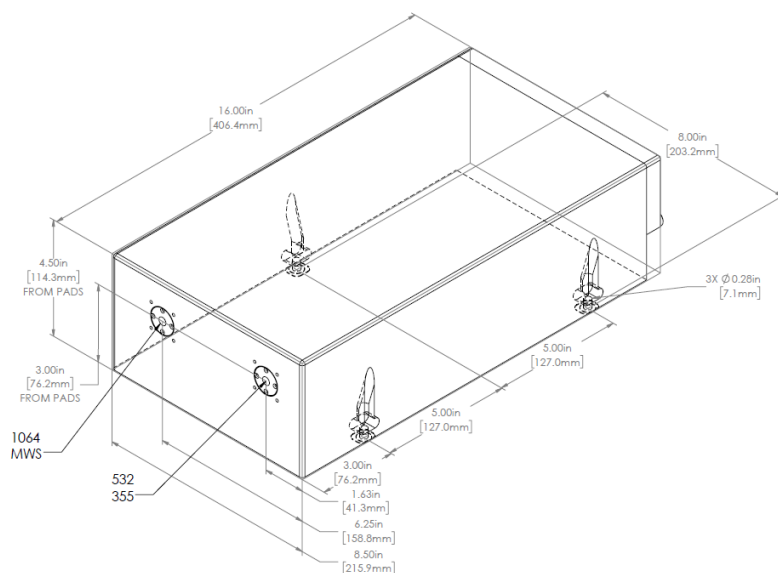
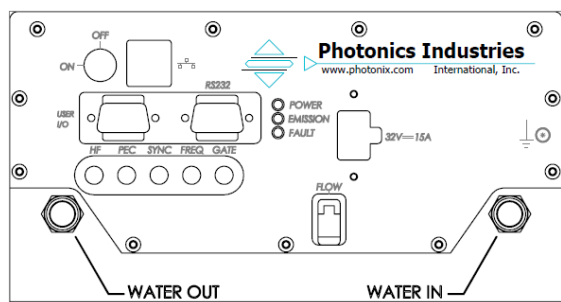
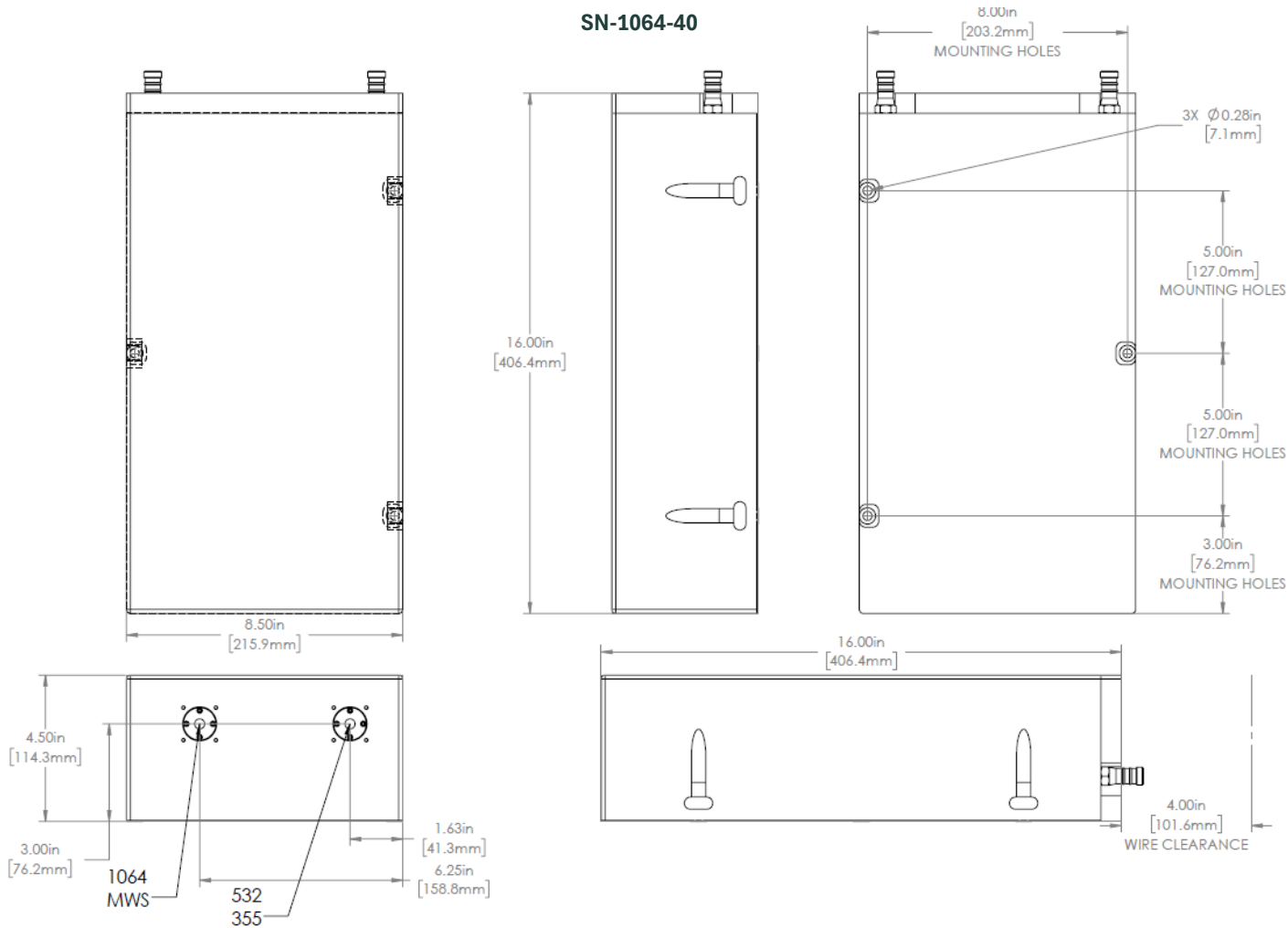
[8] 60V/20A and 32V/28A two connections between laser head and PSU.

Power and Pulse Energy vs. PRF Graph

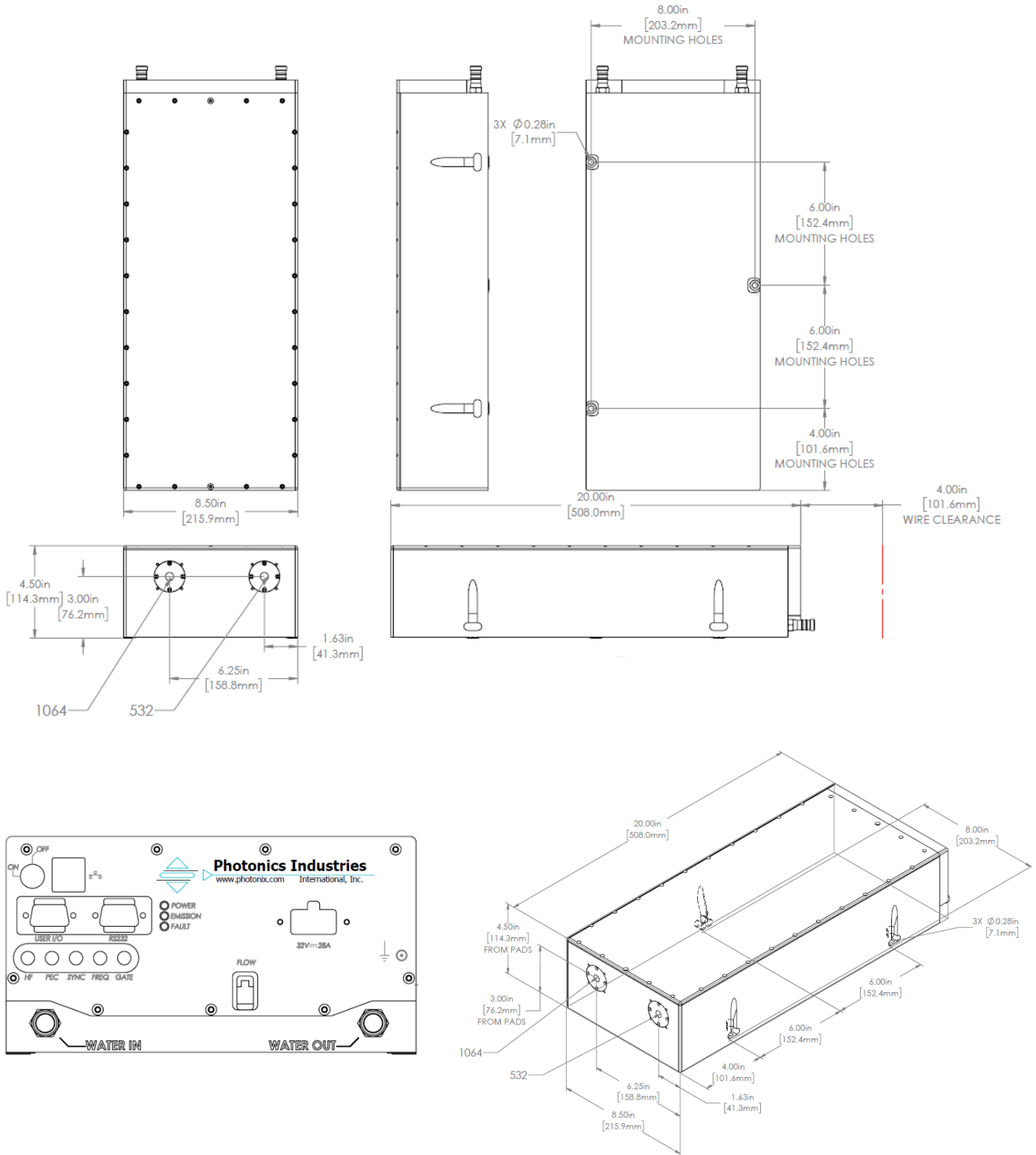


Dimensional Drawings

SN-1064-40

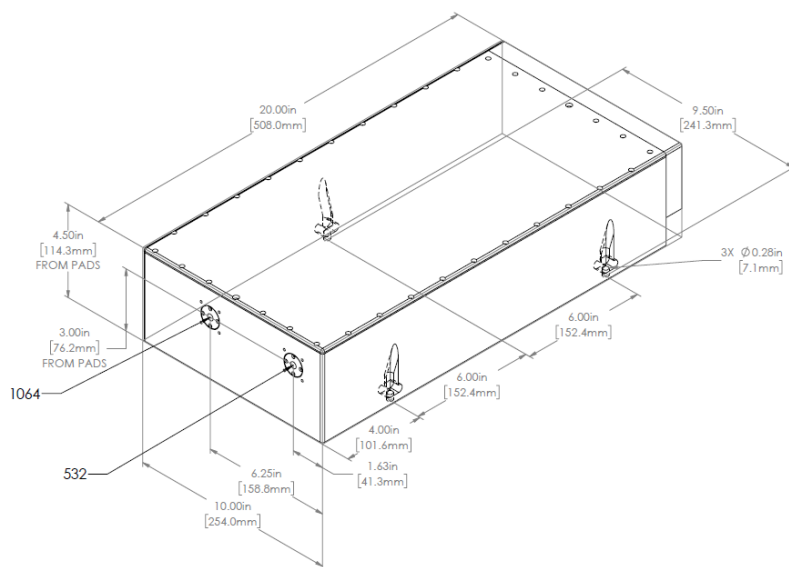
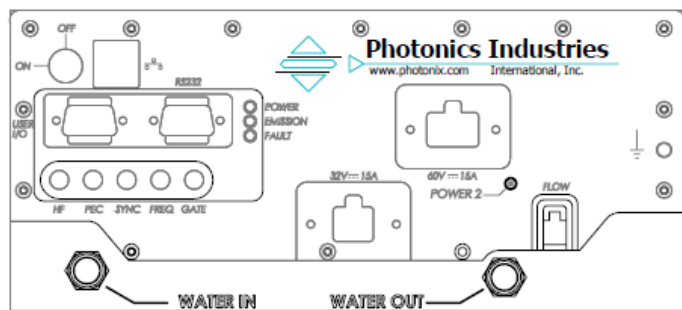
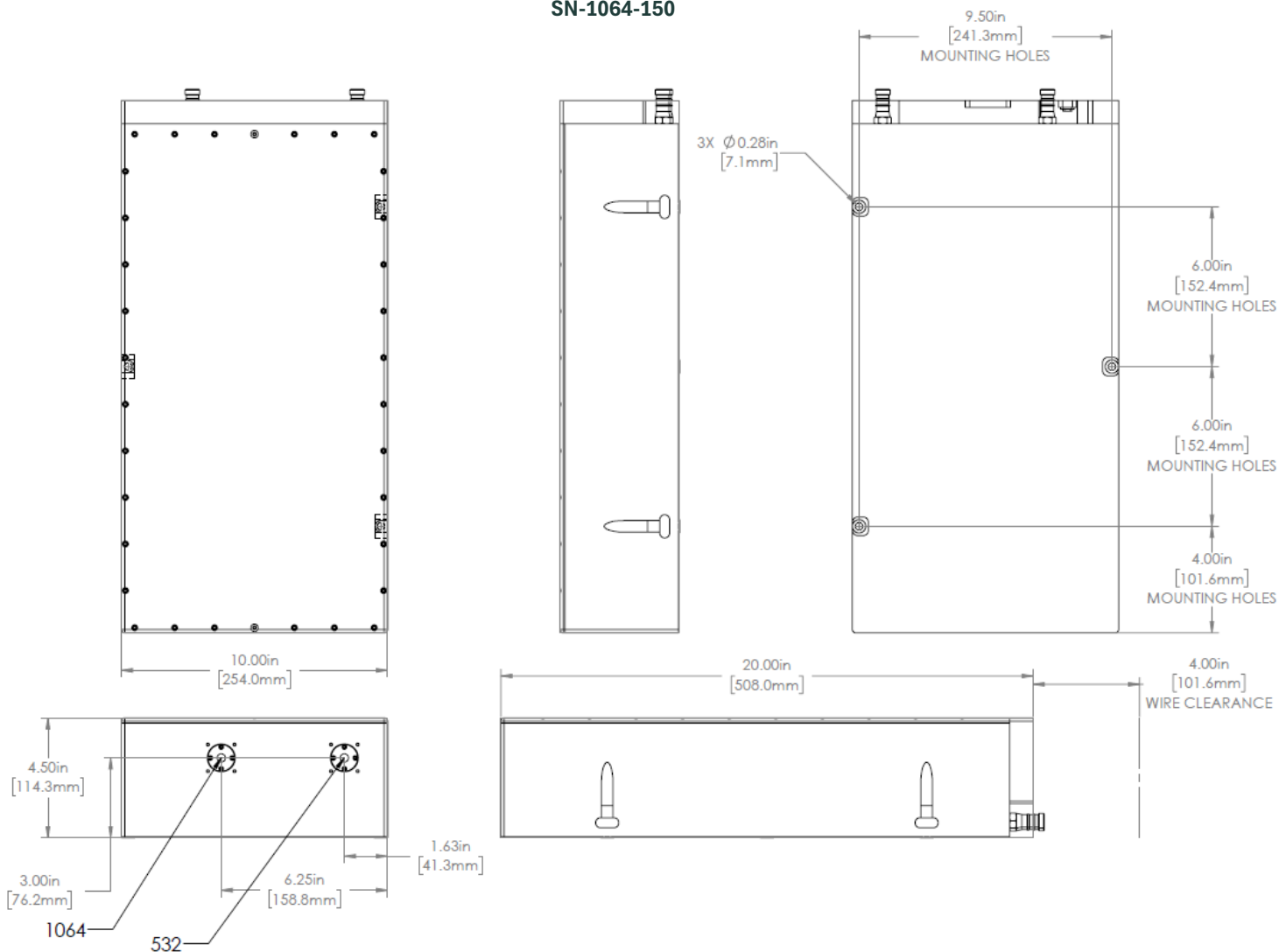


Dimensional Drawings SN-1064-100



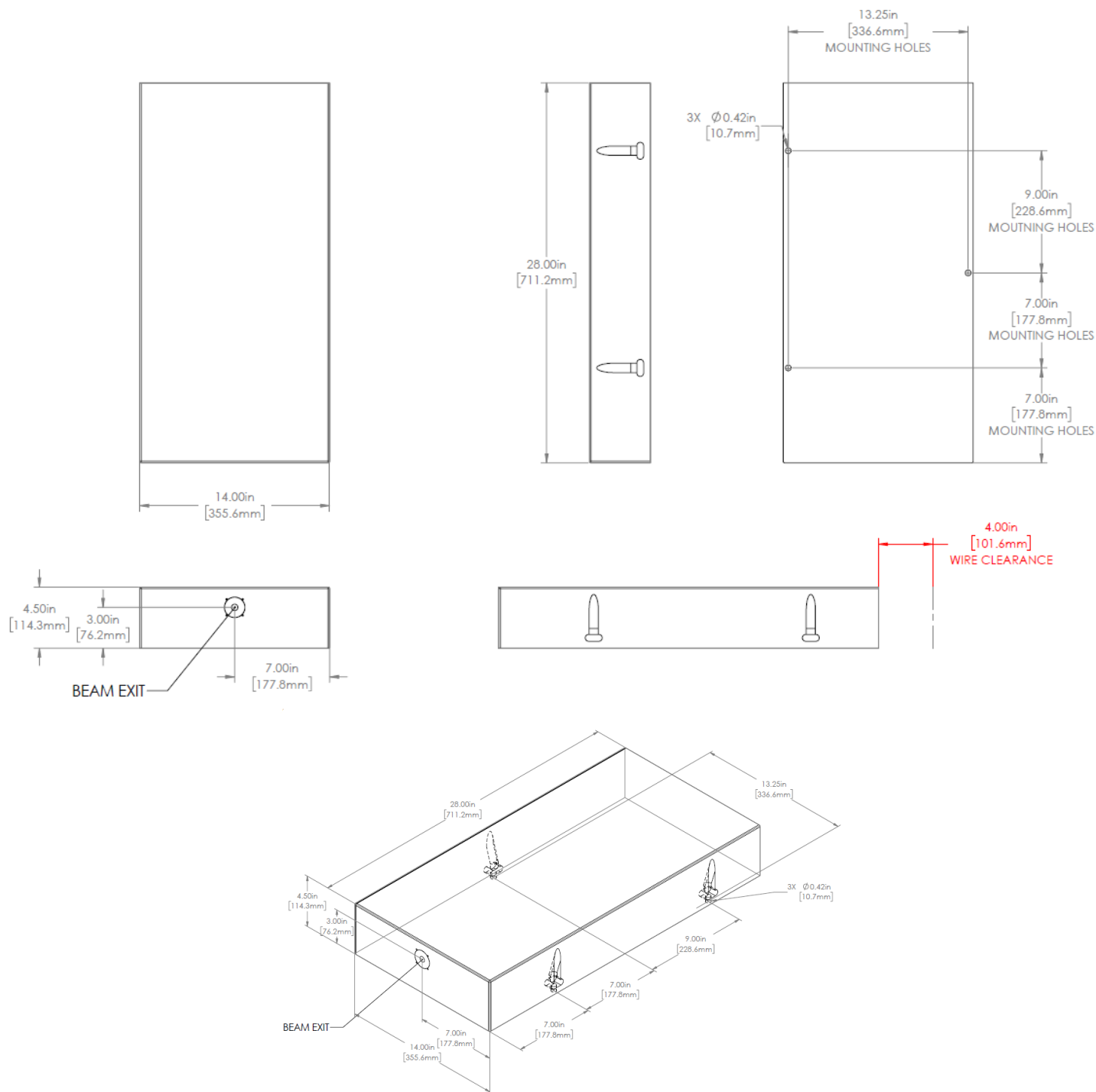
Dimensional Drawings

SN-1064-150





Dimensional Drawings SN-1064-250



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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.

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