SN IR Series

SN Sub-nanosecond Lasers

TEM_{00}, 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

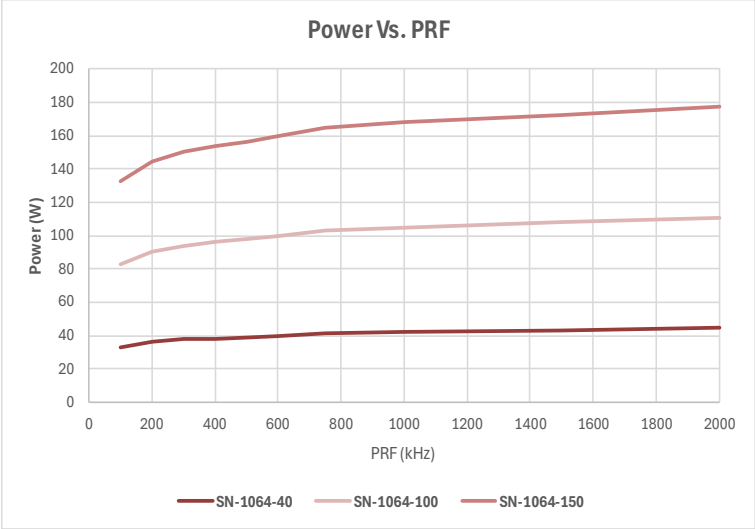
- Up to 2.5mJ Pulse Energy at 100kHz
- True TEM_{00} Output, M^2 <1.3
- Exceptional point stability (<25urad)
- Ultra-Short Pulse Widths (100ps-100ns @1064nm)
- Burst Mode for Pulse Control
- Robust & Compact Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- Power Monitoring and Self-Calibration

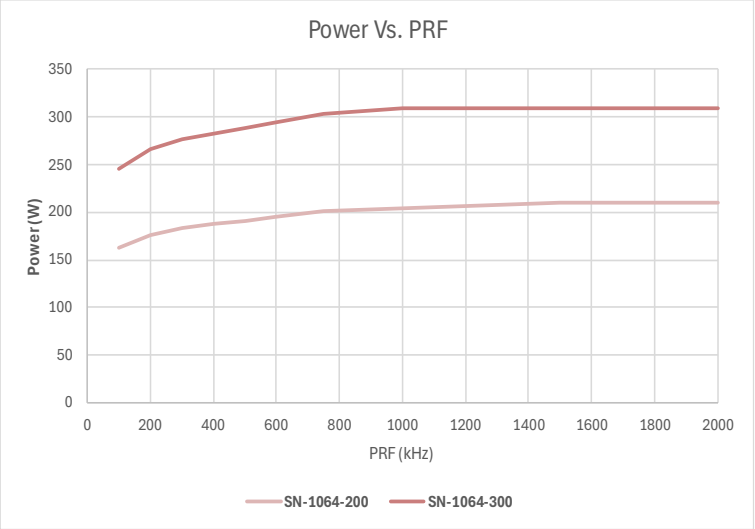
Specifications – SN **Series**					
	SN-1064-40	**SN-1064-100**	**SN-1064-150**	**SN-1064-200**	**SN-1064-250**
Wavelength (nm)	1064				
Average Power (W) @1MHz	40	100	150	200	250
Max Pulse Energy (mJ) [1] @ 100kHz	0.4	1	1.5	2	2.5
Pulse Width [3]	100ps – 100ns				
Pulse repetition rate[4]	Single shot 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 <1.2				
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				

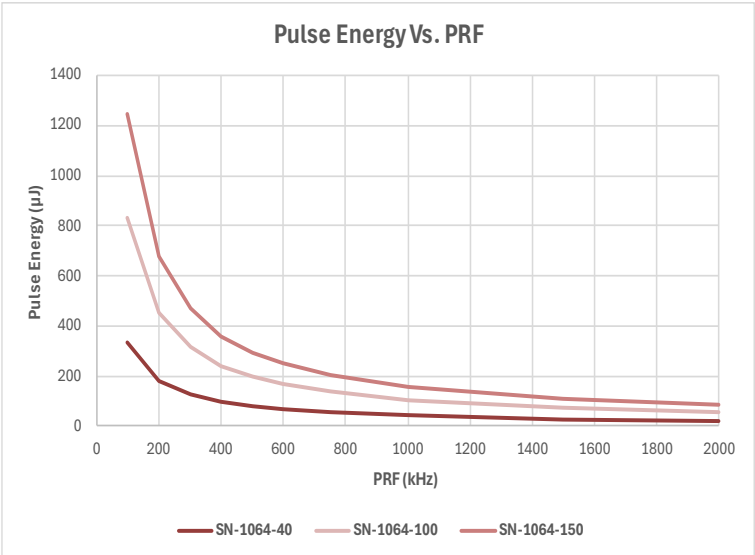
[1.] Standard power optimization is at 1000kHz. Output power is specifiable at different pulse repetition rates. Pulse energy varies depending on the repetition rate optimization and specified pulse width. > 3 mJ single pulse energy optimization is available. [2.] Measured over 8 hours ± 1°C. [3.] Specifiable 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 [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. [8.] 60V/20A and 32V/28A two connections between laser head and PSU. *Illustration includes some simulated data for conceptual visualization.

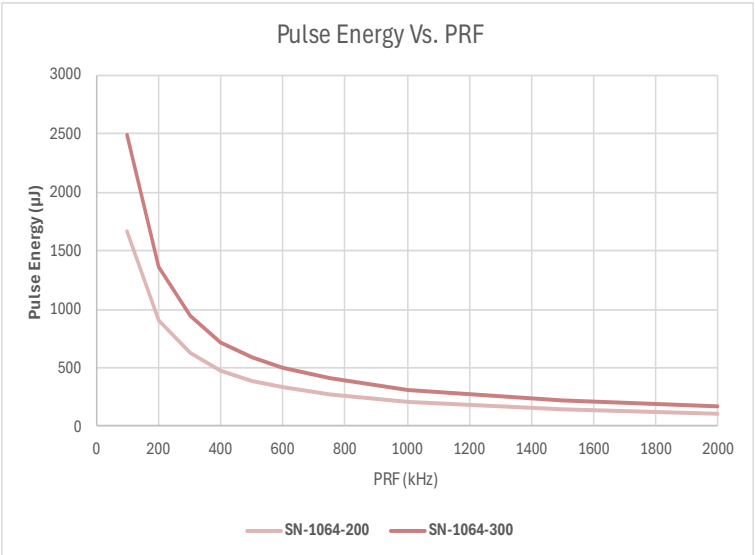
Photonics Industries International, Inc.

Power and Pulse Energy vs. PRF Graph



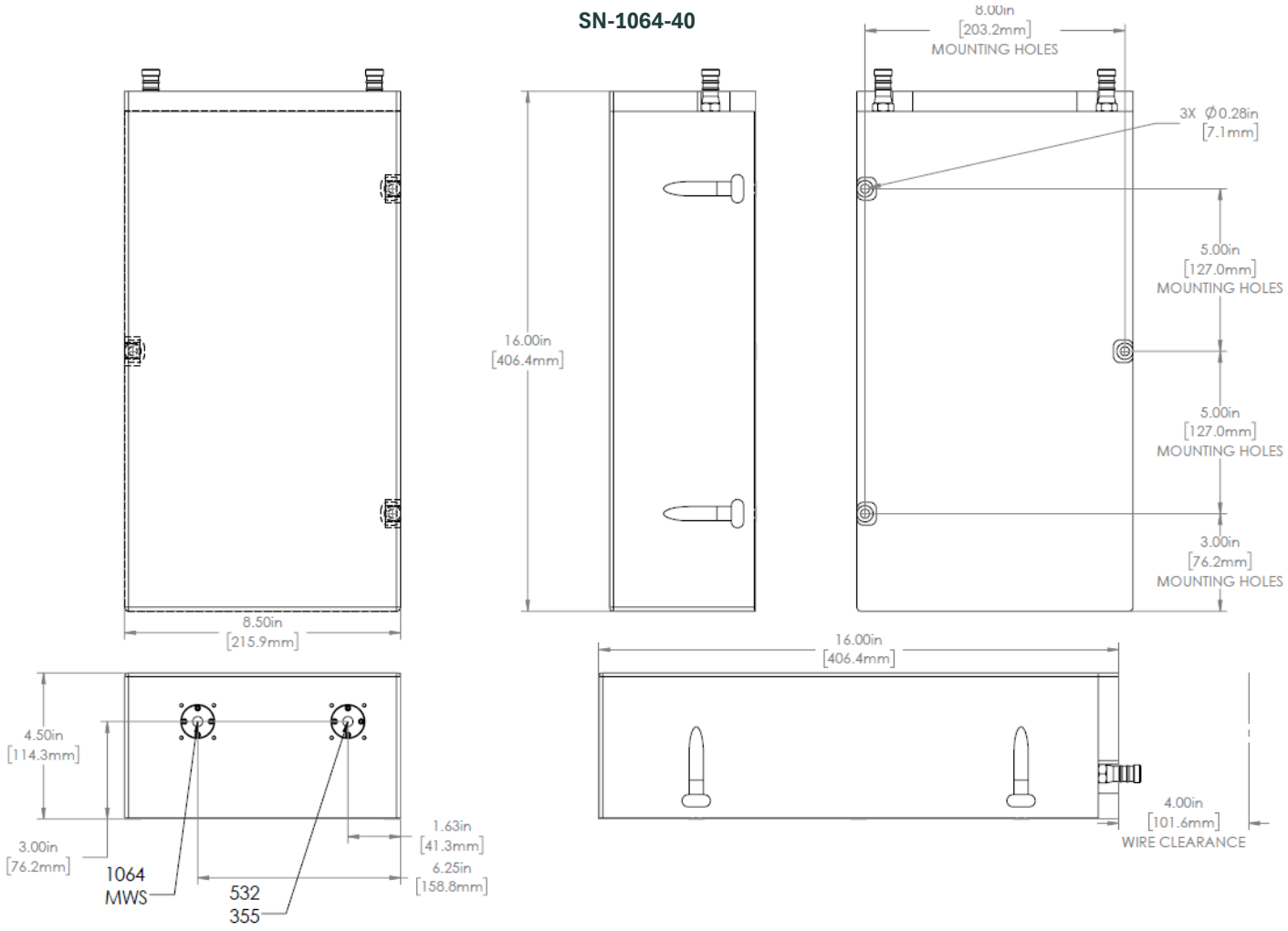


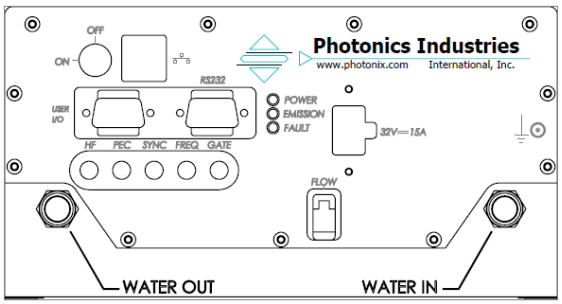


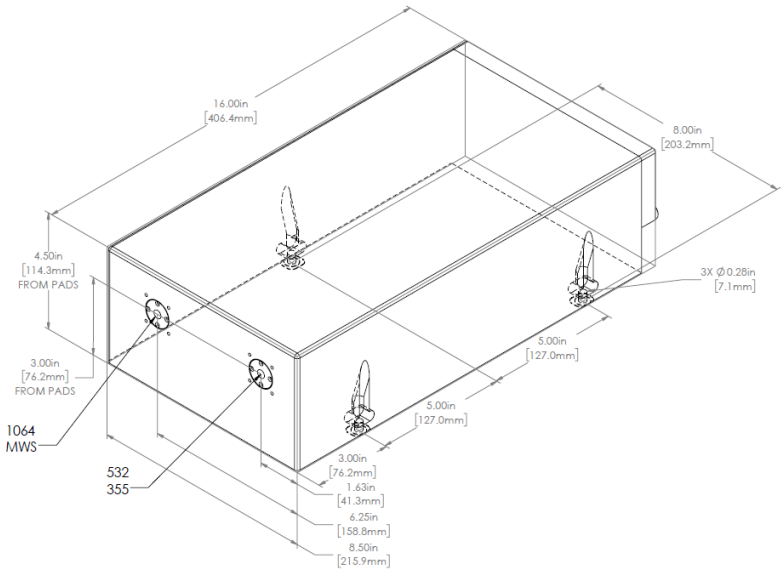


Dimensional Drawings

SN-1064-40

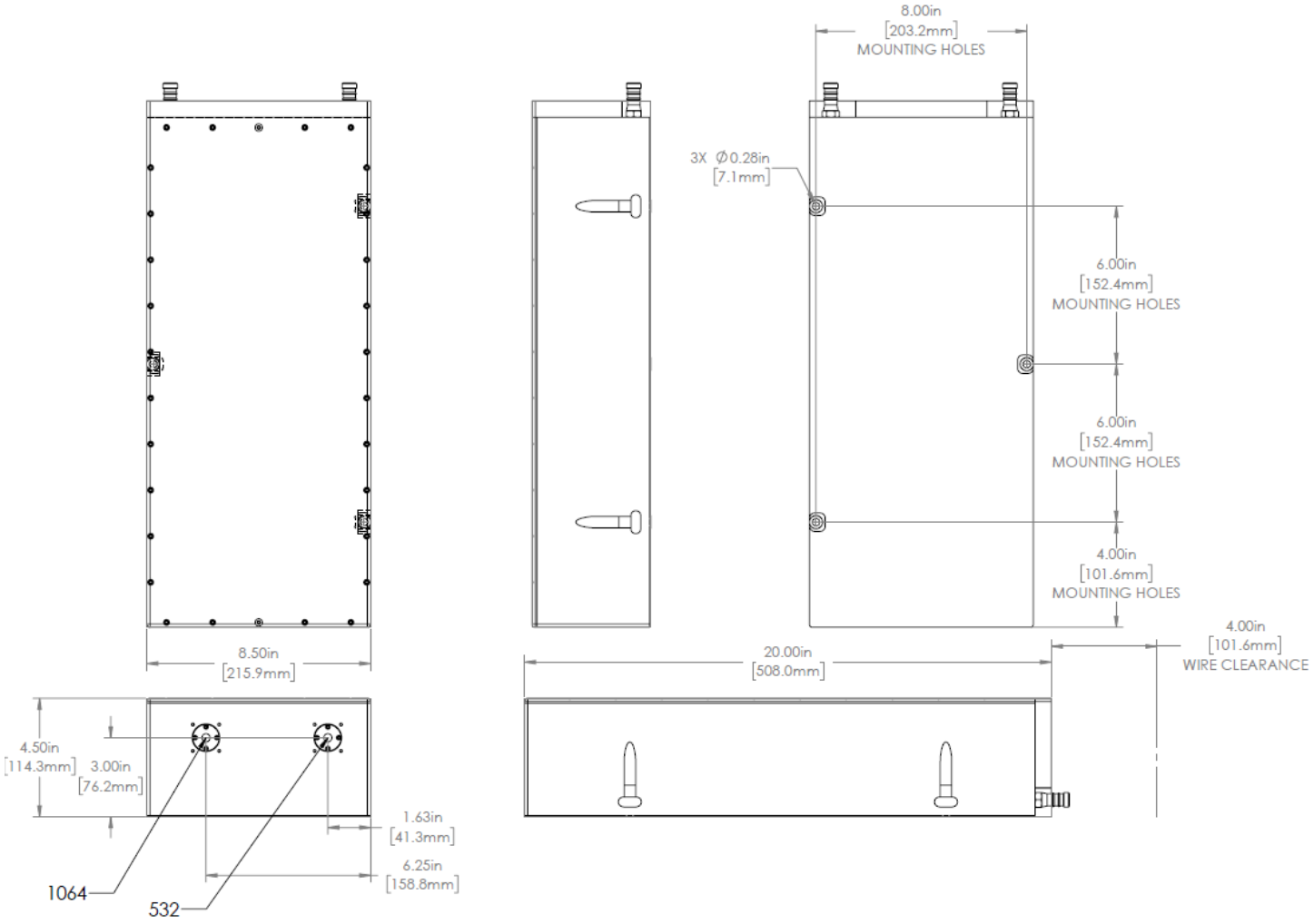


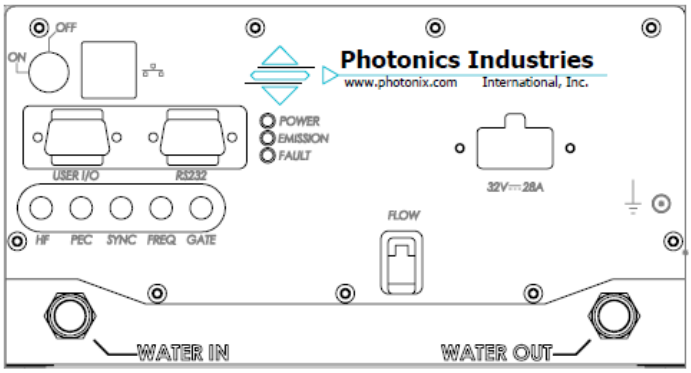


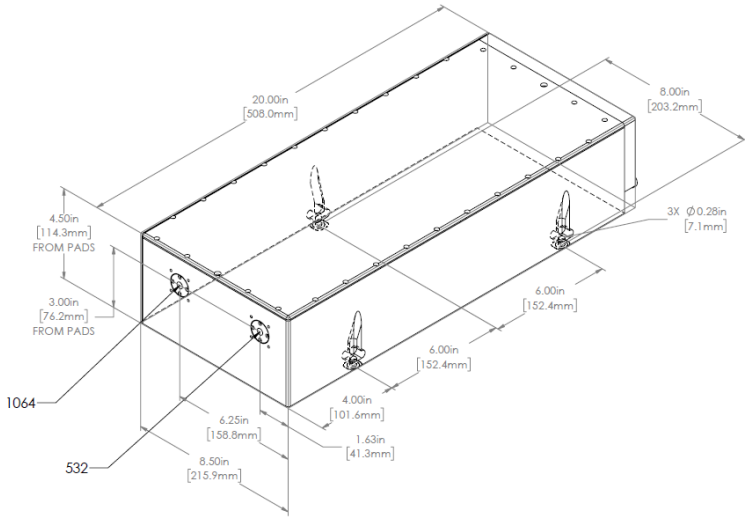


Dimensional Drawings

SN-1064-100

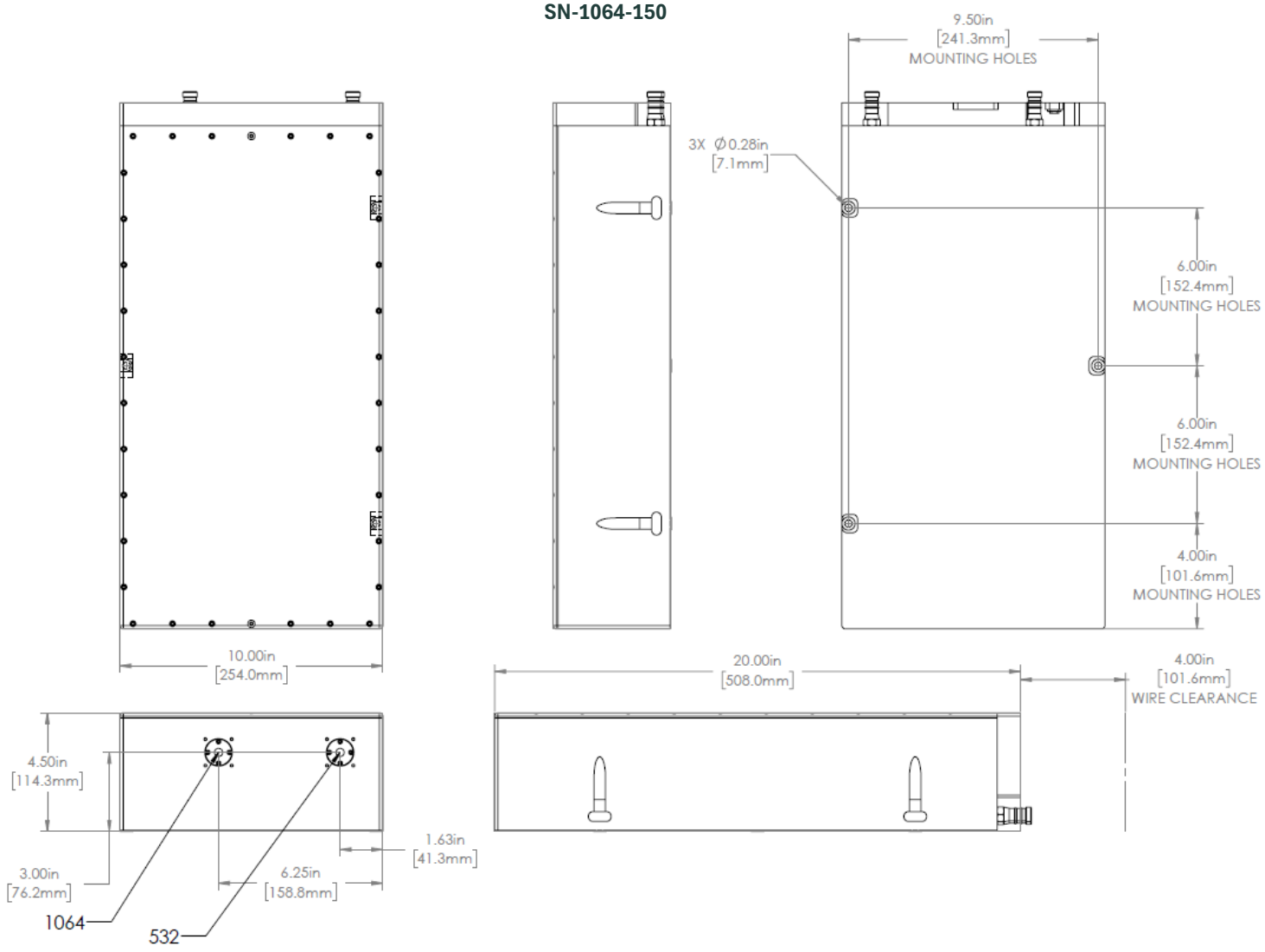


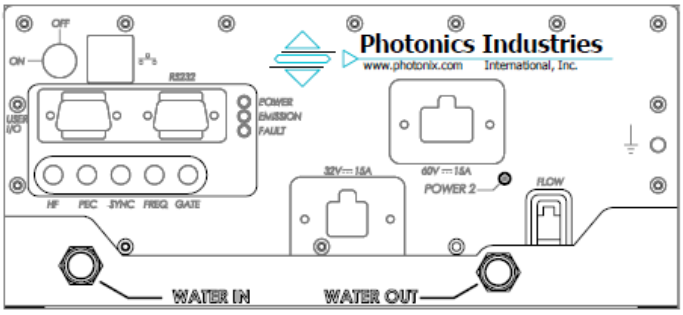


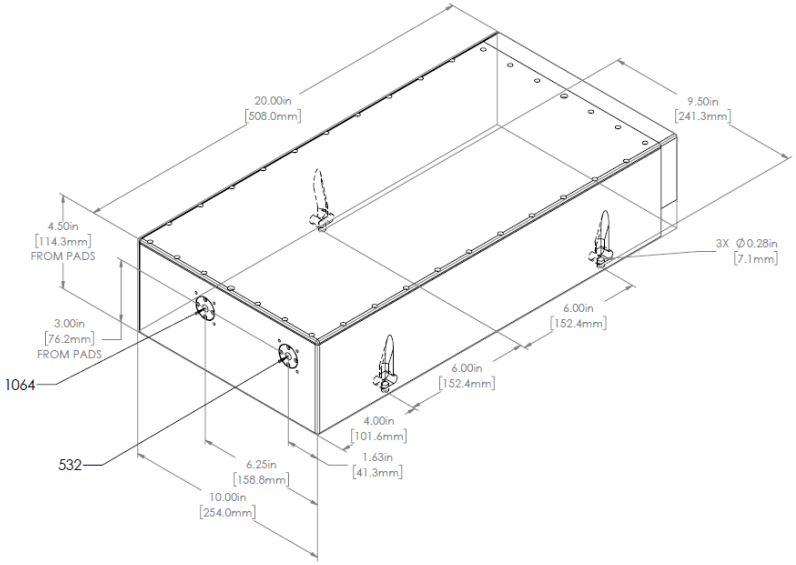


Dimensional Drawings

SN-1064-150

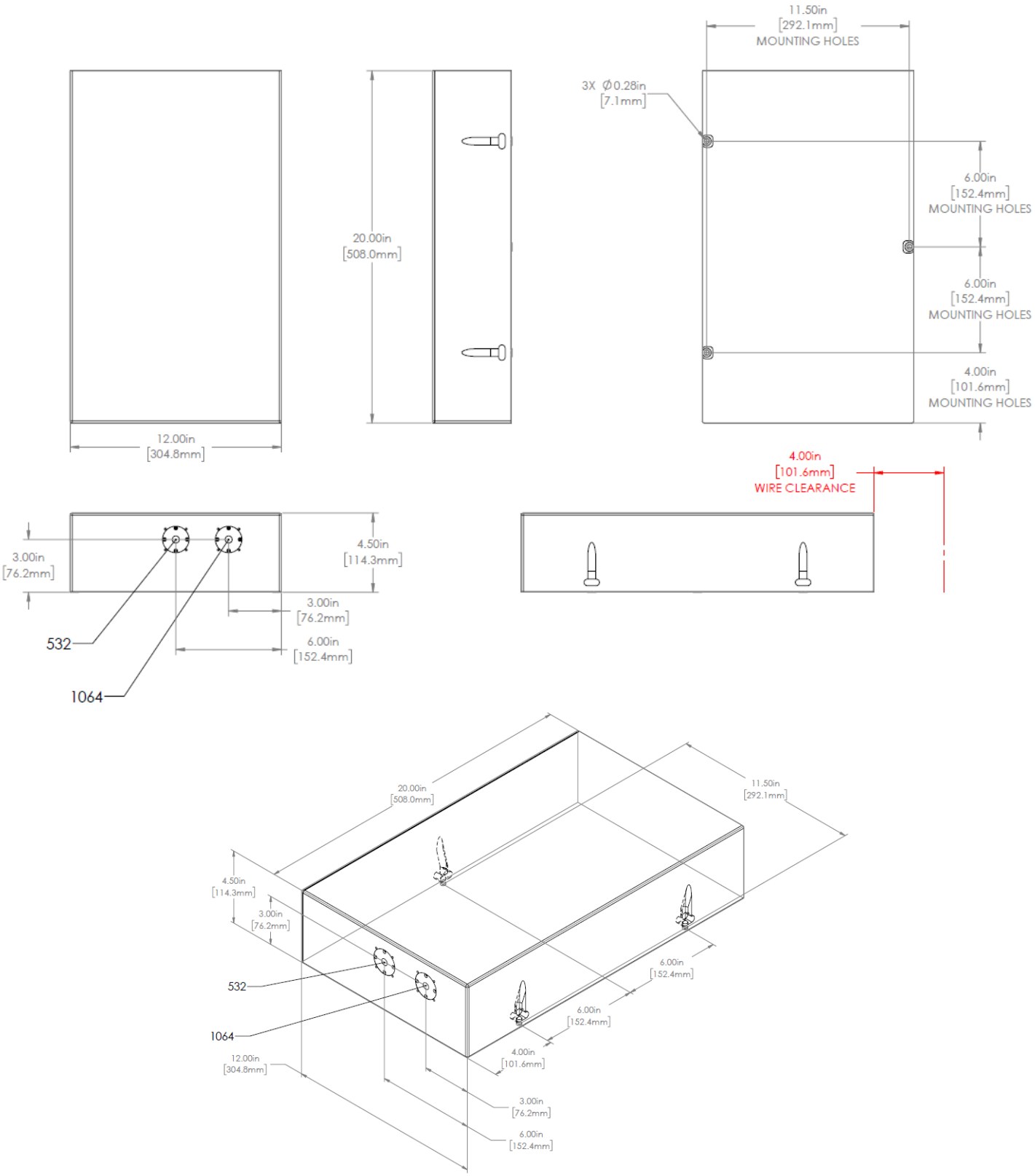






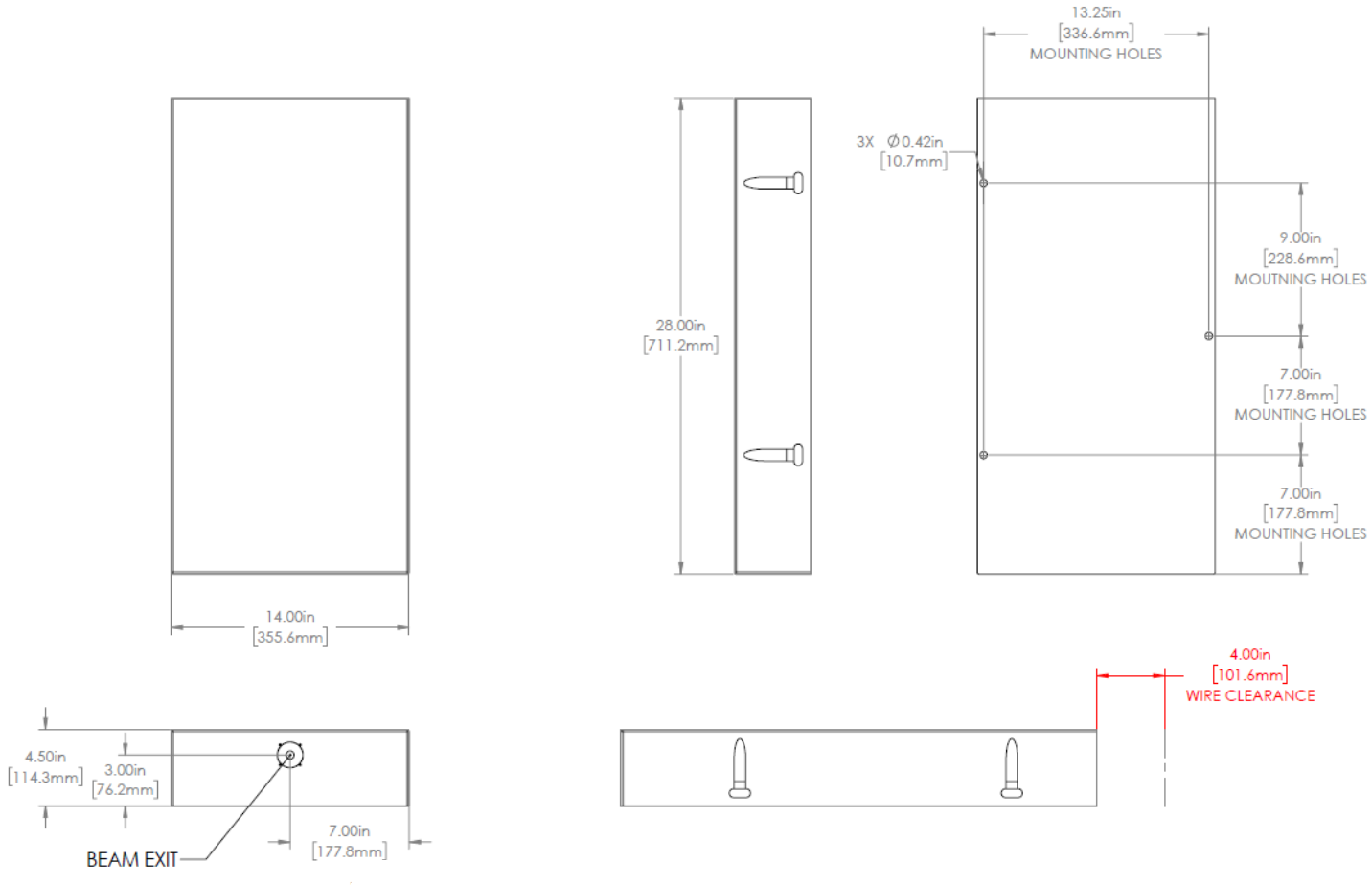
Dimensional Drawings

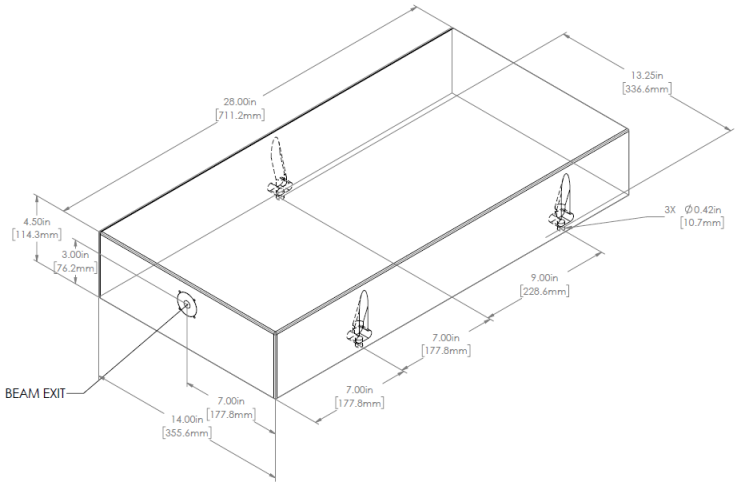
SN-1064-200



Dimensional Drawings

SN-1064-250





Our ongoing policy is to improve the design and specification of our products. The information provided is non-binding.

Headquarters: 1800 Ocean Ave, Ronkonkoma, New York 11779, United States

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

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