

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.

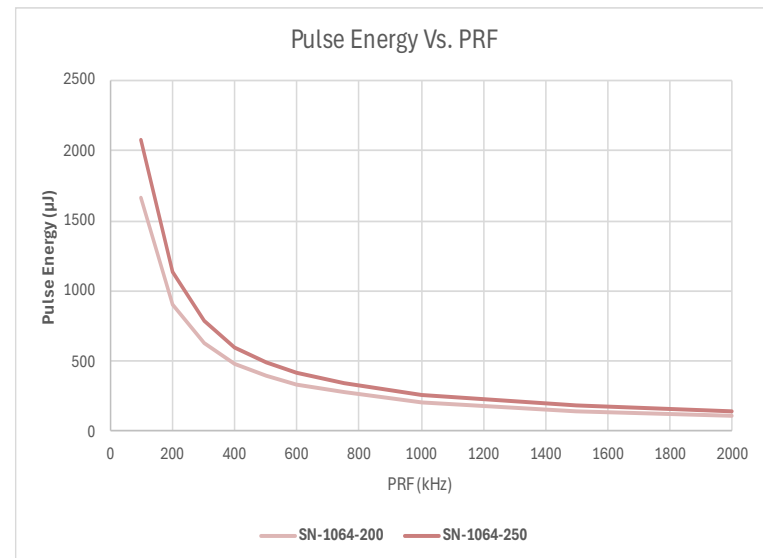
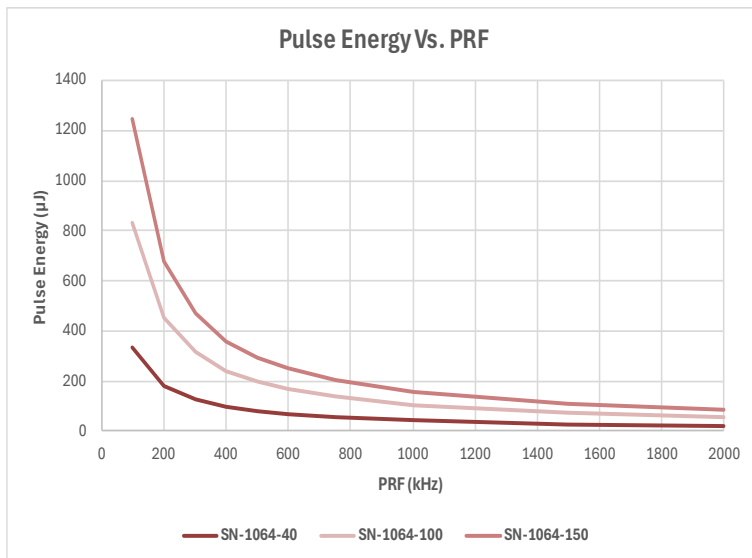
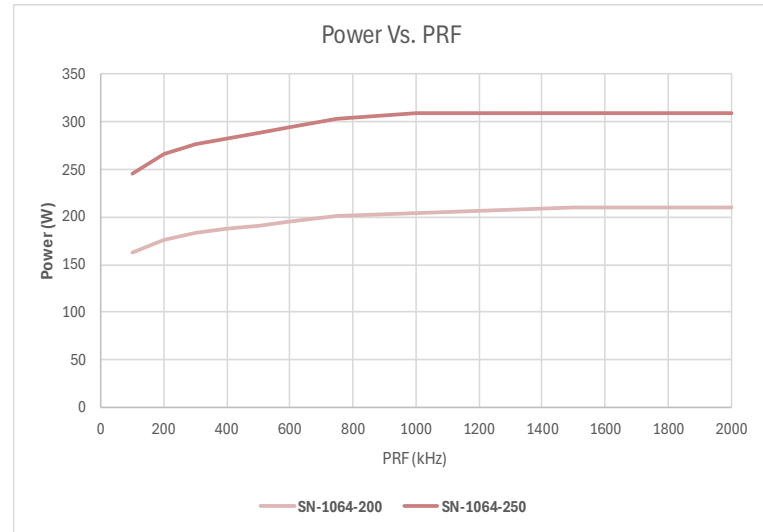
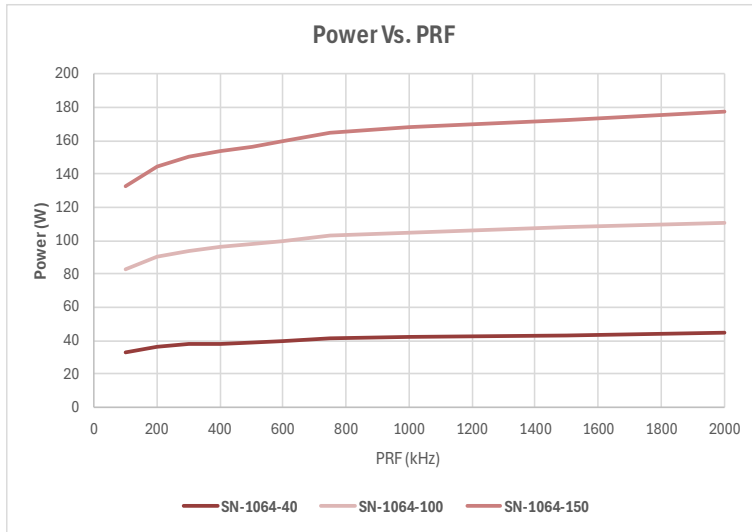
[4] Lower pulse repetition rate operation, down to single shot, achieved by utilizing POD features. Higher pulse repetition rates are available

[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.

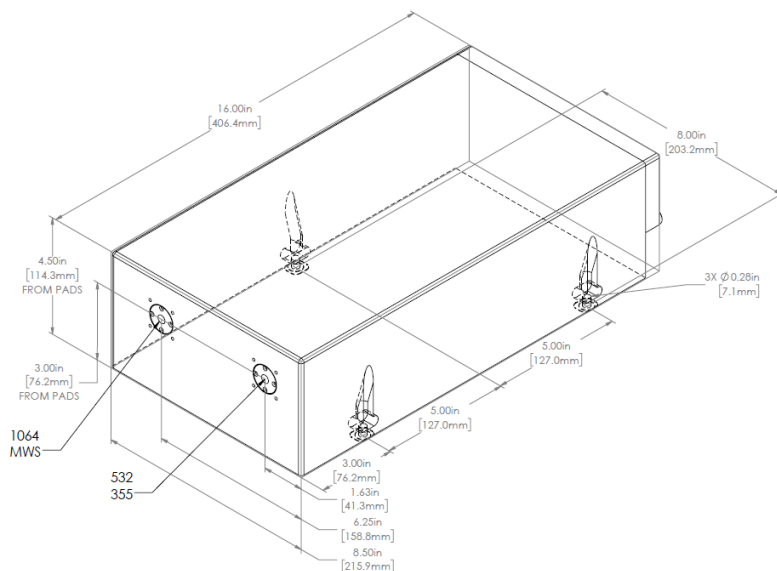
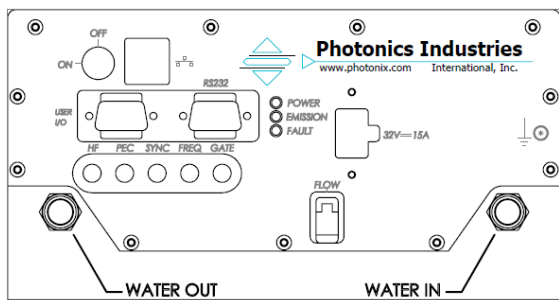
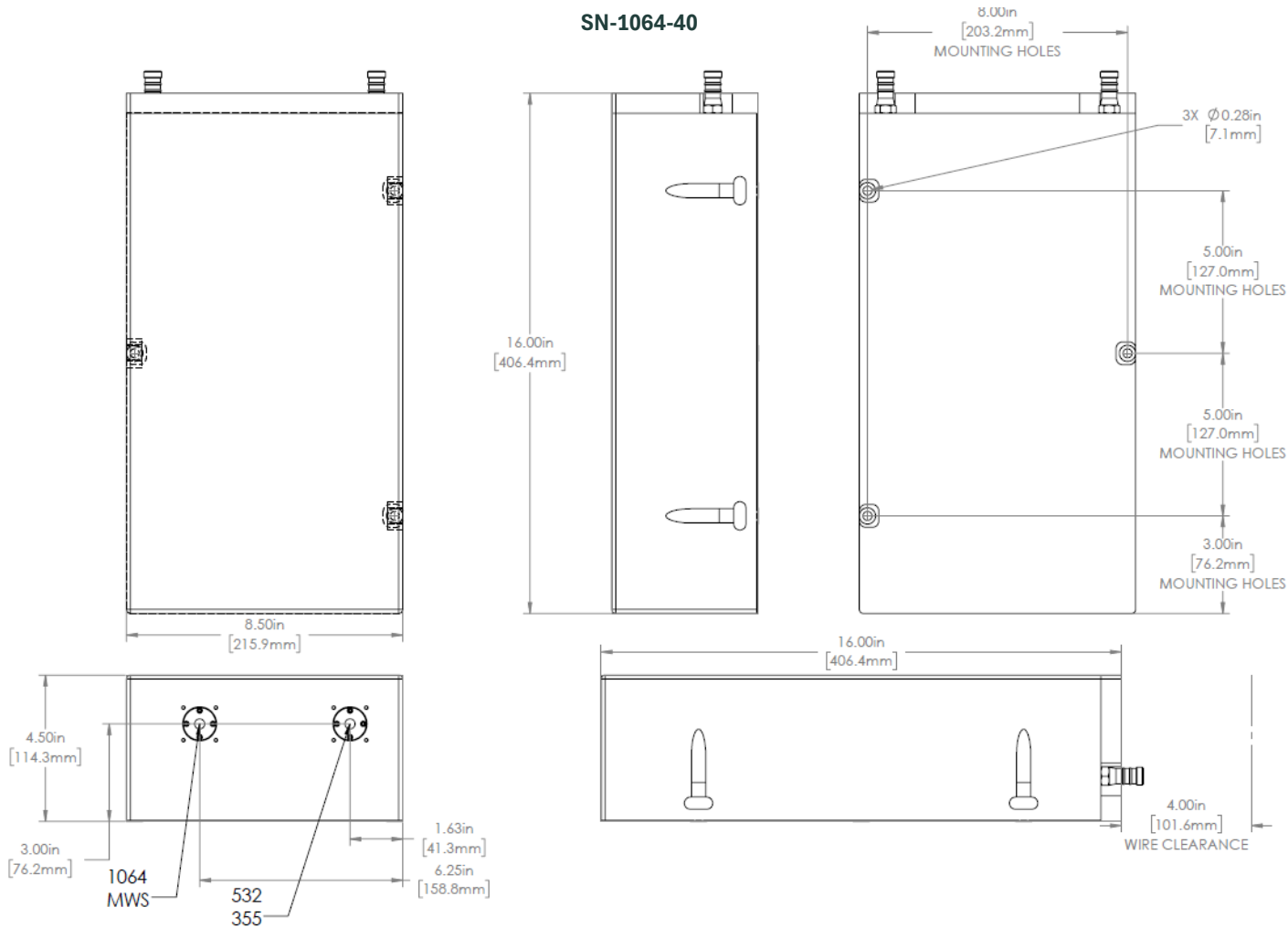
[8] 60V/20A and 32V/28A two connections between laser head and PSU.

Power and Pulse Energy vs. PRF Graph



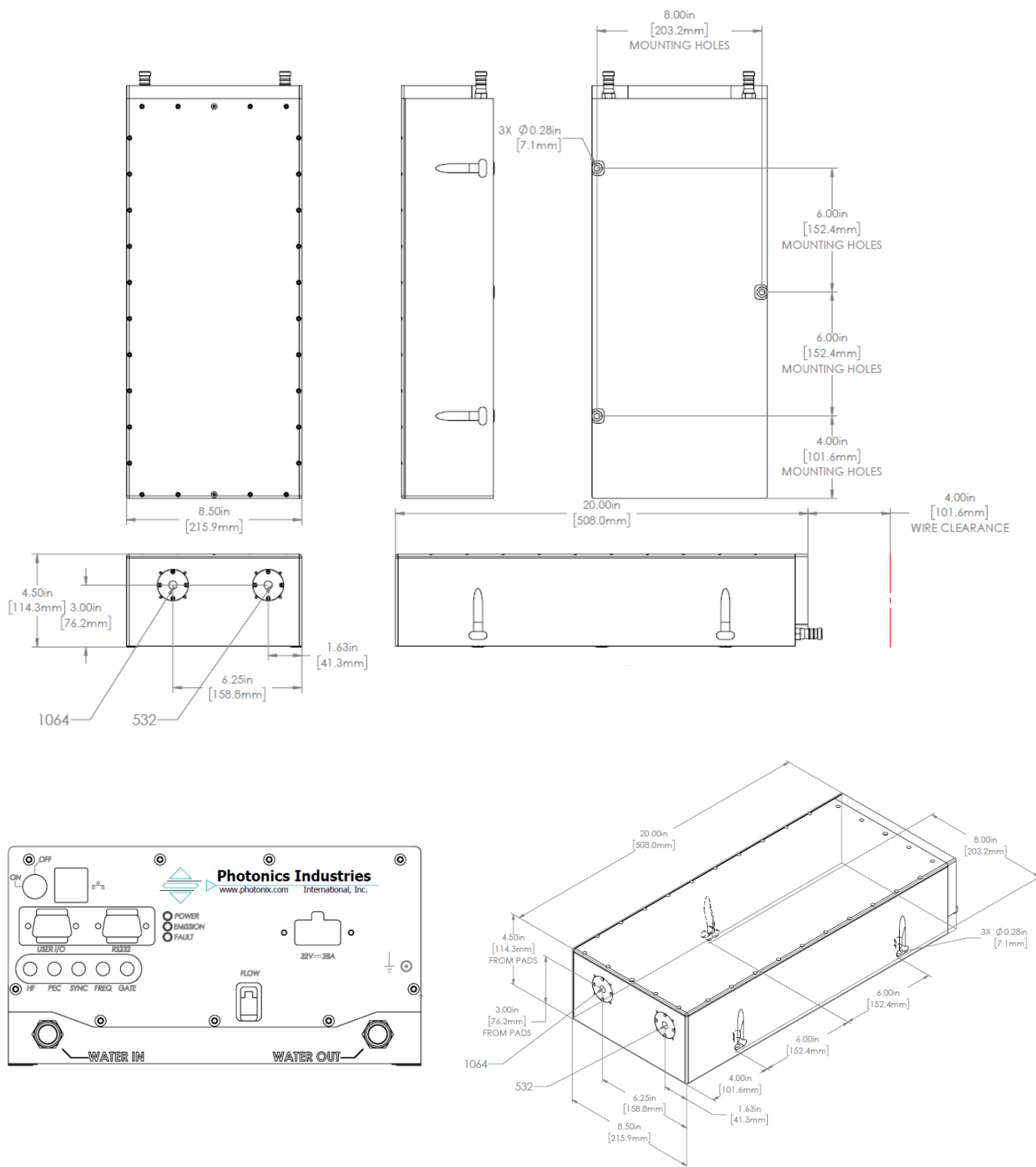
Dimensional Drawings

SN-1064-40



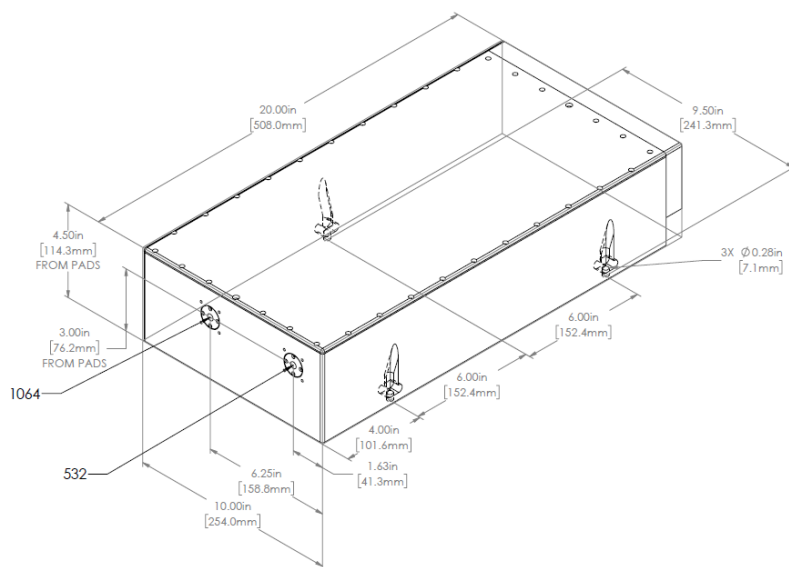
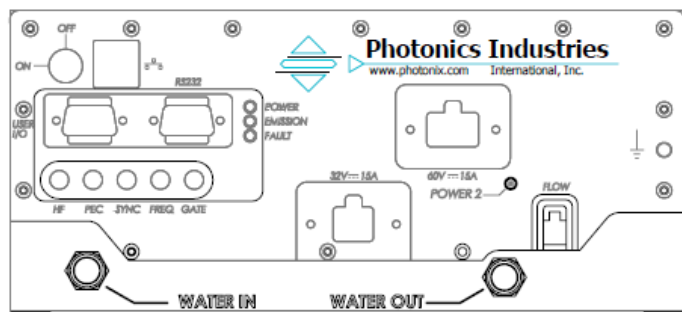
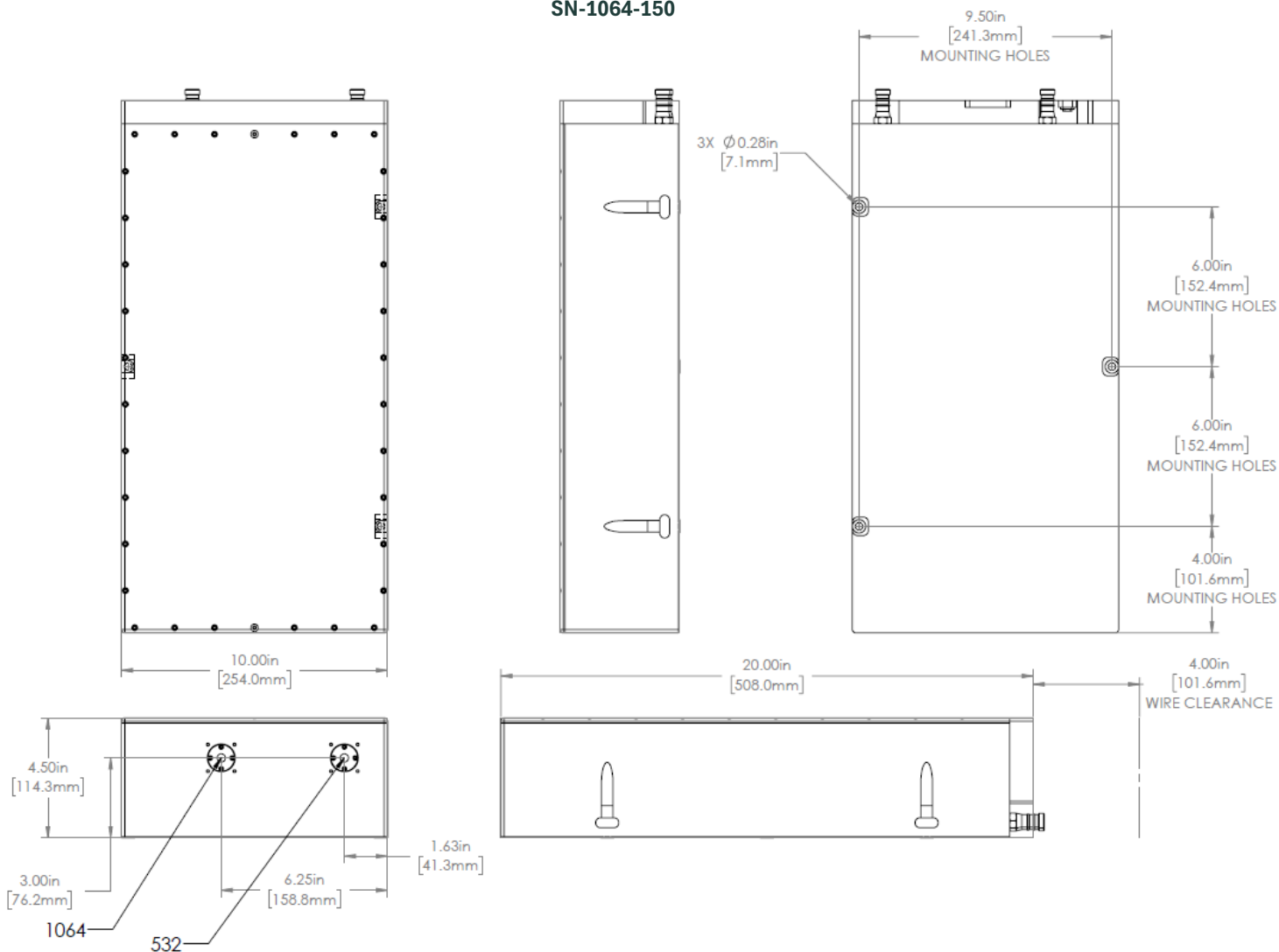
Dimensional Drawings

SN-1064-100

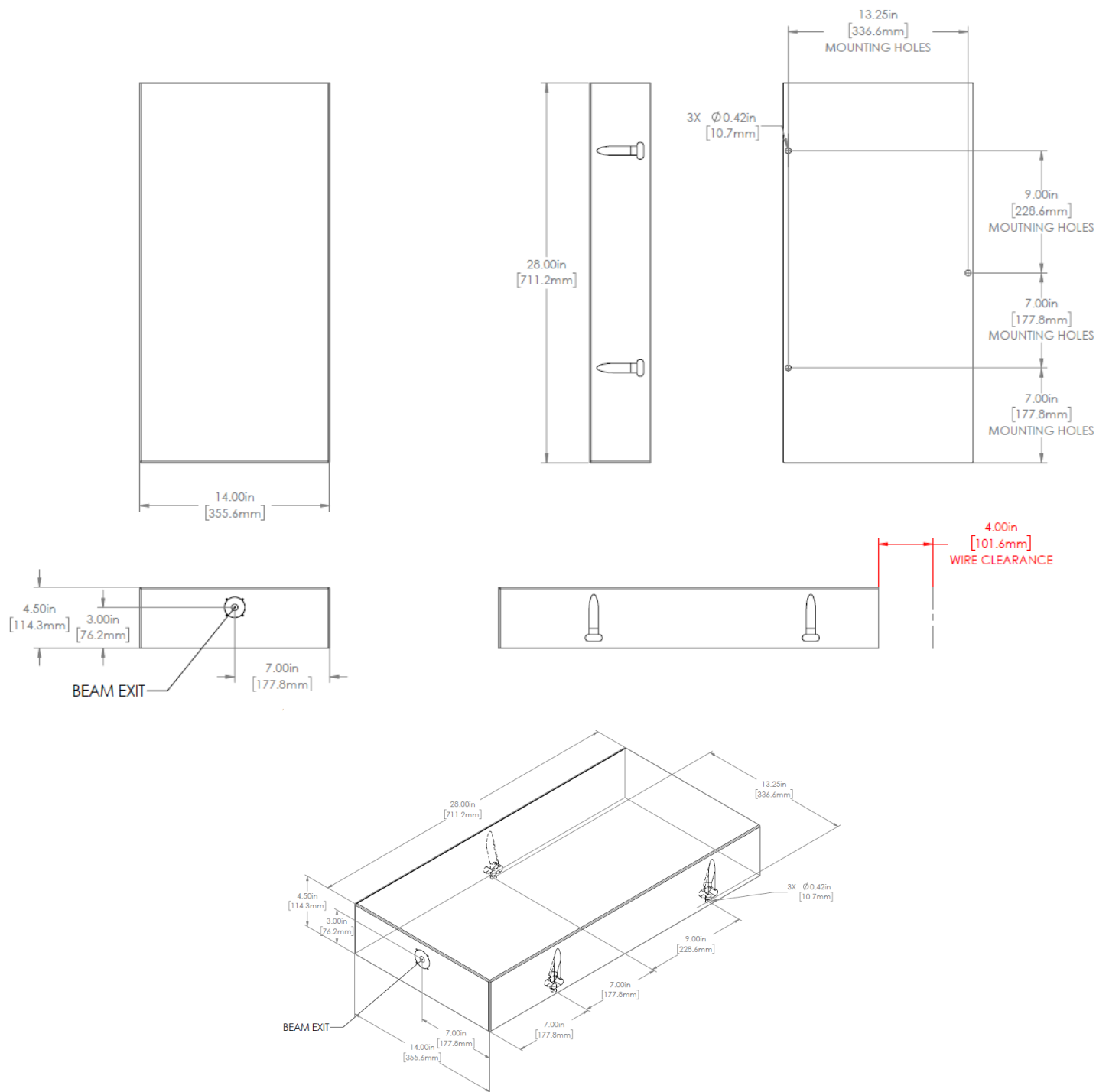


Dimensional Drawings

SN-1064-150



Dimensional Drawings SN-1064-250



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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

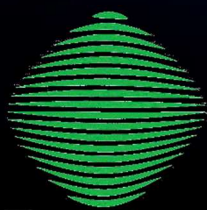


Our ongoing policy is to improve the design and specification of our products. The information provided is non-binding.



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Rayture Systems



レイチャーシステムズ株式会社

〒160-0006 東京都新宿区舟町7 ロクサンビル7F

TEL : 03-3351-0717 FAX : 03-3351-6771

URL : <http://www.rayture-sys.co.jp>

E-mail : laser@rayture-sys.co.jp