SN Series

SN Sub-Nanosecond Lasers

DPSS, TEM_{00}, Pulse Picked 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 5 nanoseconds to an ultra-fast 500 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

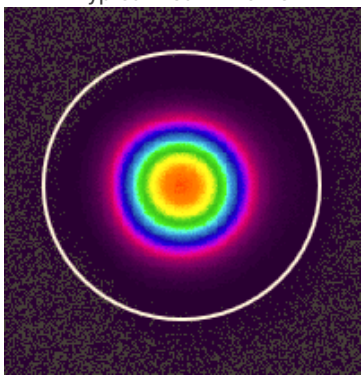
FEATURES

- Up to ~1.5mJ Pulse Energy at 100kHz
- True TEM_{00} Output
- Short Pulse Widths
- Air-cooled with Radiator Cooled Option
- Robust & Compact Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- Power Monitoring and Self-Calibration

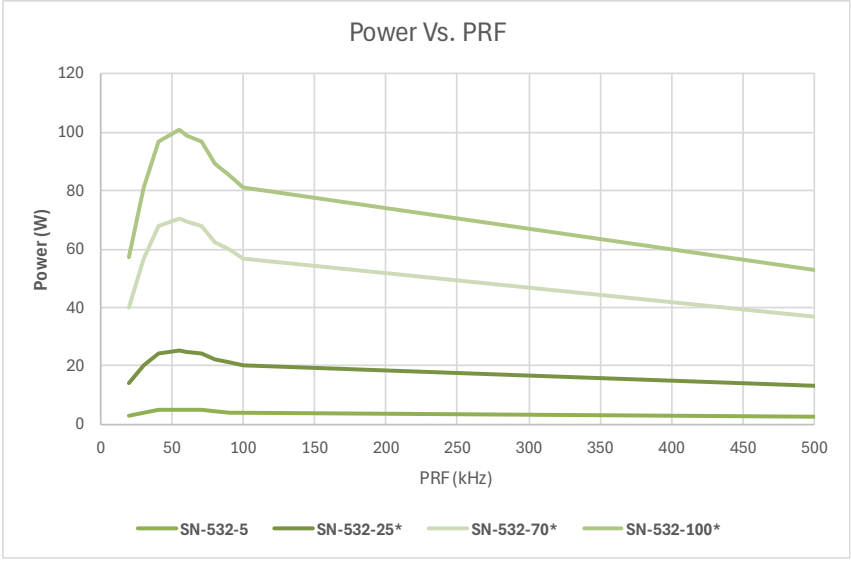
Specifications – **SN Series**				
	SN-532-5	**SN-532-25***	**SN-532-70***	**SN-532-100***
Wavelength	532nm			
Max Average Power[1]	5W	25W	70W	100W
Max Pulse Energy @ 100kHz	~50uJ	~250µJ	~700µJ	~1mJ
Pulse Width [3]	500ps to 5ns			
Pulse repetition rate[4]	Single shot to 2MHz			
Pulse-to-pulse stability[5]	<2% rms			
Long-term power stability [2]	≤1% rms			
Beam spatial mode & M^2	TEM_{00} - M^2 <1.2			
Beam divergence (nominal)	<2 mrad			
Beam bore sight accuracy	≤ 1 mm lateral (to specified exit location), ≤ 5 mrad angular (to specified exit direction)			
Beam roundness	>90%			
Beam pointing stability	<20 µrad			
Polarization ratio	Horizontal; >100:1			
	Operational Specifications and Characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering			
Warm-up time	< 5 minutes from standby, <10 minutes from cold start			
Electrical requirement	15V DC, 13A	32V DC, 15A	32V DC, 28A	60/32V DC, 20/18A
Line frequency	50-60 Hz			
Power consumption [6]	~200W	~500W	~900W	~1300W
Dimensions[7]	18 x 5 x 8.90in	16 x 8.5 x 4.5 in.	20 x 8.5 x 4.5 in.	20 x 10 x 4.5 in.
Weight	35lbs [~15.8kg]	~38lbs	~47lbs	~57lbs
	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	Air-Cooled	Water-Cooled		

[1.] Standard power optimization is at 1 MHz. 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 PSO or 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.

Typical Beam Profile

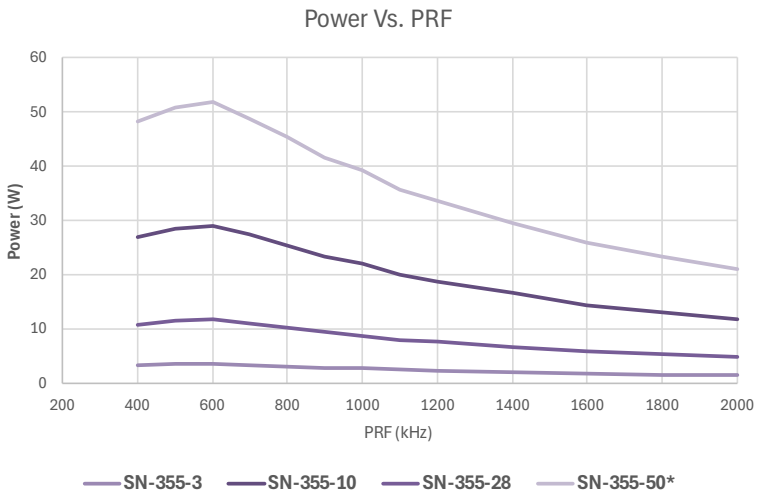


SN-532-5



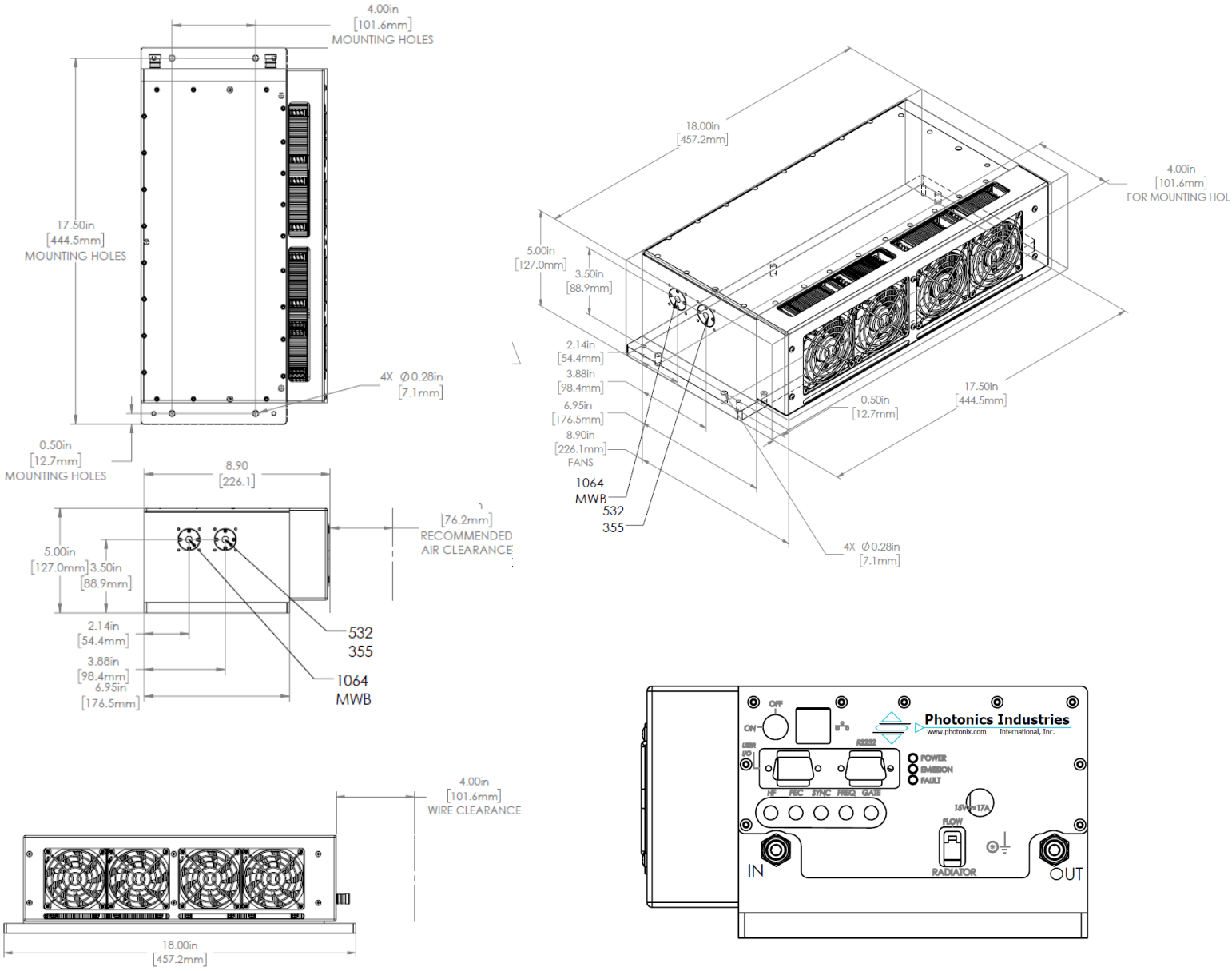
Specifications – **SN Series**				
	SN-355-3	**SN-355-10***	**SN-355-28***	**SN-355-50***
Wavelength	355nm			
Max Average Power[1]	3W	10W	28W	50W
Max Pulse Energy @ 100kHz	~30µJ	~100µJ	~280µJ	~500µJ
Pulse Width [3]	500ps to 5ns			
Pulse repetition rate[4]	Single shot to 2MHz			
Pulse-to-pulse stability[5]	<2% rms			
Long-term power stability [2]	≤1% rms			
Beam spatial mode & M^2	TEM_{00} - M^2 <1.2			
Beam divergence (nominal)	~ 2 mrad			
Beam bore sight accuracy	≤ 1 mm lateral (to specified exit location), ≤ 5 mrad angular (to specified exit direction)			
Beam roundness	>90%			
Beam pointing stability	<25 µrad			
Polarization ratio	Vertical; >100:1		Horizontal; >100:1	
	Operational Specifications and Characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering			
Warm-up time	< 5 minutes from standby, <10 minutes from cold start			
Electrical requirement	15V DC, 13A	32V DC, 15A	32V DC, 28A	60/32V DC, 20/18A
Line frequency	50-60 Hz			
Power consumption [6]	~200W	~500W	~900W	~1300W
Dimensions[7]	18 x 5 x 8.90in	16 x 8.5 x 4.5 in.	25.5 x 10 x 4.5in	
Weight	35lbs [~15.8kg]	~38lbs	~71lbs	
	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	Air-Cooled	Water-Cooled		

[1.] Standard power optimization is at 1 MHz. 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 PSO or 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.



Dimensional Drawings

SN-532-5, SN-355-3



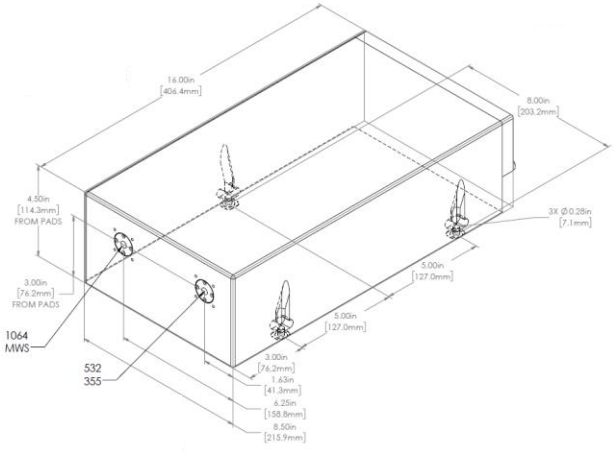
Options:					
Multi-wavelength	Multi-wavelength output, blended or selectable				[MWB], [MWS]
Deep Ultraviolet (DUV)	266nm Wavelength available upon request				[SN-266]
Rad-cooling™	Rad-cooling™ system instead of air-cooling fans				[RC]

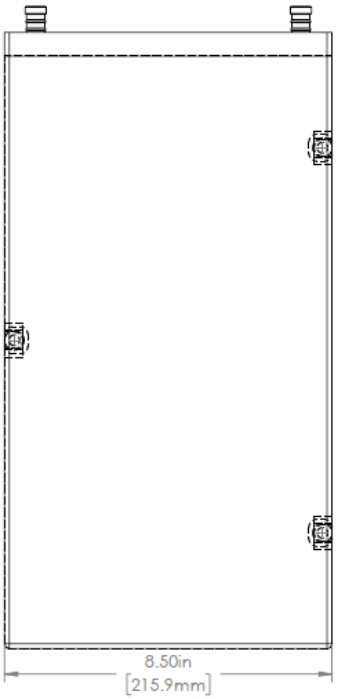
Format	SN-1064/532/355	-	[Power level]	-	[xxx]

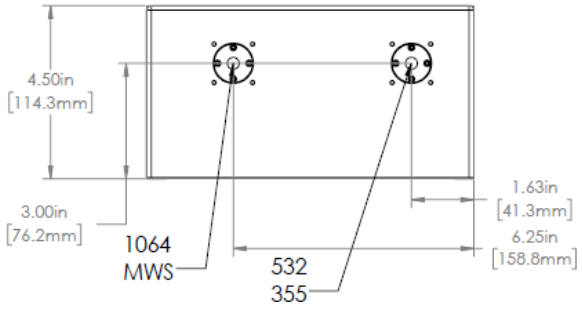
Dimensional Drawings

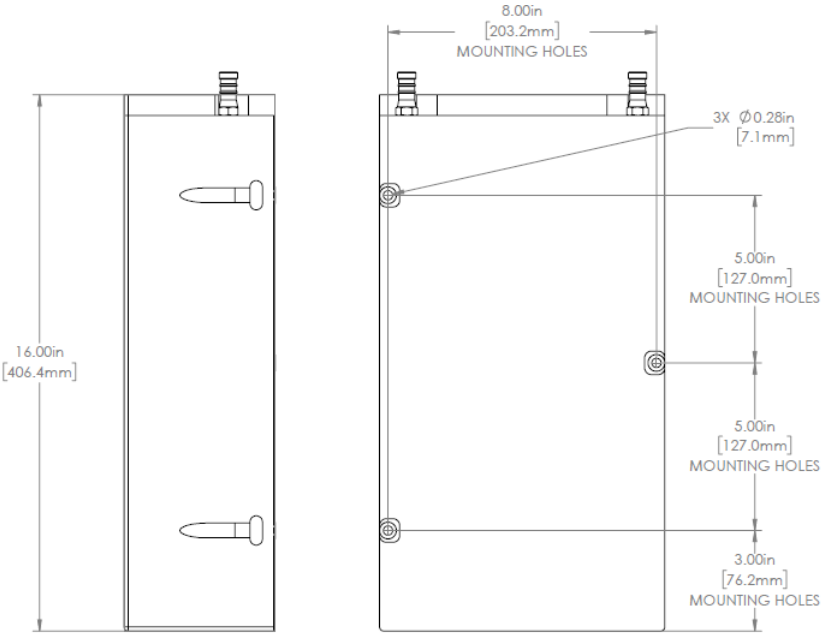
SN-532-25, SN-355-10

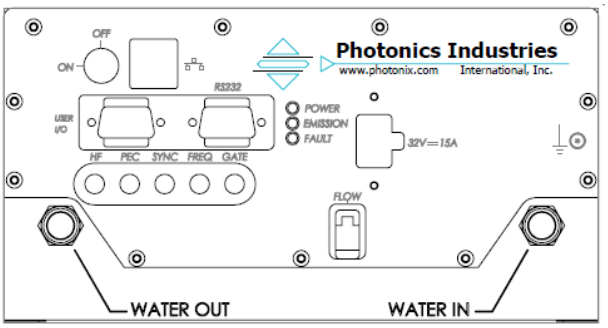
*The SN1 model depicted is a future release and is expected to be available in Q3 2025. Specifications and availability are subject to change. For information on currently available models, please contact us









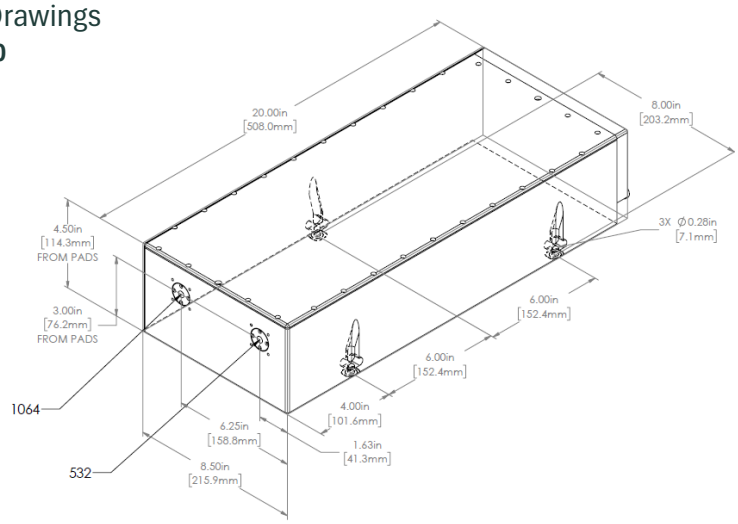


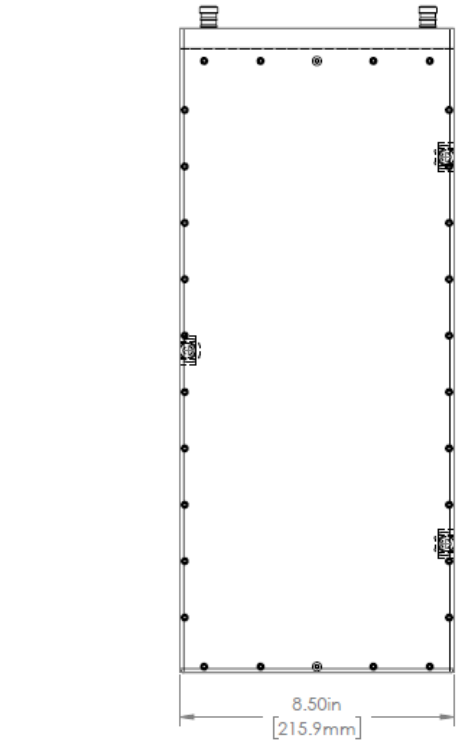
Options:		
Multi-wavelength	Multi-wavelength output, blended or selectable	[MWB], [MWS]
Deep Ultraviolet (DUV)	266nm Wavelength available upon request	

Format	SN-1064/532/355/266	-	[Power Level]	-	[xxx]

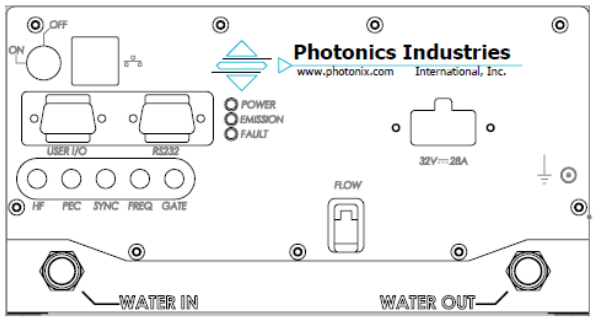
Dimensional Drawings

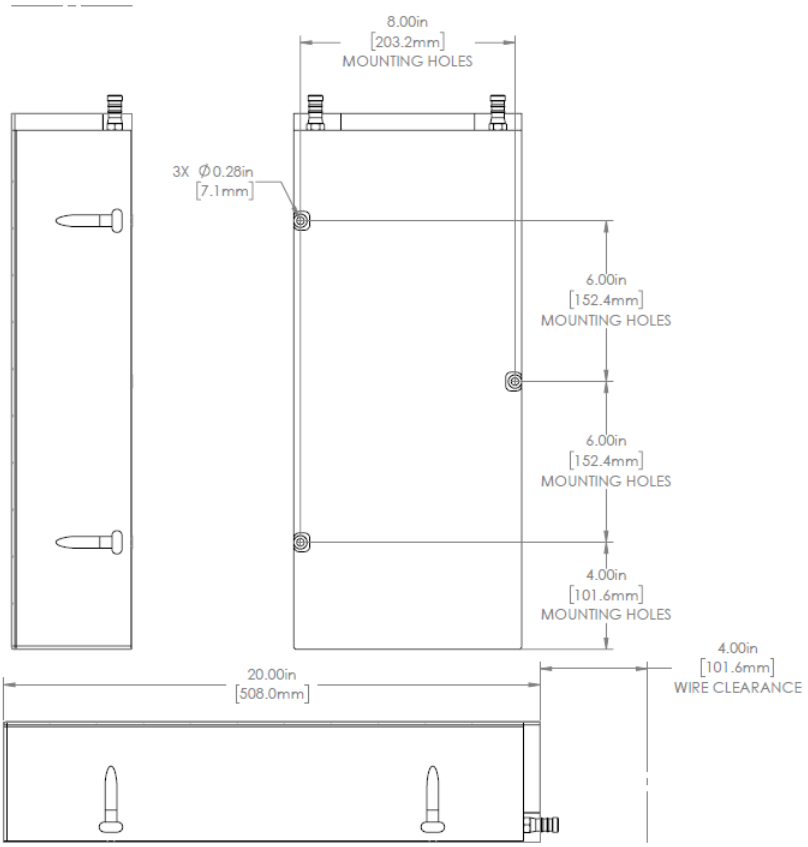
SN-532-70





SCALE 1:2



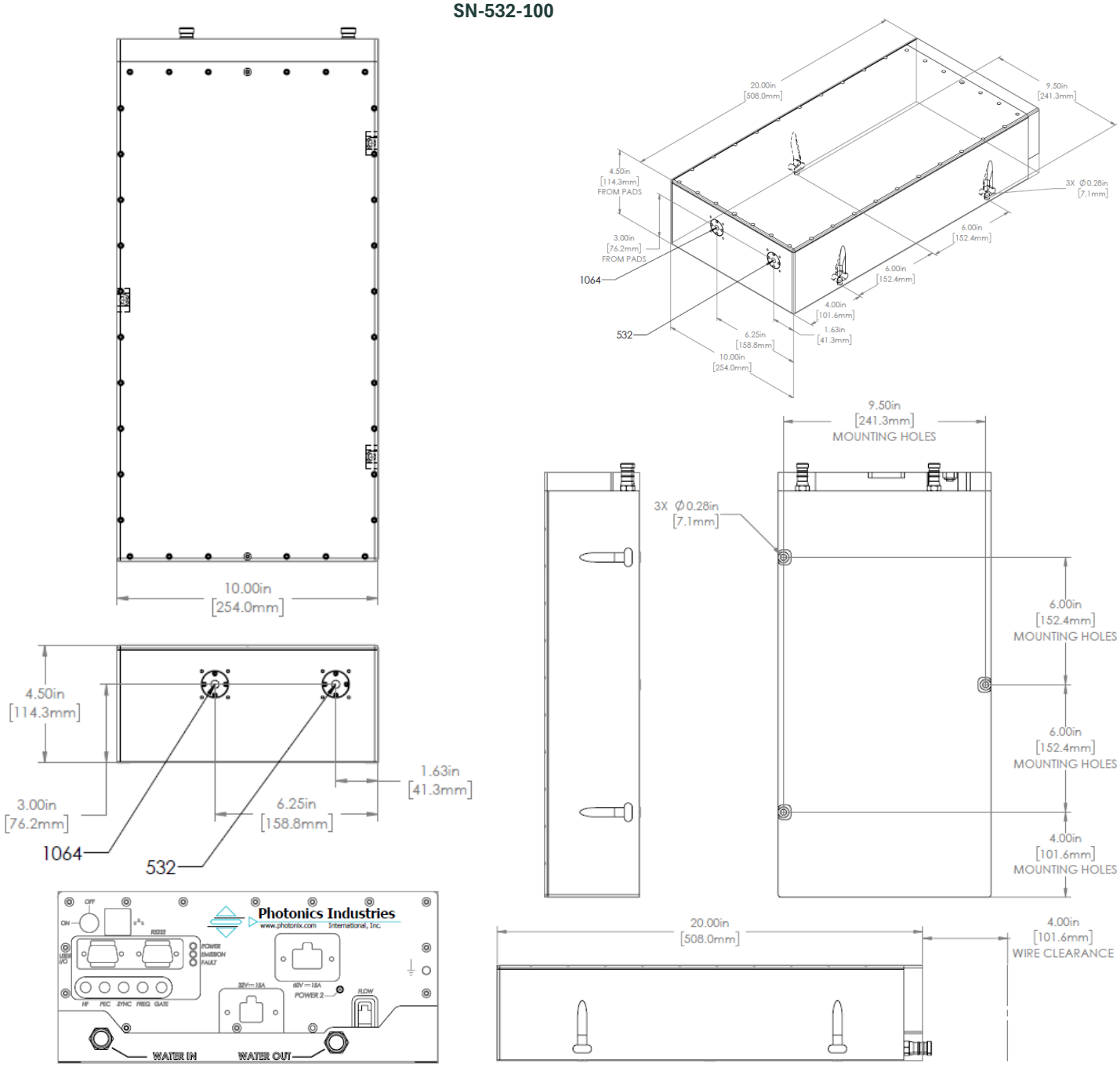


Options:					
Multi-wavelength	Multi-wavelength output				[MWB]

Format	SN-1064/532	-	[Power Level]	-	[xxx]

Dimensional Drawings

SN-532-100

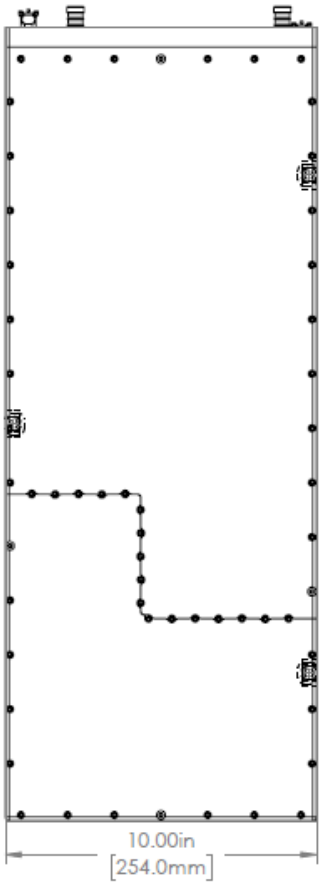


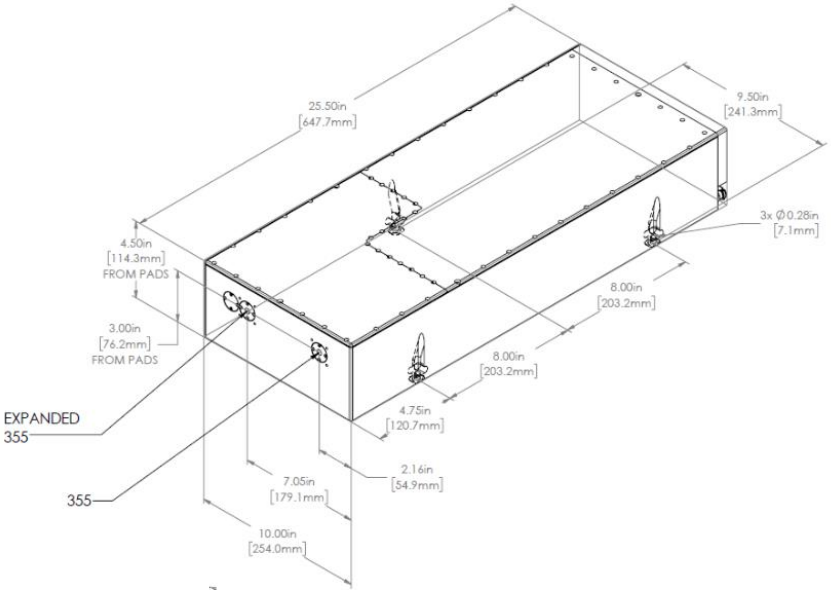
Options:		
Multi-wavelength	Multi-wavelength output, blended	[MWB]

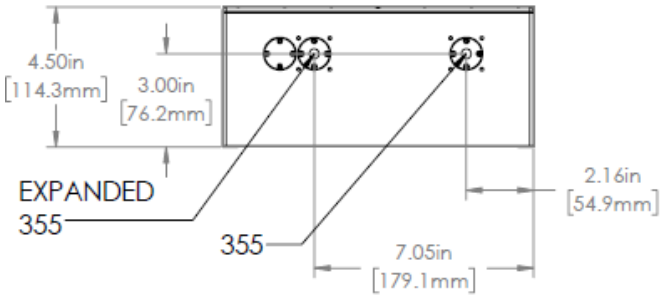
Format	SN-1064/532	-	[Power Level]	-	[xxx]

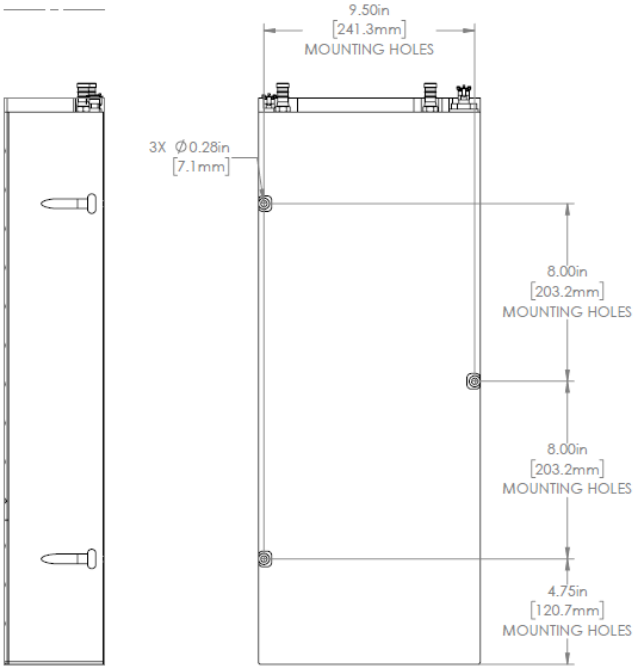
Dimensional Drawings

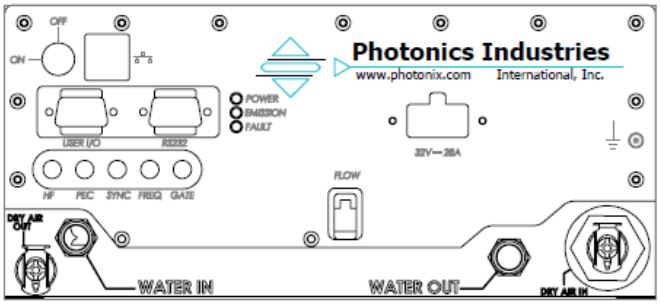
SN-355-28

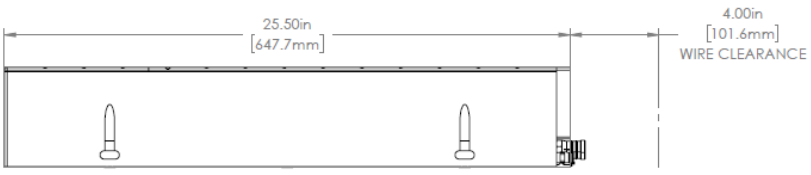






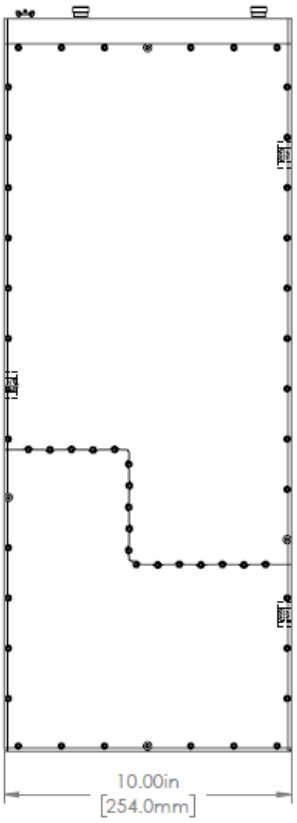


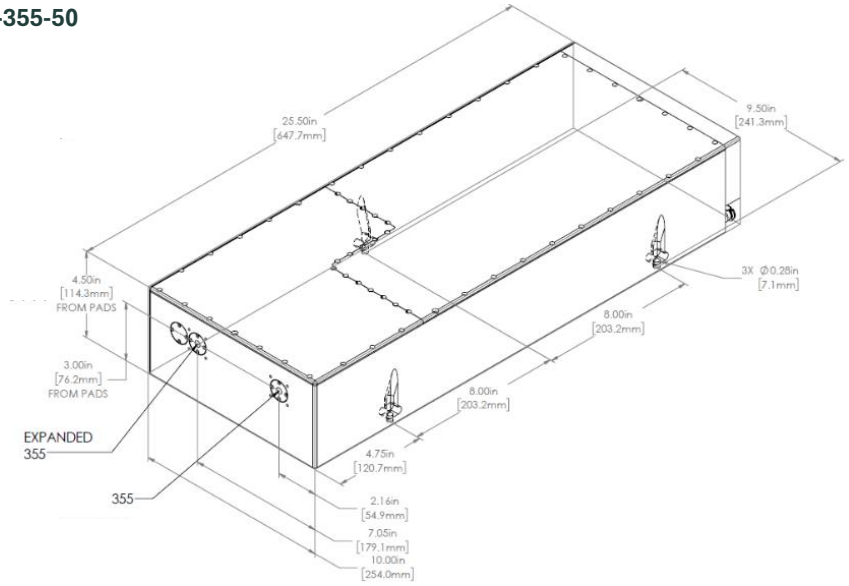


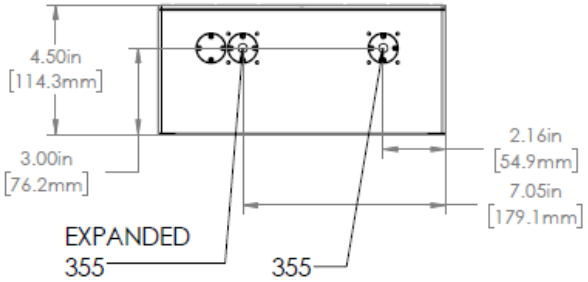


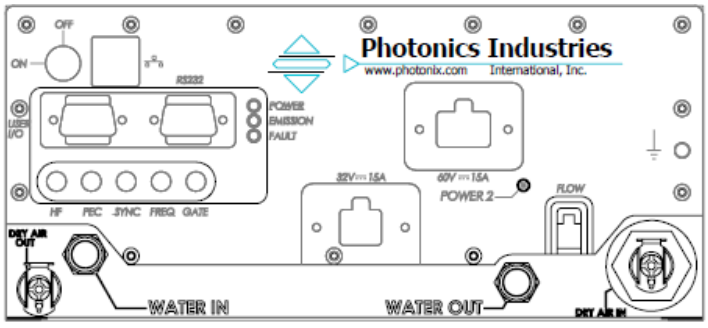
Dimensional Drawings

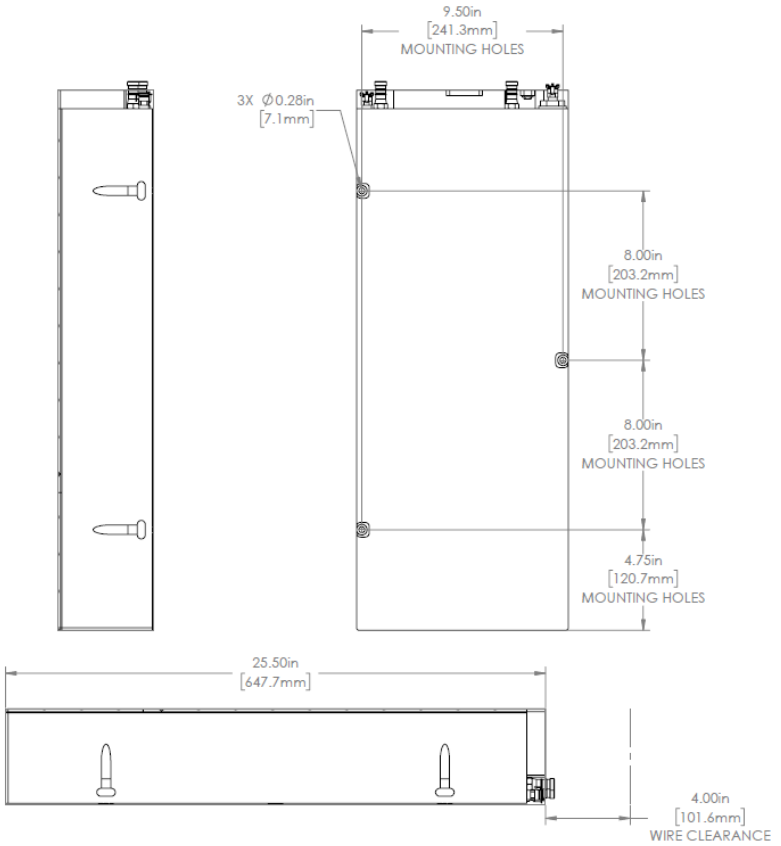
SN-355-50











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

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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

Photonics Industries International, Inc.

RoHS Compliant

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Rayture Systems

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