

RX Series

RX Picosecond Lasers

TEM₀₀, Picosecond Lasers

With over 15 years of expertise in developing and refining picosecond laser features, performance, reliabilities, after delivering thousands of these RX series lasers, RX Series picosecond lasers deliver exceptional performance, precision, and durability, making them ideal for advanced industrial and scientific applications. our RX series excels in precision manufacturing, scientific research, and ultrafast laser processing. While maintaining consistent reliability and accuracy.

Photronics Industries has earned a reputation as a global leader in ultrafast laser technology. Each laser is built to rigorous quality standards, reflecting our commitment to innovation and customer satisfaction. Our proven track record demonstrates our ability to address complex challenges and deliver solutions that empower cutting-edge industries and research.



APPLICATIONS

- Marking & Scribing
- Medical Device Laser Micro processing
- Thin Film Removal and Processing
- PCB & Polymer Cutting & Drilling
- Selective Annealing and Doping
- Solar Cell Manufacturing
- Semiconductor Processing
- Micromachining Transparent Materials

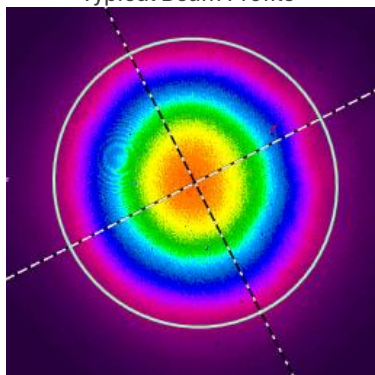
FEATURES

- Up to ~900μJ Pulse Energy at 100kHz
- True TEM₀₀ Output, M² < 1.3
- Exceptional point stability (<25urad)
- Ultra-Short Pulse Widths (10ps @1064nm) (~7ps@ 532/355nm)
- Burst Mode for Pulse Control
- Robust & Compact Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- **P**osition **S**ynchronized **O**utput - **PSO**
- Power Monitoring and Self-Calibration

Specifications – RX Series			
	RX-1064-40	RX-1064-100	RX-1064-150
Wavelength	1064nm		
Average Power @ 1MHz	40W	100W	150W
Pulse Energy @100kHz	~300μJ	~600μJ	~900μJ
Pulse Width	~10ps		
Pulse repetition rate	Single shot to 2MHz		
Pulse-to-pulse stability	<1% rms		
Long-term power stability ¹	≤1% rms		
Beam spatial mode & M ² †	TEM ₀₀ - M ² <1.3	TEM ₀₀ - M ² <1.2	
Beam divergence (nominal)	<1.5 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		
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	32 V DC, 15 A	32 V DC, 28 A	60/32 V DC, 20/18 A
Line frequency	50-60 Hz		
Power consumption	<500W	<900W	<1300W
Dimensions	16 x 8.5 x 4.5 in. [406.4 x 215.9 x 114.3mm]	20 x 8.5 x 4.5 in. [508 x 215.9 x 114.3mm]	20 x 10 x 4.5 in. [508 x 254 x 114.3mm]
Weight	~38lbs [17.2kg]	~47lbs [21.3kg]	~57lbs [25.9kg]
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		

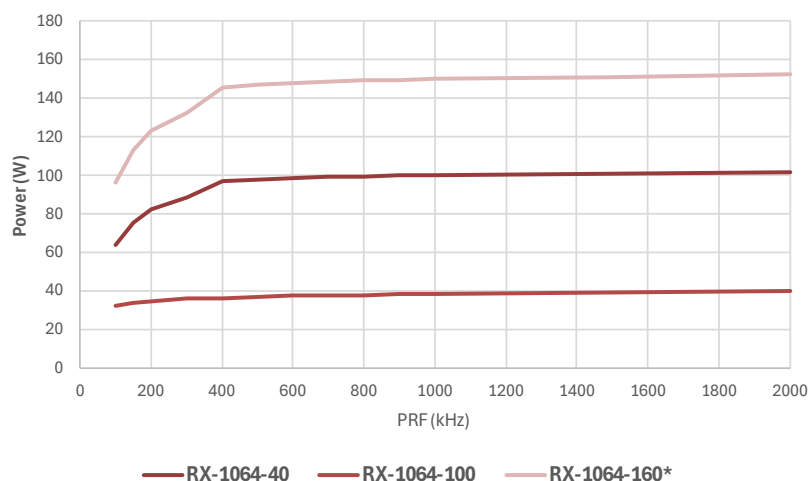
[1] Measured over 8 hours ± 2°C. [2] For operation of the laser outside of the specified temperature range, contact PI. [†] ALL beam parameters and stability are at specification 1MHz repetition rate *Illustration includes some simulated data for conceptual visualization.

Typical Beam Profile



RX-1064-100

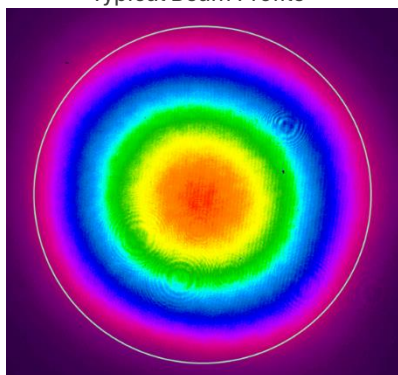
Power Vs. PRF



Specifications – RX Series			
	RX-532-20	RX-532-70	RX-532-100
Wavelength	532nm		
Average Power @ 1MHz ¹	25W	70W	100W
Pulse Energy @100kHz ²	~180μJ	~400μJ	~600μJ
Pulse Width	~7ps		
Pulse repetition rate	Single shot to 2MHz		
Pulse-to-pulse stability	<2% rms		
Long-term power stability ³	≤1% rms		
Beam spatial mode & M ² †	TEM ₀₀ - M ² <1.2		
Beam divergence (nominal)	< 1 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	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	32 V DC, 15 A	32 V DC, 28 A	60/32 V DC, 20/18 A
Line frequency	50-60 Hz		
Power consumption	<500W	<900W	<1300W
Dimensions	16 x 8.5 x 4.5 in. [406.4 x 215.9 x 114.3mm]	20 x 8.5 x 4.5 in. [508 x 215.9 x 114.3mm]	20 x 10 x 4.5 in. [508 x 254 x 114.3mm]
Weight	~38lbs [17.2kg]	~47lbs [21.3kg]	~57lbs [25.9kg]
Environmental Requirements			
Ambient temperature ⁴	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		

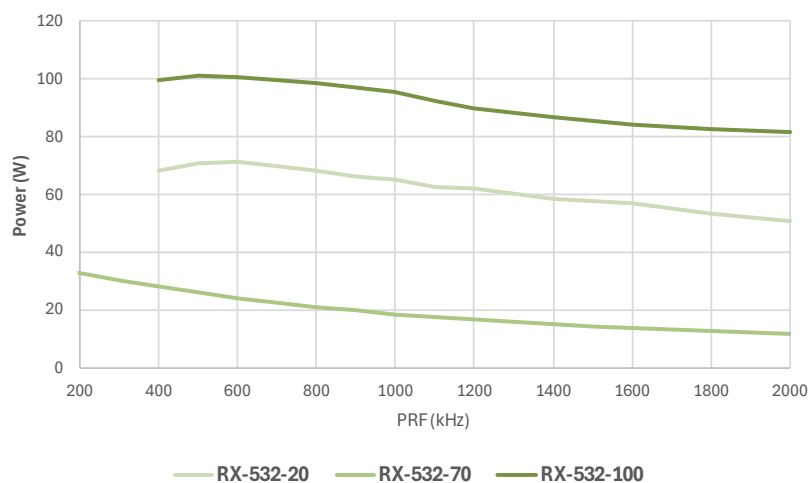
[1] Specification is based on 1MHz optimized performance data. [2] Specifications for power and pulse energy are provided for specific repetition rates and are not achievable simultaneously. The listed power and pulse energy apply exclusively to their respective repetition rates. Please inform Photonics Industries of your desired operational PRF (kHz) when placing your order. [3] Measured over 8 hours ± 2°C. [4] For operation of the laser outside of the specified temperature range, contact PI. [†] ALL beam parameters and stability are at specification 1MHz repetition rate *Illustration includes some simulated data for conceptual visualization.

Typical Beam Profile



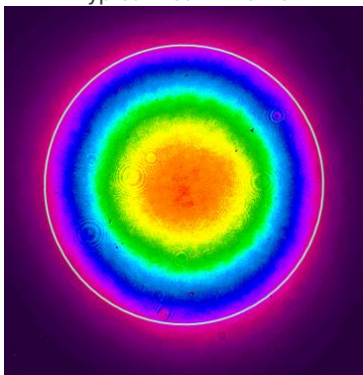
RX-532-70

Power Vs. PRF

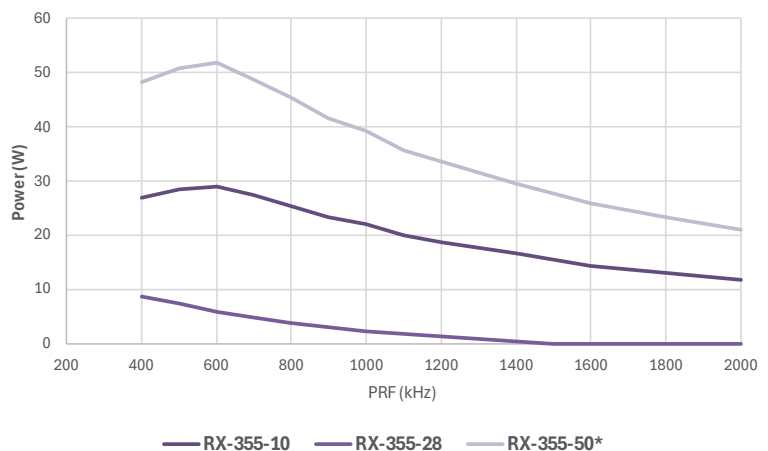


Specifications – RX Series			
	RX-355-10	RX-355-28	RX-355-50
Wavelength	355nm		
Average Power @ 1MHz ¹	10W	28W	50W
Pulse Energy @100kHz ²	~80μJ	~200μJ	~280μJ
Pulse Width	~7ps		
Pulse repetition rate	Single shot to 2MHz		
Pulse-to-pulse stability	<2% rms		
Long-term power stability ³	≤1% rms		
Beam spatial mode & M ² †	TEM ₀₀ – M ² <1.2		
Beam divergence (nominal)	<1 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, <15 minutes from cold start		
Electrical requirement	32 V DC, 15 A	32 V DC, 28 A	60/32 V DC, 20/18 A
Line frequency	50-60 Hz		
Power consumption	<500W	<900W	<1300W
Dimensions	16 x 8.5 x 4.5 in. [406.4 x 215.9 x 114.3mm]	25.5 x 10 x 4.5in [647.7 x 254 x 114.3mm]	
Weight	~38lbs [17.3kg]	~71lbs [32.2kg]	
Environmental Requirements			
Ambient temperature ⁴	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] Specification is based on 1MHz optimized performance data. [2] Specifications for power and pulse energy are provided for specific repetition rates and are not achievable simultaneously. The listed power and pulse energy apply exclusively to their respective repetition rates. Please inform Photonics Industries of your desired operational PRF (kHz) when placing your order. [3] Measured over 8 hours ± 2°C. [4] For operation of the laser outside of the specified temperature range, contact PI. [†] ALL beam parameters and stability are at specification 1MHz repetition rate *Illustration includes some simulated data for conceptual visualization.

Typical Beam Profile


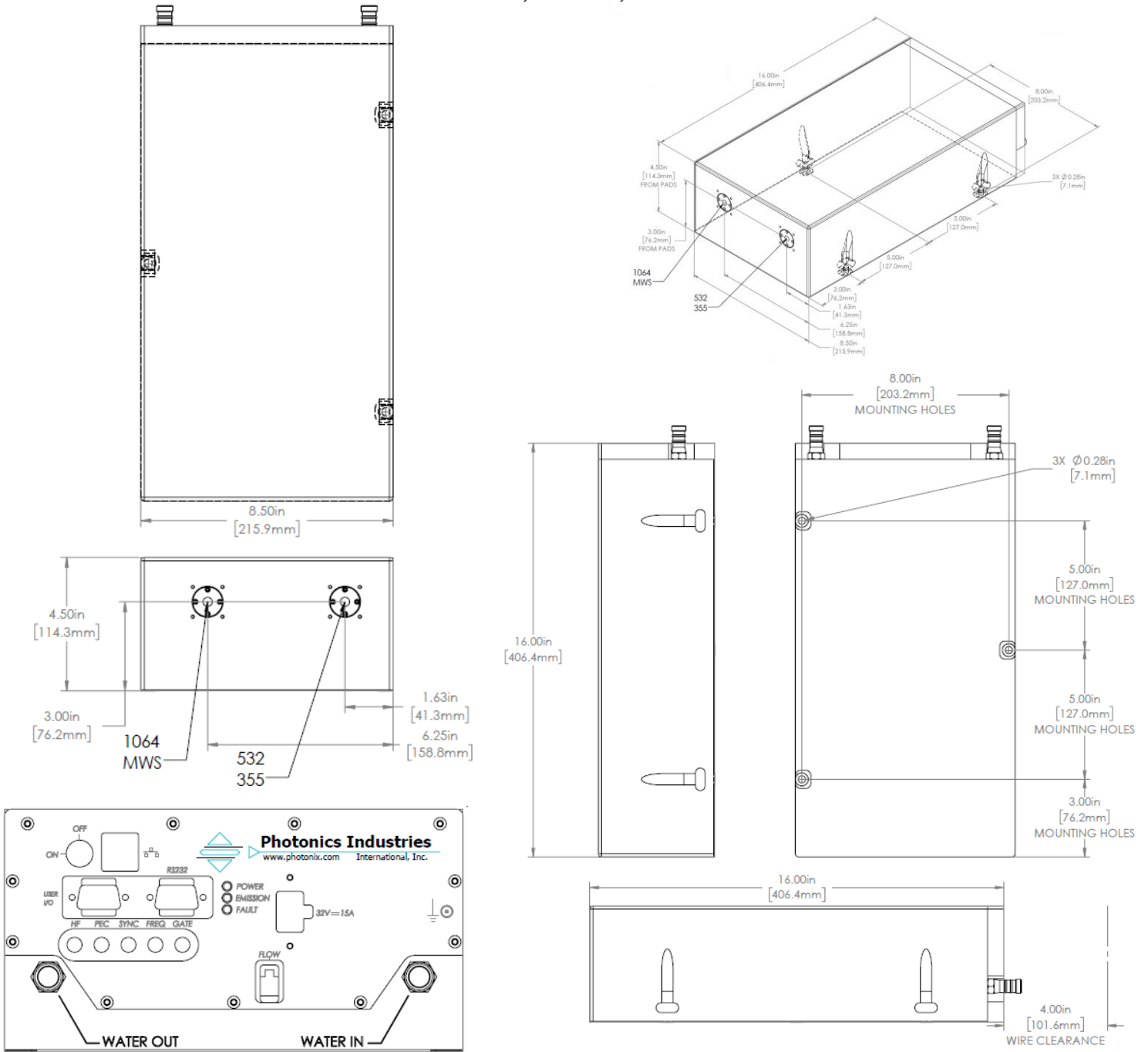
RX-355-28

Power Vs. PRF


Dimensional Drawings

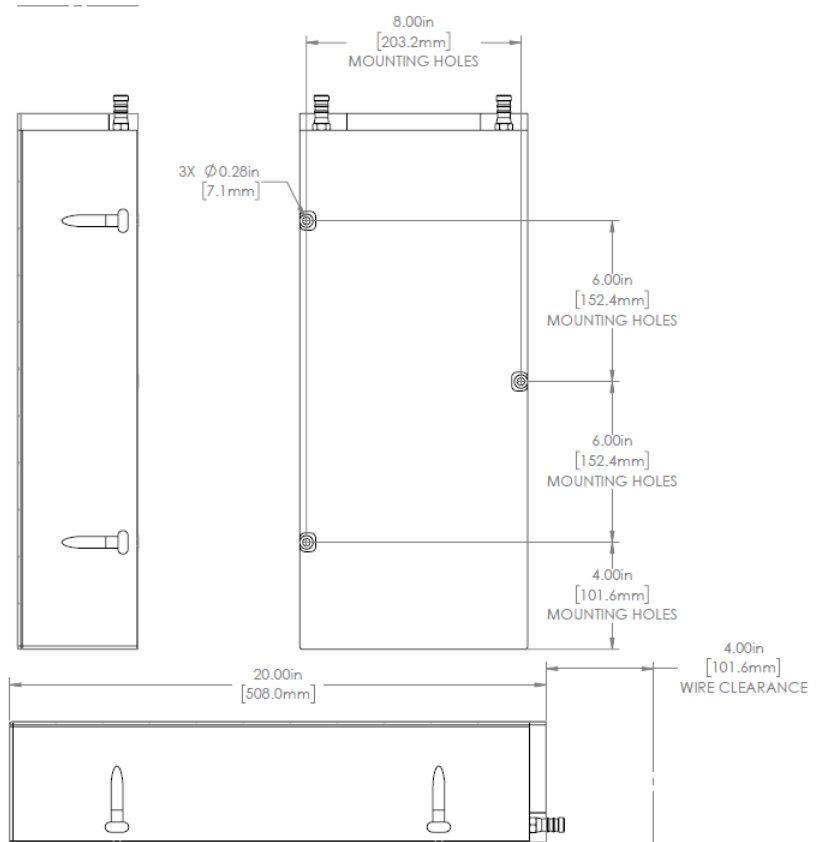
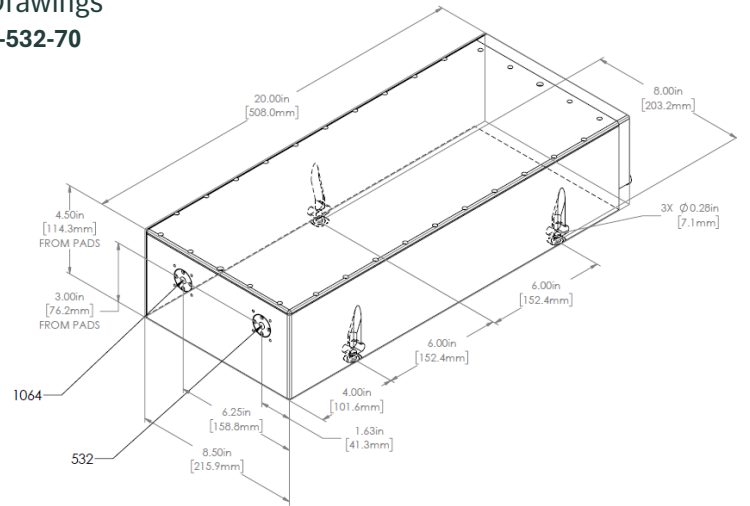
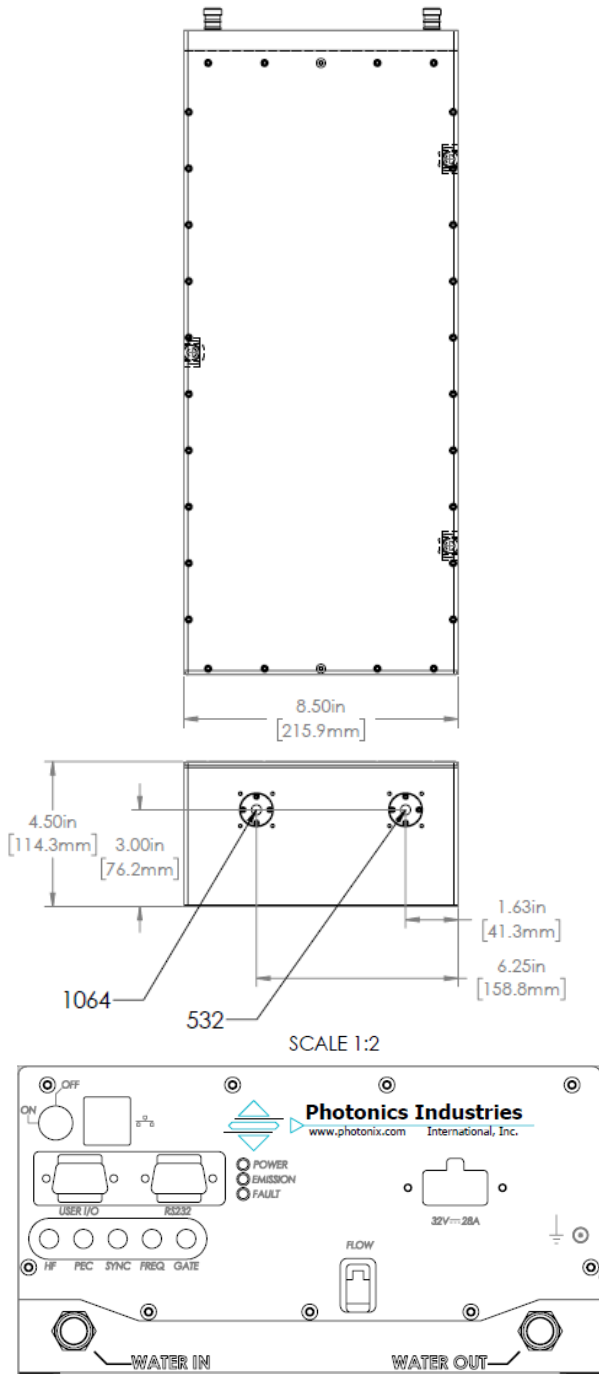
RX-1064-40, RX-532-25, RX-355-10

*The RX1 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:

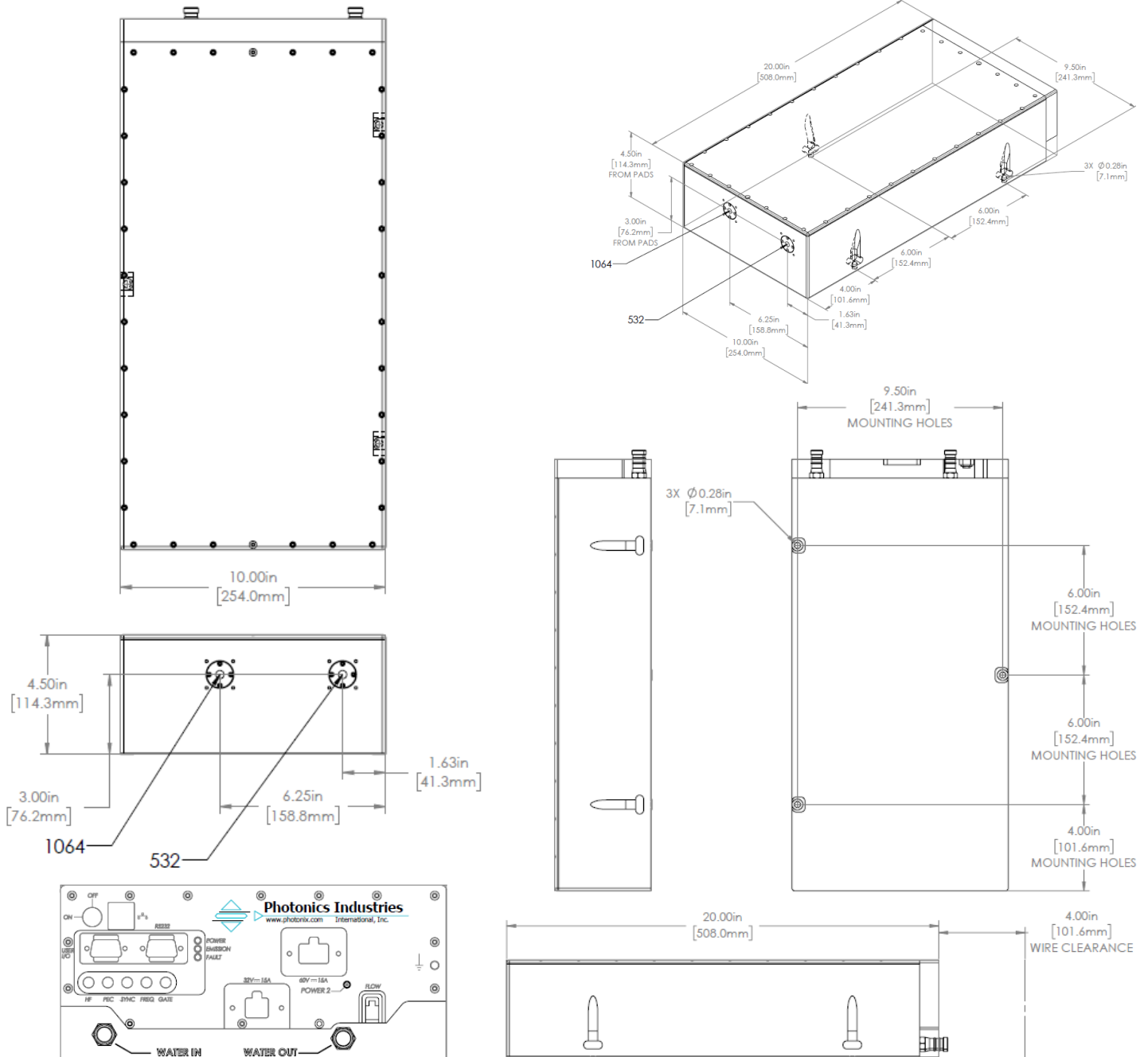
High PRF	Up to 15 MHz operational pulse repetition rate	[15M]
Quasi-CW	~32 MHz fixed pulse repetition rate	[QCW]
Multi-wavelength	Multi-wavelength output, blended or selectable	[MWB], [MWS]
Deep Ultraviolet (DUV)	266nm Wavelength available upon request	

Format	RX-1064/532/355/266	-	[Power Level]	-	[xxx]
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Dimensional Drawings
RX-1064-100, RX-532-70

Options:

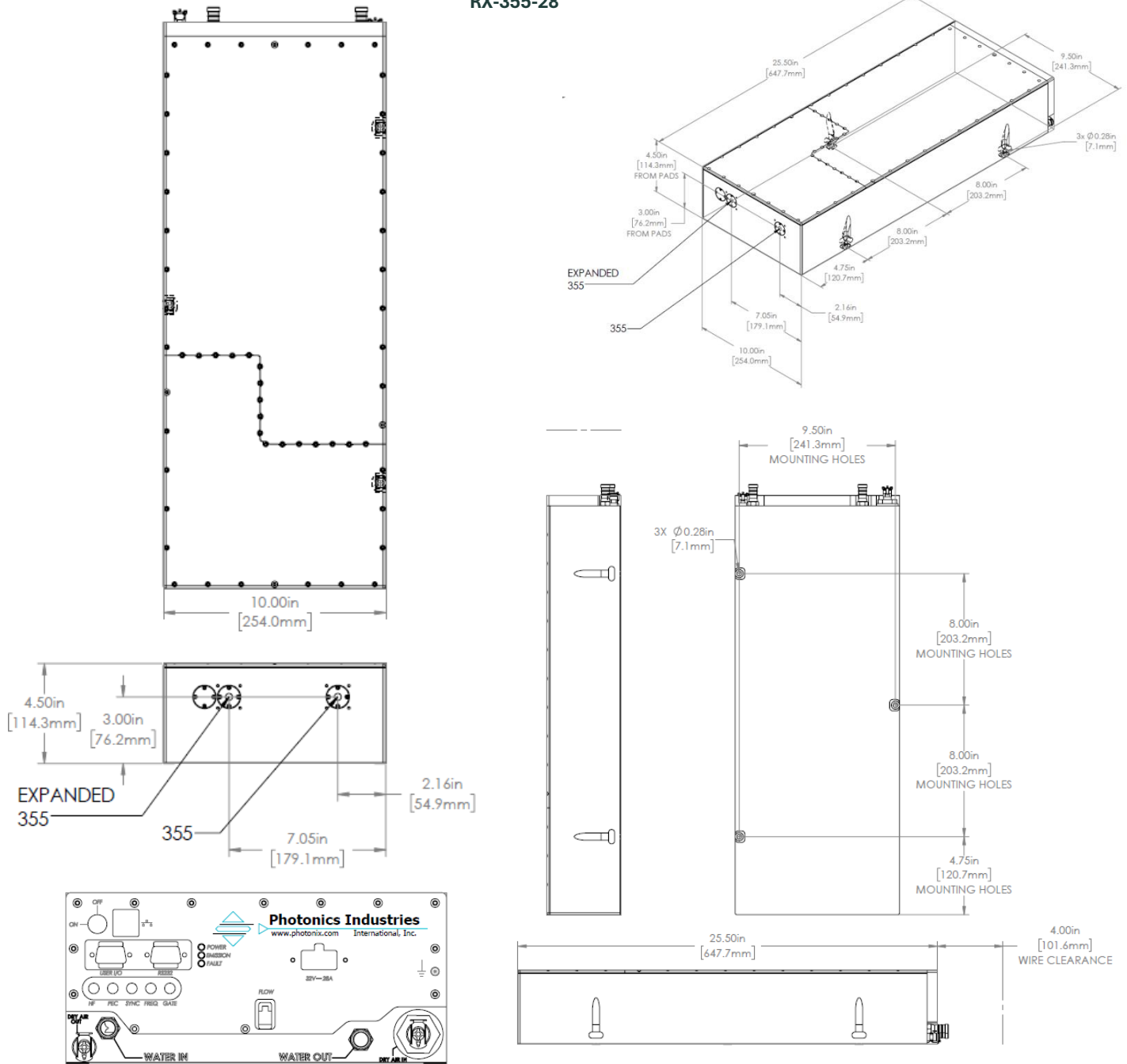
High PRF	Up to 15 MHz operational pulse repetition rate	[15M]
Quasi-CW	~32 MHz fixed pulse repetition rate	[QCW]
Multi-wavelength	Multi-wavelength output	[MWB]

Format	RX-1064/532	-	[Power Level]	-	[xxx]
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Dimensional Drawings
RX-1064-150, RX-532-100

Options:

High PRF	Up to 15 MHz operational pulse repetition rate	[15M]
Quasi-CW	~32 MHz fixed pulse repetition rate	[QCW]
Multi-wavelength	Multi-wavelength output, blended	[MWB]

Format	RX-1064/532	-	[Power Level]	-	[xxx]
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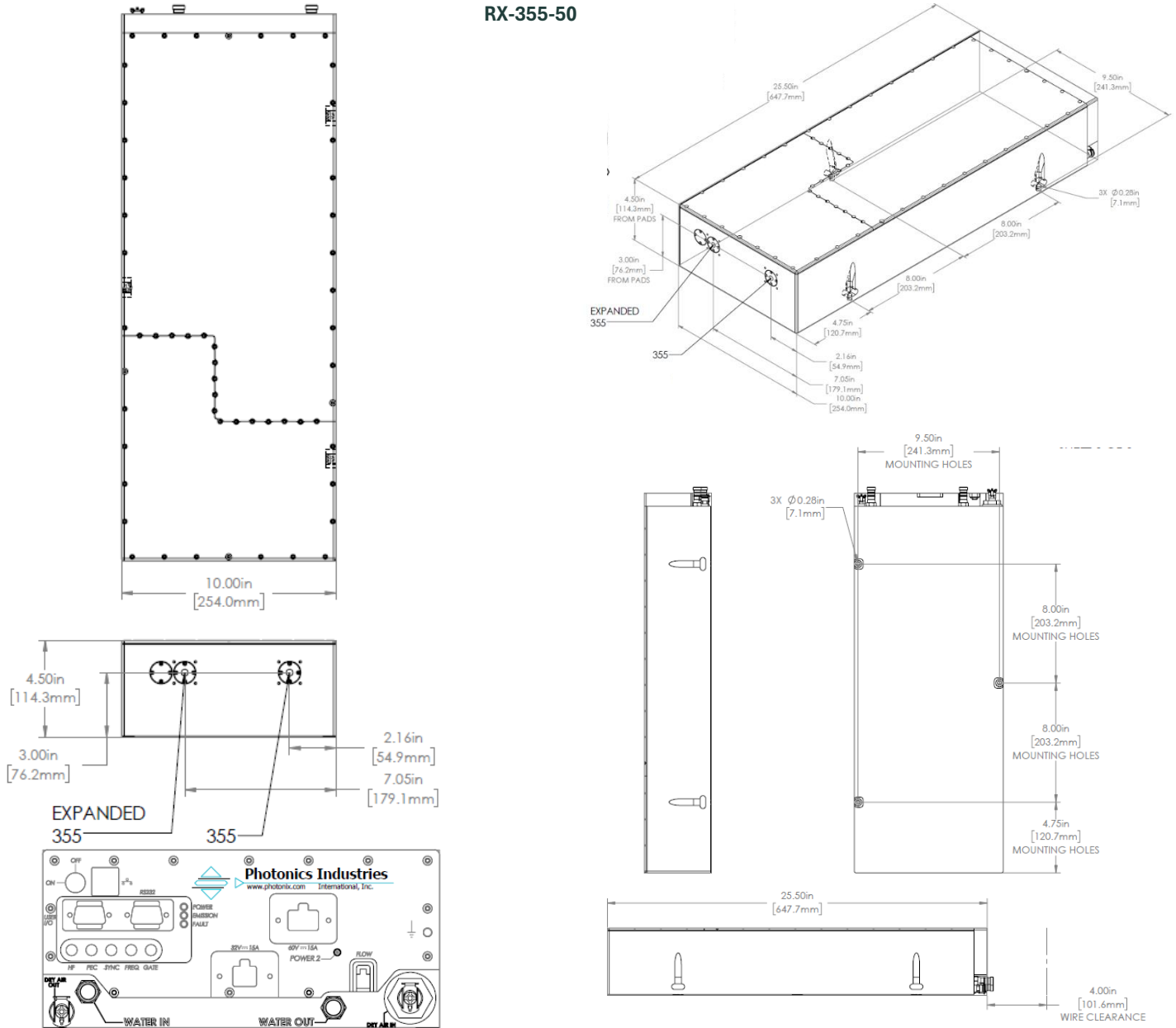
Dimensional Drawings
RX-355-28

Options:

High PRF	Up to 15 MHz operational pulse repetition rate	[15M]
Quasi-CW	~32 MHz fixed pulse repetition rate	[QCW]
Deep Ultraviolet (DUV)	266nm Wavelength available upon request *Dimensions may vary	

Format	RX-355	-	[Power Level]	-	[xxx]
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Dimensional Drawings

RX-355-50



Options:

High PRF	Up to 15 MHz operational pulse repetition rate	[15M]
Quasi-CW	~32 MHz fixed pulse repetition rate	[QCW]
Deep Ultraviolet (DUV)	266nm Wavelength available upon request *Dimensions may vary	

Format	RX-355	-	[Power Level]	-	[xxx]
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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

