RX IR “HE” Series

RX Picosecond Lasers

TEM_{00}, Infrared, High Pulse Energy, Picosecond Lasers

With over 15 years of expertise in developing and refining picosecond laser features, performance, reliability, 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.

Photonics 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

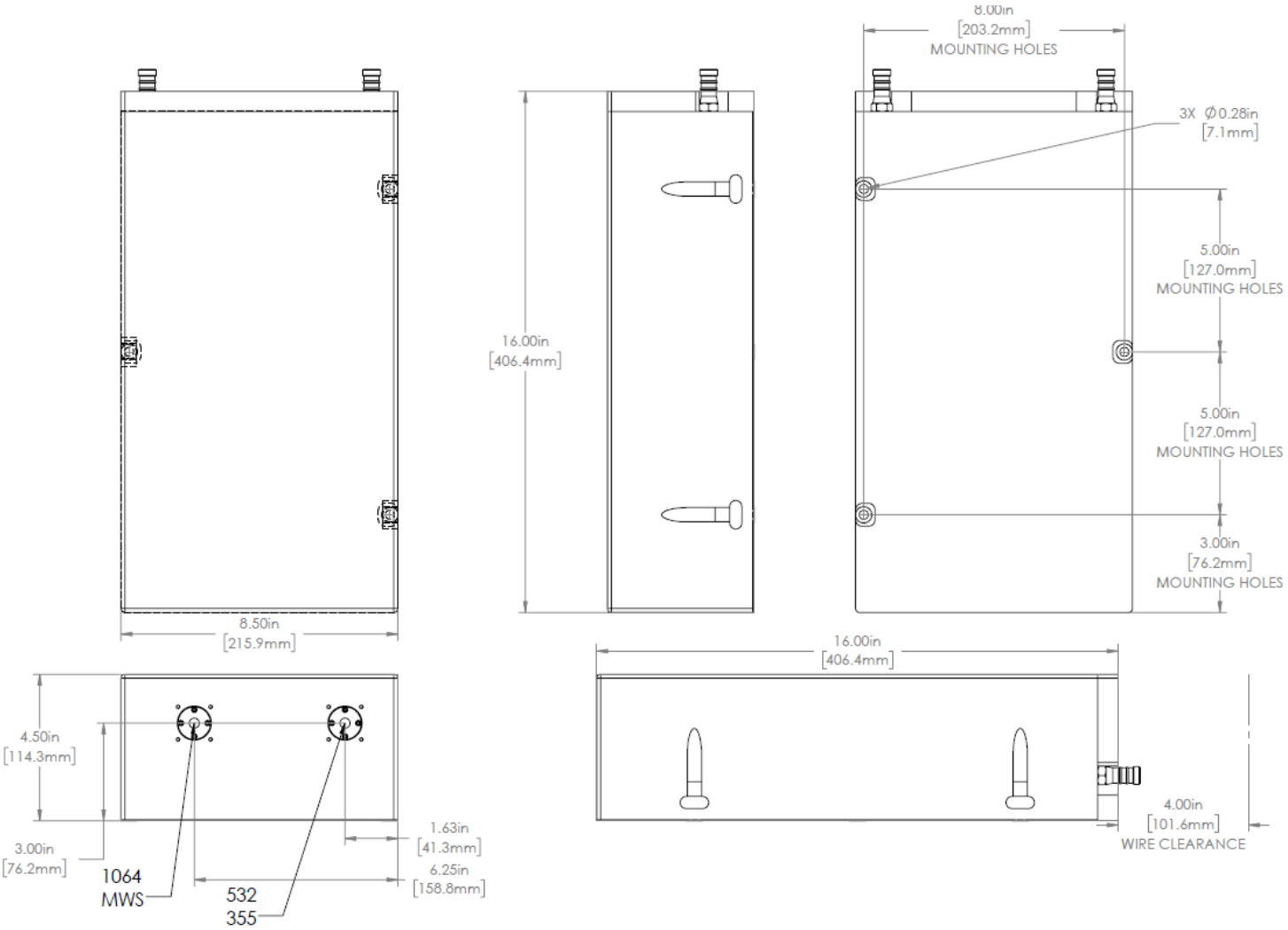
- Up to ~1mJ Pulse Energy at 100kHz
- True TEM_{00} Output, M^2 <1.3
- Exceptional point stability (<25urad)
- Ultra-Short Pulse Widths (10ps @1064nm)
- Burst Mode for Pulse Control
- Robust & Compact Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- **P**osition **S**ynchronized **O**utput - **PSO**
- Power Monitoring and Self-Calibration

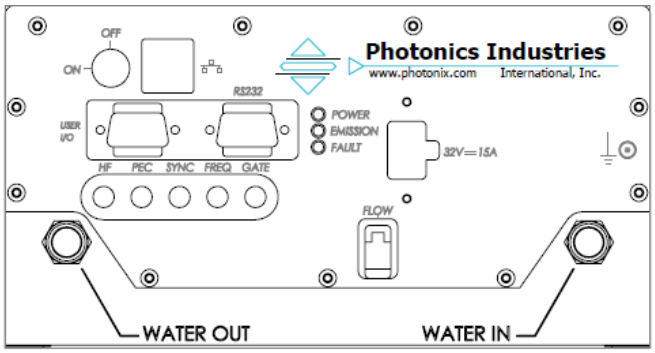
Specifications – **RX-HE Series** [1,2,3,4]				
	RX-1064-40-HE	**RX-1064-100-HE**	**RX-1064-150-HE**	**RX-1064-200-HE**
Wavelength Output (nm)	1064			
Average Power @ 100kHz (W)	25	65	85	100
Max Pulse Energy (µJ) [5]	250	650	850	1000
Specification PRF (kHz)	100			
Pulse Width (ps)	~10			
Pulse repetition rate (kHz)[6]	Single Shot to 2000			
Pulse-to-pulse stability (RMS %)	<1			
Long-term power stability (RMS %)[7]	≤1			
Beam spatial mode & M^2 [8]	TEM_{00} - M^2 <1.35			
Beam Diameter (mm)	1.5 ± 0.5		2 ± 0.5	3 ± 0.5
Beam Divergence (nominal) (mrad)	<1.5			
Beam Circularity (%)	>90			
Beam Pointing Stability (µrad)	<25			
Beam Bore Sight Accuracy	≤ 1 mm lateral (to specified exit location), ≤ 5 mrad angular (to specified exit direction)			
Polarization ratio	Vertical; >100:1			
	Burst Mode			
MegaHz Burst Mode (kHz)	Single Shot to 2000			
Max Sub-pulses in Burst [10]	20			
	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)	<500	<900	<1300	<1800
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]	23 x 12 x 4.5in [584.2 x 304.8 x 114.3mm]
Weight	~38lbs [17.2kg]	~47lbs [21.3kg]	~57lbs [25.9kg]	~65lbs
	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 [20-22°C ± 0.1°C]			

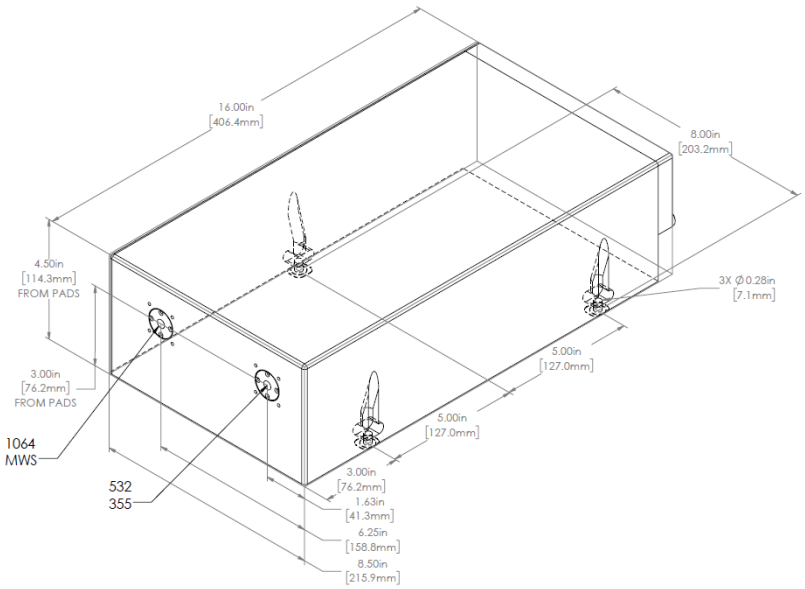
Notes:
[1] After warm-up time, steady state chiller temperature
[2] Steady-state operation (no pulse gating or constant no gating or PRF change).
[3] Single pulse operation [Burst = 1]
[4] Maximum power with PEC = 100.
[5] "HE" model optimized at 100 kHz.
[6] Option up to 15 MHz
[7] Measured over 8 hours ± 1°C, for operation of the laser outside of the specified temperature range, contact PI.
[8] ALL beam parameters and stability are at specification repetition rate.
[9] Pulse repetition rate x number of burst cannot exceed 15 MHz

Dimensional Drawings

RX-1064-40-HE

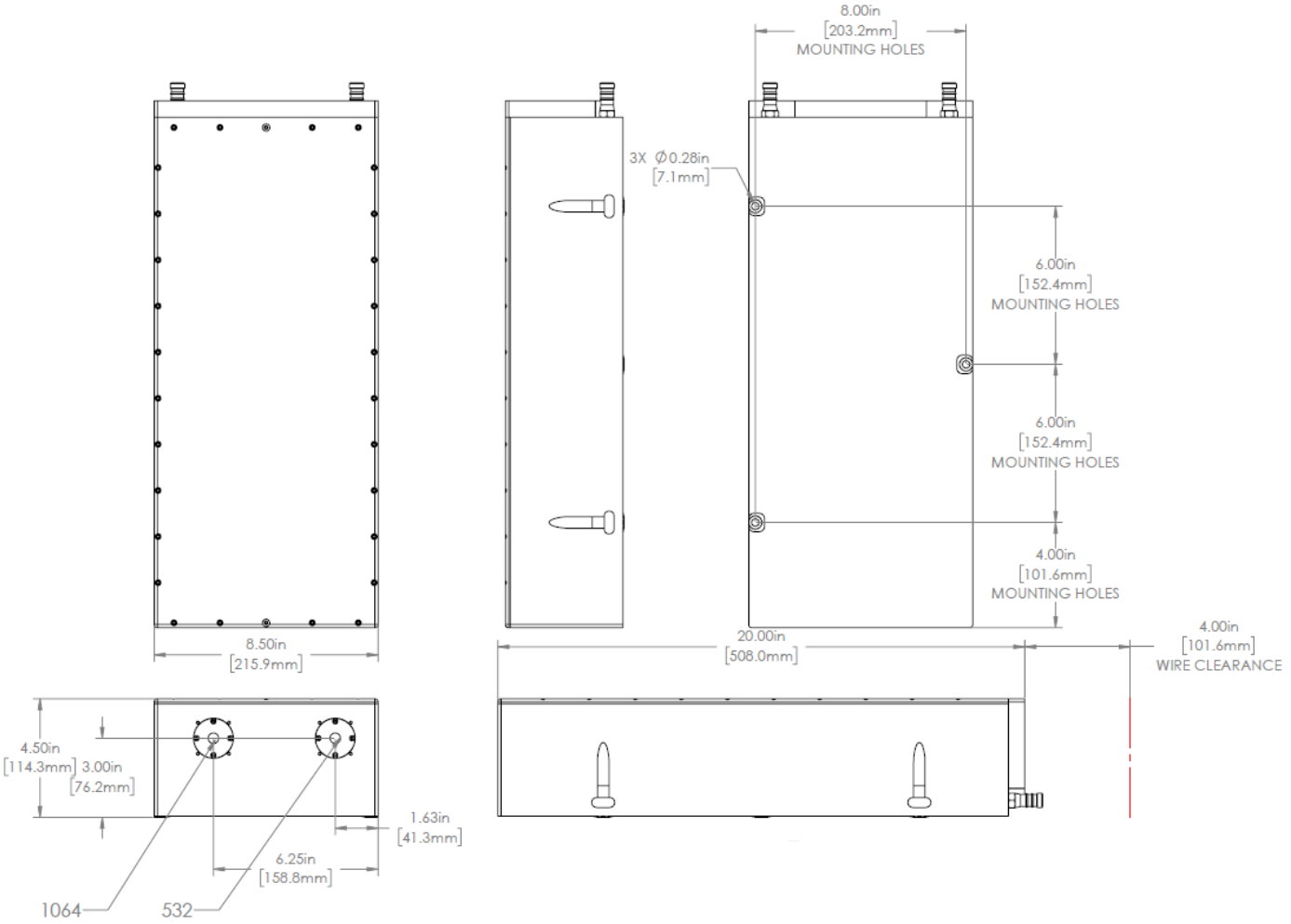


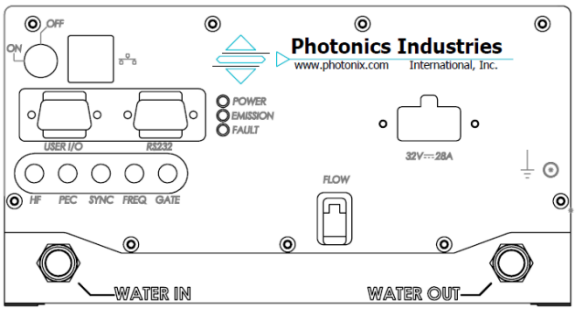


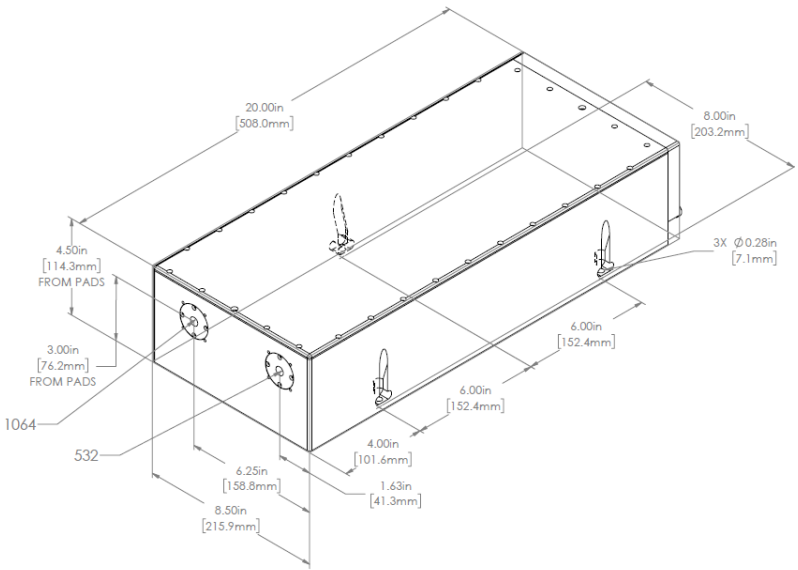


Dimensional Drawings

RX-1064-100-HE

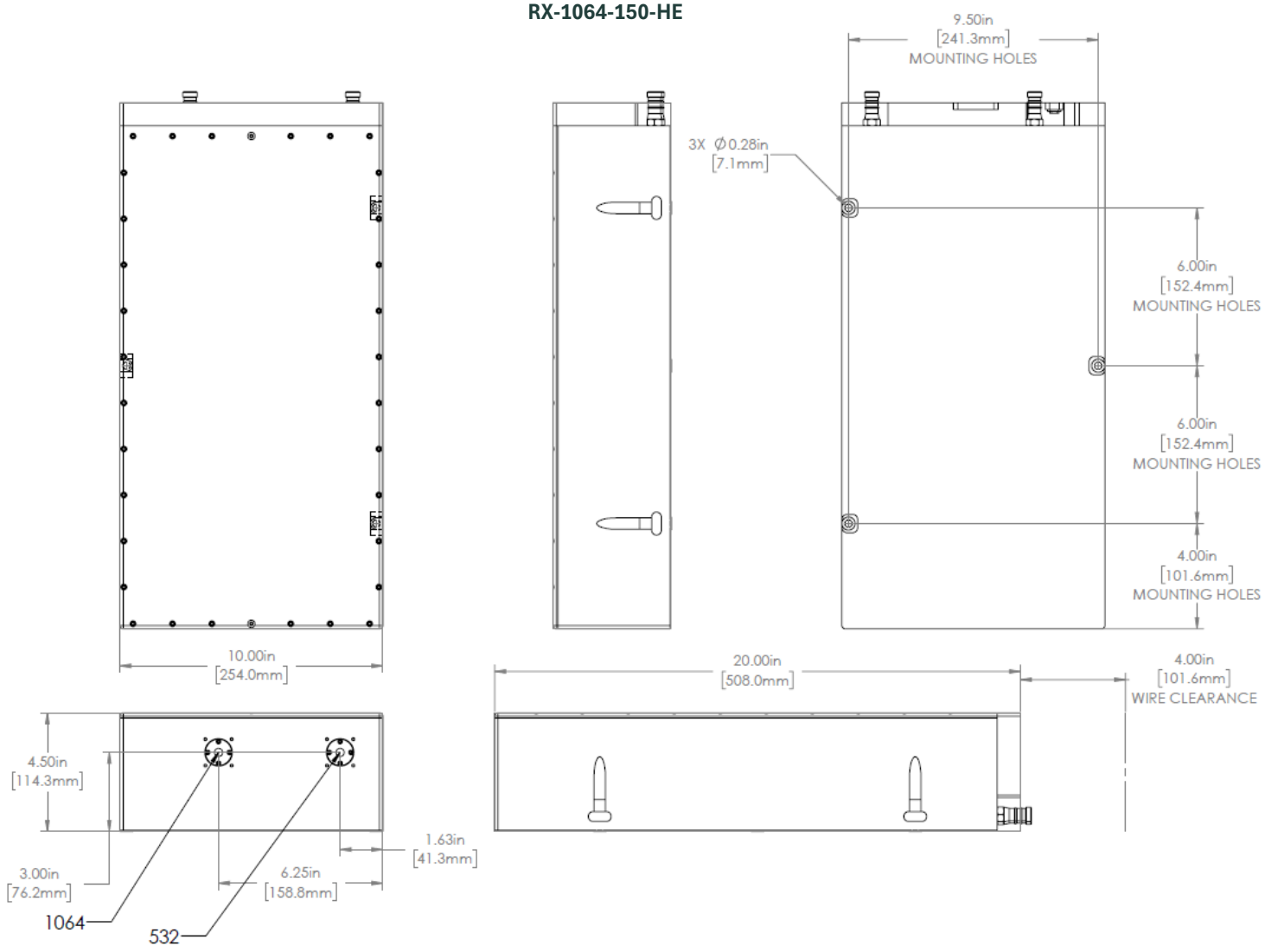


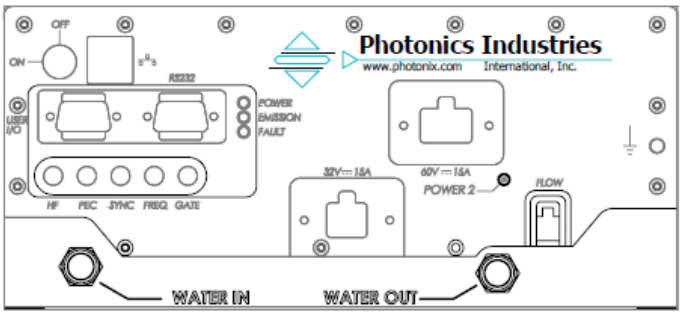


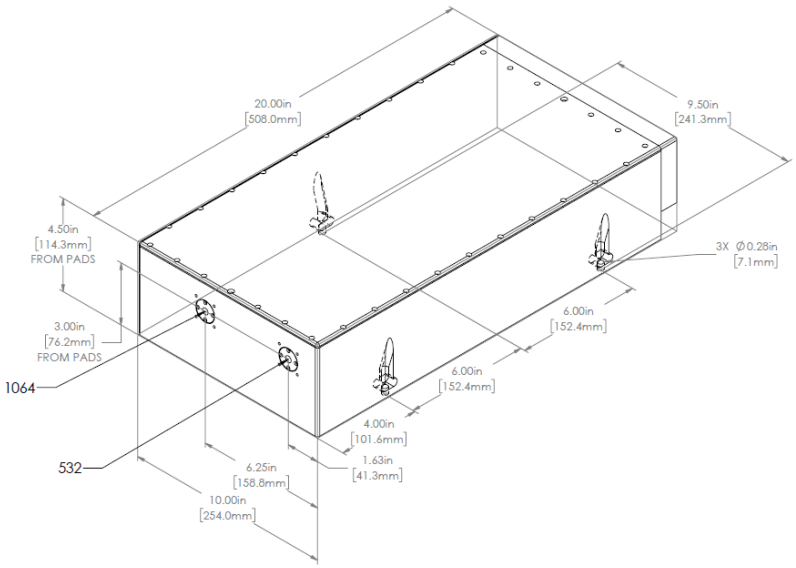


Dimensional Drawings

RX-1064-150-HE

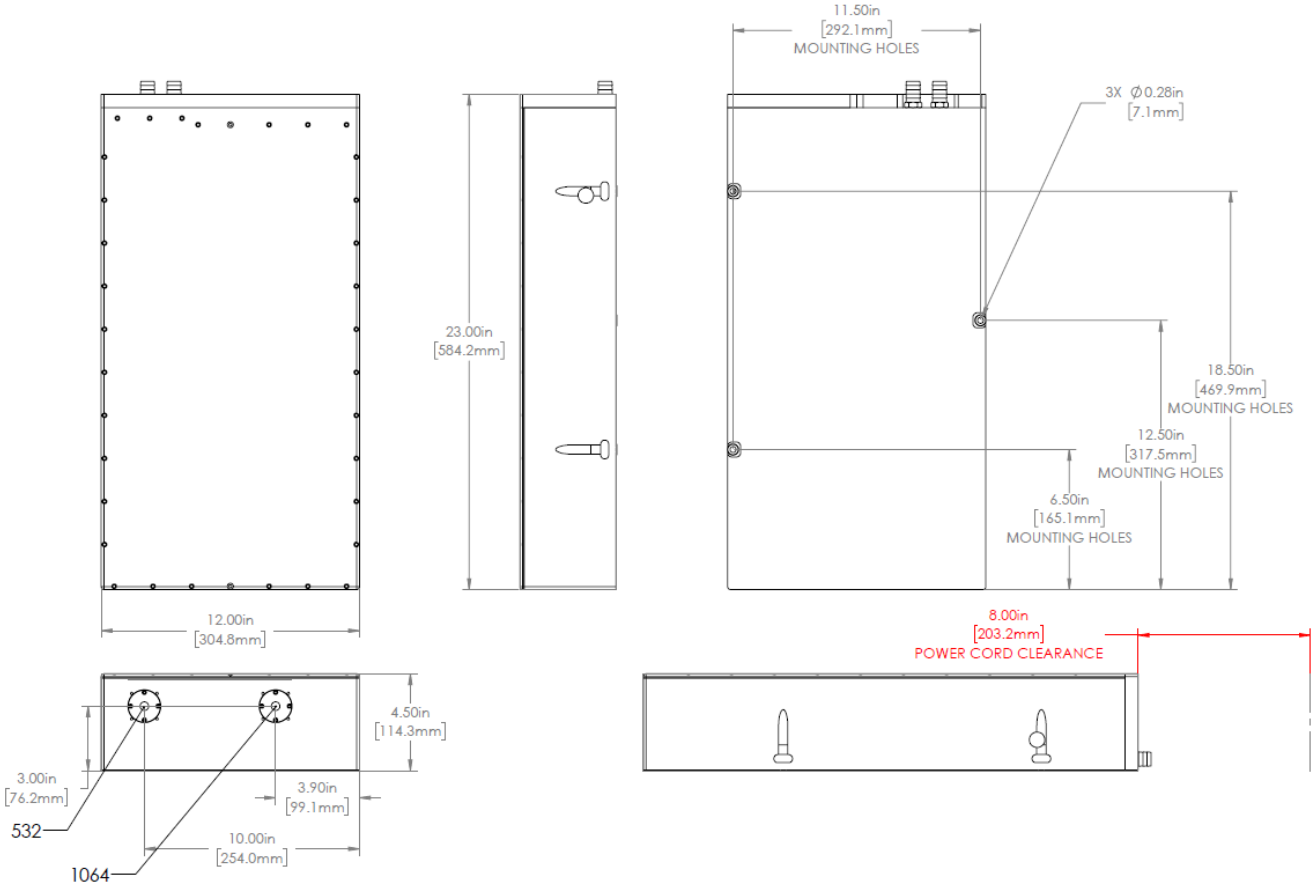


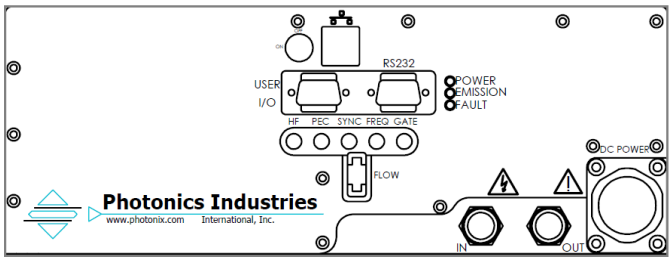


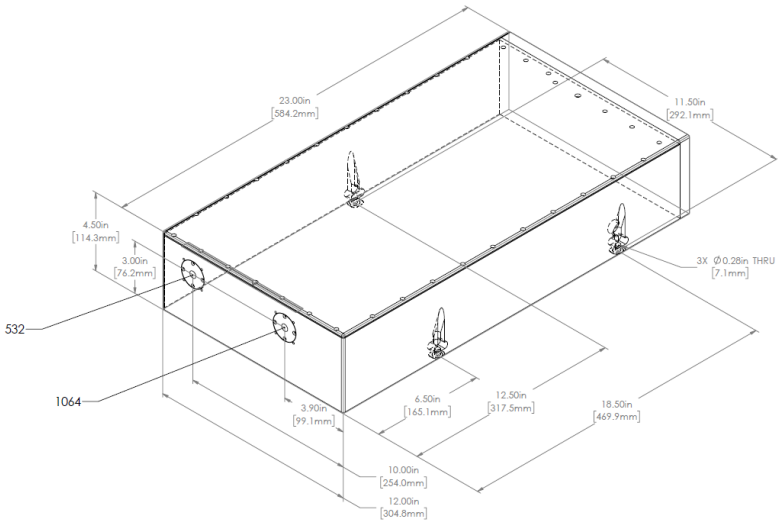


Dimensional Drawings

RX-1064-200-HE







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

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