DP TEM_{00} Series

DP Pulse Pumped Nanosecond Lasers

Diode Pulse Pumped DP TEM_{00} Series Q-Switched Lasers

DPM	MultiMode	10Hz	200mJ to 4J
DP	TEMoo	100Hz	Up to 50mJ
DP1k	TEMoo	1000Hz	Up to 20mJ

The DP Series offers two configurations, TEM_{00} and multi-mode, both delivering 2X to 10X higher efficiency and up to 10X the repetition rate of competing products. With repetition rates up to 100Hz and high efficiency reducing heat generation, these lasers enable broader applications and simpler thermal management in air-cooled systems.

The DP TEM_{00} Series provides up to 50mJ/pulse at 100Hz, all in TEM_{00} mode with pulse widths of 6ns to 12ns. Available in IR wavelengths (1064nm/1030nm) and harmonics (GRN, UV, DUV), it offers three cooling options: no-fan, fan-cooled with optional water-cooling, and water- or radiator-cooled, ensuring flexibility for varying thermal requirements.

APPLICATIONS

- Material Processing: Marking, scribing, grooving
- Ion generation, atomic excitation, and quantum physics.
- LCD/LED/OLED panel repair systems.
- LIBS and advanced spectroscopy systems.
- Non-Destructive Testing: Incorporates laser ultrasonics, acoustic microscopy, and photoacoustic.
- Thin Film Technology: Specializes in pulsed laser deposition (PLD).
- OPO Pumping: Supports optical parametric oscillator systems.

FEATURES

- Up to ~50mJ Pulse Energy at 100Hz
- True TEM_{00} Output
- Short Pulse Widths
- Air-cooled with Radiator Cooled Option
- Robust & Compact Form Factor
- Dynamic **P**ower **C**ontrol - **PWC**
- Optional Low Jitter operation w/ short-shot energy control [<1ns]
- Power Monitoring and Self-Calibration

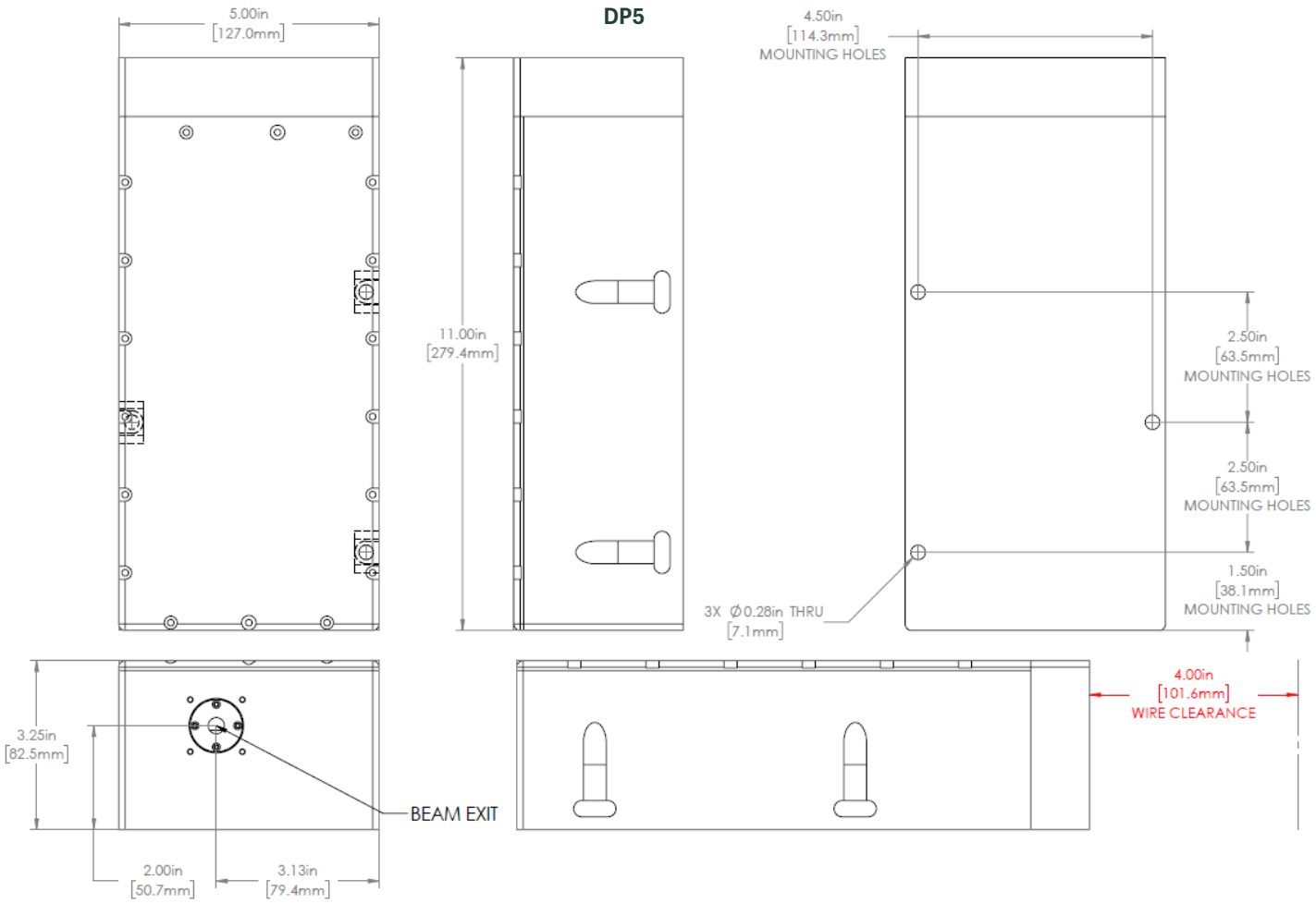
Specifications – **DP TEM_{00} Series**				
		DP5	**DP20**	**DP50**
Wavelengths (nm)[†]		1064 532 355 266[1]	1053, 527, 351, 263	1030 515 343 257[1]
Max Pulse Energy (mJ)[2,4]	IR	2.5*	20	50
	GRN	1.5*	10	25*
	UV	1*	5	15*
Average Power (W)	DUV	>0.5		
Pulse Width Range (ns)[3]		~6-10		
Pulse repetition rate (Hz)		Single shot to 100		
Pulse-to-pulse stability (RMS %)		<3		
Long-term power stability (RMS %)		<3		
Beam spatial mode[5] & M^2		TEM_{00} - M^2 <1.5		
Beam divergence (nominal) (mrad)		<2		
Beam diameter at exit (nominal) (mm)[5]		1 – 2.5		
Beam roundness (%)		~90		
Beam pointing stability (µrad)		<25		
Polarization ratio (IR) [§]		Vertical; >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		15 V DC, 7A	24V DC, 3A	32V DC, 11A
Line frequency (Hz)		50-60		
Power consumption (W)		~10	~50	~150
Dimensions[7]		11 x 5 x 3.25 in	14 x 6.75 x 4.25in	
Weight		~10 lbs	~15.5 lbs [~7 kg]	
		Environmental Requirements		
Ambient temperature		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		Passively Cooled	Air-Cooled	Water Cooled / Rad-Cooled[6]

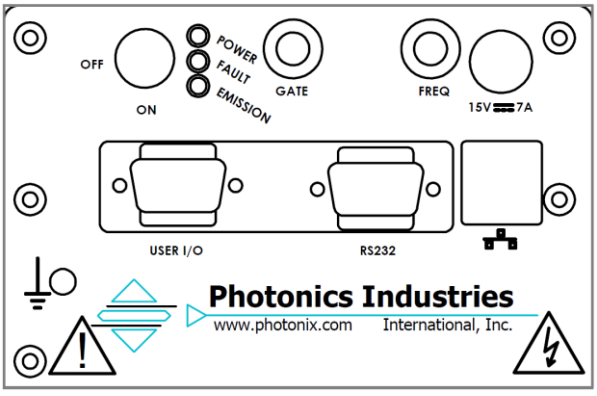
[1] For DUV 257 nm, 263 nm, or 266 nm outputs, please contact us. [2] Air-cooling or Rad cooling™ systems can be used for laser head heat removal based on pulse energy. [3] Pulse width is model and configuration dependent. [4] Pulse energy efficiency varies with multi-wavelength output options. [5] Values are wavelength and model dependent. [6] Rad cooling™ isolates vibrational noise (low dB) while effectively removing heat. [7] DP Series Lasers are all-in-one (AIO) with back-panel connections for operation and control. [†] For multi-wavelength output options, please contact us. [§] Polarizations vary for blended options. [*] Preliminary specification

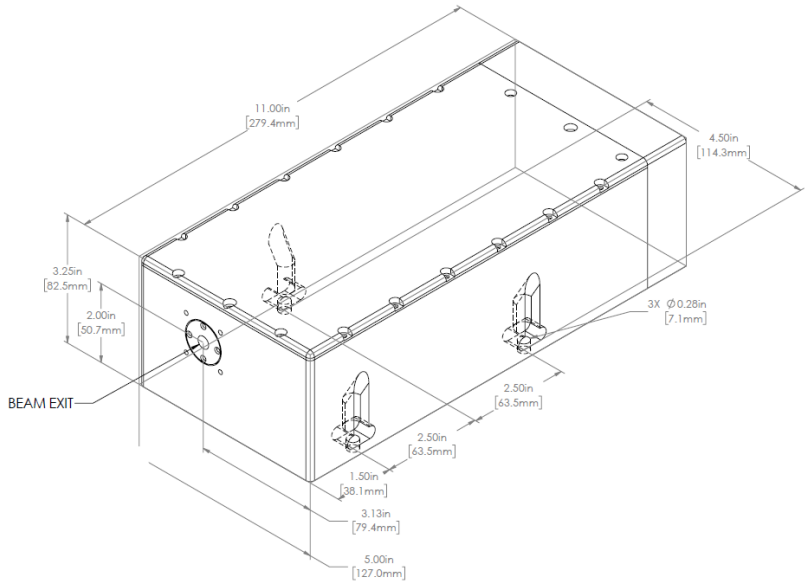
Optional: Multi-Wavelength Output – The wavelengths exit the laser via the standard beam exit port.		
Wavelength Combinations	[IR/GRN] | [GRN/DUV] | [IR/GRN/UV] | [IR/GRN/DUV]	
Blended	The selected wavelengths exit the port simultaneously. No selection option.	MWB
Blended/Selectable	The exit port can emit one, two, or three blended wavelengths. Software selectable.	MWB/S
Selectable	Each Individual wavelength is isolated and exits the same port. Software selectable.	MWS

Dimensional Drawings

DP5

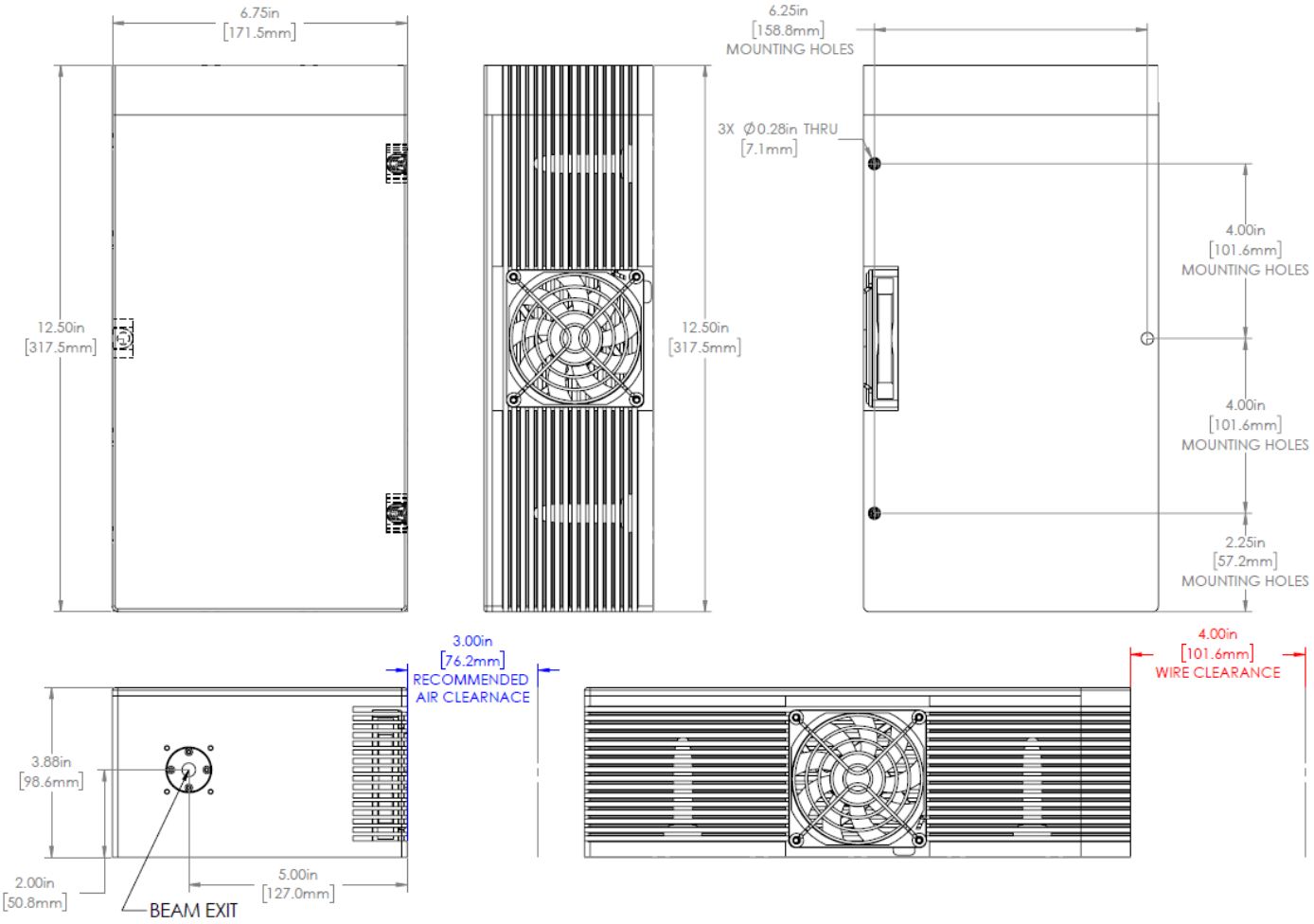


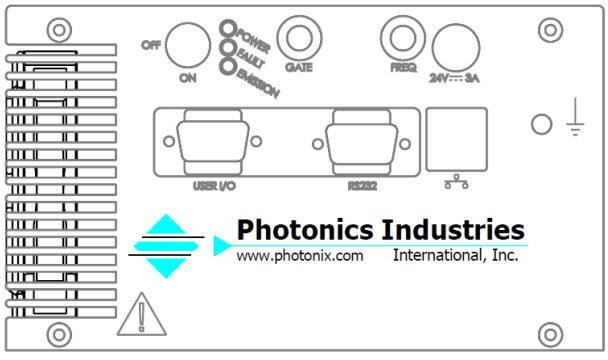


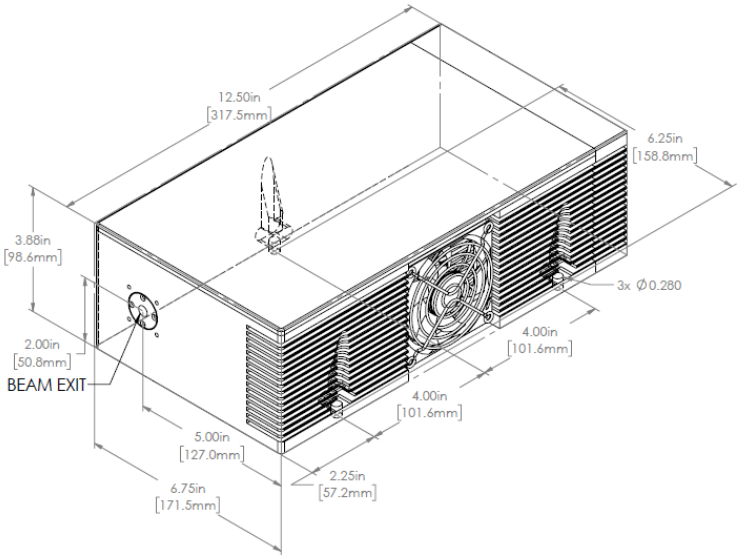


Dimensional Drawings

DP20

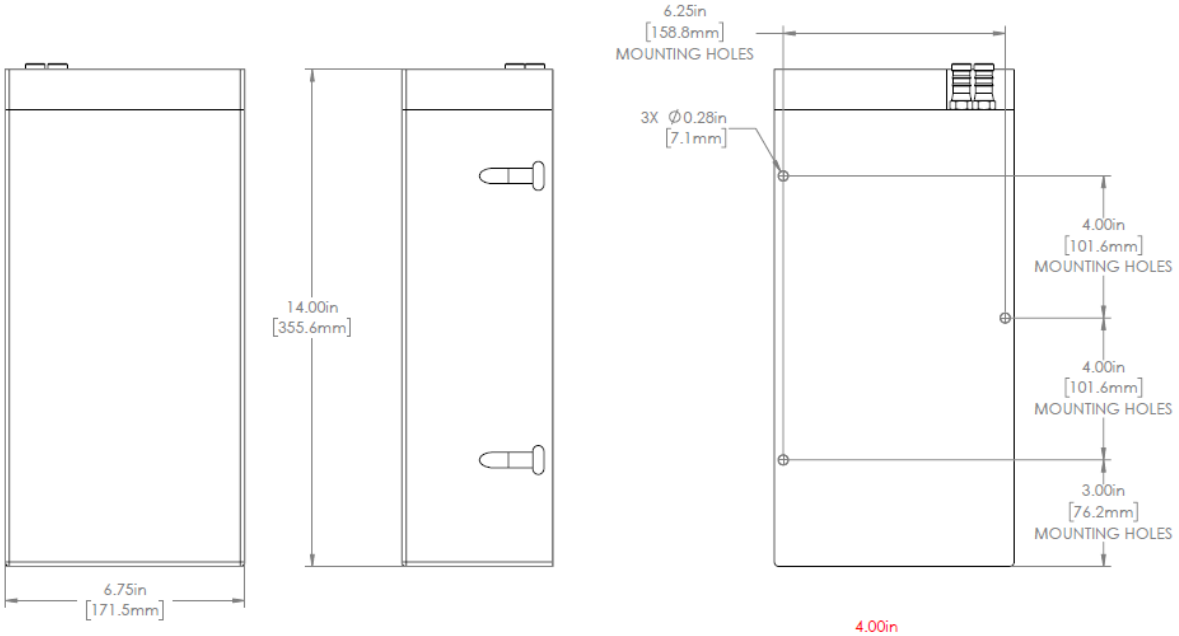


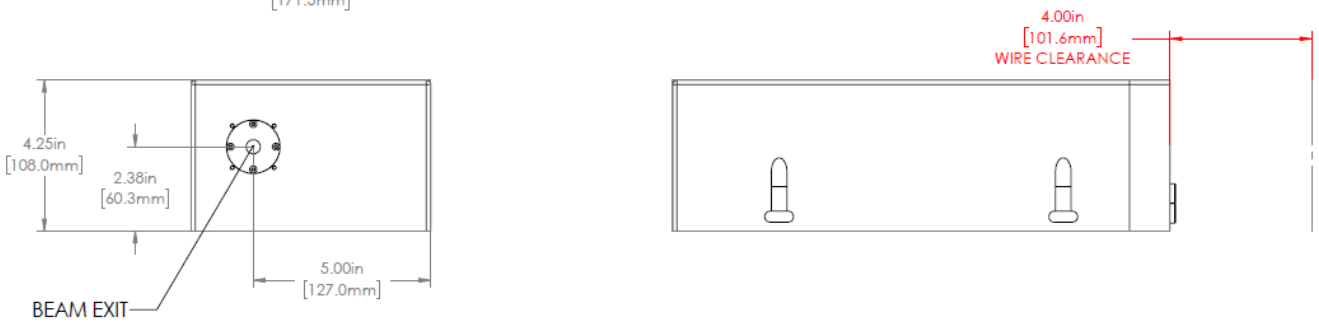


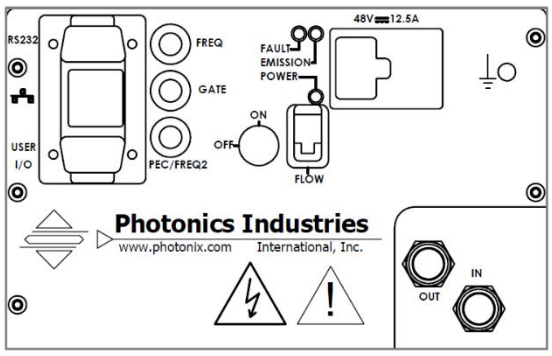


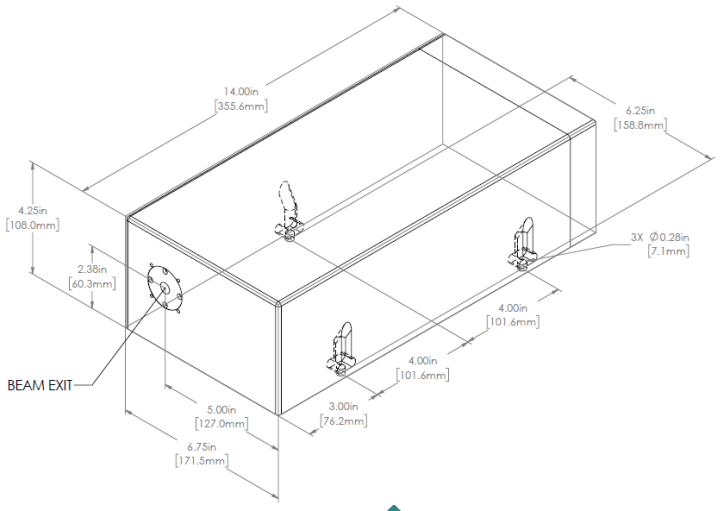
Dimensional Drawings

DP50









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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Rayture Systems

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