DC Nd:YLF Series

DX Nanosecond Lasers

DPSS, TEMoo, Nd: YLF, Q-Switched Lasers

Photonics Industries' DC Series Nd:YLF nanosecond lasers are the result of over 30 years of innovation and refinement, starting with the very first laser we built. This groundbreaking product laid the foundation for our patented intracavity harmonic generation technology, which revolutionized the industry with superior harmonic conversion efficiency, exceptional beam quality, and unparalleled beam pointing stability in a compact, simple design.

Delivering pulse energies up to 1.5 mJ, repetition rates from single shot to 10 kHz, and low pulse widths, all in a lightweight, air-cooled form factor, the DC Series has been perfected to meet the most demanding industrial applications. Its reliability and long-term stability make it a trusted tool for precision manufacturing, embodying our legacy of pioneering laser technology.

APPLICATIONS

- Laser Cutting, drilling, welding, and marking
- Flat panel display repair (LCD/LED/OLED) and laser-assisted chemical vapor deposition (LACVD).
- Flexible printed circuit boards (FPCB), printed circuit boards (PCB), and liquid crystal polymer (LCP) microprocessing.
- Stereolithography (SLA), rapid prototyping 3D printing systems, and UV laser 3D printing.
- Mass spectrometry and MALDI systems

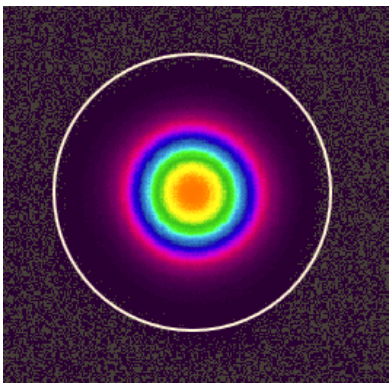
FEATURES

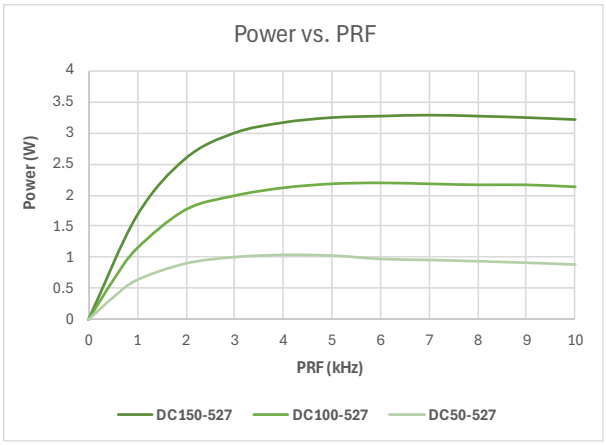
- Up to ~1.5mJ Pulse Energy at 1 kHz
- True TEM_{00} Output
- Short Pulse Widths
- Air-cooled with Radiator Cooled Option
- Robust & Compact Form Factor
- Dynamic **P**ulse **E**nergy **C**ontrol - **PEC**
- **P**osition **S**ynchronized **O**utput - **PSO**
- Power Monitoring and Self-Calibration

Specifications – **DC Series**			
	DC50-527	**DC100-527**	**DC150-527**
Wavelength (nm)	527		
Average Power (W) @ 3kHz	1	2	3
Pulse Energy (µJ) @ 1kHz	500	1000	1500
Pulse Width (ns) @ 1kHz	~30		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability (% RMS) [1]	<3		
Long-term power stability (% RMS) [2]	<2		
Beam spatial mode & M^2	TEM_{00} - $M^2 \leq 1.2$		
Beam divergence (nominal) (mrad)	< 2		
Beam diameter at exit (nominal) (mm)	~ 0.4		~0.7
Beam roundness	>85%		
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, <10 minutes from cold start		
Electrical requirement	100-240 V AC - 15 V DC, 13.4 A [PSU Included]		
Line frequency (Hz)	50-60		
Power consumption (W)	~50		~130
Dimensions	8.5 x 4 x 5 in [215.9 x 101.6 x 127mm]		11x5x5 in [279.4 x 127 x 127]
Weight	~6 lbs [~2.7 kg]		~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[3]	Air-Cooled		

[1.] Measured at ambient temperature ± 2°C. [2.] Measured over 8 hours ± 1°C. [3.] Water-cooled option available.

Typical Beam Profile

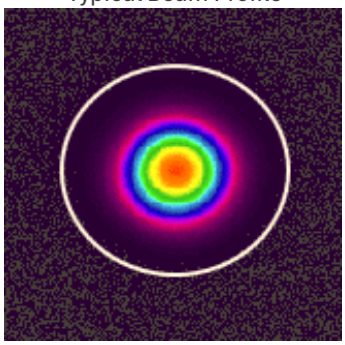


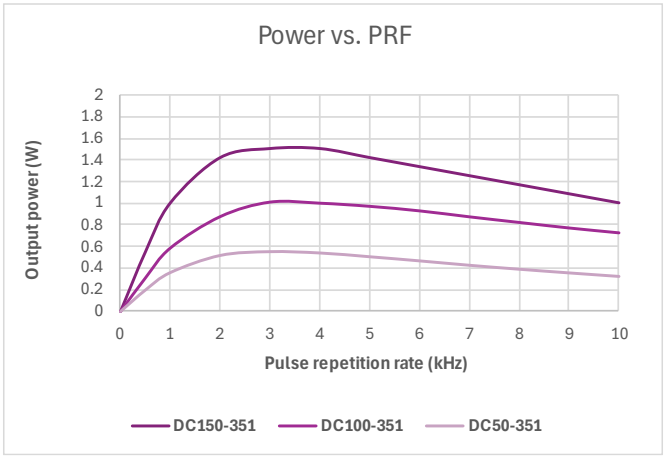


Specifications – **DC Series**			
	DC50-351	**DC100-351**	**DC150-351**
Wavelength (nm)	351		
Average Power (W) @ 3kHz	0.5	1	1.5
Pulse Energy (µJ) @ 1kHz	250	500	1000
Pulse Width (ns) @ 1kHz	~30		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability (% RMS) [1]	<3		
Long-term power stability (% RMS) [2]	<2		
Beam spatial mode & M^2	TEM_{00} - $M^2 \leq 1.1$		
Beam divergence (nominal) (mrad)	< 2		
Beam diameter at exit (nominal) (mm)	~ 0.4		~0.5
Beam roundness	>85%		
Beam pointing stability (µrad)	<25		
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	100-240 V AC - 15 V DC, 13.4 A [PSU Included]		
Line frequency (Hz)	50-60		
Power consumption (W)	~50		~130
Dimensions	8.5 x 4 x 5 in [215.9 x 101.6 x 127mm]		11x5x5 in [279.4 x 127 x 127]
Weight	~6 lbs [~2.7 kg]		~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[3]	Air-Cooled		

[1.] Measured at ambient temperature ± 2°C. [2.] Measured over 8 hours ± 1°C. [3.] Water-cooled option available.

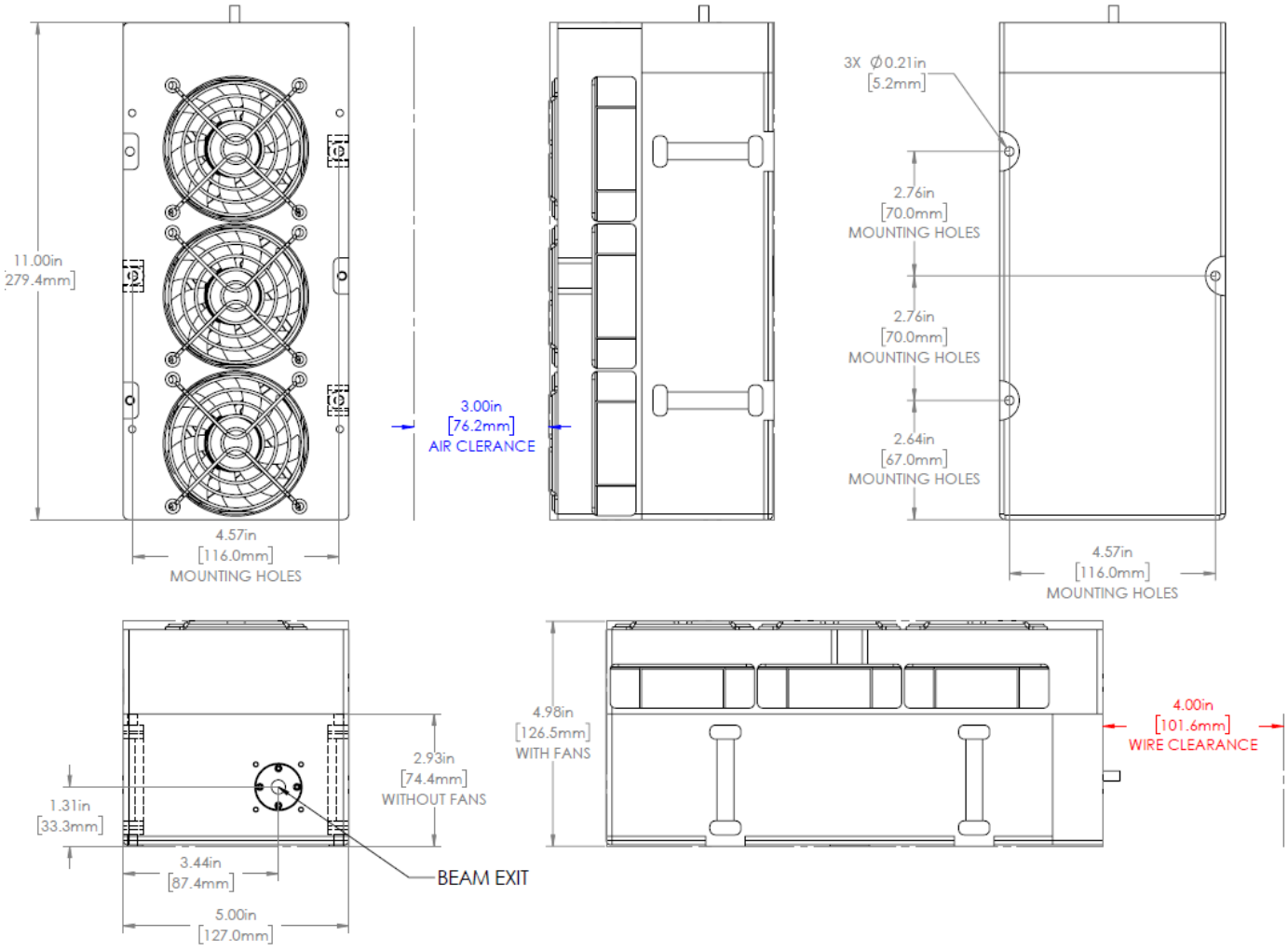
Typical Beam Profile

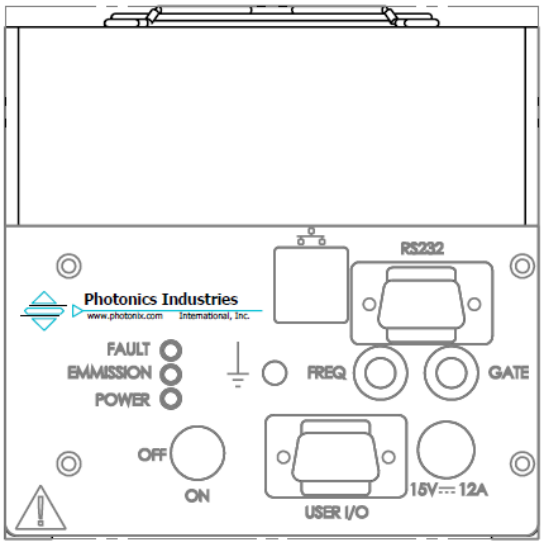


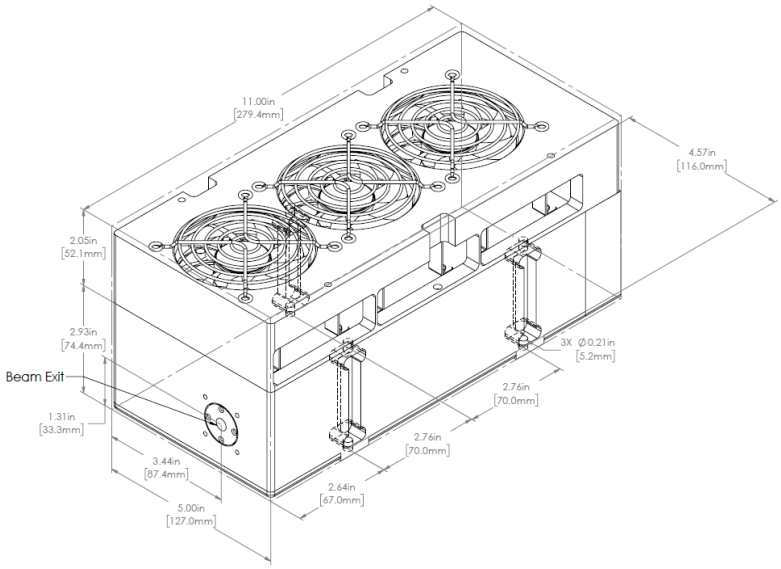


Dimensional Drawings

DC150

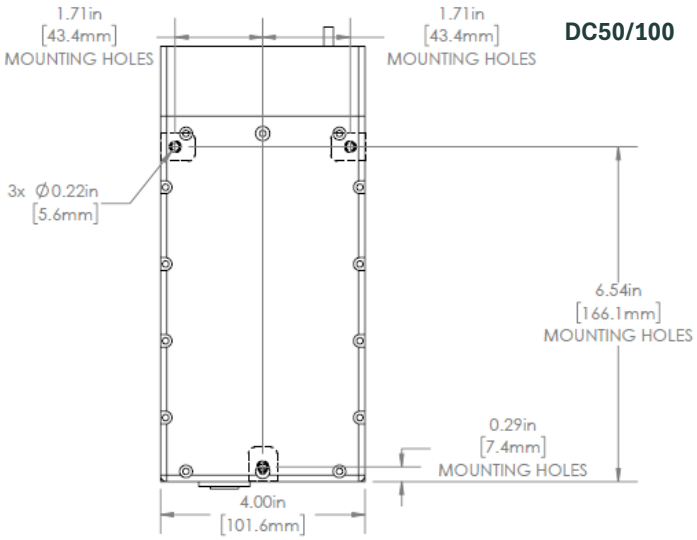


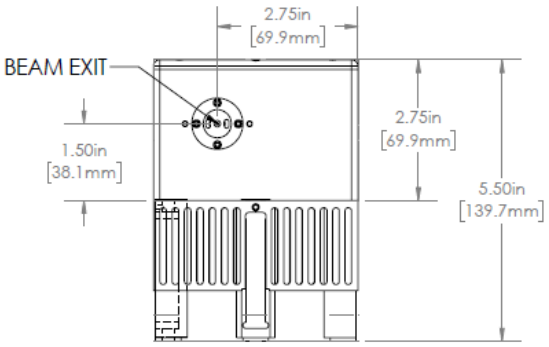


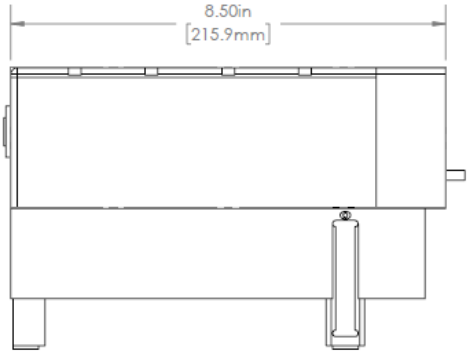


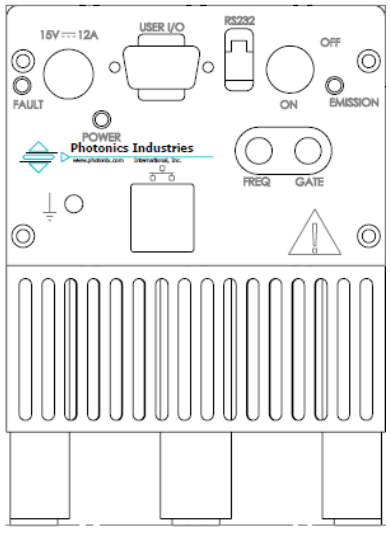
Dimensional Drawings

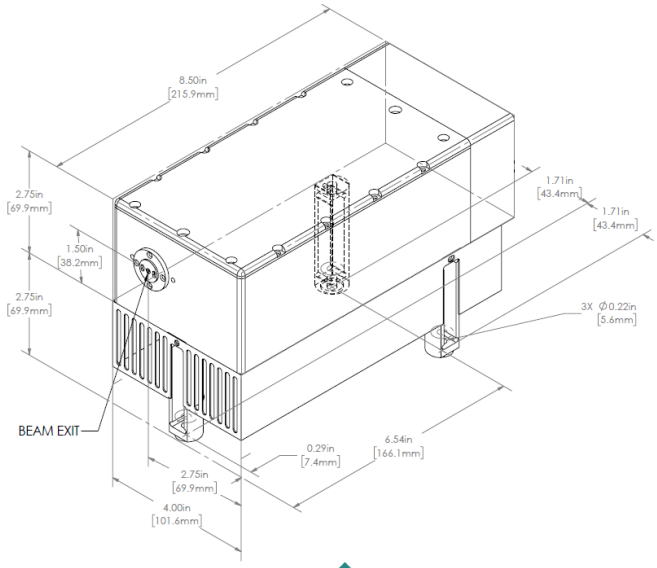
DC50/100











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

Photonics Industries International, Inc.

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

RoHS Compliant