

DC Nd:YLF Series

DX Nanosecond Lasers

DPSS, TEM₀₀, Nd: YLF, Q-Switched Lasers

Photronics 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

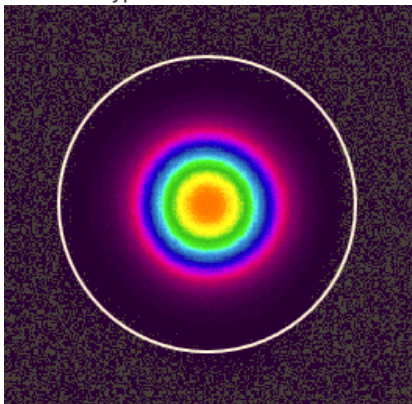
FEATURES

- Up to ~1.5mJ Pulse Energy at 1 kHz
- True TEM₀₀ 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

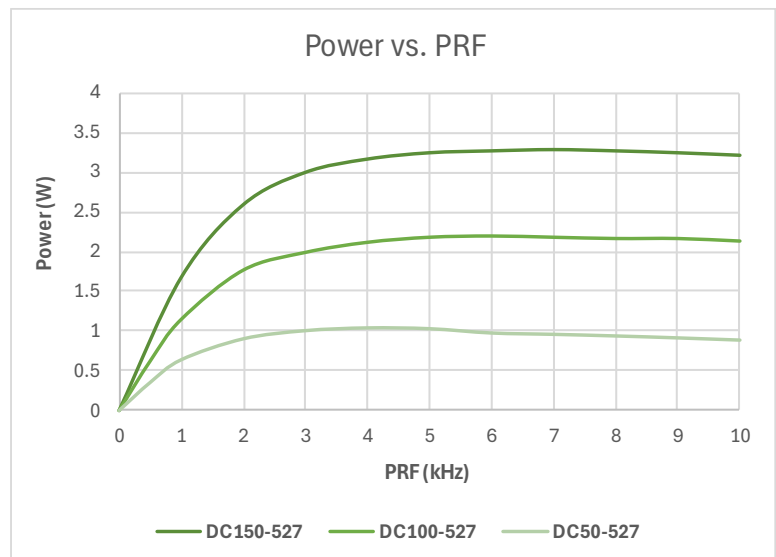
Specifications – DC Series			
	DC50-527	DC100-527	DC150-527
Wavelength	527nm		
Average Power @ 3kHz	1W	2W	3W
Pulse Energy @ 1kHz	~500μJ	~1mJ	~1.5mJ
Pulse Width @ 1kHz	~30ns		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability ¹	<3% rms		
Long-term power stability ²	<2% rms		
Beam spatial mode & M ²	TEM ₀₀ - M ² ≤ 1.2		
Beam divergence (nominal)	< 2 mrad		
Beam diameter at exit (nominal)	~ 0.4mm		~0.7mm
Beam roundness	>85%		
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, <10 minutes from cold start		
Electrical requirement	100-240 V AC - 15 V DC, 13.4 A [PSU Included]		
Line frequency	50-60 Hz		
Power consumption	~50W		~130W
Dimensions	8.5 x 4 x 5 in		11x5x5 in
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



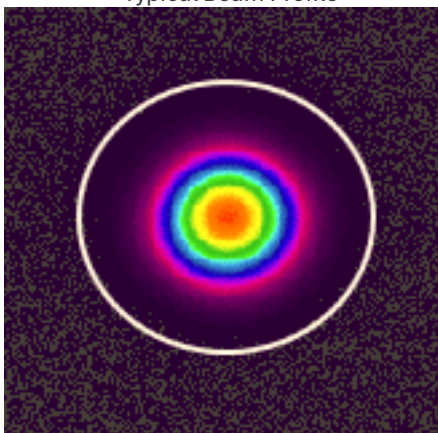
DC50-527



Specifications – DC Series			
	DC50-351	DC100-351	DC150-351
Wavelength	351nm		
Average Power @ 3kHz	0.5W	1W	1.5W
Pulse Energy @ 1kHz	~250µJ	~500µJ	~1mJ
Pulse Width @ 1kHz	~30ns		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability ¹	<3% rms		
Long-term power stability ²	<2% rms		
Beam spatial mode & M ²	TEM ₀₀ - M ² ≤ 1.1		
Beam divergence (nominal)	< 2 mrad		
Beam diameter at exit (nominal)	~ 0.4mm		~0.5mm
Beam roundness	>85%		
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, <10 minutes from cold start		
Electrical requirement	100-240 V AC - 15 V DC, 13.4 A [PSU Included]		
Line frequency	50-60 Hz		
Power consumption	~50W		~130W
Dimensions	8.5 x 4 x 5 in		11x5x5 in
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		

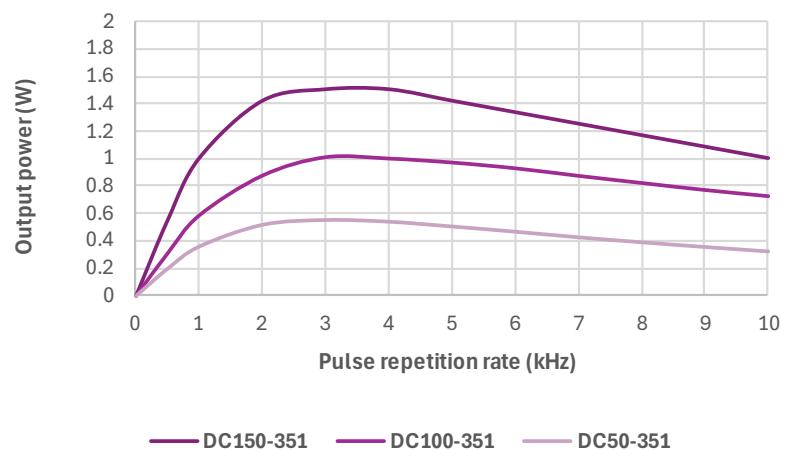
[1.] Measured at ambient temperature ± 2°C. [2.] Measured over 8 hours ± 1°C. [3.] Water-cooled option available.

Typical Beam Profile



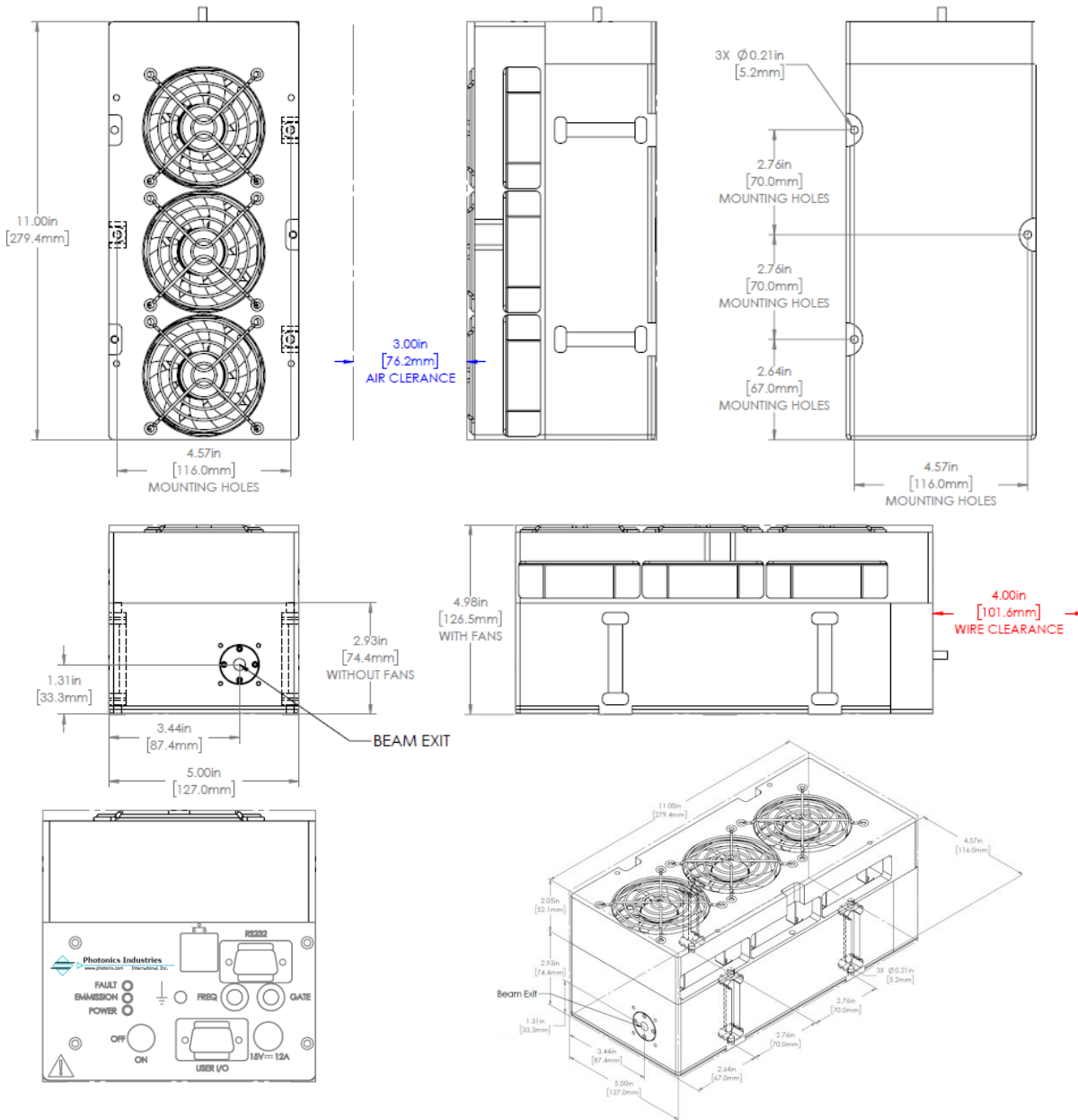
DC50-351

Power vs. PRF



Dimensional Drawings

DC150



Options:

Deep Ultraviolet (DUV)	266nm Wavelength available upon request (Dimensions may vary)	{DX-266}
Rad-cooling™	Rad-cooling™ system instead of air-cooling fans	[RC]
Format	DC	- [Power level] - [xxx]



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

© 2024 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.



