

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

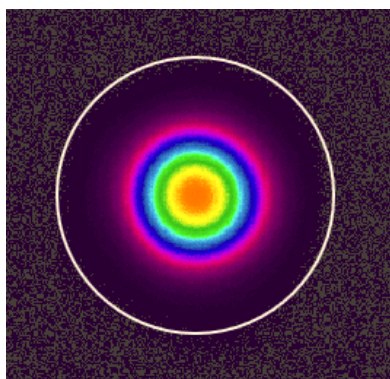
FEATURES

- 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 **Pulse Energy Control - PEC**
- **Position Synchronized Output - PSO**
- Power Monitoring and Self-Calibration

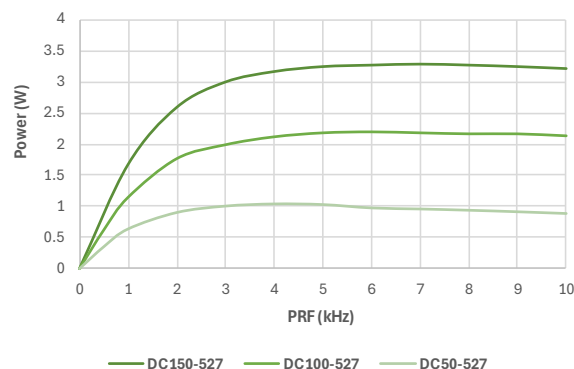
Specifications – DC Series			
	DC50-527	DC100-527	DC150-527
Wavelength (nm)	527		
Average Power (W) @ 3kHz	1	2	3
Pulse Energy (μJ) @ 1kHz	500	1000	1500
Pulse Width (ns) @ 1kHz	~30		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability (% RMS) ¹	<3		
Long-term power stability (% RMS) ²	<2		
Beam spatial mode & M ²	TEM ₀₀ - M ² ≤ 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



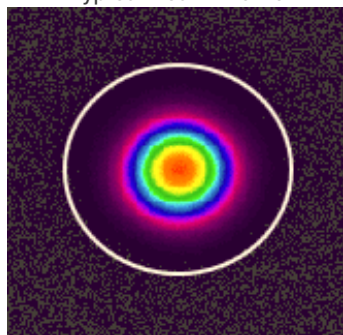
Power vs. PRF



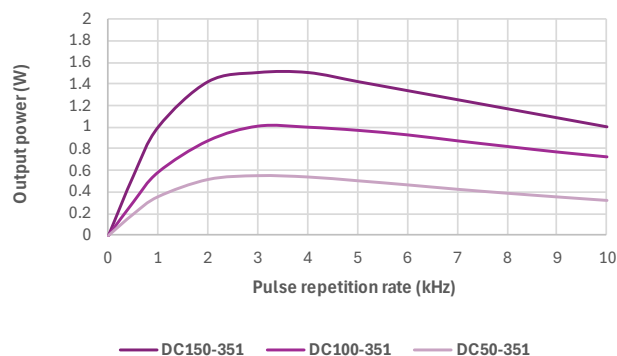
Specifications – DC Series			
	DC50-351	DC100-351	DC150-351
Wavelength (nm)	351		
Average Power (W) @ 3kHz	0.5	1	1.5
Pulse Energy (μJ) @ 1kHz	250	500	1000
Pulse Width (ns) @ 1kHz	~30		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability (% RMS) ¹	<3		
Long-term power stability (% RMS) ²	<2		
Beam spatial mode & M ²	TEM ₀₀ - M ² ≤ 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]		
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Typical Beam Profile



Power vs. PRF



Technical drawings of the Photonix Industries RS232 laser unit, showing dimensions in inches and millimeters.

Front View:

- Overall height: 11.00in [279.4mm]
- Overall width: 4.57in [116.0mm]
- Mounting holes: 3x Ø0.21in [5.2mm]
- Mounting hole spacing (top to bottom): 2.76in [70.0mm], 2.76in [70.0mm], 2.64in [67.0mm]
- Air clearance: 3.00in [76.2mm]

Side View:

- Overall height: 4.98in [126.5mm] WITH FANS
- Wire clearance: 4.00in [101.6mm]

Top View:

- Overall width: 5.00in [127.0mm]
- Beam exit diameter: 1.31in [33.3mm]
- Beam exit offset: 3.44in [87.4mm]
- Beam exit height: 2.93in [74.4mm] WITHOUT FANS

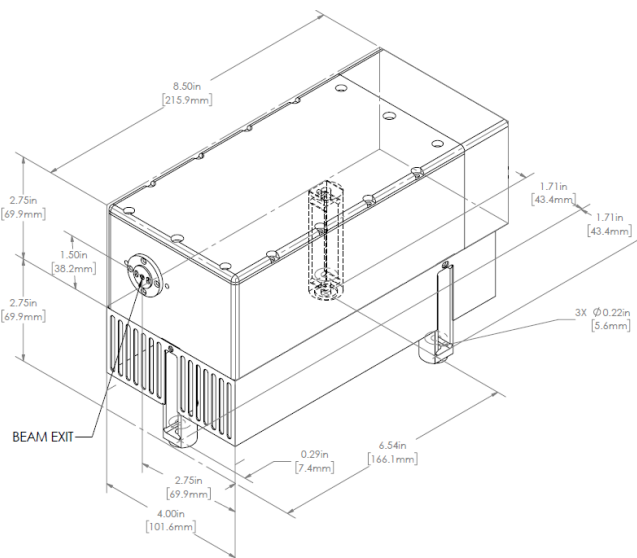
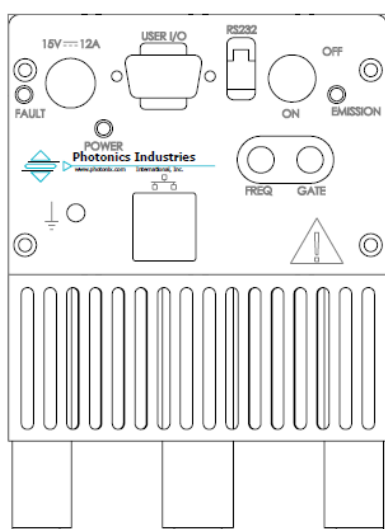
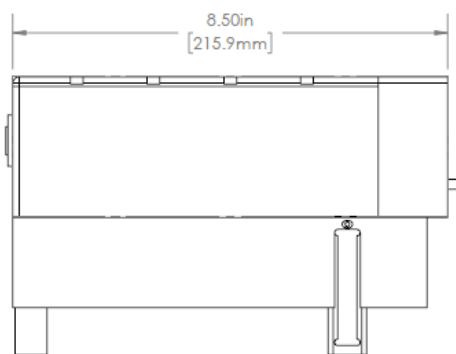
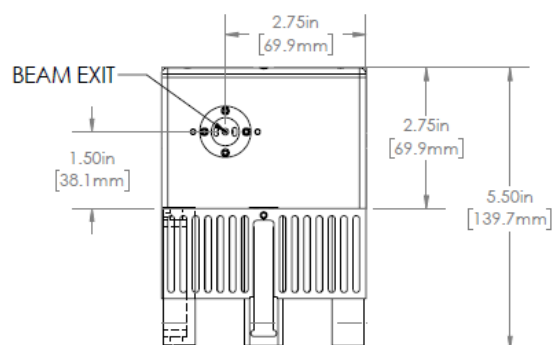
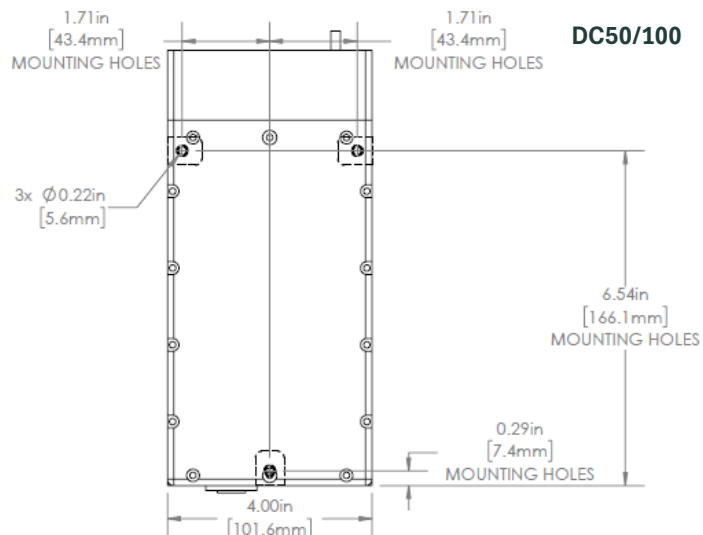
Control Panel:

- Brand: Photonix Industries
- Model: RS232
- Controls: FAULT, EMISSION, POWER, OFF, ON, FREQ, GATE, USER I/O, 15V 12A

Isometric View:

- Overall height: 11.00in [279.4mm]
- Overall width: 4.57in [116.0mm]
- Mounting holes: 3x Ø0.21in [5.2mm]
- Mounting hole spacing (top to bottom): 2.76in [70.0mm], 2.76in [70.0mm], 2.64in [67.0mm]
- Beam exit diameter: 1.31in [33.3mm]
- Beam exit offset: 3.44in [87.4mm]
- Beam exit height: 2.93in [74.4mm] WITHOUT FANS

Dimensional Drawings



CAUTION: LASER RADIATION - READ MANUAL
 BEFORE OPERATING. LASER RADIATION
 MAY BE EMISSION FROM THE FRONT OF THE
 DEVICE. LASER PRODUCT

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

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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



Photonics Industries
International, Inc.



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Rayture Systems



レイチャーシステムズ株式会社

〒160-0006 東京都新宿区舟町7 ロクサンビル7F

TEL : 03-3351-0717 FAX : 03-3351-6771

URL : <http://www.rayture-sys.co.jp>

E-mail : laser@rayture-sys.co.jp