Photonics Industries
International, Inc.

DC Series Nd:YLF Nanosecond Lasers

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Photonics Industries' DC Series Nd:YLF nanosecond lasers combine ideal mJ pulse energy levels (up to 1.5 mJ) with high kHz repetition rates (single shot to 10 kHz), while maintaining low pulse widths, all within a compact, air-cooled form factor. The DC Series stands the test of time, providing the highest pulse energy from one of the smallest footprint, lightest weight air-cooled industrial nanosecond lasers commercially available in UV and Green, and reliably performing for demanding industrial needs, maintaining long-term stabilities for consistent process quality. Owing to key patented technologies, intracavity harmonic generation is inherently a more efficient harmonic conversion that provides unmatched superior beam quality, natural TEM00 output, as well as better beam pointing stability in a simple, compact laser configuration making this laser the perfect tool for precision manufacturing.

Applications

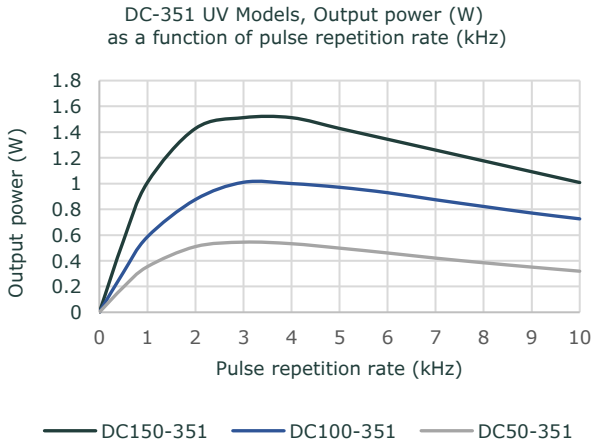
- Cutting, drilling, welding, scribing, marking, intra-marking, patterning, dielectric grooving, de-paneling, annealing, repair
- Flat Panel Display Repair Systems, LCD/LED/OLED Repair, Laser-assisted Chemical Vapor Deposition (LACVD)
- Flexible Printed Circuit Boards (FPCB), Printed Circuit Boards (PCB), Liquid Crystal Polymer (LCP) Microprocessing
- Stereolithography (SLA) Systems, Rapid Prototyping 3D Printing Systems, UV Laser 3D Printing
- Mass Spectrometry Systems, MALDI

Features

- Reliable, low COO, non-consumable design
  Patented intracavity harmonic UV & Green generation, no damaging indexing of the harmonic crystals.
- High pulse energies Nd:YLF
  Up to 1 mJ in 351 nm, and up to 1.5 mJ in 527 nm
- Wide repetition rate range
  Single shot to 10 kHz
- Extra Small, handheld, air-cooled form factor
- Excellent, natural TEM00 beam quality:
  Typical M2 < 1.1
- Monolithic, all-in-one (AIO), compact form factor laser
- Total Pulse Control

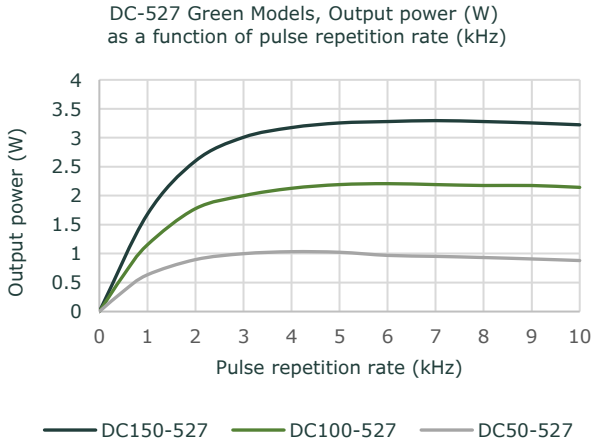
	DC50-351	DC100-351	DC150-351
Beam and output specifications			
Wavelength	351 nm		
Average power	0.5 W at 3 kHz	1 W at 3 kHz	1.5 W at 3 kHz
Pulse energy	0.25 mJ at 1 kHz	0.5 mJ at 1 kHz	1 mJ at 1 kHz
Pulse width[1]	≤ 25 ns at 1 kHz		
Pulse repetition rate	Single shot to 10 kHz		
Pulse-to-pulse stability[2]	< 3% rms		
Long term power stability[3]	< 2% rms		
Beam spatial mode	TEM_{00} $M^2 \leq 1.1$		
Beam pointing stability	< 25 µrad		
Beam divergence	< 2 mrad		
Beam roundness	> 85%		
Beam diameter, at exit	~0.4 mm		~0.5 mm
Polarization ratio	Horizontal; 100:1		
Operational specifications and system characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering		
Warm-up time	< 5 minutes from standby or cold start		
Electrical requirement	100-240 V AC; or 32 V DC, 15 A		
Line frequency	50-60 Hz		
Ambient temperature	Ambient 15°C to 35°C (59°F to 95°F) Operating Range, Relative Humidity 90% Max., non-condensing		
Storage conditions	-10°C to 40°C; Sea Level to 12,000 m; 0% to 90% Relative Humidity, non-condensing		
Power consumption	~50 W		~130 W
Dimensions (LxWxH)	8.5 x 4 x 5 in.		11 x 5 x 5 in.
Weight	~6 lbs (~2.7 kg)		~15.5 lbs (~7 kg)
Cooling system[4]	Air-cooled		

[1.] Longer pulse widths are available on request. [2.] Measured at ambient temperature ± 2°C. [3.] Measured over 8 hours ± 1°C. [4.] Water-cooled option available.



	DC50-527	DC100-527	DC150-527
Beam and output specifications			
Wavelength	527 nm		
Average power	1 W at 3 kHz	2 W at 3 kHz	3 W at 3 kHz
Pulse energy	0.5 mJ at 1 kHz	1 mJ at 1 kHz	1.5 mJ at 1 kHz
Pulse width	≤ 30 ns at 1 kHz		
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	TEM_{00} M^2 ≤ 1.2		
Beam pointing stability	< 25 µrad		
Beam divergence	< 2 mrad		
Beam roundness	> 85%		
Beam diameter, at exit	~0.4 mm		~0.7 mm
Polarization ratio	Vertical; 100:1		
Operational specifications and system characteristics			
Interface	RS232, Ethernet, Software GUI, External TTL Triggering		
Warm-up time	< 5 minutes from standby or cold start		
Electrical requirement	100-240 V AC; or 32 V DC, 15 A		
Line frequency	50-60 Hz		
Ambient temperature	Ambient 15°C to 35°C (59°F to 95°F) Operating Range, Relative Humidity 90% Max., non-condensing		
Storage conditions	-10°C to 40°C; Sea Level to 12,000 m; 0% to 90% Relative Humidity, non-condensing		
Power consumption	~50 W		~130 W
Dimensions (LxWxH)	8.5 x 4 x 5 in.		11 x 5 x 5 in.
Weight	~6 lbs (~2.7 kg)		~15.5 lbs (~7 kg)
Cooling system[3]	Air-cooled		

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



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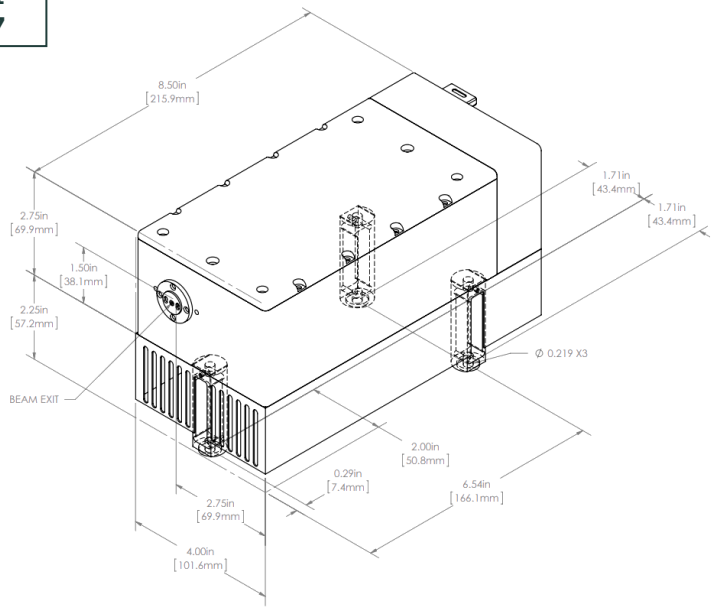
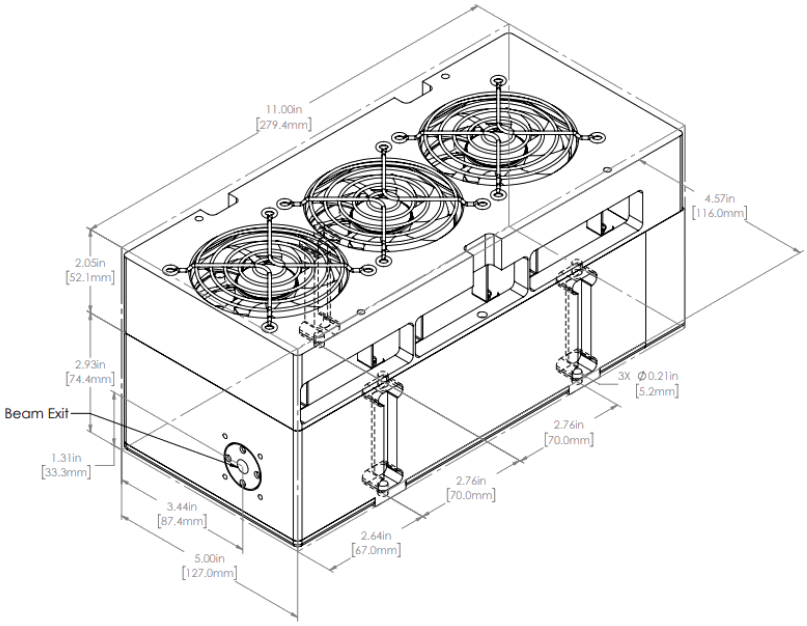
Dimensional Drawings

DC50-351, DC100-351
DC50-527, DC100-527



DC150-351
DC150-527



Main Headquarters: 1800 Ocean Ave, Ronkonkoma, New York 11779, United States

Photonics Industries International 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 industrial, scientific, defense, and medical industries. Check out our products and see how we can help you apply our lasers to your needs.

LASER RADIATION