

DXG Water-Cooled Series

DX Nanosecond Lasers

Solid State DPSS, TEM₀₀, Q-Switched Lasers

The DXG Series Lasers are Nd: YAG nanosecond Laser Series, offering a compact, industrial-grade solution with high pulse energy and fast repetition rates. The combination of short pulse duration and high pulse energy in the 5 to 15kHz domain make the DXG Series ideal for demanding applications requiring high material removal rates with precision beam quality.

Available in a compact, water-cooled format, the DXG lasers provide complete flexibility for OEM integration. A full suite of pulse frequency and pulse energy controls also ensures that the laser output is tailored precisely to a variety of applications



APPLICATIONS

- Marking & Scribing
- LIBS (Laser-Induced Breakdown Spectroscopy)
- PCB & Polymer Cutting & Drilling
- Selective Annealing and Doping
- Laser Cleaning
- Photolithography
- Resistor Trimming
- LIDAR & Laser Ranging

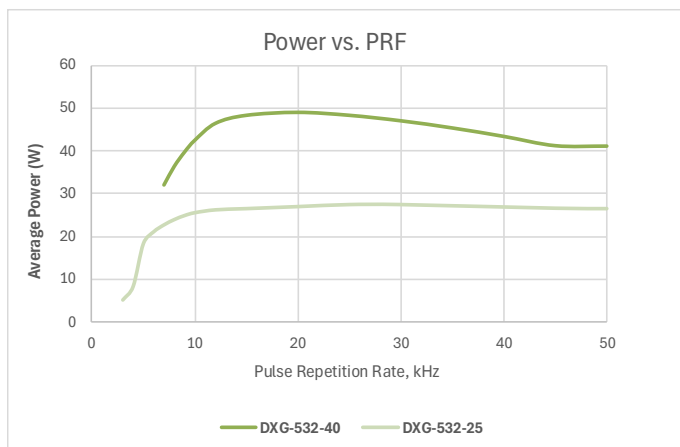
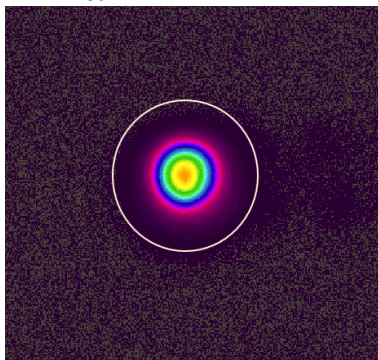
FEATURES

- Up to ~4mJ Pulse Energy at 10 kHz
- True TEM₀₀ Output
- Short Pulse Widths
- Robust & Compact Form Factor
- Dynamic **Pulse Energy Control - PEC**
- **Position Synchronized Output - PSO**
- Power Monitoring and Self-Calibration

Specifications – DXG Series		
	DXG-532-25	DXG-532-40
Wavelength (nm)	532	
Average Power (W) @10kHz	25	40
Pulse Energy (mJ) @10kHz	~2.5	~4
Pulse Width (ns) @10kHz	~25ns	
Pulse repetition rate ¹	Single shot to 50kHz	
Pulse-to-pulse stability (% RMS) ²	<2	
Long-term power stability (% RMS) ³	<2	
Beam spatial mode & M ²	TEM ₀₀ - M ² <1.2	
Beam divergence (nominal) (mrad)	~ 2.5	
Beam diameter ⁴ at exit (nominal) (mm)	~ 0.8	
Beam roundness	> 90	
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	<15 minutes from standby, <30 minutes from cold start	
Electrical requirement	100-240 V AC - 32 V DC, 15 A [PSU Included]	
Line frequency (Hz)	50-60	
Power consumption (W)	<500	
Dimensions	18 x 7.5 x 3.75in [457.2 x 190.5 x 95.25mm]	
Weight	~29 lbs [~13.2kg]	
	Environmental Requirements	
Ambient temperature ⁴	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	Water Cooled	

[1.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping. [2.] Measured at ambient temperature ± 2°C. [3.] Measured over 8 hours ± 1°C. [4.] For operation of the laser outside of the specified temperature range, contact us.

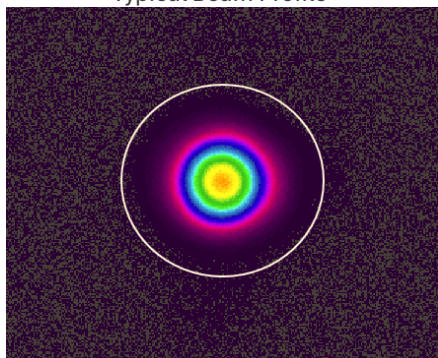
Typical Beam Profile



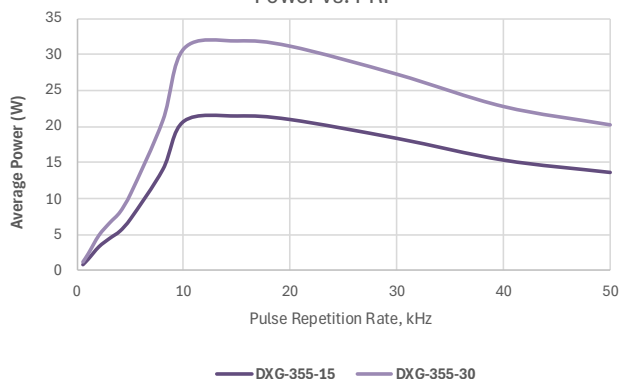
Specifications – DXG Series		
	DXG-355-15	DXG-355-30
Wavelength (nm)	355	
Average Power (W) @10kHz	15	30
Pulse Energy (mJ) @10kHz	~1.5	~3
Pulse Width (ns) @10kHz	~20	
Pulse repetition rate ¹	Single shot to 50kHz	
Pulse-to-pulse stability (% RMS) ²	<2	
Long-term power stability (% RMS) ³	<2	
Beam spatial mode & M ²	TEM ₀₀ - M ² <1.2	
Beam divergence (nominal) (mrad)	~ 2.5	
Beam diameter ⁴ at exit (nominal) (mm)	~0.6	
Beam roundness	> 90	
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	<15 minutes from standby, <30 minutes from cold start	
Electrical requirement	100-240 V AC - 32 V DC, 15 A [PSU Included]	
Line frequency (Hz)	50-60	
Power consumption (W)	<500	
Dimensions	18 x 7.5 x 3.75in [457.2 x 190.5 x 95.25mm]	
Weight	~29 lbs [~13.2kg]	
	Environmental Requirements	
Ambient temperature ⁵	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	Water Cooled	

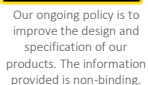
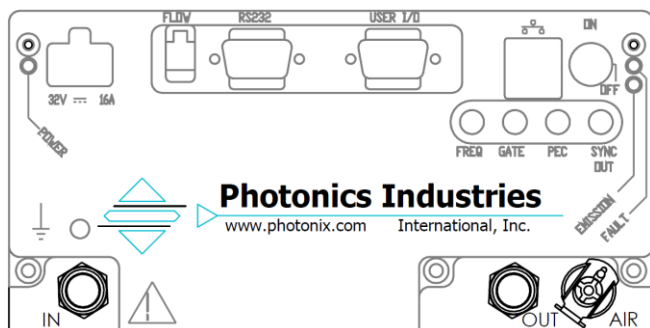
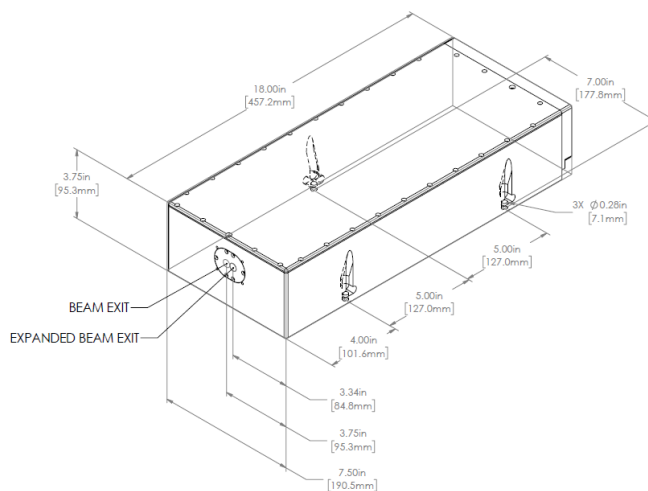
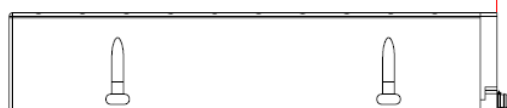
[1.] Lower pulse repetition rates (down to < 1 kHz) performance achieved by pulse energy capping. [2.] Measured at ambient temperature ± 2°C. [3.] Measured over 8 hours ± 1°C. [4.] Larger beam diameters available on request, contact us. [5.] For operation of the laser outside of the specified temperature range, contact us.

Typical Beam Profile



Power vs. PRF



DXG-355-15/30

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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.

