



DX Air-Cooled UV/Green Series Nanosecond Lasers

High Power Compact ns Lasers

A pioneer of intracavity generation with 25 + years of manufacturing experience and well over ten thousand shipments worldwide, Photonics Industries offers the broadest nanosecond (ns) UV product selection from 1W to 55W* at 355nm and Green product selection from 2W to 100W* at 532nm.

With its new revolutionary packaging, our new DX Air-Cooled Series has smaller form factor, higher performance and shorter pulse widths compared to its ancestor, the DCH series, providing the most compact UV output powers from 1W to 7W and Green output powers from 2W to 14W. The DX Air-Cooled Series lasers provide the highest average power from one of the smallest footprint, lightest weight short pulse width, high peak power air-cooled industrial ns lasers commercially available in UV and Green.

Owing to key patented technologies, intracavity harmonic generation is inherently a more efficient harmonic conversion that provides unmatched superior beam quality, as well as better beam pointing stability in a simple, compact laser configuration making this laser the perfect tool for precision manufacturing.

Standard feature-rich packed software allowing for adjustable output power using real-time TTL and/or analog control signals enables high quality process optimization all with ease of handling, high throughput, uncompromised process quality and long-term stability in 24/7 applications with a low Cost of Ownership (COO).

* For higher power models please see the DX Series.



PI Advantages

- ❖ High Power air cooled UV and Green ns laser
- ❖ The most compact, most efficient air-cooled laser
- ❖ The highest wall plug efficiency laser:
 - ~10% for green
 - ~6% for UV
- ❖ The shortest pulse width with rep rates up to 500kHz
- ❖ Patented intracavity UV and Green generation
- ❖ Highest Pulse Energy laser in the market
- ❖ Excellent TEM₀₀ beam with typical M² < 1.2
- ❖ Exceptional Beam Pointing Stability < 25 μrad
- ❖ Monolithic All-In-One (AIO) ns UV and green laser
- ❖ Water cooled option available

Applications

- ❖ Laser Trimming of Embedded Passives
- ❖ Glass Marking
- ❖ Laser Direct ITO/TCO Patterning
- ❖ LED and Medical Package Marking
- ❖ Solar P1 to P3 processing
- ❖ Thin-film Scribing
- ❖ Rapid Prototyping/Stereolithography
- ❖ PCB drilling and structuring
- ❖ Marking of Plastic
- ❖ Cutting metals
- ❖ Thin Film Annealing
- ❖ LIDAR
- ❖ MALDI



Photronics Industries
International, Inc.

UV System Specifications

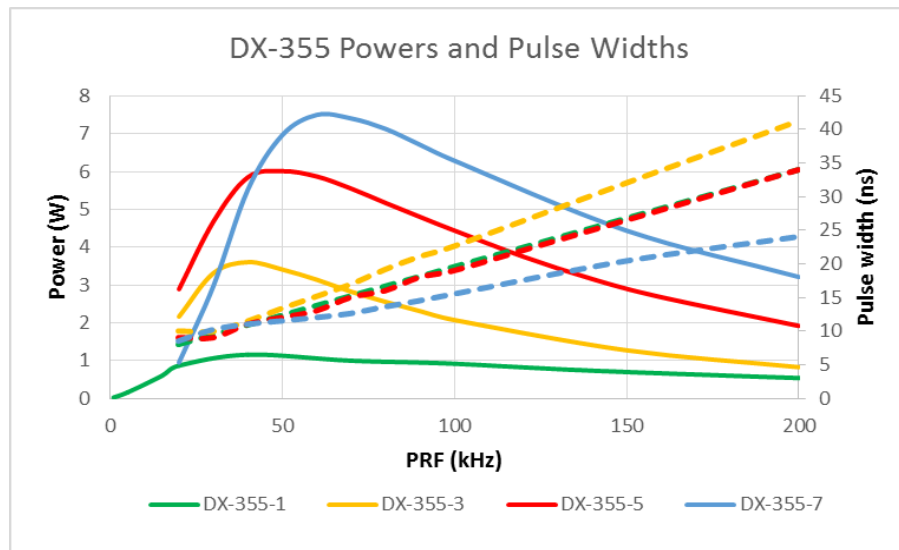
Model	DX-355-1	DX-355-3	DX-355-5	DX-355-7
Technology	Air-Cooled			
Output Characteristics				
Wavelength	355 nm			
Average Power	0.8W at 20kHz 1W at 40kHz	1.5W at 20kHz 3W at 50kHz 1.5W at 100kHz	5W at 50kHz 3W at 100kHz	5W at 40kHz 7W at 60kHz 6W at 100kHz
Pulse Energy	~40 μ J	~100 μ J	~150 μ J	~125 μ J
Pulse Width (nominal)	10 \pm 5ns @ 40 kHz 20 \pm 5ns @ 100 kHz			
Repetition Rate	Single Shot to 200 kHz (Option to 300kHz)			
Pulse to Pulse Stability†	< 2% rms			
Long Term Stability (8 hr \pm 1° C)†	< 2% rms			
Beam Characteristics				
Polarization Ratio	Horizontal; 100:1			
4 σ Beam Diameter @ exit	~0.3 mm	~0.5 mm		~0.45 mm
Beam Divergence (Full Angle Far Field)	< 2.5 mrad			
Beam Circularity	~90%			
Spatial Mode	TEM ₀₀ M ² <1.2			
Beam Pointing Stability	< 25 μ rad			
Operating Specifications				
Interface	Ethernet / RS 232 / GUI / External TTL Triggering			
Power Consumption (typical)	~50 W		~130 W	
Warm Up Time	< 10 min			
Electrical Requirement	100 to 240V AC			
Line Frequency	50 to 60 Hz			
Relative Humidity	Non-condensing, 90% Max			
Ambient Temperature**	10°C to 30°C (50° to 86°F) Operating Range			
Storage Conditions	-10°C to 40°C; Sea Level to 12,000 m; 0% to 90% RH, non-condensing			
Physical Characteristics				
Dimensions	5 in x 4.88 in x 8.5 in*		5 in x 4.88 in x 11 in*	
Weight	~10 lbs		~15.5 lbs	

*Dimensions given are with air cooled heatsinks. Water cooled heatsink options are available (see dimensional drawings)

**For operation outside this temperature range, please contact us

†measured at ambient temp of \pm 2°C

Performance Curves



Green System Specifications

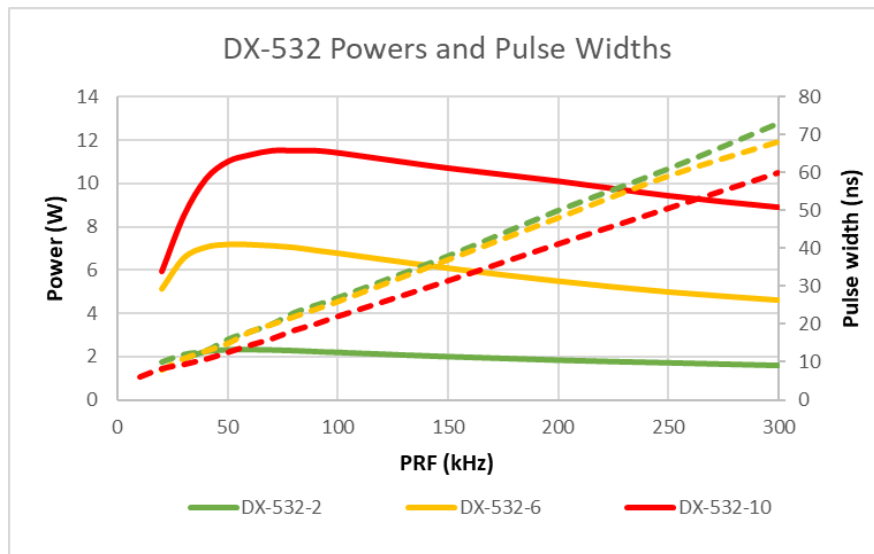
Model	DX-532-2	DX-532-6	DX-532-10	DX-532-14
Technology	Air-Cooled			
Output Characteristics				
Wavelength	532 nm			
Average Power	2W at 40kHz 2W at 100kHz	6W at 40kHz 6W at 100kHz	10W at 80kHz 10W at 100kHz	14W at 50kHz 14W at 100kHz
Pulse Energy	~50 µJ	~250 µJ	~260 µJ	~330 µJ
Pulse Width	12 ± 5ns @ 40 kHz 24 ± 5ns @ 100kHz			
Repetition Rate	Single Shot to 300 kHz (Option to 500kHz)			
Pulse to Pulse Stability†	< 2% rms			
Long Term Stability (8 hr ± 1° C)†	< 2% rms			
Beam Characteristics				
Polarization Ratio	Vertical; 100:1			
4σ Beam Diameter @ exit	~0.3 mm	~0.4 mm		~0.45 mm
Beam Divergence (Full Angle Far Field)	< 3 mrad			< 2.5 mrad
Beam Circularity	~90%			
Spatial Mode	TEM ₀₀ M ² <1.3			
Beam Pointing Stability	< 25 µrad			
Operating Specifications				
Interface	Ethernet / RS 232 / GUI / External TTL Triggering			
Power Consumption (typical)	~50 W			~130 W
Warm Up Time	< 10 min			
Electrical Requirement	100 to 240V AC			
Line Frequency	50 to 60 Hz			
Relative Humidity	Non-condensing, 90% Max			
Ambient Temperature**	10°C to 30°C (50° to 86°F) Operating Range			
Storage Conditions	-10°C to 40°C; Sea Level to 12,000 m; 0% to 90% RH, non-condensing			
Physical Characteristics				
Dimensions	5 in x 4.88 in x 8.5 in*		5 in x 4.88 in x 11 in*	
Weight	~10 lbs		~15.5 lbs	

*Dimensions given are with air cooled heatsinks. Water cooled heatsink options are available (see dimensional drawings)

**For operation outside this temperature range, please contact us

†measured at ambient temp of ± 2°C

Performance Curves

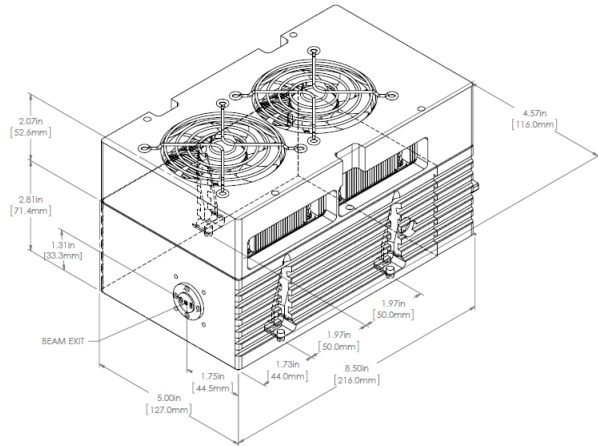
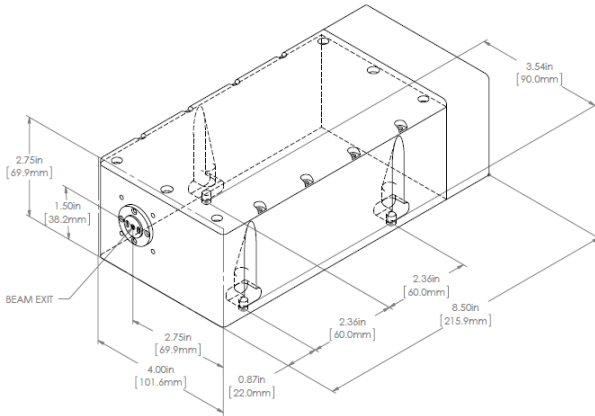


Dimensional Drawings

DX-355-1 & -532-2 Laser

without air cooled heatsink

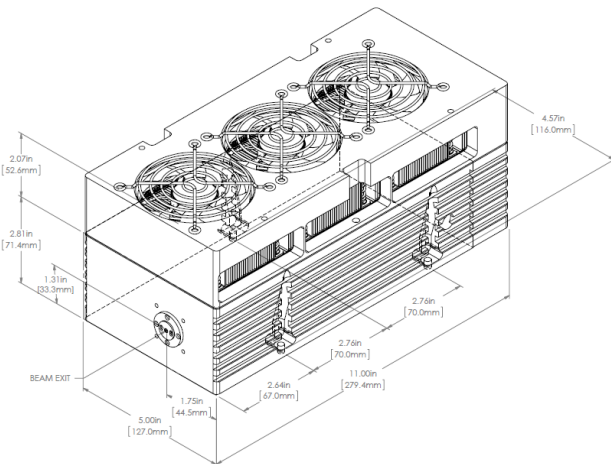
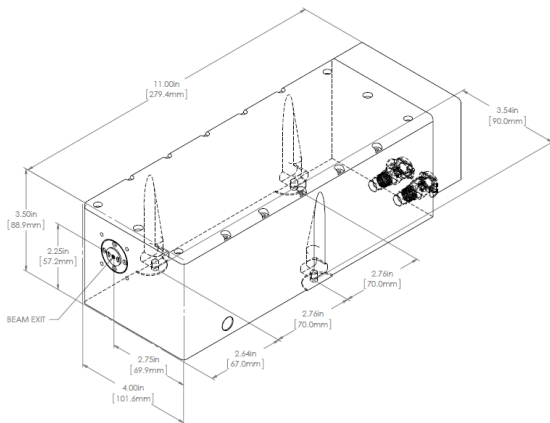
with air cooled heatsink



DX-355-3, 5 & 7, -532-6, 10 & 14 Laser

with water cooled version

with air cooled heatsink



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Due to Photonics Industries' commitment to continuous product improvement, specifications and drawings are subject to change without notice.



Photonics Industries
International, Inc.

Photonics Industries conforms to provisions of US 21 CFR 1040.10 & 1040.11 and is made under one or more US patents listed below: 9,882,335, 9,531,147, 8,817,831, 7,869,471, 7,346,092, 7,082,149, 7,079,557, 6,999,483, 6,980,574, 6,961,355, 6,842,293, 6,762,405, 6,587,487, 6,584,134, 6,366,596, 6,356,578, 6,327,281, 6,246,707, 6,229,829, 6,108,356, 6,061,370, 6,028,620, 5,936,983, 5,898,717 and Pending Patents

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