



AVIA NX

Solid-State Q-Switched Green Lasers

AVIA NX is the fourth generation of the renowned AVIA ns pulsed laser product family. Providing an unmatched combination of disruptive features, the AVIA NX was redesigned from the ground up to provide even higher levels of performance and reliability in an incredibly compact integrated package.

AVIA NX is available in green versions from 36W to 85W at 532 nm. An 80 kHz configuration provides best in class performance of 1000 μ J per pulse. The design is based on the same optical architecture as the previous generation AVIA, proven over the last 17 years with thousands of lasers in use worldwide. Nevertheless, the entire optical engine and control electronics have been streamlined and cleverly integrated into a single compact package.

Extreme environmental testing using in house HALT/HASS facilities is employed in both the design and manufacturing of the AVIA NX, leading to higher standards for reliability and robustness that are unmatched by any other pulsed green or UV laser.

The AVIA NX offers effortless ease of integration into laser based tools through its small footprint and simplified interface. Clever features like the unique slide-in SoloBoard™ PCB, reduce the size and cost, and enhance the utility of the laser while improving serviceability in the field. In addition, our PureUV™ active laser-cleaning engine is fully integrated into the laser head, with no external tubing or connectors. This fully preserves the integrity of the optical cavity and maintains hands-off functionality.

FEATURES

- 36W to 85W average power at 532 nm
- High energy option to 1000 μ J
- Rep rates single-shot to 100s of kHz
- High beam quality $M^2 < 1.3$
- Industry leading compact footprint
- Simplified user interface at laser head
- HALT designed/HASS certified
- High reliability between long maintenance cycles

APPLICATIONS

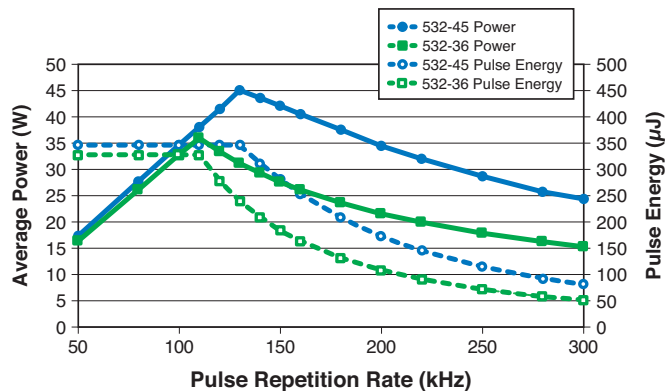
- Drilling & Cutting PCBs
- Micromaching Copper
- Scribing & Grooving Silicon
- Cutting and Machining Ceramics
- Solar Cell Scribing



SPECIFICATIONS ¹	AVIA NX 532-36	AVIA NX 532-45
Fundamental Center Wavelength (nm)	532	532
Output Power and Energy	36W, 327 µJ at 110 kHz	45W, 346 µJ at 130 kHz
Repetition Rate	Single-shot to 300 kHz	Single-shot to 300 kHz
Pulse Width (ns)	<33 up to 110 kHz	<35 up to 130 kHz
Spatial Mode	TEM ₀₀ , M ² <1.3	
Beam Divergence (mrad)	<0.3	
Beam Waist Diameter (mm, 1/e ²)	3.50 ±0.35	
Beam Waist Location	At output port ±25% of Rayleigh Range	
Astigmatism (%)	<30	
Beam Circularity (%)	>85	
Polarization Ratio	>100:1	
Polarization Direction	Vertical, ±3°	
Beam Pointing Stability (µrad/°C)	<25	
Pulse Energy Stability (%) (RMS)	<5	
Power Stability (%) (RMS, 2σ) (over 8 hours)	<2	
Warm-up Time (minutes)		
Cold Start	<45	
Warm Start	<15	
Long-term Pointing Stability at Fixed Rep-rate (µrad)	±25 over 8 hours	
Head Weight	21.5 kg (47.4 lbs.)	
External Comms	RS-232, Ethernet, USB	
Power Consumption (VAC)	100 to 240, <500W	100 to 240, <600W
OPERATING SPECIFICATIONS		
Temperature (non-condensing)		
Laser Head	+10 to 35°C (50 to 95°F)	
Power Supply	+10 to 35°C (50 to 95°F)	
Non-Operation (storage)	-20 to +50°C (-4 to 122°F)	
Shipping Specifications		
Temperature	-20 to +60°C (-4 to 140°F)	
Relative Humidity (%)	5 to 80	

¹ All specifications measured at the optimized pulse repetition rate.

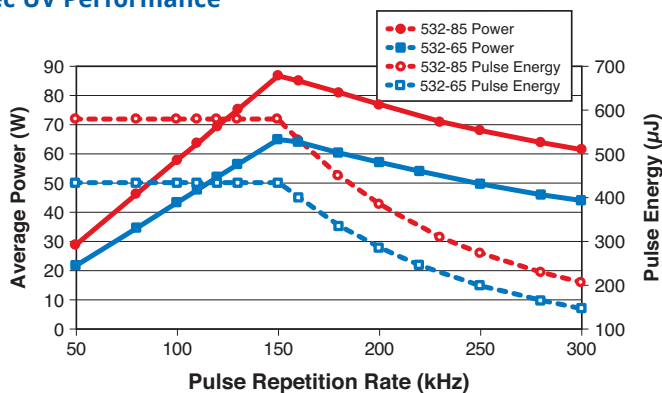
AVIA NX 532-45 and 532-36 Spec UV Performance



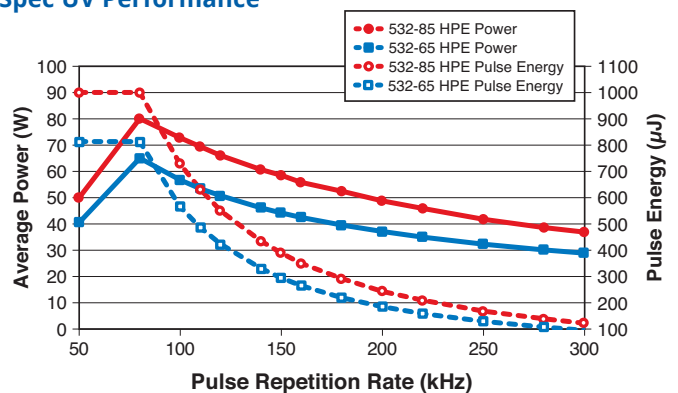
SPECIFICATIONS ¹	AVIA NX 532-65	AVIA NX 532-85	AVIA NX 532-65 HPE	AVIA NX 532-85 HPE
Fundamental Center Wavelength (nm)	532	532	532	532
Output Power and Energy	65W, 433 μJ at 150 kHz	85W, 531 μJ at 160 kHz	65W, 813 μJ at 80 kHz	80W, 1000 μJ at 80 kHz
Repetition Rate	Single-shot to 300 kHz	Single-shot to 300 kHz	Single-shot to 300 kHz	Single-shot to 300 kHz
Pulse Width (ns)	<45 up to 150 kHz	<45 up to 160 kHz	<30 up to 100 kHz	<30 up to 100 kHz
Spatial Mode	TEM ₀₀ , M ² <1.3			
Beam Divergence (mrad)	<0.3			
Beam Waist Diameter (mm, 1/e ²)	3.50 ±0.35			
Beam Waist Location	At output port ±25% of Rayleigh Range			
Astigmatism (%)	<30			
Beam Circularity (%)	>85			
Polarization Ratio	>100:1			
Polarization Direction	Vertical, ±3°			
Beam Pointing Stability (μrad/°C)	<25			
Pulse Energy Stability (%) (RMS)	<5			
Power Stability (%) (RMS, 2σ) (over 8 hours)	<2			
Warm-up Time (minutes)				
Cold Start	<45			
Warm Start	<15			
Long-term Pointing Stability at Fixed Rep-rate (μrad)	±25 over 8 hours			
Head Weight	22.5 kg (49.6 lbs.)			
External Comms	RS-232, Ethernet, USB			
Power Consumption (VAC)	100 to 240, <700W	100 to 240, <900W	100 to 240, <700W	100 to 240, <900W
OPERATING SPECIFICATIONS				
Temperature (non-condensing)				
Laser Head	+10 to 35°C (50 to 95°F)			
Power Supply	+10 to 35°C (50 to 95°F)			
Non-Operation (storage)	-20 to +50°C (-4 to 122°F)			
Shipping Specifications				
Temperature	-20 to +60°C (-4 to 140°F)			
Relative Humidity (%)	5 to 80			

¹ All specifications measured at the optimized pulse repetition rate.

AVIA NX 532-85 and 532-65 Spec UV Performance

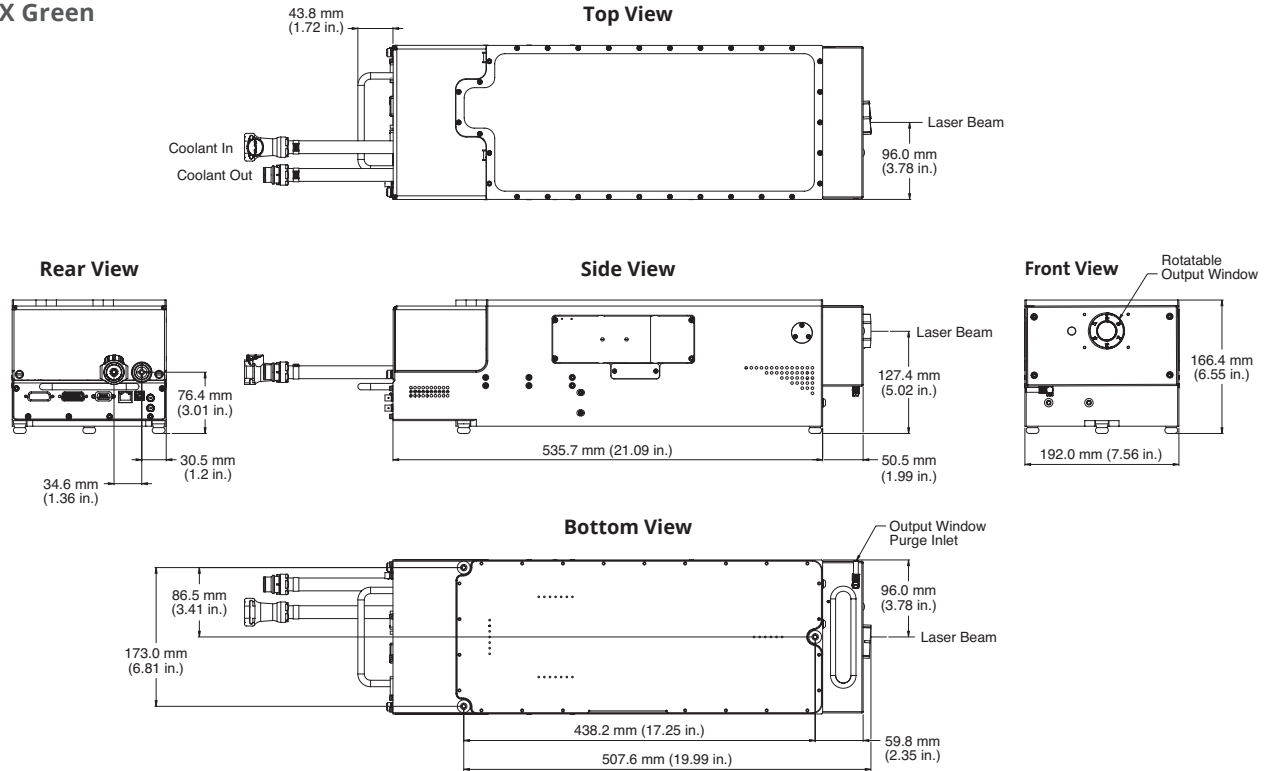


AVIA NX 532-85 HPE and 532-65 HPE Spec UV Performance

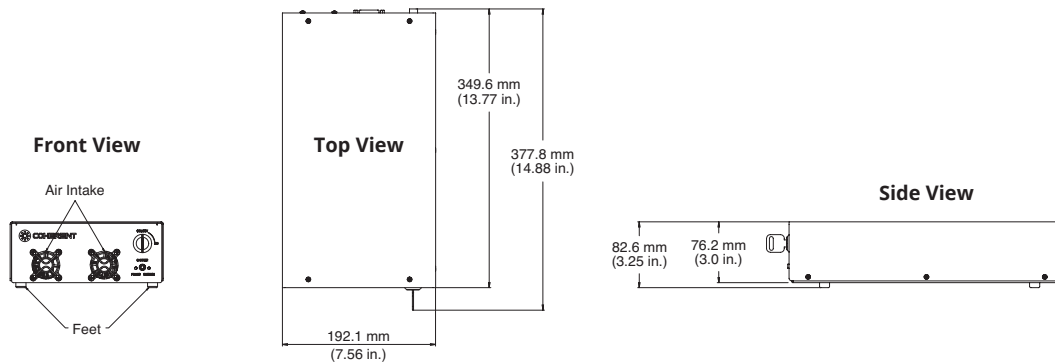


MECHANICAL SPECIFICATIONS

AVIA NX Green



Power Supply



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Coherent follows a policy of continuous product improvement. Specifications are subject to change without notice. Coherent's scientific and industrial lasers are certified to comply with the Federal Regulations (21 CFR Subchapter J) as administered by the Center for Devices and Radiological Health on all systems ordered for shipment after August 2, 1976.

Coherent offers a limited warranty for all AVIA NX lasers. For full details of this warranty coverage, please refer to the Service section at www.Coherent.com or contact your local Sales or Service Representative. Printed in the U.S.A. MC-XXX-16-0M0216 Copyright ©2017 Coherent, Inc.