

# AVIA NX

## Solid-State Q-Switched Green Lasers

AVIA NX is a nanosecond pulsed laser that offers high performance and reliability in an incredibly compact integrated package.

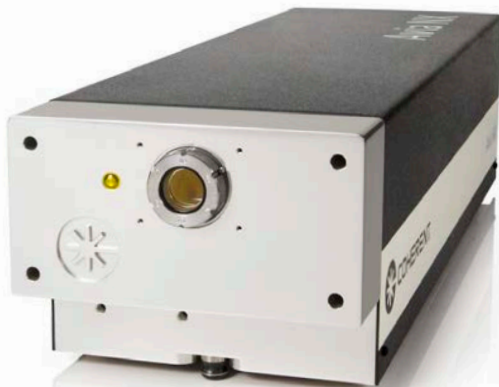
AVIA NX is available in green versions with a range of power levels from 36 W to 85 W at 532 nm. An 80 kHz configuration provides best in class performance of >800  $\mu\text{J}$  per pulse. Extreme environmental testing using in-house HALT/HASS facilities is employed in both the design and manufacturing of the AVIA NX, leading to higher standards of reliability and robustness that are unmatched by any other pulsed green or UV laser.

### FEATURES & BENEFITS

- 36 W to 85 W average power at 532 nm
- High energy option to 800  $\mu\text{J}$
- 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

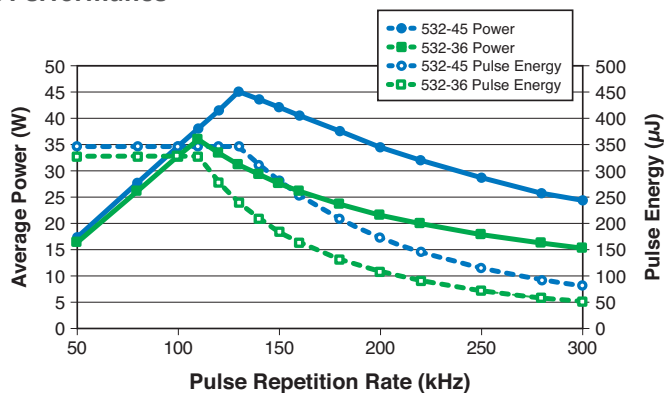


SPECIFICATIONS <sup>1</sup>	AVIA NX 532-36	AVIA NX 532-45
Fundamental Center Wavelength (nm)	532	532
Output Power and Energy	36 W, 327 μJ at 110 kHz	45 W, 346 μJ at 130 kHz
Repetition Rate	Single-shot to 300 kHz	Single-shot to 300 kHz
Pulse Width (ns)	<33 up to 110 kHz	<35 up to 130 kHz
Spatial Mode	TEM <sub>00</sub> , M <sup>2</sup> <1.3	
Beam Divergence (mrad)	<0.3	
Beam Waist Diameter (mm, 1/e <sup>2</sup> )	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, <500 W	100 to 240, <600 W

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

<sup>1</sup> All specifications measured at the optimized pulse repetition rate.

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



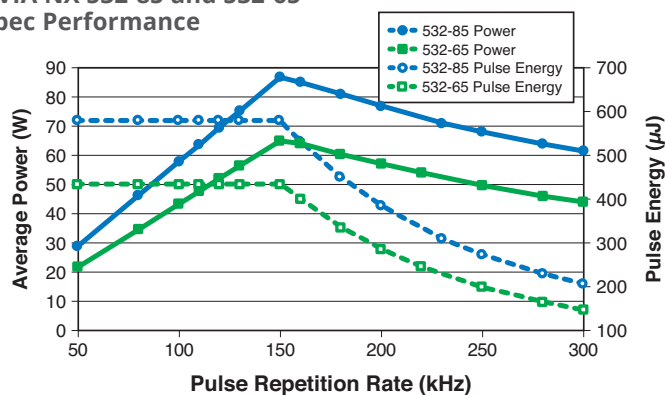
SPECIFICATIONS <sup>1</sup>	AVIA NX 532-65	AVIA NX 532-85	AVIA NX 532-65 HPE
Fundamental Center Wavelength (nm)	532	532	532
Output Power and Energy	65 W, 433 μJ at 150 kHz	85 W, 531 μJ at 160 kHz	65 W, 813 μJ at 80 kHz
Repetition Rate	Single-shot to 300 kHz	Single-shot to 300 kHz	Single-shot to 300 kHz
Pulse Width (ns)	<45 up to 150 kHz	<45 up to 160 kHz	<30 up to 100 kHz
Spatial Mode	TEM <sub>00</sub> , M <sup>2</sup> <1.3		
Beam Divergence (mrad)	<0.3		
Beam Waist Diameter (mm, 1/e <sup>2</sup> )	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, <700 W	100 to 240, <900 W	100 to 240, <700 W

**OPERATING SPECIFICATIONS**

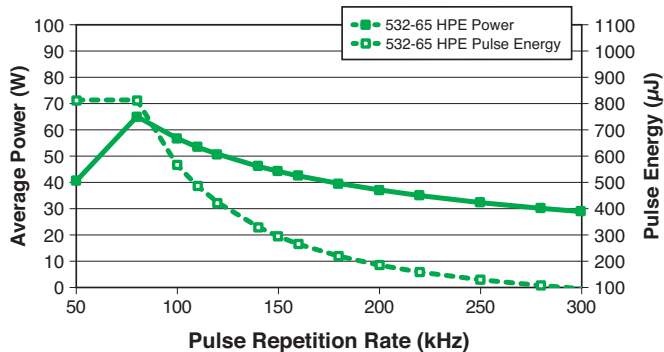
Temperature (non-condensing)	
Laser Head	+ 10 to 35°C (50 to 95°F)
Power Supply	+ 10 to 35°C (50 to 95°F)
Non-Operation (storage)	-20 to +50°C (-4 to 122°F)
Shipping Specifications	
Temperature	-20 to +60°C (-4 to 140°F)
Relative Humidity (%)	5 to 80

<sup>1</sup> All specifications measured at the optimized pulse repetition rate.

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

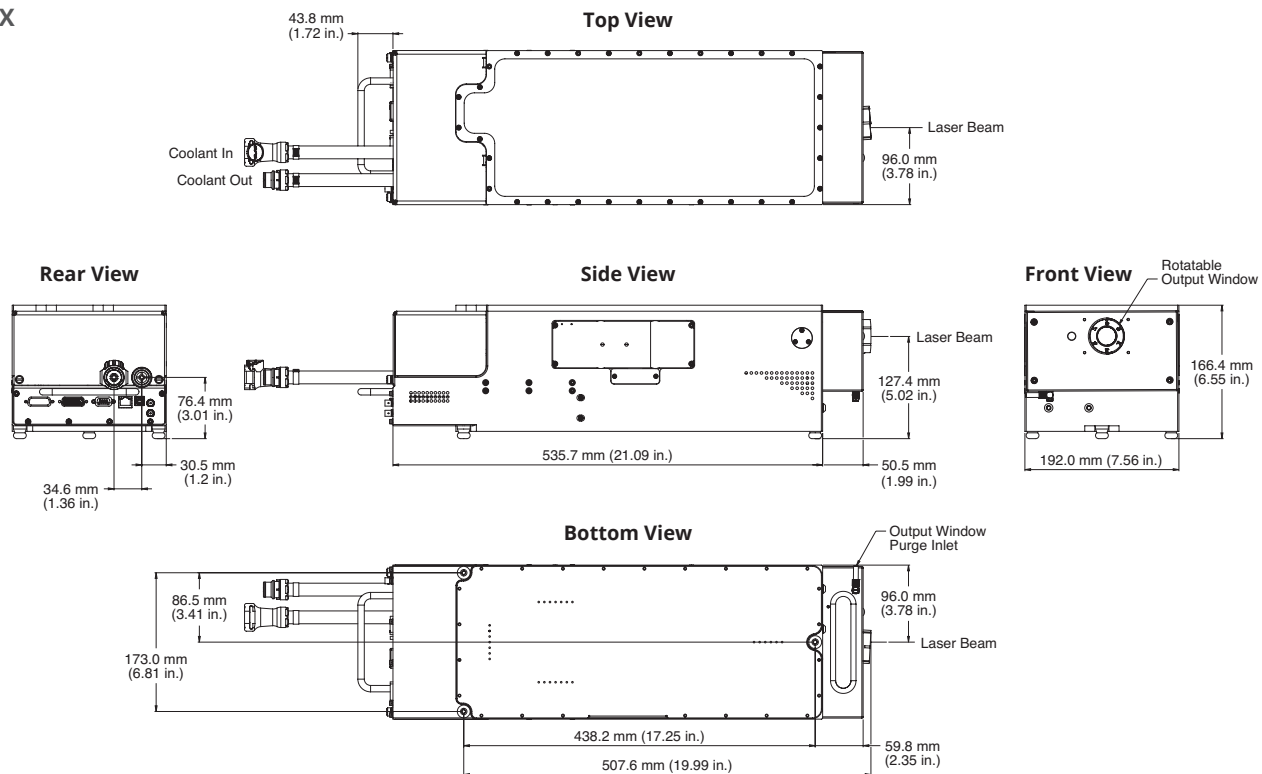


**AVIA NX 532-65 HPE Spec Performance**

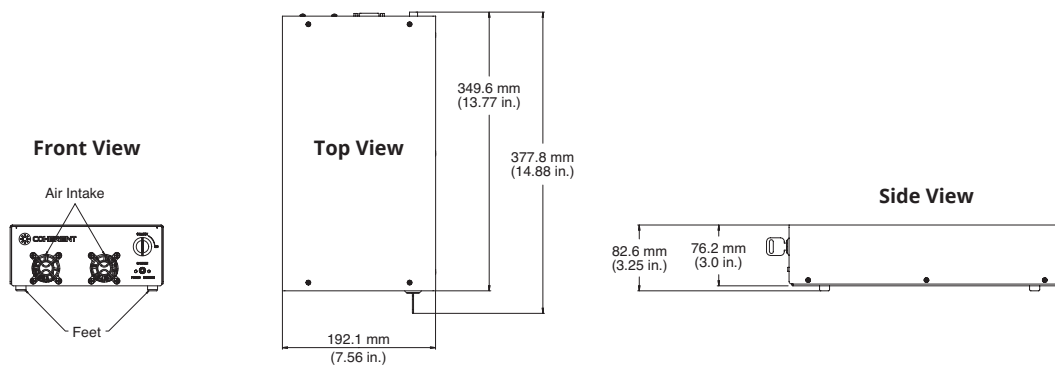


## MECHANICAL SPECIFICATIONS

### AVIA NX



### 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](http://www.coherent.com) or contact your local Sales or Service Representative. MC-005-17-0M0818Rev.A Copyright ©2018 Coherent, Inc.