

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 both UV and green versions with up to 40W at 355 nm and 65W at 532 nm. 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.

AVIA NX represents the pinnacle of performance and reliability for 24/7 manufacturing, in which factory up-time is the true measure of success and is therefore ideal for applications such as machining thin silicon, metal foils and flexible PCB materials, 3D chip package manufacturing, IC package trimming, and solar cell processing.



Superior Reliability & Performance

AVIA NX Advantages:

- **36W and 65W average power at 532 nm**
- **Rep rates single-shot to 100s of kHz**
- **High beam quality $M^2 < 1.3$**
- **Industry leading compact footprint**
- **Simplified graphical user interface**
- **HALT designed/HASS certified**
- **High reliability between long maintenance cycles**

AVIA NX Applications:

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

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System Specifications¹

	AVIA NX 532-36	AVIA NX 532-65	AVIA NX 532-65 HPE
Fundamental Center Wavelength (nm)		532	
Output Power and Energy	36W, 327 μJ at 110 kHz	65W, 433 μJ at 150 kHz	850 μJ at <80 kHz
Repetition Rate		Single-shot to 300 kHz	
Pulse Width (ns)		<45 up to 150 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		22.2 kg (49 lbs.)	
External Comms		RS-232, Ethernet, USB	
Power Consumption (VAC)		100 to 240, <700W	

Operating Specifications

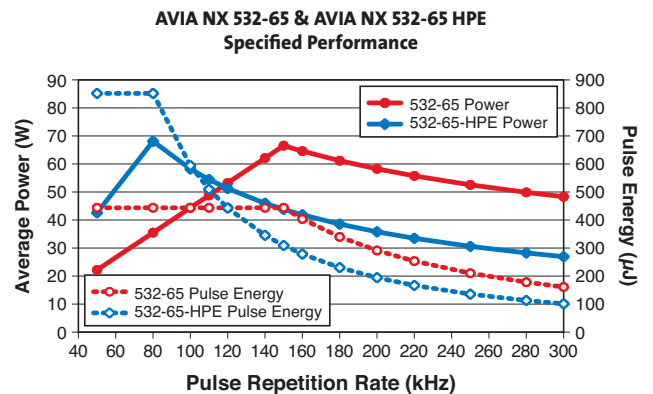
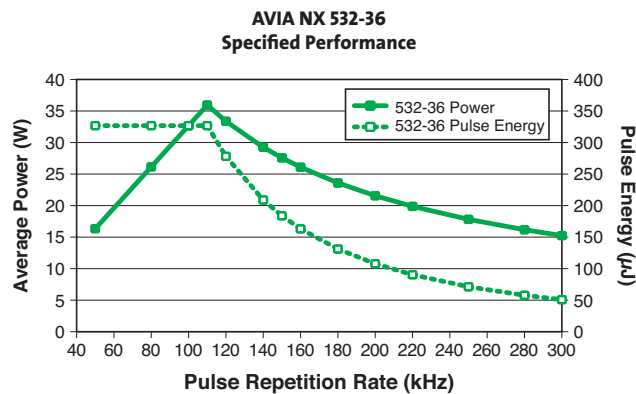
Temperature (non-condensing)

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

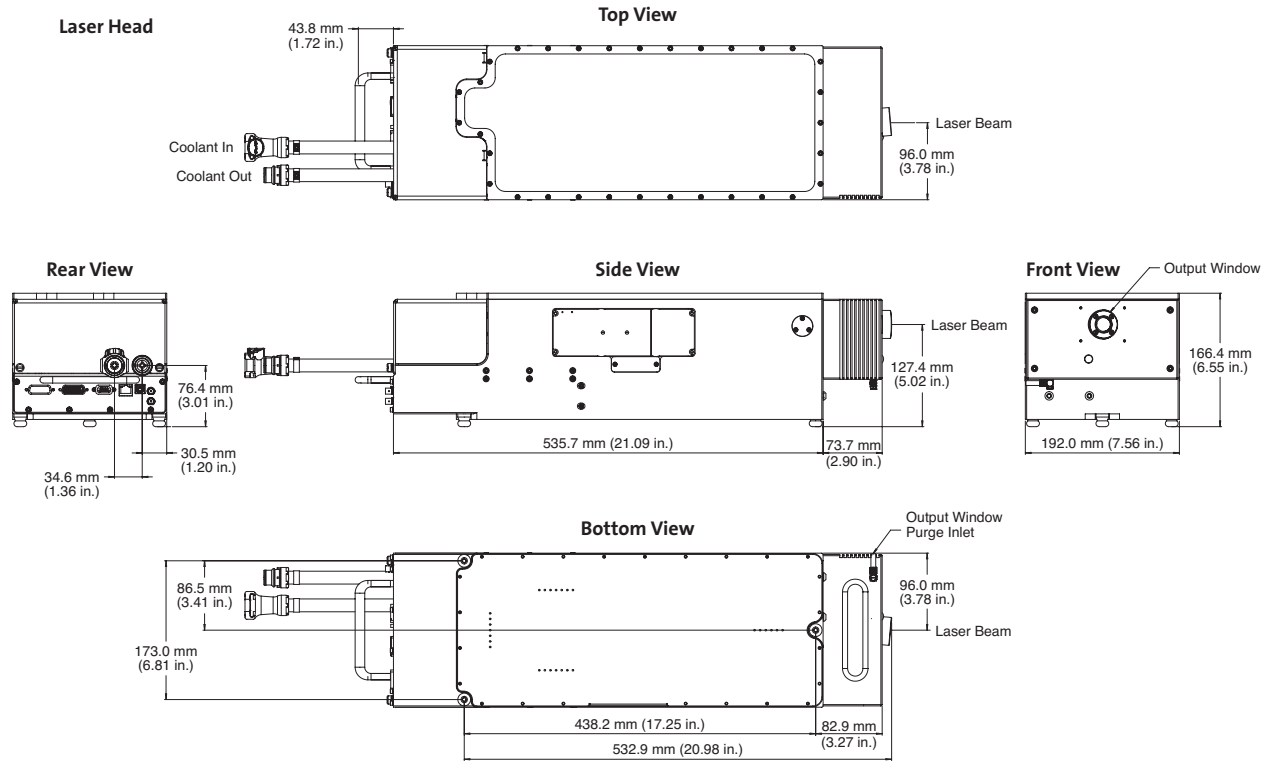
¹ All specifications measured at the optimized repetition rate.



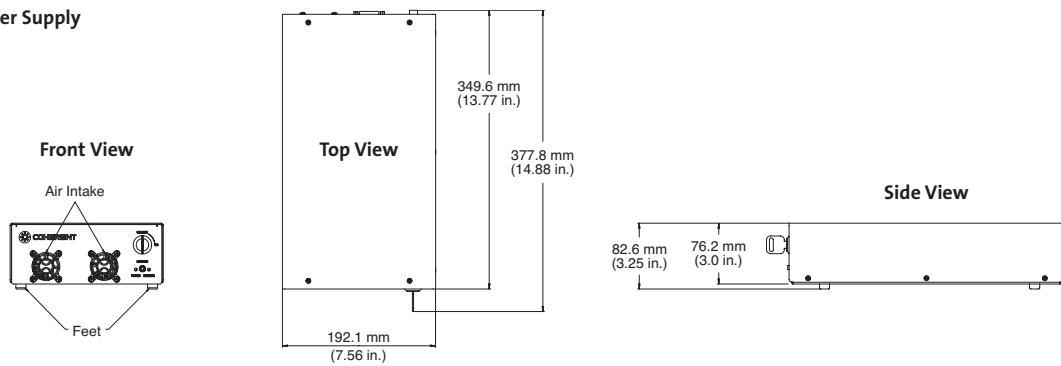
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Mechanical Specifications



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.