

Axon FP

Next Generation Fiber-Delivered Ultrafast Sources

The Axon FP sets a new benchmark in femtosecond laser technology by moving beyond the traditional setup of separate controller, power supply, and optical head. Instead, it integrates all components and advanced features into a single, rack-mountable unit, dramatically simplifying optical integration for users.

By delivering a collimated beam directly through fiber, the Axon FP minimizes the need for external optics, reduces setup time, and lowers system costs. Its portable design allows quick transfer between experimental setups without alignment, enabling a shared-access model that boosts efficiency and utilization across labs.

Available in 920 nm and 1064 nm configurations with identical form, fit, and function, the Axon FP delivers 1 W of average output power in high-quality femtosecond pulses. Integrated fast power control ensures precise high contrast modulation, while adjustable dispersion pre-compensation maintains optimal pulse characteristics at the point of use. The light is delivered via 3 m of fiber with a conveniently collimated output.

Combining portability with easy, repeatable integration, the Axon FP is ideally suited for life sciences, imaging, inspection, and nano-processing applications.



FEATURES

- Fiber-delivered, collimated beam output for repeatable, plug-and-play system integration
- Fully integrated & rack mountable architecture (6U chassis)
- Integrated dispersion pre-compensation
- Built-in Total Power Control (TPC)
- Consistent form, fit, and function maintained across all wavelength configurations
- HALT-designed construction for maximum lifetime, reliability, and uptime

APPLICATIONS

- Multiphoton Excitation (MPE) Microscopy
- Second Harmonic Generation (SHG) Microscopy
- Two Photon Polymerization (2PP)
- Nano-Processing/Inspection
- Semiconductor Metrology
- Supercontinuum Generation
- Terahertz Generation
- Ultrafast Spectroscopy
- Biomedical & Life Science Instrumentation

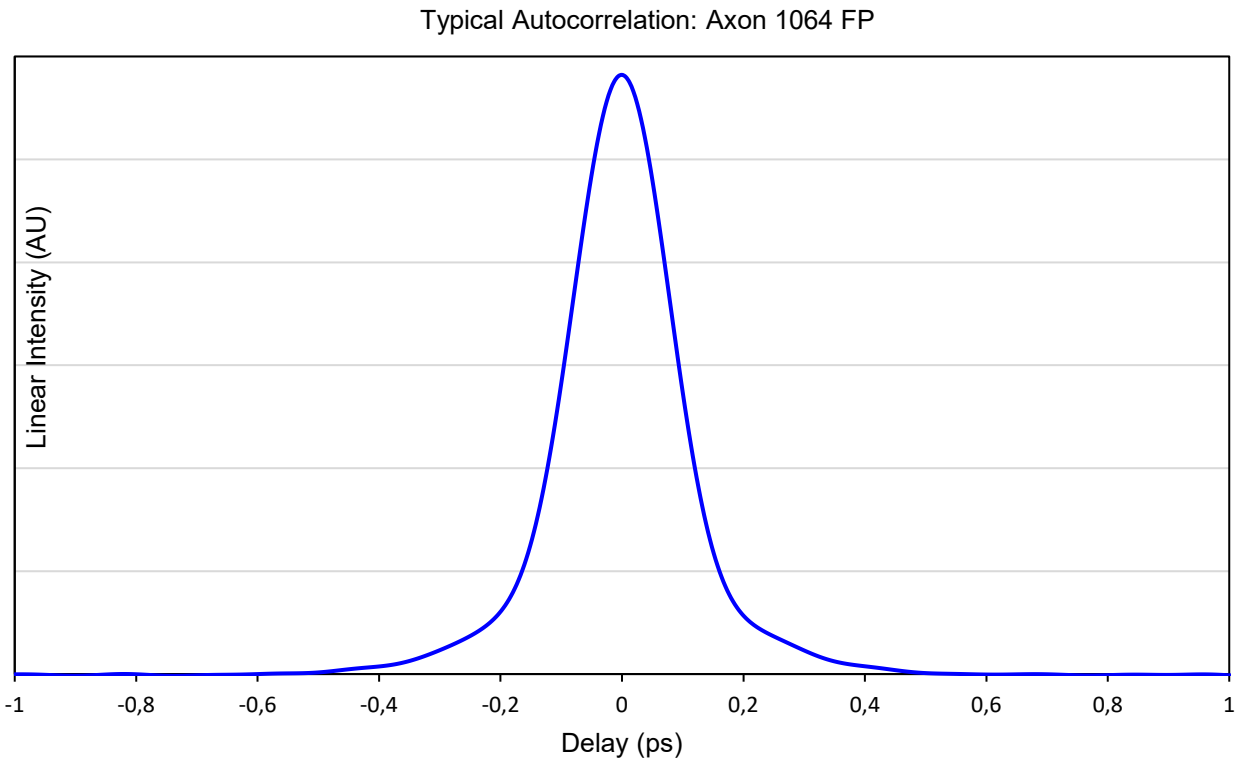
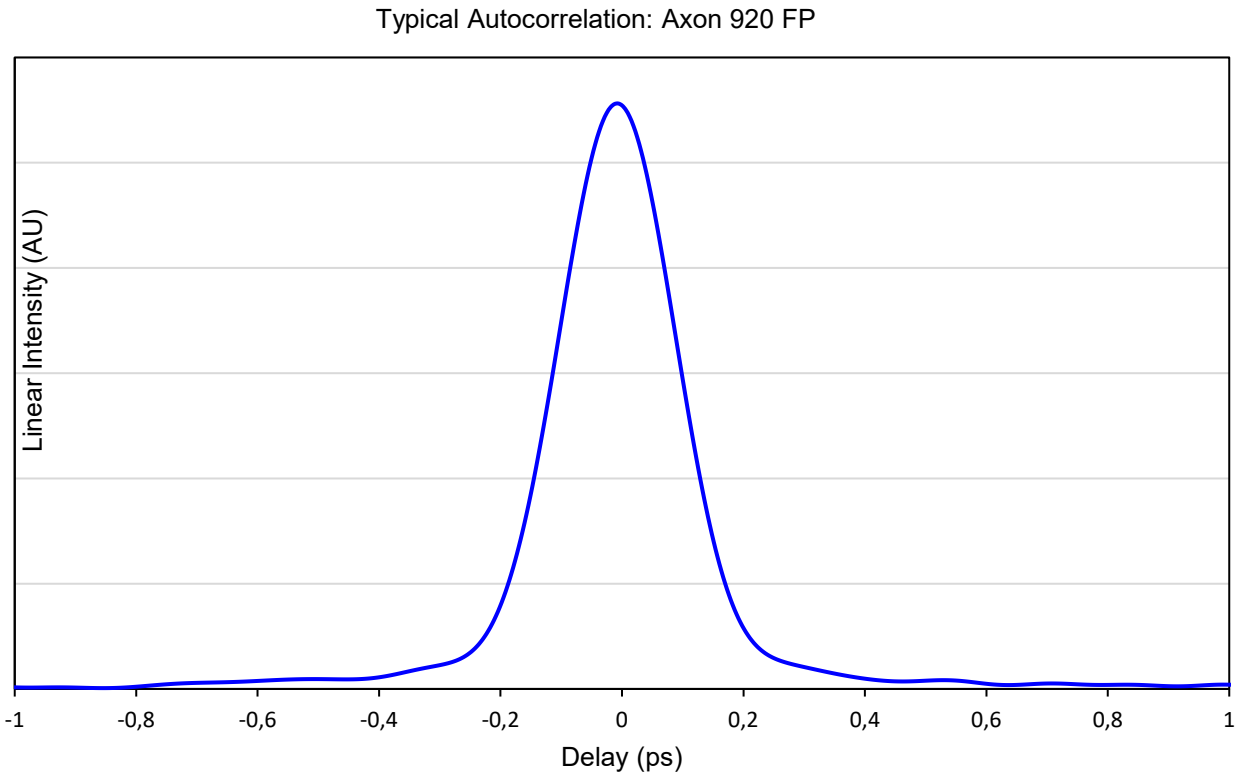
Specifications	Axon 920 FP	Axon 1064 FP
Central Wavelengths ¹ (nm)	920	1064
Average Output Power (mW)	> 1000	
Pulse Repetition Rate (MHz)	80 ± 1 (MHz)	
Pulse Duration ² (fs)	<150	
Beam Mode	M2 < 1.3	
Beam Asymmetry ^{3,4}	0.8 to 1.2	
Beam Diameter ⁴ (mm)	2 ± 0.2	
Astigmatism (%)	< 25	
Polarization (Linearly polarized)	100:1	
Power Stability ⁵ (%)	± 2	
Dispersion Precompensation ⁶ (fs ²)	0 to -50,000	
Modulation Rise/Fall time ⁷ (ns)	< 500	
Contrast Ratio ⁸	> 100000:1	
Mechanical and Environmental Specifications		
Laser Dimensions (m)	0.27 x 0.45 x 0.43 (H x W x D)	
Laser Mass (kg)	27.5	
Fiber Length (m)	3 ± 0.3	
Output Collimator Length (m)	0.1	
Output Collimator Weight (kg)	0.1	
Fiber Output Connector	See drawing	
Fiber Cable Type	Stainless steel reinforced	
Operating Temperature	18 to 28°C (65 to 82 °F)	
Ambient Temperature During Storage	0 to 40°C	
Operating Relative Humidity	<85% RH, non-condensing with dew point<20°C	
Altitude (m)	< 2000	
Electrical and Control Requirements		
Power Requirements	100/240 VAC (50/60 Hz), <500 VA	
Control Interface	RS-232 or USB	
Sync Output	BNC, 50% duty cycle, 3.5 V into 50 Ω	
Analog Power Control (V) (optional)	0 to 5	

Notes:

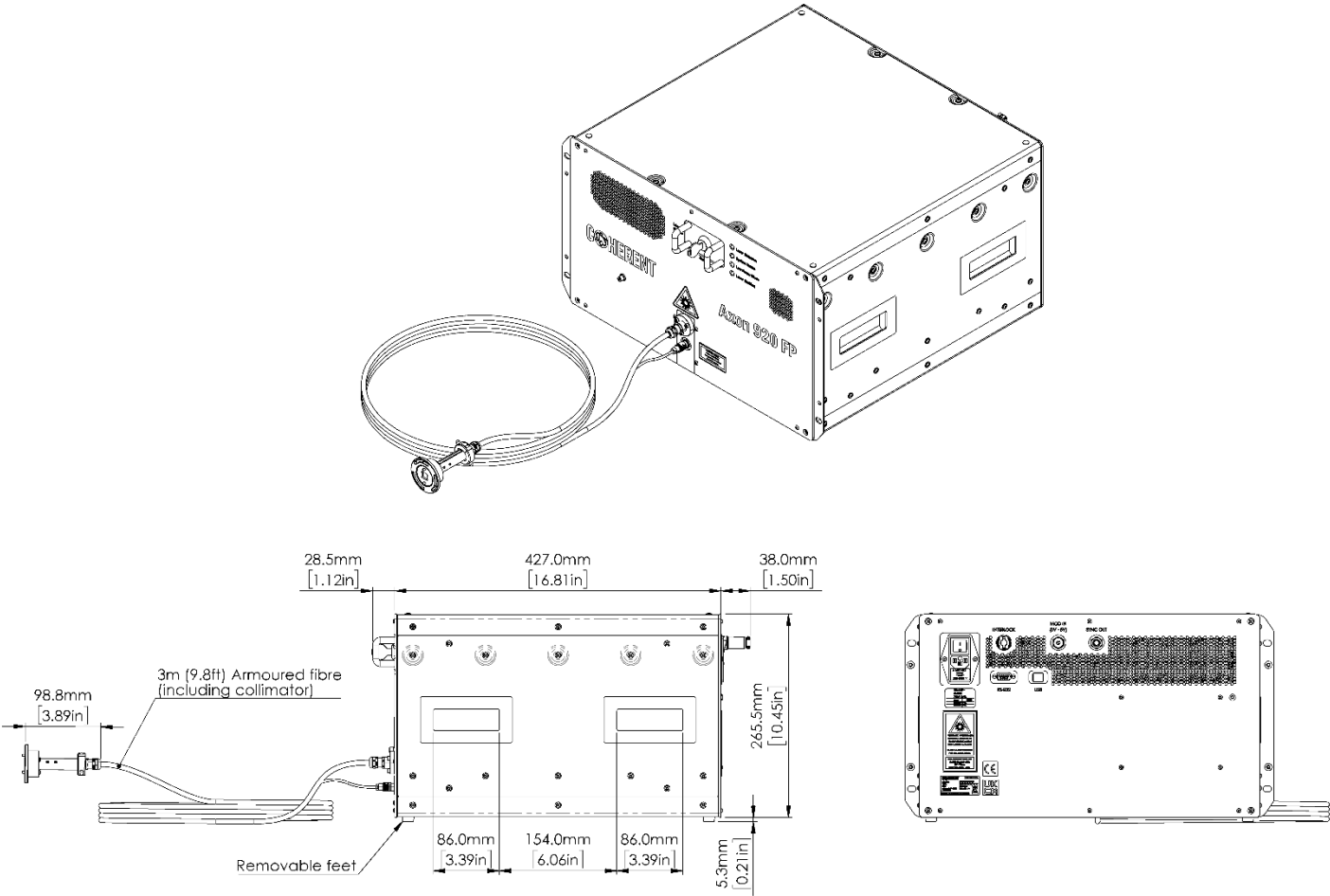
1. Center of mass, ±3 nm.
2. Assumes sech² deconvolution factor.
3. Ratio of waist sizes.
4. Measured at beam waist locations.
5. Over 2 hours, environmental stability ±1°C, after warm-up.
6. Adjustable via externally accessible fine adjust. Higher values on request.
7. 5% to 95% power level.
8. Measured at maximum power.

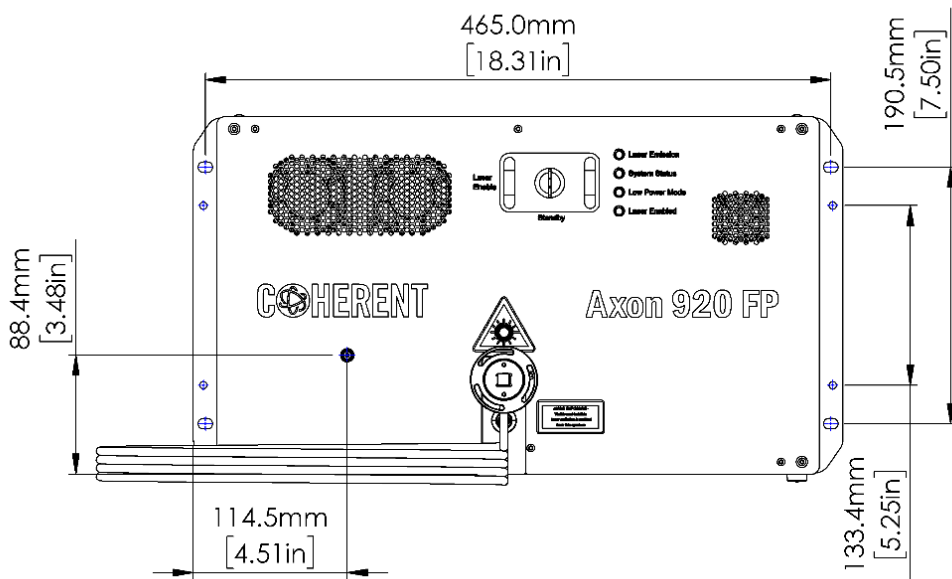
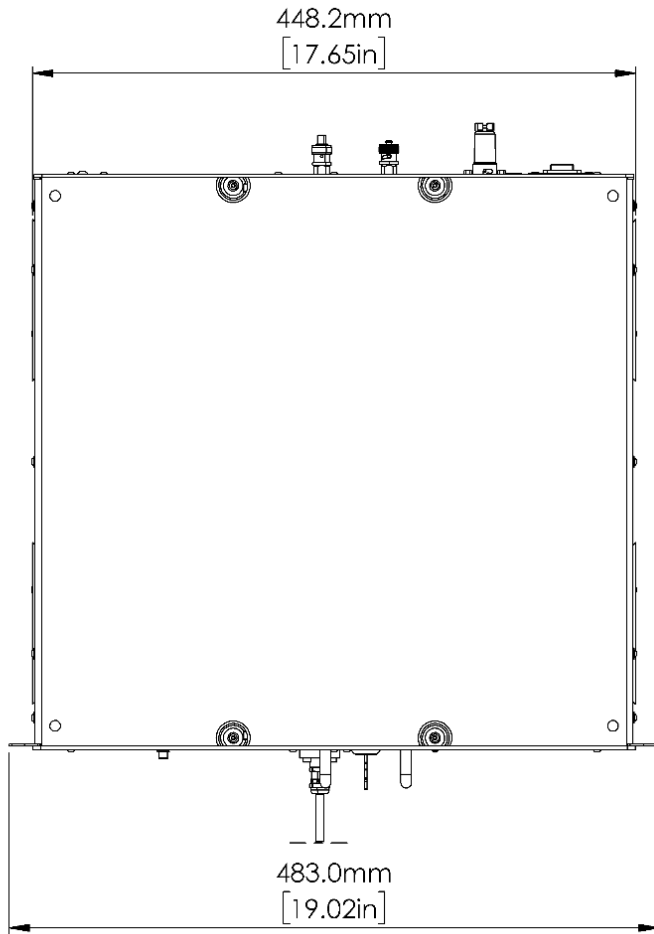
Typical Performance Data

Temporal Pulse Profile

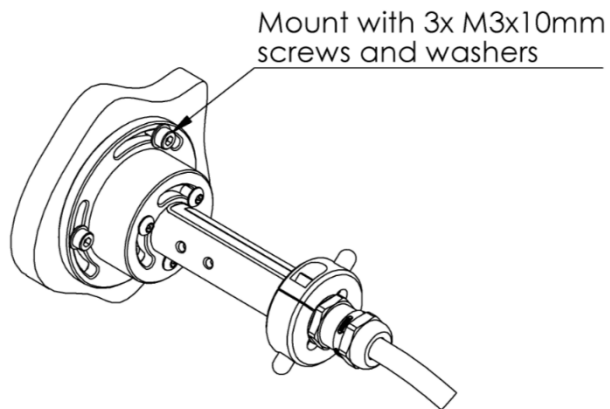
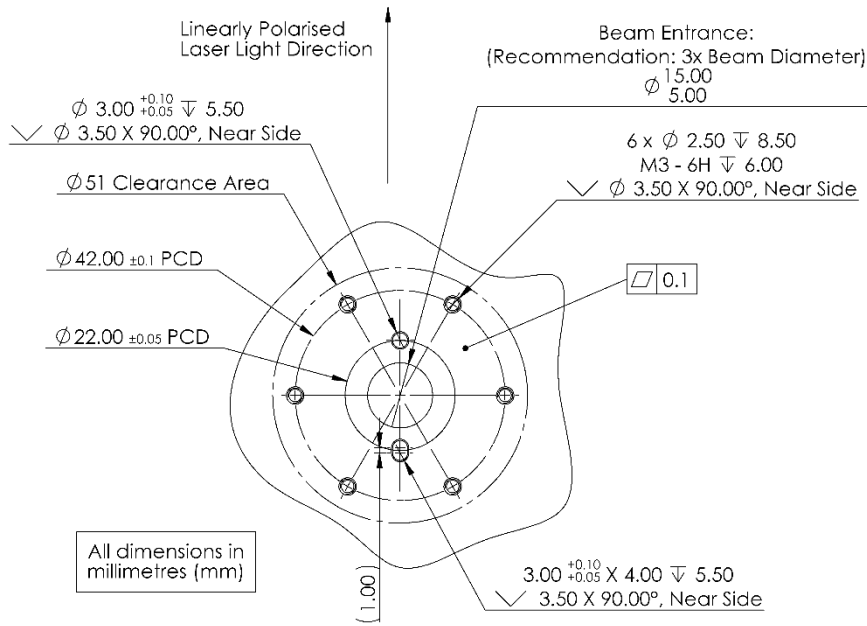


Mechanical Specifications

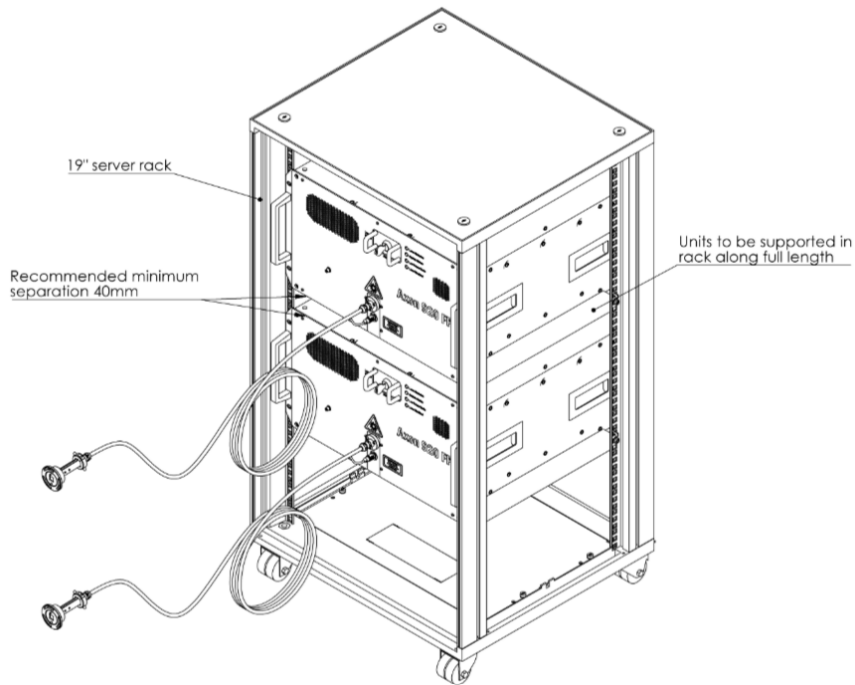




Collimator Mating Surface



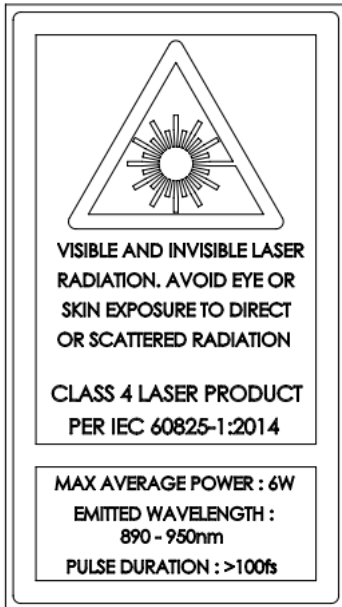
Rack Mounting Illustration



Rack not included with Axon FP

Safety Labels

Axon 920 FP



Axon 1064 FP

