

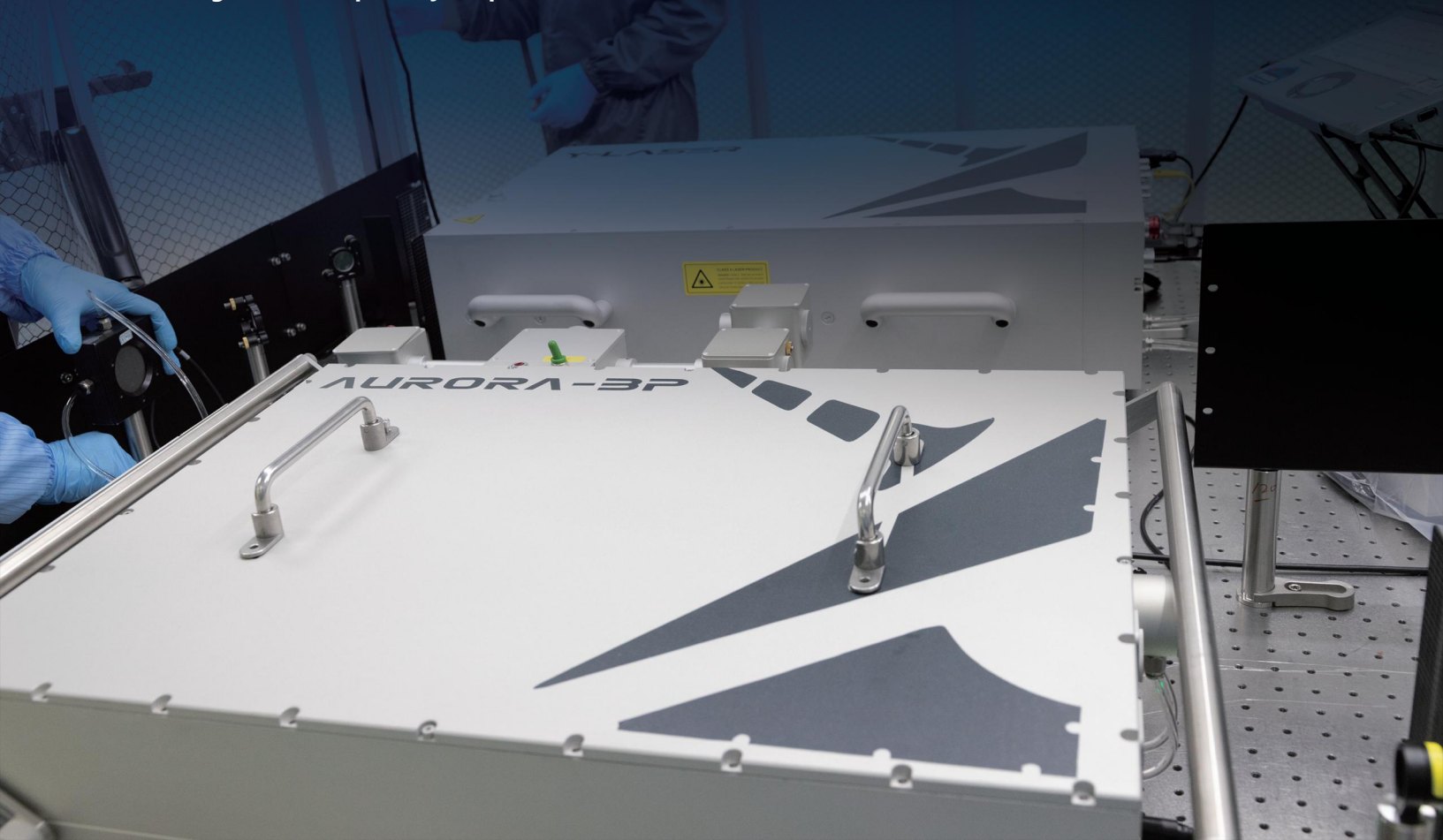
AURORA-3P

Three-photon Imaging Light

AURORA-3P is a broadband tunable ultrafast laser source specifically developed for three-photon (3P) imaging research. With a stable optical and mechanical design, AURORA-3P offers outstanding performance parameters. Its narrow pulse width and high repetition rate perfectly meet the laser peak power requirements for the three-photon excitation process. The system provides a wide wavelength tuning range, including the 1300nm and 1700nm wavelengths required for three-photon imaging, making it an ideal light source for ultrafast three-photon imaging, enabling higher-quality fluorescence labeling signals.

Product Features:

- Tuning range from 1250 nm to 1800 nm
- Efficiency optimized for 1300 nm/1700 nm
- Up to 1 MHz repetition rate
- Output pulse width as short as 60 fs
- Electromechanical design
- Integrated Group Delay Dispersion (GDD) automatic control



Ultrafast Three-Photon Imaging Excitation Source

Application Areas

- Optogenetics
- Nonlinear Spectroscopy
- Optical Coherence Tomography (OCT)
- Terahertz Imaging
- Multiphoton microscopy
- Two-photon excited fluorescence (TPEF)
- Coherent anti-Stokes Raman spectroscopy (CARS)
- Stimulated Raman spectroscopy (SRS)



Parameter Specifications

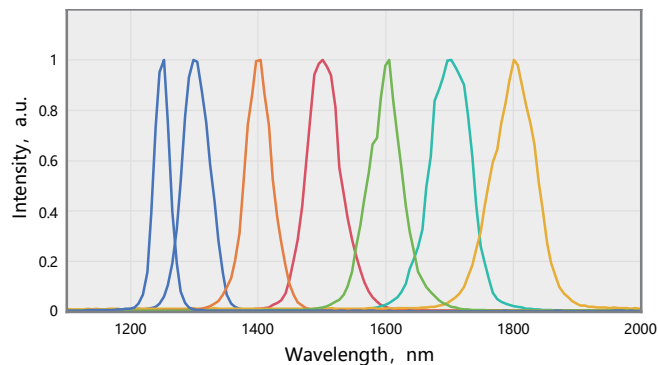
Parameter	AURORA-3P	
Tuning range	1250 – 1800 nm	
Typical output wavelength	1300 nm 和 1700 nm (switchable output)	
	1300nm	1700nm
Pulse duration(FWHM)	<60 fs@1300 nm	<70 fs @1700 nm
Repetition rate ¹⁾	Single pulse-1MHz	
Dispersion compensation ²⁾	-4000~ +9000 fs ² @1300nm	-12000~ +2900 fs ² @1700nm
Output power ³⁾	1000mW@1 MHz	600mW@1 MHz
Beam quality M ²	< 1.3	
Beam diameter ⁴⁾	2-4mm	
Beam divergence angle	<1mrad	
Beam ellipticity	>0.8	
Pulse energy stability	<0.5% RMS @24h	
Pulse power stability	<1% RMS @24h	
Dimensions (L×W×H)	812 x 545 x 240mm (LxWxH)	
Weight (kg)	83kg	
Remaining weight (kg)	24kg (Water-cooled machine)	
Power supply requirements	500W	
Power supply requirements for the water-cooled machine	Water cooler 1, 1260W; Water cooler 2, 1020W; Total, 2780W	

备注:

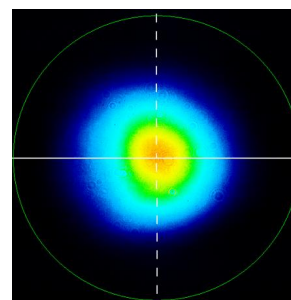
- (1) Lower repetition rates and higher pulse energies available.
 (2) Continuous dispersion control; - 3000 fs² with +3000 fs² compensation microscope.
 (3) Pump laser: 50W/50uJ/1030nm, supports higher power customization, please contact us for details.
 (4) 1/e², compressed output measurement.
 (5) Optional 650-900nm output expansion, please contact us for details.

AURORA-3P Three-Photon Imaging Excitation Source

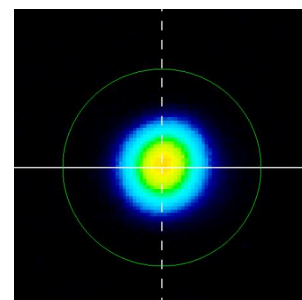
Ultrafast Three-Photon Imaging Excitation Source



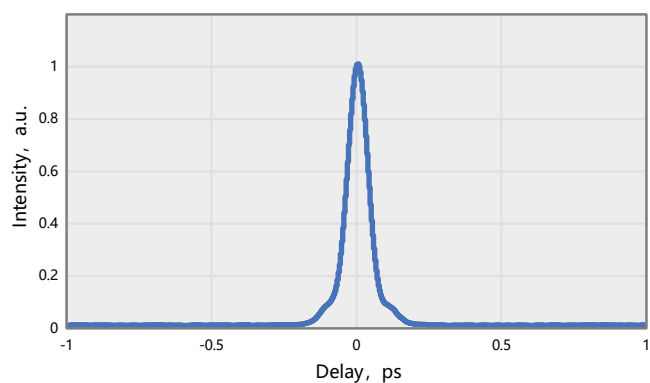
Typical pulse duration of AURORA-3P(1250-1700nm)



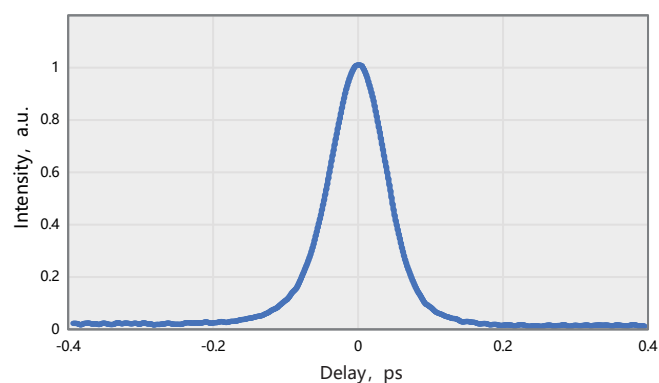
Near-field beam profile



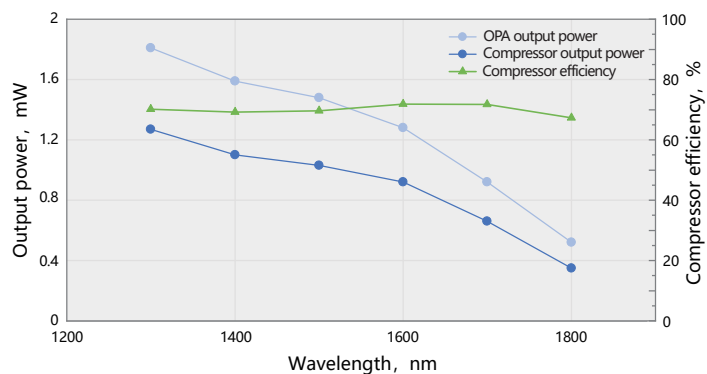
Far-field beam profile



Typical spectrum of AURORA-3P(1300nm@55.4fs)

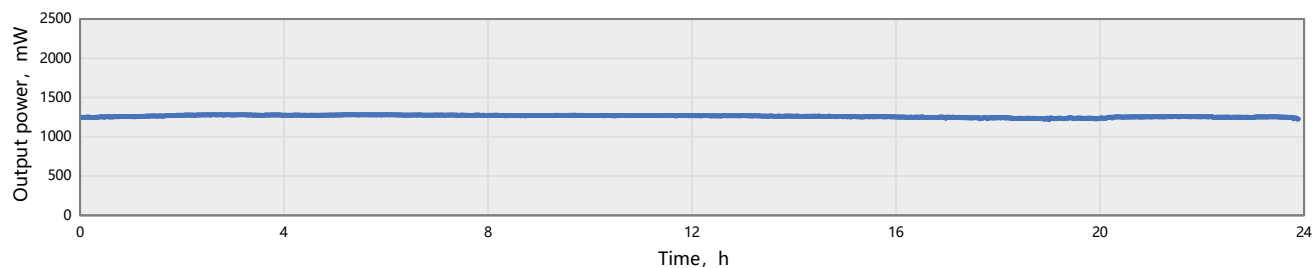


Typical spectrum of AURORA-3P(1700nm@60.5fs)



Three-photon system + Compressor output power comparison
Driving laser: 1MHz/40uJ/301fs@HELIOS-40W

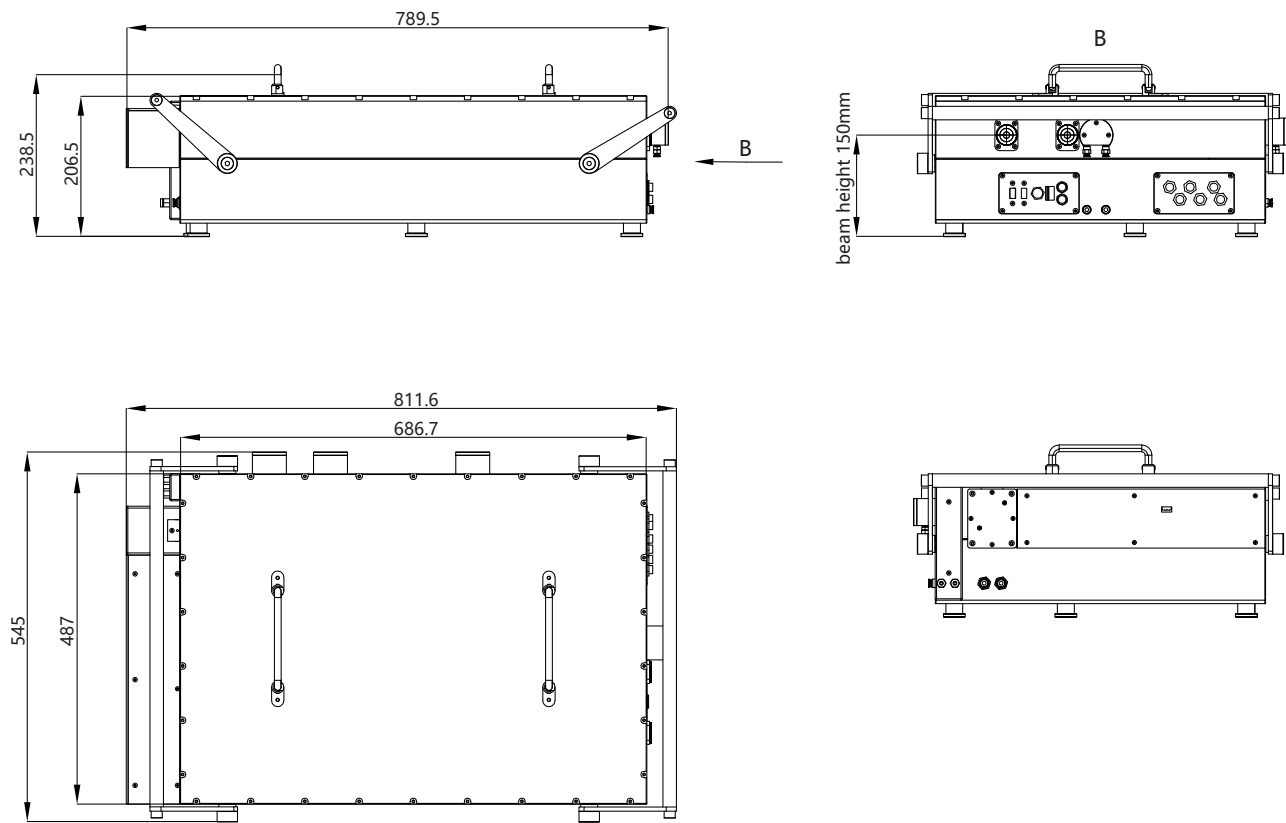
Stability Measurement



24-hour power stability of AURORA-3P

Ultrafast Three-Photon Imaging Excitation Source

Drawings



AURORA-3P outline drawing