

AURORA-H

Ultrashort Pulse Femtosecond Optical Parametric Amplifier



Optimal combination of collinear and non-collinear OPA

Ultrashort pulses in the near-infrared spectrum (650 - 900nm and 1200 - 2500nm)

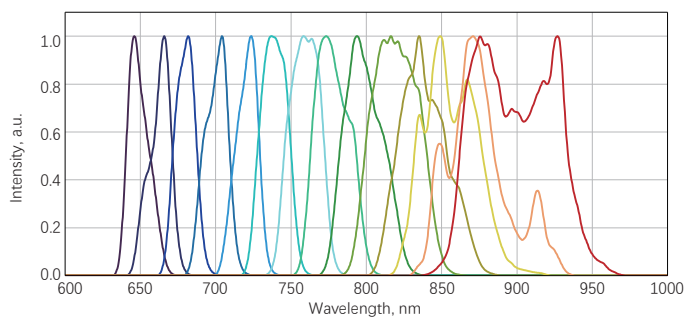
Supports one-click precise tuning

Single shot to 1MHz repetition rate

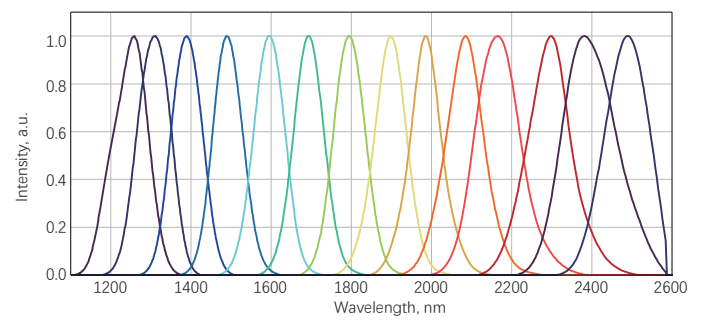
Pulse duration < 100fs

Tunable spectral bandwidth

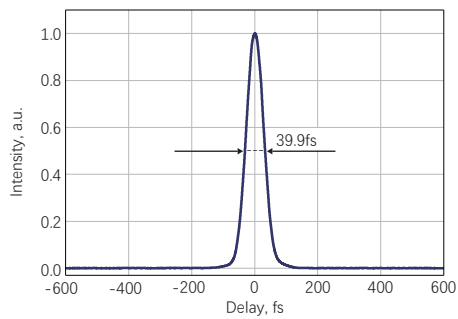
AURORA-H-HE Signal Tuning Spectrum



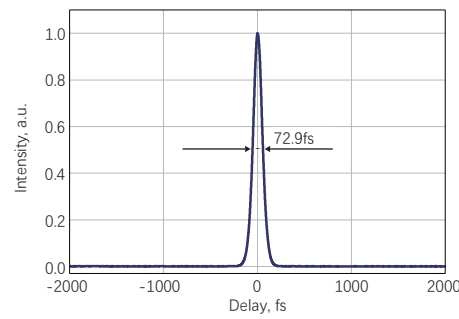
AURORA-H-HE Idler Tuning Spectrum



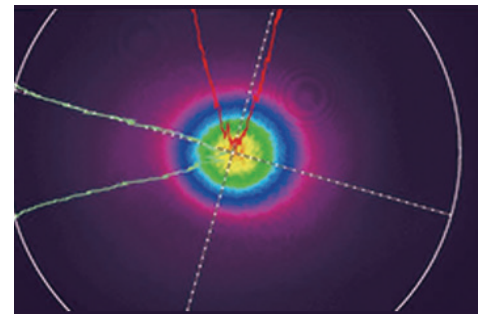
AURORA-H-HE Typical Pulse Width@800nm



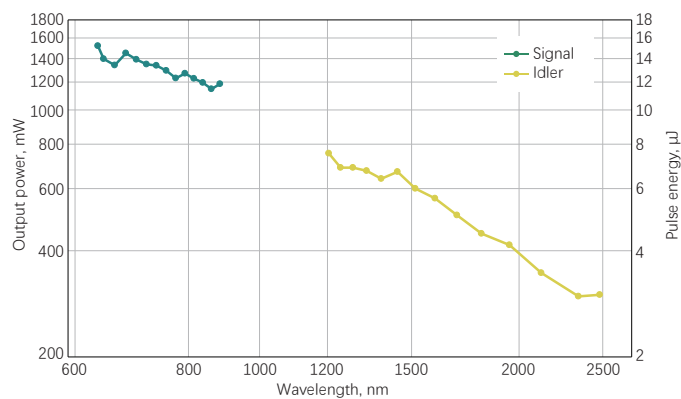
AURORA-H-HE Typical Pulse Width@1500nm



AURORA-H-HE Typical Output Beam Profile

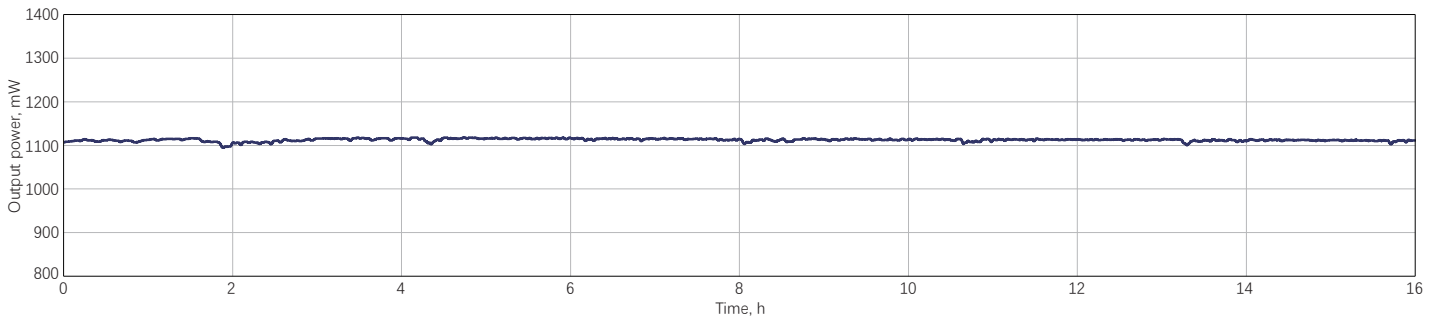


AURORA-H-HE Typical Power Tuning Curve



AURORA-H-HE

Power Stability: RMS=0.3019%@16h-100kHz/11.13μJ



Specifications

Parameter	AURORA-H-HP	AURORA-H-HE
Tuning range	650 – 900nm (Signal) 1200 – 2500nm (Idler)	
Maximum pump power	80 W	
Maximum pump energy	10 - 200μJ	200 - 2000μJ
Peak conversion efficiency ¹⁾	> 7% (Signal) > 3.5% (Idler)	
Second harmonic Generation (515nm) conversion efficiency ²⁾	> 35%	
Typical pulse duration before compression	120 - 250 fs	
Spectral bandwidth	200 - 750cm ⁻¹ @ 650 - 900nm	
Pulse duration after compressor	< 55fs @ 800 - 900nm < 70fs @ 650 - 800nm < 100fs @ 1200 - 2000nm	
Compressor transmission	> 65% @ 650 - 900nm > 80% @ 1200 - 2000nm	
Long-term power stability	< 2% @ 800nm	
Pulse-to-pulse energy stability	< 2% @ 800nm	
Dimensions	800 × 330 × 254mm (L×W×H)	
Weight	57kg	
Optional Compressor Dimensions	324 × 165 × 214mm (ICMP) / 650 × 135 × 250mm (SCMP)	
Remaining weight	32kg (Compressor) +24kg (Water-cooled machine) +17kg (frequency doubling)	
Power supply requirements	AC 220V/10A; 24V DC power supply, motor drive power supply, total power ≤ 150W	
Power supply requirements for the water-cooled machine	CWUP-10AI; operating voltage 220V; operating current 0.6-5.6A; rated power 1.02kW; cooling capacity 0.75kW	

- 1) Specified as a percentage of the pump power before compression.
- 2) Measured at the designated output port; not synchronized with the OPA output.
- 3) Normalized Root Mean Square Deviation (NRMSD) of the average pulse energy.

Drawings

