

Continuously Tunable Femtosecond Optical Parametric Amplifier



210nm - 16 μ m tuning range

Compatible with pump energy up to 2mJ

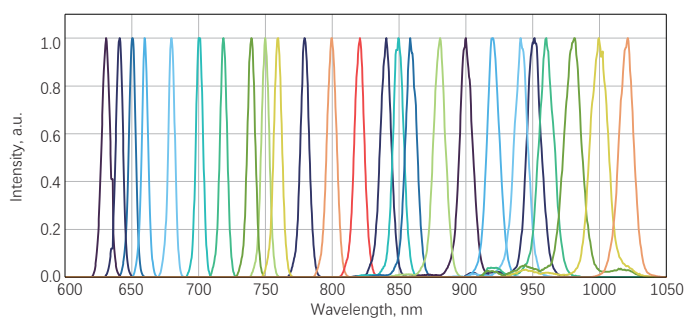
Conversion efficiency up to >13.5%

High output stability

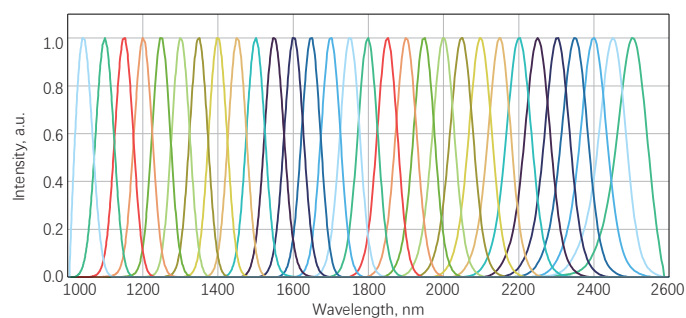
CEP-stable option

Mechatronic design

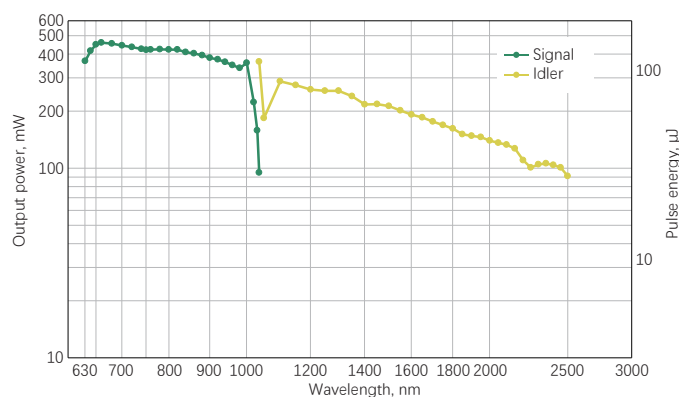
AURORA-HE Signal Tuning Spectrum



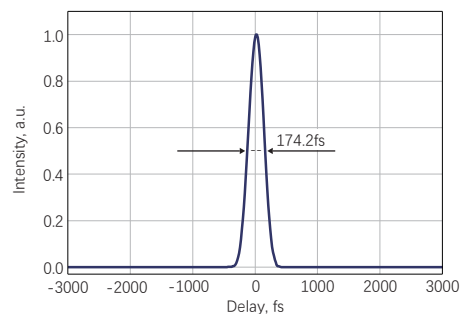
AURORA-HE Idler Tuning Spectrum



AURORA-HE Typical Power Tuning Curve (1.5mJ, 5W@3.3kHz)

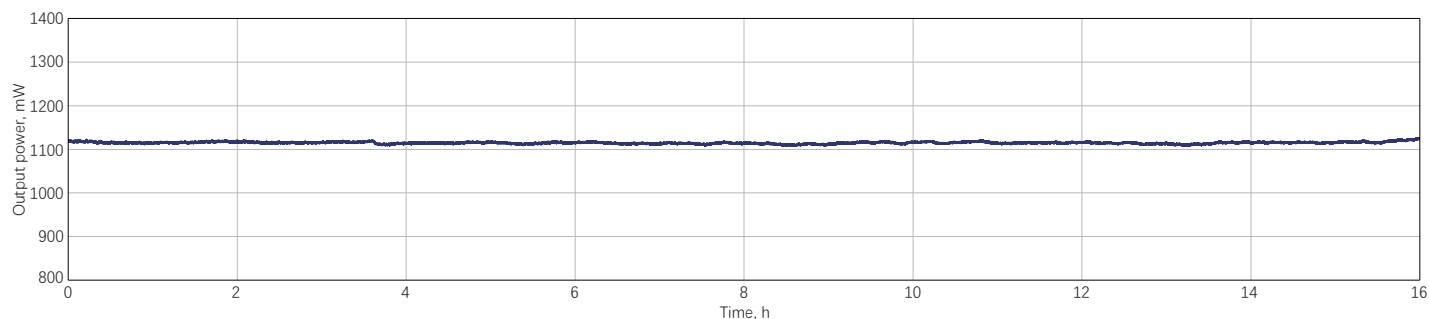


AURORA-HE Typical Pulse Width



AURORA-HE

Power Stability: RMS=0.3129%@16h-50kHz/22.3 μ J@HELIOS-20W-HE



Specifications

Parameter	AURORA-HP		AURORA-HE
Tuning range	630 – 1036nm (Signal) 1036 – 2600nm (Idler)		
Maximum pump power	80W		
Pump pulse energy	10 - 20μJ	20 - 200μJ	200 - 2000μJ
Peak conversion efficiency	> 4.5% (Signal) > 2% (Idler)	> 7% (Signal) > 3.5% (Idler)	> 9% (Signal) > 4% (Idler)
Pulse duration	120 - 400fs		
Spectral bandwidth	60 - 220cm ⁻¹		
Long-term power stability (8h) ¹⁾	< 2% RMS @ 750nm		
Pulse-to-pulse energy stability (1min) ¹⁾	< 2% RMS @ 750nm		
Polarization	Linear polarization		
Dimensions	800 × 330 × 254mm (L×W×H)		
Weight	57kg		

Expansion Options

Pump pulse energy	10 - 20μJ	20 - 200μJ	200 - 2000μJ
315 - 630nm (SHG)	> 1% @ 350nm	> 2% @ 350nm	
210 - 315nm (THG)	> 0.4% @ 250nm	> 0.4% @ 250nm	
2200 - 4200nm (DFG1)	> 1.5% @ 3000nm	> 3% @ 3000nm	
4000 - 16000nm (DFG2)	> 0.1% @ 10000nm	> 0.2% @ 10000nm	
Remaining weight	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) Normalized Root Mean Square Deviation (NRMSD) of average pulse energy.

Drawings

AURORA Outline Drawing

