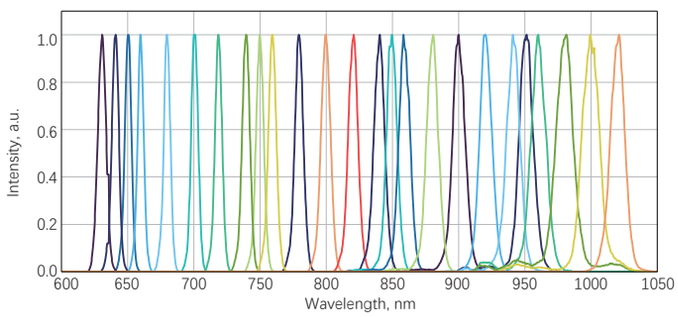
AURORA

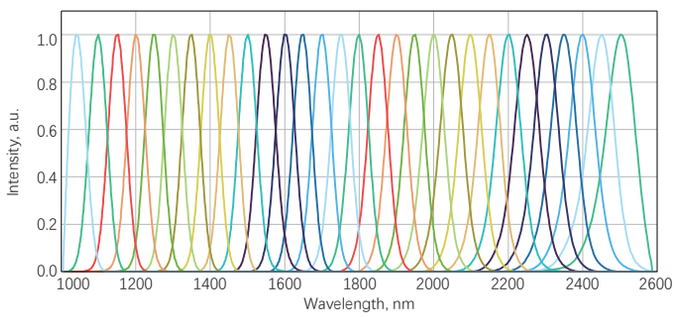
Continuously Tunable Femtosecond Optical Parametric Amplifier

- 210nm - 16μm tuning range
- Compatible with pump energy up to 2mJ
- Conversion efficiency up to >13.5%
- High output stability
- CEP-stable option
- Mechatronic design

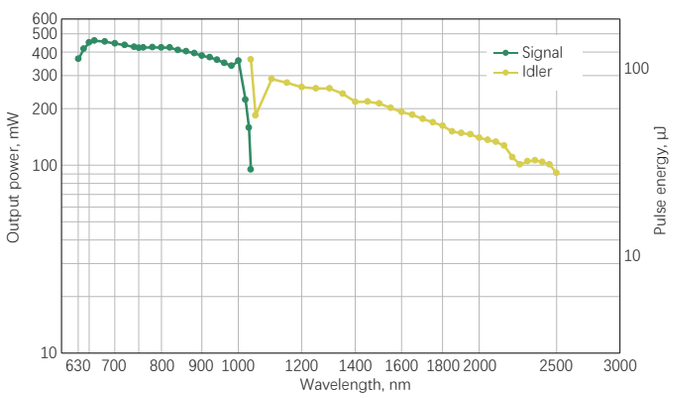
AURORA-HE Signal Tuning Spectrum



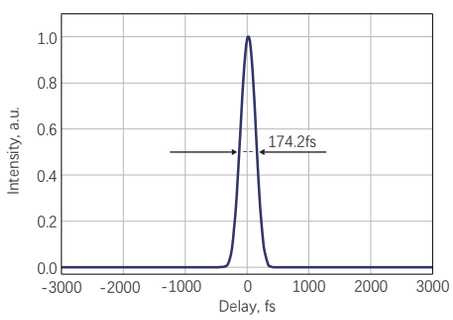
AURORA-HE Idler Tuning Spectrum



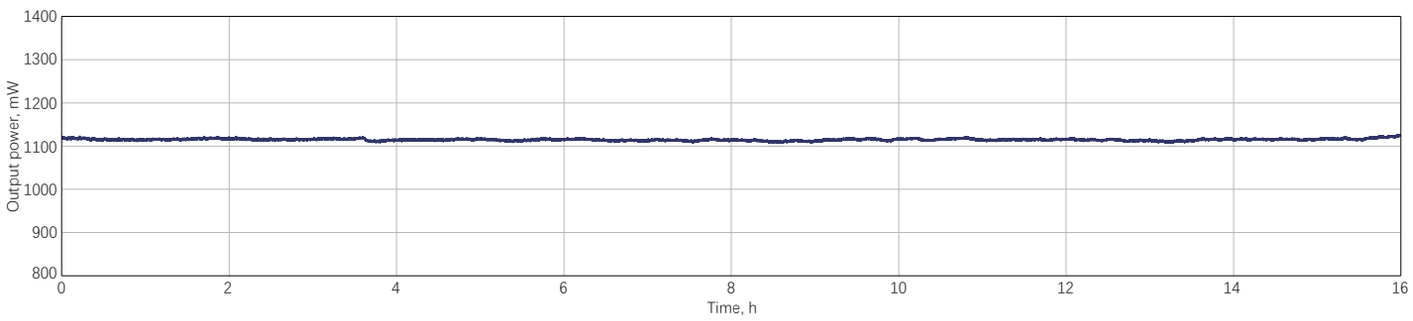
AURORA-HE Typical Power Tuning Curve（1.5mJ, 5W@3.3kHz）



AURORA-HE Typical Pulse Width



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



Specifications

Parameter	AURORA-HP		AURORA-HE
Tuning range	630 – 1036nm（Signal） 1036 – 2600nm（Idler）		
Maximμm pμmp power	80W		
Pμmp 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

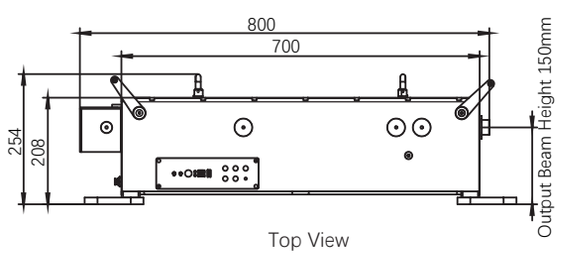
Pμmp pulse energy	10 - 20μJ	20 - 200μJ	200 - 2000μJ
315 - 630nm（SHG）	> 1% @ 350nm	> 2% @ 350nm	
210 - 315nm（THG）	> 0.4% @ 250nm	> 0.4% @ 250nm	
2200 - 4200nm（DFG1）	> 1.5% @ 3000nm	> 3% @ 3000nm	
4000 - 16000nm（DFG2）	> 0.1% @ 10000nm	> 0.2% @ 10000nm	
Remaining weight	24kg（Water-cooled machine）+17kg（frequency 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.

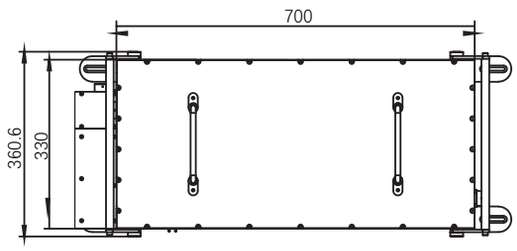
Drawings

AURORA Outline Drawing

Front View



Top View



Side View