

# AURORA-IR

## Long-Wave Mid-Infrared Optical Parametric Amplifier



Covers a broad spectral range from near-infrared to long-wave infrared

Available in high-energy and high-power models

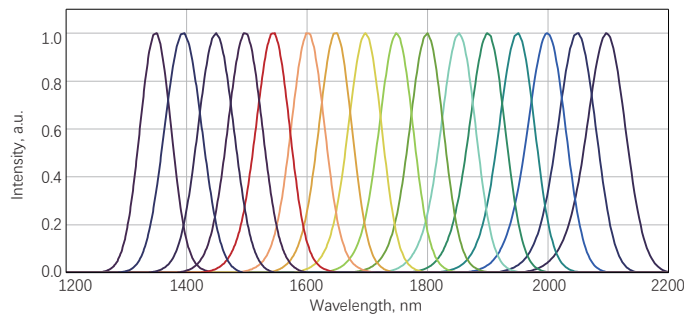
Supports pump power up to 80W

Features single-shot to 2MHz repetition rate

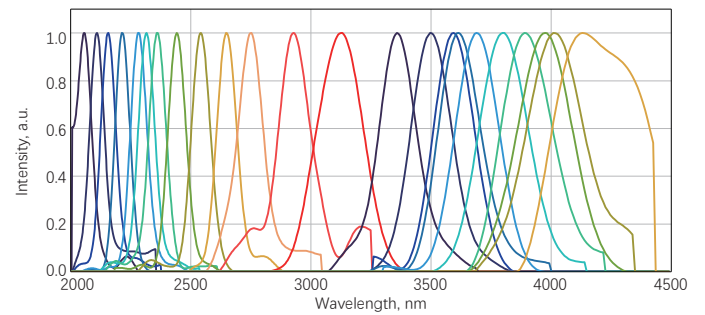
Achieves pump pulse energy up to 2mJ

Wavelength tuning range: 1400 - 6000nm

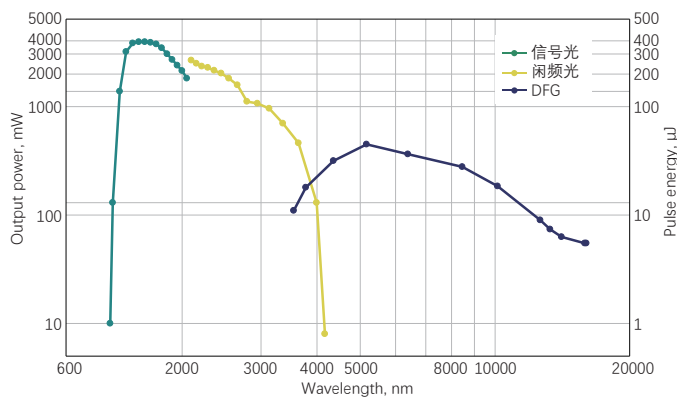
AURORA-IR-HE Signal Tuning Spectrum



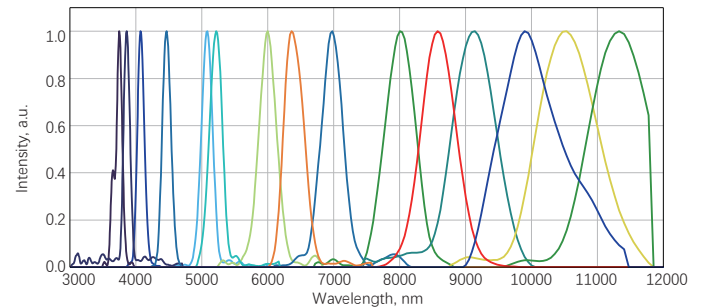
AURORA-IR-HE Idler Tuning Spectrum



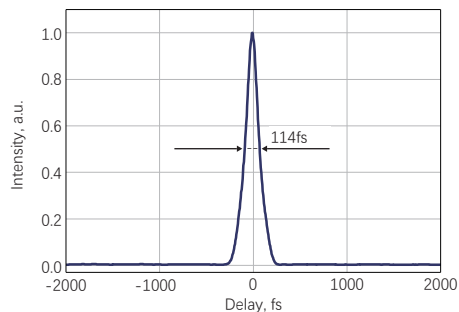
AURORA-IR-HE Typical Power Tuning Curve



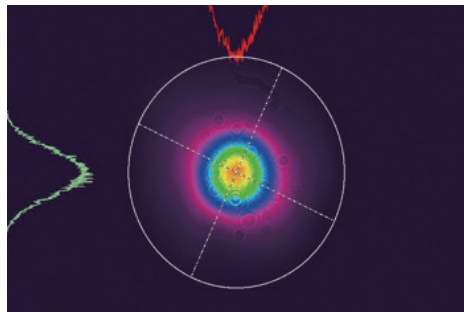
AURORA-IR-HE DFG Tuning Spectrum



AURORA-IR-HE Typical Pulse Width

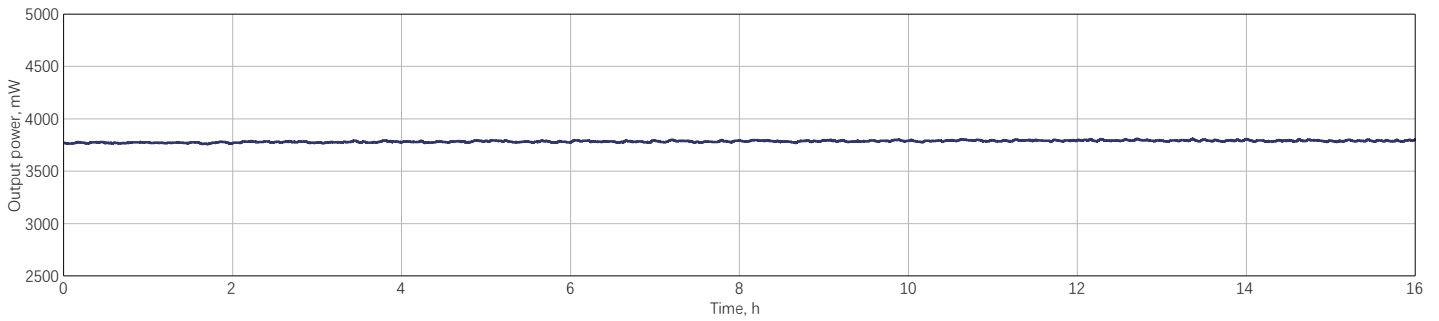


AURORA-IR-HE Typical Output Beam Profile



## AURORA-IR-HE

Power Stability: RMS=0.2672%@16h-10kHz/378.5μJ



## Specifications

Parameter	AURORA-IR-HP	AURORA-IR-HE
Tuning range	1400 – 2000 nm (Signal) 2100 – 4200 nm (Idler)	
Maximum pump power	80W	
Pump pulse energy	12 – 400 μJ	400 – 2000 μJ
Conversion efficiency <sup>1)</sup> @1550nm	> 9%, 30 - 2000μJ pump energy > 6%, 12 - 30μJ pump energy	
Spectral bandwidth	50 - 150cm <sup>-1</sup> @ 1450 - 2000nm	
Long-term power stability (8h) <sup>2)</sup>	< 2% @ 1550nm	
Pulse-to-pulse energy stability (1min) <sup>2)</sup>	< 2% @ 1550nm	
Dimensions	800 × 395 × 254mm (L×W×H)	
Weight	52kg	

## Expansion Options

Tuning Range	4000 - 16000nm (DFG)
Conversion Efficiency <sup>1)</sup>	> 0.3% @ 10000nm, 30 - 2000μJ pump energy > 0.2% @ 10000nm, 12 - 30μJ pump energy
Output Pulse Bandwidth	50 - 120cm <sup>-1</sup> @ 5000 - 8000nm
Remaining weight (kg)	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.

2) Expressed as NRMSD (Normalized Root Mean Square Deviation).

## Drawings

### AURORA-IR Outline Drawing

