

High-Energy Optical Parametric Amplifiers

NEW

Up to 5 mJ pump pulse energy

Continuous tunability from
UV to MIR, 210 – 16 000 nm

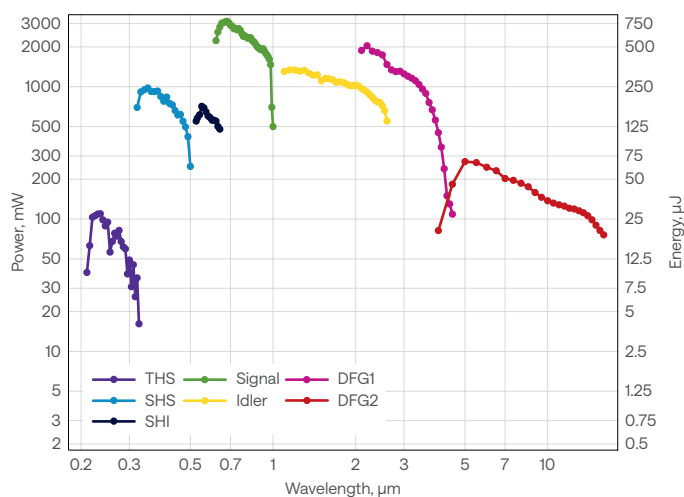
Up to 80 W pump power

Single-shot – 200 kHz repetition rate

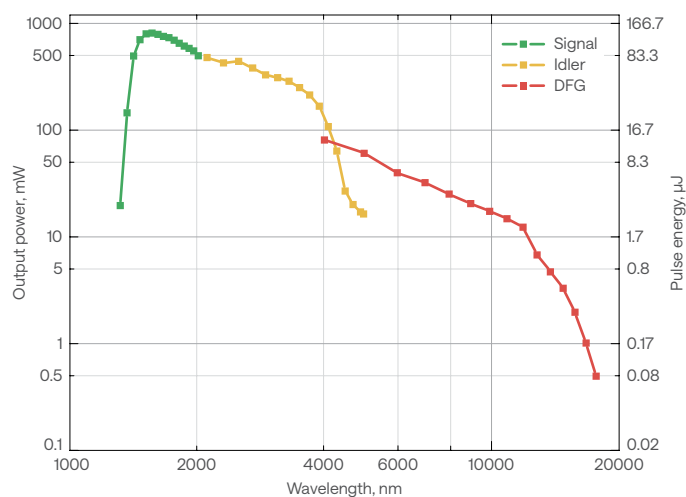


ORPHEUS-HE-5mJ

ORPHEUS-HE-5mJ typical tuning curves
Pump: 20 W, 5 mJ, 4 kHz



ORPHEUS-ONE-HE typical tuning curves
Pump: 6 W, 1 mJ, 6 kHz



Optics Toolbox



Specifications

Model	ORPHEUS-HE	ORPHEUS-HE-5mJ ¹⁾	ORPHEUS-ONE-HE	ORPHEUS-ONE-HE-5mJ ¹⁾
Pump pulse energy ²⁾	0.4 – 2 mJ	2 – 5 mJ	0.4 – 2 mJ	2 – 5 mJ
Pump power	Up to 80 W			
Tuning range	630 – 1030 nm (signal) 1030 – 2600 nm (idler)	630 – 1000 nm (signal) 1050 – 2600 nm (idler)	1400 – 2000 nm (signal) 2100 – 4200 nm (idler)	1400 – 2000 nm (signal) 2100 – 4500 nm (idler)
Conversion efficiency	> 8% @ 700 nm		> 9% @ 1550 nm	
Spectral bandwidth	60 – 220 cm ⁻¹ @ 700 – 960 nm		50 – 150 cm ⁻¹ @ 1450 – 2000 nm	
Pulse duration	120 – 400 fs		100 – 400 fs	
Long-term power stability, 8 h ³⁾	< 2% @ 800 nm	< 1% @ 800 nm	< 2% @ 1550 nm	< 1% @ 1550 nm
Pulse-to-pulse energy stability, 1 min ³⁾	< 2% @ 800 nm	< 1% @ 800 nm	< 2% @ 1550 nm	< 1% @ 1550 nm

WAVELENGTH EXTENSIONS

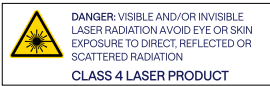
THS	210 – 315 nm: > 0.8% @ 250 nm ⁴⁾	210 – 320 nm: > 0.4% @ 250 nm ⁴⁾	n/a
SHS, SHI	315 – 630 nm: > 2.4% @ 350 nm	320 – 500 nm, 525 – 640 nm: > 2.4% @ 350 nm	n/a
DFG	2200 – 4200 nm: > 3% @ 3000 nm	2500 – 4200 nm: > 3% @ 3000 nm	4000 – 16 000 nm: > 0.3% @ 10 000 nm
	4000 – 16 000 nm: > 0.2% @ 10 000 nm	4000 – 16 000 nm: > 0.2% @ 10 000 nm	

PUMP LASER, ENVIRONMENTAL & UTILITY REQUIREMENTS

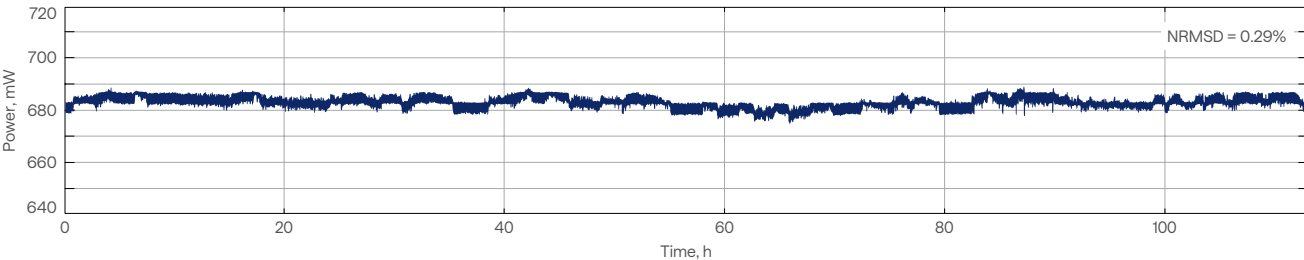
Refer to lightcon.com

¹⁾ Applicable only for PHAROS-5mJ.
²⁾ For lower pump pulse energy, refer to I-OPA, ORPHEUS, or ORPHEUS-NEO platforms.

³⁾ Expressed as normalized root mean squared deviation (NRMSD).
⁴⁾ Maximum output power of 400 mW.



ORPHEUS-HE-5mJ
Long-term power stability at 400 nm



Drawings

ORPHEUS-HE-5mJ / -ONE-HE-5mJ

