

Non-Collinear Optical Parametric Amplifiers

Pulse duration down to < 30 fs

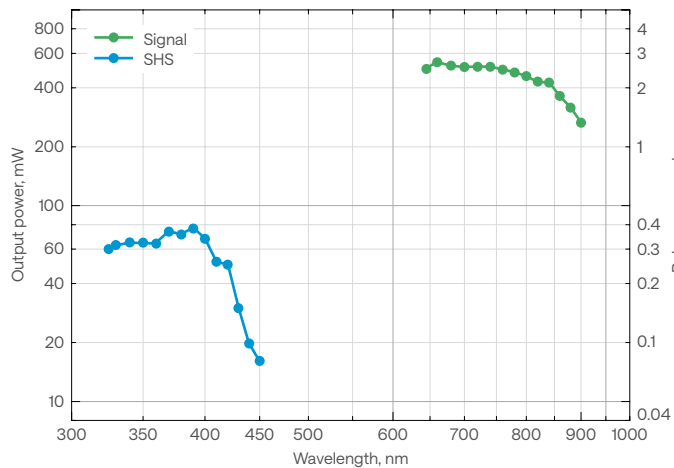
Integrated prism compressor

Adjustable spectral bandwidth and pulse duration

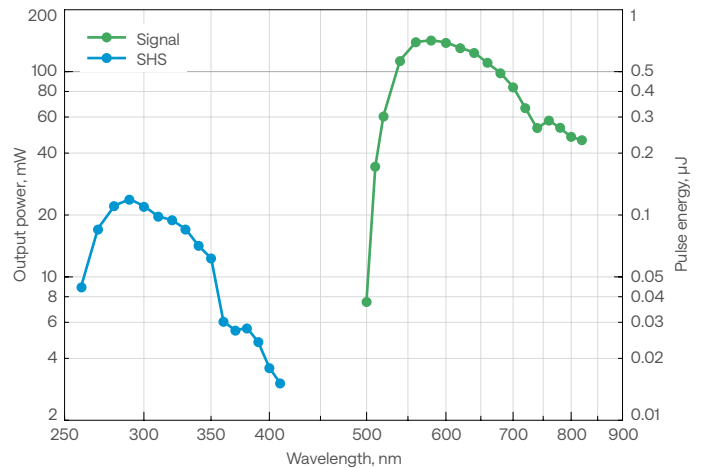
Wavelength feedback with an internal spectrometer



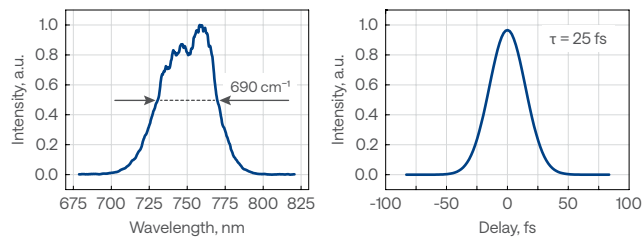
ORPHEUS-N-2H typical tuning curves
Pump: 6 W, 30 μ J, 200 kHz



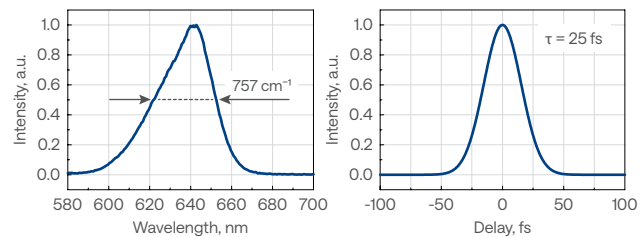
ORPHEUS-N-3H typical tuning curves
Pump: 6 W, 30 μ J, 200 kHz



ORPHEUS-N-2H typical output



ORPHEUS-N-3H typical output



Specifications

Model	ORPHEUS-N-2H	ORPHEUS-N-3H
MAIN OUTPUT		
Tuning range	650 – 900 nm (signal)	520 – 900 nm (signal)
Maximum pump power	8 W	
Pump pulse energy	10 – 200 μJ	12 – 200 μJ
Conversion efficiency	> 7% @ 700 nm > 5% @ 800 nm	> 1.3% @ 580 nm > 0.7% @ 700 nm > 0.3% @ 800 nm
Integrated 2H / 3H generation efficiency ¹⁾	> 35% (515 nm)	> 25% (343 nm)
Pulse duration after compressor	< 30 fs @ 700 – 850 nm	< 30 fs @ 540 – 660 nm < 70 fs @ 660 – 800 nm
Long-term power stability, 8 h ²⁾	< 2% @ 800 nm	< 2% @ 580 nm
Pulse-to-pulse energy stability, 1 min ²⁾	< 2% @ 800 nm	< 2% @ 580 nm
WAVELENGTH EXTENSIONS		
Tuning range (SHS)	325 – 450 nm	260 – 450 nm
Conversion efficiency	> 0.7% @ 350 nm	> 0.15% @ 290 nm
PUMP LASER REQUIREMENTS		
Pump laser	CARBIDE or PHAROS	
Center wavelength	1030 ± 10 nm	
Maximum pump power	8 W	
Repetition rate	Single-shot – 800 kHz	Single-shot – 600 kHz
Pump pulse energy	10 – 200 μJ	12 – 200 μJ
Pump pulse duration ³⁾	180 – 500 fs	
ENVIRONMENTAL & UTILITY REQUIREMENTS		
Operating temperature ⁴⁾	19 – 25 °C (air conditioning recommended)	
Relative humidity ⁴⁾	20 – 70% (non-condensing)	
Electrical requirements	100 – 240 V AC, 1.4 A; 50 – 60 Hz	
Rated power	120 W	
Power consumption	Standby: 10 W Max during wavelength tuning: 100 W	
Purging requirements	Nitrogen purge – optional	Nitrogen purge – required, 1 – 3 liters per minute

¹⁾ Not simultaneous to NOPA output.

²⁾ Expressed as normalized root mean squared deviation (NRMSD).

³⁾ Full width at half maximum (FWHM), assuming a Gaussian pulse shape.

⁴⁾ Specifications are guaranteed for a maximum temperature variation of ± 1°C and humidity variation of ± 10%.



DANGER: VISIBLE AND/OR INVISIBLE
LASER RADIATION AVOID EYE OR SKIN
EXPOSURE TO DIRECT, REFLECTED OR
SCATTERED RADIATION
CLASS 4 LASER PRODUCT

Drawings

ORPHEUS-N

