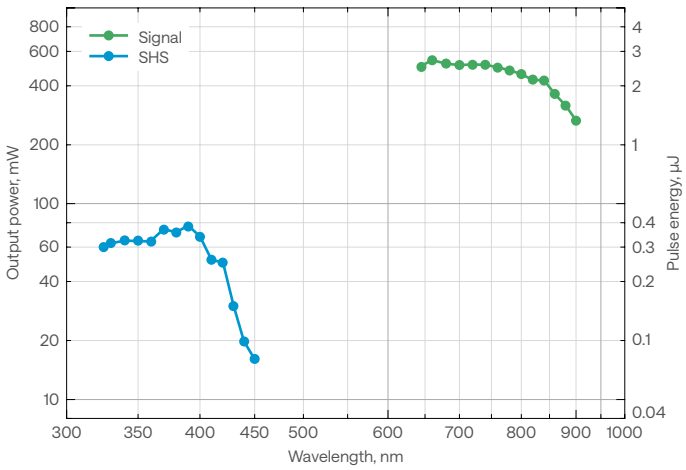
ORPHEUS | N

Photonic Solutions Ltd
Edinburgh
EH14 4AP
+44 131 664 8122
www.photonicsolutions.co.uk

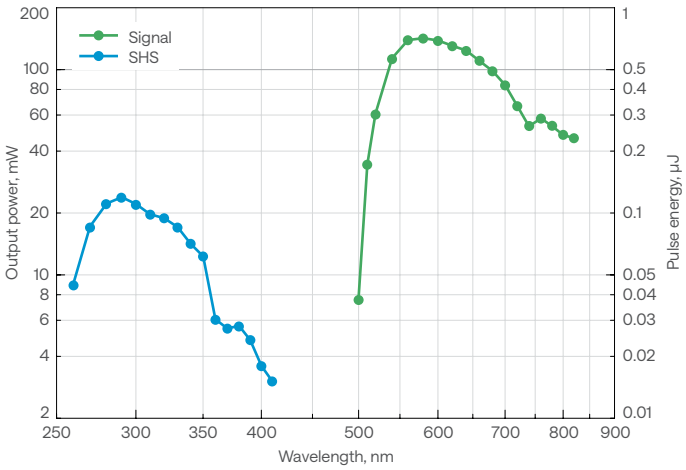
Non-Collinear Optical Parametric Amplifier

- Pulse duration down to < 30 fs
- Integrated prism compressor
- Adjustable spectral bandwidth and pulse duration
- Wavelength feedback with an internal spectrometer

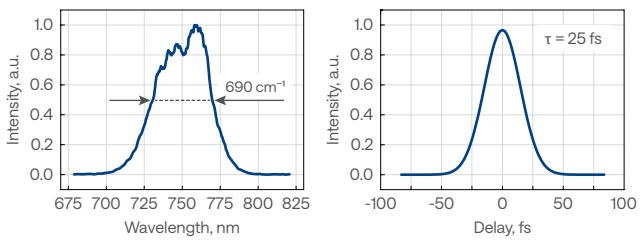
ORPHEUS-N-2H typical tuning curves
Pump: 6 W, 30 µJ, 200 kHz



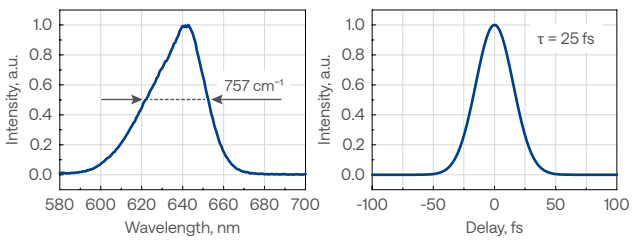
ORPHEUS-N-3H typical tuning curves
Pump: 6 W, 30 µJ, 200 kHz



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.*

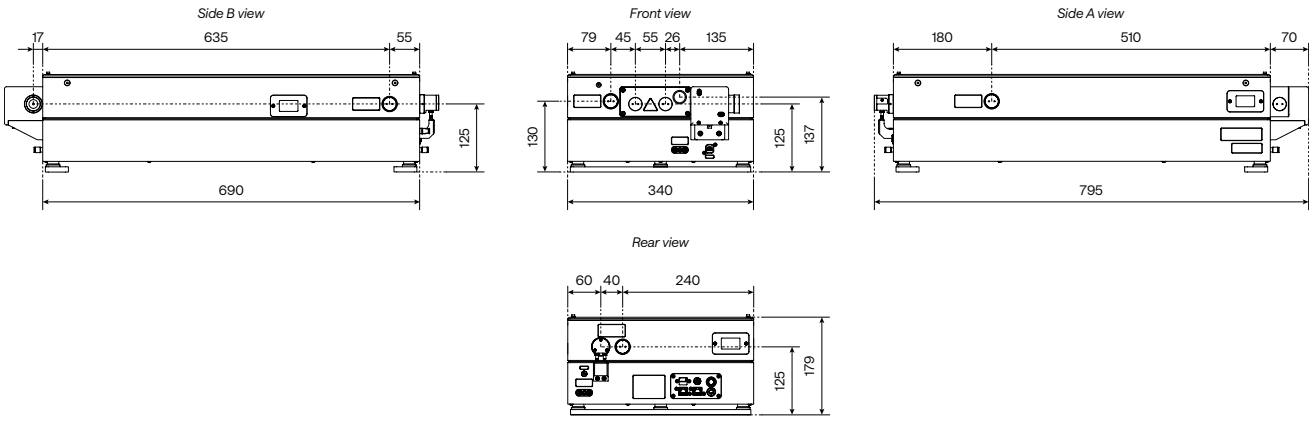
[2] *Expressed as normalized root mean squared deviation (NRMSD).*

[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%.*

Drawings

ORPHEUS-N



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