

# ORPHEUS | N

## Non-Collinear Optical Parametric Amplifier

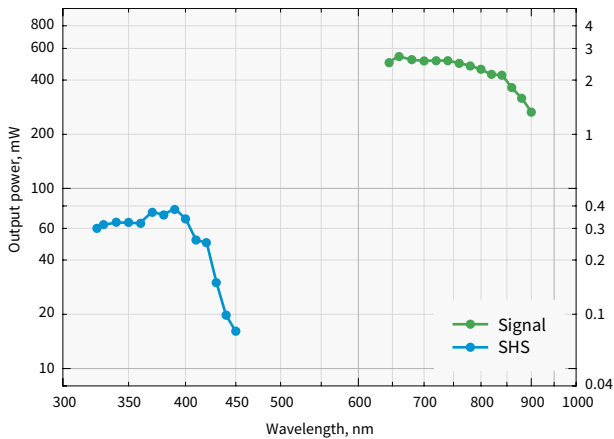
### FEATURES

- < 30 fs pulse duration
- Single-shot – 1 MHz repetition rate
- Integrated prism compressor
- Adjustable spectral bandwidth and pulse duration
- Wavelength feedback with internal spectrometer

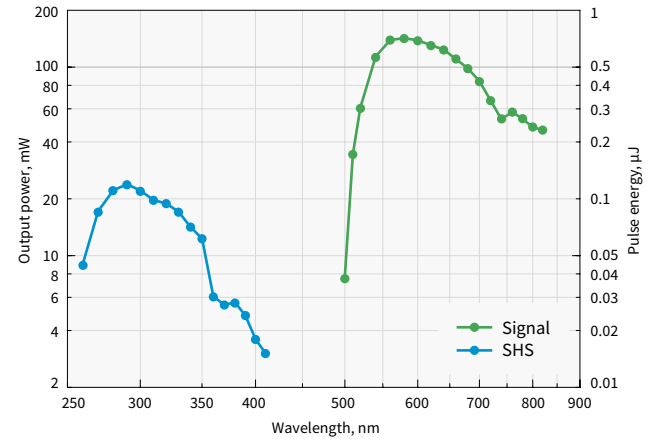


ORPHEUS-N is a non-collinear optical parametric amplifier (NOPA). Depending on the ORPHEUS-N model, it has a built-in second or third harmonic generator producing a 515 nm or 343 nm pump, respectively. ORPHEUS-N with a second harmonic pump (ORPHEUS-N-2H) delivers pulses of less than 30 fs in the 700 – 850 nm range. ORPHEUS-N with a third harmonic pump (ORPHEUS-N-3H) delivers pulses of less than 30 fs in the 530 – 670 nm range. ORPHEUS-N works at repetition rates of up to 1 MHz.

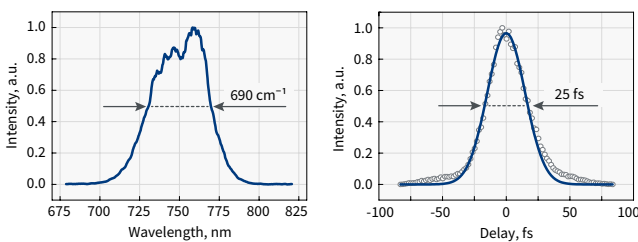
An optional second harmonic generator is available, extending the tuning range down to 260 – 450 nm. Featuring a built-in pulse compressor, ORPHEUS-N is an invaluable instrument for time-resolved spectroscopy. A single PHAROS or CARBIDE laser can pump more than one OPA device providing several pump and/or probe channels with independent wavelength tuning.



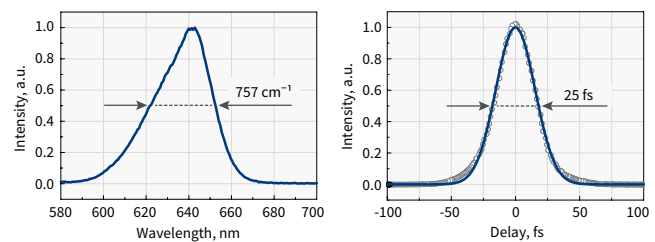
Typical tuning curves of **ORPHEUS-N-2H**  
Pump: 6 W, 30  $\mu$ J, 200 kHz



Typical tuning curves of **ORPHEUS-N-3H**  
Pump: 6 W, 30  $\mu$ J, 200 kHz



Typical output of **ORPHEUS-N-2H**



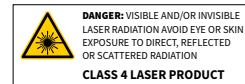
Typical output of **ORPHEUS-N-3H**

For custom tuning curves visit <http://toolbox.lightcon.com/tools/tuningcurves/>

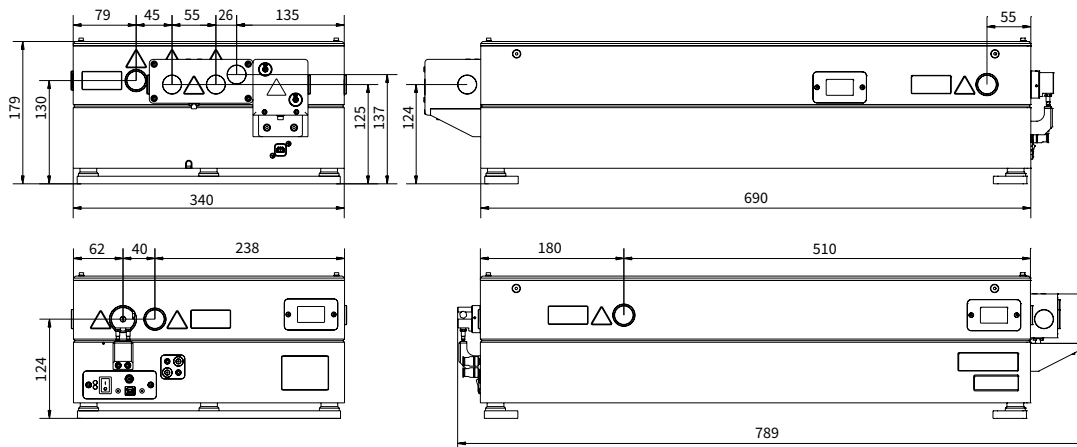
## SPECIFICATIONS

Model	ORPHEUS-N-2H	ORPHEUS-N-3H			
<b>OUTPUT FROM ORPHEUS-N</b>					
Tuning range	650 – 900 nm (Signal)	520 – 900 nm (Signal)			
Integrated 2H / 3H generation efficiency	> 35% (515 nm)	> 25% (343 nm)			
Maximum pump power	8 W				
Pump pulse energy	10 – 200 $\mu$ J	12 – 200 $\mu$ J			
Conversion efficiency at peak	700 nm	800 nm	580 nm	700 nm	800 nm
	> 7%	> 5%	> 1.3%	> 0.7%	> 0.3%
Pulse duration after compressor	< 30 fs (700 – 850 nm)		< 30 fs (530 – 670 nm)		
			< 80 fs (670 – 900 nm)		
Long-term power stability, 8 h <sup>1)</sup>	< 2% @ 800 nm		< 2% @ 580 nm		
Pulse-to-pulse energy stability, 1 min <sup>1)</sup>	< 2% @ 800 nm		< 2% @ 580 nm		
<b>OPTIONAL WAVELENGTH EXTENSIONS</b>					
Tuning range (SHS)	325 – 450 nm		260 – 450 nm		
Conversion efficiency at peak	> 10% of Signal				

<sup>1)</sup> Expressed as NRMSD (normalized root mean squared deviation).



## DRAWINGS



ORPHEUS-N drawings