

# ORPHEUS-IV

## Non-Collinear Optical Parametric Amplifier

### GENERAL DESCRIPTION

ORPHEUS-N is a non-collinear optical parametric amplifier (NOPA) pumped by the PHAROS laser system. Depending on the

ORPHEUS-N model, it has a built in second or third harmonic generator producing 515 nm or 343 nm pump. ORPHEUS-N with second harmonic pump (ORPHEUS-N-2H) delivers pulses of less than 25 fs in 650-850 nm range with average power of more than 0.5 W at 700 nm\*. ORPHEUS-N with third harmonic pump (ORPHEUS-N-3H) delivers pulses of less than 20 fs in 530-700 nm range with average power of more than 0.2 W at 550 nm\*. ORPHEUS-N works at repetition rates of up to 1 MHz. The device is equipped with computer controlled stepping motor stages, allowing automatic tuning of the output wavelength. An optional signal's second harmonic generator is also available. It extends the tuning range down to 250-450 nm. Featuring a state of the art builtin pulse compressor ORPHEUS-N is an invaluable instrument for time-resolved spectroscopy. More than two ORPHEUS-N systems can be pumped with a single PHAROS laser providing several pump and/or probe channels with independent wavelength tuning.

\*when pumped with 6 W @ 1030 nm, 200 kHz.

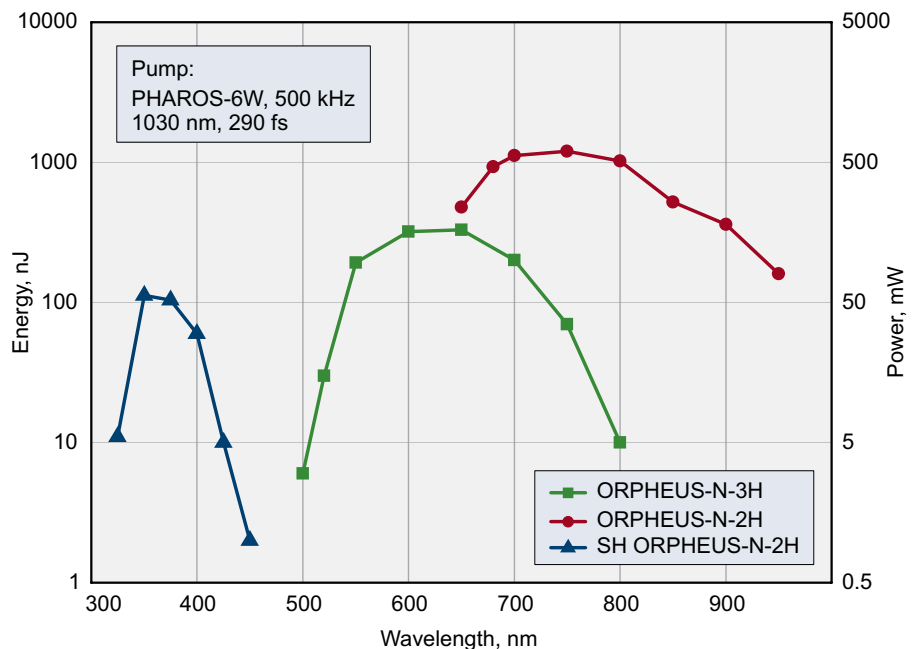


### FEATURES

- Pulse duration down to 15 fs
- High repetition rates (up to 1 MHz)
- Computer controlled wavelength tuning
- Compact and flexible design

### APPLICATIONS

- Spectroscopy
- Nonlinear optics
- Micro structuring

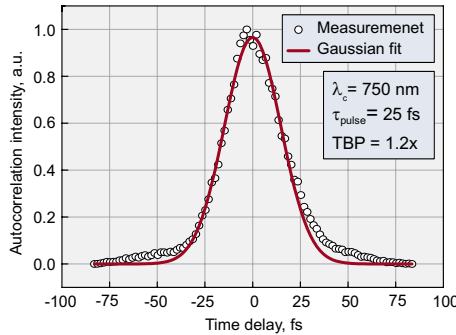
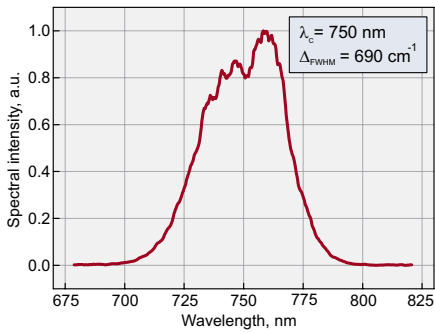


Typical tuning curve of ORPHEUS-N

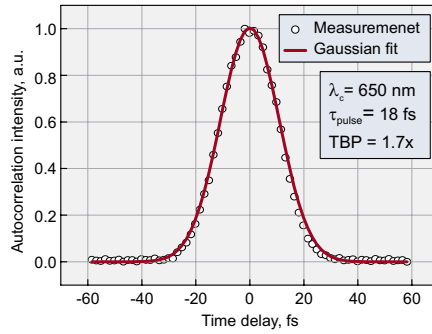
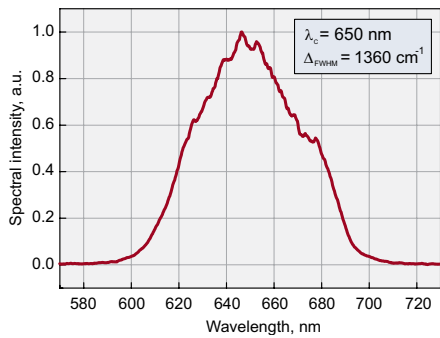
**SPECIFICATIONS**

	ORPHEUS-N-2H (pump: 30 μJ @ 1030 nm)	ORPHEUS-N-3H (pump: 30 μJ @ 1030 nm)
Tuning range	650-900 nm	490-900 nm
Built in harmonic generator	Second harmonic 515 nm wavelength >14 μJ pulse energy	Third harmonic 343 nm wavelength >8 μJ pulse energy
Output pulse energy (after prism compressor)	>2.2 μJ at 700 nm >0.9 μJ at 850 nm	>0.4 μJ at 550 nm >0.3 μJ at 700 nm
Pulse duration (Gaussian fit)	<30 fs at 700-850 nm	<30 fs at 530-700 nm <80 fs at 650-900 nm

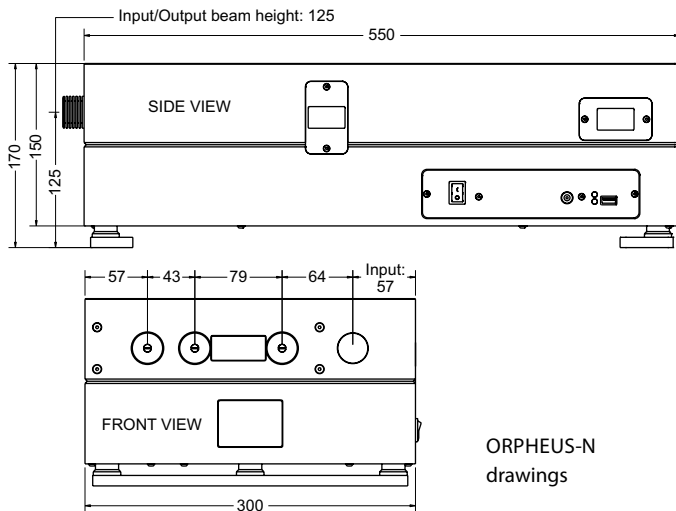
Requirements for the pump laser (typically PHAROS femtosecond laser): Wavelength 1030 nm, Repetition rate 1-1000 kHz, Pump pulse energy 8- 60 μJ, Pulse duration (FWHM) 180-290 fs.



Typical output of ORPHEUS-N-2H



Typical output of ORPHEUS-N-3H



Specifications are subject to change without notice.



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**OPTIONAL  
ACCESSORIES**

- Second harmonic generator of signal wave
- Computer controllable pulse duration

Local distributor list available at  
[www.lightcon.com](http://www.lightcon.com)