

# ORPHEUS-IV

## Non-Collinear Optical Parametric Amplifier

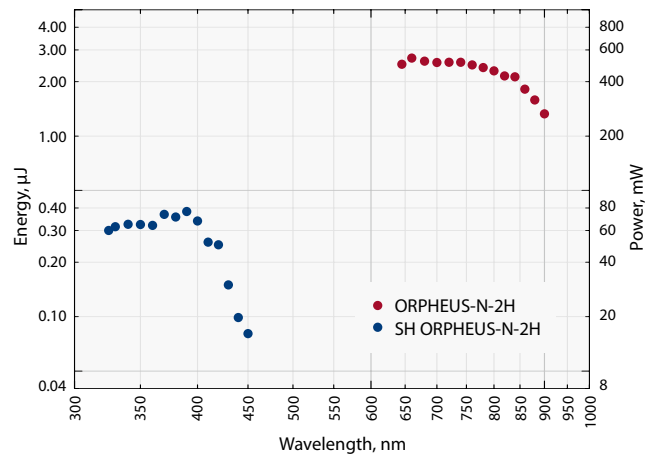


### FEATURES

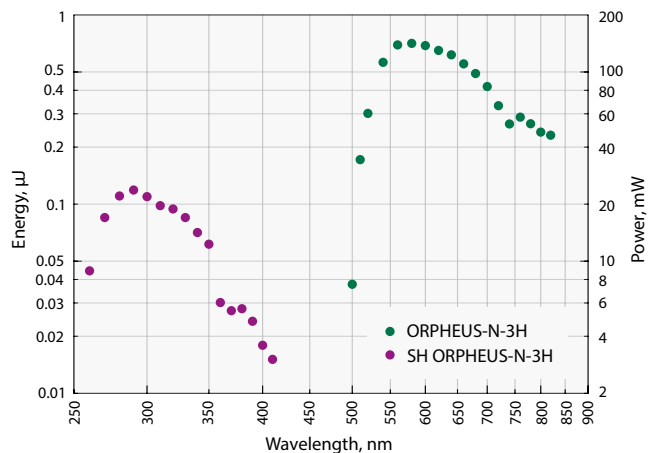
- < 30 fs pulse duration
- Integrated prism compressor
- Adjustable bandwidth and pulse duration
- Single pulse – 1 MHz repetition rate
- Computer controlled

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 30 fs in 700–850 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 30 fs in 530–670 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, extending the tuning range down to 250–450 nm. Featuring a state of the art built in 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.



Typical tuning curve of ORPHEUS-N-2H  
Pump: Pharos-6W, 200 kHz, 260 fs



Typical tuning curve of ORPHEUS-N-3H  
Pump: Pharos-6W, 200 kHz, 260 fs

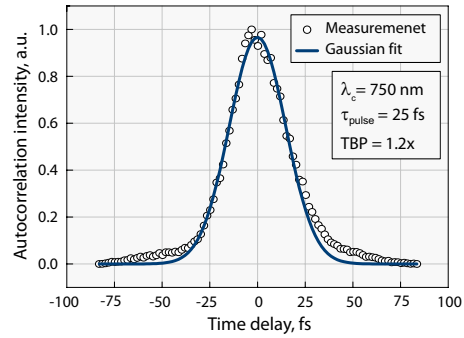
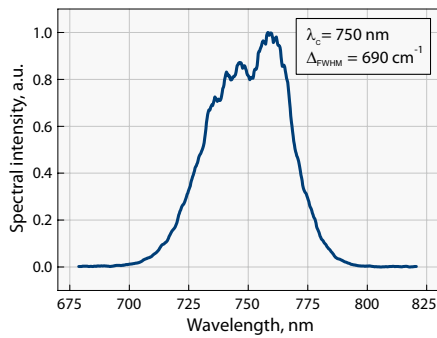
**SPECIFICATIONS**

	ORPHEUS-N-2H (pump: 30 $\mu$ J @ 1030 nm)	ORPHEUS-N-3H (pump: 30 $\mu$ J @ 1030 nm)
Tuning range	650 – 900 nm	500 – 800 nm
Built in harmonic generator	Second harmonic 515 nm wavelength >14 $\mu$ J pulse energy	Third harmonic 343 nm wavelength >8 $\mu$ J pulse energy
Output pulse energy (after prism compressor)	7 % at peak (700 nm) 3 % @ 850 nm Max. pump power is 8 W	1.3 % at peak (580 nm) 0.7 % @ 700 nm Max. pump power is 8 W
Pulse duration (Gaussian fit)	<30 fs at 700 – 850 nm	<30 fs at 530 – 670 nm <80 fs at 670 – 800 nm

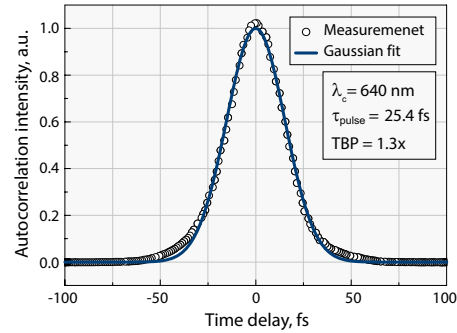
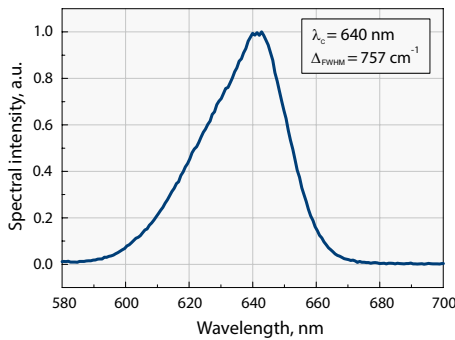
Requirements for the pump laser (typically PHAROS femtosecond laser):  
wavelength 1030 nm, repetition rate 1 – 1000 kHz, pump pulse energy 8 – 200  $\mu$ J, pulse duration (FWHM) 180 – 290 fs.

**OPTIONAL ACCESSORIES**

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



Typical output of ORPHEUS-N-2H



Typical output of ORPHEUS-N-3H

