

# ORPHEUS-N

## 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 650 nm\*. ORPHEUS-N with third harmonic pump (ORPHEUS-N-3H) delivers pulses of less than 35 fs in 500-650 nm range with average power of more than 0.2 W at 550 nm\*. ORPHEUS-N works at repetition rates of up to 500 kHz. 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.

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.*

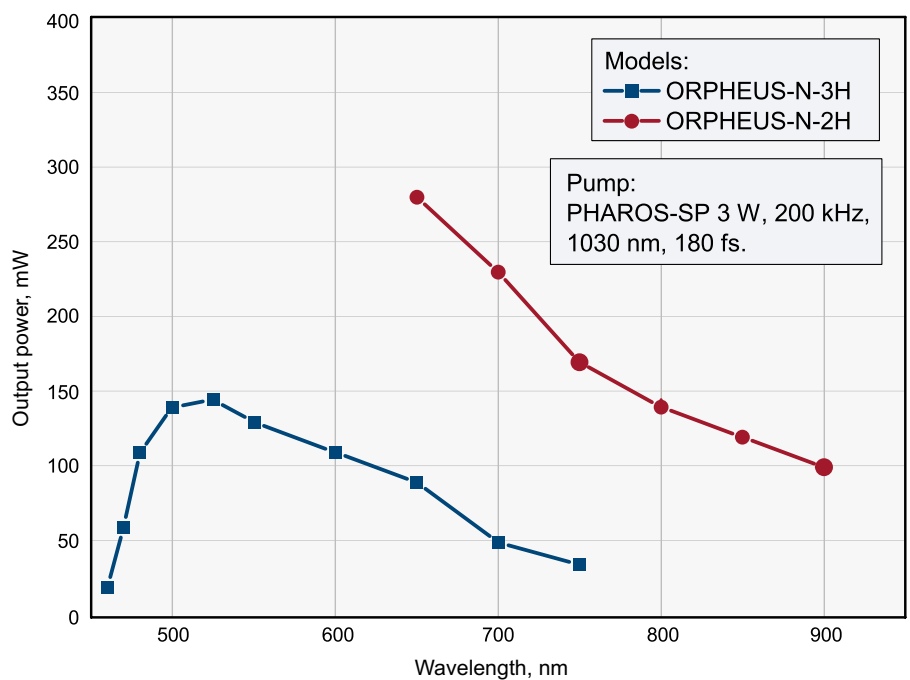


### FEATURES

- Pulse duration down to 15 fs
- High repetition rates (up to 500 kHz)
- Computer controlled wavelength tuning
- Pump energies down to 8  $\mu$ J
- Compact and flexible design

### APPLICATIONS

- Spectroscopy
- Nonlinear optics
- Micro structuring

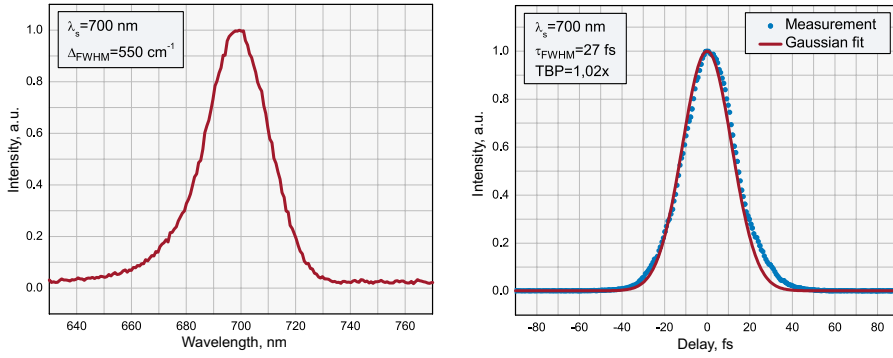


Typical tuning curve of ORPHEUS-N

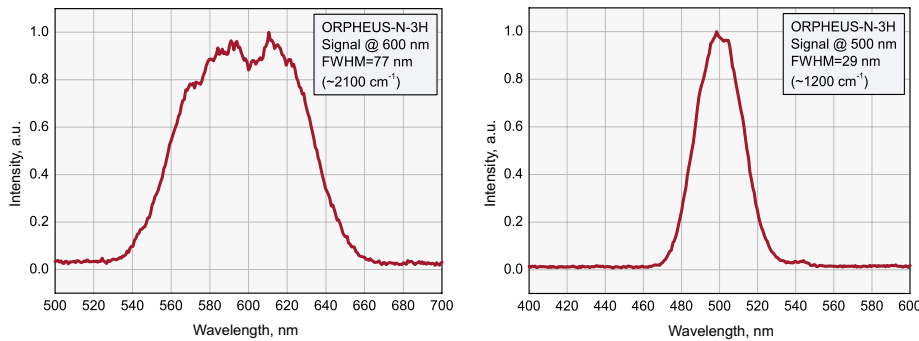
**SPECIFICATIONS**

	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 650 nm >0.9 μJ at 850 nm	>0.9 μJ at 550 nm >0.3 μJ at 700 nm
Pulse duration (Gaussian fit)	<30 fs at 650-850 nm	<40 fs at 500-650 nm <80 fs at 650-900 nm

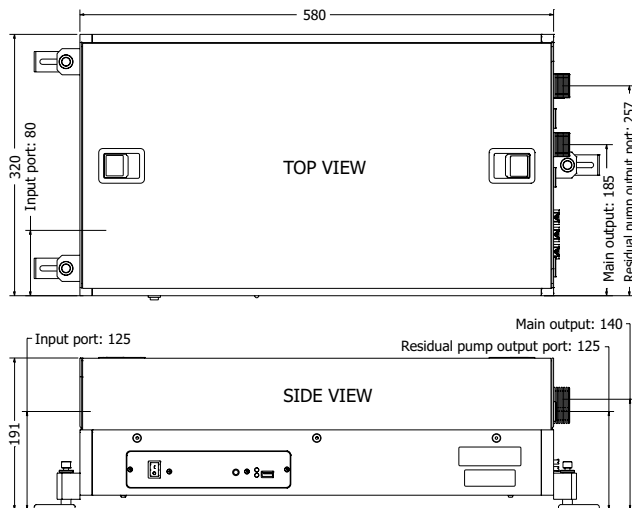
Requirements for the pump laser (typically PHAROS femtosecond laser):  
wavelength 1030 nm, Repetition rate 1-500 kHz, Pump pulse energy 8- 60 μJ, Pulse duration (FWHM) 180-290 fs



Example pulse duration and spectra of ORPHEUS-N



Broad spectra output of ORPHEUS-N



ORPHEUS-N drawings



Specifications are subject to change without notice.



UAB MGF "Sviesos konversija"  
(Light Conversion Ltd)  
Sauletekio av. 10  
LT-10223 Vilnius, Lithuania  
Phone: +370 5 2491830  
Fax: +370 5 2698723  
e-mail: company@lightcon.com  
http://www.lightcon.com

**OPTIONAL ACCESSORIES**

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



フォトテクニカ株式会社  
〒336-0017 埼玉県さいたま市南区南浦和 1-2-17  
TEL: 048-871-0067 FAX: 048-871-0068  
e-mail: voc@phototechnica.co.jp  
http://www.phototechnica.co.jp