

# ORPHEUS-HP

## High Power Optical Parametric Amplifier



### FEATURES

- 190 nm – 16000 nm tunable wavelength
- Single pulse – 1 MHz repetition rate
- Up to 40 W pump power
- Up to 0.4 mJ pump energy (higher energy upon request)
- Automated wavelengths separation
- Integrated spectrometers for monitoring the output wavelength

ORPHEUS-HP is a collinear optical parametric amplifier of white-light continuum pumped by PHAROS laser. The device is a modified version of the ORPHEUS OPA, with UV-VIS and Mid-IR tuning range frequency mixers integrated into a thermally-stabilized monolithic housing. ORPHEUS-HP also provides the option of generating deep ultraviolet pulses (190–215 nm), in addition to 210–2600 nm.

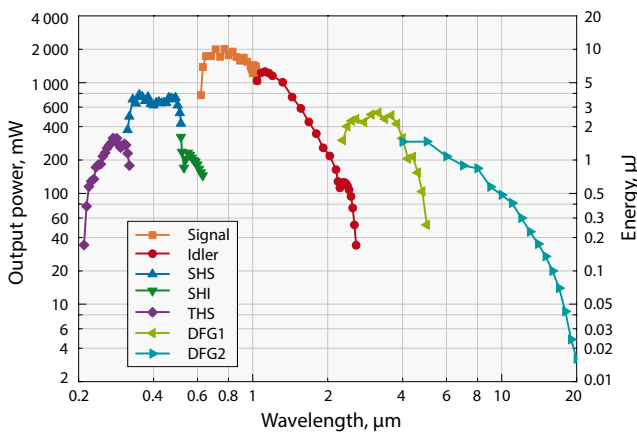
The design of this OPA offers completely hands-free wavelength tuning and automatic wavelength separation, also ensuring the same position and direction for all wavelengths in UV-near-IR region. ORPHEUS-HP integrates a mini spectrometer for online monitoring of output wavelength and comes with specialized software that enables wavelength feedback.

ORPHEUS-HP is highly recommended over standard ORPHEUS if the input power is more than 8 W, or whenever the necessary tuning range requires both UV and mid-infrared generation (for example 315–5000 nm).

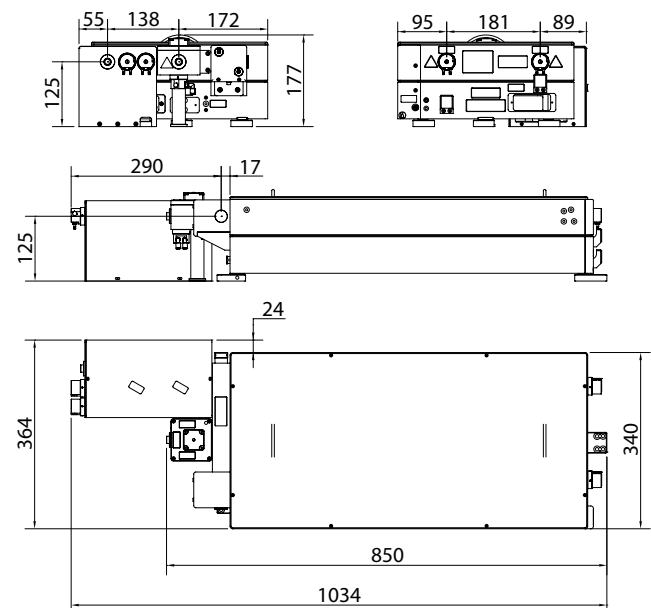
Performance specifications are the same as of ORPHEUS except for UV and deep-UV ranges which are provided in the table below.

### OUTPUT OF OPTIONAL UV AND DEEP-UV CONVERTER

|   | DUV              | FHG     | TH of Signal    |
|---|------------------|---------|-----------------|
| Tuning range  | 190–215 nm       | 258 nm  | 210–315 nm      |
| Pulse energy conversion efficiency at 20–1000 $\mu$ J | > 0.3 % @ 200 nm | > 5.0 % | > 0.8 % at peak |
| Pulse energy conversion efficiency at 8–20 $\mu$ J    | Not available    |         | > 0.4 % at peak |



ORPHEUS-HP energy conversion curve.  
Pump: 20 W, 200 kHz



ORPHEUS-HP drawings