

# ORPHEUS | TWINS

## Two Independently Tunable Optical Parametric Amplifiers

### FEATURES

- Two OPA units in a single compact housing
- 210 nm – 16 μm tunable wavelength
- Single-pulse – 1 MHz repetition rate
- Standard pump energy up to 0.5 mJ (2 mJ upon request)
- Broadband and short-pulse (<100 fs) versions available
- CEP stable mid-infrared output available
- Integrated spectrometers for monitoring OPA output wavelength



ORPHEUS-TWINS consists of two independently tunable optical parametric amplifiers designed for flexible pump parameters and OPA configuration. The two channels can be separately configured to be a version of either ORPHEUS, ORPHEUS-ONE, ORPHEUS-F or even ORPHEUS-N. Both OPA units are integrated into a single housing and share the same

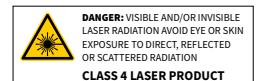
white light seed for amplification. The design of this OPA enables hands-free wavelength tuning, optional automated wavelength separation and the possibility of generating broadband mid-infrared radiation, in the region of 4 – 16 μm, with a passively stable Carrier Envelope Phase (CEP).

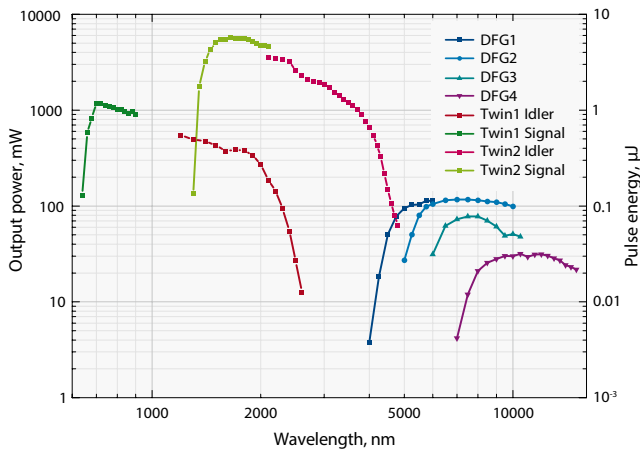
### SPECIFICATIONS

<b>Model</b>	<b>ORPHEUS-TWINS</b>
<b>Required pump laser</b>	PHAROS or CARBIDE
<b>Accepted pump input pulse energy @ 1030 nm, 180 – 300 fs pulse duration</b>	8 μJ – 2 mJ
<b>Supported repetition rates</b>	Single-pulse – 1 MHz
<b>Tuning range</b>	Choice between ORPHEUS, ORPHEUS-F, ORPHEUS-N-2H or ORPHEUS-ONE configurations
<b>Output pulse energy</b>	Depends on the configuration – check the specifications of the chosen models
<b>Pulse bandwidth</b>	Depends on configuration, up to 100 – 750 cm <sup>-1</sup>
<b>Pulse duration</b>	Depends on configuration, down to 40 fs

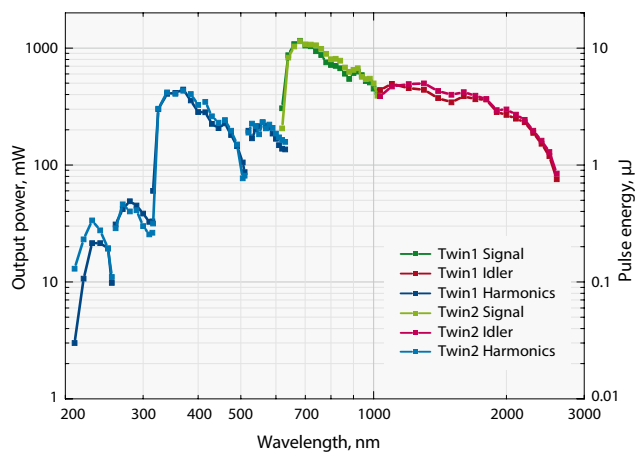
### PHYSICAL DIMENSIONS

<b>Full dimension of the ORPHEUS-TWINS, including wavelength separation (W × L × H)</b>	810 × 430 × 164 mm
<b>Full dimensions of the PHAROS+ORPHEUS-TWINS system with beam routing units (W × L × H)</b>	910 × 850 × 215 mm





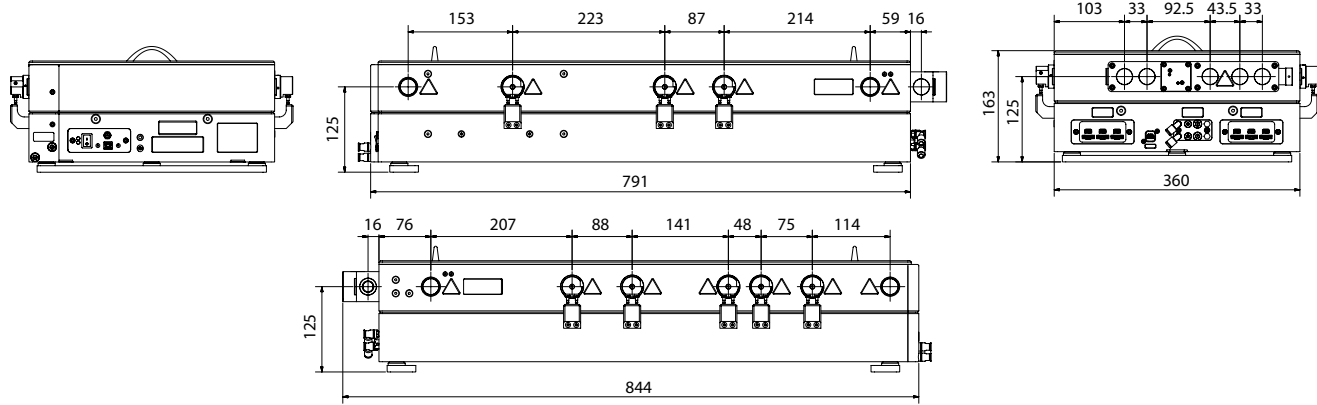
**ORPHEUS-TWINS (ONE/F configuration)**  
 output power conversion curve.  
 Pump: 40 W, 40 µJ, 1000 kHz



**ORPHEUS-TWINS (ORPHEUS/ORPHEUS configuration)**  
 output power conversion curve.  
 Pump: 20 W, 20 µJ, 100 kHz

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

## OUTLINE DRAWINGS



ORPHEUS-TWINS outline drawings



ORPHEUS-TWINS setup example