

# ORPHEUS-TWINS

## Two Independently Tunable Optical Parametric Amplifiers

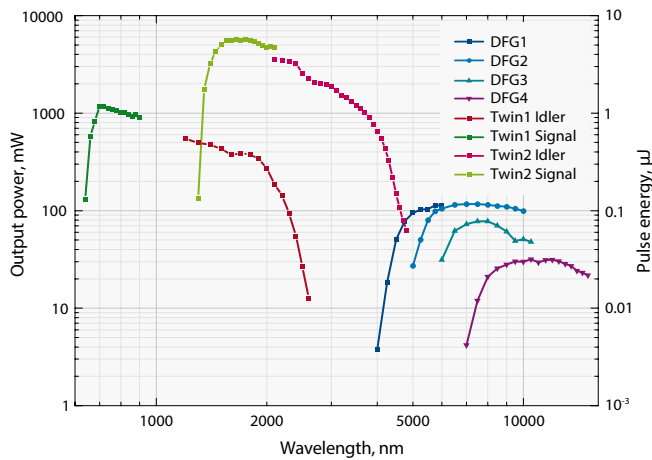


### FEATURES

- 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

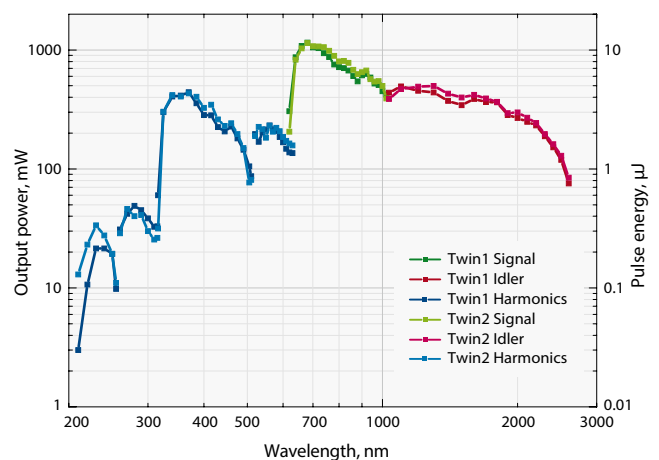
ORPHEUS-TWINS consists of two independently tunable optical parametric amplifiers designed for flexible pump parameters and OPA configuration. The two channels can be separately configured to be a version of either ORPHEUS, ORPHEUS-ONE, ORPHEUS-F or even ORPHEUS-N. Both OPA units are integrated into 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 μm – 16 μm, with a passively stable Carrier Envelope Phase (CEP).



### ORPHEUS-TWINS

ORPHEUS-TWINS (ONE/F configuration)  
output power conversion curve.  
Pump: 40 W, 40 μJ, 1 000 kHz



### ORPHEUS-TWINS

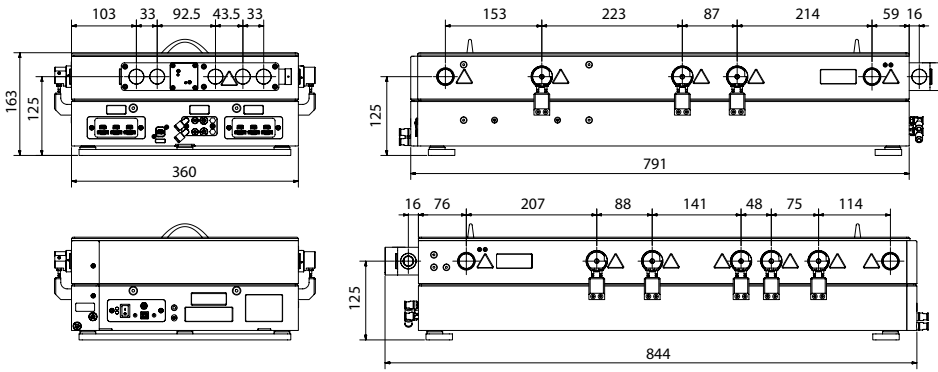
ORPHEUS-TWINS (ORPHEUS/ORPHEUS configuration)  
output power conversion curve.  
Pump: 20 W, 20 μJ, 100 kHz

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

### SPECIFICATIONS

|  |   |
|--|---|
| Required pump laser  | PHAROS or CARBIDE   |
| Accepted pump input pulse energy @ 1 030 nm, 180 – 300 fs pulse duration | 8 μJ – 2 mJ   |
| Supported repetition rates   | Single pulse – 1 MHz  |
| Tuning range   | Choice between ORPHEUS, ORPHEUS-F, ORPHEUS-N-2H or ORPHEUS-ONE configurations |
| Output pulse energy  | Depends on the configuration – check the specifications of the chosen models  |
| Pulse bandwidth  | Depends on configuration, up to 100 – 750 cm <sup>-1</sup>                    |
| Pulse duration   | Depends on configuration, down to 40 fs                                       |

| Dimensions   | W x L x H          |
|--|--------------------|
| Full dimension of the ORPHEUS-TWINS, including wavelength separation       | 810 x 430 x 164 mm |
| Full dimensions of the PHAROS+ORPHEUS-TWINS system with beam routing units | 910 x 850 x 215 mm |



ORPHEUS-TWINS outline drawings



ORPHEUS-TWINS setup example