

ORPHEUS | VIS



Ultrashort-Pulse VIS Optical Parametric Amplifier

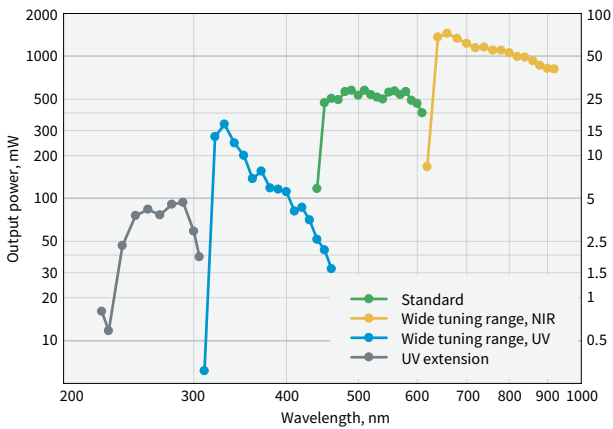
FEATURES

- Ultrashort UV – VIS – NIR output
- < 50 fs pulse duration at 500 nm
- Up to 100 kHz repetition rate
- Up to 20 W, 1 mJ pump
- Optional UV extension down to 250 nm

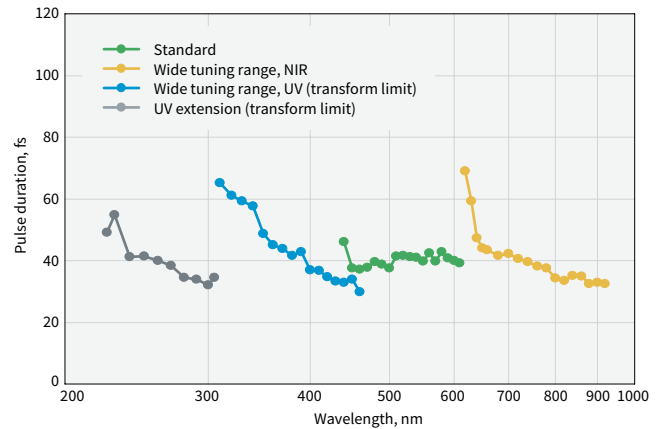


ORPHEUS-VIS is an optical parametric amplifier (OPA) optimized for the generation of high-energy short-pulse VIS output. The laser system provides ultrashort pulses in the tuning range of 450 – 600 nm or 320 – 900 nm, depending on the chosen configuration, and reaches down to 250 nm with optional UV extension. The ORPHEUS-VIS system can be coupled with PHAROS or CARBIDE femtosecond pump lasers and can be pumped with up to 20 W average power

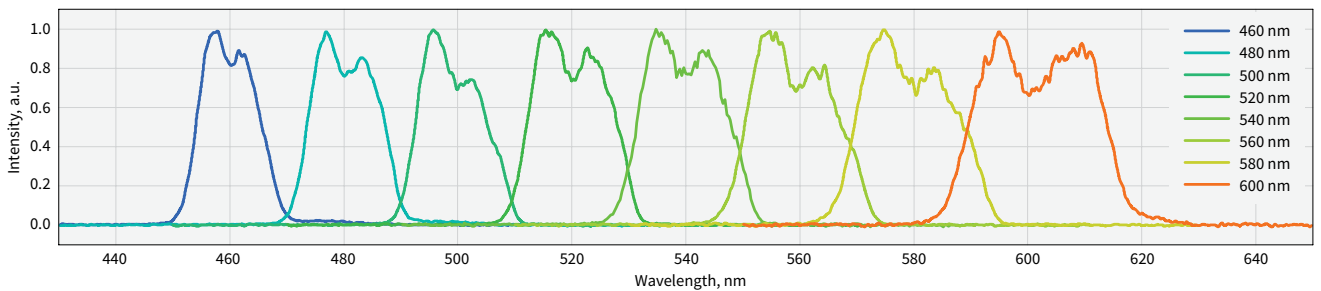
and 1 mJ energy pulses, thus capable of providing up to tens of microjoules in VIS and microjoule-level output in UV. ORPHEUS-VIS serves as an excellent high-repetition-rate source for ultrafast spectroscopy such as two-dimensional electronic spectroscopy (2DES), time-resolved photoemission spectroscopy, and many other applications in the visible spectral range.



ORPHEUS-VIS tuning curves.
Pump: 20 W, 1 mJ



ORPHEUS-VIS typical pulse duration



A set of typical spectra of standard **ORPHEUS-VIS** configuration

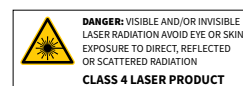
SPECIFICATIONS

Model	ORPHEUS-VIS	
MAIN OUTPUT		
Configuration	Standard	Wide tuning range
Tuning range	450 – 600 nm	320 - 900 nm
Maximum pump power	20 W	
Pump pulse energy	200 – 1000 μ J	
Conversion efficiency ¹⁾	> 1.5 % @ 500 nm	> 1.5% @ 500 nm > 5.0% @ 660 nm > 0.5% @ 350 nm
Pulse duration	< 50 fs @ 500 – 600 nm	< 50 fs @ 500 – 600 nm < 55 fs @ 800 – 900 nm < 70 fs @ 650 – 800 nm
Spectral bandwidth ²⁾	200 – 700 cm^{-1}	
Long-term power stability, 8h ³⁾	< 2% @ 500 nm	
OPTIONAL EXTENSION (UV)		
Tuning range	250 – 300 nm	
Conversion efficiency ¹⁾	> 0.15% @ 280 nm	
Spectral bandwidth ²⁾	200 – 600 cm^{-1}	

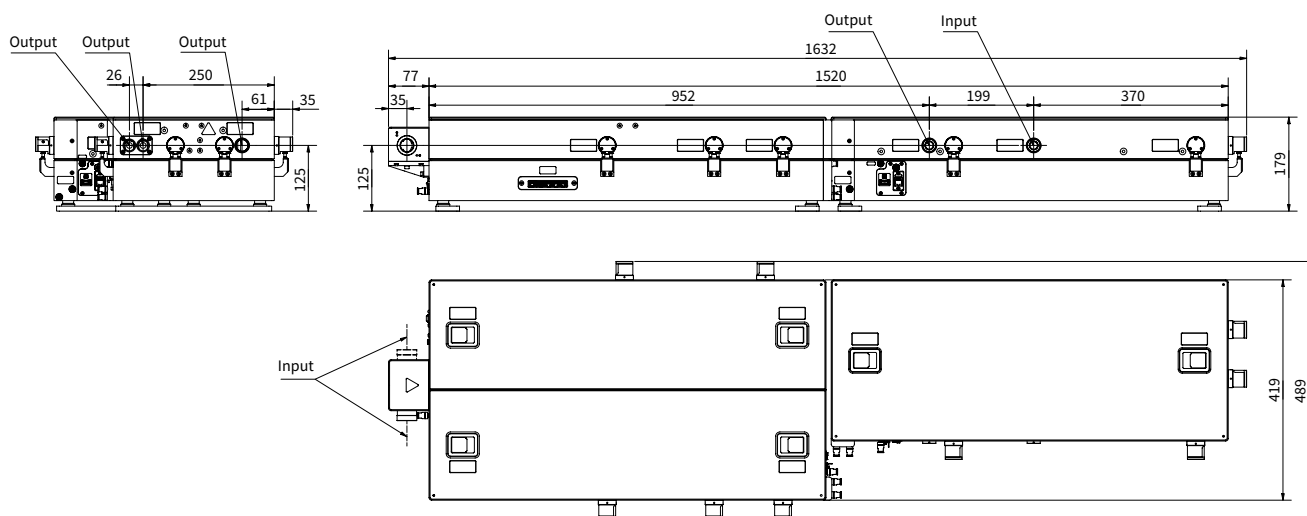
¹⁾ Specified as the percentage of pump power.

²⁾ FWHM (full width at half maximum).

³⁾ Expressed as NRMSD (normalized root mean squared deviation).



DRAWINGS



ORPHEUS-VIS drawings