

Broad-Bandwidth VIS Optical Parametric Amplifiers

Ultrashort UV – VIS – NIR pulses

< 50 fs pulse duration at 500 nm

Up to 100 kHz repetition rate

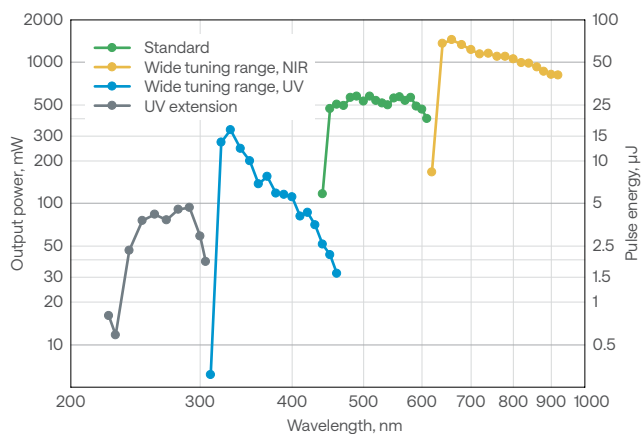
Up to 20 W, 1 mJ pump

Optional UV extension down to 250 nm

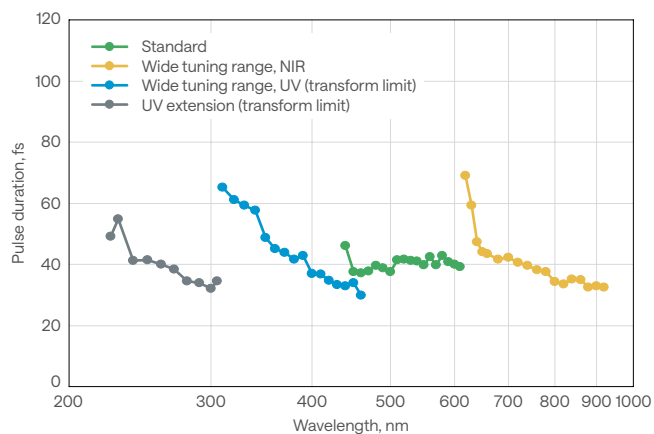


ORPHEUS-VIS tuning curves

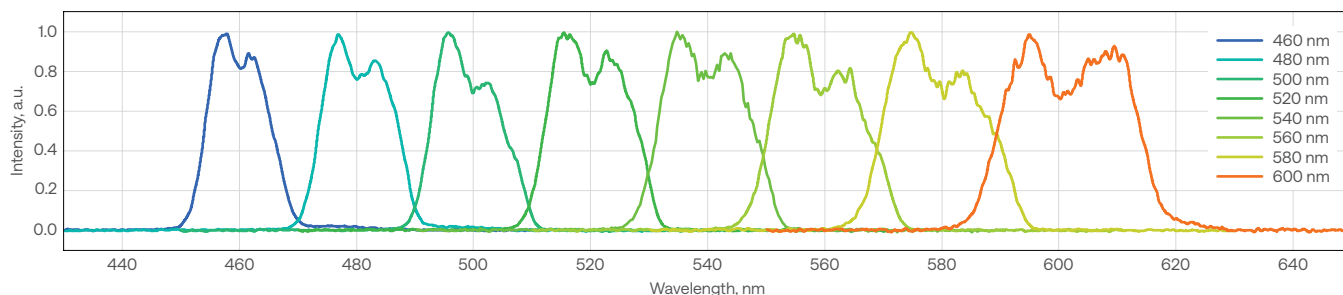
Pump: 20 W, 1 mJ



ORPHEUS-VIS typical pulse duration



ORPHEUS-VIS standard configuration's typical spectra set



Specifications

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, 8 h 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}

PUMP LASER REQUIREMENTS

Pump laser	CARBIDE or PHAROS
Center wavelength	1030 $\pm$ 10 nm
Maximum pump power	20 W
Maximum repetition rate	100 kHz
Pump pulse energy	200 – 1000 μ J
Pump pulse duration ⁴⁾	200 – 350 fs

ENVIRONMENTAL & UTILITY REQUIREMENTS

Operating temperature ⁵⁾	19 – 25 $^{\circ}\text{C}$ (air conditioning recommended)
Relative humidity ⁵⁾	20 – 70% (non-condensing)
Electrical requirements	100 – 240 V AC, 1.4 A; 50 – 60 Hz
Rated power	120 W
Power consumption	Standby: 10 W Max during wavelength tuning: 100 W

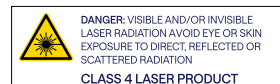
¹⁾ Specified as a percentage of pump power.

²⁾ Full width at half maximum (FWHM).

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

⁴⁾ Full width at half maximum (FWHM), assuming a Gaussian pulse shape.

⁵⁾ Specifications are guaranteed for a maximum temperature variation of $\pm 1^{\circ}\text{C}$ and humidity variation of $\pm 10\%$.



Drawings

ORPHEUS-VIS

