ORPHEUS-HE

new

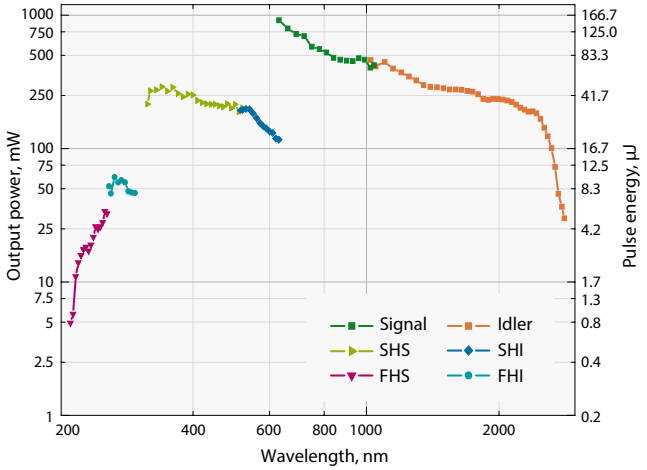
High Energy Optical Parametric Amplifier

FEATURES

- 190 – 16 000 nm tuning range
- < 1 kHz – 1 MHz repetition rate
- Up to 40 W pump power
- Up to 2 mJ pump energy
- Single output port for UV-VIS-NIR
- Dedicated output port for Mid-IR
- Integrated spectrometer

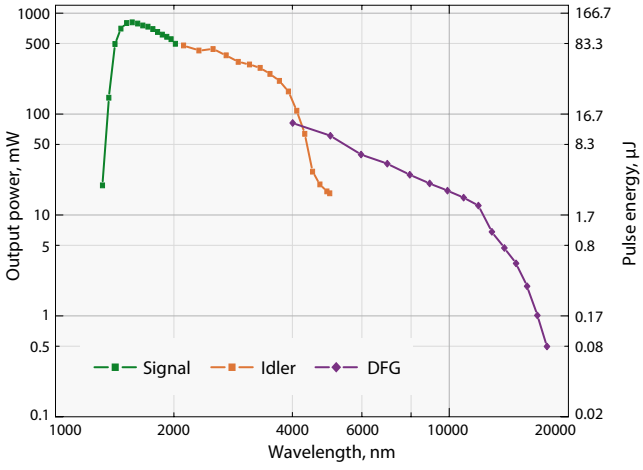
ORPHEUS-HE is a collinear optical parametric amplifier of white light continuum pumped by PHAROS laser. This model is specially adapted for high pulse energy operation to produce the highest quality beam at the output. The OPA is assembled into a monolithic housing with integrated UV, visible and mid-infrared tuning range extensions available as options. The design of this OPA offers completely hands free operation, ensuring the same position, direction and polarization for all wavelengths in UV near IR region covering 190 – 2600 nm tuning range. A dedicated output port is available for the mid-infrared wavelength extension, which covers the 2.4 µm to 16 µm range.

ORPHEUS-HE also integrates a mini spectrometer for online monitoring of OPA output wavelength and remote trouble-shooting. Thermally-stabilized housing helps to decrease sensitivity to ambient temperature, maintaining constant output beam pointing and optical path length for long-term measurements. This OPA can also be re-configured to work with lower energy pump pulses at higher repetition rates to exploit the versatility of our PHAROS product line.



ORPHEUS-HE

Typical tuning curve of ORPHEUS-HE.
Pump: 6 W, 1 mJ, 6 kHz



ORPHEUS-ONE-HE

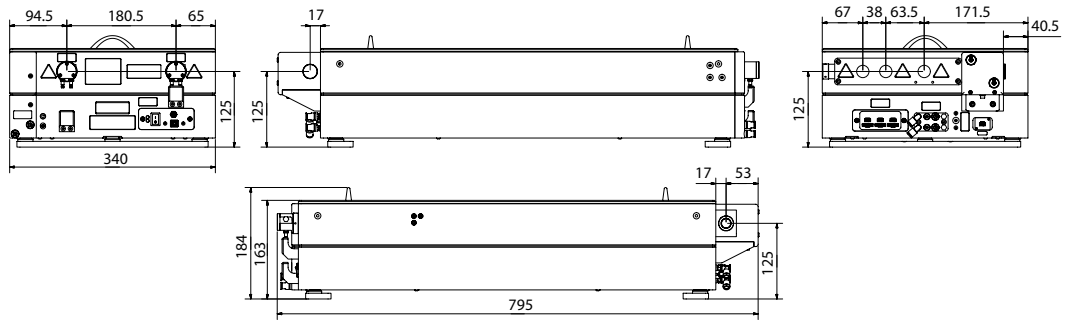
Typical tuning curve of ORPHEUS-ONE-HE.
Pump: 6 W, 1 mJ, 6 kHz

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

Rev. 20190107

SPECIFICATIONS

Product name		ORPHEUS-HE		ORPHEUS-ONE-HE
OUTPUT FROM ORPHEUS-HE				
Tuning range	Signal	630 – 1020 nm		1350 – 2060 nm
	Idler	1040 – 2600 nm		2060 – 4500 nm
Pump power (maximum)		40 W		40 W
Pump energy		400 – 2000 µJ		400 – 2000 µJ
Conversion efficiency at peak	Signal	> 9 %		–
	Idler	> 4 %		
	Signal + Idler combined	–		> 14 %
Pulse duration		Pharos / Carbide	Pharos-SP	–
		150 – 290 fs	120 – 190 fs	
Pulse bandwidth	700 – 960 nm	Pharos / Carbide	Pharos-SP	–
		80 – 150 cm^{-1}	100 – 220 cm^{-1}	
	1450 – 2000 nm	–		60 – 150 cm^{-1}
	1550 – 2000 nm	–		60 – 150 cm^{-1}
Long term power stability	8 hours	< 2 % @ 800 nm		< 2 % @ 1550 nm
Pulse energy stability	1 min	< 2 % @ 800 nm		< 2 % @ 1550 nm
OUTPUT FROM WAVELENGTH EXTENSIONS				
At peak	Pump energy	400 – 2000 µJ		400 – 2000 µJ
	315 – 510 nm (SH of Signal)	> 2.4 %		–
	520 – 630 nm (SH of Idler)	> 2.4 %		–
	720 – 970 nm (SH of Signal)	Is covered by Signal from ORPHEUS-HE		70 – 150 cm^{-1} @ 800 – 970 nm
				> 2 %
	190 – 215 nm (FH of Signal)	> 0.3 %		–
	210 – 315 nm (TH of Signal)	> 0.8 %		–
	2200 – 4200 nm (DFG1)	3000 nm		Is covered by Signal and/or Idler from ORPHEUS-ONE-HE
		> 3.0 %		
	4000 – 16 000 nm (DFG2)	10 000 nm		60 – 120 cm^{-1} @ 5000 – 8000 nm
				10 000 nm
		> 0.2 %		> 0.3 %



ORPHEUS-HE outline drawings