

ORPHEUS-OPA

All-in-one Optical Parametric Amplifier



FEATURES

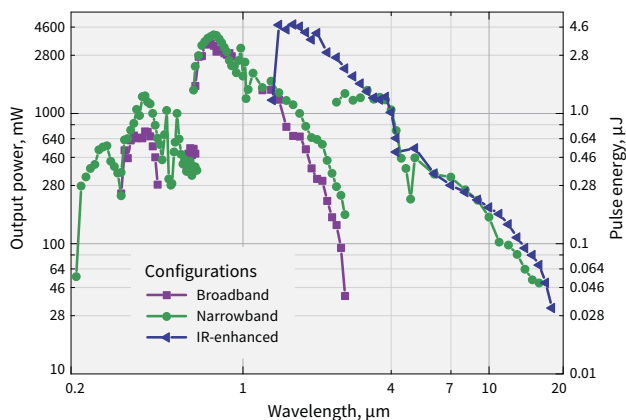
- Completely **hands-free** and **single-housing** design
- Exceptional long-term stability
- Integrated detectors for output monitoring and remote diagnostics
- Most versatile **all-in-one** solution
- **Single pulse – 2 MHz** repetition rate
- Thermally shielded and stabilized housing

ORPHEUS-OPA is the next generation addition to our ORPHEUS product family. With its simple-to-use and hassle-free design, ORPHEUS-OPA emerges as an invaluable tool in even the most demanding scientific applications.

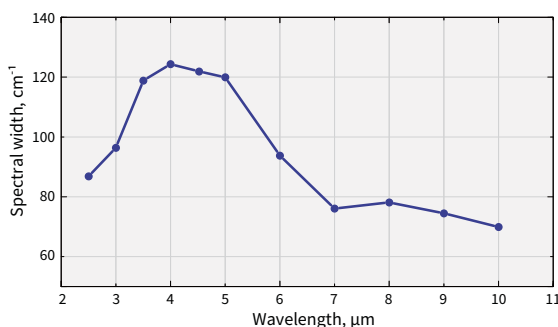
The device is available in several different configurations providing the broadest tuning range (210 – 16000 nm), ultrashort pulses (<70 fs) or enhanced IR output. The unique platform of ORPHEUS-OPA allows an all-in-one solution of having all the configurations available at once. Switching between any of them is fully automated. This makes it the most versatile optical parametric amplifier on the market.

Additionally, ORPHEUS-OPA boasts remarkable long-term stability, thanks to its robust industrial-grade mechanical design developed by Light Conversion. In addition to that, it is equipped with a number of detectors to monitor its output parameters. This results in the fastest remote diagnostics and troubleshooting capability.

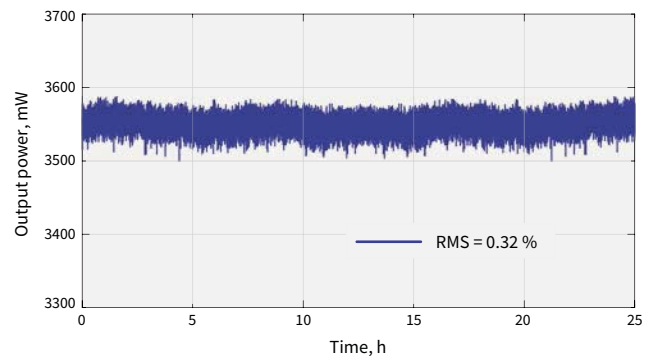
Inspired by the most demanding users, ORPHEUS-OPA has been engineered to become a powerful tool in the field of multiphoton microscopy, optogenetics, time-resolved spectroscopy and more.



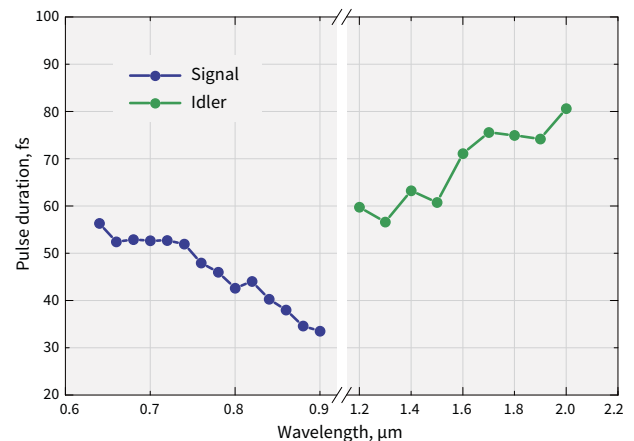
ORPHEUS-OPA energy conversion curve.
Pump = 40 W @ 1 MHz



ORPHEUS-OPA (IR-enhanced) typical spectral width



ORPHEUS-OPA long-term power stability



ORPHEUS-OPA typical pulse duration after compression

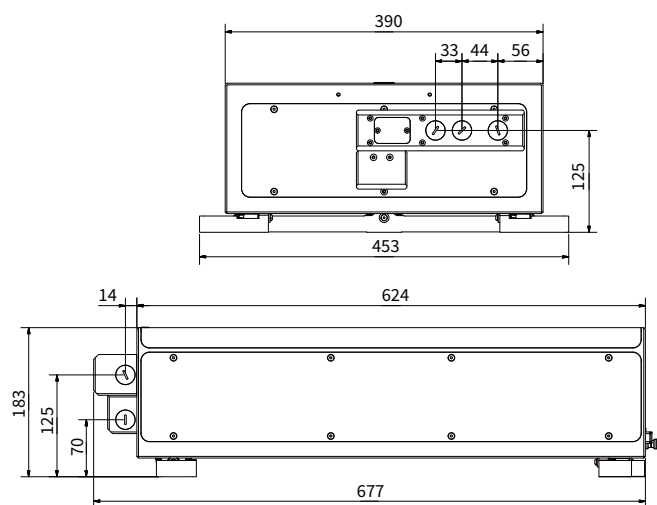
SPECIFICATIONS

PRODUCT NAME	ORPHEUS-OPA (Broadband)	ORPHEUS-OPA (Narrowband)		ORPHEUS-OPA (IR-enhanced)	
Tuning range	650 – 900 nm 1200 – 2500 nm	630 – 1030 nm 1030 – 2600 nm		1350 – 2060 nm 2060 – 4500 nm	
Pump power	up to 40 W				
Pump energy	10 – 500 μJ	8 – 20 μJ	20 – 2000 μJ	12 – 30 μJ	30 – 2000 μJ
Conversion efficiency at peak (Signal + Idler)	> 10 %	> 7%	> 12 %	> 10%	> 14%
Pulse duration before compression	150 – 290 fs (PHAROS / CARBIDE) 120 – 190 fs (PHAROS-SP)				
Pulse bandwidth	200 – 750 cm ⁻¹ @ 650 – 900 nm	80 – 220 cm ⁻¹ @ 630 – 900 nm		60 – 150 cm ⁻¹ @ 1450 – 2000 nm	
Pulse duration after compression	800 – 900 nm	< 55 fs		—	
	650 – 800 nm	< 70 fs			
	1200 – 2000 nm	< 100 fs			
Pulse duration after compression (typical)	650 – 900 nm	25 – 70 fs		—	
	1200 – 2000 nm	40 – 100 fs			
Compressor transmission	650 – 900 nm	> 65 %		—	
	1200 – 2000 nm	> 90 %			
Long-term power stability (8h)	< 2% @ 800 nm			< 2 % @ 1550 nm	
Pulse energy stability (1 min)	< 2% @ 800 nm			< 2 % @ 1550 nm	

WAVELENGTH EXTENSIONS

Tuning extension #1 (TH of Signal)	—	210 – 315 nm		—	
Conversion efficiency	—	> 0.4 %	> 0.8 %	—	
Tuning extension #2 (SH of Signal)	325 – 450 nm	315 – 520 nm		—	
Conversion efficiency	> 1 %	> 1.2 %	> 2.4 %	—	
Tuning extension #3 (SH of Idler)	600 – 700 nm	520 – 630 nm		—	
Conversion efficiency	> 0.5 %	> 1.2 %	> 2.4 %	—	
Tuning extension #4 (DFG1)	—	2200 – 4200 nm		—	
Conversion efficiency	—	> 1.5 % @ 3000 nm	> 3 % @ 3000 nm	—	
Tuning extension #5 (DFG2)	—	4000 – 16000 nm		4000 – 16000 nm	
Conversion efficiency	—	> 0.1 % @ 10000 nm	> 0.2 % @ 10000 nm	> 0.2 % @ 10000 nm	> 0.3 % @ 10000 nm

Conversion efficiency is specified as the percentage of input power to ORPHEUS-OPA. Specifications are subject to change without notice.



ORPHEUS-OPA outline drawings



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