

A P E

Chameleon compact **OPO**

The **OPO** for MPE Microscopy



The all new and compact **Chameleon OPO** offers full flexibility in pump- and OPO output wavelengths. Together with the Chameleon Ultra Ti:Sapphire laser it is the perfect tool for Multiphoton Excitation (MPE) Microscopy, covering 680 to 1600 nm, in combination with a SHG / THG module down to 227 nm without a single gap.

The system is completely alignment free, fully automated and computer controlled. Significant advantages in MPE are

Higher penetration depth and lower sample damage for excitation wavelengths above $1 \mu\text{m}$

Simultaneous imaging of different MPE fluorophores with optimum excitation, for instance GFP with Chameleon and RFP with OPO

Multimodality due to access to SHG / THG microscopy and

CARS microscopy of lipids (2845 cm^{-1})

Ultrafast Pulse Diagnostics

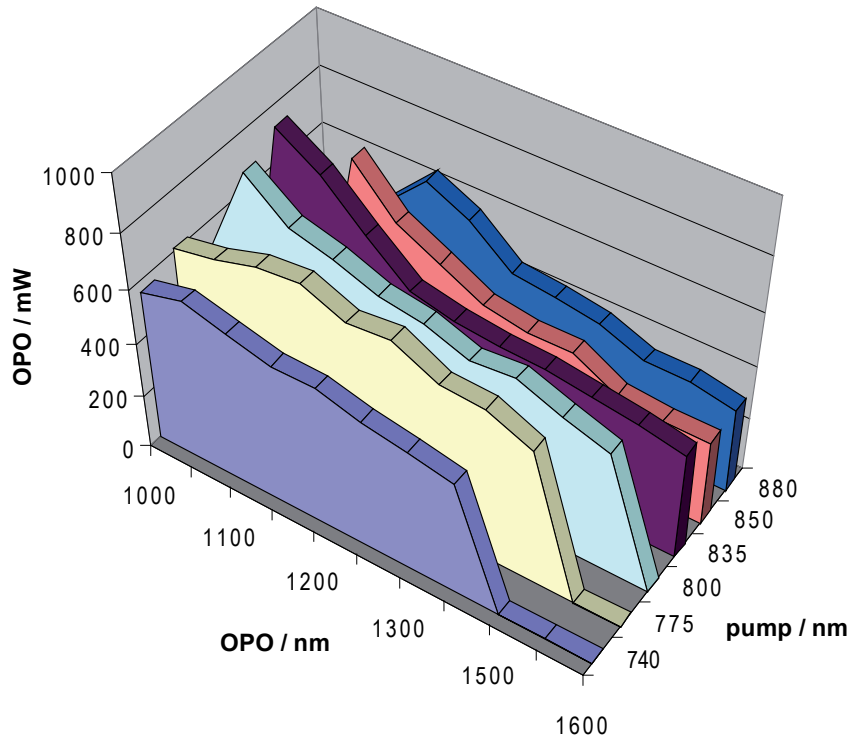
Wavelength Conversion

Pulse Management

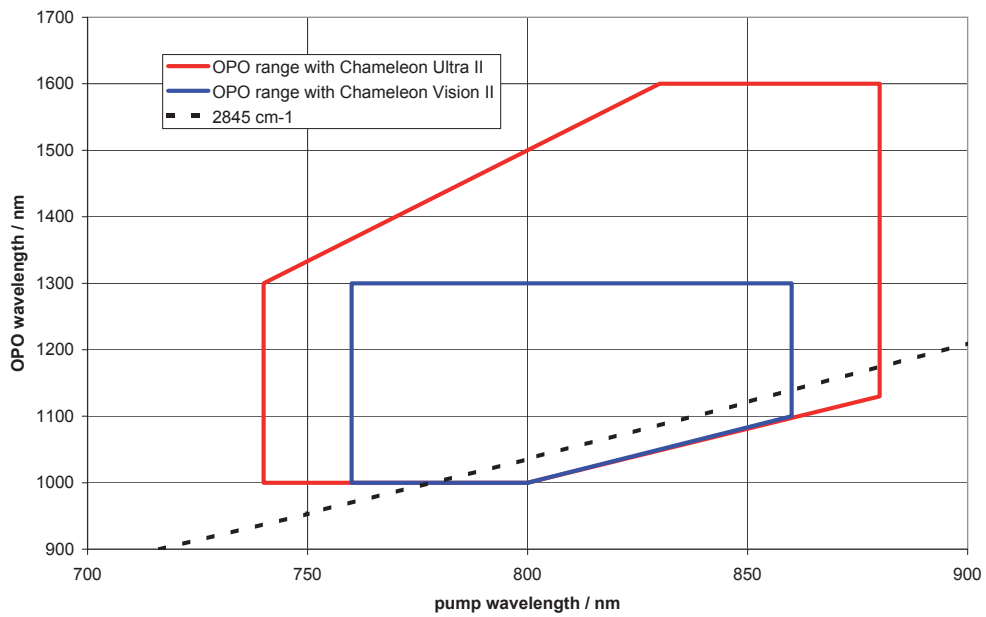
Acoustooptics

Your Partner in Ultrafast

POWER TUNING CURVES



TUNING RANGE

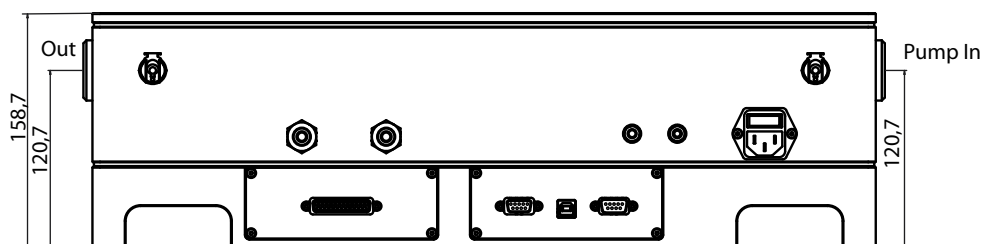
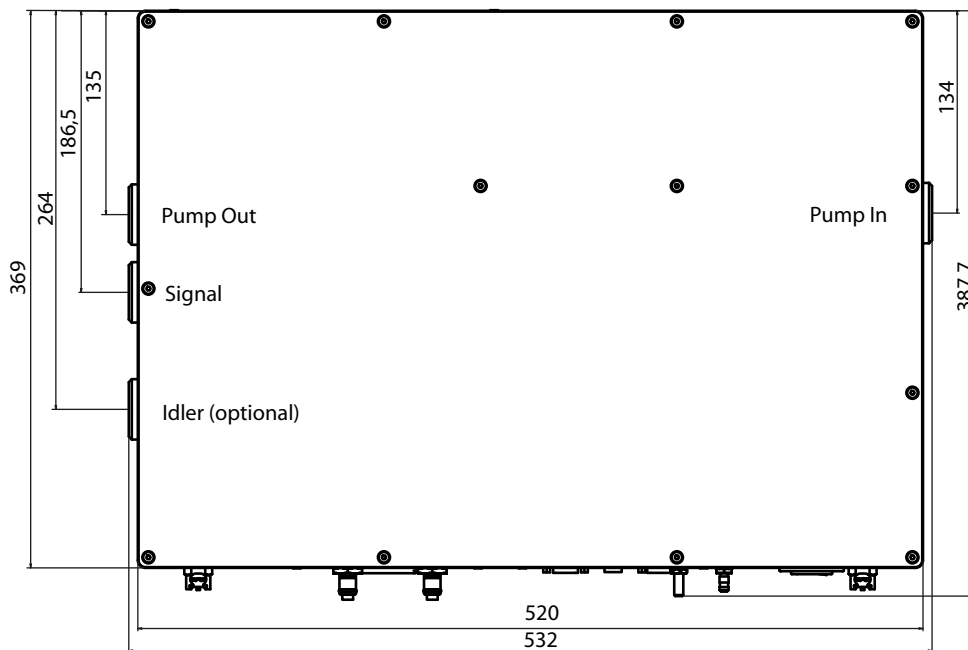


DIMENSIONS (W*L*H in mm)

OPO optics unit	520 x 369 x 158
Chiller	270 x 200 x 380
MRU air recirculator	460 x 430 x 85
Panel PC	234 x 128 x 41

WEIGHT (in kg)

OPO optics unit	40
Chiller	11
MRU air recirculator	9
Panel PC	2



Chameleon compact OPO

TECHNICAL DATA

Chameleon Ultra II pump

Pump wavelength range	740 to 880 nm
OPO Signal wavelength range	1000 ... 1600 nm (depending on actual pump wavelength, Idler wavelength needs to be between 1720 and 4000 nm)
Output power	> 550 mW @ 1100 nm with 800 nm, 3.5 W pump

Chameleon Vision II pump

Pump wavelength range	760 to 860 nm
OPO Signal wavelength range	1000 ... 1300 nm (depending on actual pump wavelength, Idler wavelength needs to be between 1720 and 4000 nm)
Output power	> 450 mW @ 1100 nm with 800 nm, 3.0 W pump
Best GDD settings	-7500 fs ² @ 760 nm to -4500 fs ² @ 860 nm

Time-bandwidth product	0.6 typical
Pulse duration	200 fs typical
2 output ports	OPO Signal output and 20% Ti:Sapphire output (or 100% Ti:Sapphire output only)
Pointing stability	< 400 μ rad for full pump / OPO wavelength range
Beam diameter	2.0 mm at OPO exit
Divergency	0.5 mrad typical
M ²	1.1 typical
Minimum energy difference between Pump and Signal	2500 cm ⁻¹
Computer interface	USB, RS 232

UTILITY AND ENVIRONMENTAL REQUIREMENTS

Electrical connections	4 x 100 - 240 V AC, 50 - 60 Hz (auto ranging)
Power consumption (max)	635 W (chiller) + 180 W (MRU X1) + 100 W (user interface) + 100 W (OPO optics)
Operating temperature range	15 - 33° C

OPTIONS

Idler wavelength	1750 ... 4000 nm
100% pump option (no Ti:Sapphire bypass available)	

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APE follows a policy of continued product improvement. Therefore, specifications are subject to change without notice.