

APOLLO-Y *Optical Parametric Amplifier*

**Optimized for
Time-Resolved
Spectrometry**

**For Ultrafast Ytterbium
Amplifiers**

Fully Automated



The **APOLLO-Y** Optical Parametric Amplifier is designed to extend the tuning range of an ultrafast Ytterbium amplifier from the UV to the NIR. It is optimized to work with Ultrafast Systems' spectrometers – [HELIOS](#), [EOS](#), [HALCYONE](#), etc. High stability and high efficiency are achieved through three step amplification of a white-light supercontinuum, and all nonlinear crystal tuning, optical delay compensation, and wavelength separation is fully computer controlled.

This OPA has been designed as a capable yet easy to use pump source with the spectroscopist in mind. Its layout has been optimized to fit neatly alongside new or existing spectroscopy systems, minimizing the amount of bench space required. Inclusion of multiple frequency conversion schemes allows fully computer-controlled tuning of the output wavelength from 258 nm to 2600 nm, while collinear output from a single port reduces the need for external beam routing optics. The timing of the pulse output remains consistent across the whole wavelength tuning range.

Tuning Range
258, 343, 515 nm
258 – 2600 nm

Single Output Port
For All Wavelengths
Fully Automated

Optimized For
HELIOS, EOS
HALCYONE



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Features

- Designed for amplified [Ytterbium lasers](#)
- 25cm x 66cm (10" x 26") footprint
- Optimized for use with Ultrafast Systems' [delay lines](#) and [spectrometers](#)
- Single beam, single port output across the entire tuning range
- Consistent output pulse timing across the entire tuning range
- Fully tunable **from 258 nm to 2600 nm** with built-in SHF (515 nm), THF (343 nm), FHF (258 nm) option

Specifications

| Mode | Wavelength range, nm | Conversion Efficiency at Peak* Rep. rate ≤5KHz | Conversion Efficiency at Peak* Rep. rate >5KHz | Polarization |
|---------------|----------------------|--|--|---------------|
| FH Idler | 258 - 320 | 1% | 0.5% | H, V** |
| SH Signal | 320 - 515 | 5% | 4% | H, V** |
| SH Idler | 515 - 630 | 3.5% | 2% | V |
| Signal | 630 - 1030 | 15% | 10% | V |
| Idler | 1030 - 2600 | 10% | 5% | H, V** |
| FHF, THF, SHF | 258, 343, 515 | > 5% | > 5% | H, V** |

* measured with 250 fs 100 uJ pump

** constant vertical polarization upon request

Pump Laser Requirements

| | |
|----------------|------------------------------|
| Wavelength | ~ 1030 nm |
| Pulse duration | 100 - 400fs |
| Pulse energy | ≥ 50uJ |
| Beam diameter | ≤ 8mm |
| Stability | < 2% (pulse-pulse) |