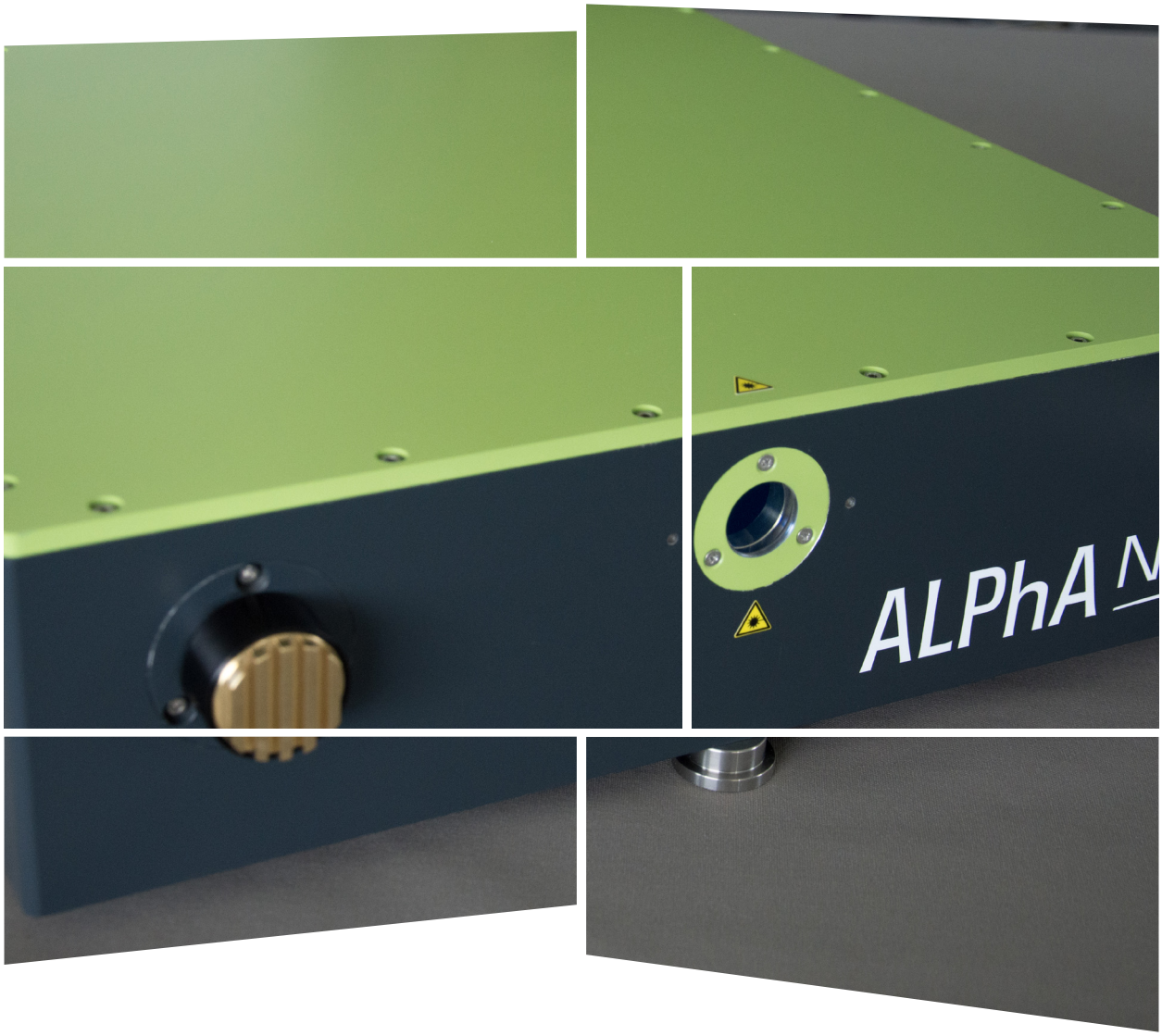
# S-FA-HP+

## High-power special fiber amplifiers




ALPhA NOV

Optics & Lasers Technology Center

www.alphanov.com

# S-FA-HP+

## High-power special fiber amplifiers

ENHANCED STABILITY | HIGH POWER | CO-FORWARD

- With strong expertise in laser design and by using state-of-the-art fibers, ALPhANOV can build monolithic YDFAs based on co-forward pumping, with superior stability and performances optimized for your operating regime.
- For the most demanding optical regimes, the S-FA-HP+ is our most advanced version in terms of integration. Actively cooled, it is design to reach 100 W-class average power, and can also integrate isolators and pre-amplifiers.
- Pumping modules can be delivered as an option.

### AMPLIFIER PARAMETERS

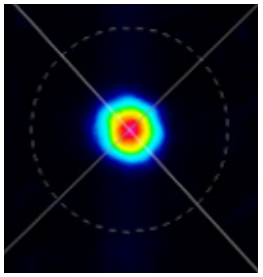
| | |
|---|---|
| Pumping scheme | Co-Forward |
| Pump combiner | 6+1 >1 (diodes are not included) |
| Gain fiber | Tailored to your regime<br>(Several fiber technologies can be implemented) |
| Input fiber | 12 µm core PM single mode fiber<br>(connectorized or bare fiber) |
| Pump fibers | 6 ports; 105/125,NA0.22 @976 nm |
| Mode field adaptor | Down to 0.6-1dB loss |
| Cooling | Water |
| Output beam | Collimated (1.5 - 2.5 mm)<br>Wavelength separator (for pump removal) |

### TYPICAL PERFORMANCES (*)

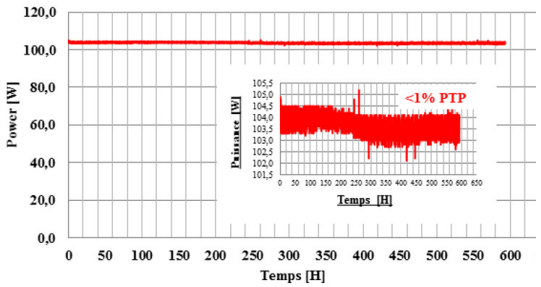
| | |
|---|---|
| Operational wavelength | 1030 - 1060 nm |
| Operating regime | CW or pulsed |
| Beam Quality | $M^2 < 1.2$ |
| Output power (rated) | 100 W-class |
| Max gain | < 17 dB |
| Output energy | Up to 200 µJ |
| Output Peak Power | Up to 400 kW |
| Slope efficiency | 70% typ. |
| PER | > 15 dB |
| Long term stability | < 2% over 1000 hrs |

*(*) the feasibility of these typical performance is always discussed depending on the operating regime*

### STABILITY

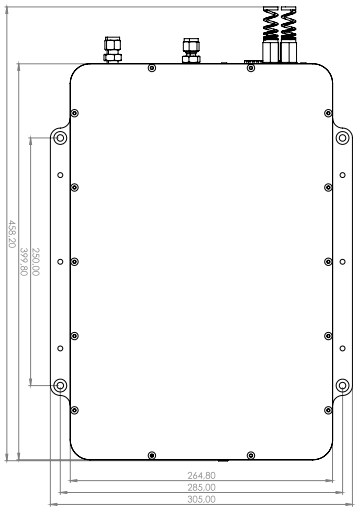


*Beam quality after 25 days burn in, @ 100 W, 100 kW peak power*




*Laser stability over 3 weeks of continuous burn in at 100 W/100 kW peak power*

### MECHANICAL




*The footprint can vary as an homothety of the radius of curvature of the fiber*

Photos : ALPhANOV - Version 06/22