aeroPULSE FS is a portfolio of industrial-grade femtosecond fiber lasers based on NKT Photonics world renowned Crystal Fiber platform. This rugged and compact OEM lasers use state-of-the-art mode-locking technology to deliver ultra-short femtosecond pulses with outstanding long-term stability, superior pulse-to-pulse stability, low noise, and excellent TEMoo mode quality. As standard, aeroPULSE FS is available with output powers up to 20W emitting at 1030nm.

The aeroPULSE FS lasers were developed for demanding 24x7 OEM applications, highlighting unit-to-unit consistency and uptime, low cost of ownership, and ease of integration. Designed for the stringent requirements of materials processing and micromachining applications where superior reliability is a mandatory attribute.

The system configuration consists of a 19” rack-mountable control unit and a very low profile laser head that can be mounted either horizontally or vertically. The complete system is water-cooled supporting high output power performance.

**Applications**
- Femtosecond micromachining
- Glass cutting and drilling
- Wafer scribing
- Medical device fabrication
- Thin film ablation
- Material processing
- Ceramic and polymer processing

**Typical pulse auto-correlation trace**

- 20W average power
- 20µJ/pulse @ 1030nm
- Available pulse widths <500 fs to 3 ps
- Up to 50 MHz repetition rate
- Excellent beam pointing stability
- All-fiber design, industrial reliability
- System monitoring via remote diagnostics
- Very quick warm-up time

aeroPULSE FS offers very clean pulses with virtually no pedestal.
Optical

- **Power**: 20 W
- **Wavelength**: 1030 nm
- **Energy per pulse**: 20 µJ (at 800 kHz)
- **Pulse duration, available**: <500 fs to 3 ps
- **Repetition rates, available**: 200 kHz - 50 MHz
- **Polarization**: Linearly polarized, PER >17 dB
- **Beam diameter**: ~1 mm
- **Beam divergence**: 1.6 ± 0.2 mrad
- **Spatial mode**: Fundamental, $M^2 \leq 1.2$
- **Power fluctuation (50 hours)**: <0.5%
- **Warm-up Time**: <1 min

*Other values available on request

Mechanical/Electrical

- **Computer Interface**: USB 2.0, RS 232
- **Operation Voltage**: 100-240 VAC 50/60 Hz
- **Power Consumption**: <330 W
- **System Cooling**: Water cooled
- **Chiller**: Included (rack mount or floor stand)
- **Operation Temperature**: 18°C—30°C
- **Storage Temperature**: -10°C—60°C
- **Dimensions (WxHxL)**:
  - Laser head: 335.5 x 88.3 x 545.1 mm³
  - Control box: 375 x 177 x 440 mm³ (4U 19” rack)
  - Chiller: 330 x 197 x 279 mm³ (floor stand) / 432 x 177 x 438 mm³ (rack mount)
- **Weight**:
  - Laser head: 10.2 kg
  - Control box: Up to 14.7 kg
  - Chiller: 9 kg

Support and Warranty

aeroPULSE support/warranty

All aeroPULSE products come with industry leading reliability and are backed by our standard 2 year warranty. However, should you need the extra security of an extended warranty and remote diagnostics support this is available in our support and warranty extension package. Please contact your sales representative for more information.

Lifetime

The aeroPULSE systems are driven by our proven pulsed platform used in our SuperK EXTREME supercontinuum lasers. Consequently, the systems are completely maintenance free and have an expected lifetime of more than 20,000 hours.

NKT Photonics A/S (Headquarters)
Blokken 84, 3460 Birkerød, Denmark
Phone: +45 4348 3900
Fax: +45 4348 3901

See www.nktphotonics.com for global offices and distributors