

# aeroPULSE FS10

High power femtosecond fiber laser

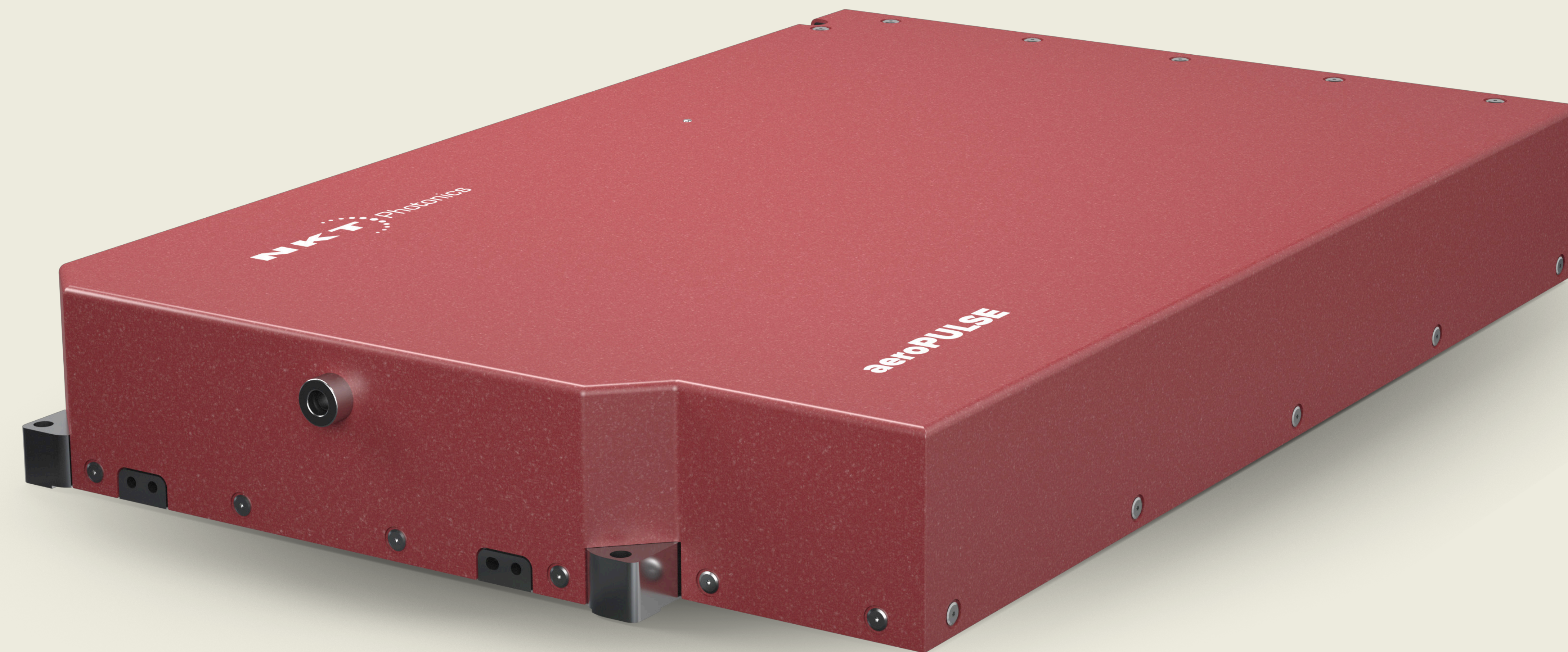




# Rugged and compact ultrafast fiber laser

## Medical-grade femtosecond fiber laser

This rugged and compact OEM laser utilises 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 beam pointing stability.



## aeroPULSE FS10

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### Applications

**Ophthalmic surgery**

**Photostimulation  
for optogenetics**

**Flat panel display repair**

**Medical device manufacturing**

**Microelectronics**

**Femtosecond micromachining**

**Femtosecond laser marking  
and scribing**

**Laser metrology**



# Reliable

**Developed for demanding medical & industrial applications**  
Designed for the stringent reliability requirements of medical and industrial markets, the aeroPULSE FS10 is qualified to rigorous safety, mechanical & environmental standards.

**Maintenance-free and OEM-ready**  
With no alignment required, the aeroPULSE FS10 guarantees high stability with 24/7 operation and is ideal for OEM integration.

The system configuration consists of a low-noise, air-cooled control unit and a very low-profile laser head that can be mounted either horizontally or vertically.

The complete system is air-cooled supporting straightforward integration in a variety of locations.

## Features

- Average power 10 W @1030nm**
- Pulse energy 20 µJ @1030nm**
- Variable pulse widths < 300 fs - 3 ps**
- Clean pulses with virtually no pedestal**
- Single-shot to 20 MHz**
- Excellent beam pointing stability**
- All-fiber design, industrial reliability**
- Maintenance-free 24/7 operation**
- Burst mode capable**

- Average power 5 W @515nm w/ SHG**
- Pulse energy 10 µJ @515nm w/ SHG**

# aeroPULSE FS10

## NKT Photonics CONTROL

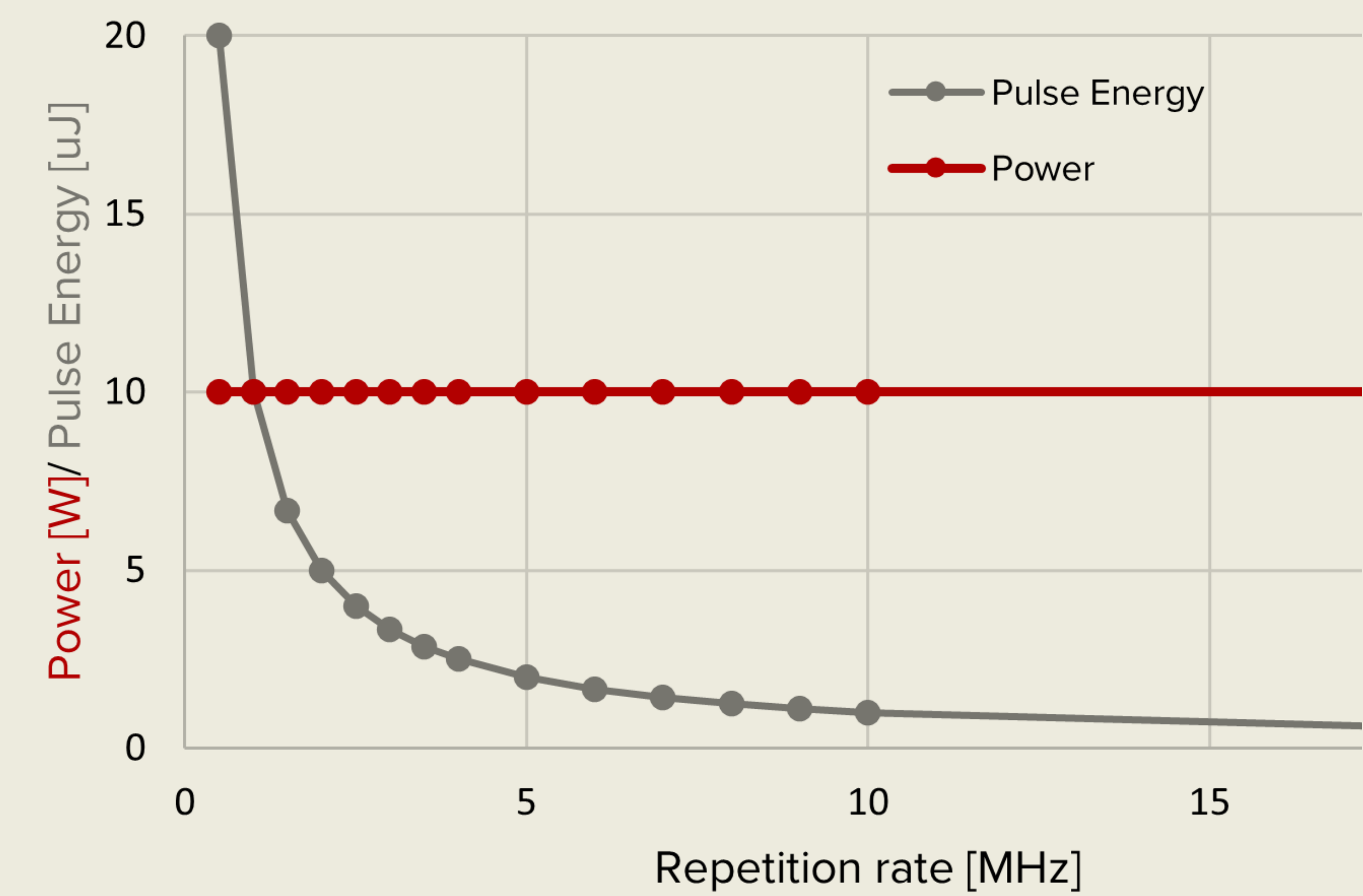
Using the NKT Photonics ubiquitous CONTROL software, the aeroPULSE FS10 is easy to operate through the intuitive graphical user interface.

Furthermore, the platform allows laser condition monitoring by virtue of in-built surveillance sensors ensuring optimum and safe laser operation.

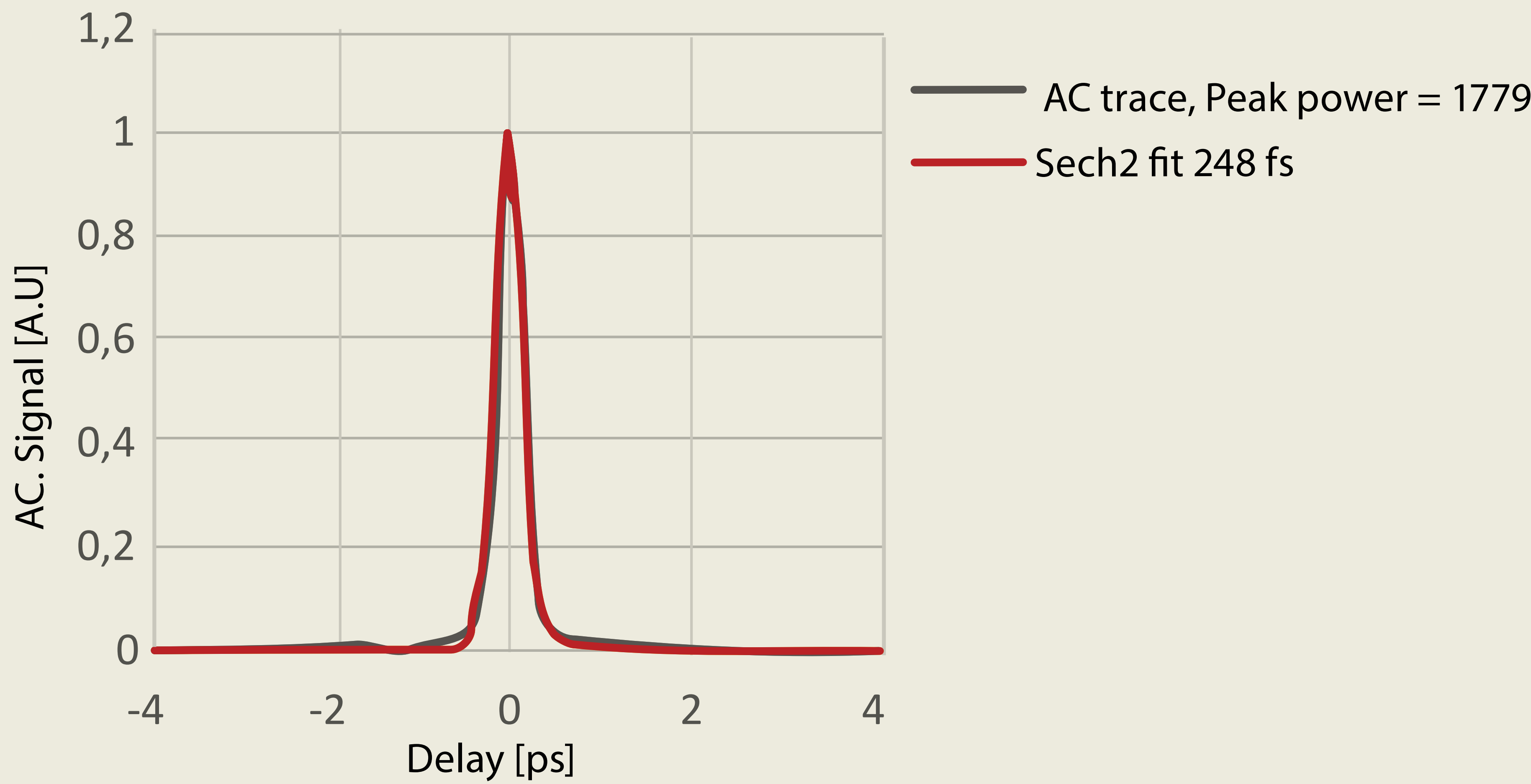
# Typical Performance, IR

aeroPULSE  
FS10

Typical output power vs repetition rate



Typical pulse auto-correlation trace





# Specifications

## Optical

Model	FS10	FS10-05
Center wavelength [nm]	1030 ± 5	515 ± 5
Power [W]	> 10	> 5
Pulse duration [fs]	< 300 - 3000	< 300
Pulse energy [μJ]	> 20 @ 500 kHz	> 10 @ 500 kHz
Repetition rate [MHz]	0.5 – 20	0.5 – 20
Output pulse picker	Single shot – 1 MHz	Single shot – 1 MHz
Beam diameter [mm]	1.5 ± 0.3	1.0 ± 0.3
Beam divergence [mrad]	1.4 ± 0.3	1.0 ± 0.3
Spatial mode, fundamental	M² ≤ 1.2	M² ≤ 1.2
Beam asymmetry/ellipticity [%]	< 15	< 15
Power stability (8 hours), RMS [%]	< 0.5	< 1
Pointing stability (8 hours) [μrad]	< 50	< 50
Polarization - linear, PER [dB]	> 25	> 25

# aeroPULSE FS10

## Support and warranty

The product is covered by a comprehensive warranty. Service options are available. For details, please enquire.

All aeroPULSE lasers are completely maintenance-free and have an expected lifetime of more than 20,000 hours.



# Specifications

## Electrical/Mechanical

Model	FS10	FS10-05
Computer interface	RS-485, USB, ethernet	RS-485, USB, ethernet
Operation voltage [Hz]	100-240 VAC 50/60	100-240 VAC 50/60
Power consumption [W]	< 400	< 400
Operation temperature [°C]	15 - 32	15 - 32
Storage temperature [°C]	0 - 50	0 - 50
Laser head dimensions (WxHxL) [mm³]	335 x 70 x 514	394 x 80 x 676
Laser head weight [kg]	18.5	23.8
Control unit dimensions (WxHxL) [mm³]	170 x 360 x 400	170 x 360 x 400
Controller weight [kg]	16	16
Umbilical length [m]	1.3	1.3
Cooling	Air / passive	Air / passive

# aeroPULSE FS10

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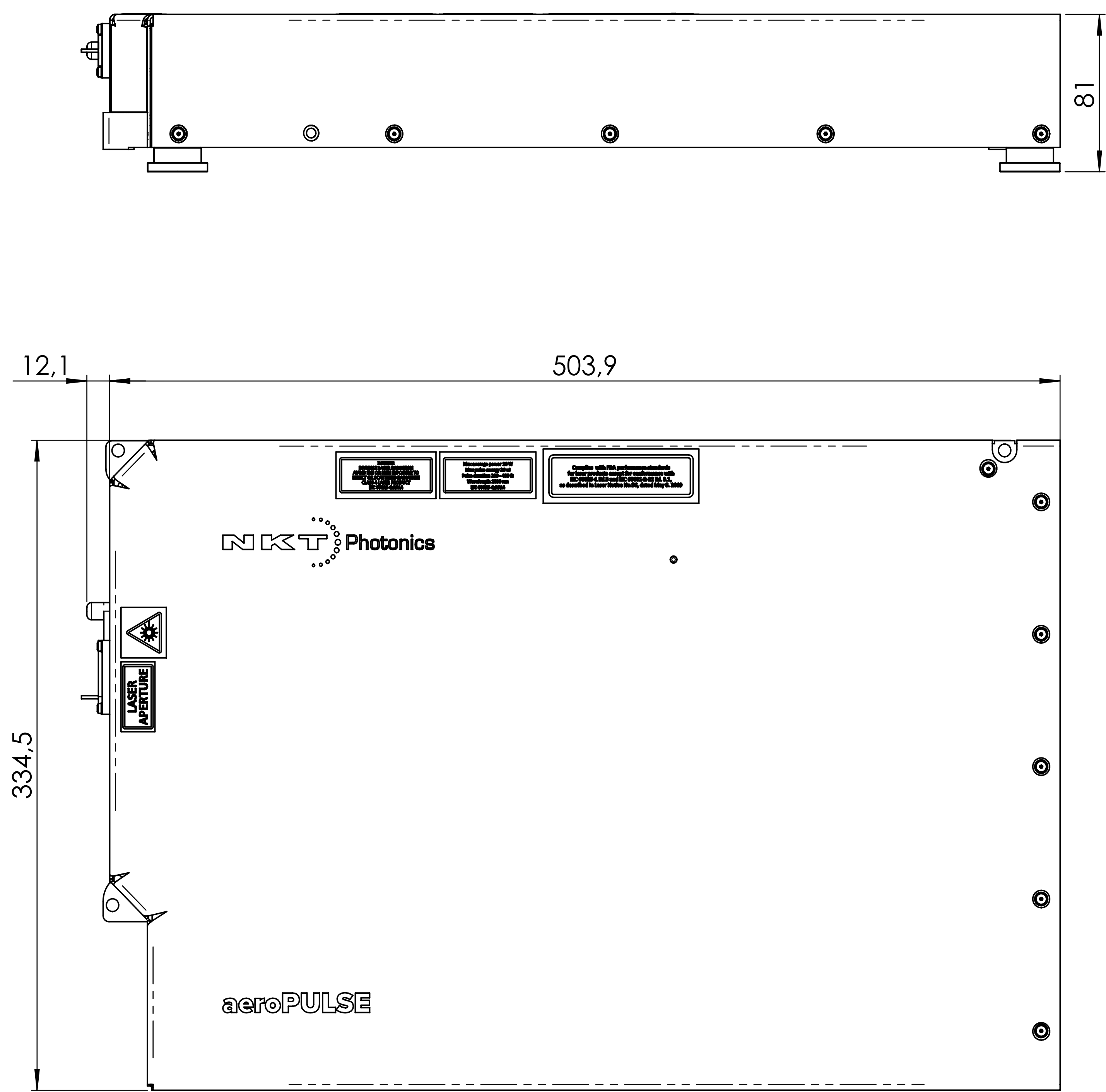
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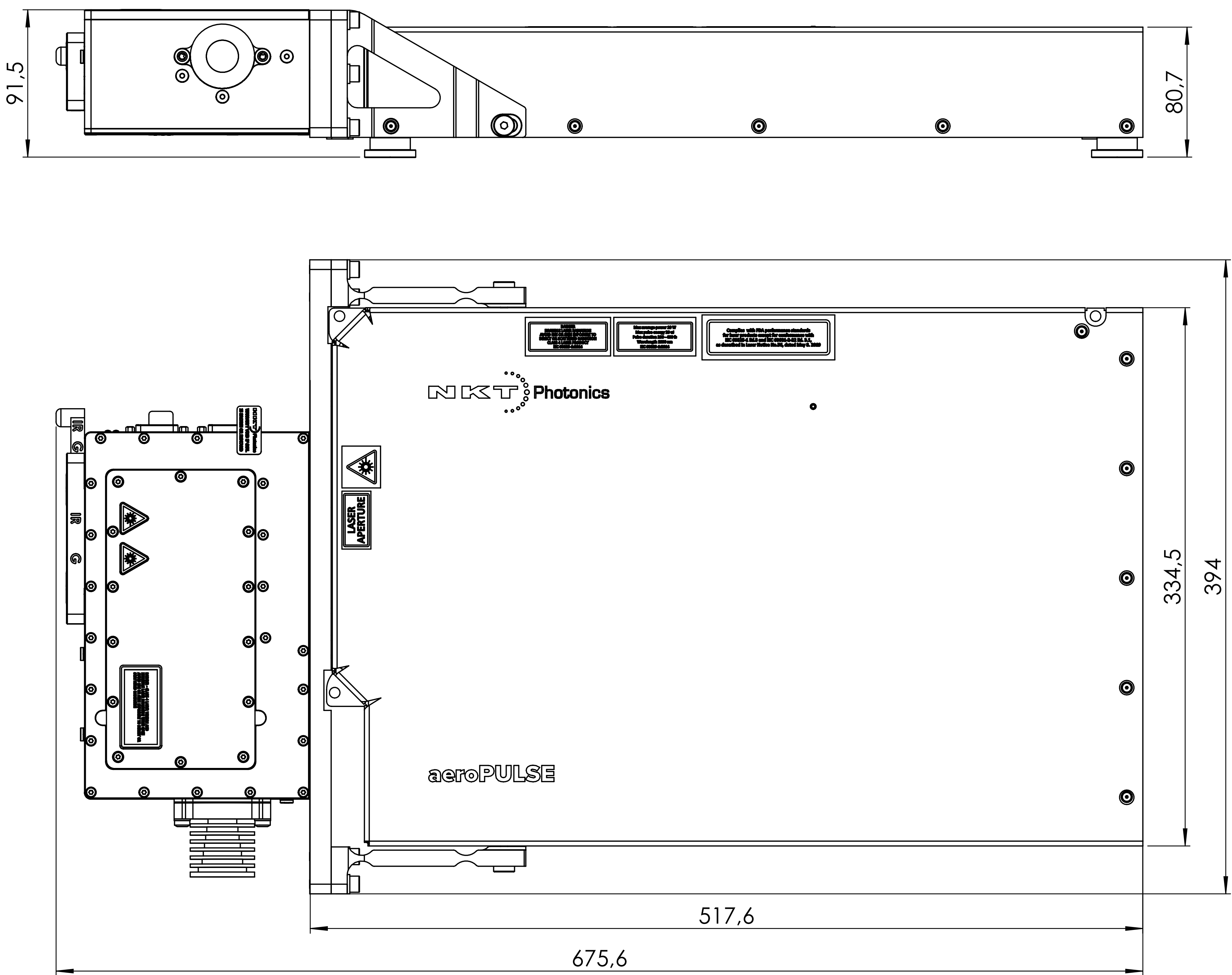


# Technical Drawings

Laser head FS10



Laser head FS10-05



## aeroPULSE FS10

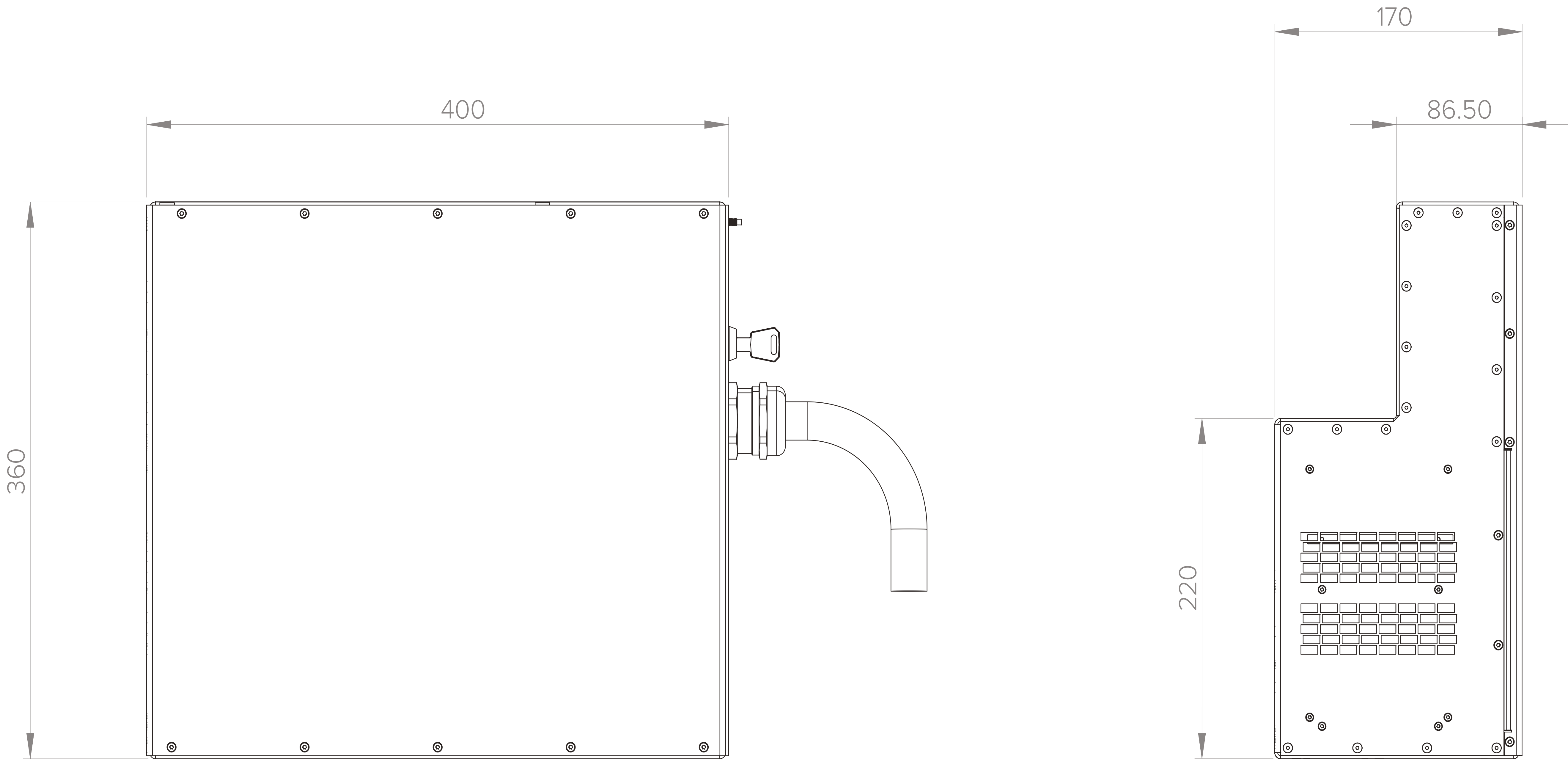
All NKT Photonics products are produced under our quality management system certified in accordance with the ISO 9001:2015 standard.





# Technical Drawings

## Control unit



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# SOLUTIONS FOR INNOVATORS