

PEFL-EOLA

PULSED ERBIUM FIBER LASER

1.5 μm LONG PULSE FIBER LASER



1.5 μm



PE 11A/ PE 12A

PE 13D

Eye-safe 1.5 μm operating wavelength,
Energy per pulse up to 400 μJ ,

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The PEFL-EOLA series is a range of 1.5 μm pulsed fiber lasers specially designed for Doppler heterodyne LIDAR systems, delivering Fourier transform limited pulses with high energy and high peak power. Shorter pulse duration with high peak power are well suited to high spatial resolution middle range systems whereas longer pulses with high energy are well suited for long range applications.

Thanks to innovative optical designs, the lasers can emit up to 400 μJ energy and up to 900W peak power with a linear polarization, a very high extinction ratio in between two pulses, a long coherence length and an excellent output beam quality (diffraction limited or $M^2 < 1.1$ to 1.5 depending on peak power). This product range is ideal for various wind measurement applications such as turbine mounted lidar, windfarm optimization and wind hazard and wake vortices monitoring.

The rugged modules can work in the most stringent environments 24 hours/24. Lumibird provides numerous of PEFL-EOLA lasers which operates continuously under vibrations, shocks and strong temperature variations. IP64 solutions are also available.

The OEMs incorporate a microcontroller for internal controls, alarms, and RS232 communications making the laser compatible with all systems. Pulses are triggered by external signals (one TTL used as a gate, one analog used for pulse shaping) supplied by the user system. The lasers can be proposed with integrated pulse shaping electronics for easy integration into lidar systems or for pulse shape optimization. In this case, only one external TTL trigger signal is required.

An output circulator can be implemented into the module in order to collect the backscattered light for the Heterodyne measurement.

Key features

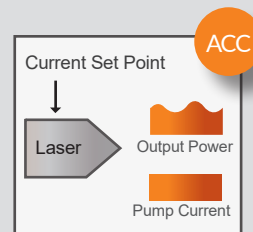
- Eye-safe 1.5 μm operating wavelength
- Energy per pulse up to 400 μJ
- Peak power up to 900 W
- Pulse duration from 100 to 800 ns
- Pulse repetition frequency from 10 kHz to 20 kHz
- Low RIN and low phase noise
- Linear Polarization
- Fourier transform limited linewidth operation
- Diffraction limited $M^2 < 1.1$ or < 1.5
- Wide operating temperature range from +10 $^{\circ}\text{C}$ to +65 $^{\circ}\text{C}$
- Highly integrated design

What applications

- Aerosol detection
- 2D/3D wind profiler
- Weather monitoring
- Pollution monitoring
- Turbine mounted LiDAR
- Wind hazard and wake vortices monitoring
- Wind farm optimization

Modes of operation

The devices offer one mode of operation :



ACC (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.

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Optical Specifications @ 25 °C

PEFL-EOLA	
Mode of operation	Pulsed
Operating wavelength	1550 +/-10 nm or ITU channel
Energy per pulse	Up to 400 μJ
Peak power	Up to 900 W
Pulse repetition frequency	From 10 to 20 kHz
Pulse duration	From 100 to 800 ns
Average output power	Up to 4 W
Spectral linewidth	From 3 kHz to <1 MHz
Polarization	Linear
Beam quality, M^2	<1.1 to < 1.5
CW seed tap	> 1 mW power on Panda, 100 +/-5 cm, 3 mm PVC
Tap and output termination	FC/APC

The PEFL-EOLA is available as OEM module for an easily integration

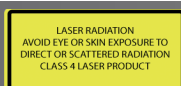
RELIABILITY

The Lumibird range of fiber lasers are manufactured with tested components and are submitted to several inspections during the manufacturing process under a rigorous quality management certified in accordance with the ISO 9001:2015 standard. Our all-in-fiber systems offer maintenance-free operation. Countless units are continuously running in demanding environments with no failure.

GUARANTEE

Our fiber systems are under 1 full year parts and labor warranty. We offer a warranty extension of 1 or 2 years. Please contact us.

For ordering information and custom solutions, please contact us : websales@keopsys.com



Lumibird undertakes a continuous and intensive product development program to ensure that its products perform to then highest technical standards. As a result, the specifications in this document are subject to change without notice.

Lumibird has locations across the globe that are available to provide support for any product, service or inquiry. Visit www.lumibird.com to connect with any of our global sites.

