

PEFL-EOLA

Pulsed Erbium Fiber Laser
1.5 μm long pulse



PE60D



PE30D / PE31D



MAIN FEATURES

- Eye-safe 1.5 μm operating wavelength
- Energy per pulse up to 300 μJ
- Peak power up to 600 W
- Pulse duration from 200 to 800 ns
- Pulse repetition frequency from 10 kHz to 20 kHz
- Narrow linewidth available down to 5 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

MAIN APPLICATIONS

- AEROSOL DETECTION
- 2D/3D WIND PROFILER
- WEATHER MONITORING
- POLLUTION MONITORING
- TURBINE MOUNTED LIDAR
- WIND HAZARD AND WAKE VORTICES MONITORING
- WIND FARM OPTIMIZATION

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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 design, the lasers emit up to 300 μJ and 600 W peak power with a linear polarization and a high extinction ratio. These lasers offer an output circulator to collect the back scattered light analyzed in LiDAR systems. In addition the long coherence length and the output beam quality make these products ideal for various wind applications as turbine-mounted LiDAR, windfarm optimization and wake vortices monitoring.

The rugged modules can work in the most stringent environments 24h/24 and operate continuously under vibrations, shocks and strong temperature variations.

The laser module incorporate a microcontroller for internal controls, alarms, and RS232 communication, making the laser widely compatible.

Only one external TTL trigger signal is required as the pulse shaping is directly integrated in the lasers for an easy integration into LiDAR systems.

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Many options and configurations are available.
Please contact Lumibird to find the best match for
your needs and compatibility between options.

PEFL-EOLA

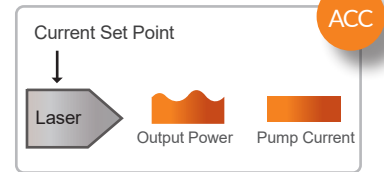
Pulsed Erbium Fiber Laser 1.5 μm long pulse



SPECIFICATIONS

	PEFL-EOLA
Mode of operation	Pulsed
Operating wavelength (nm)	ITU channels (1546.12 , 1548.51, 1550.12) or 1550 +/- 2
Spectral linewidth	From 5 kHz to 1 MHz
Pulse duration (FWHM, ns)	Up to 800
Energy per pulse (μJ)	Up to 300
Peak power (W)	Up to 600
Pulse repetition frequency (kHz)	10 or 20 depending on models
Average output power (W)	Up to 3.6
Polarization	Linear (PER > 17 or 20 depending on the model)
CW seed tap	> 1 mW power on PANDA fiber
Output type	Circulator
Output termination	FC/APC
Beam quality, M ²	< 1.1 or < 1.5 depending on the model

Mode of operation



ACC (Automatic Current Control)

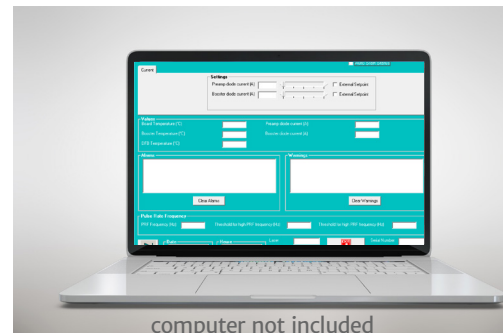


EASY TO INTEGRATE !



Control box

- Control box and cables delivered with the module for easy evaluation
- Available as an option



computer not included

Remote control

- RS232 interface
- Serial command set provided for easy integration
- GUI available

Reliability



All our fiber lasers and fiber amplifiers are manufactured according to our ISO certified quality management system, which places the needs and values of customers and partners at the heart of our organization. Throughout the manufacturing process, our components and systems are subjected to rigorous tests and inspections, which guarantees their robustness and reliability in the most demanding environments. Countless units operate continuously without maintenance around the world. The ISO 9001 certificates can be downloaded from our website.



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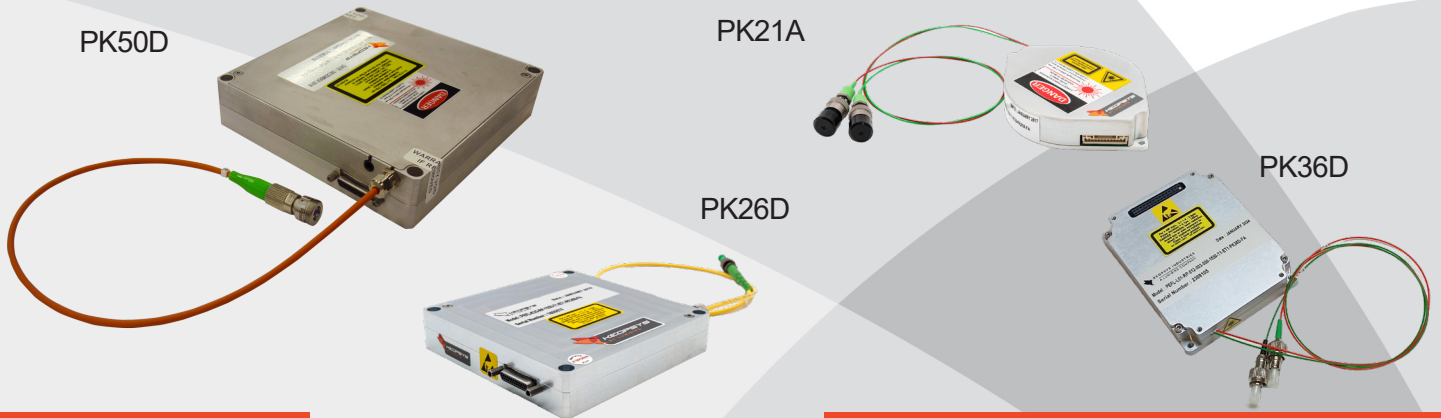


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PEFL-KULT

Pulsed Erbium Fiber Laser Ultra-compact Laser Transmitter



MAIN FEATURES

- 1.5 μm eye-safe operation
- Energy per pulse up to 50 μJ
- Peak power up to 12.5 kW
- Pulse duration from 0.5 ns to 50 ns
- Pulse repetition frequency from 5 kHz to 1 MHz
- Continuously pulsed or burst operation
- Diffraction limited output beam
- Linear or random polarization
- Low power consumption
- Wide operating temperature range ($-35\text{ }^{\circ}\text{C}$ to $+65\text{ }^{\circ}\text{C}$)
- Compact and rugged package

MAIN APPLICATIONS

- ADAS
- TELEMETRY, RANGE-FINDING
- 3D SCANNING
- MAPPING
- CLOUD HEIGHT MEASUREMENT
- WIND SENSING
- SUPERCONTINUUM GENERATION



The PEFL-KULT series is a range of 1.5 μm pulsed fiber laser transmitters, delivering high peak power and high energy per pulse in ultra-compact modules with diffraction-limited output beam for range finding applications.

A varied choice of models offers the possibility to operate over a wide range of operating setpoints (pulse duration, pulse repetition frequency and energy) making them suitable for a various of high-accuracy systems. Compact pulsed laser transmitters are commonly used in applications such as ADAS, 3D scanning, mapping, telemetry, and also for supercontinuum generation. The all-in-fiber design requires no maintenance. Some models of the PEFL-KULT series have been tested under vibrations and shocks conditions in accordance with military standards (MIL-STD-810G, RTCA-DO-160G...) allowing operations in the most demanding environments.

The laser modules incorporate a microcontroller for internal controls, alarms, and RS232/USB communication, making the laser widely compatible. Pulses are triggered by an external signal supplied by the user system. More than 10,000 lasers have already been installed worldwide.



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PEFL-KULT

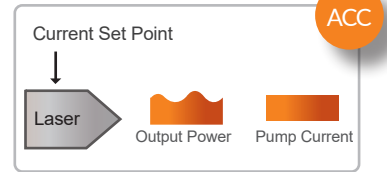
Pulsed Erbium Fiber Laser Ultra-compact Laser Transmitter



SPECIFICATIONS

	PEFL-KULT
Mode of operation	Pulsed
Operating wavelength (nm)	1545 or 1550 (depending on the model)
Wavelength excursion over T° range	< 0.3 or < 10 (depending on the model)
Pulse duration (FWHM, ns)	From 0.5 to 50
Energy per pulse (µJ)	Up to 50
Peak power (kW)	Up to 12.5
Pulse repetition frequency (kHz)	From 5 to 1000
Average power (W)	Up to 2.5
Polarization	Random or linear (PER > 17 dB)
Seed tap (ST option)	1m pigtail length, SMF, FC/PC > 0.1 mW peak power
Pigtail length (cm)	32 +/- 2
Fiber type	Single mode or LMA fiber (depending on the power)
Output termination	FC/APC, ferrule APC or collimator (depending on the model)
Beam quality, M ²	< 1.1 to < 1.5 depending on the model

Mode of operation



ACC (Automatic Current Control)

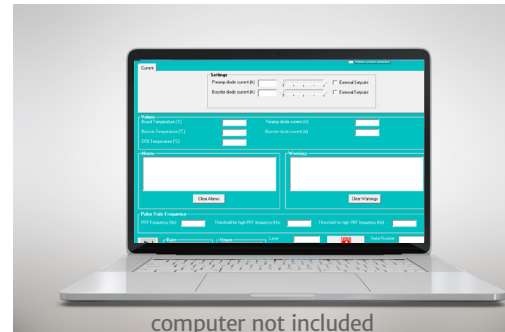


EASY TO INTEGRATE !



Control box

- Control box and cables delivered with the module for easy evaluation
- Available as an option



computer not included

Remote control

- RS232 interface
- Serial command set provided for easy integration
- GUI available

Reliability

All our fiber lasers and fiber amplifiers are manufactured according to our ISO certified quality management system, which places the needs and values of customers and partners at the heart of our organization. Throughout the manufacturing process, our components and systems are subjected to rigorous tests and inspections, which guarantees their robustness and reliability in the most demanding environments. Countless units operate continuously without maintenance around the world. The ISO 9001 certificates can be downloaded from our website.



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PEFL-MIRVISION

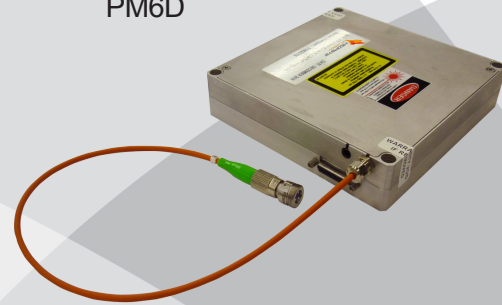
Pulsed Erbium Fiber Laser
Eye-safe high power laser transmitter



PM14D



PM6D



MAIN FEATURES

- 1.5 μm eye-safe operation
- Energy per pulse up to 350 μJ
- Peak power up to 25 kW
- Pulse duration from 3 to 20 ns
- Pulse repetition frequency from 15 to 700 kHz
- Linear or random polarization
- High beam quality (<1.1 or <1.5 depending on the model)
- Low power consumption
- Wide operating temperature range ($-35\text{ }^{\circ}\text{C}$ to $+65\text{ }^{\circ}\text{C}$)
- Rugged and compact package

MAIN APPLICATIONS

- **TELEMETRY, RANGE-FINDING**
- **OBSTACLE DETECTION**
- **AIRBORNE SURVEY, MAPPING**
- **3D SCANNING**

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The PEFL-MIRVISION series is a range of 1.5 μm pulsed fiber laser transmitters, delivering high peak power and high energy per pulse in compact modules for long-range applications.

A varied choice of models offers the possibility to operate over a wide range of operating setpoints (pulse duration, pulse repetition frequency and energy) making them suitable for a various of high-accuracy systems. Compact pulsed laser transmitters are commonly used in applications such as Airborne 3D scanning and mapping, telemetry and obstacle detection.

The all-in-fiber design requires no maintenance. Some models of the PEFL-MIRVISION series have been tested under vibrations and shocks conditions in accordance with military standards (MIL-STD-810G, RTCA-DO-160G...) allowing operations in the most demanding environments.

The laser modules incorporate a microcontroller for internal controls, alarms, and RS232/USB communication, making the laser widely compatible. Pulses are triggered by an external signal supplied by the user system.

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PEFL-MIRVISION

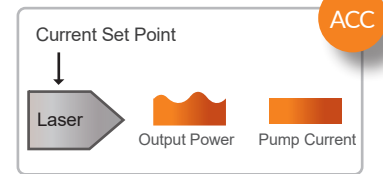
Pulsed Erbium Fiber Laser
Eye-safe high power laser transmitter



SPECIFICATIONS

	PEFL-MIRVISION
Mode of operation	Pulsed
Operating wavelength (nm)	1545, 1550 or 1555 (depending on the model)
Wavelength excursion over T °C range	< 0.3 or < 10 (depending on the model)
Pulse duration (FHWM, ns)	From 3 to 20
Energy per pulse (µJ)	Up to 350
Peak power (kW)	Up to 25
Pulse repetition frequency (kHz)	From 15 to 700
Average power (W)	Up to 10
Polarization	Random or linear (PER > 17 dB)
Seed tap (ST option) :	1 m pigtail length, SMF, FC/PC > 0.1 mW peak power
Pigtail length (cm)	32 +/- 2
Fiber type	single mode, LMA or multimode (50 µm) depending on the model
Output termination	FC/APC or collimator

Mode of operation



ACC (Automatic Current Control)

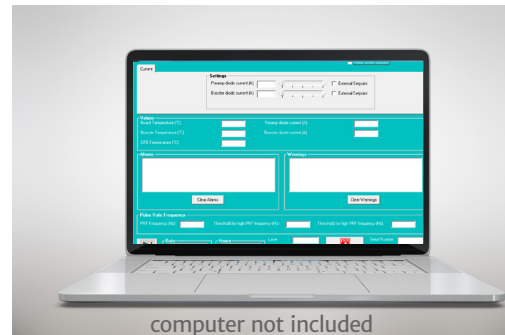


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