

## Fiber-coupled Picosecond-pulsed Laser Module



Our single-mode fiber-coupled picosecond-pulsed laser modules can provide short light pulses down to 50ps with a peak power up to 150mW in various wavelengths.

### KEY SPECS

- Laser diode gain-switching technology
- Available wavelengths: 405, 445, 488, 520, 635 and 850 nm
- Desktop-size-compact (135×110×50 mm)
- Light weight (510g)
- Standalone module, no computer connection required
- FC/PC fiber-coupled laser diode
- B2C or B2B selling options

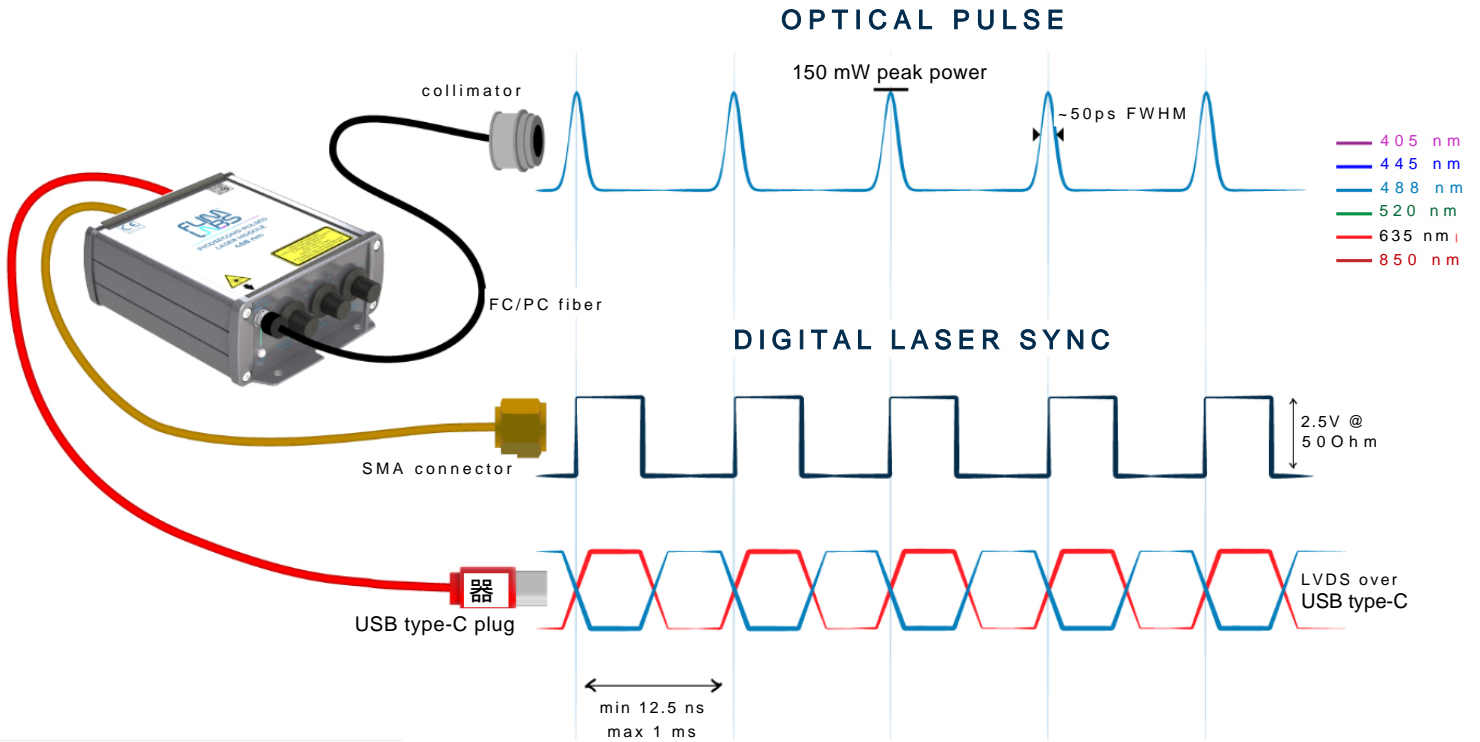
### Included in the price

- Wall-mount DC converter
- SMA coaxial cable
- USB type-C LVDS signal cable
- FC/PC MultiMode or SingleMode fiber patch cord

### MAIN TECH-SPECS

- Spectral width  $\pm 10$ nm
- Pulse duration down to 50ps (FWHM)
- From 1KHz up to 80MHz repetition rate
- 150mW pulse peak power
- 1.5mW average CW power at 80MHz
- Single-mode fiber coupled module (FC/PC type)
- External and internal digital sync trigger available (LVTTTL 2.5V @ 50Ohm and LVDS interface)

## Main Function

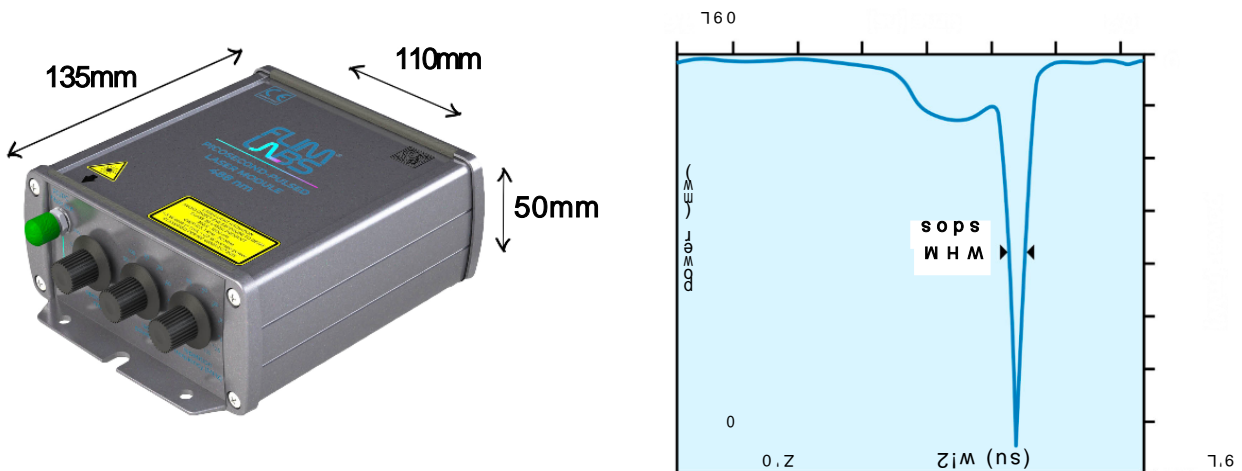


## MAIN FEATURES

Our fiber-coupled picosecond-pulsed laser modules are engineered for fluorescence lifetime imaging and spectroscopy measurements. The lasers are available in the following wavelengths: 405, 445, 488, 520, 635 and 850 nm. Being standalone modules and requiring no computer connection to fully operate, our lasers can be deployed with minimal effort in different types of environments.

### Compactness

Being only 135×110×50 mm in size and capable of delivering picosecond long pulses, our laser modules offer a good compromise between compactness and performance.



### Laser power and pulse duration

The pulse duration (FWHM) can be as low as 50ps depending on the laser wavelength. While the pulse peak power is around 150mW yielding an average CW power of 1.5mW when operating at the maximum repetition frequency (80MHz).

## Digital Knobs user interface

For fast and intuitive usage we designed the lasers as standalone modules requiring no computer interface. That is also why we equipped them with just 3 digital knobs for **(1)** controlling the functioning mode, either in PW or CW, **(2)** adjusting the laser power and **(3)** setting the repetition frequency as well the triggering modality, internal or external.



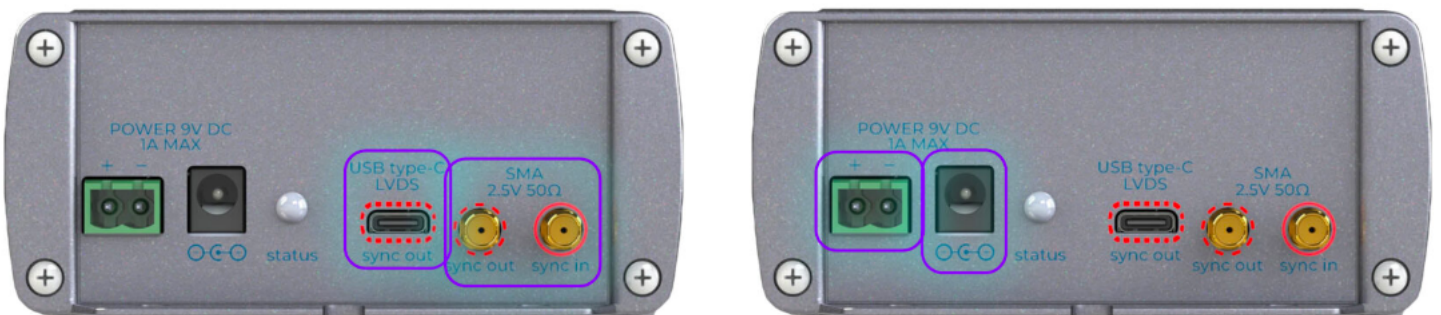
## Laser triggering

Internal laser triggering is available from 80 down to 1.25MHz. The laser **sync out** is available in LVTTTL @ 50Ohm or in LVDS over USB type-c connector (FLIM LABS proprietary interface).

External laser triggering is also possible using a dedicated knob functionality together with the **sync in** SMA connector port. External **sync in** signal has to be LVTTTL @50Ohm and can be driven as low as 1KHz.

## Interface and connection type

Our laser modules have SMA coaxial connectors for a LVTTTL 50 Ohm **sync in** and **sync out** interface. The **sync out** SMA interface works in parallel with an orientation independent USB type-C port for communicating over a proprietary FLIM LABS LVDS protocol with the [FLIM Data Acquisition Card](#).



## Power Supply

The 2 options available for the power supply allow for flexible powering the laser modules via a 2.1/5.5 mm coaxial connector using a wall-mount DC converter or via jumper cables (recommended values are 9 V DC – 1 A max).

## Fiber coupling

FC/PC fiber coupling offers flexibility for using our picosecond-pulsed laser modules for any type of applications, from fluorescence imaging to single-point fluorescence spectroscopy.





## LEDs

Two LED lights are always there for providing real time feedback on the correct functioning of the laser module. One in the front panel for knowing when the laser is active **(1)**, the second in the rear panel for making sure the module is working at its best **(2)**.

## FULL SPECS

<b>Technology</b>	<b>Laser diode gain-switching</b>
<b>Operational mode</b>	<b>CW or PW</b>
<b>Wavelengths</b>	<b>405, 445, 488, 520, 635, 850nm</b>
<b>Spectral width</b>	<b>± 10nm</b>
<b>PW Peak power</b>	<b>150mW</b>
<b>FWHM</b>	<b>Down to 50ps (depending on laser wavelength)</b>
<b>Average CW power when pulsing</b>	<b>1.5mW at 80MHz repetition rate</b>
<b>CW power</b>	<b>30mW</b>
<b>Repetition frequency</b>	<b>Internal triggering: 80, 40, 20, 10, 5, 2.5, 1.25 MHz</b> <b>External triggering: from 1 KHz up to 80MHz</b>
<b>Fiber coupling</b>	<b>SingleMode 4µm core</b>
<b>Fiber connector</b>	<b>FC type</b>
<b>Laser sync out</b>	<b>LVTTTL 4V@50 Ohm over the SMA connector</b> <b>LVDS over the USB-type C ports (FLIM LABS proprietary interface)</b>
<b>Laser sync In (digital modulation)</b>	<b>LVTTTL 4V@50 Ohm over the SMA connector</b>
<b>Power supply</b>	<b>9V DC-1 A max via the 2.1/5.5 mm coaxial connector or via jumper cables</b>
<b>Dimensions</b>	<b>135×110×50 mm</b>
<b>Weight</b>	<b>510g</b>