

## Applications

Multiphoton  
microscopy

Photopolymerization

Ophthalmology

OPO pumping

**lilit**

**BIOLIT  
2**

Femtosecond fiber laser for biophotonics  
1050nm, 80fs, 2W, 20MHz



## Features

Very short and clean  
pulses

Robust and stable

Flexible repetition  
rate optimized for  
multiphoton  
microscopy

Maintenance-free &  
turn-key

Integrated dispersion  
pre-compensation

## Clean pulses lead to sharp images

**Biolit 2** is a compact, air-cooled femtosecond laser designed with multiphoton microscopy and other nonlinear optics applications in mind.

The industrial-grade device is exceptionally robust, affordable and maintenance-free.

A combination of very short (typ 60fs) and clean pulses, high beam quality and lower repetition rate – compared to solid-state siblings – enables unparalleled multiphoton imaging while preserving the object.

## Specifications

	<b>Biolit 2</b>
Central wavelength	1050 ± 5 nm
Average power	>2 W
Pulse duration	<80 fs (60 fs typ.)
Pulse strehl ratio	>0.9
Tunable dispersion pre-compensation <sup>1)</sup>	-8 000 fs <sup>2</sup> ... +500 fs <sup>2</sup>
Pulse repetition rate <sup>2)</sup>	15, 20, 30 or 40 MHz
Tuneable pulse repetition rate	Optional, 1-30MHz
Analog power control	up to 100kHz bandwidth
Peak power	> 1MW@20MHz
Beam quality	M <sup>2</sup> <1.2
Beam circularity <sup>3)</sup>	>0.9
Beam diameter (1/e <sup>2</sup> )	1.5 ± 0.5 mm
Beam pointing (pk-to-pk)	< 50 µrad
Pulse Energy Stability (RMS)	<1 %
Warm up time (cold start)	<5 min
Available control interfaces	USB, CAN
Powering requirements	100...240 V AC, 47...63 Hz
Operating temperature	15 – 35 °C
Humidity	non condensing
Transportation/storage temperature	-20 – +70 °C
Dimensions:	
Laser head	266 x 190 x 112 mm
Control unit	449 x 370 x 140 mm
Umbilical length	3 ± 0.3 m
Colling:	
Laser head	air (passive)
Control unit	forced air (fans)

<sup>1)</sup> Higher dispersion (up to 15'000fs<sup>2</sup>) of external optical system can be compensated on request

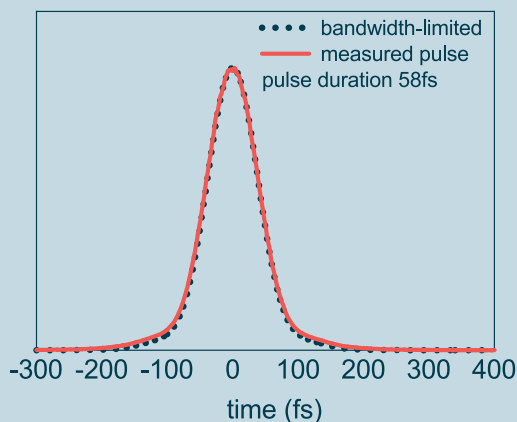
<sup>2)</sup> Factory preset

<sup>3)</sup> Defined as the worst case ellipticity along the z-scan ( $\pm 5 \times L_{\text{Rayleigh}}$ ) of the beam

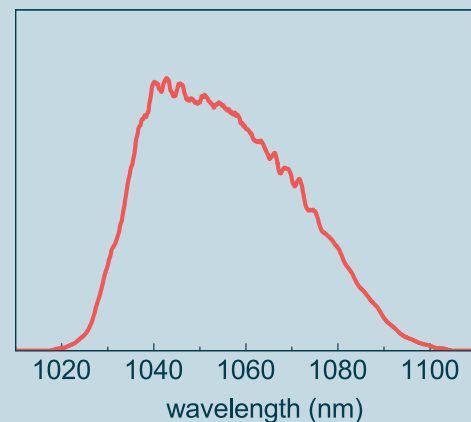
<sup>4)</sup> Indylit lasers are class 4 laser products. Avoid eye or skin exposure to direct or scattered laser light

<sup>5)</sup> World patented technology: US10038297, JP6276471, EP3178137, CN106575849

## Performance



Measured autocorrelation function of the pulses from Biolit 2 laser



Output spectrum from Biolit 2 laser