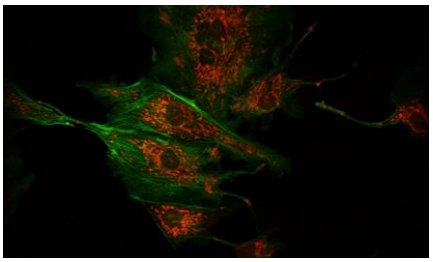
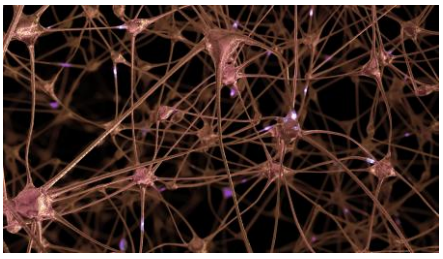
FEMTOSECOND LASER

DIADEM 1040



Two-photon microscopy



Two-photon optogenetics

COMPACT HIGH-ENERGY FEMTOSECOND LASER

1040 nm, high energy, short pulses, variable repetition rate

DIADEM 1040 is a compact fiber laser designed to offer wide variability for advanced experiments involving two-photon excitation.

DIADEM 1040 offers software-controlled variable repetition rates which can be changed on the fly from 0 to 40 MHz. Users can therefore optimize repetition rate in their demanding applications. With high energy and short pulse duration, DIADEM 1040 offers remarkable peak power which is ideally suited for 2P optogenetics and other nonlinear optical processes. DIADEM 1040 incorporates an AOM-based modulator to change power or modulate intensity with a modulation bandwidth exceeding 1 MHz. In addition, computer controlled GDD precompensation ensures optimal brightness is achieved under all conditions. DIADEM 1040 is passively cooled, with no fans, removing acoustic noise and vibration, thanks to its very high conversion efficiency.

TECHNICAL SPECIFICATIONS*

General	DIADEM 1040
Wavelength	1040 nm
Maximum average power	5 W
Pulse duration	< 250 fs
Repetition rate	0 to 40 MHz
Energy per pulse	5 µJ up to 1 MHz (1 µJ at 5 MHz, 500 nJ at 10 MHz...)
GDD precompensation	Software controlled from 0 to -300 000 fs²
Beam parameters	
M²	< 1.3
Ellipticity	> 0.85
Output beam	Collimated
Polarization	> 100:1, vertical
Stability	
Power stability RMS	< 1%
Pulse to pulse stability RMS	< 1%
Pointing stability	< +/- 25 µrad/°C
Electrical	
External interfaces	RS-232, USB, TCP/IP
Synchronized input	Sync in for pulse-on-demand
Synchronization output	TTL
Pulse power control	Analog modulation + fast gating (> 1MHz Bandwidth) + software controlled energy
Software interfaces	GUI, RS-232 serial communication protocol
Power consumption	< 250 W
Cooling	Air
Mechanical	
Laser head dimensions	330 x 280 x 104 mm
Control unit	19”/ 3U rack
Umbilic length	3 m
Environmental	
Operational temp range	20-26°C
Storage temp range	0-40°C
Operational max altitude	2000 m
Operational humidity	Non condensing
Storage humidity	80% RH

* This information is subject to modifications without prior notice.