



**3-photon microscopy**  
(courtesy of Chris Xu, Cornell University)



**Optogenetics**



## COMPACT 1300 nm FEMTOSECOND LASER

< 150 fs / Up to 1  $\mu$ J / Up to 2 W / 1300 nm

DIADEM 1300 is the first compact laser producing high-energy femtosecond pulses at 1300 nm. DIADEM 1300 was specifically designed to meet the requirements of 3-photon microscopy and optogenetics by offering the ideal combination of high average power, high energy and short pulse duration in the infrared.

DIADEM 1300 is a highly versatile platform offering potential access to other wavelengths such as 1030 nm or 1700 nm. DIADEM 1300 is the ideal laser for deep brain imaging.

# TECHNICAL SPECIFICATIONS\*

General		DIADEM 1300
Wavelength		1300 nm
Average power		2 W at 2 MHz
Pulse duration		< 150 fs
Repetition rate		Single shot to 2 MHz
Energy per pulse		1 $\mu$ J
Beam parameters		
M <sup>2</sup>		< 1.3
Beam diameter		1.6 +/- 0.3 mm
Divergence		< 0.5 mrad
Ellipticity		> 0.85
Output beam		Collimated
Polarization		> 100:1, vertical
Stability		
Power stability RMS		< 1%
Pulse to pulse stability RMS		< 2%
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) + Fine energy control
Software interfaces		GUI, RS-232 serial communication protocol
Power consumption		< 250 W
Cooling		Air
Mechanical		
Laser head dimensions		534 x 342 x 195 mm
Laser head weight		22 kg
Control unit		19" / 3U rack
Control unit weight		13 kg
Umbilic length		3 m
Environmental		
Operational temp range		19-30°C
Storage temp range		0-40°C
Operational max altitude		2000 m
Operational humidity		non condensing
Storage humidity		80% RH
Options		
Wavelength		1700 nm or dual output with 1030 nm
High repetition rate		> 2 MHz operation
Cooling		Water

\* This information is subject to modifications without prior notice.

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