DIADEM 1300

SPARK LASERS

3-photon microscopy
(Chris Xu, Cornell University)

Optogenetics

COMPACT 1300 nm FEMTOSECOND LASER

< 50 fs / Up to 1 µJ / Up to 2 W / 1300 nm

DIADEM 1300 is the first compact laser producing high-energy femtosecond pulses at 1300 nm. DIADEM 1300 has been 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	< 50 fs
Repetition rate	Single shot to 2 MHz
Energy per pulse	1 µJ
Beam parameters	
M²	< 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
GDD precompensation	Computer controlled from 0 to -20000 fs²
Cooling	Water

* This information is subject to modifications without prior notice.