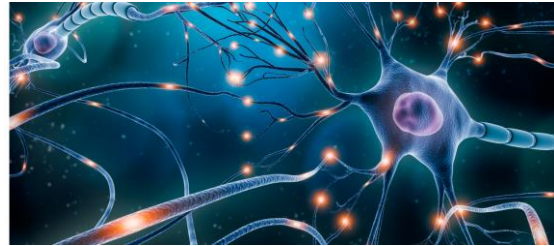


Medical device manufacturing



Neurosciences



COMPACT HIGH-ENERGY FEMTOSECOND LASER

< 400 fs / Up to 40 μ J / Up to 30 W / 1030 nm and 1064 nm

DIADEM is a high-energy, versatile femtosecond fiber laser operating at either 1030 or 1064 nm in the most compact and robust air-cooled configuration on the market. DIADEM produces pulses of < 400 fs up to 40 μ J with many pulse control features such as adjustable pulse duration, selectable repetition rate from 40 MHz down to single pulse, or fine pulse energy tuning so that pulses can be emitted in various modes (on demand via external signal, burst of pulses with configurable pulse separation).

DIADEM can also be equipped with an external computer-controlled frequency doubling module which offers on-the-fly wavelength selection at 1030 nm or in the green or UV wavelengths

TECHNICAL SPECIFICATIONS*

General	DIADEM 1030-10	DIADEM 1030-20	DIADEM 1030-30	DIADEM 1064-10	DIADEM 1064-20
Wavelength	1030 nm			1064 nm	
Average power	> 10 W	> 20 W	> 30 W	> 10 W	> 20 W
Pulse duration (1)	Adjustable from < 400 fs to 10 ps				
Repetition rate (3)	Single shot to 2 MHz				
Energy per pulse (4)	> 10 μ J	> 30 μ J	> 40 μ J	> 10 μ J	> 20 μ J
Beam parameters					
M ² (5)	< 1.2				
Beam diameter (6)	3 +/- 0.3 mm				
Divergence (7)	< 0.5 mrad				
Ellipticity (8)	> 0.9				
Output beam	Collimated				
Polarization	> 100:1, vertical				
Stability					
Power stability RMS (9)	< 1%				
Pulse to pulse stability RMS (10)	< 2%				
Electrical					
External interfaces	RS-232, USB, TCP/IP				
Synchronized input	Sync in for pulse-on-demand				
Synchronization output	TTL				
Pulse burst mode	Up to 5 pulses with configurable pulse delay between pulses : 25, 50 , ..., 125 ns				
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	531 x 342 x 143 mm				
Laser head weight	18 kg				
Control unit	19"/ 3U rack				
Control unit weight	12 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					
Frequency conversion module	Computer selectable between 1030/1064 nm and 515/532 nm with 50% conversion efficiency				
High repetition rate	> 2 MHz operation				
Fiber delivery	Customized fiber delivery solution				

- (1) Sech² fit, autocorrelator measurement
- (2) User adjustable group delay dispersion compensation
- (3) Other value upon request
- (4) Energy defined as the ratio between average power and repetition rate
- (5) M² measurement according ISO method
- (6) Beam diameter at output port at 1/e²
- (7) Half divergence, far field measurement, ISO method
- (8) Minor over major diameter ratio, far field measurement
- (9) Over 12 hours or more, at room temperature +/-1°C
- (10) Pulse to pulse stability measurement performed with oscilloscope and photodiode

* This information is subject to modifications without prior notice.

