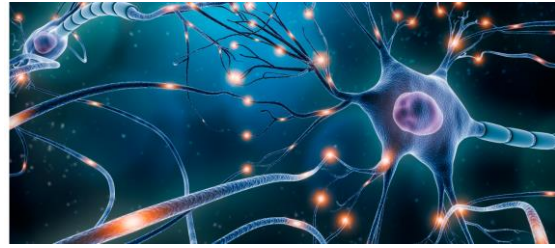


Medical device manufacturing



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

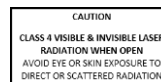
TECHNICAL SPECIFICATIONS*

| 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 | Sync out + Seeder Sync at 40 MHz | | | | |
| Pulse burst mode | Up to 5 pulses with configurable pulse delay between pulses : 25, 50 , ..., 125 ns | | | | |
| Pulse power control | Analog modulation + fast garting (> 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 | 17 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 | | | | | |
| 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 ouput 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.

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