

DIADEM Series

Compact, high-energy femtosecond laser



DIADEM produces high energy with femtosecond (<500fs) pulses, in a compact and robust format. Offering one of the World's lowest cost of ownership, high precision and ease of integration, DIADEM is ideally suited for industrial applications such as very accurate & qualitative micron-scaled features drilling/cutting used in a wide variety of industrial market segments.

From single shot to 1 MHz, its efficient, industrial GUI is Industrials best ally to fine tune even the most challenging processes whatever the PRF.

DIADEM embeds perfectly into any kind of systems working in a 24/7 operating environment, year wide. Its very reduced footprint, weight and capital investment make it the money-maker you need.

DIADEM Key Features

- Up to 30W at 1030 nm
- < 500 fs pulses
- Up to 30 μ J @ > 1 MHz
- PRF range single shot to 1 MHz
- Burst mode
- $M^2 < 1.2$
- Rugged design
- Maintenance free
- Worldwide warranty coverage 24 months

ULTRAFAST MICROMACHINING LASERS

DIADEM applications

- Consumer Electronics
- Automotive/Aerospace
- Medical & Bio-Medical implantable devices
- Semiconductors



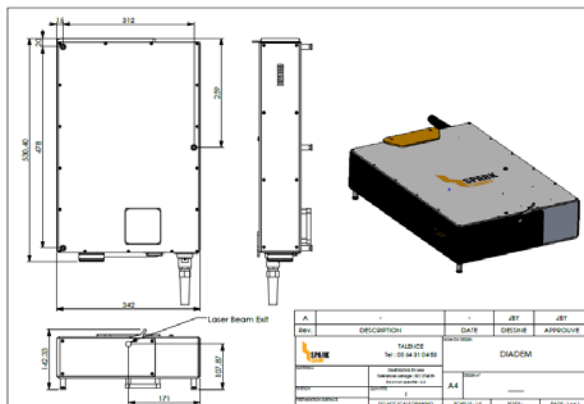
Technical Specifications*

Model	DIADEM IR-10**	DIADEM IR-30**
Wavelength	1030 nm	
Spectral linewidth	< 8 nm	
Pulse duration	<500 fs	
Pulse energy	20 µJ at 100 kHz (2 W) 20 µJ at 200 kHz (4 W) 20 µJ at 500 kHz (10 W) 10 µJ at 1 MHz (10 W)	30 µJ at 100 kHz (3 W) 30 µJ at 200 kHz (6 W) 30 µJ at 500 kHz (15 W) 30 µJ at 1 MHz (30 W)
Repetition rate	Single pulse to 1 MHz (with burst mode)	
M ²	<1.2	
Beam waist diameter	2 mm	
Beam divergence	<1 mrad	
Beam pointing	<25 µrad/°C	
Ellipticity	>0.85	
Warm-up time	< 15 min	
Power stability	<2% RMS	
Pulse stability	<2% RMS	
Polarization	Linear, >100:1	
External Interfaces	High speed External synchronisation (Sync. Out / In), Communication through USB, RS 232, TCP/IP	
Software interfaces	Intuitive GUI, Serial communication Protocol	
Laser head dimensions (mm ³)	531 x 342 x 143	
Laser controller dimensions	19"/3U rack	
Standard umbilical length	3 m	
Power consumption	100 to 240 VAC < 400 W	
Cooling	Air cooled	
OPTION	Possibility to convert in the harmonics and switch thanks to an external module (IR/GR or IR/GR/UV) Tunable pulse duration from < 500 fs up to 10ps	

* Specifications subject to change without notice.

** Other wavelengths available upon request

Please contact us for Customization needs



CAUTION
CLASS 4 VISIBLE & INVISIBLE LASER
RADIATION WHEN OPEN
 AVOID EYE OR SKIN EXPOSURE TO
 DIRECT OR SCATTERED RADIATION

SPARK LASERS offers a 24-month warranty for all DIADEM laser range.

For full details of this warranty coverage, please refer to our website www.spark-lasers.com

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