

DIADEM SERIES



<400 FS / SINGLE SHOT TO 1 MHZ / UP TO 30W AT 1030 NM

COMPACT HIGH-ENERGY FEMTOSECOND LASER FOR MICROMACHINING

DIADEM is a very compact, high energy ultrafast laser for advanced micro-machining applications needing short femtosecond pulse widths, which offers over 40 μ J at 30W and up to 1MHz (standard), with pulses below <400 fs from single shot to 1 MHz and a remarkable beam quality with $M^2 < 1.2$.

DIADEM laser series combine the most advanced electronics for on-the-fly pulse control and uncomparable ergonomics with a compact design and a less than 5 minutes set-up time.

This laser has been especially conceived for demanding medical implantable device and electronics manufacturing.

CORE SPECIFICATIONS

- / High power : up to 30W at 1030 nm
- / High repetition rate : < 400 fs pulses
- / High energy : up to 60 μ J

USABILITY

- / Compact, robust & air cooled fiber laser
- / Plug'n play : < 5 min set up
- / Intuitive User Interface (on the fly)
- / Smart electronics with sync. out / sync. in

APPLICATIONS

- / Consumer electronics & Semi-conductors
- / Luxury and watch industry
- / Medical & biomedical implantable devices

CUSTOMER CARE

- / 24-month warranty
- / Worldwide technical support

TECHNICAL SPECIFICATIONS*

	DIADEM IR-10	DIADEM IR-20	DIADEM IR-30
WAVELENGTH		1030 nm	
SPECTRAL LINEWIDTH		< 8 nm	
PULSE DURATION		< 400 fs	
PULSE ENERGY	10 µJ up to 1 MHz	30 µJ up to 700 kHz	60 µJ up to 100 kHz 40 µJ up to 750 kHz
REPETITION RATE	Single pulse to 1 MHz (with burst mode) – 5 MHz optional		
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	

ELECTRICAL

EXTERNAL INTERFACES	High speed External synchronisation (Sync. Out / In), Communication through USB, RS 232, TCP/IP
SOFTWARE INTERFACES	Intuitive GUI, Serial communication Protocol
POWER CONSUMPTION	100 to 240 VAC < 400 W

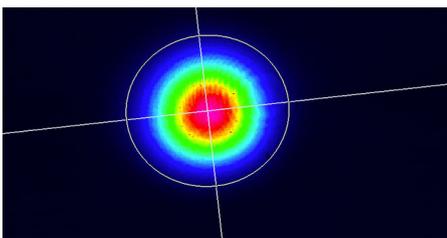
MECHANICAL

LASER HEAD DIMENSIONS (mm ³) - WEIGHT	531 x 342 x 143 - 17 kg
LASER CONTROLLER DIMENSIONS - WEIGHT	19"/3U rack - 7.5 kg
STANDARD UMBILICAL LENGTH	3 m
TECHNICAL DRAWINGS FOR DOWNLOAD	DIADEM / DIADEM + MODULE
COOLING	Air cooled

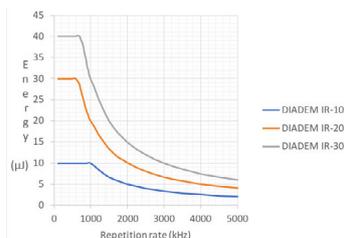
OPTIONS

FIBER DELIVERY MODULE	Fiber delivery coupling module with hollow core fiber (3 m long)
ULTRA SYNC	low timing jitter for ultra accurate on-demand pulse triggering
TUNABLE PULSE DURATION	from < 400 fs up to 10ps
EXTERNAL MODULE	Possibility to convert in the harmonics and electronically switch thanks to an external module (IR/GR or IR/GR/UV)

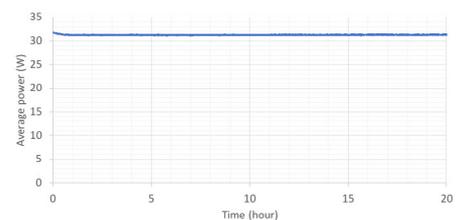
PERFORMANCE



BEAM PROFILE



PULSE ENERGY VS REPETITION RATE



AVERAGE POWER STABILITY

* This information is subject to modifications without prior notice.

