

femtoTRAIN™ Ytterbium High-Power

Compact, all-diode-pumped, solid state femtosecond oscillator



femtoTRAIN™	IC-1040-2000	IC-1040-3000	IC-1040-8000
Wavelength ¹⁾	1040 nm +/- 5 nm		
Pulse width (FWHM), typical ²⁾	< 250 fs	250 fs +/- 50 fs	350 fs
Average output power	> 2 W	> 3 W	> 8 W
Optional Green module	0.8 W @ 520 nm	1.2 W @ 520 nm	3 W @ 520 nm
Pulse repetition rate ³⁾	21 / 76 MHz	76 MHz	76 MHz
Laser material ⁴⁾	Ytterbium		
Power stability, typical	< 1 % RMS (12h)		
Beam quality	TEM ₀₀ ; M ² ≤ 1.2		
Polarization	horizontal / vertical (TBD)		
Power supply	90 VAC - 240 VAC, 50/60 Hz, < 200 W		
Laser head size	460 x 200 x 80 mm ³ (l x w x h)		530 x 200 x 102 mm ³
Beam height	50.8 mm (2"), not including pedestals		76.2 mm (3")
Controller size	490 x 200 x 90 mm ³ (l x w x h), fits into 19" rack		
Chiller	386 x 277 x 203 mm ³ (l x w x h), 100 - 240 VAC, 50/60 Hz, < 625 W (incl. heater)		
Operation ambient temperature	18 °C to 30 °C		

All specifications are typical data and subject to change without notice in order to provide the best product possible.

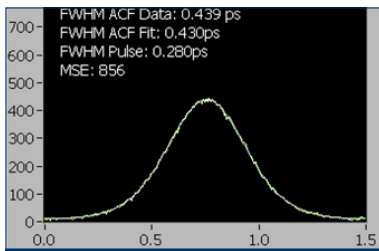
1) other wavelengths on request

2) different pulse widths down to 100 fs or up to 50 ps on request

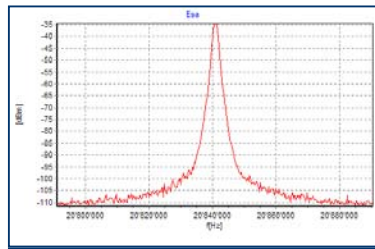
3) +/- 1MHz, other pulse repetition rates on request (10 - 200 MHz)

4) different laser materials on request (e.g. Nd:Glass, Yb:Glass)

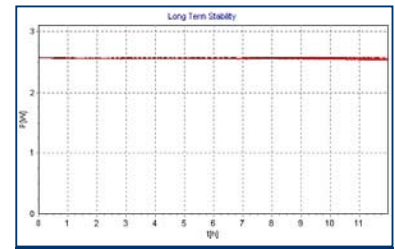
Main Features	Customer benefits
• Field replaceable diode module	• High temporal and spatial stability
• FEA optimized industrial mirror mounts	• USB software remote control
• Passive self-starting modelocking by saturable Bragg reflectors	• Hands-free, true turnkey operation
• Sealed-off technology	• Compact and modular setup
• Air-cooled closed-loop chiller (included)	• Synchronised IR, Green or UV beams (optional)
• High MTBF and up-time	• High beam quality



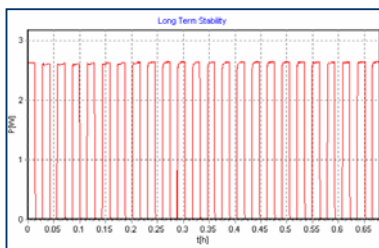
Typical Intensity Autocorrelation
Autocorr. duration 430 fs
Pulse duration 280 fs



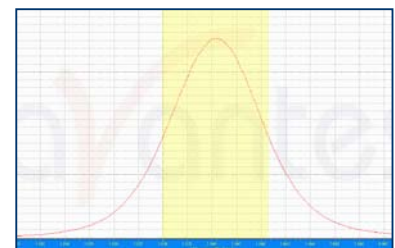
Typical Electrical RF Spectrum
Span 100 kHz, resolution 100 Hz
Side-band suppression > 70 dB



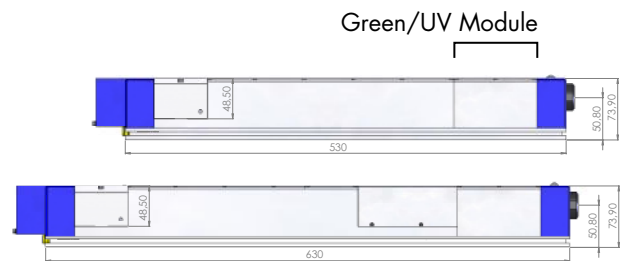
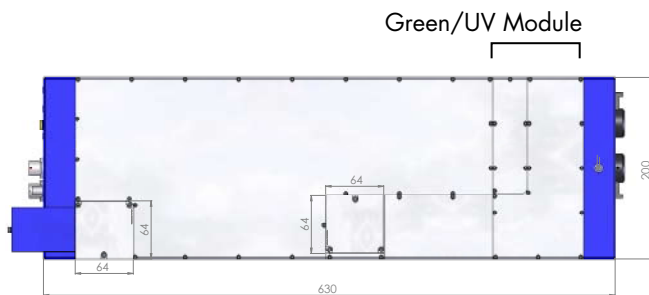
Power Stability IC-1045-2000
Measurement duration 12h
Mean 2.55W, RMS 0.13%



Long Term On/Off Test
20 On/Off cycle time 120s



Typical Wavelength Spectrum
Center wavelength 1040,0nm
Bandwidth 4.3 nm



Applications

- Continuum Generation
- Multi-Photon Imaging
- Two-Photon Polymerisation
- Femtosecond Laser Dissection
- CARS / SRS Microscopy
- OPO Pumping
- Nonlinear Optics
- Materials Processing
- THz Generation

Please Inquire About

- OPO **fs-EMERALD**: Tunable output from 300 nm - 3000 nm
- High pulse energy: up to 300 nJ
- Low replate: down to 10 MHz
- Harmonics module (SHG – THG – FHG)
- Long pulse versions up to 50 ps
- Application laboratory for Nano Processing
- Synchronisation "SYNC" option
- OEM and customized models

