

THE ULTIMATE MEASUREMENT AND CONTROL TOOL FOR  
ULTRAFAST LASER OSCILLATORS AND HOLLOW-FIBER  
COMPRESSORS

# d·scan

MEASURE AND COMPRESS  
YOUR ULTRAFAST LASER



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## MEASURE AND COMPRESS YOUR ULTRAFAST LASER

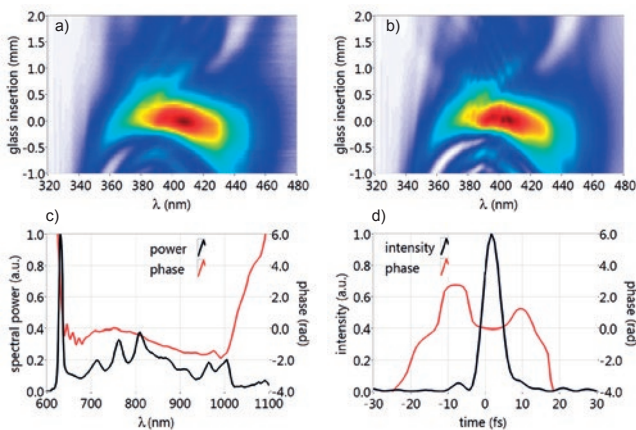
d·scan is an inline, compact and high-performance device for the simultaneous measurement and compression of even the most demanding ultrafast pulses.

d·scan can be used either as a standalone system or integrated with existing optical pulse compressors. It handles broadband oscillators, amplifiers, OPAs and hollow-fiber compressors.

Coupling your beam into the d·scan is easily achieved in less than one minute and a full measurement takes less than 10 seconds.

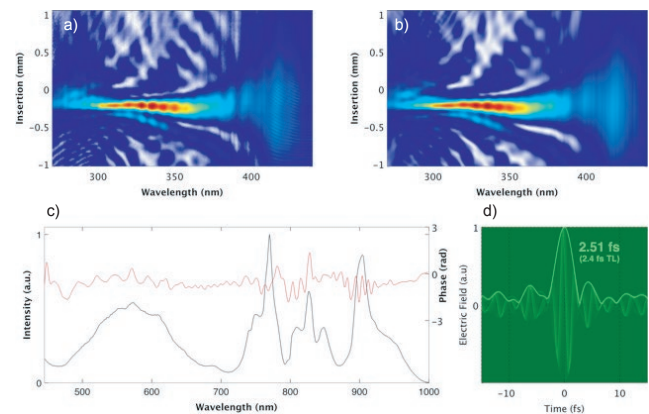
The resulting d·scan traces are very intuitive and a proprietary algorithm provides fast and accurate retrieval of the full electric field of the pulses.

### OSCILLATOR



Few-cycle Ti:Sapphire oscillator: Measured (a) and retrieved (b) d-scan traces. (c) Measured spectrum (black) and retrieved spectral phase (red). (d) Retrieved temporal profile (black) and phase (red). Pulse duration is 5.5 ± 0.1 fs (FWHM).

### HOLLOW-FIBER COMPRESSOR



Single-cycle hollow-fiber compressor: Measured (a) and retrieved (b) d-scan traces. (c) Measured spectrum (black) and retrieved spectral phase (red). (d) Retrieved temporal profile for the wedge insertion that minimizes the pulse duration, corresponding to 2.5 fs (1.3 cycles at 700 nm).

## TECHNICAL SPECIFICATIONS

|                                       | d·scan B a)                      | d·scan R b)          | d·scan NIR c)        | d·scan 1.5            |
|---------------------------------------|----------------------------------|----------------------|----------------------|-----------------------|
| Wavelength range                      | 450-1000nm<br>500-1050nm         | 600-1100nm           | 700-1400nm           | 1500-1700nm           |
| Pulse duration (FTL)                  | 2.5fs to 10fs                    | sub 5fs to 20 fs     | 2.5fs to 60fs        | 60fs to 200fs         |
| Chirp range                           | ±375 fs <sup>2</sup>             | ±720 fs <sup>2</sup> | ±600 fs <sup>2</sup> | ±4000 fs <sup>2</sup> |
| Repetition rate                       | 1 kHz and above <sup>d)</sup>    |                      |                      |                       |
| Input polarization                    | Linear                           |                      |                      |                       |
| Max input aperture                    | 20 mm                            | 10 mm                |                      |                       |
| Required input energy                 | >100 pJ @ 80 MHz<br>1 μJ @ 1 kHz |                      |                      |                       |
| Compression module dimensions (WxLxH) | 317 x 336 x 97 mm                | 250 x 250 x 100 mm   |                      |                       |
| Measuring head dimensions (WxLxH)     | 182 x 336 x 97 mm                | 57 x 57 x 116mm      |                      |                       |

(a) Optimized for hollow fiber compressors  
(b) Optimized for Ti:sapphire oscillators and OPCPA  
(c) Optimized for OPCPA

(d) Lower repetition rates possible with external synchronisation option  
\* Vacuum compatible systems available on request



Talk to us for different wavelength range, chirp range, input aperture, and other