

IMPETUX

The Force of Light

Deimus™ T-10i

THE ENTRY LEVEL

OFF THE BEATEN TRACK

Discover what the *Deimus™ T-40i* can do for you

IRREGULAR SAMPLES:

Our patented technology permits measurements of force with non-spherical particles.

COMPLEX TRAPPING BEAMS:

The *Deimus™* provides access to accurate force measurements to customers working with non-Gaussian beams or multiple permanent traps.

NON-VISCOUS MEDIA:

Direct force measurements inside viscoelastic materials, changing environments or living cells are now possible.

Impetux's exclusive, patented technology leads you where other force methods cannot. Our products represent a change in the force measurement arena, making possible and simple experiments where traditional trap stiffness calibration fails.

The **entry-level** system of the T-series allows you to easily incorporate the momentum-based technology to multiply the possibilities of your optical trapping setup at a low price. Its **versatility** and **flexibility** allows you to install the same instrument in different commercial microscopes and even in custom-built systems.



THE AFFORDABLE CHOICE FOR EXPERTS

Impetux Optics is a company established in Barcelona, specialized in the measurement of forces with optical tweezers.



SPECIAL FEATURES

HIGH FLEXIBILITY:

*Deimus*TM' compact design makes the system compatible with both custom-made microscopes and commercial systems:

- Nikon
- Zeiss
- Olympus

EASY INSTALLATION AND OPERATION:

The *Deimus*TM replaces the microscope condenser and can be installed and set in operation through a simple procedure even by non-expert users.

OPTO-MECHANICAL AND ELECTRONIC SYSTEMS:

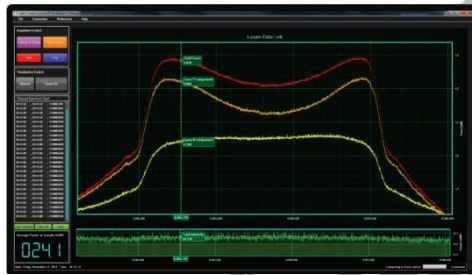
Our instruments have been designed with the utmost quality in mind. The *Deimus*TM incorporates immersion optics for maximum signal sensitivity, especially when working with small samples or at low powers. The integrated analog and digital electronics, featuring high-resolution AD converters ensure acquisition fidelity. A careful design guarantees mechanical stability.

Impetux technology

The key of our technology is that our systems measure the force as a derived magnitude of the direction of propagation of the beam, instead of the sample position, which provides a direct route to the force. After an accurate calibration at factory, the deflection of the beam produced as this goes through the sample directly corresponds to the optical force exerted on the particle. This gives our technology the advantage, as no restrictions on the sample are imposed.

For further information, visit our webpage: www.impetux.com

Data Acquisition and Processing



For a complete solution, the *Deimus*TM T-10i additionally integrates a traditional calibration mode, to obtain trap stiffness and position measurements with nanometer precision.

The standalone Windows application makes easy for the user to make these calibrations, as well as acquire, visualize and store the data generated by the *Deimus*TM sensor. Data can be streamed to disk in real time for extended periods of time and the files are compatible with a host of data processing software, including Excel, MATLAB, LabVIEW, and Origin.

We can optionally provide a companion data processing suite. The application includes a complete set of visualization modes and mathematical functions and is optimized to handle the large data sets generated in many experiments.

Technical specifications

- Dual measurement mode: force measurements and trap stiffness calibration for position tracking.
- Compact opto-mechanical design.
- Straightforward installation and tuning routines ensure correct measurements and reproducibility (eyepiece with Bertrand lens incorporated or Centering Scope required).
- High Numerical-Aperture (NA=1.4) immersion optics.
- Adaptable to a wide range of laser wavelengths.
- Maximum laser power at the sample: 300 mW (Check with us **different power ranges to fit your needs**)
- Compatible with custom-made microscopes and commercial systems:
 - Nikon
 - Zeiss
 - Olympus
- Up to 20 kHz, 16-bit, analog-to-digital conversion.
- Direct PC communication through Hi-speed 2.0 USB port.
- Highly-regulated, low-noise linear power supply (*models with 100/120/220/240 VAC- 50/60 Hz available*).
- Acquisition software and LabVIEW libraries included.
- Dimensions of the sensor head (L x H x W):
18cm x 17 cm x 13 cm

