TopWave 229 – Industrial CW Laser for Deep UV Raman

User-friendly, Turnkey Single Frequency Laser with Excellent Lifetime at 228.5 nm

Graefelfing | May 31 2022

With the new TopWave 229, TOPTICA presents the latest addition to its industrial deep UV laser lineup at analytica in Munich. The TopWave 229 is an exciting new choice for deep UV spectroscopists looking for an easy to use and reliable laser that enables the user to focus on their application rather than worrying about the light source.

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With its state-of-the-art laser controller, the TopWave 229 offers a wide range of options for operation. While laboratory users might prefer the controller's easy to use touchscreen interface or the TOPAS PC GUI, system integrators will appreciate the comprehensive command language that enables smooth integration with their control software.

With its short wavelength and an ultra-narrow laser linewidth, the **TopWave 229** provides the key features (< 1 MHz ≙ < 4 x 10-5 cm-1) to take on an important role as excitation source in the field of deep UV Raman and deep UV fluorescence spectroscopy.

Fluorescence free Raman

Excitation below 250 nm is crucial for fluorescence-free Raman, as this avoids the overlap between the spectral regions of the Raman signal and the native fluorescence. Compared to fluorescence, the Raman effect is orders of magnitude weaker, so that even minimal fluorescence is sufficient to mask Raman emission. Fluorescence spectroscopy also benefits from the 228.5 nm emission, because it allows the detection of molecules with fluorescence spectra in the range ≤ 270 nm, which can only be excited with shorter wavelength light. As a CW laser system, the TopWave 229 offers another advantage: it avoids non-linear and saturations problems common with pulsed laser sources.

The compact footprint and low heat dissipation of the TopWave 229 laser head allow for easy integration in space restricted and temperature sensitive application environments. Comfortable, hands-off operation over the system lifetime (typ. 10,000 hrs) is ensured by fully automated optimization routines for the internal opto-mechanics. To provide best reliability and consistent, diffraction limited beam quality (M^2 < 1.3), the complete UV beam path is enclosed in a specially sealed compartment.

Go to **www.toptica.com** for further information.

Applications:

- DUV Raman
- DUV Native Fluorescence
- Protein detection
- Photoluminescence (PL)

Visit us at analytica June 21. - 24. 2022 | Messe München A1.301

About TOPTICA

TOPTICA has been developing and manufacturing high-end laser systems for scientific and industrial applications for more than 20 years. Our portfolio includes diode lasers, ultrafast fiber lasers, terahertz systems and optical frequency combs. TOPTICA today has 450 employees in 6 commercial entities with a consolidated group revenue of 100 Mio € (about 107 Mio $).