ONDAX
Advanced Solutions for Optical Measurements

THz-Raman®

THz-Raman® Transmission Sampling Accessory

Transmission Raman Sample Accessory Mounted to TR-PROBE Module

FEATURES

- Sample chamber accommodates pill/tablet holders or vials
- Utilizes fiber-coupled Ondax **CleanLine™** Laser source from TR-PROBE module
- Can be used for either transmission or backscattering measurements – even on the same sample
- An included set of pill/tablet holders accommodates common pill/tablet sizes
- Includes laser interlock with override capability

Easily switchable with other sample holders via the universal dovetail mount. Various sample inserts enable many common sample dimensions.

[1] U.S. Patents 7,986,407, 8,184,285, 9,986,407and 9,587,983

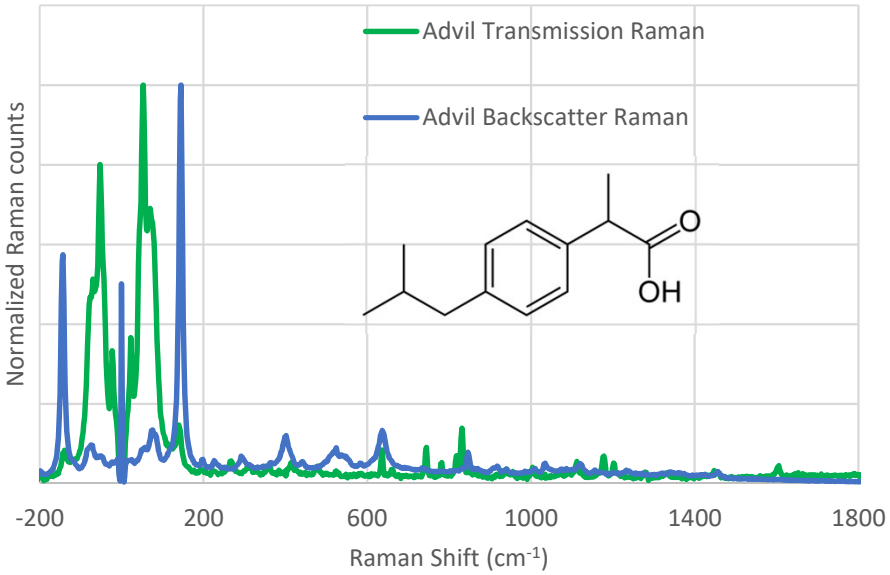
Ondax's new **Transmission Sampling Accessory** adds transmission Raman capability to our patented[1] **TR-Probe** THz-Raman® platform. This can be very beneficial when coatings or other materials affect backscatter measurements, particularly with pharmaceutical tablets or pills. Since transmission Raman is a multiple scattering process, it is the best method to get an average measurement over the entire volume of the sample.

The sample chamber comes with a set of holders that will accommodate pills or tablets of varying sizes, and can also be used with standard HPLC vials.

The excitation is provided by the fiber-coupled Ondax **CleanLine™** Laser source from the TR-PROBE module – simply unplug it from the Excitation port of the probe (backscatter mode) and plug it into the front of the transmission accessory (transmission mode). A comparison between transmission and backscatter modes can easily be made without moving the sample (see figure below).

The accessory can be easily removed from the probe and swapped with other TR-Probe accessories via the dovetail mount on the front of the probe (see reverse side).

Compatible with all TR-PROBE models: 532nm, 785nm, 808nm, 976nm and 1064nm.



Comparison of backscatter and transmission measurements on an Advil tablet. The backscatter signal (blue trace) is dominated by the tablet coating, and the spectrum of the Ibuprofen present in the bulk is not detected. Transmission Raman signal (green trace) including the THz-Raman® spectrum demonstrates increased SNR in the THz-Raman region compared to the fingerprint region, further reducing acquisition times.

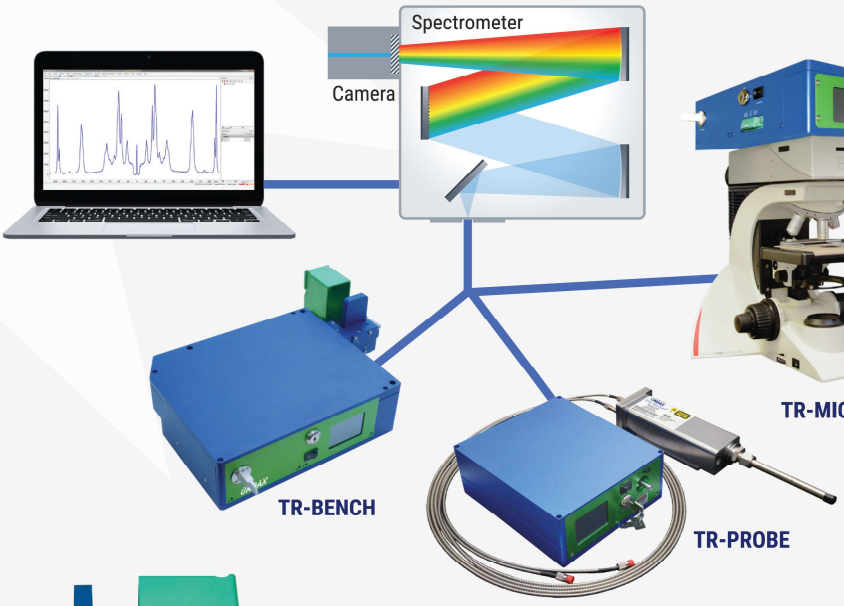
THz-Raman®

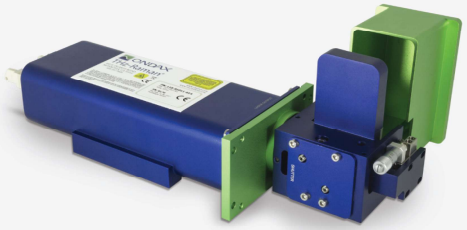
THz-Raman PLUS fingerprint region measurement with the same system

All **TR-Series** THz-Raman® modules are ultra-compact and simple to connect via fiber to almost any spectrometer or Raman system. A high-power, wavelength-stabilized, single-frequency laser source is precisely matched to the ultra narrow-band ASE, beamsplitter and notch filters to assure maximum throughput and exceptional attenuation (>OD 9) of the excitation source. Systems are available in 532nm, 633nm, 785nm, 850nm, 976nm and 1064nm excitation wavelengths.

The new **TR-PROBE** is a compact, robust THz-Raman® probe that enables in-situ reaction or process monitoring. The TR-PROBE can be configured with a variety of sample interface accessories, including immersion or contact probe tips, a convenient vial/tablet holder, or a steerable non-contact optic (see options below). A separate CleanLine™ laser provides ASE-free excitation via a multimode fiber, enabling the probe to operate in harsher environments where electrical connections are not permitted.

Ondax THz-Raman® modules are compatible with virtually any commercial Raman system or spectrometer, and Ondax can recommend or integrate an appropriate spectrometer and deliver as a complete turnkey system.

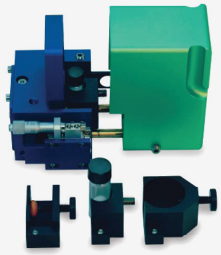




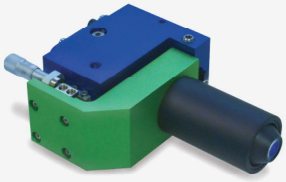
Probe with Vial/Tablet Holder

Probe with Non-Contact Optic

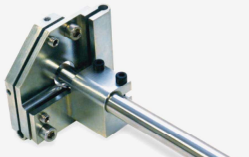
Probe with Contact/Immersion Probe Tip



Vial/Tablet Holder



Non-Contact Optic



Adjustable Probe Mount

Fixed Probe Mount

Probe without accessory – Collimated beam output

A variety of sample interface accessories enable the TR-PROBE and TR-BENCH to be easily configured to match a broad range of applications. Immersion or contact probe tips may be mounted with either a fixed SwageLok mount, or for longer probes that may need alignment, an adjustable tip/tilt probe mount. The Vial/Tablet Sample Holder incorporates an adjustable steering mirror, interchangeable focusing lens, and safety shutter. And the Steerable Non-contact Optic Mount allows for projection and steering of the output beam with precision alignment and interchangeable focusing optics, for applications requiring long-range collection paths. Additionally, the accessories may be rotated around the dovetail mount to accomplish any angle of incidence.

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