UNLEASH THE FUTURE

VERTEX NEO Ultra

The New Gold-Standard for Vacuum FT-IR Research

Innovation with Integrity

VERTEX NEO Ultra is the pinnacle of bench-top FT-IR technology. It can achieve the highest spectral resolution, the broadest spectral ranges and complete automation to meet the most demanding research requirements.

- Automated vacuum FT-IR measurements (UV/VIS to FIR) with UltraScan™ & MultiTect™
- Proven UltraScan™ interferometer with optional automatic 4-position BMS changer
- Multiple detector options enabling up to 6 internal detectors for automation
- Record spectral resolution of 0.04 cm^{-1}
- Step-scan TRS functionality for fast (ns) and slow (µs) processes in one go
- verTera extension: FT-IR / cw THz down to 3 cm^{-1} – no cryogenic cooling
- 7 beam ports (5 output, 2 input), software-controlled
- Compatible with VERTEX & INVENIO accessories

Unmatched Automation Capability

The VERTEX NEO Ultra revolutionizes FT-IR spectroscopy with its advanced automation capabilities. It can cover the entire spectral range UV, VIS, NIR, MIR, and FIR/THz fully automated, by combining proven technologies like the MultiTect™ detector unit and the beam splitter changer of the UltraScan™ interferometer. This cutting-edge spectrometer can seamlessly switch between 4 radiation sources (2x internal and 2x external), 6 internal detectors (with MultiTect™ and DigiTect™ positions), and 4 beam splitters (BMS), automatically via software without any manual intervention. Extending spectral range is easily done without breaking the vacuum.

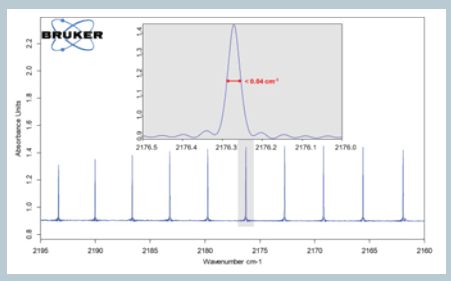
Vacuum Platinum ATR

With the latest Vacuum Platinum ATR innovation, the entire optical path for an ATR experiment can be maintained under vacuum, eliminating atmospheric interference while keeping your sample in ambient lab air. Samples of all kinds, such as liquids, fine powders, or volatile compounds, can be measured without any issues. Even sample exchange is possible under stable vacuum environment. This guarantees peak performance under the most stable conditions, making high-end research effortless and efficient.

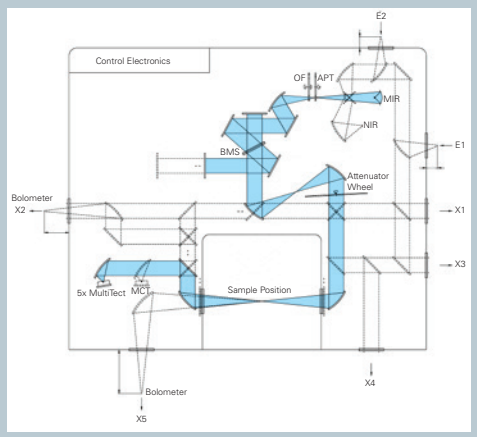
Optional touch panel with dedicated OPUS TOUCH software offering an intuitive workflow as well as advanced R&D software features.

The verTera extension combining vacuum FT-IR with continuous-wave terahertz (cw THz) technology, extends the spectral range of VERTEX NEO further down to 3 cm^{-1} without the need for cryogenic cooling.

BRUKER FM Technology



High-resolving FT-IR spectrum measured for CO gas demonstrating the excellent spectral resolution of better than 0.04 cm^{-1}.



VERTEX NEO Ultra optical beam path.

Laser class 1 product.

Record Spectral Resolution

The VERTEX NEO Ultra achieves a maximum spectral resolution of 0.04 wavenumbers, setting the new standard for FT-IR benchtop instruments. This exceptional resolution enables precise measurements of almost any sample type. A standard resolution version with 0.12 cm^{-1} and an advanced resolution version with 0.07 cm^{-1} are also available. These are sufficient for many samples, including most condensed phase samples, low-temperature crystals, and gases at low pressure.

Combined Step Scan

The VERTEX NEO Ultra enables integrated Step-Scan measurements that simultaneously capture both fast (ns) and slower (µs/ms) kinetics. Unlike conventional step-scan TRS methods, which require two separate runs to collect data across different time domains, this approach allows acquisition of both ns and µs/ms kinetics in a single step-scan sequence. This significantly reduces overall measurement time for experiments involving dynamic processes spanning from nanoseconds to milliseconds.
The system's Transient Recorder Board (TRB) delivers outstanding temporal resolution down to 2.5 ns, ideal for tracking rapid changes.
In parallel, the standard ADC records slower transitions with sampling intervals as fine as 6 µs, all while the scanner progresses step-by-step through the interferogram just once.

Multiple Detector Options

Bruker's advanced MultiTect™ detector technology and the flexible DigiTect™ user-exchangeable detector slot are both supported by the VERTEX NEO Ultra. These two detector systems can be freely combined within a single instrument, allowing full customization to meet your specific experimental requirements. Furthermore, an MCT detector with a 12-hour holding time can be installed directly without the need for a raised lid.

Bruker Optics is continually improving its products and reserves the right to change specifications without notice.
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Bruker Optics is ISO 9001, ISO 13485, ISO 14001 and ISO 50001 certified.