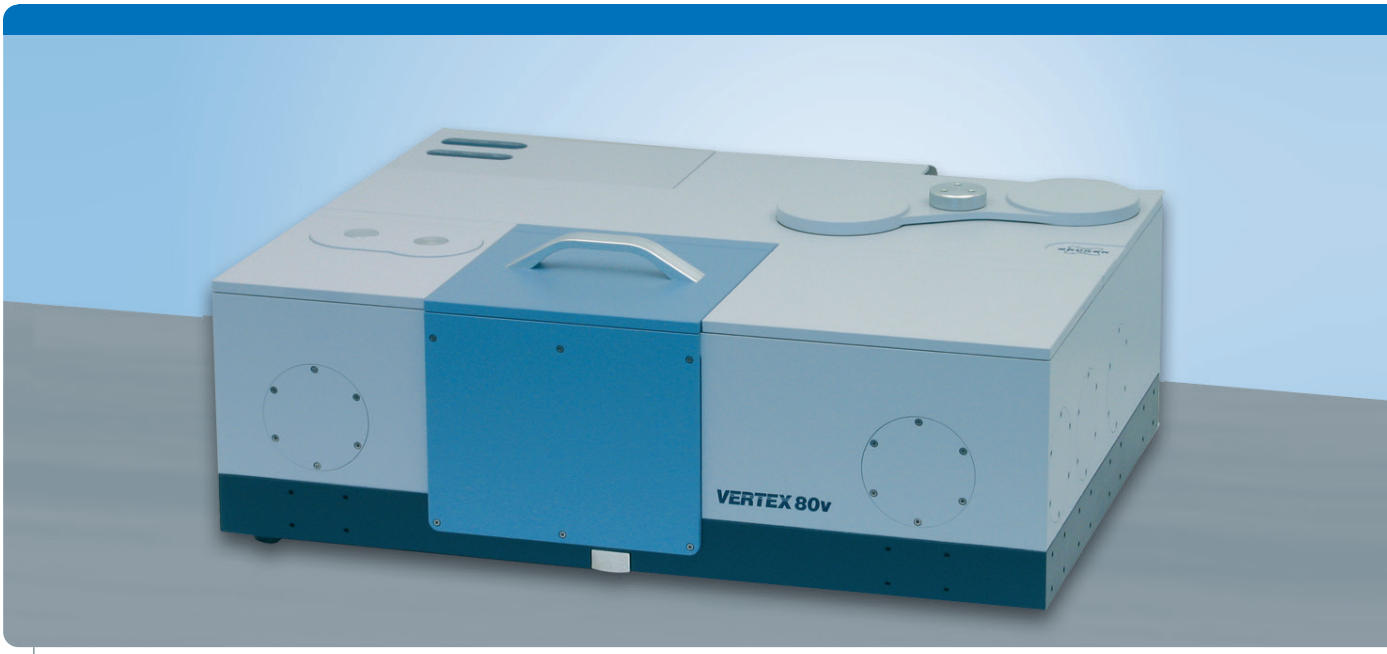


VERTEX 80 & 80v FT-IR Spectrometers

Reach the peak performance with the VERTEX 80 and the 80v high-end research FT-IR spectrometers.

- Optical resolution of <0.06 cm^{-1}
- Full spectral range coverage from THz to UV
- True-aligned UltraScan™ high resolution interferometer
- Air-cooled internal and water cooled high power external sources
- Wide spectral range room temperature DLaTGS detector (12,000 cm^{-1} to 20 cm^{-1})
- Remotely selectable 5 exit and 2 input beam ports
- Bench top vacuum optics (VERTEX 80v)
- Automatic and vacuum compatible beam-splitter changer (BMS-c) option
- Parallel 2-channel 24-bit dynamic range Analog to Digital Converter

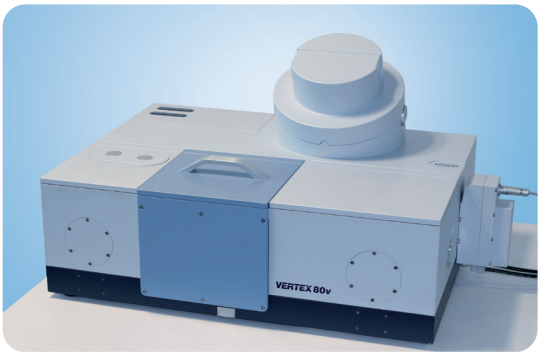
The VERTEX 80 and the 80v are the culmination of everything Bruker has pioneered and developed in over 35 years for FT-IR spectroscopy.

UltraScan™ Interferometer

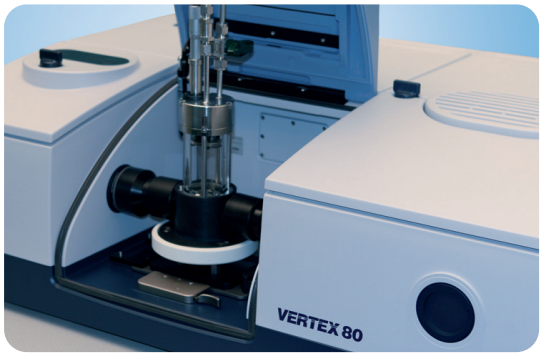
Both the VERTEX 80 and the 80v are based on the actively aligned UltraScan™ interferometer, which provides PEAK spectral resolution. The precise linear air bearing scanner and PEAK quality optics guarantees the ultimate sensitivity and stability. VERTEX is the ideal instrument for demanding experiments such as high resolution, ultra fast rapid-scan, step-scan, or UV spectral range measurements. The unique Bruker DigiTect™ data acquisition technology prevents external signal disturbance and guarantees PEAK signal-to-noise ratio.

Table Top Vacuum Optics Bench

With its rugged, stable cast aluminum optics bench and the evacuated optics, the VERTEX 80v eliminates atmospheric moisture absorptions and provides PEAK sensitivity and stability, especially in the far IR and terahertz spectral regions. The new automatic beamsplitter exchange unit (BMS-c) allows software controlled extension of the spectral range without break of the spectrometer vacuum.



VERTEX 80v vacuum spectrometer equipped with the automatic beamsplitter exchange option (BMS-c) and external water cooled far IR/THz Mercury lamp.



VERTEX 80's purgeable sample compartment can accommodate any commercially available and custom made FT-IR accessories.

PEAK Spectral Range Extension

The VERTEX 80 - 80v can optionally be equipped with optical components to cover the spectral ranges from the far IR, or terahertz, through the mid and near IR and visible and up to the ultraviolet. With its actively aligned UltraScan™ interferometer, range change and maintenance are easy.

Optical PEAK Resolution

The VERTEX 80 - 80v standard configuration provides apodized spectral resolution of better than 0.2 cm^{-1}. For advanced low temperature work, e. g. on crystalline semiconductor materials or gas phase measurements at lower pressure, a PEAK resolution of better than 0.06 cm^{-1} is available. This is the highest spectral resolution achieved using a commercial bench top FT-IR spectrometer. High resolution spectra in the visible spectral range demonstrate a resolving power of better than 300,000:1 (see right side of this page).

Vacuum Optics

The innovative optics design results in the most flexible and expandable R&D vacuum FT-IR spectrometer available. With the evacuated optics bench, PEAK sensitivity in the mid-, near- and far IR regions is obtained without the fear of masking very weak spectral features by air water vapor absorptions. Outstanding results, e.g. in the area of nano-science research down to less than 10^{-3} monolayers, can be obtained with the VERTEX 80v vacuum FT-IR spectrometer.

Automatic Beamsplitter Changer

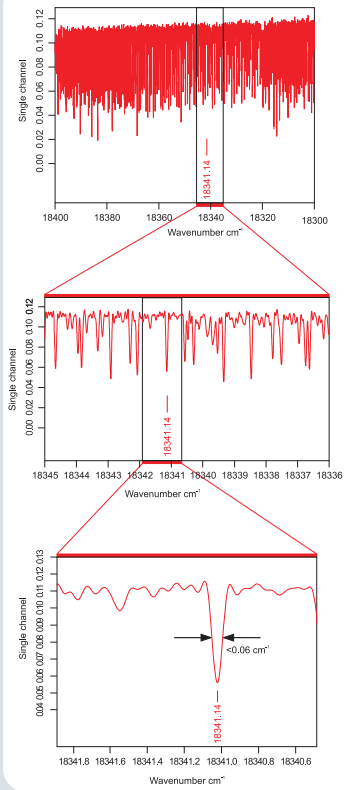
The new motorized and vacuum compatible computer controlled automatic beamsplitter exchange (BMS-c) unit accepts up to 4 different types of beamsplitters. The unique option prepares the VERTEX 80 interferometer for measurements in the complete accessible spectral range from the THz up to the UV. The instrument user is able to remove, add and exchange compatible beamsplitters by him- or herself.

PEAK Versatility

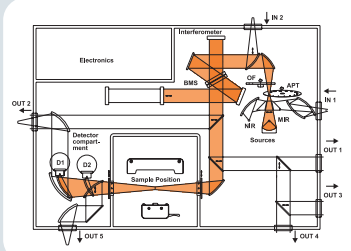
There are virtually no limitations with respect to flexibility. Five beam exit ports on the right, front and left side and two beam input ports on the right and rear side of the optics bench are available. This allows simultaneous connection of, for example, a synchrotron light source using the rear side input port, the PMA 50 polarization modulation accessory at the right side exit beam, a fiber optics coupling at the right front side port, a bolometer detector at the left front and the HYPERION series FT-IR microscope at the left side exit beam.

Resolving Power

High resolution measurement showing electronic band transitions in the visible spectral range of an iodine vapor measurement, with a typical absorption band width of less than 0.06 cm^{-1}. The demonstrated resolving power is better than 300,000:1.



VERTEX 80 - 80v optical beam path



Bruker Optics is ISO 9001 and ISO 13485 certified.

Laser class 1 product (VERTEX 80)
Laser class 2 product (VERTEX 80v)

Covered by one or more of the following patents: DE102004025448; DE19940981.
Additional patents pending.

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