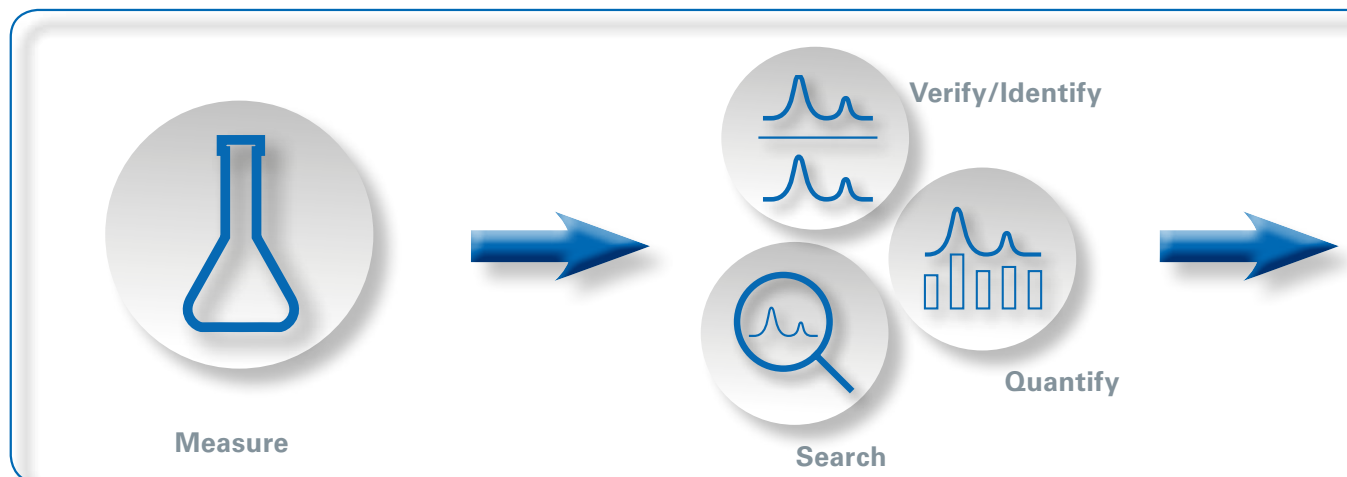




ALPHA II

- The benchmark for compact FTIR spectrometers

• One Touch - Many Applications



Efficient Quality Control

Incoming goods inspection and quality control are vital tools in almost all modern industry sectors. The intention is to minimize failures in the production-process and to assure a constant high product quality. The ALPHA II allows you to quickly confirm the identity and purity of incoming raw materials, intermediates and final products. With its compact size and rugged design, the ALPHA II can be used anywhere, whether in the lab or on site.

- Polymers and plastics
- Pharmaceutical
- Chemical and petrochemical
- Automotive
- Electronics
- Food and Feed
- Construction

Identification

The identification of unknown substances is a common requirement in failure analysis, competitor analysis, and forensics. Typical fields of application are the elucidation of products defects, the analysis of materials used in competing products or the determination of seized foreign substances (e.g. illicit drugs).

Virtually any sample type can be analyzed with the ALPHA II, whether it be solids, liquids or gases.

Quantification

IR spectroscopy is ideally suited to quantify individual components in liquid samples and pastes. Liquid cells and numerous ATR options allow to provide the optimal measurement setup for the quantitative analysis of any sample type.

Teaching

With the integrated touchpad and the footprint of a lab book, the FTIR spectrometer ALPHA II is the ideal choice for classrooms and teaching laboratories. Its durability and reliability in the production of high-quality spectral data qualify the ALPHA II for educational and reserach applications alike.





Report

Guided Workflow

It takes only three touches for measurement, evaluation and report generation. OPUS-TOUCH provides an intuitive workflow that is guiding the user step by step through the measurement and evaluation process. The built-in spectra viewer offers the data evaluation and data processing functions which are needed for in-depth analysis of your IR data. Furthermore, OPUS-TOUCH can manage multiple users and offers a built-in file archive.

- Easy to use touch interface
- Intuitive measurement assistant
- Integrated user- and file-management
- Multiple language support

THE **ALPHA II** IS A UNIVERSALLY APPLICABLE **FTIR** SPECTROMETER WHICH PROVIDES **ANSWERS** TO A MULTITUDE OF ANALYTICAL QUESTIONS.



• Reliable Performance

Reliability & Stability

Bruker's well-proven, permanently aligned RockSolid™ interferometer incorporates dual retroreflecting gold coated cube corner mirrors in an inverted double pendulum arrangement for maximum efficiency and sensitivity. A wear-free flexible pivot bearing is located at the center of mass which renders the instrument robust against vibrations. The permanent alignment provides consistent high quality results, less downtime and outstanding stability.

By using a durable diode laser and patented technology, high wavenumber accuracy is ensured.

The ALPHA II is equipped with an IR-source that utilizes Bruker's CenterGlow™ technology guaranteeing consistently high performance throughout its life-time of at least 5 years. CenterGlow™ optimizes the location of the glowing area within the source to maximize light flux.

The ALPHA II's temperature-stabilized detector makes the system very robust against variations of the ambient temperature.

Validation

Today, a growing number of products have to be manufactured in a strictly regulated environment. Bruker offers a comprehensive system validation that provides the documentation and procedures needed for an effective compliance.

The ALPHA II is prepared to fully support your validation needs; from the design qualification (DQ) to daily performance qualification (PQ). ALPHA II incorporates an Internal Validation Unit (IVU) with a certified reference standard. The IVU and appropriate software protocols ensure fully automated instrument test routines for Operational and Performance Qualification (OQ/PQ) of every ALPHA II setup and every measurement mode.

Bruker's system validation manual provides all related documentation and guides you through all the necessary steps of the validation procedures. Validation, instrument installation and annual certification are offered by Bruker's factory trained, certified service engineers thereby further reducing the cost of compliance.

PermaSure™ Technology

PermaSure™ automatically and constantly ensures reliable analysis results you can trust in. The QuickSnap™ sampling modules are automatically recognized and tested. An individual calibration of each sampling module ensures highest wavenumber accuracy. All vital spectrometer components like source, detector and interferometer as well as the internal humidity status are checked by the PerformanceGuard™ system diagnostics. Periodically performed test measurements verify the functionality of the ALPHA II according to its specification.





Low Cost of Ownership

The ALPHA II is designed to be used for many years with low running costs. Its housing is made from robust metal. The ALPHA II employs a modern diode laser with a lifetime of over 10 years. The CenterGlow™ infrared source has been engineered for a lifetime of greater than 5 years and offers an advanced stabilization that ensures ideal intensity over the complete lifetime. The Platinum Diamond ATR module has a minimum lifetime of 10 years. These quality features are completed by the RockSolid™ interferometer with more than 10 years time of operation. Adding the low energy consumption these outstanding characteristics result in significant cost savings.

- 10 years warranty on interferometer, laser and diamond ATR module
- 5 years warranty on IR source

Portability

With the footprint of a lab notebook, the ALPHA II is a very compact and integrated solution. It withstands vibrations easily and can be placed almost anywhere. The ALPHA II can be transported from lab to lab with virtually no downtime and smoothly fits into a fume hood or glove box.

- 1 Touch PC with OPUS-TOUCH software
- 2 CenterGlow™ IR-source, guaranteeing a constantly high emission
- 3 Internal Validation Unit with certified reference standard
- 4 Permanently aligned RockSolid™ interferometer
- 5 Temperature stabilized DTGS detector
- 6 Exchangeable QuickSnap™ sampling module
- 7 Platinum-ATR with durable monolithic diamond measurement interface
- 8 Durable robust metal housing

• Design Follows Application

QuickSnap™ Modules

The QuickSnap™ sampling modules for the ALPHA II offer full sampling flexibility. Whether solid, liquid or gas, the device is ideally prepared for any sample with the simple push of a button and the quick change of the sampling module. Thanks to the electronic coding the ALPHA II recognizes the replaced accessories immediately and automatically adjusts the measuring parameters accordingly. Lastly, the wide range of FTIR sampling accessories for transmission, external, diffuse or attenuated total reflection (ATR) provide many possibilities to adapt to any analytical question.

The Multi reflection ATR module with horizontal ZnSe ATR crystal is very suitable for the analysis of pastes, gels and liquids. Six internal reflections and an exceptionally high light throughput provide highest ATR measurement sensitivity for the analysis even of sample components in low concentrations.

High pressure version of the diamond ATR, for hard samples like plastic pellets.

With the Eco-ATR is a very cost effective single reflection ATR module available. It is equipped with either a ZnSe or Ge ATR-crystal.



The universal sampling module enables you to analyze all kinds of samples: solids, liquids and gases. This transmission sample compartment with its 2x3" standard sample holder can house a variety of gas cells and liquid cells.

Attenuated Total Reflection (ATR) is an easy-to-use FTIR measurement method that is ideal for both solids and liquids. The Platinum-ATR is a single reflection ATR module with outstanding chemical and mechanical robustness. Its diamond crystal is brazed into a very hard and inert ceramics made from tungsten carbide. This assembly allows the application of very high pressure so that even very hard samples can be measured.

The diffuse reflection (DRIFT) module is a very suitable option for the analysis of a broad variety of solid samples: powders, inorganic material, gem stones and many others. The DRIFT module is designed for easy sampling and high light throughput. This results in an unmatched time-per-analysis for FTIR diffuse reflection measurements.



QuickSnap™ module exchange



Dedicated reflection modules allow contactless and non-destructive FTIR analysis of large samples like coated metal, paper or textile fabrics. For the measurement the samples are placed in front or on top of the instrument, depending on the chosen module. Large or immobile samples such as surfaces of cars, airplanes, mural paintings or artwork can easily be analyzed as the ALPHA is placed in front of the material/object. Optionally, an integrated video camera provides view of the sampling area.

The FTIR spectrometer ALPHA II combines outstanding quality and sets a benchmark in terms of user convenience. With its integrated touch PC the system is extremely compact and can be moved easily within and between laboratories.

Higher spectral range, sensitivity, resolution and increased robustness are but a few examples of the improved performance, made possible by technical innovations such as the stabilized source and detector.

With its variety of plug and play QuickSnap™ modules the ALPHA II has unmatched flexibility and can be adapted to almost any measurement scenario.

OPUS-TOUCH, the dedicated user interface for touch operation makes the control of the ALPHA II very convenient and guides the user during the operation.



- Robust and compact FTIR spectrometer with integrated design
- Convenient touch panel operation with intuitive software, suitable even for beginners
- Low costs of ownership due to premium components with long life time, and low power consumption
- Dedicated design for any application by exchangeable sampling modules
- Absolute reliability through high system intelligence
 - Electronic coding of sampling modules and spectrometer
 - Individual calibration of sampling modules and automated setting of parameters
 - Permanent diagnosis of all relevant system components
 - Automated tests to verify readiness of system
 - Validation with internal certified standards

Technologies used are protected by one or more of the following patents:
DE 102004025448; DE 19940981

**Bruker Optics is ISO 9001
and ISO 13485 certified.**

Laser class 1 product.

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