BRUKER Optics

MATRIX-I

expectmore

MATRIX™-I offers a unique solution for your QA/QC needs utilizing the FT-NIR technology.

MATRIX™-I with sample rotator

- Accurate results in seconds
- Non-destructive analysis
- Easy to use
- Multiple components per measurement
- High resolution
- Rugged and insensitive to vibrations
- Ethernet connectivity and industry standard communication protocols.

The *MATRIX™-I* is a rugged FT-NIR spectrometer designed for QA/QC analysis. The instrument comes equipped with an integrating sphere. This permits fast and easy analysis using the diffuse reflectance technique. Samples can be measured directly in their containers or poured into standard cups. This method is ideal for measuring large amounts of materials and is particularly useful for analyzing inhomogeneous samples or large particle size items such as grains or seeds. Several options are available such as a rotating cup and an automated sampling unit.

MATRIX™-I's permanently aligned optics and insensitivity to vibrations and temperature changes, make it a perfect rugged and compact system. With a developer's tool kit and ActiveX controls, *MATRIX™-I* can be customized with VB script programmes, allowing more flexibility. Furthermore, secure computer interfacing via standard ethernet, using TCP/IP protocol and an embedded HTML server, enables fast and reliable connectivity.

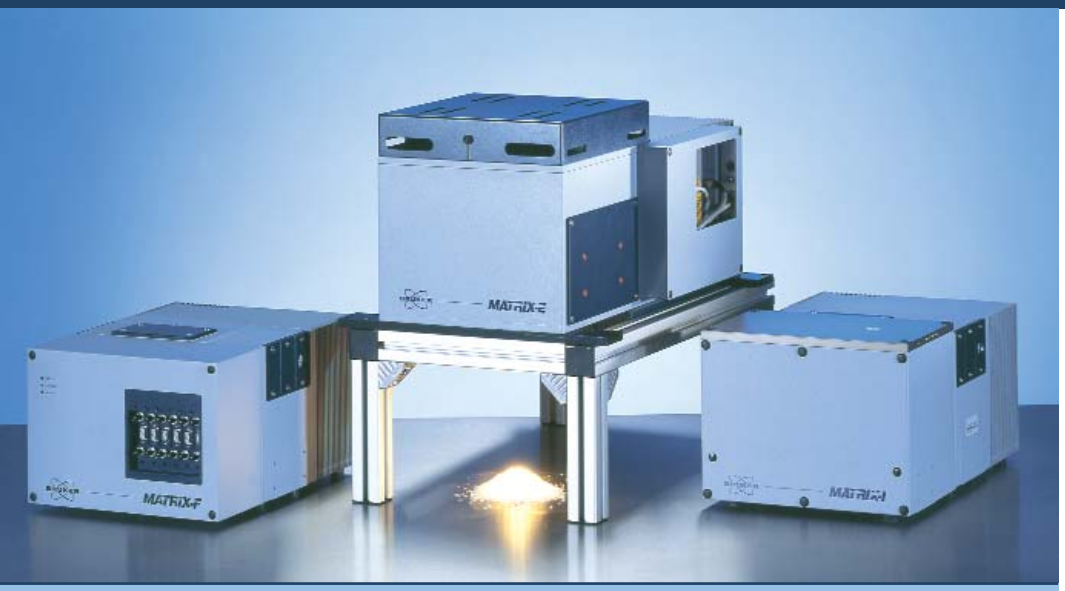
The system is based on the R&D 100 award winning *MATRIX™* spectrometer. *MATRIX™-I*'s integrating sphere can be utilized even more effectively using various sampling accessories and sample holders. A customized flange mounting for in-line applications is available on request.

Various sampling accessories are available for the integrating sphere.

The internal validation unit (IVU) ensures the precision of the instrument.

OPUS/LAB is an easy to use data acquisition and evaluation software package.

Ethernet connectivity and a portable computer enables easy mobility and connection.



The *MATRIX*™ FT-NIR spectrometers

MATRIX-I

Maintenance

Fourier Transform technology allows higher resolution, better sensitivity, higher wavelength accuracy and easy calibration transfer from one instrument to another. Maintenance of the system is simple, since all consumable components (such as the laser and sources) are on pre-aligned mounts for quick exchange. Furthermore, these components are located in a different compartment from the optical components (such as the interferometer and focusing mirrors). This allows repairs and replacements to be carried out without accessing the environmentally sensitive optics area.

Application Support

Bruker Optics is staffed by expert scientists and engineers who have an in-depth knowledge of instrumentation and applications. Our product specialists are available to assist you with method development either remotely or in your lab. We offer customized instruction/support packages to fit your needs.

Service & Training

Bruker Optics spectrometers are designed to provide years of dependable trouble-free operation, but should a problem occur a network of Bruker companies and representatives throughout the world are ready to promptly respond to your needs.

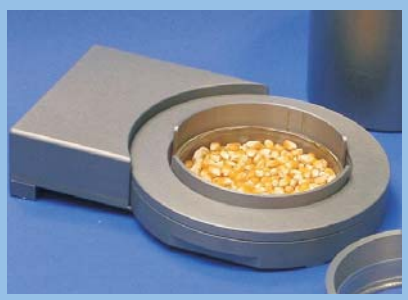
Professional installations and a high standard of post-delivery service are commitments Bruker Optics makes to each of its customers. Remote diagnostics in addition to a variety of service contract packages are available for comprehensive support.

Applications

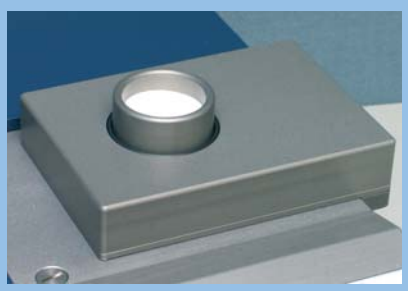
The *MATRIX*™*-I* with its integrating sphere sampling is ideal for your daily QA/QC work. Applications include:

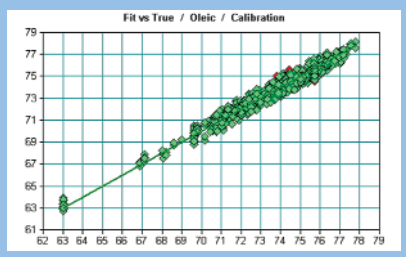
- Grain and oil seed analysis: moisture, protein, oil, starch and fatty acid profile.
- Milk and dairy analysis: moisture, fat, protein and dry matter.
- Food and feed analysis: protein, starch, fat, moisture, fiber and ash.
- Fuel ethanol analysis: fermentation profiling.
- Tobacco analysis: leaf quality and process verifications of tobacco blends.
- Pharmaceutical analysis: raw material ID, blend uniformity, blend ratio, drying process monitoring.
- Polymer lab and online analysis: additives, melt flow index, residual monomer, density and viscosity.

Fatty acid profile of canola seeds analysis

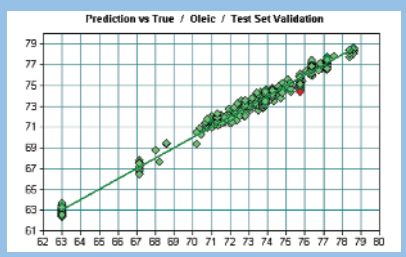


Optional rotating cups in different sizes can be mounted off-centered on the sample window of the MATRIX™-I for averaging sample inhomogeneity.





NIR determination of oleic acid content in Canola seeds. R^2 = 97.0, RMSECV= 0.45



Oleic Model Validation Result from 5 Different Instruments. R^2 = 98.0, RMSEP= 0.47

LASER CLASS 1

For more information contact us:

BRUKER Optics

www.brukeroptics.com

North America
+1 978 439 9899
info@brukeroptics.com

Europe
+49 7243 504 600
info@brukeroptics.de

Asia
+852 2796 6100
asiapacific@brukeroptics.com.hk