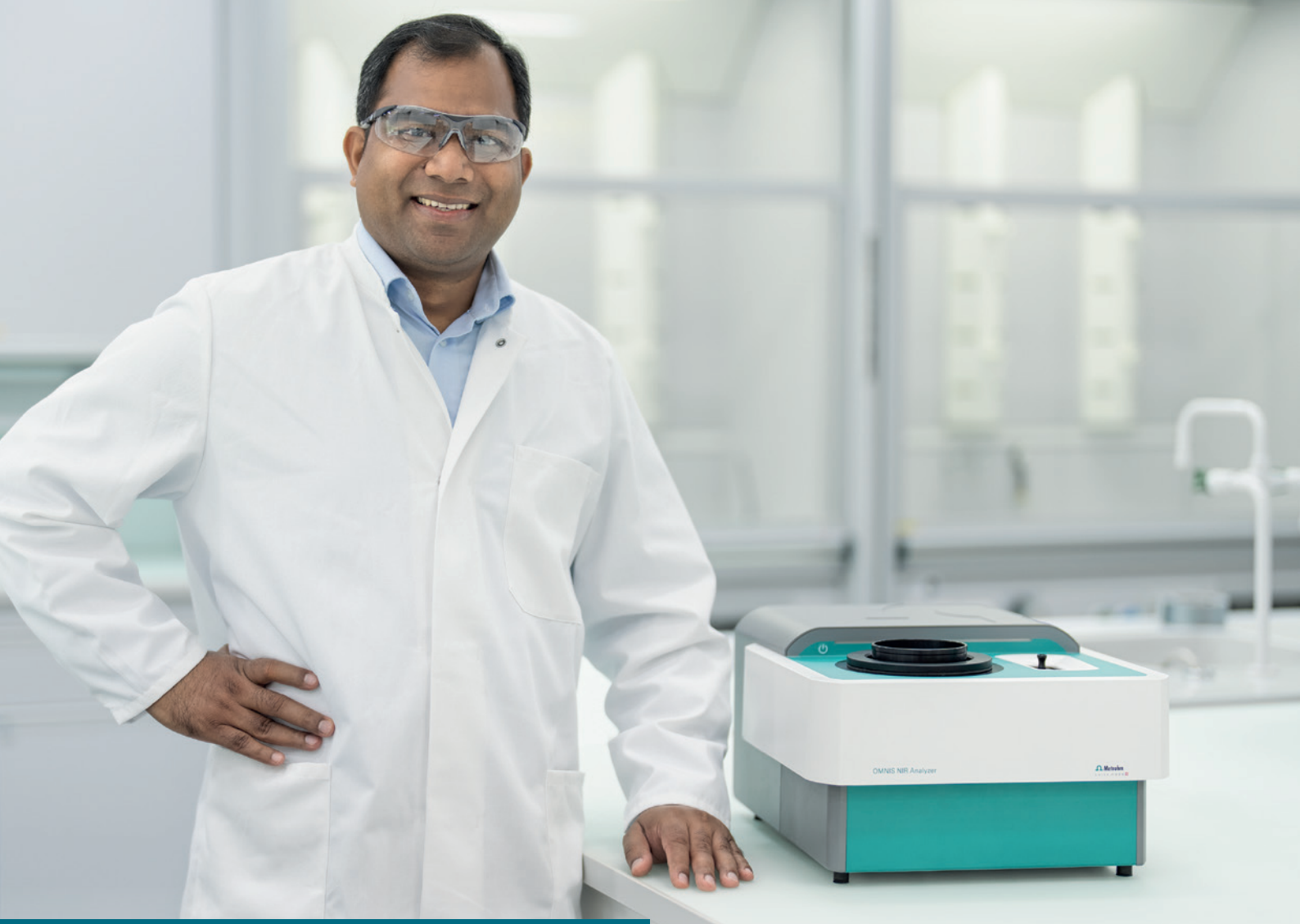


OMNIS NIR Analyzer

Modular platform for high-performance NIR analysis

PEOPLE
YOU
CAN
TRUST

HIGHLIGHTS

- Swiss Made Quality – Reliable and robust
- Modular and Scalable – From a single system to full automation
- Intuitive Operation – Guided workflows supported by hardware and software
- Fully Compliant – Meets global regulatory standards such as USP, EP, and JP

Metrohm

Unique features and benefits of an exceptional solution

RELIABLE PERFORMANCE: IP54 CERTIFICATION AND NO MOVING OPTICAL PARTS

The OMNIS NIR Analyzer is engineered for long-term stability and high reproducibility. With no moving optical parts, the system maintains consistent performance over time, minimizing maintenance and maximizing reliability. Built-in standards, traceable to NIST SRM 2035b, enable automatic calibration and instrument performance checks without any user intervention. Validated by an external testing laboratory, the analyzer is rated IP54, making it suitable not only for laboratory use but also for near-process applications where fast analysis of intermediate products is required.

CONSISTENT ACCURACY: ADVANCED TEMPERATURE CONTROL

The OMNIS NIR Analyzer delivers precise and reproducible measurements thanks to its unique temperature control functionality. Equipped with multiple sensors for liquid samples, the system actively monitors and controls the real sample temperature rather than just the vessel or holder.
Leveraging a specialized algorithm developed by Metrohm, the OMNIS NIR Analyzer ensures rapid heating and cooling of the sample. This eliminates the need for arbitrary waiting times to reach thermal equilibrium. As a result, this approach not only speeds up your workflow but also guarantees consistent, reproducible results across all measurements.

WORKFLOWS WITHOUT MISTAKES: INTELLIGENT HOLDER AND VESSEL DETECTION

Accurate measurements begin with the correct sample vessel, and the OMNIS NIR System ensures nothing is left to chance. Built-in sensors automaticallydetect both the vessel holder and the sample vessel, providing clear guidance and confidence during routine analysis.
Thanks to intelligent vessel insertion and removal detection, measurements start automatically as soon as the sample is in place, minimizing user interaction and streamlining your workflow.

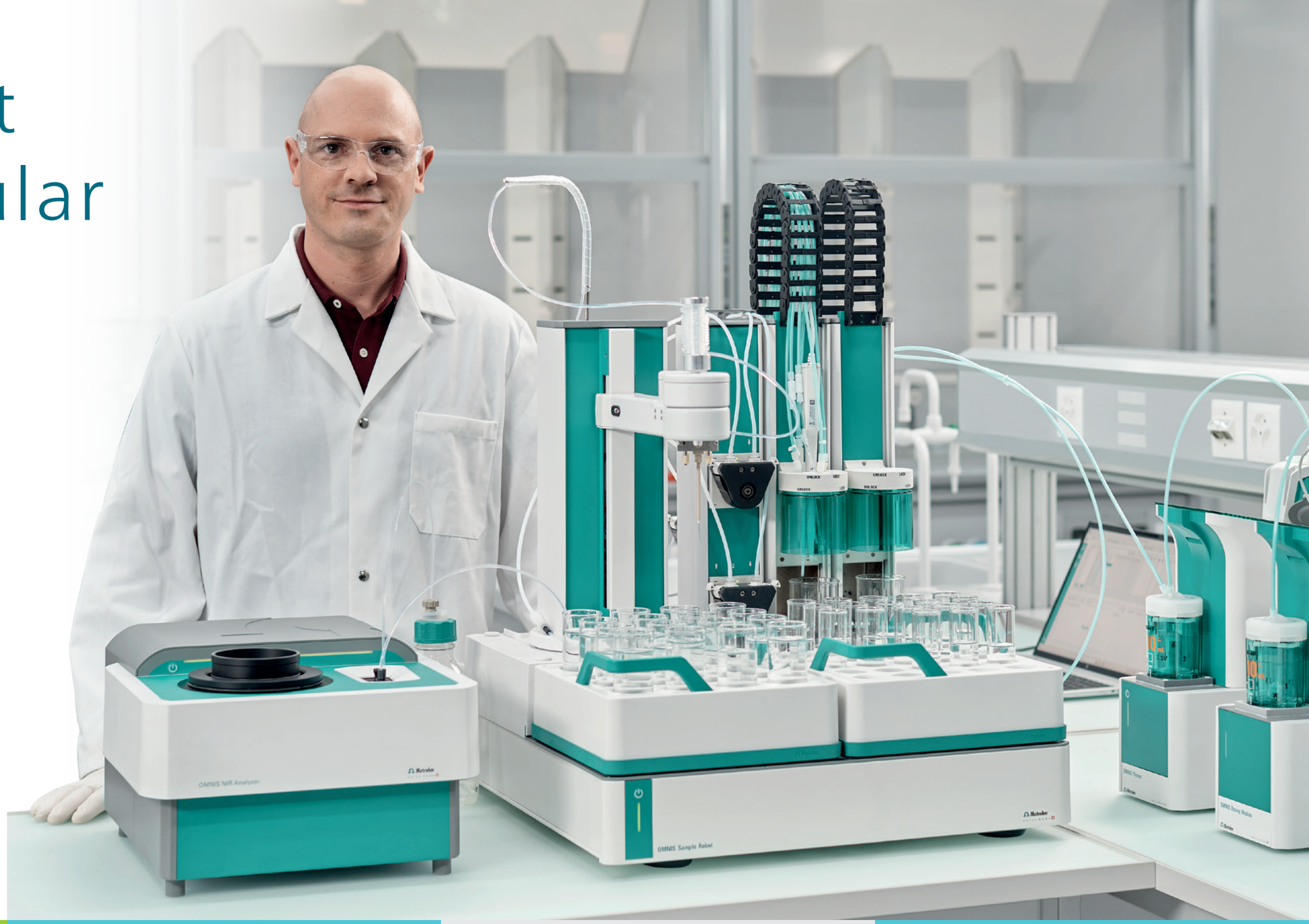
Compliant and modular

Full compliance with pharmaceutical guidelines

The OMNIS NIR System is fully compliant with the latest pharmaceutical regulations, including USP 856, EP 2.2.40, and JP 2.27. Complete certified test sets are available for a comprehensive evaluation of the entire system, covering noise, photometric linearity, and wavelength accuracy and precision.

Performance verification is simplified with built-in internal standards traceable to NIST SRM 2035b. This enables automatic and scheduled checks, ensuring that the instrument remains in optimal working condition at all times.

In addition, OMNIS features advanced user management, electronic signing, and audit trail capabilities, all adaptable to your laboratory's specific needs and fully aligned with 21 CFR Part 11 requirements.



MODULARITY TO ADAPT TO YOUR NEEDS

OMNIS is built on a modular concept designed to grow with your laboratory's evolving requirements. Software functionalities can be expanded at any time by activating supplementary licenses, whether you need compliance mode, model development functionalities or want to integrate additional hardware.

UPGRADE POSSIBLE AT ANY TIME

The hardware follows the same principle of scalability. Begin with a single-channel analyzer for liquids or solids and upgrade onsite to a dual-channel system to cover more application possibilities. For automated and unattended measurements, an OMNIS Sample Robot can be added, enabling the processing of over 200 samples in one sequence.

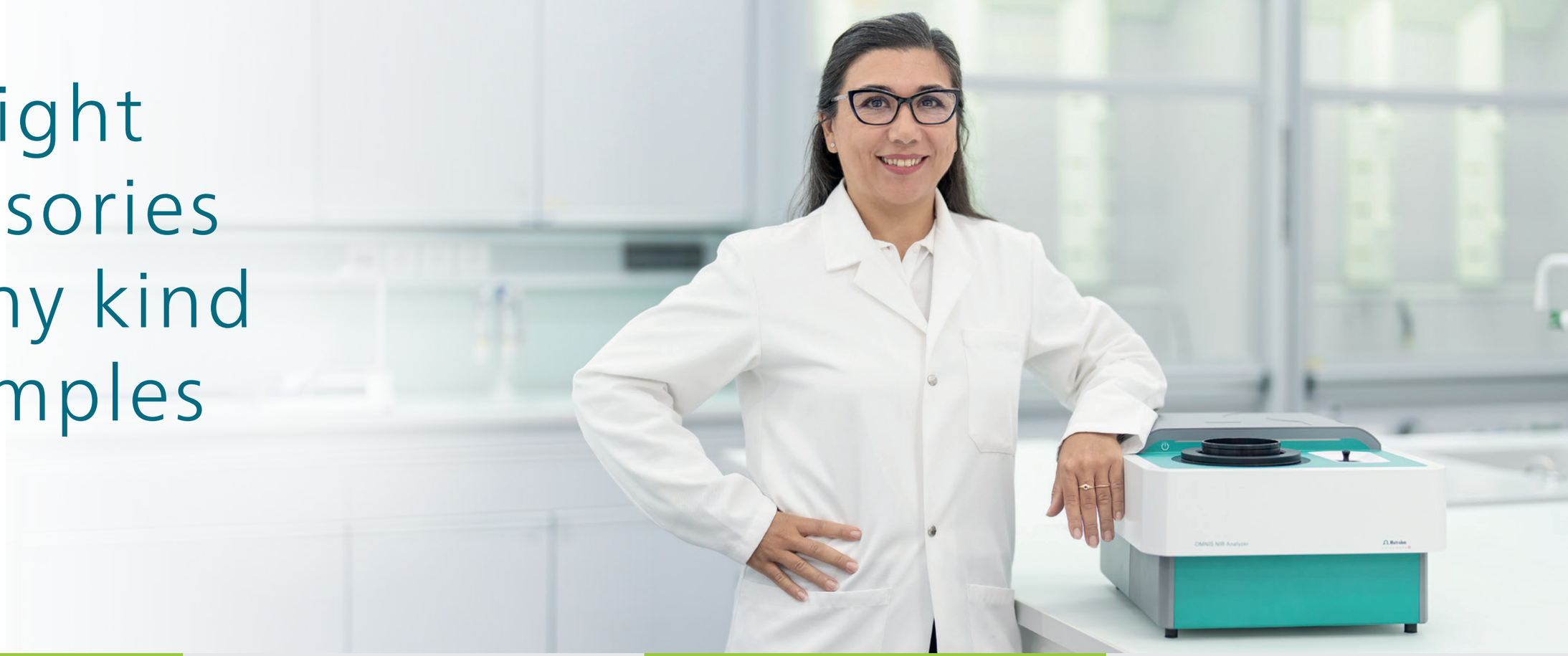
ONE PLATFORM

In addition, the OMNIS platform bridges the gap between laboratory analysis and process monitoring. Since it is based on the same spectroscopy hardware, data collected on the OMNIS NIR Analyzer can be seamlessly transferred to process instruments such as the 2060 The NIR, ensuring consistent results across lab and process environments.

MULTIPLE TECHNOLOGIES

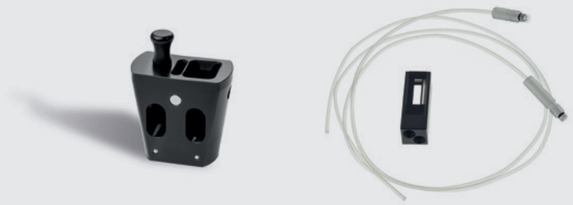
Finally, the system integrates effortlessly with other Metrohm technologies, including OMNIS Titrators and OMNIS Karl Fischer instruments. Best of all, all setups are controlled with one software: OMNIS.

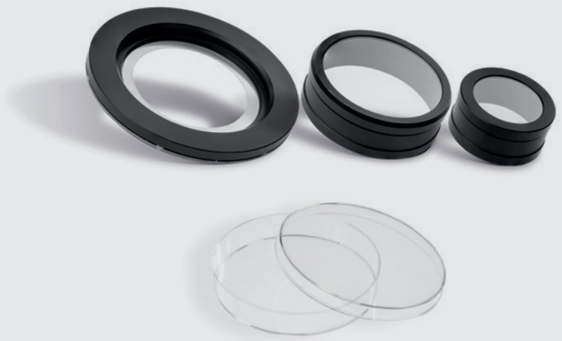
The right accessories for any kind of samples



CUVETTES AND FLOW-THROUGH CELLS (TRANSMISSION MEASUREMENT)

High-precision cuvettes with path lengths of 0.5–10 mm can be used with the OMNIS NIR Analyzer. The flow through cell in combination with Metrohm's liquid handling products allow the analysis of highly absorbing liquids such as oils, milk, or sugarcane juice.



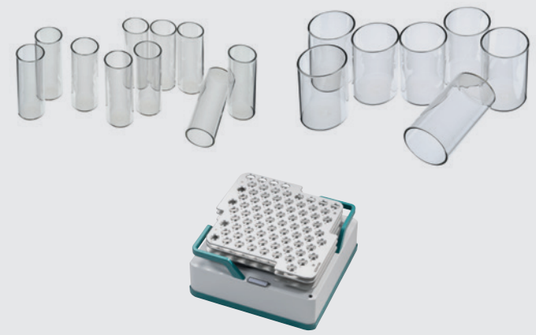


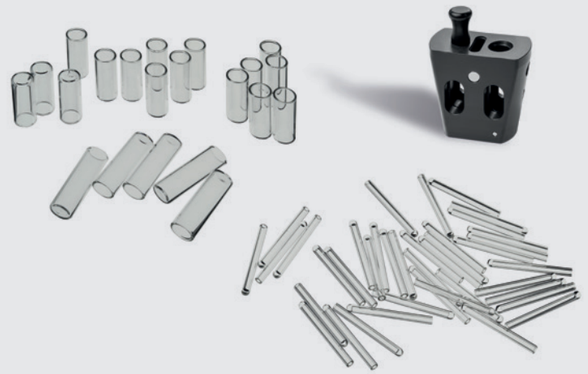
OMNIS SAMPLE CUPS (REFLECTION MEASUREMENT)

Different cups and petri dishes with diameters of 60 mm and 100 mm are supported by the OMNIS NIR Analyzer, enabling reproducible and convenient measurements of solid samples. Ideal for inhomogeneous or coarse solids, such as pellets or ungrinded food products.

OMNIS VIALS FOR SOLID SAMPLES (REFLECTION MEASUREMENT)

Disposable vials in diameters of 15–28 mm are suitable for solid samples when multi-point measurements are not required. Compatible with the OMNIS Sample Robot NIR, they allow unattended analysis of multiple samples. Perfect for fine powders or, in combination with the inert OMNIS reflectors, for highly viscous materials.



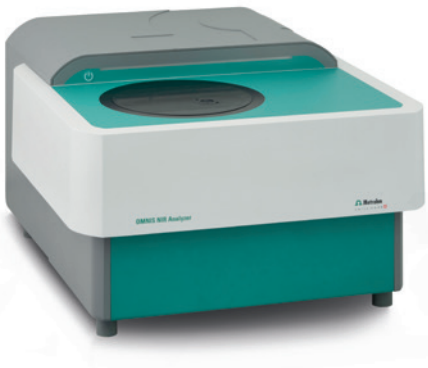


OMNIS VIALS FOR LIQUID SAMPLES (TRANSMISSION MEASUREMENT)

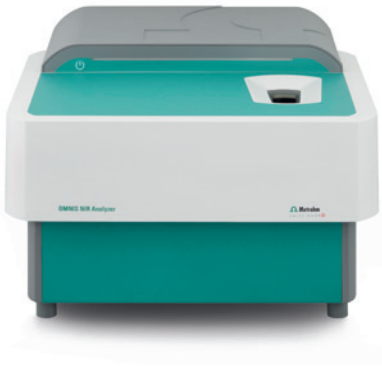
Disposable vials with path lengths of 2–10 mm enable convenient liquid measurements without the need for cleaning. The 8 mm vial is compatible with the OMNIS Sample Robot NIR, allowing unattended analysis of numerous samples. Ideal for polyols, isocyanates, edible oils, and other liquids.

Operating Specifications

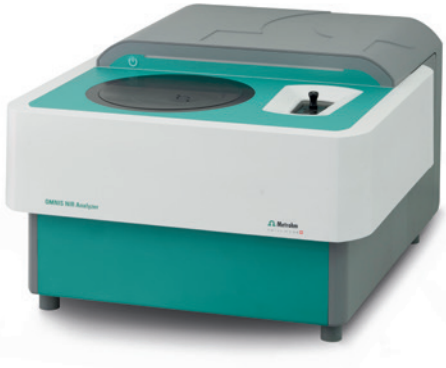
Measurement Type	
Solids	Holds 60/100 mm petri dishes, 60/100 mm samples cups, and disposable vials – supports single and multipoint scans
Liquids	Interchangeable holders support disposable vials, cuvettes and flow-through cells with heating and cooling option
Spectral Range	1000–2250 nm
Detector Type	TE-cooled InGaAs detector
Calibration	Internal wavelength standard traceable to SRM 2035b
Lamp	Tungsten halogen, >8,000-hour life
Temperature Control	25–80 °C (holder and vessel)
Security	
User Access	Granular permissions, Windows Active Directory integration
Data Security	Access rights managed by MS-SQL database
LIMS Connectivity	Automated report export or direct integration via API
Mechanical Specifications	
Width	14.2 in (360.7 mm)
Height	16.7 in (232.2 mm)
Depth	9.3 in (424.2 mm)
Weight	40.2 lbs (18.2 kg)



SOLIDS ANALYZER



LIQUIDS ANALYZER



LIQUIDS/SOLIDS ANALYZER