



● **TANGO** FT-NIR Spectrometer for Reflection Measurements

Specifications

Rugged NIR analyzer with sealed and desiccated optics for routine quality control. The analyzer is equipped with a gold coated integrating sphere for the reflection measurement of samples. Sample spinners for inhomogeneous samples are optionally available.

The analyzer is either equipped with a built-in data system with a touch screen or optionally available with an external PC-based data system. The easy-to-use and GMP compliant TANGO software package allows qualitative and quantitative analysis.

Design

- Housing: rugged, sealed and desiccated housing
- NIR source: air cooled Tungsten source, average lifetime 9,000 h, pre-aligned, easily exchangeable by operator
- Interferometer: RockSolid™, frictionless bearing, permanently aligned, Quartz substrate beamsplitter with proprietary coating 10 years warranty on the moving parts of the interferometer.
- Laser: Solid State Laser (10 years warranty)
- Detector: InGaAs diode, TE-cooled and temperature-stabilized
- Sample presentation: reflection measurements in cups, Petri dishes or disposable vials background measurement w/o removing the sample

Performance

- Spectral range: 11,500 - 4,000 cm^{-1}
- Resolution: better than 4 cm^{-1}
- Wavenumber reproducibility: better than 0.04 cm^{-1} , at 7,181 cm^{-1}
- Wavenumber accuracy: better than 0.1 cm^{-1} , at 7,181 cm^{-1}
- Photometric accuracy: better than 0.1% T

Electronics

- Data acquisition: 24-bit A/D converter
- Automation: microprocessor controlled optical bench, digital speed control, automatic gain selection, internal background, advanced system check
- Performance check: permanent on-line diagnostics of all optical components, automation units and sampling accessories
- Connectivity: Ethernet interface, 10/100 Mbps

Dimensions

- Spectrometer (w x d x h): 309 mm x 438 mm x 175 mm (plus max. 250 mm height for monitor)
- Weight: 22.0 kg (17.5 kg w/o data system)

Operating Environment

- Degree of protection: IP53 (TANGO with external PC)
- Operating temperature: 5° C to 35° C
- Storage temperature: -20° C to 70° C
- Operating relative humidity: < 80% non-condensing
- Power requirements: 100 to 240 VAC, 50/60 Hz, 75 W (typical 40 W)
- Regulatory certification and compliance: CE, WEEE and RoHS

Data System

- Embedded PC (1,86GHz, 4GB RAM, 64GB SSD) with 12.2" touch display (capacitive); optional external PC data system

Validation

- TANGO software: the software package includes functions that facilitate the use of the analyzer in a 21 CFR Part 11 compliant environment
- Instrument qualification: TANGO software supports Operational Qualification (OQ) and Performance Qualification (PQ) optional: qualification according to USP1119/PhEur 2.2.40 filter wheel with reference standards, for automatic PQ tests
- Internal validation unit: complete hardware and software validation documentation is available as an option
- Validation manual: Preventive maintenance contracts and validation services are available as an option
- Service contracts:

Software

- GMP compliant TANGO software with user-friendly interface
- Product based operation (Barcode reader friendly)
- Qualitative and/or quantitative evaluations (no method development)
- Customizable analysis reports
- Data exchange via USB stick and/or LAN



Product selection by pressing the respective icon



After the measurement the results are displayed graphically

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

www.bruker.com/optics

● **Bruker Optics Inc.**

Billerica, MA · USA
Phone +1 (978) 439-9899
Fax +1 (978) 663-9177
info.bopt.us@bruker.com

● **Bruker Optik GmbH**

Ettlingen · Germany
Phone +49 (7243) 504-2000
Fax +49 (7243) 504-2050
info.bopt.de@bruker.com

● **Bruker Shanghai Ltd.**

Shanghai · China
Phone +86 21 51720-800
Fax +86 21 51720-899
info.bopt.cn@bruker.com

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

Laser class 1 product.