

NIR 10

NEAR INFRARED SPECTRUM ANALYZER

The new generation full-spectrum NIR analyzer for feed, food, agriculture and beyond



700–2500 NM

1-MINUTE RESULTS

NIST TRACEABLE

01

RAPID ANALYSIS

No sample preparation, non-destructive testing. Multiple components such as moisture, fat, protein and amino acids in one minute.

02

FULL SPECTRUM

700–2500 nm ultra-wide range fully reflects N-H, S-H, C-H and C=O vibration information for simultaneous multi-indicator analysis.

03

NIST TRACEABLE

Built-in PTFE reference module and polystyrene wavelength standard with automatic correction ensure wavelength accuracy and stability.

04

MODEL TRANSFER

Consistent wavelength accuracy across instruments enables seamless model transfer and greatly reduces model deployment cost.

KEY NIR 10 ADVANTAGES

- Simple operation — no sample preparation required, sample is not destroyed
- 700–2500 nm ultra-wide spectral range with fast simultaneous analysis
- Integrating sphere diffuse reflectance, rotating sample stage and large-spot technology ensure spectrum uniformity and reproducibility
- NIST-traceable calibration standards; built-in PTFE reference and polystyrene wavelength standard
- Multiple sample cup configurations for particle, powder, liquid and slurry samples
- Professional software: multi-user level menus, result editing and export at a glance
- Real-time monitoring of environment and temperature, saved for result review and adjustment
- Compact 365 × 295 × 157 mm, 18 kg — easy to maintain and carry
- Calibration models delivered in 1–3 months with only 10–20 calibration samples
- Core components — tungsten lamp, filters, gold-plated grating, TE-cooled InGaAs detector — from international leading brands
- Front-splitting optics eliminate temperature fluctuation noise during measurement
- Professional service team: prompt response, calibration development and upgrade services

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- ROTATING SAMPLE STAGE**

Rotating stage with large-spot illumination averages sample heterogeneity, ensuring spectrum uniformity and reproducibility.
- INTEGRATING SPHERE**

Diffuse reflectance collection at multiple angles improves measurement reproducibility on uneven samples such as grains and forage.
- TE-COOLED INGAAS DETECTOR**

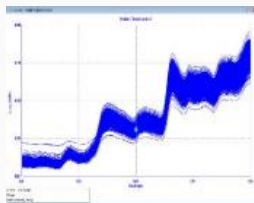
Refrigerated indium gallium arsenide detector delivers high sensitivity and excellent baseline stability across the full range.
- GOLD-PLATED GRATING OPTICS**

Gold-plated grating and tungsten source from international leading brands secure high optical throughput and instrument quality.
- COMPACT & INTELLIGENT**

18 kg benchtop design with real-time monitoring of environment and temperature; compact and easy to maintain.

CORE TECHNOLOGIES

ENGINEERED FOR ACCURACY, ROBUSTNESS AND SEAMLESS MODEL DEPLOYMENT



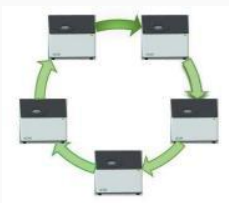
FULL-SPECTRUM OPTICS

- 700–2500 nm (14000–4000 cm⁻¹) coverage
- Spectral bandwidth 12 nm
- Wavelength accuracy ≤ 0.2 nm
- Stray light ≤ 0.1%; noise ≤ 20 μA
- Front-splitting, temperature-insensitive design



FLEXIBLE SAMPLING

- Particle, powder, liquid and slurry samples
- Rotating stage with large-spot measurement
- Integrating sphere diffuse reflectance cell
- Non-destructive analysis, no preparation



MODELS & SOFTWARE

- LPLS quantitative calibration technology
- DPLS digital PLS qualitative models
- One-click multi-indicator analysis
- Multi-user rights management
- Verified transfer between instruments

PERFORMANCE PROOF

Professional Model Development, Proven in Practice

The professional NIR modeling software provides powerful model building, evaluation, optimization and maintenance. Unique digital partial least squares (DPLS) technology supports qualitative identification models — authenticity discrimination, product classification and grading. After practice-verified model validation, good transfer between multiple instruments is achieved, greatly reducing model promotion cost.

Reference: NIR 10 operating software; NIST-traceable wavelength calibration.

APPLICATION AREAS

FEED & FORAGE

Moisture, protein, fat, fiber, ADF/NDF, starch, amino acids; 170+ feed ingredients

GRAINS & OILS

Moisture, protein, fat, starch, fatty acids, glucosinolate, erucic acid in grains and oilseeds

FOOD & DAIRY

Milk powder, whey, biscuits; moisture, protein, lactose, fat, peroxide and acid value

WINE & LIQUOR

Alcohol, reducing sugar, total ester, methanol, ethyl lactate and hexanoate in liquor and brewing

TOBACCO

Total sugar, reducing sugar, nicotine, potassium and chlorine in leaf and processed tobacco

SOIL & RESEARCH

Soil and TCM analysis; breeding research, product development and calibration cooperation



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NIR 10

TECHNICAL SPECIFICATIONS

MAIN SYSTEM

Measurement Method	Integrating sphere diffuse reflectance sample cell
Wavelength Range	700–2500 nm (14000–4000 cm ⁻¹)
Spectral Bandwidth	12 nm
Wavelength Accuracy	≤ 0.2 nm
Wavelength Repeatability	≤ 0.05 nm
Stray Light	≤ 0.1%
Absorbance Noise	≤ 20 μA
Analysis Time	1 minute (adjustable)
Light Source Lifetime	> 5000 hours (tungsten lamp)
Detector	TE-cooled InGaAs (refrigerated)
Reference / Wavelength Standard	Built-in PTFE reference module; polystyrene wavelength standard; automatic correction

SAMPLE HANDLING & ACCESSORIES

Sample Forms	Particle, powder, liquid, slurry
Sampling	Rotating sample stage with large-spot technology
Dimensions (L × W × H)	365 × 295 × 157 mm
Weight	18 kg

PERFORMANCE HIGHLIGHTS

700–2500 nm

Ultra-wide full-spectrum wavelength range

1 min

Rapid analysis of multiple components

≤ 0.2 nm

Wavelength accuracy, NIST traceable

> 5000 h

Light source lifetime

18 kg

Compact benchtop footprint

SOFTWARE & CALIBRATION

Operating Software	Ascstar; multi-user levels, result editing & export
Quantitative Analysis	LPLS — local partial least squares
Qualitative Analysis	DPLS — digitized partial least squares
Monitoring	Real-time environment & temperature logging