# SpectraStar™ XT-R

## HIGH-PERFORMANCE EXTENDED RANGE NIR ANALYZER

KPM

## Fast and High-Performance Extended Range NIR for All Laboratory and At-Line Applications

The SpectraStar XT-R Near-Infrared (NIR) Analyzer offers outstanding accuracy and reliability for rapid compositional analysis of solid, slurry or liquid samples. Typical constituents measured are moisture, protein, and fat, as well as more difficult parameters such as sugars, fibers, ash, lignin and fatty acids.

### OUTSTANDING PERFORMANCE

SpectraStar XT analyzers are based on a scanning monochromator platform offering high signal to noise ratio and the best spectral quality available. The XT-R analyzer scans across a broad spectral range to accurately predict a wide variety of constituents in complex sample types.

### READY TO USE CALIBRATIONS

The SpectraStar XT-R has many ready-to-use calibrations available for common applications and constituents. Calibrations are continuously updated for quick implementation and to ensure accurate results across broad sample ranges.

For processed foods, snack foods, dairy products, feed and feed ingredients, forages, and animal meals, Unity calibrations provide accurate and reliable results for your specific products and applications.

### RELIABLE RESULTS

Each SpectraStar XT-R includes patented TRUE ALIGNMENT® Spectroscopy (TAS) technology which detects and corrects any instrument changes due to shock, temperature, or lamp changes. User-level monitoring and alignment of the instrument aligns the XT-R to calibrated standards for consistent results over time and across locations.

POWERED BY **TAS**

**TRUE** Alignment®

*SPECTROSCOPY*

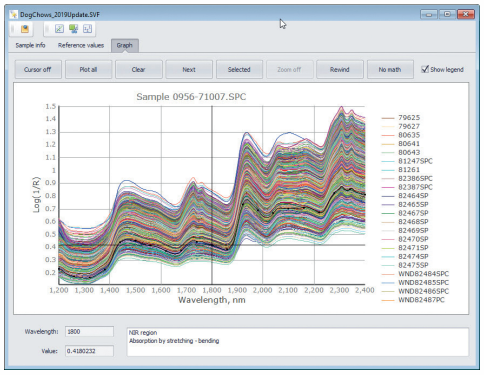
### SPECTRASTAR XT-R FEATURES

- Dual detector design and patented data processing for extended wavelength range.
- Broad wavelength coverage supports calibrations for fibers, sugars, fatty acids, starch and other difficult constituents as well as moisture, protein and fat.
- Maximum spectral information is ideal for custom calibration development.
- Products include animal feeds and ingredients, pet foods, processed food, ingredients, snack foods, oilseeds, forage and confectionery.

# SpectraStar™ XT-R

## PROVEN TECHNOLOGY

The SpectraStar XT-R analyzer uses proven near-infrared (NIR) technology to deliver highly accurate results to quality laboratories and production floors. NIR analyzers are used daily in thousands of locations to ensure quality through the entire production process.




**NIR technology offers many advantages over other techniques including:**

- **Fast -** samples are analyzed in under a minute
- **Simple -** little or no sample preparation is required
- **Safe -** uses no dangerous chemicals to purchase or dispose
- **Easy to implement -** minimal training is required
- **Reliable -** offers accurate, operator-independent results

## ULTIMATE VERSATILITY

The SpectraStar XT-R analyzer has a stand-alone design and small form factor for easy placement almost anywhere. With a sealed case and touch-screen monitor, the XT-R is ready for both the laboratory for routine testing and research as well as the production floor for in-process testing or final product release. Results are presented in under a minute for fast turn-around and immediate feedback.

**SpectraStar Analyzers are ideal solutions for every step of your production process including:**

- Incoming raw material testing to verify ingredient quality and support claims
- In-process testing ensuring proper batch or continuous processing conditions
- Final product verification to ensure product quality and label or specification claims

## EASY TO USE SOFTWARE

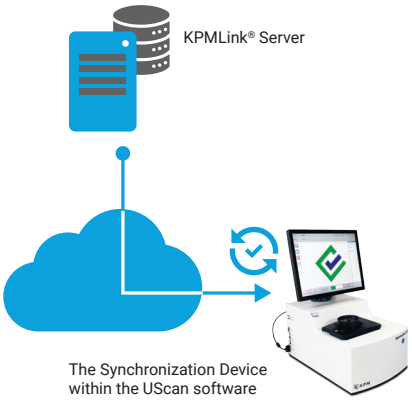
The SpectraStar XT-R comes complete with UScan™ software incorporating an intuitive graphical interface with multiple display options including an SPC chart for easy product monitoring. UScan was designed for easy operation and minimal training requirements for routine operators. A 17” touch screen makes sample analysis as easy as a couple finger touches.

UScan uses a reliable SQL database for secure storage and traceability of all settings and sample data, and LIMS options make real-time data transfer to external systems seamless.

## KPMLink® CLOUD-BASED MANAGEMENT SOFTWARE

KPMLink® is an intuitive software suite designed for streamlined configuration of product settings, efficient management of calibrations, and synchronization of SpectraStar XT Series NIR analyzers globally. KPMLink® offers users and managers access to complete diagnostic history for each instrument, thereby providing detailed health information and instilling confidence needed for making decisions on collected measurement data.

KPMLink® makes it easy to ensure all SpectraStar analyzers within your organization are operating at exact standards and at consistent configurations, regardless of location or local expertise.




The Synchronization Device within the UScan software automatically updates the instrument as changes are made to the database hosted on the cloud server.

# SpectraStar™ XT-R

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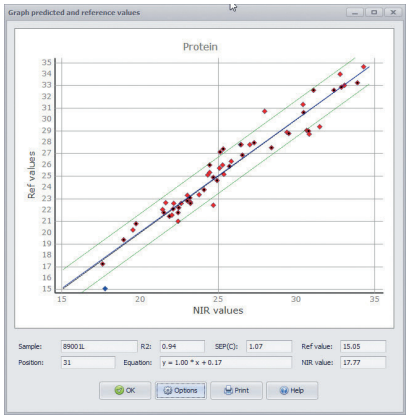
## READY TO USE CALIBRATIONS

The SpectraStar XT-R has many calibrations available to ensure robust and reliable results out of the box. Calibrations include ingredient, dairy, processed food, forage, feed and feed ingredient calibrations.

- Bakery By-Product
- Barley
- Blood Meal
- Butter – Salted
- Butter – Unsalted
- Canola Flakes
- Canola Meal
- Canola Seeds
- Cheese – Cheddar
- Cheese – Various
- Chocolate
- Cocoa Beans
- Cocoa Butter
- Cocoa Liquor
- Cocoa Nibs
- Cocoa Powder
- Cookies
- Corn
- Corn Flour
- Corn Germ
- Corn Gluten Feed
- Corn Gluten Meal
- Corn Meal
- Corn Silage
- Corn Starch - Dry
- DDGS
- Egg Powder
- Feather Meal
- Feed – General
- Feed – Poultry
- Feed – Swine
- Fish Meal
- Flour – Clear
- Flour – Hard Wheat
- Flour – Soft Wheat
- Frozen Finished French Fries
- Hay – Alfalfa
- Hay – Grass
- Hay – Mixed
- Ice Cream Mix
- Infant Formula Powder
- Liquid Whey
- Liquid WPC
- Malted Barley
- Meat & Bone Meal
- MPC 56
- MPC 70
- Mustard Flour
- Mustard Seeds
- Neonatal Milk
- Olive Oil
- Olive Pommace
- Olives - Crushed
- Petfood Dry Kibbles
- Pita Chips
- Pork Meal
- Potato Chips
- Potatoes – Raw/Dried
- Poultry Meal
- Processed Cheese
- Raw meat blend
- Rice (Brown)
- Rice (White)
- Sausage
- Skim Milk Powder
- Soybean Meal
- Soybean Seeds
- Soybeans
- Soybeans (Amino Acids)
- Soybeans (Fatty Acids)
- Sugar Beet Shavings
- Tortilla Chips
- Wheat – Ground
- Wheat Midds
- Wheat Seeds
- Whole Milk Powder
- Whole Oats
- Whole Peas
- WPC Powder




## CUSTOM CALIBRATION OPTIONS

With industry leading performance and extended wavelength range, the XT-R is the ideal platform for custom calibration development for unique or proprietary products. Calibration development assistance and training is available, and the optional UCal™ 4 makes NIR calibrations easy for any product including food, agricultural and industrial applications.

UCal 4 offers advanced chemo-metric algorithms and development tools for the creation of robust and high performance calibrations. Intuitive design and graphical displays make UCal 4 suitable for novices and experts alike.

- Quantitative and qualitative model creation and validation
- Calibration transfer tools to re-use calibration data from other instrument types
- Population structuring toolbox to get the most from your reference chemistry budget
- Enhanced graphical displays for quick and thorough evaluation of results

## ORDERING INFORMATION

The SpectraStar™ XT-R analyzer can be ordered ready-to-use with pre-loaded Unity™ Calibrations or with UCal™ 4 calibration software for custom applications.

| Part Number | Description |
|---|---|
| US-SPSR-XTR | SpectraStar XT-R NIR Analyzer including dual detector monochromator, rotating top window configuration, built in Windows 10 computer with 17" touch screen, UScan software, WiFi dongle, multi cup adapter, ring cup/powder cup ring and TAS Standards. |

## CALIBRATION OPTIONS

| Part Number | Description |
|---|---|
| US-CALB-1000 | Unity calibration for single product type, all constituents. |

## ACCESSORIES *A variety of sample and software accessories are available*

| Part Number | Description |
|---|---|
| US-LGOP-0001 | Large open cup with plunger |
| US-RTIR-0016 | Large open cup sample ring |
| US-SRCP-0025A | Small round cup, 25 mm height |
| US-ISIH-0307 | Ring cup |
| US-LIQK-0003 | Kit for measuring liquid samples, 0.3 mm pathlength |
| US-UCAL-0401 | UCal 4 Calibration software with 1 year calibration support |
| KPMLink-0001 | One (1) year of KPMLink® User License and one Instrument License, access to training course via the KPM Academy for one user. |
| KPMLink-0002 | Additional KPMLink® User License |

## SPECIFICATIONS

| | |
|---|---|
| Light source | Tungsten halogen lamp with MTBF rating of 10,000 hours, user changeable |
| Measurement mode | Reflectance or transflectance |
| Detector | High Performance ultra-cooled InGaAs extended range detectors |
| Optical bandwidth | 10.0 ± 0.3 nm actual FWHM |
| Absorbency range | Up to 3 AU |
| Analysis time | 10 – 60 sec. |
| Wavelength accuracy | < 0.02 nm to traceable standard reference material |
| Wavelength precision | < 0.005 nm |
| Wavelength range | 680 - 2600 nm |
| Number of data points | 1920 |
| Photometric noise full range | < 20 µAu |
| Instrument case | Powder coated aluminum, completely sealed, no venting or fan |
| ISO 12099 compliant | Animal feedstuffs, cereals and milled cereal products - Guidelines for the application of near infrared spectrometry |
| Built-in computer | Windows 10 Professional, SSD |
| Networking | LIMS compatible, HDMI port, 4 USB ports |
| Ambient temperature | 1 - 40°C |
| Ambient humidity | < 95% RH, < 85% RH recommended |

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