



APARA
ANALYTICALS
— tools to test —



PAT TOOLS AND SOLUTIONS.

PROVIDING PAT SOLUTIONS

Our long understanding of multivariate, non-destructive spectroscopy tools has helped us to provide customers solutions for R & D, process understanding, control, optimization, and reduced testing. The solutions provide proactive decision-making, and ensuring compliance with regulatory requirements

OUR PORTFOLIO

- NIR Spectrometers
- Raman Spectrometers
- PAT Solutions
- Multivariate Data Analysis
- Data Visualization

WHY CHOOSE OUR PRODUCTS

- Instantaneous
- Robust and Reliable
- Non Destructive
- Rapid Analysis

MEET OUR PARTNERS



Our Services

APPLICATIONS SERVICE

- Blend Monitoring
- Drying-Moisture/Solvents
- Coating Monitoring
- Content Uniformity

CHEMICAL/BIO ANALYSIS

- Reaction Monitoring
- Reaction kinetics
- Continuous manufacturing
- Bio-Process Monitoring

TRAINING

- Applications
- Software
- Operational

OTHER

- Qualifications Service
- Maintenance Service
- Operational



WE ARE LEADING PROVIDER OF CUTTING-EDGE SOLUTIONS IN SPECTROSCOPY AND PROCESS ANALYTICAL TECHNOLOGY (PAT) SINCE A DECADE



Brimrose Corporation of America

We make world-class NIR spectrometers using our core Acousto-Optic Tunable Filter (AOTF) technology spectrometers specially designed for Process Analytical Technology (PAT) and in-line/at-line analysis and have been doing so for four decades



Tornado Spectral Systems

We are the global provider of chemical analysis & measurement systems for Raman spectroscopy. It is perfect solution for process, manufacturing and laboratory Raman applications. Tornado's non-destructive real time measurement solutions offer for pharmaceutical, petrochemical, biotech, and other applications.



KAX Group

Our goal is simple, to demystify multivariate data analysis (chemometric) by developing easy to use and intuitive software that can be used by beginners and experts alike. Our flagship product VEKTOR DIREKTOR was designed with end users in mind and was developed by end users.



Expo Process Analytics

We are globally currently offering fully developed and supported process analytics solutions for Pharmaceutical, Food, Agricultural & Agrichemicals. These include a broad range of application, from R&D, with our benchtop simulators through to inline process analytics that can integrate into full scale batch & continuous solids plant manufacturing.



Brimrose designs and builds ruggedized AOTF-NIR Spectrometers as a Process Analytical Technology (PAT) tool to deliver fast-responding analysis for a variety of industrial process applications and meets customer individual needs and environmental constraints to improve production, quality, and consistency. We specialize in At-Line, In-Line, and Multi-Purpose Near-Infrared (NIR) spectrometers that are adaptable and flexible to meet your ever-changing needs.

LUMINAR 5030



KEY FEATURES

- Dual-Beam, Pre-Aligned Lamp Assembly
- Fast Scanning Speed - 16,000 Wavelengths per Second
- SNAP32! Brimrose Analytical Software with Brimrose MACRO Language
- 6 mm Diameter Sample Area at 40 mm Sampling Distance (Amounts can vary.)

APPLICATIONS

- In-line blend uniformity
- In-line food analysis for fat, protein, moisture, starch, etc.
- Polymer: measurements of pellets and resins
- Paper and Textile Goods: In-line coating thickness measurements Measurements of Tobacco
- On line and at line analysis of oil, moisture and dry matter in olive oil extraction process

LUMINAR 4030



KEY FEATURES

- Dual-Beam, Pre-Aligned Lamp Assembly
- Including InGaAs Detectors Fast Scanning Speed-16,000
- Wavelength per Second (30 scans per second for range of 1200-2200 nm)
- No Moving Parts
- Miniature Integrated Electronics and Optical Modules in Same Stainless-Steel Enclosure
- Lightweight about 8.5 kg. Versatility in Deployments Measuring Non-Destructively Powders, Solids, Gels, in Diffuse Reflectance Mode
- SNAP32! Brimrose Analytical Software with Brimrose MACRO Language

APPLICATIONS

- Blend Control: Real-time homogeneity monitoring and blending control process
- Drying process: Direct placement on spray or fluid bed dryers Pharmaceutical: 100 percent inspection of solids, gels, liquids and powders
- Agricultural/Food: On-line food analysis for fat, protein, bread crumb, moisture, starch, etc.
- Polymer: In-site measurement of pellets, films and coatings Textile: Cotton/polyester ratio accurately by the web
- Pulp and paper: In-line thickness and coating analysis
- Tobacco: Measurements of nicotine, sugars, potassium, etc.

LUMINAR 7030



KEY FEATURES

- Dual-Beam, Pre-aligned Lamp Assembly,
- InGaAs Detectors No Moving Parts
- Fast Scanning Speed - 16,000 Wavelengths per Second SNAP32! Brimrose Analytical Software with Brimrose MACRO Language
- 6 mm Diameter Sample Area at 55 mm Sampling Distance (can be other distances)
- NEMA 4X Miniature Stainless-Steel Integrated Enclosure for IP55 Protection

APPLICATIONS

- Blender Control: Real-time homogeneity monitoring and blending control process
- Pharmaceutical: 100 percent inspection of solids, gels, liquids and powders
- Agricultural/Food: In-line food analysis for fat, protein moisture, starch etc.
- Polymer: In-site measurement of pellets,
- Films and coatings
- Drying Process: Direct placement on spray or fluid bed dryers
- Tobacco: Measurement of nicotine, sugars, potassium, etc.

LUMINAR 3060



KEY FEATURES

- Analyzing up to 16 Streams, Ensuring Real-Time
- Process Quality Control No Moving Parts
- Sampling Speeds of up to 16,000 Wavelengths per Second Compatible with a Variety of Process Interfaces
- Can be Explosion Proof to All Requirements

APPLICATIONS

- Blend Control: Real-time homogeneity monitoring and blending control process
- Polymer: analysis of chemical and physical properties of gasoline, diesel fuel Kerosene polymerization monitoring; NCO values online
- catalyst identification Hydrocarbon: gasoline, diesel and kerosene blending
- Pharmaceutical/Chemical: reaction monitoring, solvent recovery, distillations, and 100 percent inspection
- Pulp & Paper: green, white and black liquor process control and monitoring

ACCESSORIES



**CONTENT UNIFORMITY TESTING
ACCESSORIES**



**TRANSFLECTANCE AND DISFFUSE
REFLECTANCE PROBE**



LABORATORY STAND



TRANSMISSION CELL

WE ARE LEADING PROVIDER OF CUTTING-EDGE SOLUTIONS IN SPECTROSCOPY AND PROCESS ANALYTICAL TECHNOLOGY (PAT) SINCE A DECADE

HYPERFLUX™ PRO PLUS RAMAN SPECTROMETER



SPECIFICATIONS

- Laser Wavelength: 785 nm
- Laser Power: 20 mW up to 495 mW
- Spectral Range: 200 cm⁻¹ to 3300 cm⁻¹ (Raman shift from 785 nm excitation)
- Probes: Immersion and Non- Contact
- Input Power Requirements: 100 V to 240 V AC line power
- Storage Temperature: -20 to +50°C Fiber Length: 3 meters' standard - Different lengths are available upon request
- Dimensions: 46.7 x 21.6 x 13.7 cm
- Weight: 9.8 kg

FEATURES

- In-line blend uniformity
- Raman measuring principle
- Raman spectral range covers 99% of industrial chemicals
- Dual fiber optic connectors for remote measurements up to 100 meters away
- More accurate identification and quantification for challenging mixtures and low concentration levels
- Faster measurements of dynamic reactions
- Small footprint, lightweight and portable

PROCESS GUARDIAN™ RAMAN SPECTROMETER



SPECIFICATIONS

- Laser Wavelength: 785 nm
- Configurable power output from 5 to 495 mW
- Spectral Range: 200 cm⁻¹ to 3300 cm⁻¹ (Raman shift from 785 nm excitation)
- Input Power Requirements: 100VAC - 240VAC
- Mounting: Bench top or shelf mounting (19" rackmount compatible)
- Dimensions: 19.5 cm x 44.6 cm x 62.6 cm.
- Weight: 15 kg.

FEATURES

- Powerful embedded processor
- A smart Raman analyzer that can monitor its own health providing remote clients with status and alarms
- More accurate identification and quantification for challenging mixtures and low concentration levels
- Faster measurements of dynamic reactions
- Turbocharged by Tornado's patented High Throughput Virtual Slit (HTVS™) technology
- Probe options for broad range of application
- Includes OPC UA and ModBus TCP service.

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SUPERFLUX™ RAMAN SPECTROMETER

SPECIFICATIONS

- Laser Wavelength: 785 nm
- Laser Wavelength: 785 nm wavelength (Configurable power output from 5 to 495 mW)
- Spectral Range: 200 cm⁻¹ to 3300 cm⁻¹ (Raman shift from 785 nm excitation)
- Fiber Length: 2 meters' standard - Different lengths are available upon request
- Dimensions: 40.1 x 28.8 x 13.6 cm
- Weight: 5.4 kg

FEATURES

- Compact Desktop Size
- Embedded CPU - No External Laptop Needed
- Fit-For-Purpose Lab-Scale Raman Analyzer
- Non-Destructive Monitoring and Analysis
- OPC UA Client for Remote Control
- Easy Installation and Operation
- Small footprint, lightweight and portable
- Custom Probe are available

ACCESSORIES

HUDSON™ 785 NON-CONTACT RAMAN PROBE



HUDSON™ BIOREACTOR RAMAN IMMERSION PROBE



RAMANBIOCONNECT™ RAMAN PROBE



FIBERS



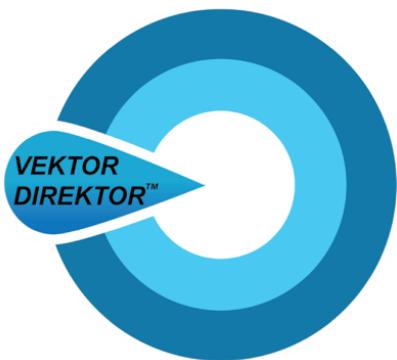
MULTIPLEXER



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VEKTOR DIREKTOR

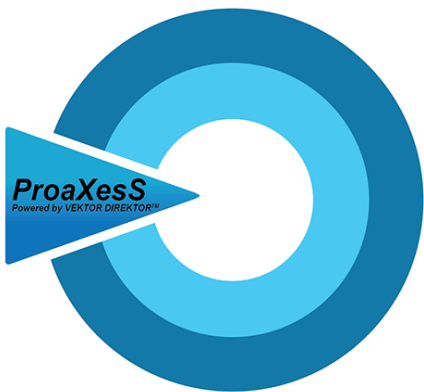
Multivariate Analysis with Direction and Purpose. High Level Multivariate Data Analysis (Chemometrics) Software.



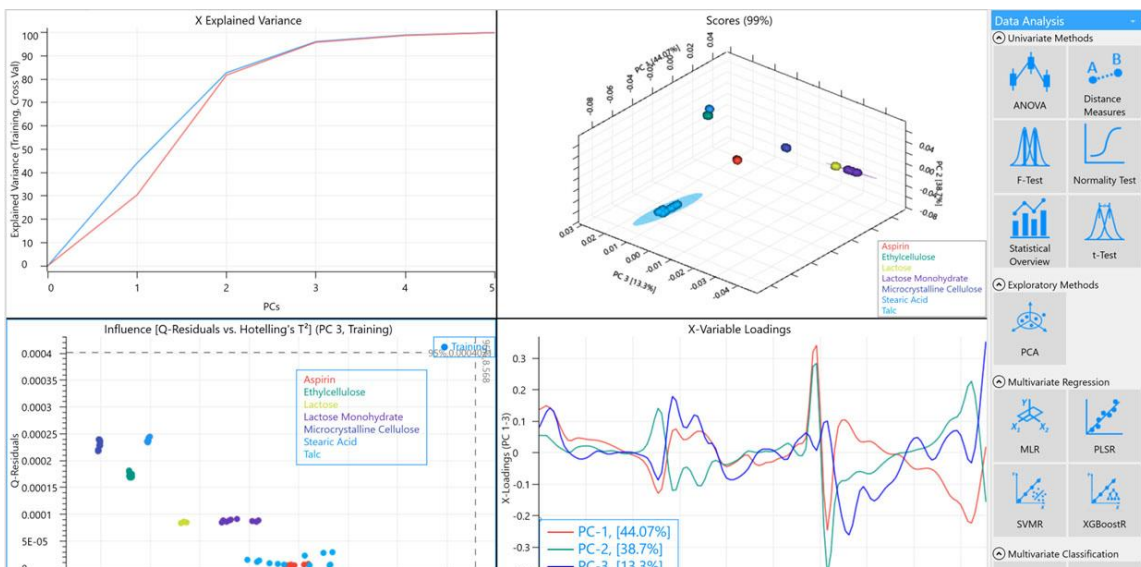
- Flexible Data Import.
- Spreadsheet Data Viewer.
- Wide range of Data Visualisation Tools.
- Spectroscopic and Other Pre-processing Tools.
- MVA Data Analysis and Prediction Tools.

PROAXESS

Process Monitoring and Control Platform for All Industries Utilising Inline Sensors and PAT



- Highly Configurable and Connects to Many Data Sources.
- Utilises Process Models Developed in VEKTOR DIREKTOR.
- Multivariate and Univariate Statistical Process Control.
- Expert and Non-expert Data Visualisation and Dashboards.
- OPC Connectivity for Integration with Third-party Process Control Systems.
- In-built Database Schema.



SPIDER WHEEL



SPECIFICATIONS

- Temperature: -20°C to +60°C
- Pressure rating 10 Bar max
- Probe diameter 19mm Probe
- Minimum probe length 200mm
- Rotational speed range 10-100 RPM
- Heater Available Yes
- Motor type Servo
- Standard Wheel Type 6 spurs, 18mm

ADVANTAGES

- Allows inline sampling of the process stream.
- caret-right Variable rotation and sampling speed
- caret-right Ability to change rotational direction
- caret-right Process contact Zone 20 ATEX certified
- caret-right External non-contact Zone 22 ATEX Certified

TASO/RADO



SPECIFICATIONS

- Environment temperature limits +10°C to +40°C
- PAT Probe Diameter 19mm
- Wiper Styles Open Spoon / Closed Spoon / Straight
- Probe Length Application Defined (minimum 200mm)
- Material 316L Stainless Steel

ADVANTAGES

- Single robust interface with probe. Process interface via standard DNA flange.
- Allows inline access to the process stream for Spectral Analysis.
- Quick release coupling for air supply.
- Control can be run standalone with periodic wiping or plant control

FEED FRAME



SPECIFICATIONS

- Contact Materials 316L stainless steel
- Finish Highly polished 0.4RA / 0.8RA
- Spider Wheel Design 5 design options see below.
- Usual Run Speed Range 15-50 RPM Expected Average Run Speed 25 RPM (Max 100RPM)
- Ambient Temperature Range +10°C to +40°C

ADVANTAGES

- Minimize use of expensive Active Pharmaceutical Ingredients in the lab.
- Simulate spectroscopic performance without use of cGMP equipment
- Safe, compliant, fully certified simulation with ergonomic operation
- Supports use of multiple probe types - NIR, RAMAN, UV or LIF



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OFFICE LOCATIONS

AHMEDABAD

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MSME

MICRO, SMALL & MEDIUM ENTERPRISES

सूक्ष्म, लघु एवं मध्यम उद्यम

OUR STRENGTH • हमारी शक्ति