brimrose

...we invent your tomorrows

AOTF-NIR Spectrometer Product Catalog

AOTF-NIR SPECTROMETERS

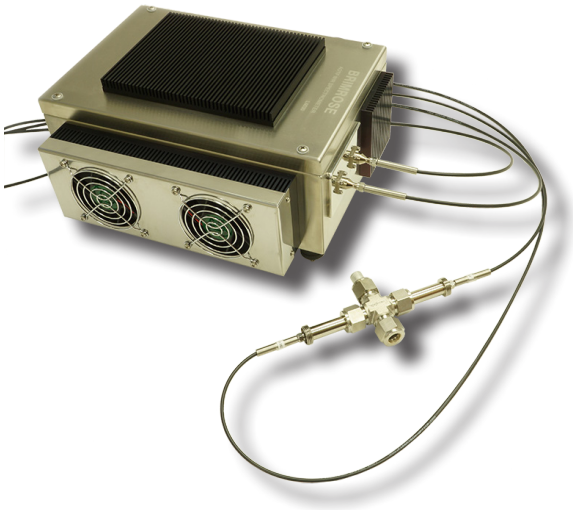
In-Line Process

LUMINAR 4030 / 4040

Our most popular Process Analytical Technology (PAT) Analyzer. This spectrometer can be used as free space or with fiber. The 4040 model has dual cooling for higher temperature applications.

Applications

- **Blend Control:** Real-time homogeneity monitoring and blending control process
- **Drying process:** Direct placement on spray or fluid bed dryers
- **Pharmaceutical:** 100% inspection of solids, gels, liquids and powders
- **Agricultural/Food:** In-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 3060 Multiplexer

Analyze up to 16 process points to ensure real-time process quality control. The 3060 is compatible with a variety of process interfaces including fiber optic probes and flow cells.

Applications

- **Polymer:** polymerization monitoring; NCO values; in-line catalyst identification
- **Chemical/Bio-Fuel:** hydrocarbons, analysis of blending, chemical, and physical properties of gasoline, diesel fuel & kerosene
- **Pharmaceutical/Chemical:** reaction monitoring, solvent recovery, distillations, and 100% inspection
- **Pulp & Paper:** green, white, and black liquor process control and monitoring
- **Agricultural/Food:** moisture, ammonia, gluten, protein, alcohol, amino acid, etc.

AOTF-NIR SPECTROMETERS

In-Line Process

LUMINAR 7030

This smaller version free space analyzer is installed directly into the production line with tight spaces.

Applications

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

LUMINAR 3010

Used by applications that need a lot of energy such as liquids, gels, and foods that require greater penetration.

Applications

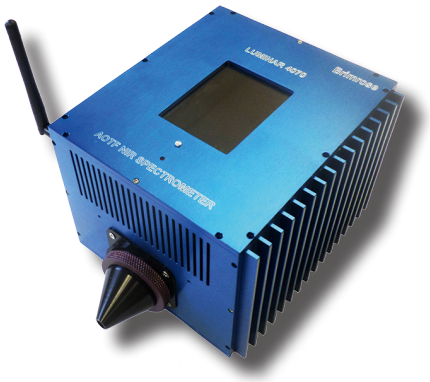
- **Polymer:** molten polymers
- **Chemical/Bio-Fuel:** hydrocarbons, analysis of blending, chemical, and physical properties of gasoline, diesel fuel & kerosene
- **Agricultural/Food:** fruits and fruit juices, sugar refining
- **Pulp & Paper:** green, white, and black liquor process control and monitoring

AOTF-NIR SPECTROMETERS

Laboratory

LUMINAR 4060 / 4070

The newest models from Brimrose offer small size and power consumption, touch screen display, and options for many different applications in support of our in-line spectrometers or as stand-alone devices with contact (4060) or free space (4070) options



LUMINAR 6000

The 6000 offers flexibility for liquid or powder analysis by providing the option to switch out probes, cuvettes, and flow cells.

Applications

- **Raw Material Identification**
- **Polymer:** Intrinsic viscosity and/or identification
- **Sample Preparation:** In more controlled environment
- **Verification:** Of in-line spectrometers
- **Feasability Studies:** Prior to installation of in-line spectrometers

LUMINAR 3070

The bench top analyzer was designed for non-contact, non-destructive measurement of chemical and physical properties in a laboratory environment.

Models: Applications

- **920A:** Transmission for liquids with integrated flow cell dynamic mode
- **920B:** Transmisson for single seeds or tablets
- **920D:** Transmission for liquids with separate heated flow cells in dynamic mode
- **920E:** Diffuse reflectance measurements with rotating cup

AOTF-NIR SPECTROMETERS

Unique - Built For Purpose Solutions

Brimrose “Built-For-Purpose” AOTF-NIR spectrometers are unique solutions including hand-held, mounted, tablet & seed analyzers, gas analyzers, and much more.

- Custom Designed
- Multi-Functional
- Rapid Testing & Automated Sorting
- Multi-Purpose

LUMINAR 5030

The multipurpose analyzer is used in the laboratory, in-line or at-line, and in the field. The 5030 can be handheld or mounted. The attachments are easily swapped, depending upon the application.

Applications

- **Blender Control:** Real-time homogeneity monitoring and blending control process
- **Agricultural/Food:** In-line food analysis for fat, protein, moisture, starch, mold, etc.
- **Polymer:** In-site measurement of pellets and resins
- **Pulp & Paper:** In-line thickness and coating analysis
- **Tobacco:** Measurement of nicotine, sugars, potassium, etc.
- **Coffee:** Caffeine, etc.
- **Field Applications:** In-line and at-line analysis of olive oil, grapes, moisture, etc.

LUMINAR 3076 “SEEDMEISTER”

Discriminate, qualify, and sort hybrid seeds, nuts, and beans such as peanuts, watermelon, coffee, hybrid peppers and more. Seeds can be sorted by oil, protein, starch, moisture, and high/low oleic contents.

Applications

- **Watermelon:** Sort triploid from diploid with speeds up to 30 seeds / minute
- **Sunflower:** Determine percentage of Oleic and Linoleic acid
- **Corn:** Sort based upon oil content
- **Soybean:** Sort based upon protein content
- **Peanut:** Sort high/low Oleic and high/low Linoleic

AOTF-NIR SPECTROMETERS

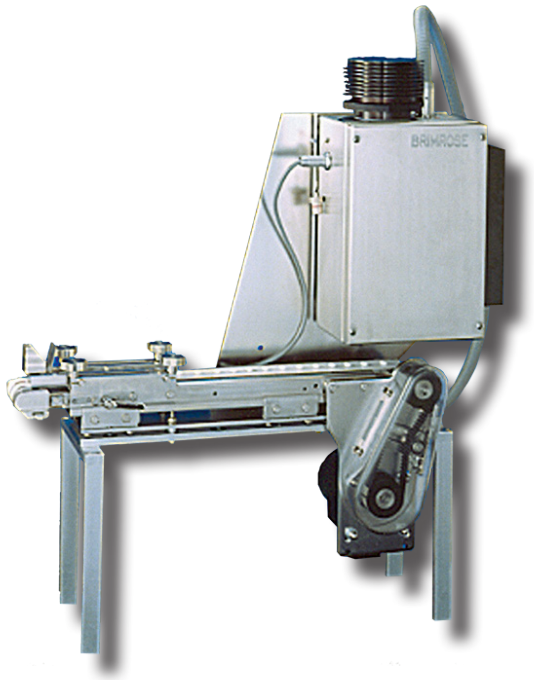
Unique - Built For Purpose Solutions

LUMINAR 3077 “TABLET ANALYZER”

Measure chemical and physical properties of tablets by transmission or reflection through non-contact, non-destructive means.

Applications

- **Pharmaceutical:** Automated monitoring system for tablet transmission/reflection analysis
- **Chemical & Physical Properties:** I.D. of active (and excipient), moisture, dissolution, disintegration, hardness, density, and dosage levels.



LUMINAR 7050 Gas Analyzer

Conduct gas analytical testing and inspection with this extremely bersatile analyzer, offered in a variety of different configurations to meet the high demand of different industries and applications.

Applications

- **Carbon monoxide, dioxide**
- **Butane**
- **Methane**
- **Moisture**
- **Propane**
- **Hydrocarbons**

AOTF-NIR SPECTROMETERS

Technical Data Specifications

Name	Specification (General)
Spectral Range Options	850-1700 nm, 900-1800 nm, 1100-2300 nm, 1300-2500 nm (gas analyzer)
Measurement Modes	Diffuse Reflectance, Transmission, Transflectance, Liquid Transmission
Spectral Resolution	1-10 nm
Wavelength Accuracy	± 0.5 nm
Wavelength Repeatability	± 0.01 nm over more than 5 years service
Wavelength Increment	Software Selectable 1-10 nm
Ambient Light Rejection	$> 10^6$
S/N at 70% Range	< 30µabs, for<5 seconds integration time
Wavelength Access Time	< 66 µsec
Photometric Range	3.5 AU
Linearity	Better than 0.15%
Sampling Speed	16,000 wavelength/sec
Sampling Area	Ø6 mm - Ø10 mm (custom)
Sampling Distance	20 mm - 100 mm (custom)
Internal Diagnostic	10 Built-in monitoring sensors
Power Requirements	12VDC, (24VDC special order), 90Watts, 110VAC 60Hz, 220VAC 50Hz
Communication Protocols	TCP IP, ModBus, FieldBus, OPC-UA, 4-20mA, I/O Capable
Software Package	Windows-based analytical software for data acquisition

The Brimrose Advantage

Brimrose AOTF-NIR ruggedized spectrometers are the ideal analyzers for 24/7 real-time, on-line industrial process control.

- Fastest Scanning Speed (16,000 wavelengths / second)
- Solid State, No Moving Parts
- Real-Time, Dual-Beam Reference (No Drifting)
- Immune to Ambient Light & Vibration

Brimrose Spectrometers have always been designed for the harshest of environments including manufacturing facilities, refineries, oil/gas platforms, military locations, etc.

ATEX and UL certified spectrometers are available. All projects are reviewed by our engineering staff with our customers for full compliance.

CONTACT BRIMROSE TODAY

Our Satisfied Customers

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...we invent your tomorrows

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