ANALYTICAL INSTRUMENT

Are you looking for instrument ti qualitatively and quantitatively analyze your samples?

KGC

EMPOWERING FUTURE
THROUGH RESEARCH & INNOVATION

INTRODUCTION

Welcome to our 2020 - 2021 edition of Product Catalog. We would like to thank you for your continue support and encouragement. Throughout this challenging time, we have grown and transform our business to be more efficient and effective. This will enable us to offer better service and more competitive pricing to our customers.

Our new edition of catalog comes with a easy reference features where we categorized the products into different usage categories, i.e. Advanced Material, Renewable Energy, Bio-Process, Gauge Calibration, Membrane Technology, 3D scanner and others. This will facilitate the users to quickly access to the equipment specification required, and options available to them in term of measuring range or equipment complexity.

In our new catalog, we have also added the equipment to do research in renewable energy like solar cell, fuel cell, flow cell, lithium ion batteries, and membrane technologies. In synergy with our advanced material equipment, we have also added the equipment for material characterization especially in the area of rare earth research and magnetic properties. In line with the manufacturing industry footsteps, the equipment on 3D scanning and 3D printing also have been added in to expand the tools in the research and development for industry 4.0.

To our current customers, we believed our partnership will be strengthen for the years to come. The new catalog will also create new opportunities to build new relationship with new customers.

Lastly, I would like to thanks our staffs for their dedication and sacrifice in supporting the management for a brighter future.

Patrick Tan
Director
KGC (Group of Companies)

Contents

ANALYTICAL INSTRUMENT

GAS ANALYZER & CHROMATOGRAPH

You are at the correct chapter if you want to analyze gas content

Oxygen & Carbon Dioxide Analyzer

Founded in 1995, Quantek Instruments provides oxygen and carbon dioxide analyzers and solutions to food, pharmaceutical, research, educational, and government institutions worldwide

Model 908 (CO$_2$)

- The Quantek Model 908 CO2 Analyzer is designed for spot measurement and analysis of carbon dioxide levels
- Analysis ranges of 0-2000ppm up to 0-100% vol/vol
- Resolution - 0.1% CO2 for 0 to 30, 0-50, and 0 to 100% ranges
- Accuracy - +/-1% of reading, or 0.2% CO2 for 0-100% range
- Drift - less than 0.02% per month
- Sensor- Infrared (NDIR); non-depleting with no moving parts
- Sensor Body - Anodized aluminum
- Calibration - Single Point Calibration - With standard calibration gas (available from Quantek if needed); SPAN adjustment on rear panel
- Calibration Frequency - Within two years of original manufacture; each year thereafter
- Power Supply - Internationally compatible charger or power supply, 100/240V (50/60Hz) to 12V
- Sample Pump - Optional; internal, with on-off switch on front panel, draws about 5 cc/sec
- Battery Operation - Included, with internal rechargeable 12 Vdc NiMH battery pack
- Size - 8 in. x 2 in. x 7 in. (203 mm x 51 mm x 178 mm)
- Weight - 2 lbs. (0.9 kg)

Model 905 (O$_2$)

- The Quantek Model 905 is a benchtop, portable oxygen analyzer used primarily for the measurement of residual oxygen in gas-flushed food packages
- Range: 0.0 to 100% Oxygen
- Resolution: 0.1% Oxygen
- Accuracy: +/- 0.1% (for oxygen levels below 10%)
- Minimum Detection Limit: 0.1%
- Drift: less than 1% per month
- Sensor: Proprietary electrochemical cell, expected lifetime 4-5 years
- Sample Pump: Internal, draws ~5cc/sec, with 2-12 second adjustable timer (on back of unit)
- Sampling Assembly: Probe with male luer connection for side-port needle, PTFE tubing
- Calibration: Calibrates with room air; SPAN adjustment on back; ZERO adjustment on back
- Calibration Frequency: Minimum once per year
- Power Supply: 100-240V (50-60Hz) Charger included, with US or international interchangeable plug adapter (upon request)
- Backup Power: Optional 12V internal battery pack
- Input Voltage: 100-240V, 50-60Hz
- Battery Life: 10-14 hours before recharging
- Size: 9.8in x 4in x 10in. (249 x 102 x 254 mm)
- Weight: 8 lb. (3.6 Kg)

Model 901 (O$_2$)

- The Quantek Model 901 is a battery-operated, portable headspace oxygen analyzer
- Range: 0.0 to 100% Oxygen
- Resolution: 0.1% Oxygen
- Accuracy: +/- 0.1% (below 10% oxygen).
- Minimum Detection Limit: 0.1%
- Drift: less than 1% per month
- Sensor: Proprietary electrochemical cell, expected lifetime 4-5 years
- Sample Pump: Internal, draws ~5cc/sec, with 2-12 second adjustable timer (on side of unit)
- Sampling Assembly: Probe with male luer connection for side-port needle, PTFE tubing
- Calibration: Calibrates with room air; SPAN adjustment on side; ZERO adjustment on side
- Calibration Frequency: Minimum once per year
- Power Supply: Four "AA" NiMH rechargeable batteries; auto shut-off after 45 minutes idle. 100-240V (50-60Hz) Charger included
- Battery Life: 10-14 hours before recharging
- Size: 8 x 4 x 1.8 in. (200 x 100 x 40 mm)
- Weight: 1 lb. (450 gms)

Model 902D (O$_2$ and CO$_2$)

Technical Specifications – Oxygen Channel
- Oxygen Sensor Type: Proprietary Electrochemical
- Expected Lifetime: 4-5 years
- Oxygen Range: 0 to 100%
- Oxygen Sensitivity: 0.1% O2
- Oxygen Minimum Detection Limit: 0.1% O2

Technical Specifications – Carbon Dioxide Channel
- Carbon Dioxide Sensor Type: Solid-state Infrared
- Expected Lifetime: Theoretically unlimited
- Measurement Ranges: 0-20% or 0-100%

Technical Specifications - All
- Sample Pump - Miniature diaphragm type with ~5cc/sec flow
- Pump Timing – 2-12 second adjustable pump time, potentiometer on back of analyzer
- Sampling Port - Double reinforced sample probe (~12in. length)
- Exhaust port – Vents to air
- Size - 9.8W x 4H x 10L in. (249 x 102 x 254 mm)
- Weight - 9.8 lb. (4.4 Kg)

ANALYTICAL INSTRUMENT

Model 906 (CO$_2$)

- The Quantek Model 906 CO2 Analyzer is designed for continuous or spot measurement and analysis of carbon dioxide levels
- Analysis ranges of 0-5,000ppm, 0-10,000ppm, 0-25,000ppm, 0-20%, or 0-100% vol/vol
- Resolution - 0.1% CO2 for 0 to 30, 0-50, and 0 to 100% ranges
- Accuracy - +/-1% of reading, or 0.2% CO2 for 0-100% range
- Drift - less than 0.1% per month
- Sensor- Infrared (NDIR); non-depleting with no moving parts
- Sensor Body - Anodized aluminum
- Calibration - With standard calibration gas (available from Quantek if needed); SPAN adjustment on rear panel ZERO set with auto-zero button located on rear panel
- Calibration Frequency - Within two years of original manufacture; each year thereafter
- Power Supply - Internationally compatible charger or power supply, 100/240V (50/60Hz) to 12V
- Sample Pump - Optional; internal, with on-off switch on front panel, draws about 5 cc/sec
- Battery Operation - Optional, with internal rechargeable 12 Vdc battery
- Size - 10 in. x 4 in. x 10.5 in. (25.4 cm x 10.6 cm x 26.67 cm)
- Weight - 7 lbs. (3.18 kg)

Model 902P (O$_2$ and CO$_2$)

Technical Specifications – Oxygen Channel
- Oxygen Sensor Type: Proprietary Electrochemical
- Expected Lifetime: 4-5 years
- Oxygen Range: 0 to 100%
- Oxygen Sensitivity: 0.1% O2

Technical Specifications – Carbon Dioxide Channel
- Carbon Dioxide Sensor Type: Solid-state Infrared
- Expected Lifetime: Theoretically unlimited
- Measurement Ranges: 0-5000ppm, 0-2.5%, 0-10%, 0-20%, 0-30%, 0-50%, or 0-100%

Technical Specifications - All
- (Optional) Sample Pump - Miniature diaphragm type with ~5cc/sec flow
- Pump Timing – (Optional) 2-mode pump switch (timed, or continuous); (optional) cycling pump with on/off timer
- Sampling Port - Front panel fitting with luer connection for disposable filter, plastic splitter; 1/16 to 1/8 ID tubing; (optional) Swaglok inlet
- Exhaust port – Vents to air OR tube outlet for recirculation to closed systems
- Size - 9.8W x 4H x 10L in. (249 x 102 x 254 mm)
- Weight - 9.8 lb. (4.4 Kg)

Model 905P (O$_2$)

- The Model 905P is a process O2 analyzer, designed to check oxygen levels in all types of processes, gas blending, biotech, fermentation, fruit storage areas, welding gases, and controlled atmosphere rooms
- Range: 0.0 to 100% Oxygen
- Resolution: 0.1% Oxygen (optional .01% resolution available)
- Accuracy: +/- 1% of reading
- Minimum Detection Limit: 0.1%
- Drift: Less than 1% per month
- Sensor: Proprietary electrochemical cell
- Sensor Lifetime: Expected lifetime 4-5 years
- (Optional) Pump: Internal, with adjustable timer (2-12 seconds), draws ~5cc/sec
- Calibration: Calibrates with room air; span and zero adjusters on back of analyzer, NIST certificate included
- Calibration Frequency: Two years after initial shipment, recommended once a year thereafter
- Power Supply: 100-240V Internationally compatible power supply/ charger
- Input Voltage: 100-240V, 50-60Hz
- (Optional) Battery: 10-14 hour run time before recharging
- Size: 9.8in x 4in x 10in. (249 x 102 x 254 mm)
- Weight: 8 lb. (3.6 Kg)

Model 905V (O$_2$)

- The Quantek Model 905V is a pharmaceutical headspace oxygen analyzer. Use it for headspace oxygen analysis in pharmaceutical products – vials, blister packs, or bottles. Achieve results with as little as 0.5cc of headspace
- Range: 0.0 to 100% Oxygen
- Resolution: 0.01% Oxygen
- Accuracy: +/- 1% of reading; +/- 0.1% absolute below 10.0%
- Minimum Detection Limit: 0.01%
- Drift: less than 1% per month
- Sensor: Proprietary electrochemical cell, expected lifetime 4-5 years
- Sample Method: Water displacement method; alternately, product can be squeezed to introduce sample to analyzer
- Minimum Sample Required: 0.5cc
- Sampling Assembly: Probe with male luer connection for side-port needle, PTFE tubing
- Calibration: Calibrates with room air; coarse SPAN adjustment on back; fine span adjustment on side; ZERO adjustment on back
- Calibration Frequency: Minimum once per year
- Power Supply: 100-240V (50-60Hz) Charger included, with US or international interchangeable plug adapter (upon request)
- Backup Power: Optional 12V internal battery pack
- Input Voltage: 100-240V, 50-60Hz
- (Optional) Battery Life: 10-14 hours before recharging
- Size: 9.8in x 4in x 10in. (249 x 102 x 254 mm)
- Weight: 8 lb. (3.6 Kg)

Oxygen & Carbon Dioxide Analyzer

A.KRÜSS gas analysers are used by many companies for the quality inspection in the lab but also at the production line if sensitive or perishable products are filled or packaged. Our Modified Atmosphere Testers (MAT) are suitable for both the random sampling and the permanent monitoring of the gas mixture used on packaging machine

Analysis of headspace volume

In order to check the mixture ratio of the protective gases inside a package, a self-adhesive septum is applied to a sampling point. The suction needle of the gas analyser is then inserted through the septum into the headspace of the package. A simple touch on the touch-screen of the device will ensure that the required sample is automatically drawn in. Within a very short time, the oxygen and carbon dioxide content is measured, the nitrogen content calculated, and the results are shown on the display.

MAT1100 (O_2)

- Measurement range:0.5–35 vol%
- Accuracy: ±0.2 vol%
- Resolution: 0.1 vol%
- Sensor type: Electrochemical cell (EC)
- Measurement Principle: Acidic electrolyte
- Cross-Sensitivity : No CO_2-cross-sensitivity
- Drift : Low drift: < 3 %/month

MAT1400 (O_2)

- Measurement Range: 0–100 vol%
- Accuracy:
- ±0.001 vol% (< 1 vol%)
- ±0.01 vol% (< 6 vol%)
- ±0.1 vol% (< 35 vol%)
- ±0.4 vol% (> 35 vol%)
- Resolution: 0.001 vol%
- Type: Zirconium dioxide sensor (ZrO2)
- Measurement Principle : Potentiometric measurement
- Cross Sensitivity: Cross-sensitive toward inflammable gases
- Drift : Drift-free

MAT1200 (O_2 and CO_2)

OXYGEN (O_2)
- Measurement range : 0.5 – 35 vol%
- Accuracy : ±0.2 vol%
- Resolution : 0.1 vol%

O_2-SENSOR
- Type: Electrochemical cell (EC)
- Measurement Principle: Acidic electrolyte
- Cross- Sensitivity : No CO2 cross-sensitivity
- Drift : Low drift, < 3 %/month

CARBON DIOXIDE (CO_2)
- Measurement Range : 0 – 50 vol%
- Accuracy: ±0.5 vol%
- Resolution: 0.1 vol%

CO_2-SENSOR
- Type : Two-channel NDIR sensor
- Measurement Principle : Infrared spectroscopy
- Cross Sensitivity: Not affected by moisture
- Drift: Low drift < 1 %/month

MAT1500 (O_2 and CO_2)

OXYGEN (O_2)
- Measurement range : 0–100 vol%
- Accuracy :
- ±0.001 vol% (< 1 vol%)
- ±0.01 vol% (< 6 vol%)
- ±0.1 vol% (< 35 vol%)
- ±0.4 vol% (> 35 vol%)
- Resolution : 0.001 vol%

O_2-SENSOR
- Zirconium dioxide sensor (ZrO_2)
- Measurement Principle: Potentiometric measurement
- Cross- Sensitivity : Cross-sensitive toward inflammable gases
- Drift : Drift-free

CARBON DIOXIDE (CO_2)
- Measurement Range : 0 – 50 vol%
- Accuracy: ±0.5 vol%
- Resolution: 0.1 vol%

CO_2-SENSOR
- Type : Two-channel NDIR sensor
- Measurement Principle : Infrared spectroscopy
- Cross Sensitivity: Not affected by moisture
- Drift: Low drift < 1 %/month

ANALYTICAL INSTRUMENT

Flue Gas Analyzer

Proudly providing solutions for portable and stationary gas analyzers for industrial and commercial air quality applications since 1984.

IMR 1050X

- Flue Temperature 20-2400°F /-29~1315°C
- O2 Oxygen 0-21%
- CO Carbon Monoxide 0-2000 ppm (4000 max 15 min)
- CO2 Carbon Dioxide 0-20%
- Efficiency 0-99.9%
- Excess Air 0-250%
- CO/CO2 ratio 0-0.999
- NO Nitric Oxide 0-100 ppm

IMR 1400

- The IMR 1400 P is a portable, continuous measuring flue gas analysis instrument housed in an aluminum case.
- Oxygen O2 0 - 20.9 Vol.%
- Carbon Monoxide CO 0 - 2000 ppm
- Carbon Dioxide CO2 0 - 30.0 Vol.%
- Flue Gas Temperature -20 - 1200°C
- Ambient Temperature -20 - 120°C

IMR 1100F - CO

- Carbon Monoxide CO 0-9.999 Vol.%
- Flexible gas sampling probe
- Batteries - 3 x AA
- Dimensions: 200 x 90 x 60 mm
- Weight: 500g
- Operating conditions: -10°C..50°C (10-90% RH, non-condensing)
- Its basic unit has an O2 (Oxygen) and a CO (Carbon Monoxide) sensor.

IMR 1440-O2

- CO Carbon Monoxide 0 - 10.000 Vol. %
- CO Carbon Monoxide 0 - 0.200 Vol. % (IMR 1440COFL)
- CO2 Carbon Dioxide Calculation 0 - CO2 max.
- TG Flue Temperature -4 °F - 2192°F / -20 - 1200 °C40FL - Exhaust Gas Analyzer
- Can measure soot on diesel engines and Carbon Monoxide CO on gas powered forklift trucks.

IMR 2800

- The IMR 2800 P is a portable, continuous measuring flue gas analysis instrument housed in an aluminum case.
- TG Flue gas temperature -4°F – 2192°F / 0°C – 1200°C
- TA Air temperature -4°F - 248°F / 0°C – 120°C
- Basic unit has an O2 Oxygen sensor , a CO Carbon Monoxide sensor, a NO Nitric Oxide sensor and a SO2 Sulfur Dioxide Sensor. Other sensors available upon request
- The IMR 2800 measures and calculates all the needed parameters to perform a thourough emission test

IMR 1020

- Flue Temperature 32 - 1112˚F / 0 - 600˚C
- CO Carbon Monoxide 0 – 2000 ppm (4000ppm max for 15 mins)
- CO2 Carbon Dioxide 0 - 20%
- O2 Oxygen 0 - 21%
- Efficiency 0 - 99.9%
- Excess Air 0 - 250%
- CO/CO2 ratio 0 - 0.999

IMR 1400c

- Oxygen O2 0 - 20.9 Vol.%
- Carbon Monoxide CO 0 - 2000 ppm
- Carbon Dioxide CO2 0 - 30.0 Vol.%
- Efficiency 0 - 99.9 %
- Flue Gas Temperature -20 - 1200°C
- Ambient Temperature -20 - 120°C
- The rugged combustion analyzer can be equipped with up to 4 sensors

IMR 5000 – CEMS

- Designed for a wide variety of stationary emission monitoring applications.
- Communication: 4 – 20mA or 0 – 20mA, RS232 or RS422/485 Modbus RTU (Optional), Ethernet (Modbus TCP/IP)
- Webserver & Email directly from Recorder
- Circuit protection
- Storage Media (SD card 16GB)

KGC

Gas Chromatograph by SRI GC, USA

SRI Instruments is a manufacturer of high quality chromatography instruments and accessories. We take pride in providing our customers with exceptional service and attention, which is reflected in our high level of customer satisfaction.

SRI GC advantages:

- Our instruments are typically HALF (or less) the price of comparable units from other manufacturers.
- Our instruments are small enough to ship FedEx/UPS or as accompanied airline baggage and they come in a rugged, re-usable shipping container.
- Choose from 16 GC detectors, and mount up to 4, or more (if compatible) on one GC. No one offers more detector choices.
- Choose from 17 GC injector types, and install up to 5 on one GC. Perform more types of analyses on one GC than you thought possible!
- The built-in PeakSimple for Windows™ chromatography data system connects to your computer using a USB 2.0 cable. Software updates are FREE and can be downloaded here.
- SRI Instruments instruments come with a 2 year warranty and free technical support. When you call SRI Instruments, you reach a knowledgeable technician immediately, not voicemail.
- Easy hardware upgrades—SRI Instruments can install an additional detector or injector on your existing 8610C or 310 GC in a matter of days
- Customization! SRI Instruments offers many possible GC configurations. Name your application.
- CE, TUV, GS, and NRTL approvals: SRI Instruments manufactures all instruments in compliance with EN 61010 standards for laboratory equipment.
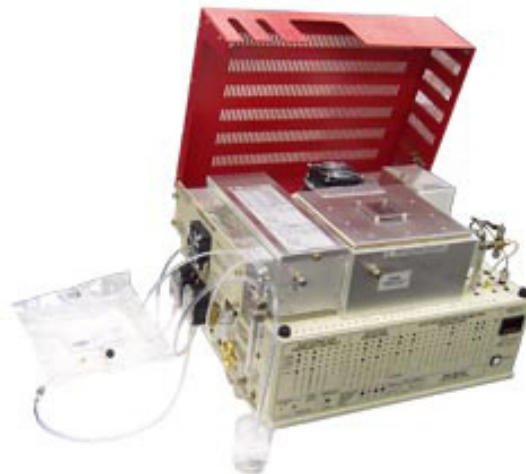
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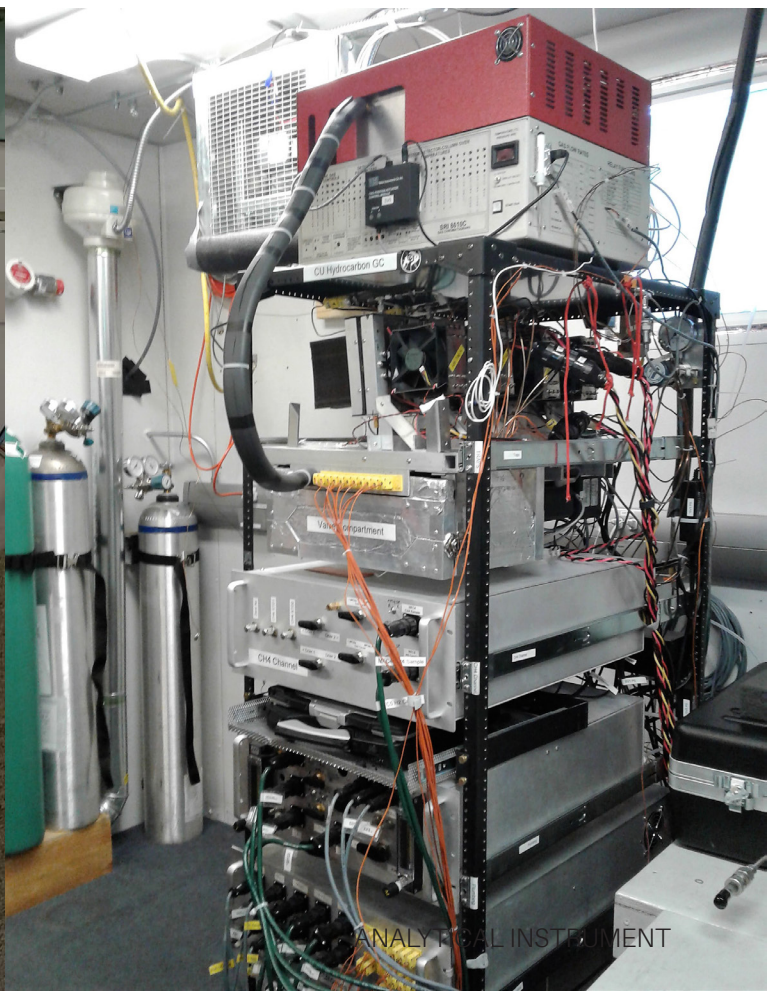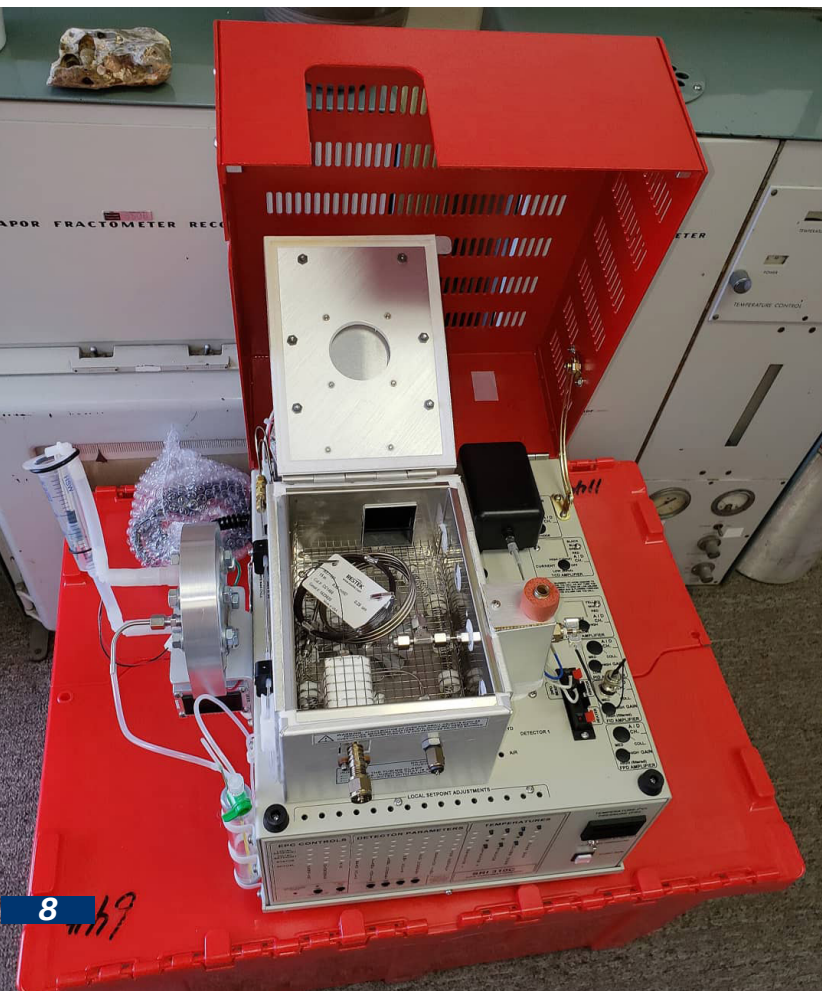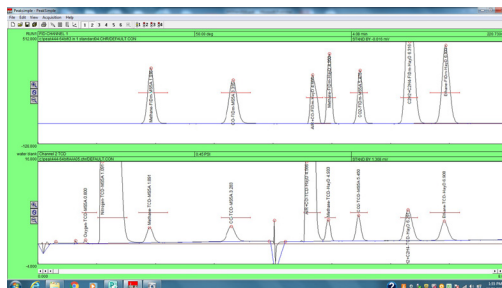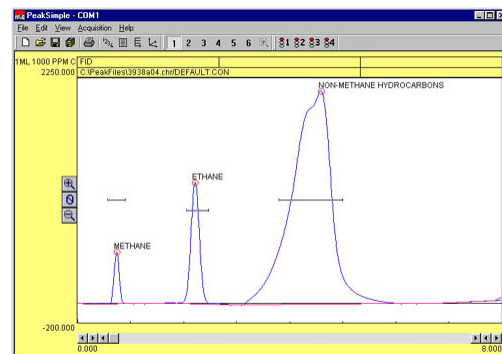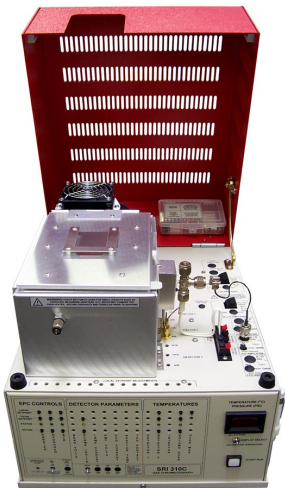
Biodiesel GC

- Biodiesel GC system is configured to perform ASTM D-6584 (residual free and bound glycerol in B-100 biodiesel)
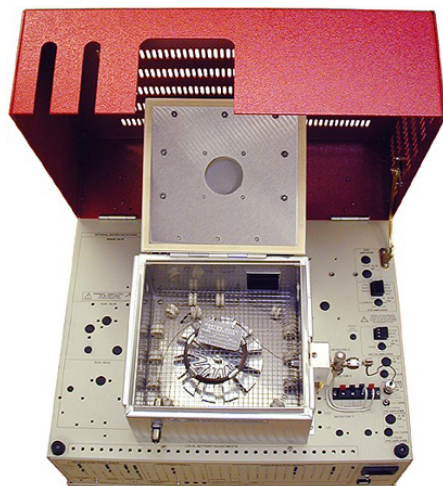
Natural Gas Analyzer GC

- The Natural Gas Analyzer GC system is pre-plumbed and ready to measure N_2, methane, CO_2, ethane, H_2O, propane, iso- and normal pentanes, iso- and normal pentanes, and C6 plus backflush

Capillary FID GC

- Capillary FID GC System is a state of the art, general purpose temperature programmable GC in a compact, low-cost package.

Narrow Bore Capillary FID GC

- The Narrow Bore Capillary FID GC System is ultra-high performance narrow bore capillary chromatography. In addition the Narrow Bore Capillary FID GC System is excellent for environmental testing and quality control applications

Model 310 GC

- Smallest GC that still retains the performance of a full-sized laboratory instrument. Ambient to 400°C temperature programmable column oven and Mounts up to four detectors

Dissolved Gas GC

- Designed to make dissolved gas analysis easier and less expensive than other methods

Environmental & BTEX GC

- For laboratory or mobile field testing where space and versatility are critical, choose the Environmental GC system. Equipped with Method 5030 or 5030/5035 compliant Purge & Trap, PID and FID/ DELCD detectors

Explosives GC System

- The Explosives GC system from SRI combines a Heated Flash Vaporization injector, a built-in "whisper quiet" air compressor, and a Thermionic Ionization Detector for detection of nitroaromatic explosives such as TNT, and nitramine explosives such as RDX (C4) and HMX.

Model 8610C GC

- The 8610C can control up to 16 heated zones, three gas sampling valves, and seven EPC gas pressures. Up to six detectors, from a choice of 16, can be mounted simultaneously. Implement virtually any EPA or ASTM method

Model 8610D

- Both column ovens are independently temperature programmable from ambient to 400°C, with unlimited ramps and holds, plus fast cool down. Each column oven can accommodate a 4-inch diameter column coil, capillary or packed.

Greenhouse GC

- Designed for the detection of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O)

HVROC GC

- HRVOC GC system equipped with FID and PID detectors and designed for analytes (Ethylene, propylene, 1,3-butadiene and butane)

Method 25 GC

- The SRI Method 25 GC system is equipped with an FID detector, built-in air compressor, and a 10-port backflush gas sampling valve to quickly determine methane/non-methane hydrocarbons as per EPA Method 25.

Method 5030 & 5030/5035 GC

- Built into the Model 8610C GC, the SRI Purge & Trap concentrates the volatile organic compounds (VOCs) in a gas, water, or soil sample onto two adsorbent traps, from which they are automatically desorbed onto the GC column.

HVROC GC

- HRVOC GC system equipped with FID and PID detectors and designed for analytes (Ethylene, propylene, 1,3-butadiene and butane)

Mud-Logging GC

- Rack Mount Mud-Logging GC system provides a continuous reading of total hydrocarbons in a gas stream while periodically performing a chroatographic separation to determine the exact composition of the sample gas stream

310 Soil Gas GC

- The 310 Soil Gas GC is similar to the Environmental GC, except that it is more compact and does not include a purge & trap. This configuration has been approved by the Japanese Ministry of the Environment for the analysis of VOCs in soil and water samples by direct headspace injection.

Model 410 Rackmount

- Model 410 is a rack mountable GC which offers the performance of a laboratory gas chromatograph. Excellent for industrial applications, where rack mounting is required, the Model 410 mounts in a shelf-equipped 19-inch rack

KGC

Thin Film Measurement System

Hardware includes compact visible spectrometer, visible light source, reflectance probe, and reflectance probe holder

TF-VIS System from Stellar Net

The TF-VIS System has a thickness measurment range from 150 A-20 µm and spectral range from 400-1000 nm. StellarNet thin film reflectometry systems consist of a portable USBspectrometer coupled to a reflectance probe and light source. The optical properties are obtained from reflection and thickness is measured by detecting the sinusoidal fringe pattern from the sample's specular reflectance. Several spectrometer models are available to suit your thin film and/or optical measurement requirements.

Features:

- Precision: 0.1Å or 0.01% (greater of) Standard deviation of 100 thickness reading of 100nm SiO2/Si calibration sample
- Accuracy: 0.2% or 10A (greater of) Film stack dependent
- Stability: 0.2A or 0.02% (greater of) 2 sigma over 20 days (100 measurements daily) on 100nm/Si calibration sample
- Spot size: 3 mm standard, optional down to 3 µm
- Sample size: from 1 mm
- Computer OS: TFC Software is designed for 32-bit OS (upgrades are available)

TF-VIS
- Range: 400 - 1,000 nm
- Resolution: < 2 nm
- Thickness: 150 A - 20 µm
- Lamp type: Halogen SL1

TF-NIR
- Range: 900 - 1,700 nm
- Resolution: < 5 nm
- Thickness: 50 A - 20 µm
- Lamp type: Halogen SL1

TF-C-UVIS
- Range: 190 - 850 nm
- Resolution: < 2 nm
- Thickness: 50 A - 20 µm
- Lamp type: Deuterium SL3

TF-VIS-NIR
- Range: 400 - 1,700 nm
- Resolution: < 5 nm
- Thickness: 1,000 A - 200 µm
- Lamp type: Halogen SL1

TF-C-UVIS-SR
- Range: 220 - 1,100 nm
- Resolution: < 2.5 nm
- Thickness: 50 A - 20 µm
- Lamp type: SL1-F+ SL3

TF-C-UVIS-SRN
- Range: 200 - 1,700 nm
- Resolution: < 2 nm, 5 > 1,000
- Thickness: 150 A - 200 µm
- Lamp type: Halogen + Deuterium SL4

ANALYTICAL INSTRUMENT

BENCHTOP INSTRUMENT

More analytical benchtop instrument such as polarimeter, density meter, and so on for your review

KGC

Polarimeter by Kruss

A.KRÜSS polarimeters are ideal for analysing optically active substances by determining their angle of rotation. They support all applications in industry, research, development and education
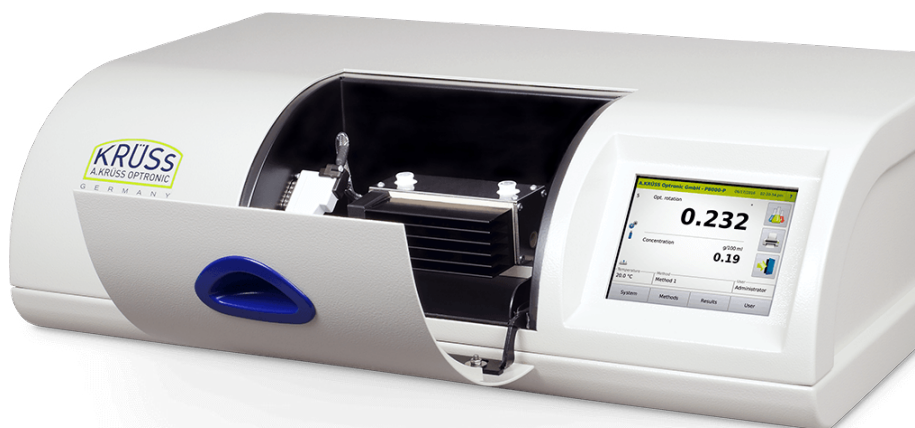
Polarimeters without temperature control
P8000 and P8100

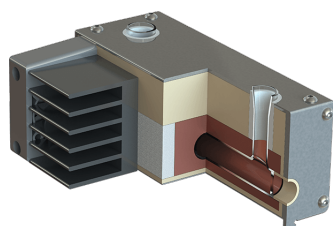Polarimeters with Peltier temperature control
P8000-P and P8100-P

Polarimeters with circulation thermostat temperature control
P8000-T and P8100-T

Applications

The polarimeters can be used for a variety of applications in the pharmaceutical, chemical, sugar, food and beverage industry, as well as for the production of flavors and fragrances

- Determination of the concentration of sugar as an ingredient of pharmaceutical agents
- Purity control and content determination
- Determination of the stereochemical composition and mutarotation
- Characterisation of new synthetic substances
- Purity control and concentration determination
- Monitoring of chemical processes during the production of optically active substances
- Characterisation tests in research laboratories
- Reaction kinetic analyses

Model	P8000/P8000-P/P8000-T	P8100/P8100-P/P8100T
Scales	Optical rotation [°] Int. sugar scale [°Z] Concentration [g/100 ml] Spec. rotation	
Measurement Ranges	±90° ±259 °Z	
Measurement Accuracy	±0.003° ±0.01 °Z	±0.002° ±0.01 °Z
Resolution	0.001° 0.01 °Z	

Polarimeter measurement tube with integrated Peltier temperature control
The PRG-100-EPT is a directly temperature-controlled measurement tube for P8000-P and P8100-P which allows high-precision measurements without the use of an additional external device. Three Peltier elements ensure an accurate, fast temperature control in the range between 15 °C and 40 °C.

PRG-100-EPT

Calibration standards for polarimeters
PQP- and PQE-quartz controplates

ANALYTICAL INSTRUMENT

Density Meter by Kruss

A.KRÜSS density meters use the U-tube oscillator method and enable simple, fast and precise measurements of all flowable media. Due to the small footprint, an intelligent user interface as well as the conformity with many standards, our density meters are optimally tailored to a modern laboratory world

FULLY AUTOMATIC

Applications

A comprehensive quality assurance covering the entire production process is a must in any industrial sector. Density measurements are frequently used for this purpose, especially in the pharmaceutical, chemical, petrochemical as well as the food and beverage industry. They allow the manufacturer to analyse raw materials, semi-finished and finished products as well as the manufacturing steps in terms of a number of factors.

Density can be used to identify substances, to determine their quality or purity and to measure their concentration in binary or quasi-binary mixtures. Substance conversions and reaction dynamics can also be inferred from it. In combination with other methods such as refractometry that measures the refractive index of substances, the density measurement allows you to make precise statements about the quality of each step of the production process

Model	DS7700	DS7800
Scales	Density [g/cm^3] Relative Density Brix [%Brix] Concentration of alcohol [vol%] Concentration of sulphuric acid [wt%] User-defined	
Measurement Range	0–3 g/cm^3	
Measurement Accuracy	±0.001 g/cm^3	±0.0001 g/cm^3
Measurement Period	Typically: 1–3 minutes including temperature control	
Sample Volume	0.9 ml	

The density meter can comes with the following configuration:
- Manual samplr supply
- Semi-automatic sample supply
- Fully automatic sample supply

Flame Photometer by Kruss

The flame photometers from A.Krüss are used to determine the concentration of alkali and alkaline earth elements in aqueous solutions and are a simple and particularly cost-effective alternative to analysis techniques such as ICP or AAS.

Application:

- **Pharmaceutical Industry**
  Product control and indirect quality testing of various substances over sodium, potassium or lithium

- **Beverage Industry**
  Determination of the content of sodium, potassium and calcium in various liquids, such as fruit juices, vegetable juices and soft drinks

- **Food Industry**
  Monitoring compliance with sodium and potassium limits in foods. In the production of pre-milk, pre-food and milk powder, the quality can also be controlled and monitored with a flame photometer

- **Environmental Analysis**
  Laboratory measurements for the determination of alkali and alkaline earth elements. Monitoring of soil qualities and water analysis, control of fertilizer residues in soils and fertilizer registrations in waters

- **Chemical Industry**
  Concentration determinations of sodium and potassium in fertilizer production and in process control. Checking ultrapure water

- **Cement Industry**
  Review of sodium, potassium or calcium content in the construction and cement industries

FP8400

- Economic entry-level model for laboratory
- Na: 0.01-4500 ppm; 0.0004-200 mmol/l
- K: 0.01-4500 ppm; 0.0003-110 mmol/l
- Li: 0.01-4500 ppm; 0.0014-600mmol/l
- Ca: 0.50-4500 ppm; 0.0125-110 mmol/l

- Sample volume: 2.5 ml
- TFT-Display with integrated 8,4" TFT touchscreen, 800x600 Pixel

FP8500

- Combines the characteristics of the FP8400 with an automatic calibration to realise a 24 hour fully automated measurement operation

- Sample volume: 2.5 ml
- TFT-Display with integrated 8,4" TFT touchscreen, 800x600 Pixel

FP8600

- Laboratory version supplemented by a rotation sampler with up to 72 sample positions
- Once programmed, it automatically measures up to 72 samples in one run

- Sample volume: 2.5 ml
- TFT-Display with integrated 8,4" TFT touchscreen, 800x600 Pixel

FP8700

- Laboratory version supplemented by a rotation sampler, diluter, and mixer
- Ideal for applications with high sample volumes and high concentrations requiring dilution

- Sample volume: 2.5 ml
- TFT-Display with integrated 8,4" TFT touchscreen, 800x600 Pixel

ANALYTICAL INSTRUMENT

Melting Point Meter by Kruss

With the melting point meters from A.KRÜSS, powdery substances can be examined quickly and reliably semi-automatically or fully automatically and with a precisely regulated heating rate

M3000

M5000

Application:

The determination of the melting point is of great importance in the identity test, since many substances can be determined by their melting point.

The purity of substances can also be qualitatively measured via melting point. A well-defined melting point is only given for 100 percent pure substances. Due to impurities, such as impurities or dopants, most substances have a melting interval (beginning of the melt to completion of the melt) of a few degrees Celsius. Even impurities during the manufacture of chemicals cause this melting point to expand to a melting interval. As a result, most substances that are examined with a melting point meter have a melting interval. This effect is used to identify the degree of impurity of the substance.

M5000

The M5000 provides fast, easy and automatic examination of powdery substances with a melting point up to 400°C. Due to the automatic determination of the melting point, an objective measurement result is always guaranteed. The high preheating rate and the integrated fan cooling allow fast and reliable measurements in any temperature range. The display provides a well-arranged readout of all important measuring data.

- Fully automatic measurement
- 1 capillary intake
- LCD display
- Alarm signal when reaching the melting point
- Fast cooling through integrated fan
- Digital display of all important data
- Display in German or English
- With RS-232 interface for printer CBM910
- Easy-to-clean membrane keypad
- Includes protective cover and 100 capillaries
- Small sample volume
- Measurement range: 25 - 400°C
- Resolution: 0.1°C
- Capillary: 1.4 mm dia

M3000

The M3000 provides fast and easy examination of powdery substances with a melting point up to 360°C. Due to the triple capillary intake, it is possible to analyse three samples within one measurement run. Thanks to the preheating rate and the integrated fan cooling, fast measurements are possible in any temperature range. The display provides a wellarranged readout of all important measuring data.

- Semi-automatic measurement
- 3 capillary intakes
- LCD-Display
- Monitoring of the illuminated sample via lens
- Fast cooling through integrated fan
- Digital display of all important data
- Display in German or English
- With RS-232 interface for printer CBM910
- Easy-to-clean membrane keypad
- Includes protective cover and 100 capillaries
- Small sample volume
- Measurement range: 30 - 360°C
- Resolution: 0.1°C
- Capillary: 1.4 mm dia

KGC

Refractometer by Kruss

A.KRÜSS refractometers measure the refractive index of liquids, pastes and solids with high precision. In close cooperation with well-known partners from industry and research, we have developed refractometers that can be easily integrated into existing processes in the laboratory

FULLY AUTOMATIC

Digital Refractometers

Our DR6000 series of digital refractometers deliver highly accurate and reproducible measurement results, offer semi-automatic and fully automatic working, and are easily integrated into existing laboratory workflows. There are three different model groups available for the different requirements of temperature control and automation options.

- Small sample volume approx. 0.3 ml
- Very short measurement time of approx. 1 s – the fastest polarimeters in the world!
- Measurement with manual measurement time input or optimised measurement time thanks to automatic stability recognition
- Reliable temperature compensation
- Highest accuracy over the entire measurement range

DR6000-T	DR6000	DR6000-TF
• With Peltier temperature control	• Measuring all sugar containing samples	• For continuous measurements or series of measurements with high sample volumes
• Allrounder for measuring all liquids and pastes	• Built-in thermostat connections for temperature control with external circulating thermostat	• For low-viscous to slightly viscous samples
• Measurement of turbid or highly viscous samples	• Preinstalled and freely definable scales with conversions bases on tables or formulas	• With highly accurate internal Peltier temperature control
• With highly accurate internal Peltier temperature control	• Chemical-resistant materials such as measurement prism made of sapphire, measuring tray made of stainless steel	• Preinstalled and freely definable scales with conversions based on tables or formulas
• Preinstalled and freely definable scales with conversions based on tables or formulas	• Intuitive operation via state-of-the-art touch-screen display	• Chemical-resistant materials such as measurement prism made of sapphire, measuring tray made of stainless steel
• Chemical-resistant materials such as measurement prism made of sapphire, measuring tray made of stainless steel	• Complete data recording and backup including audit trail	• Intuitive operation via state-of-the-art touchscreen display
• Intuitive operation via touch-screen display	• Flexible data export	• Complete data recording and backup including audit trail
• Complete data recording and backup including audit trail	• Compliance with global standards and norms	• Flexible data export
• Flexible data export	• DR6000 range: nD 1.3200 – 1.5800; 0–95 %Brix	• Compliance with global standards and norms
• Compliance with global standards and norms	• DR6100 range: nD 1.3200 – 1.7000; 0–95 %Brix	• DR6000-TF range: nD 1.3200 – 1.5800; 0–95 %Brix
• DR6000-T range: nD 1.3200 – 1.5800; 0–95 %Brix	• DR6200 range: nD 1.3200 – 1.5800; 0–95 %Brix	• DR6100-TF range: nD 1.3200 – 1.7000; 0–95 %Brix
• DR6100-T range: nD 1.3200 – 1.7000; 0–95 %Brix	• DR6200 range: nD 1.3200 – 1.7000; 0–95 %Brix	• DR6200-TF range: nD 1.3200 – 1.5800; 0–95 %Brix
• DR6200-T range: nD 1.3200 – 1.5800; 0–95 %Brix		• DR6200-TF range: nD 1.3200 – 1.7000; 0–95 %Brix
• DR6200-T range: nD 1.3200 – 1.7000; 0–95 %Brix		

Automation in the laboratory- for working environments with a high sample throughput

In working environments with a high sample throughput, fully automatic executions of the entire process – from the sample supply to the cleaning and drying – are useful if they are flexible, powerful and robust. Our AS80 and AS90 autosamplers are the suitable products to meet these high requirements. Together with the peristaltic pump DS7070, they allow for an unsupervised measurement of up to 89 samples.

ANALYTICAL INSTRUMENT

Abbe Refractometers

The Abbe refractometers have a wide range of applications in the chemical, petro-, oil- and fat industries, in the food industry, in hospitals, pharmacies and research offices, as well as in research and teaching. The special feature is the possibility to measure not only liquid and viscous samples but also solids and foils. Main application fields are:

- Identity test, purity control and concentration determination of raw materials, semi-finished products and end products
- Determination of the sugar concentration
- Incoming and outgoing goods inspection
- Purity control
- Testing of food and pharmaceutical products
- Testing of the compliance with national and international standards
- Training

AR4

- Analog Abbe refractometer
- Measurement of liquid, viscous and solid samples, regardless of their turbidity, viscosity, transparency and absorption
- Suitable for the measurement of foils and solids
- Large measuring range of nD 1.3000-1.7200 and 0-95%Brix, scale manually adjustable
- Reading the measured values via an eyepiece
- Robust housing and easy handling
- With thermostat connections that allow for the temperature control with an external thermostat
- Temperature is displayed on LCD screen
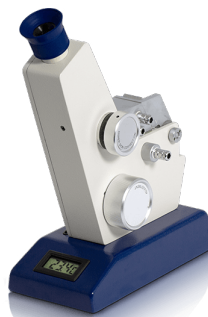
AR2008

- Measurement of liquid, viscous and solid samples, regardless of their turbidity, viscosity, transparency and absorption
- Suitable for the measurement of foils and solids
- Large measuring range of nD 1.3000-1.7200 and 0-95%Brix
- Electronic evaluation of the measured data
- Integrated thermometer
- Automatic temperature compensation for the Brix scale can be optionally activated
- Connections for temperature control with a circulating thermostat
- Robust housing and easy handling
- Serial interfaces for PC or printer (RS-232, RS-422)

AR4

R2008

Digital Handheld Refractometers

The mobile measurement with a digital handheld refractometer saves time as random checks or the regulation of mixing ratios can be carried out directly on the site. The measurement results are determined at the touch of a button and shown on the display. Unlike in the case of the analogue handheld refractometers, the digital determination of reproducible measurement results does not depend on the user's interpretation.

- Automatic measurement
- High measuring accuracy
- Fast to fill and clean
- Sample tray made of stainless steel
- Robust housing and low weight
- Automatic temperature compensation (Brix scale)
- Display of the measurement results in different units
- Very simple operation

Handheld Refractometers

The handheld refractometers HR series are the ideal solution for the petrochemical, automotive, aviation, metal processing and food industries.

- Identity test and concentration determination
- Outgoing goods inspection
- Stability test
- Quality and purity control of raw materials and end products
- Determination of the sugar concentration
- Determination of water content in honey
- Examination of urine samples

DR101-65

DR201-95

DR301-95
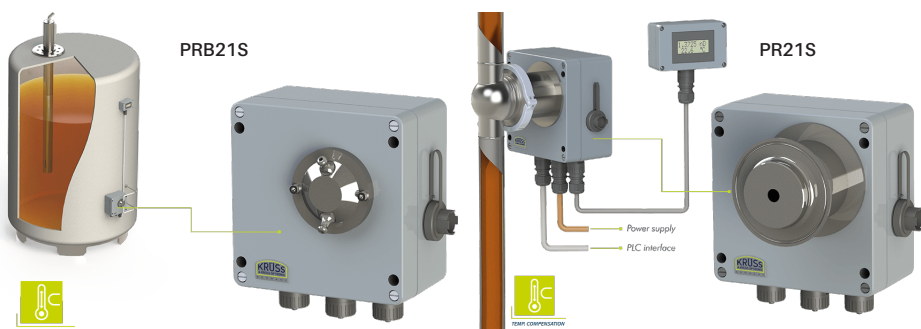
Process Refractometer

The process refractometer is the ideal solution for the chemical, petrochemical, automotive, aviation, metal processing, food, sugar, beverage, paper industries as well as wastewater control.

- Characterisation tests in research and development
- Identity test, purity control and concentration determination of raw materials, semi-finished products and end products
- Tracking of chemical processes during production

PRB21S

PR21S

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EMPOWERING FUTURE
THROUGH RESEARCH & INNOVATION

DESIGN YOUR PERFECT LABORATORY WITH OUR

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