

Solutions for Alternative Energy

High Quality Analyzers for Diverse Gas, Water, and Liquid Applications



Renewable Natural Gas (RNG)



In Situ O₂ and COe for Combustion Monitoring and Burner Optimization O2CX™ Monitor



Fast, Multi-Cycle Total Sulfur Fuel Gas Analyzer SGA-1000™

Applications:

- Real-time analyzers for RNG processing, custody transfer, and environmental compliance
- Rapid response for optimized combustion efficiency and accurate H₂ blending to reduce carbon emissions
- Multiple solutions for compliance with regulations such as 40 CFR Part 60, and HRVOC rules
- H₂S, Total Sulfur, Net Heating Value (NHV), O₂ and COe, Wobbe, Specific Gravity, CARI, and full speciated composition



Industrial Mass Spectrometers for Real-Time, Multi-Stream Fuel Compliance and Control MAX300-RTG™ 2.0

Aluminum Oxide Dew Point Meters and Transmitters with Hyper-Thin-Film Technology for Portable/Fixed/ Loop-Powered Applications XDT™ | XPDM™ | LPDT™ | LPDT2™



Water influent and effluent discharge control

Direct Heating Value

Analyzer for BTU, CARI,

Wobbe, and Density

9610™ Calorimeter

- Process control, high purity, oil in water, cooling water, condensate return, water-steam cycles, and environmental compliance
- Total Organic Carbon (TOC) in water





TOC Water Analyzer for Harsh Wastewater Applications QuickTOCultra™



TOC Water Analyzer for Clean Water Applications QuickTOCuvII™



TOC Water Analyzer for Municipal and Cooling Water Applications

QuickTOCeco™



COD Water Analyzer for Laboratories QuickCODlab™

Electrochemical Sensors & Laser Spectroscopy Analyzers



Instrument Air & Dryers

Applications:

- Continuous moisture analysis in instrument air and dryers, and portable spot checking
- Trace moisture in clean dry air, ppb to % level



Aluminum Oxide Dew Point Meters for Portable/Fixed/Loop-Powered Applications XDT™ | XPDM™ | LPDT™ | LPDT2™



CRDS Analyzer for UHP Moisture in Air SparkTM

Heating Value, Electrochemical & Spectroscopy Analyzers



Hydrogen & Fuel Cells



Benchtop Mass Spectrometers for Real-Time, ppb-Level, Multi-Impurity Analysis MAX300-LGTM



Industrial Mass Spectrometers for Real-Time, Multi-Stream Process Control MAX300-RTG™ 2.0

Applications:

- Hydrogen and syngas process control, and hydrogen purity analysis
- Increased accuracy and efficiency for all stages of the hydrogen economy: generation, storage, and delivery
- Hydrogen purity to meet ISO14687/SAE J2719 standards
- Gas analyzers for H₂O, CO, CO₂, H₂, N₂, CH₄, H₂S, hydrocarbons, BTU, Wobbe, CARI, and Density



Injection Style Heating Value
Analyzer with Zero-Hydrocarbon
Emissions for BTU and Flare Control
9800TM Calorimeter



Portable and Fixed Aluminum Oxide Dew Point Meters XPDM™





Real-time Cavity Ring Down Spectroscopy (CRDS) Impurity
Analyzers for H₂O, CO, CH₄, and CO₂
CO-rektTM and Prismatic 3TM

Mass Spectrometers & Laser Spectroscopy Analyzers



Fuel Ethanol & Fermenter Control



Vis-NIR Process Analyzer ClearView db[®]



Real-Time, Multi-Stream Process NIR Spectrometer NIR-OTM



Real-Time, Multi-Stream Mass Spectrometer Gas Analyzer for Accurate OUR, CER, and RQ MGA 1200CS™

Applications:

- Fermenter bioreactor off-gas composition analysis
- Fast and accurate analysis for control parameters such as:
 Oxygen Uptake Rate (OUR)
 Carbon dioxide Evolution Rate (CER)
 Respiratory Quotient (RQ) and fermentation end point
- Continuous monitoring to improve yield and quality, and reduce waste
- Single species or multi-component analysis (e.g. CO₂, O₂, N₂, Ar, H₂O, CO, H₂, He, hydrocarbons, alcohols, aldehydes, sulfurs, etc.)
- Real-time determination of ethanol in gasoline



Benchtop Mass Spectrometer for Real-Time, Multi-Stream, Bioreactor Control MAX300-LG™



CRDS Trace Gas Analyzer for ppb-Level Detection of H_2O , CH_4 , CO, CO_2 , and C_2H_2 $\mathbf{Spark^{TM}}$

Heating Value, Spectroscopy & Electrochemical Analyzers



Off-Gas Recapture & Enrichment



Handheld Multigas Emissions Analyzer **707**™



Direct Heating Value
Analyzer for BTU, CARI,
Wobbe, and Density
9610™ Calorimeter

Applications:

- Real-time gas analyzers for industrial off-gas, enrichment, combustion control, and environmental compliance
- Rapid response for optimized combustion efficiency and accurate H₂ blending to reduce carbon emissions
- Multiple solutions for compliance with regulations such as 40 CFR Part 60, and HRVOC rules
- H₂S, Total Sulfur, Net Heating Value (NHV), O₂ and COe, Wobbe, Specific Gravity, CARI, and full speciated composition



In Situ Stack Gas Oxygen Analyzer **Zircomat**™



In Situ O₂ and COe for Combustion Monitoring and Burner Optimization O2CX™ Monitor



Industrial Mass Spectrometers for Real-Time, Multi-Stream Fuel Compliance and Control MAX300-RTG™ 2.0



Spectrometers & Electrochemical Analyzers



Nuclear Power

Applications:

- Oxygen analysis during waste gas tritium recovery
- ppt ppb ppm levels of CO, CO₂, CH₄, NH₃, H₂O, O₂, CH₂O, CH₂O₂, He, Ar, and N₂ in H₂
- Helium, deuterium, H₂, and isotopic analysis for nuclear research





Portable and Fixed Trace to Percent Oxygen Monitors Series 3520™ and OXY-SEN™



Real-time Cavity Ring Down Spectroscopy (CRDS) Impurity Analyzers for H_2O , CO, CH_4 , and CO_2 **Prismatic 3**TM



High Resolution Mass Spectrometer for Isotopic Analysis

VeraSpec HRQ™

Electrochemical Analyzers & Mass Spectrometers



Gasification

Applications:

- Real-time control of biomass gasification and pyrolysis processes
- Gas analyzers for H₂O, O₂, CO, CO₂, H₂, N₂, CH₄, H₂S, hydrocarbons, BTU, Wobbe, CARI, and Density
- Molecular beam mass spectrometers for natural product analysis, bio oils, and pyrolysis research



Aluminum Oxide Dew Point Meters and Transmitters with Hyper-Thin-Film Technology for Portable/Fixed/Loop-Powered Applications XDT™ | XPDM™ | LPDT™ | LPDT2™





Portable and Fixed Trace to Percent Oxygen Monitors Series 3520™ and OXY-SEN™



Industrial Mass Spectrometers for Real-Time, Multi-Stream Gas Analysis and Process Control MAX300-RTG™ 2.0



Molecular Beam Mass
Spectrometer for Pyrolysis
and Environmental Research
VeraSpec™ MBx

Spectrometers, Water Quality, Electrochemical & Chilled Mirror Analyzers



Laboratory, Safety & Compliance

Applications:

- Air and fenceline monitoring
- O₂ deficiency safety monitoring, sulfur and nitrogen in fuels and biofuels, moisture calibration of sensors and standards
- Trace gas analyzers for H₂O, O₂, H₂, CH₄, NH₃,
 CO, CO₂, N₂, Ar, He and hydrocarbons
- Sulfur testing in renewable fuels



Percent and Trace Oxygen
Analyzers, and Oxygen Deficiency
Safety Monitors
Series 2000™ and ZRO2000™



Dual Beam Photometer for Real-Time Hydrogen Peroxide Vapor (HPV) Sterilant Gas Monitoring ClearView db® Hydrogen Peroxide Vapor HPV™



Total Sulfur-Total Nitrogen Gas Analyzers **XT-2000**™



Real-Time Air Mass
Spectrometers for Environmental
Health and Safety
MAX300-AIR™



FTIR Environmental Vapor Monitoring Analyzer ANALECT EVM™



TOC Water Analyzers for Pure and Process Water Applications for Laboratories QuickTOCpurity™



CRDS Trace Gas Analyzers
HALO™, Spark™, CO-rekt™,
ALOHA+™, Prismatic™



COD Water Analyzer for Laboratories QuickCODlab™



Chilled Mirror Dew Point Meters 373 Model™

REVOLUTIONIZING MEASUREMENT

EVERYWHERE

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