

# Solutions for the Life Science & Pharmaceutical Industries

# Real-Time and Fixed Point Solutions for Gas and Water Applications



# **Solvent Drying**



Industrial Mass Spectrometer for Real-Time,
Multi-Stream, Solvent Drying and Endpoint
Determination
MAX300-BIO<sup>TM</sup>

#### **Applications:**

- Accurate endpoint determination to improve product yield and production efficiency, and minimize waste
- Easily switch streams to monitor multiple chambers using the same, or different solvents
- Optimized sampling for ambient pressures, vacuum drying, and lyophilizers
- Trace moisture analysis and multi-species analysis of solvents, such as IPA, MEK, DCM, ethyl acetate, styrene, acetonitrile, etc.



Benchtop Mass Spectrometer for Real-Time, Multi-Stream, Solvent Drying and Endpoint Determination MAX300-LG<sup>TM</sup>



CRDS Trace-Level,
Low-Pressure Moisture
Analyzer for Lyophilization
HALO RP/QRP<sup>TM</sup>

#### Mass Spectrometers & Laser Spectroscopy Analyzers



### **Fermentation & Cell Culture Control**



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 / quality and reduce waste - single species or multi-component analysis (e.g. CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>, Ar, H<sub>2</sub>O, CO, H<sub>2</sub>, He, hydrocarbons, alcohols, aldehydes, sulfurs, etc.)
- Active Pharmaceutical Ingredients (API) and biomolecule production



Benchtop Mass Spectrometer for Real-Time Multi-Stream, Bioreactor Control MAX300-LG<sup>TM</sup>



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

#### Water Quality Analyzers



### Water & Wastewater



TOC Water Analyzer for Harsh Wastewater Applications QuickTOCultra™



TOC Water Analyzer for Clean Water Applications

QuickTOCuvII™

#### **Applications:**

- Water influent and effluent discharge control
- 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 Municipal & Cooling Water Applications

QuickTOCeco™



COD Water Analyzer for Laboratories QuickTOClab™

#### Spectrometry, Electrochemical & Chilled Mirror Analyzers



**Glove Box Monitoring** 

#### **Applications:**

- Real time, in situ glove box and incubation monitoring
- Ideal for vessel and climatic chamber monitoring and validation
- ppb to 100% H<sub>2</sub>O and O<sub>2</sub> (aerobic or anaerobic activity), relative humidity and dew point, temperature and compositional gas analysis
- Glove box moisture, temperature and dew point sensor validation





Trace to Percent Oxygen
Monitors for Portable and Fixed
Applications
Series 3520<sup>TM</sup> and OXY-SEN<sup>TM</sup>



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



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



Laboratory Mass Spectrometers for Real-Time, ppb-level, Multi-Impurity Analysis MAX300-LG<sup>TM</sup>



Benchtop Mass Spectrometer for Real-Time ppb-Level to 100% Catalysis, Reaction Monitoring, and Environmental Research MAX300-CAT<sup>TM</sup>



Chilled Mirror Dew Point Hygrometer with Measuring Head for Temperature and RH Measurements

973 Model™

#### Mass Spectrometers & Optical Spectroscopy Analyzers



# **Evolved Gas Analysis**



CRDS Trace-Level, Low-Pressure Moisture Analyzer HALO RP/QRP<sup>TM</sup>



CRDS Ambient-Pressure Analyzer for Trace HCI, NH<sub>3</sub>, HF, CO and CH<sub>4</sub> **T-I Max**<sup>™</sup>

#### **Applications:**

- Connects to thermal gravimetric analyzers (TGA) for off-gas monitoring
- Quality control in reaction monitoring, natural product analysis and synthesis studies
- Microreactor off-gas and head-space analysis
- Single species or multi-component analysis (e.g. CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>, Ar, H<sub>2</sub>O, CO, H<sub>2</sub>, He, hydrocarbons, alcohols, aldehydes, sulfurs, etc.)



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



Benchtop Mass Spectrometer with Heated, Evolved-Gas Inlet for Real-Time, Continuous Off-gas Analysis MAX300-EGA™

#### Spectrometers, Water Quality, Electrochemical & Chilled Mirror Analyzers



Laboratory, Safety, & Compliance

#### **Applications:**

- · Air and fenceline monitoring
- O<sub>2</sub> deficiency safety monitoring, sulfur and nitrogen in fuels and biofuels, moisture calibration of sensors and standards
- Quality of process gas supplies (CDA, N<sub>2</sub>, CO<sub>2</sub>, etc.)
- Trace gas analyzers for compounds such as H<sub>2</sub>O, O<sub>2</sub>, H<sub>2</sub>, CH<sub>4</sub>, NH<sub>3</sub>, CO, CO<sub>2</sub>, N<sub>2</sub>, Ar, He and hydrocarbons



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™



Chilled Mirror Dew Point Meters 373 Model™



Real-Time Air Mass Spectrometer 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™



COD Water Analyzer for Laboratories QuickTOClab™



#### GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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