H_2O_2 Monitoring for Sterilization of Isolators

PHARMACEUTICAL

Ensure Product Quality for Oxidation Sensitive Pharmaceuticals!

- **Aeration cycle development, validation and real time monitoring**
- **Safeguard sensitive biologics throughout production cycle**
- **Parts per billion sensitivity and precision without requiring calibration**
- **Ease of Installation and operation without consumables or carrier gases**
- **Communication interfaces for integration into isolator SCADA and dataloggers**
- **Solution to comply with cGMP and data integrity**

Introduction

Production environment decontamination with hydrogen peroxide (e.g. VHP) has become the industry standard. While VHP technology offers many performance and safety benefits, residual hydrogen peroxide can easily oxidize pharmaceutical products. Biologic products can be especially vulnerable, often showing significant oxidation when exposed to H_2O_2 levels well under 100 ppb.

The Picarro G2114 Hydrogen Peroxide Analyzer is the ideal solution for ensuring the safety and consistent quality of pharmaceutical products produced in VHP-treated environments. Built upon our revolutionary Cavity Ring-Down Spectroscopy (CRDS) technology, the G2114 offer incredibly stable parts-per-billion (ppb) sensitivity, more than four orders of linear dynamic range, and long-term calibration-free operation.

Features

The G2114 is also exceptionally easy to install and operate. The system can be installed and running in minutes, requires no consumables while in use, and is essentially maintenance free. The gas concentration is displayed in real-time with no post-processing required and is continuously archived to the analyzer's internal hard drive. The analyzer can also be configured to automatically output measurement data in digital format or via optional analog outputs.

PICARRO

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G2114 H_2O_2 Performance Specifications	
Measurement Technique	Cavity Ring-Down Spectroscopy
Lower Detectable Limit	10 ppb
Zero/Span Error	± 5 ppb / < 1% readings
Measurement Range	0 - 100 ppm specifications guaranteed
Measurement Interval	~ 3.5 seconds
Precision	< 0.5 ppb (5 minutes averaging)
Rise and Fall Times (dry gas) T90/10 & T10/90	< 2 min
Sample Flow Rate	< 0.75 slm at 760 Torr, no filtration required
Sample Temperature	- 10 to 45 °C
Sample Pressure	300 to 1000 Torr (40 to 133 kPa)
Sample Humidity	< 99% R.H. non-condensing @ 40 °C, no drying required
Operating Temperature	15 to 35 °C (operating); -10 to 50 °C (storage)
Ambient Humidity	<99% RH non-condensing
Other Gases Measured	H_2O
Accessories	Pump (external, included), keyboard (included), mouse (included), LCD monitor (optional)
Outputs	RS-232, Ethernet, USB, analog (optional) 0 - 10 V
Fittings	1/4" Swagelok® PFA fittings
Dimensions Wx H x D [in (cm)]	17"W x 7"H x 17.5"D (43.2 x 17.9 x 44.5 cm) including feet, not inlcuidng small external pump module, 7.5" W × 4"H × 11"D (19 × 10.2 × 28 cm)
Weight	Analyzer 46 lbs (20.9 kg), Pump 10 lbs (4.5 kg) not including fittings
Power Requirements	100–240 VAC, 47–63 Hz (auto-sensing), <260 W start-up (total): 110 W (analyzer), 120 W (pump) at steady state
Validation	Picarro has developed a validation procedure using commercially available, stabilized, certified hydrogen peroxide with 30% concentration (for example Fisher Scientific H323-500). If you have questions about this procedure please contact Picarro.
Application Considerations	Requires an air-like matrix. Interference can occur for high concentrations of organics. Please contact us to discuss the experimental conditions.

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