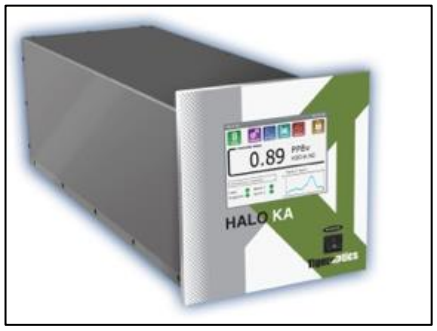
Tiger's Tale

Quarterly Newsletter

Winter, 2017

Latest on Dopants and Specialty Gases

Tiger Moisture Analyzers Now Available for Germane and Phosphine Mixtures



Dopants and Specialty Gases are widely used in deposition processes in the semiconductor and solar industries. To save on transport fees, leading fabs in Asia are moving towards blending Germane at their locations, requiring on-site analysis. Our CRDS analyzers, with cost-saving low flow rates and fast speed of response, are ideal for moisture analysis in Arsine (AsH_3), Phosphine (PH_3), Ammonia (NH_3) as pure gases, and mixture gases containing Germane (GeH_4) and Phosphine (PH_3) with Hydrogen (H_2).

Click here for more information about the HALO product family.

Get Connected with MODBUS TCP

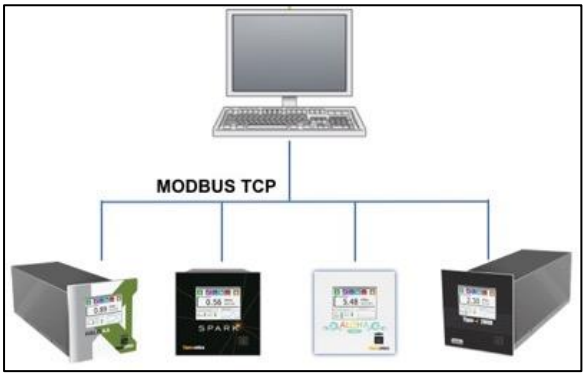
Communication Protocol interfaces HALO-based Analyzers with Your Network

We are pleased to introduce the MODBUS TCP optional software package for the HALO, Spark, ALOHA H_2O, and Tiger-i product families. MODBUS TCP is useful for monitoring and controlling far-flung analyzer installations, using existing MODBUS TCP enabled data loggers and software applications.

MODBUS TCP allows you to monitor and set:

- Concentration
- Alarm status
- Analyzer operating mode
- User alarm levels

Contact us for more information on the MODBUS TCP software package and/or upgrade.



How We Help You Guarantee Fluorocarbon Quality

Fluorocarbon gases, including C_xF_y, SF_6 and NF_3, are critical to diverse applications, such as refrigeration and electronics manufacturing. In electronics, these fluorocarbon gases are commonly used in the etching process, where dry etching agents, in particular, require very high purity. NF_3 is also a prevalent chamber cleaning agent.

Based on customer requests, Tiger now offers expanded capability for measurement of trace H_2O and HF in these gases:

Gas Matrix	HALO 3 H_2O	Spark H_2O	HALO 3 HF
NF_3	3 ppb - 20 ppm	20 ppb – 1000 ppm	0.75 ppb - 7.5 ppm
CF_4	5 ppb - 15 ppm	20 ppb – 1000 ppm	1 ppb - 6 ppm
C_2F_6	4 ppb - 15 ppm	20 ppb – 1000 ppm	2 ppb - 12 ppm
C_3F_8	4 ppb - 20 ppm	20 ppb – 1000 ppm	2 ppb - 12 ppm
C_4F_8	4 ppb - 20 ppm	20 ppb – 1000 ppm	2 ppb - 14 ppm
SF_6	1.2 ppb - 15 ppm	20 ppb – 1300 ppm	1.5 ppb - 8 ppm

Contact us for more information on the fluorocarbon applications.

New Detection Capability of D_2O/H_2O in D_2

Deuterium is one of two stable isotopes of hydrogen. It has a number of commercial and scientific uses, including:

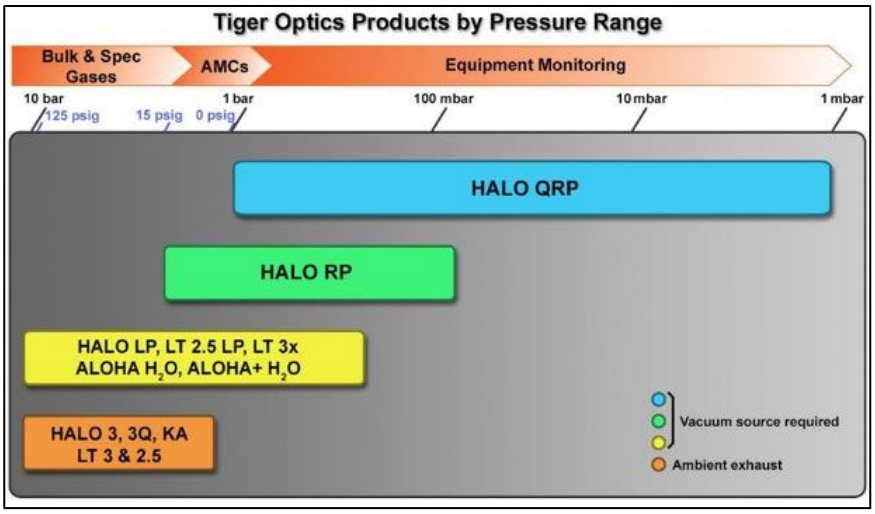
- Experimental use in nuclear reactors to slow neutrons to very low speeds and optimize wavelengths
- Preparation of deuterated compounds for pharmaceuticals
- Electronics, as a replacement for hydrogen in the annealing or sintering of silicon-based semiconductors, flat panel displays, and solar panels

Tiger Optics now offers Spark and HALO analyzers measuring D_2O and H_2O concentrations in high-purity D_2, with detection limits as low as single digit ppb levels. Our low flow rate and rapid response save on this costly gas.

Contact us for more information about analyzing D_2O/H_2O in D_2.

HALO QRP: Enables Moisture Control at Even Lower Pressures

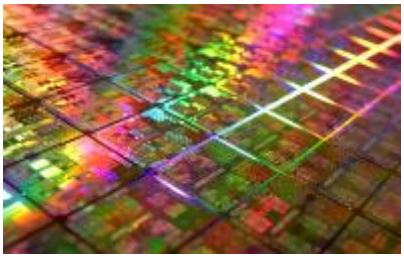
Tiger Optics already operates down to 50 Torr with our reduced pressure (RP) versions of our LaserTrace and HALO Series analyzers. Now, via an extended inlet pressure range as low as 1 Torr, the HALO QRP (Quite Reduced Pressure) enables accurate moisture control in many advanced low pressure applications, such as Low Temperature EPI, MOCVD, ALD and GaN deposition processes.



Building on Tiger's robust design and field-proven capability, with the lowest Cost of Ownership, the HALO QRP brings SEMI F-112 approved technology to support advanced semiconductor equipment. Easily integrated, the HALO QRP can provide Go/No-Go control for tools and gas sampling systems.

Contact us to ask how we can help you take control, at even lower pressures!

Meet the New Spark+ H_2O!



For customers seeking more refined detection levels than our Tiger Spark H_2O analyzer, we now offer the Spark+ H_2O analyzer, with enhanced performance. The new Spark+ H_2O affords detection limits at more than 30% lower levels than the standard Spark H_2O. Plus, it maintains the affordability, consistency, and robustness that have become hallmarks of the Spark platform. With greater precision and better accuracy, the Spark+ H_2O makes trace detection easy and cost-effective in demanding applications, such as semiconductor fabs, aerospace, and air separation units (ASUs).

Contact us to get first-hand information about the Spark+ H_2O analyzer!

Tiger Optics Salutes NASA's Successful Juno Mission

HALO Analyzer Helps Safeguard against Dangerous Contaminants

Tiger Optics had reason to cheer when the Juno spacecraft successfully entered Jupiter's orbit in July 2016, capping its five-year journey from Cape Canaveral. Prior to Juno's launch on August 5, 2011, a Tiger Optics trace-gas analyzer helped NASA keep the scientific payload in prime condition.

The Tiger Optics HALO trace-gas analyzer plays a critical role in detecting contaminants that could compromise the performance of scientific instruments - such as those aboard the Juno spacecraft - that are designed to operate in the vacuum of space and in the absence of elements present in the earth's atmosphere, such as water, oxygen, and particulate matter.

***About Tiger Optics*:** Founded in 2001, Tiger Optics offers a wide and proven array of gas analyzers, as well as atmospheric and environmental monitors. Based upon powerful Cavity Ring-Down Spectroscopy (CRDS), Tiger instruments afford outstanding detection capabilities, speed of response, dynamic range, and accuracy, combined with continuous auto-calibration, ease-of-use, and freedom from moving parts and consumables. From the cleanest of semiconductor fabs to the harshest coal-fired stacks, our analyzers work to improve your yields, reduce costs, and ease the burdens of regulatory compliance.

Please contact us at sales@tigeroptics.com or call 1 (215) 343-6600 for more information or to request a quote today!

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