ISO/TC 158
Analysis of gases

GAS2015

NEN

High Performance Gas Analysis with Continuous-Wave Cavity Ring-Down Spectroscopy (CW-CRDS) on a New Generation Low-Cost Platform

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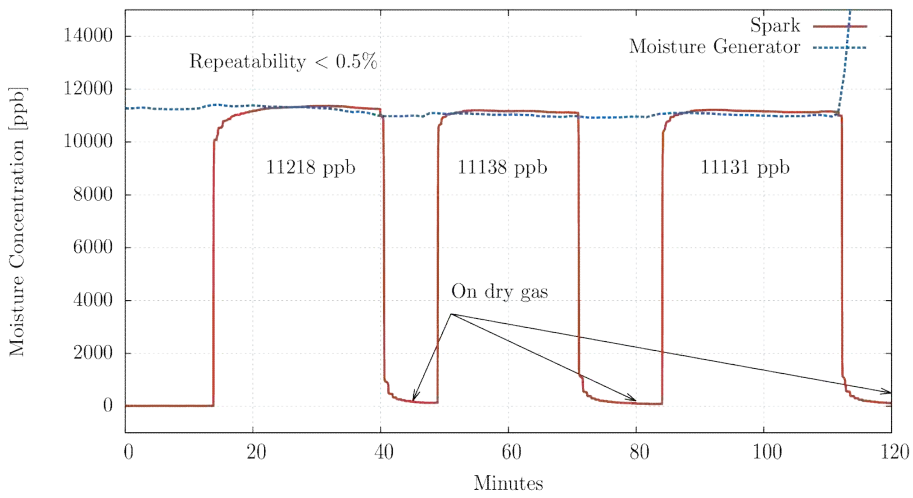
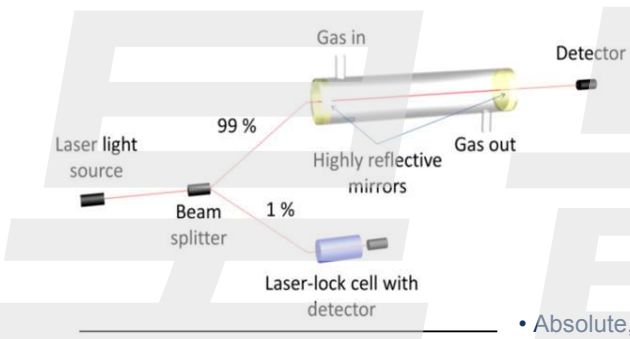
How the Spark™ Opens New Vistas

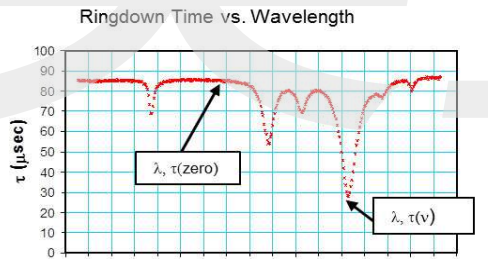
- Field proven, CW-CRDS has found growing acceptance with 1,000s of measurement points worldwide, including metrology institutes, where it is trusted for its accuracy and stability
- Spark™, a new generation platform, brings powerful CW-CRDS technology to customers at a more affordable price
- Joint validation tests with Air Products demonstrate key performance attributes of the Spark: accuracy, linearity, repeatability, speed of response, and low detection limit
- Ideal for numerous industrial process applications, ranging from cylinder filling, to air separation, to lab, and more

Repeatability



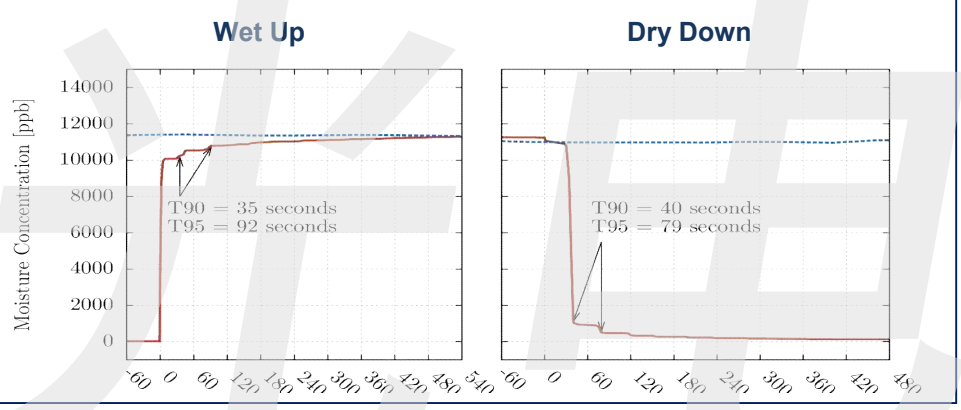
CRDS Technology = Practical Solution



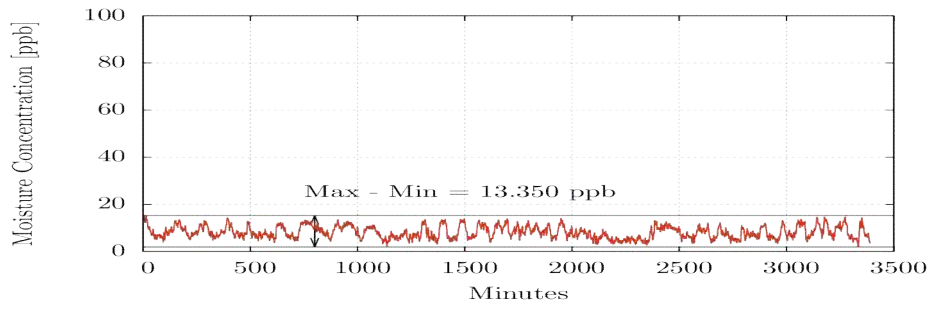


- Absolute, time-based technique
- Concentration is determined by difference between Tau and Tau (zero)
- Highly sensitive due to path length
- Excellent specificity
- Free from drift

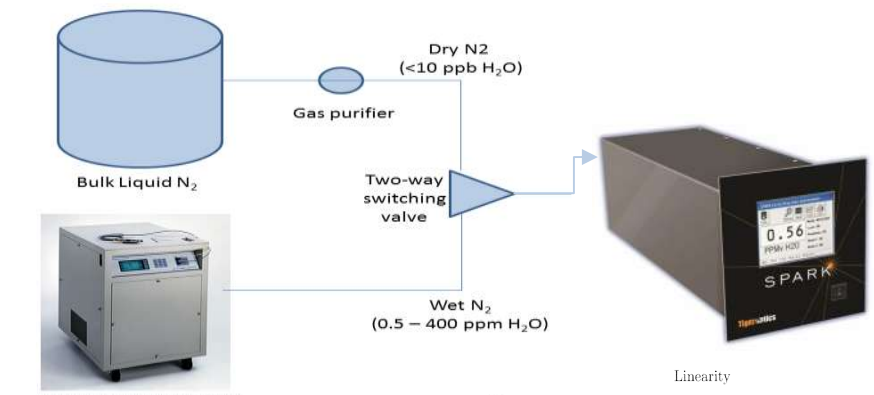
Speed of Response

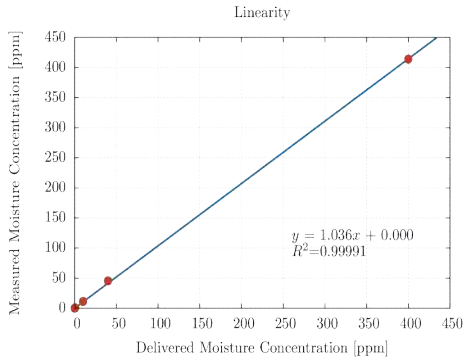


Baseline



Experimental Setup for Joint Validation Test





Intrusion (Thunder Scientific)	Spark Reading	Relative Accuracy
500 ppb	508 ppb	+ 1.6 %
11 ppm	11.2 ppm	+ 1.5 %
44.8 ppm	45.5 ppm	+ 1.6 %
408 ppm	417 ppm	+ 2.1 %

How the Spark™ Stacks Up

- A rare combination of low cost of ownership and state-of-the-art performance, as validated by joint tests with APCI
- Self-zero & auto-verification throughout full range of moisture excursion: no need to interrupt measurement to tune for baseline
- Small cell volume allows swift tracking of moisture changes and rapid measurement throughput
- Huge dynamic range with the following LDL/UDL specs for moisture in various matrices:

Gas Matrix	N2	O2	Ar	He	H2	Air:CDA
LDL (ppb)	15	7	6	4	10	14
UDL (ppm)	2000	1100	900	450	1750	1800

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