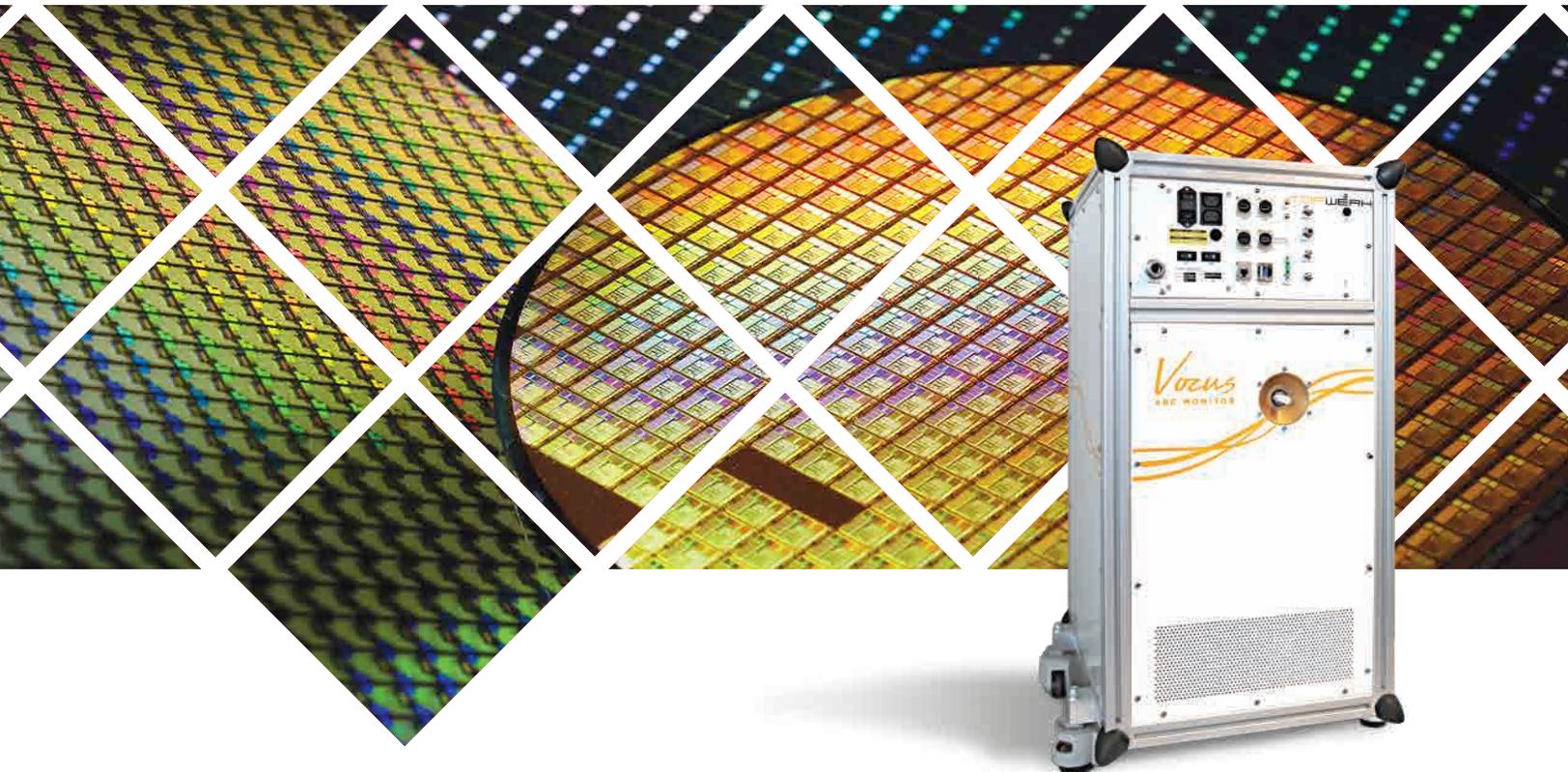


Vocus

ABC MONITOR

Comprehensive, real-time measurements of
Acids, Bases, and Condensables.



Ensure a contaminant-free fab with
the Vocus ABC Monitor.

Traditional airborne molecular contamination (AMC) detection techniques often require a suite of different instruments to provide adequate quantification, often with poor time resolution.

Combining multiple chemical ionization techniques within one mass analyzer – the Vocus ABC Monitor provides sensitive and simultaneous measurements for each AMC category – acids, bases, condensables and many VOCs – instantaneously, in real time, without any sample preparation or handling.

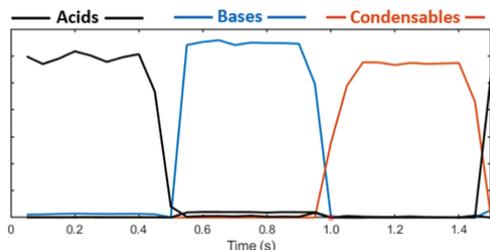
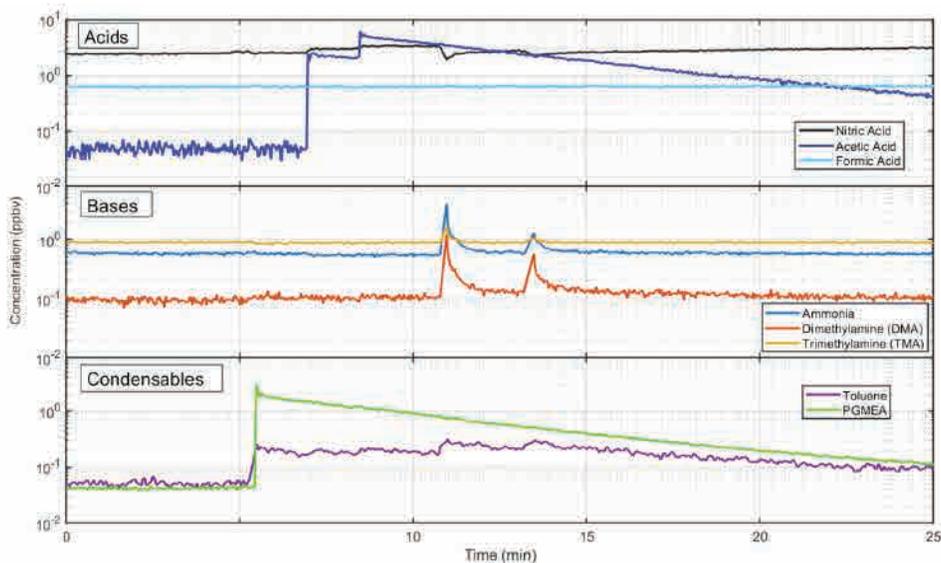
Features

- Ultra-fast measurements for dynamic process monitoring or high-throughput screening
- Simultaneous detection of multiple key AMC classes with pptV LODs
- Customized database for common AMCs
- Eliminate ionization induced fragmentation for ensured accuracy
- Mobile measurements, or manifold connectivity, without sample preparation

Measuring a diverse set of AMCs from a contaminated FOUP

Using proprietary Polarity Fast-Switching, each AMC class is simultaneously detected, allowing for robust and reliable detection free of ionization induced fragmentation.

In the demonstrated measurement below, Toluene and PGMEA are introduced to simulate FOUP contamination then purged away using nitrogen. Trace acetic acid is then introduced and purged, following a similar trend as the condensables. Finally, two small pulses of Ammonia DMA and TMA are introduced – their observed removal from the FOUP is at a much faster rate because the reaction between the bases and the trace nitric acid present in the FOUP microenvironment result in particle formation.



(Left) Enhancing a section of the measurement, fast switching measurements in milliseconds are observed. Fast switching allows each compound class to be measured in real time, ensuring that transient signals are not missed while measuring in a different mode.

Limits of Detection

	Acids			Bases		Condensables	
	HF	HNO3	HCOOH	NH3	DMA	PGMEA	Toluene
LOD ppt 1 min	10	5	10	10	5	5	5

*Representative LODs evaluated using 3 standard deviations with a integration time of 1 minute for selected AMC compounds.

System Specifications

Model	ABC Monitor
Measured Compounds	Acids, Bases, Condensables, VOCs
Library	Custom Defined
Concentration Range	ppq-100 ppb
Resolution	>1000 M/ΔM
Limits of Detection	1-50 pptv*
Analysis Cycle	40 kHz
Mode Switching	5 Hz
Operating Temperature Humidity	10-40° C <90%
Dimension Weight Power	480 x 615 x 850mm 130 kg <800 W
Certification	CE