

# IonPro-IMS®

The Deep Ultraviolet (DUV) lithography process has proven to be especially sensitive to many types of molecular level contaminants. Ammonia, n-methyl pyrrolidone (NMP), amines, and acid gases are known to create problems throughout the fab.

Ion Mobility Spectroscopy (IMS) has been found to be an extremely sensitive method of analysis for these and other gases. Molecular Analytics has developed the IonPro-IMS® Series of analyzers to monitor impurities such as ammonia, NMP, amines, and acid gases. The development of improved DUV Resist materials and long-life filters has not lessened the need for continuous real-time monitors, in fact it has made the measurement of airborne contaminants critically important. The use of the IonPro-IMS® Series Analyzer will improve resist uniformity, guarantee maximum filter life, and reduce process downtime.

Molecular Analytics' new Windows® NT based HMI (Human Machine Interface) software allows real-time viewing, manipulation and automation of ammonia, amines, NMP, or total acid analyzers that are sampling from several different locations. This software program was written for semiconductor facilities attempting to monitor and control airborne contamination in the DUV lithography process. This software has the flexibility to be applied to any industrial setting where multipoint sampling by one or more IMS analyzers is needed. Features include easy interactive control of alarms, data logging, historical trending, and basic analyzer functions from a Windows environment.

Wall Mount Unit



Mobile IonPro-IMS® with HMI

## FEATURES

- Solid-state without moving parts or optics that require alignment
- No chemical reagents, tapes, or solutions to prepare or replace
- Automatic and rapid response to concentration changes, requiring no operator intervention
- Factory precalibrated for the DUV process
- Virtually drift-free and unaffected by changes in temperature and humidity which translates to long-term calibration stability
- Internal 4 channel multi-point sampling system (MPS)
- CE certified
- Optional onboard calibration (OBC)

Without measurement, there is no control.

## Specifications

### Wall Mounted IonPro-IMS®

### Mobile IonPro-IMS® with HMI

<b>Analyzer Range:</b>	0.1 - 100 ppb	0.1 - 100 ppb
<b>Dimensions (h, w, d):</b>	24 x 24 x 9 in. (61 x 61 x 23 cm)	40 x 24 x 16 in. (102 x 61 x 41 cm)
<b>Enclosure:</b>	Rugged NEMA 4X clean room compatible stainless steel	Rugged mobile clean room compatible powder coated
<b>Weight:</b>	Less than 95 lbs. (43 kg)	Approx. 175 lbs. (80 kg)
<b>Number of sampling points:</b>	4 points	4 points
<b>Operating ambient temp:</b>	-40°F to 122°F (-40°C to 50°C)	60°F to 80°F (16°C to 27°C)
<b>Outputs:</b>	Digital display, 4-20 mA loop, 2 alarm relay, optional Secs/Gem 1 fault, RS-232 w/MODBUS® protocol	
<b>Sample requirements:</b>	Requires sample to be in vapor phase delivered to analyzer at atmospheric pressure at a minimum of 500 cc/min	
<b>Maintenance:</b>	10 minute operation, every six (6) months	
<b>Power:</b>	115 VAC, 50/60 Hz (220 VAC, 50/60 Hz)	115 VAC, 50/60 Hz (220 VAC, 50/60Hz)
<b>Current consumption:</b>	5 amps (2.7 amps)	5 amps (2.7 amps)
<b>Instrument air:</b>	-40°F (-40°C) dewpoint, oil free, 5 liters/minute (air cleanup is available) Note: Some applications require nitrogen	-40°F (-40°C) dewpoint, oil free, 40 liters/minute (air cleanup is available)
<b>Resolution:</b>	0.1% increments of full scale	0.1% increments of full scale
<b>Lower limits of detection:</b>	0.1% of full scale	0.1% of full scale

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MODBUS® is a registered trademark of Gould, Inc.  
Particle Measuring Systems reserves the right to change specifications without notice.

**AUTHORIZED REPRESENTATIVE**



Registration applies to the Boulder, Colorado facility



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