

# YIELDGUARD™

## Online Trace Metal Analyzer

with NanoBand™ -M Technology

**YieldGuard, preventing catastrophic yield loss with the first fully automated, online analyzer that continuously monitors for process integrity breakdown.**

Even trace levels of metal contaminants can cause critical damage to a wafer. Minimize plant downtime and ensure your product integrity & performance with our online trace metal analyzer. YieldGuard is configurable to monitor for lead, copper, and arsenic, as well as a variety of other trace metals. YieldGuard delivers rapid and economic detection to below 1 ppb with proven accuracy against ICP-MS correlation. Automated chemical handling ensures operator safety and ease-of-use, and there is no need for vacuum or high purity gas supplies.

### YieldGuard ensures process control integrity.

- Prevent catastrophic yield loss (\$\$).
- Immediately find metal contaminants.
- Pinpoint broken or leaking solenoids, DI H<sub>2</sub>O etching of stainless steel piping, or if wafer cassettes were cross contaminated.
- Insure your process control integrity is working at point-of-use not just 'as received from vendor'.
- Detection to sub-ppb levels, with proven accuracy against ICP-MS.

### YieldGuard Features

- Fully automated online operation
  - Eliminates operator variability to insure accuracy to 1 ppb
  - Measurement time less than 30 minutes
  - Correlation with ICP-MS (+/- 10% typical)
  - Up to four online sample ports supported
  - Grab sample port included
- Comprehensive data acquisition and SCADA interface
  - 4-20 mA trace metal levels for each sample stream
  - Programmable contact closure for local trace metal level annunciation
  - Easy-to-use front panel HMI
  - Programmable on-board data acquisition
  - Data logging records results, allows report generation and results archiving
- Low operational costs
  - Replaceable reagent tray provides up to 1000 measurements
  - Field replaceable modules for ease of maintenance
  - System runs self-diagnostics and is auto-calibrating



# YIELDGUARD Specifications

## Performance

Measurement Range	sub-ppb - 100 ppb
Measurement Accuracy	1ppb or $\pm 20\%$ , whichever is larger
Measurement Time	Less than 30 minutes
Sample Streams Supported	Standard configuration: One With optional external manifold: Up to four
Sample Requirements	Temperature: 0°C to 40°C Pressure: 5 – 75 psi pH Range: 2 – 12 (4 – 10, if copper removal is implemented)
Sampling Scheme	Standard configuration: Dead-end type, input line pumped out prior to each measurement, stagnant between measurements With optional continuous flow: Custom plumbing on external rack

## System

System/SCADA Interface	Four 4 – 20 mA outputs RS-232/485/422 Ethernet/Wireless - Remote setup, operations and diagnostics
User Interface	Display: 4 line X 20 characters, sunlight readable. Dedicated function keys for: system initialization and test, automatic operation, manual maintenance, sampling and data acquisition setup
Annunciator Interface Electrical	2 alarm relays, plus 6 relays to control external solenoid valves 100-130VAC, 50/60Hz (option for 200-260VAC 50/60Hz) 200W
Operating Conditions	Temperature (standard configuration): 10°C to 40°C Temperature (with optional weatherproof enclosure): -20°C to 50°C Humidity: <95%, non-condensing
Monitor Cabinet	NEMA 12 rated Houses all electronics and measurement fluidics User-friendly, front panel HMI
Reagent Cabinet	NEMA 12 rated Houses Standard Reagent Tray
Maintenance Schedule	Semi-annual maintenance
Reagent Consumption	Standard Reagent Tray provides up to 1000 measurements (Replenished monthly at continuous sampling of four sample streams)
Dimensions	H 48", W 32", D 13"

## Options

External Rack	Houses sample manifold & sample pressure regulation and filtering Supplies waste drain connection and waste carboy Provides D.I. water generation
Weatherproof Enclosure	NEMA 12 system enclosure Environmentally controlled enclosure: with /air conditioner, heat
Sample Preparation	Copper removal module Filter system



**TRACE | DETECT**

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YieldGuard is currently under development. The specifications listed are preliminary. TraceDetect reserves the right to change the specifications as necessary.