KANOMAX FMT
A Kanomax Company

SCANNING THRESHOLD PARTICLE COUNTER 3

Model 9010-STPC3

Reliable detection of nanoscale contaminants to mitigate wafer defects

Highlights:

- The industry's only real-time liquid 3 nanometer particle counter
- Continuous, real-time monitoring suited for applications like excursion detection and system profiling in ultrapure liquids
- Measure below optical particle counters (OPC) size detection limits
- Free of bubble interference and contaminant material dependence
- Compatible with critical process chemicals including organics, bases, and oxidizers*
- Detect both particles and particle precursors that can cause nanometer-scale defects on wafers
- Adaptable for grab samples

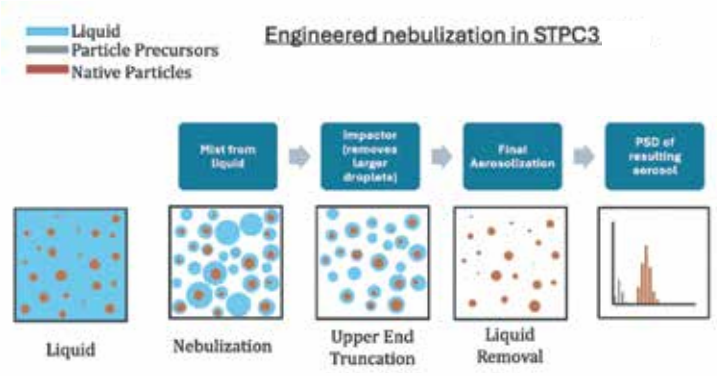
STPC3 PRODUCT LINE VARIANTS AND APPLICATIONS

Variant	Applications	Butanol CPC	Water CPC
STPC3-UPW	Ultrapure Water	✓	✓
STPC3-IPA	Isopropyl Alcohol	✓	⊗
STPC3-CHEM*	Isopropyl Alcohol	✓	⊗
	Ultrapure Water	✓	✓
	Hydrogen Peroxide*	⊗	✓
	Ammonium Hydroxide (Online Dilution Required)*	⊗	✓
	PGME/A (Online Dilution Required)*	✓	⊗

*Contact Factory for Application Details

Operating Principle

This patented technique is the only method that detects the non-volatile precursors that do not evaporate off the wafer surface and remain as nanometer sized particulates.



Relevant SEMI Standards

C79: Guide to Evaluate the Efficacy of Sub-15 nm Filters Used in Ultrapure Water (UPW) Distribution Systems

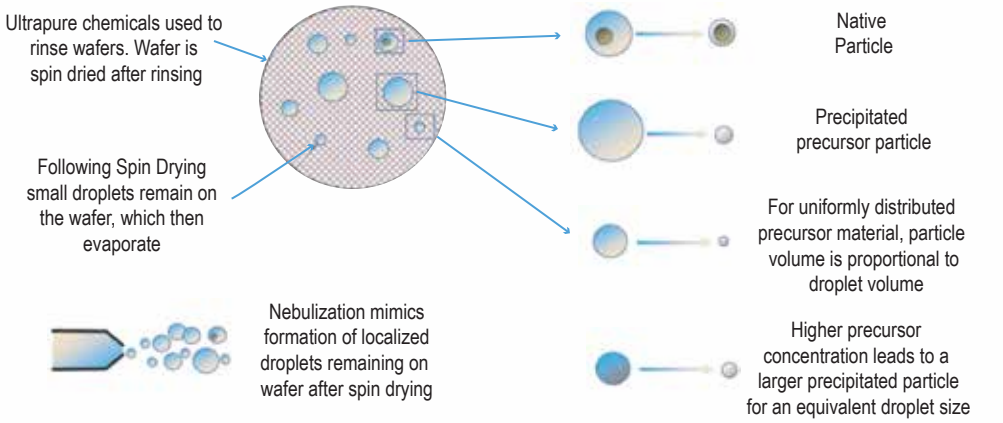
C93: Guide for Determining the Quality of Ion Exchange Resin Used in Polish Applications of Ultrapure Water System

F121: Guide for Evaluating Metrology for Particle Precursors in Ultrapure Water

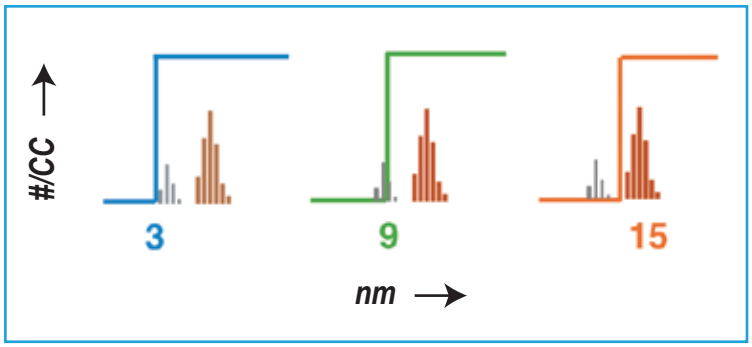
Patent Protected

www.kanomaxfmt.com/patents

STPC3 measurements mimic defect formation from liquid contaminants

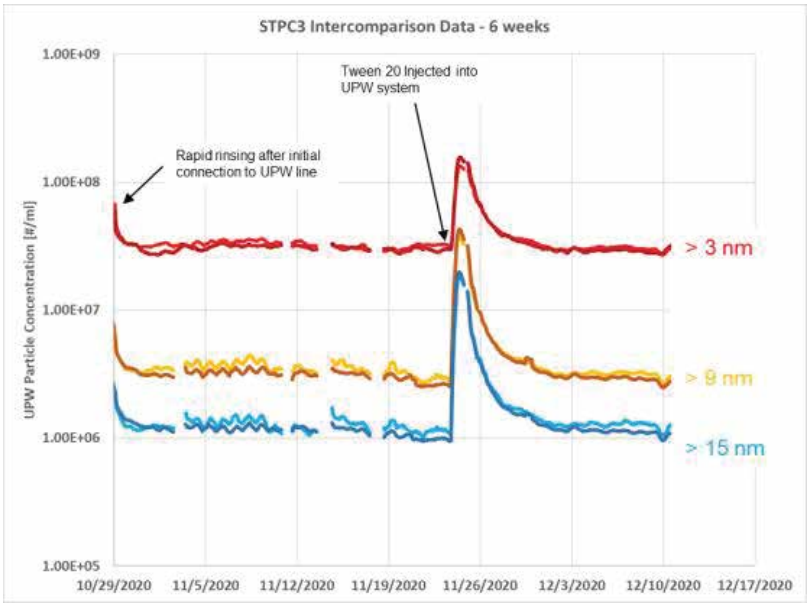


Particle counting above size thresholds



Using selective condensation growth methods in the Scanning Condensation Particle Counter, the STPC3 provides three cumulative size channels. In very clean liquids, the 15 nm channel measures native particles and the 3 nm channel is dominated by precursors, while the 9 nm channel is intermediate of these limits.

STPC3 Side-by-Side Matching Performance



Recommended Compatible Accessories

- IV Calibration Kit
- Standard Pressure Vessel
- Chem Resistant Pressure Vessel
- Aerosol Sample Heater

Specifications

Measurement range: 1E3 to 1E10 particles/mL
Threshold sizes: 3, 9, 15 nm
Number of size channels: 1-3 (user configurable)
Dead time between channel adjustment: 5 minutes
Total flow rate: 50-250 mL/min
Response time to concentration change: <30 seconds
Inlet water pressure (online): 200-620 kPa (30-90 psig)
Compressed air/nitrogen flow rate/pressure: 2.5-7.0 std L/min CDA or Nitrogen, 340-410 kPa (50-60 psi) ANSI IS08573-1:2010 Class 2 for compressed air
Wetted surface materials: proprietary, compatible materials
Detector working fluid: Reagent-grade (or better) n-Butyl alcohol/water
Working fluid consumption rate: Under 150 mL/day (bottle lasts for one week when cycling all three channels)
Ambient temperature range: 15-35°C (59-95°F)
Ambient relative humidity range: 0-85%
Maximum water temperature: 50°C (122°F)
Dimensions (W × D × H): 42 × 43 × 27 (43 with bottle) cms, 16.7 × 16.8 × 10.5 (16.8 with bottle) inches
Weight: 16.1 Kg (35.5 lbs)
Power (Nebulizer): Universal 100-240 VAC, 50/60 Hz, 90 W max
Power (CPC): Universal 100-240 VAC, 50/60 Hz, 210 W max
Communication Interfaces: Ethernet, Wi-Fi, USB, Analog 4 – 20 mA
Internal storage: Micro SD
Ultrapure water inlet: ¼ inch PFA Flaretek®
Waste outlet: ¼ inch SS Swagelok®
Compressed air inlet: ¼ inch SS Swagelok®
Detector vacuum: ¼ inch SS Swagelok® Port
Display: 7 inch TFT Color, touch panel

Specifications subject to change without notice.

Kanomax FMT and the Kanomax Group have unique liquid contamination metrology expertise and can deliver solutions to your contaminant metrology challenges. Connect with us today!

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