

# SCANNING THRESHOLD PARTICLE COUNTER 3 PLUS (STPC3+)

Model 9010-03-Plus



**Reliable detection of nanoscale contaminants that lead to wafer defects**

## Highlights:

- Continuous, real-time monitoring suited for applications like excursion detection
- Measure below optical particle counters (OPC) size detection limits
- Compatible with critical process chemicals including organics, bases, acids, and oxidizers\*
- Detect both particles and particle precursors
- Adaptable for grab samples

## STPC3 Product Line

	STPC3		STPC3 DI		STPC3 PLUS	
Size Channels (nm)	3, 9, 15		3, 9, 15		3, 9, 15	
CPC options	SCPC-W, SCPC-B		SCPC-W, SCPC-B		SCPC-W, SCPC-B	
Pressure chamber control	Yes		Yes		Yes	
Online sample dilution	Internal PEEK dilution module		Internal PEEK dilution module		Internal PTFE dilution module Dual injection ports	
Sample shutoff	External Manual Valve		External Manual Valve		Internal automated Solenoid Valve	
Direct sample injection	No		Manual internal crossover valve		Optional automated internal solenoid selection valves	
Hi/Lo Dilution gas flow settings	Not Enabled		Internal Manual Valve		Internal Automated Valve	
Applications*	SCPC-W	SCPC-B	SCPC-W	SCPC-B	SCPC-W	SCPC-B
	UPW H <sub>2</sub> O <sub>2</sub> NH <sub>4</sub> OH	UPW IPA	UPW H <sub>2</sub> O <sub>2</sub> NH <sub>4</sub> OH	UPW IPA	UPW H <sub>2</sub> O <sub>2</sub> NH <sub>4</sub> OH HCl H <sub>2</sub> SO <sub>4</sub>	• UPW • IPA • HCl ★ H <sub>2</sub> SO <sub>4</sub> PGME/A
Compatible Accessories	Standard Pressure Vessel		Standard Pressure Vessel		Chem Resistant Pressure Vessel Aerosol Sample Heater	
Recommended Accessories	IV calibration kit		IV calibration kit		IV calibration kit Additional electronic balance	

- CE Compliant option available
- ★ H<sub>2</sub>SO<sub>4</sub> needs Aerosol Sample Heater

## Relevant SEMI Standards

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

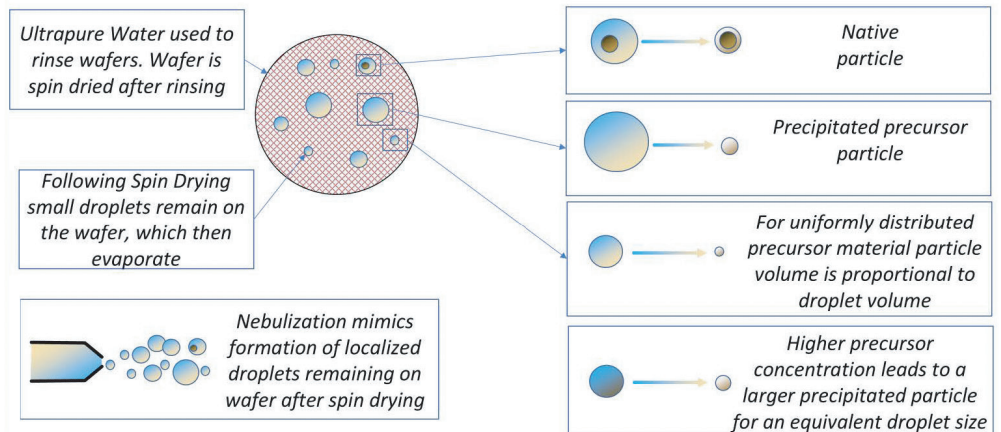
C93: Guide for Determining the Quality of Ion Exchange Resin Used in Polish Applications of Ultrapure Water System

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

## Patent Protected

[www.kanomaxfmt.com/patents](http://www.kanomaxfmt.com/patents)

## STPC3 Plus measurements mimic defect formation from liquid contaminants



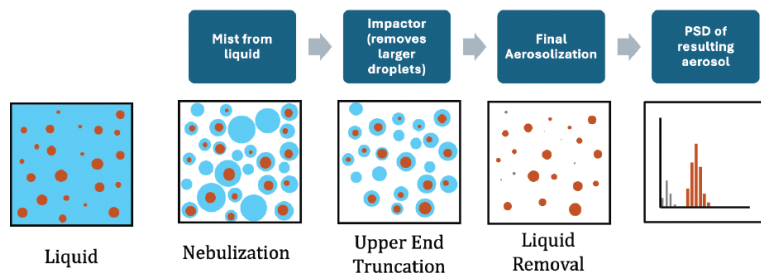
Source: Oberreit, et al, Solid State Phenomena, vol. 346.

\*Contact factory for further details

## Operating Principle

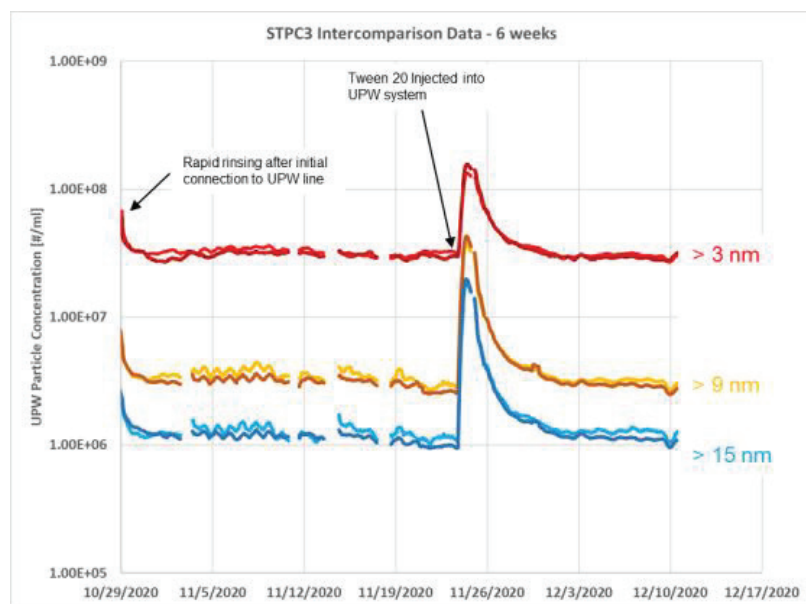
— Liquid  
— Particle Precursors  
— Native Particles

### Engineered nebulization in STPC3 Plus

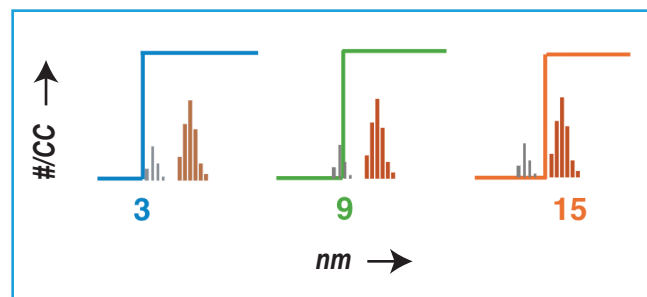


The STPC3 Plus employs unique nebulization technology to extract contaminants from the liquid, while minimizing artifacts that break correlation to on-wafer measurements.

## STPC3 Side-by-Side Matching Performance



## Particle counting above size thresholds



## 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:** 50-280 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 ISO8573-1:2010 Class 2 for compressed air  
**Wetter 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 expertise and can deliver solutions to your contaminant metrology challenges. Connect with us today!**

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