KANOMAX FMT

A Kanomax Company

NANOPARTICLE MEASUREMENT SOLUTIONS

Scanning Threshold Particle Counter 3 (STPC3)

Model 9010-03

3 nm Ultrapure Liquid Quality Monitor

- **Measure below the Optical Particle Counter Detection Limit!**
- **STPC3 Measures both Residue (Particle Precursors) and Native Particles.**
- **Monitor UPW and Dilute solvents (IPA, H_2O_2, Ammonia, HCl).**

Industry Recognition

- C79-0113 Guide to Evaluate the Efficacy of Sub-15 nm…
- C93-0217 Guide for Determining the Quality of Ion Exchange Resin Used in…

Patent Protected

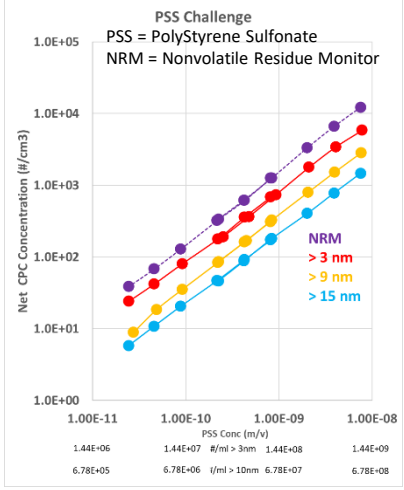
- Patent numbers 8,272,253 and 8,573,034 have been issued to CTA and licensed to Kanomax FMT.
- Kanomax FMT has applied for additional domestic and international patents for technology contained within the STPC System.
- Patent number 7,852,465 has been issued to Kanomax.

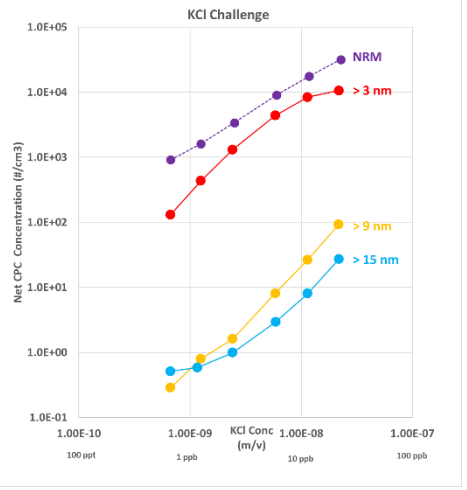
The STPC3 was developed in collaboration with CT Associates, Inc.

STPC3 Comparison to Optical Particle Counters

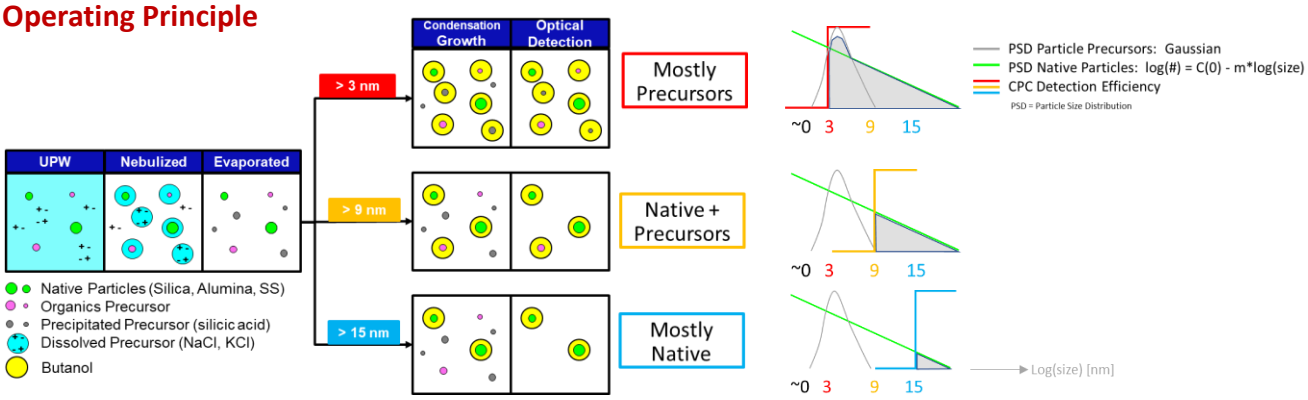
Category	STPC3 9010-03	STPC 9010	PMS Ultra DI® 20
Size channels [nm]	3, 9, 15	10, 15, 20	20, 50, 70, 100
Operating principle	Nebulization + condensation particle counting	Nebulization + condensation particle counting	Light scattering in liquid, mapped to a particle concentration
Allowed liquids	UPW, IPA, Peroxide, HCl, Ammonia	UPW	UPW
Native Particles?	Yes	Yes	Yes
NVR / Particle Precursors?	Yes	Yes	No
Material dependent?	No	No	Yes
Bubble interference?	No	No	Yes

STPC3 Non-Volatile Residue / Particle Precursor Response

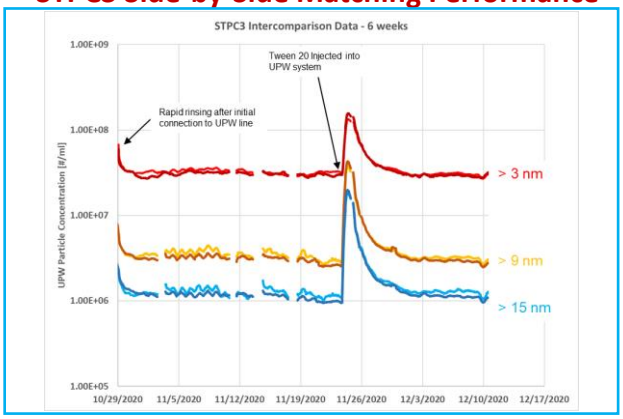




Operating Principle



STPC3 Side-by-Side Matching Performance



Allowed Chemicals

- IPA 0.10 v/v at the Sample port (limited by peristaltic pump tubing); Undiluted IPA may be injected with a pressure chamber; 0.0001 v/v at nebulizer
- Hydrogen Peroxide: 0.35 v/v at sample port; 0.001 v/v at nebulizer
- Ammonia: Max pH 12 at sample inlet / pH 9 at the nebulizer
- HCl: Min pH 2 at sample inlet / pH 5 at the nebulizer

For all other chemicals and chemical blends, contact the factory.

Specifications

Measurement range: 1E3 to 1E10 particles/mL
Inspection volume rate: 0.5 - 3 µL/min
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): 200-500 kPa (30-70 psig)
Compressed air/nitrogen flow rate/pressure: 2.5 std L/min CDA or Nitrogen, 340-410 kPa (50-60 psi) ANSI IS08573-1:2010 Class 2 for compressed air
Wetted surface materials before nebulization: PFA, PTFE, PEEK, sapphire
Detector working fluid: Reagent-grade (or better) n-Butyl alcohol
Working fluid consumption rate: Approximately 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
Shipping drain: Colder brand quick disconnect

Specifications subject to change without notice.

Kanomax FMT and the Kanomax Group have unique ultrapure liquid particle expertise and can deliver solutions to your nanoparticle measurement challenges. Connect with us today!

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