

QIII Ultra™

SURFACE PARTICLE DETECTOR

REDEFINE PRODUCTIVITY

Pentagon Technologies' QIII Line of Surface Particle Detection (SPD) instrumentation is the industry standard for measuring and controlling surface particle contamination – **and it just got better**. The new QIII Ultra SPD includes our leading surface measurement technology with resolution down to 0.1 um and many enhancements for use in today's critical clean environments.

As high technology industries move to lower and lower geometries to produce faster, higher resolution and more complex products, controlling surface particle levels in the 0.1 um range become critical to yield and process control.



BENEFITS

- Predictable, first time tool recovery, every time.
 - > Reduce recovery time by 25-50%
 - > Reduce particle adders by 50%+
 - > Reduce seasoning and test wafers
 - > Reduce pump-purge cycles
- Increase MTBC by 4x or more
- Increase tool availability by 10%+
- Reduce PM cycle time
- Reduce troubleshooting events
- ISO-14644-9 surface particle compliance

THE NEW QIII ULTRA SPD INCLUDES

- 0.1 um resolution, with HeNe laser optics
- New Static sampling mode for improved measurement accuracy
- New 7" high resolution WVGA screen for clear, crisp images and text
- New probe multi-connector for ease in attaching and swapping one of the variety of probes that are offered
- Two user replaceable batteries that can be 'hot swapped" without shutting the unit down resulting in unlimited run time in battery mode
- Data collected can now be easily downloaded through the USB port.
- Software upgrades can be uploaded directly by the end-user through the USB port
- There are now 6 channels of particle data for enhanced visibility to particle distribution

QIII Ultra™

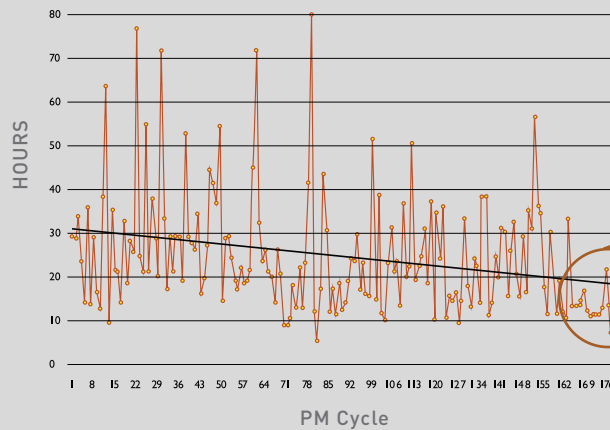
SURFACE PARTICLE DETECTOR



FIRST TIME PM RECOVERY

How do you measure cleanliness of the process chamber during a PM? Pentagon Technologies' QIII SPD can dramatically reduce PM recovery time, green-to-green time, and increase the overall throughput of a fab. Using the QIII SPD, you can immediately detect surface particles to 0.1 micron within a production tool. The result of using the QIII SPD to start clean is first-time recovery with dramatically lower adders at all particle sizes making your process tools significantly more productive.

GREEN-TO-GREEN TIME (Total PM Time, Including Recovery)



- 50% reduction in recovery time
- Consistently low green-to-green time

QIII SPD Implemented into PM

INCREASED MTBC

By incorporating the QIII SPD in the PM process to control particles, Mean Time Between Cleans (MTBC) can be increased.

Example 1: 300mm Dielectric Etch tool
 MTBC pre-QIII SPD: 174 rf hrs
 MTBC post-QIII SPD: 300 rf hrs
 CoO savings per tool per month: \$13,200
 ROI: 3.6 months

Example 2: 300mm Metal etch tool
 MTBC pre-QIII SPD: 40 rf hrs
 MTBC post-QIII SPD: 110 rf hrs
 CoO savings per tool per month: \$85,200
 ROI: 0.6 months

*CoO calculated using Too Cool software from Wright Williams & Kelly, Inc.

TECHNICAL DATA

- Size: 14" W x 23" D x 9" H
- Weight: 38 lbs
- Input power: 100-240 VAC, 50/60 Hz
- Batteries: (2) Lithium ion, hot swappable, with optional battery charger
- Display: 7" WVGA with touch screen
- GUI: Windows CE
- Sensor: HeNe with 0.1 um sensitivity
- Output: USB or Ethernet

- Probe Faceplate Material: Vespel
- Meets industry standard ISO 21501-4 and JIS B 9921 calibration standards

PROBE OPTIONS

STANDARD:

1/2" Right Angle, 2" Flat

OPTIONAL:

See Probe Brochure for available options
 Custom available upon request