



zero ion g3

resistivity of solvent extract tester

features and specifications guide



CALIFORNIA

Aqueous Technologies is an advanced cleaning and technology company specializing in the manufacturing of cleaning and testing systems for the electronics assembly industry. Our fabrication, manufacturing and support is based in California. Inspired by water, our cleaning and cleanliness testing systems are sophisticated and brilliantly simple.

FABRICATION

Our equipment is manufactured in the United States of America. Fabrication materials, devices and vendors are all hand selected with quality and reliability in mind. We take pride in our work. Building these systems from the ground up allows for customizable products that will last.



COMMITMENT

At Aqueous Technologies, we are enthusiastic about doing our part to help make this world a better place. We are committed to finding new ways of conserving water and reducing our environmental impact through our equipment designs.



ABOUT ZERO ION

Zero Ion g3 is our third generation IPC J-STD approved resistivity of solvent extract (ROSE) tester. Today's Zero Ion is more feature rich and operator friendly than ever before and the dynamic measurement technology continues to provide accurate and highly sensitive cleanliness measurement results essential for modern high reliability manufacturing environments.

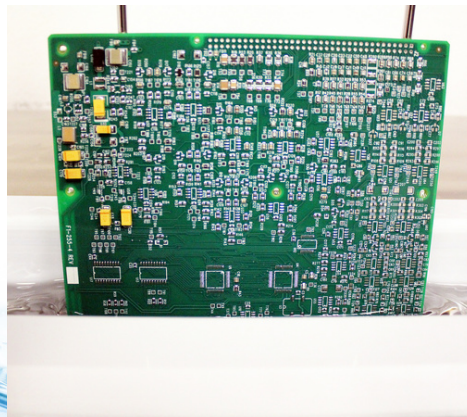


FEATURES

- ultra sensitive dynamic measurement technology
- built-in universal assembly holder
- Windows 10 all-in-one PC platform
- heavy-duty rolled stainless steel frame and panel construction
- advanced statistical process control (spc) data logging
- non-heated spray under immersion with continuous filtration
- sql multi-query searchable database
- graphic touchscreen and keyboard operator interface
- intuitively guided calibration procedures built into software
- automatic recipe recall
- wired and wireless network options
- built-in assembly surface area calculators
- included pdf report writer



Association Connecting Electronics Industries®



DYNAMIC ROSE TESTING

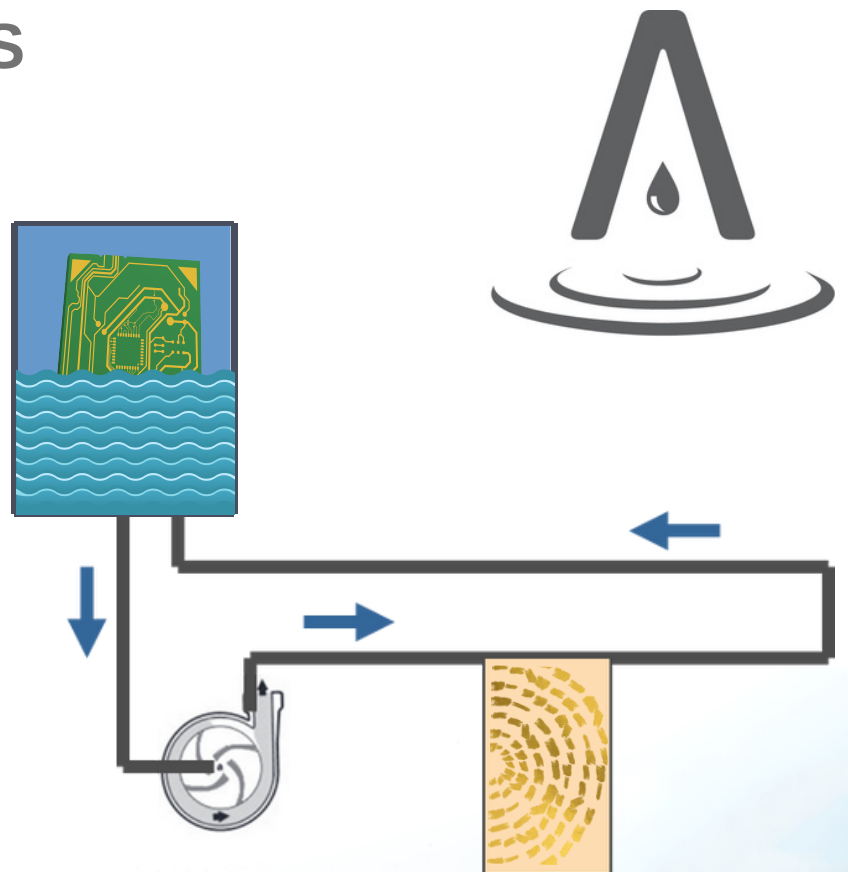


Zero Ion is an industry standard for resistivity of solvent extract testing. The dynamic measurement technology provides sensitive and precise cleanliness data in compliance with WS 6536, IPC J-STD 001 TM 650 and other current specifications.

The dynamic method was found to be the most sensitive ionic contamination test by the EMPF/US Navy *MIL2000A*. The spray under immersion and continuous filtration design allow for repeatable and accurate process monitoring results.

RELIABILITY MATTERS

During a test the Zero Ion will automatically regenerate the test solution to 150 meg-ohms of resistance and then prompt an operator to insert an assembly. Testing will then automatically begin and continue until the solution again reaches 150 meg-ohms. This continuous filtration, while spraying the assemblies under immersion, allows for optimal removal and measurement of ionic process residues, expressed as $\mu\text{g}/\text{in}^2$ / $\mu\text{g}/\text{cm}^2$.



PROCESS CONTROLS

Aqueous TECHNOLOGIES **ZERO ION**
IONIC CONTAMINATION TESTER MAIN

CURRENT STATUS:
SOLUTION RESISTANCE (MΩA-CMMS) 32 SOLUTION TEMPERATURE (°F) 68 REGENERATION FLOW (GPM) 0.00
ALCOHOL SPECIFIC GRAVITY 0.835 ALCOHOL CONCENTRATION (%) 72 REMAINING MEDIA LIFE (%) 100

TEST SETUP → **TESTING** → **TEST RESULTS** **CALIBRATION** **MACHINE SETTINGS**

STEP 1. VERIFY ALCOHOL CONCENTRATION AND CALIBRATOR NAME:
CONCENTRATION (μG) ☐ 500 ☐ 1,000 ☐ 2,000
CALIBRATOR NAME: JOHN DALL

STEP 2. CLICK THE BEGIN CALIBRATION BUTTON:
CALIBRATE

STEP 3. PREPARE EXACT DOSE OF CALIBRATION SOLUTION:

STEP 4. INSERT DOSE AND CLICK TEST NOW:

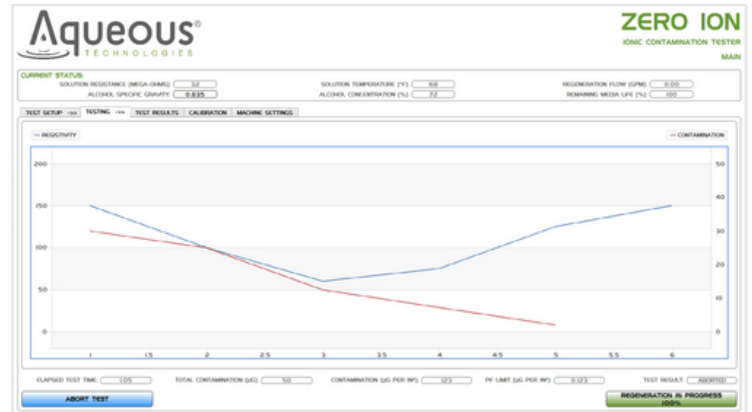
STEP 5. OBSERVE RESULTS AND CLICK ADJUST OR DO NOT ADJUST:
ELAPSED TIME: 1.30 RAW DATA: 1.30 CALIBRATION FACTOR: 1

CALIBRATION HISTORY:
CALIBRATION DATE: 02/25/2019 CALIBRATOR NAME: JOHN DALL AVERAGE FLOW (GPM): 1.724
CALIBRATION DATE: 12:53 PM RAW DATA: 2600.32 AVERAGE TEMPERATURE (°F): 72
CALIBRATION DURATION: 155 MEDIA LOAD (%): 100 ALCOHOL CONCENTRATION (%): 72

◀ ◁ 1 OF 10 ▷ ▶ DELETE PRINT DONE

The control platform developed for Zero Ion combines a simplistic operator experience with a versatile and robust program. Features include barcode scanning, an SQL database server, aSPC recording, password protected recipes, contamination reports and graphs, data networking and virtually unlimited recipe storage.

Testing data including pass/fail status, contamination per in2/cm2, times, operator information, assembly notes, and more is available for printing, PDF writing and networking after every test. Reports are also logged into the searchable database and can be accessed at the touch of a button.



Aqueous TECHNOLOGIES **ZERO ION**
IONIC CONTAMINATION TESTER CALIBRATION

CURRENT STATUS:
SOLUTION RESISTANCE (MΩA-CMMS) 23 SOLUTION TEMPERATURE (°F) 64 REGENERATION FLOW (GPM) 0.0
ALCOHOL SPECIFIC GRAVITY 0.888 ALCOHOL CONCENTRATION (%) 63

CALIBRATE:
STEP 1. VERIFY ALCOHOL CONCENTRATION AND CALIBRATOR NAME:
CONCENTRATION (μG) ☒ 500 ☐ 1,000 ☐ 2,000
CALIBRATOR NAME:
CLICK TO CONFIRM CONCENTRATION AND OPERATOR NAME
STEP 2. CLICK START REGENERATION BUTTON:
STEP 3. PREPARE EXACT DOSE OF CALIBRATION SOLUTION:
STEP 4. INSERT DOSE AND CLICK START CALIBRATION CYCLE BUTTON:
STEP 5. OBSERVE RESULTS. CLICK EITHER THE DECLINE OR ACCEPT BUTTON:
ELAPSED TIME: RAW DATA: CALIBRATION FACTOR:

CALIBRATION HISTORY:
CALIBRATION NUMBER: 3 CALIBRATOR NAME: RAW DATA: 3039.522
CALIBRATION DATE: 2/20/2019 CONCENTRATION (μG): 2000 AVERAGE FLOW (GPM): 2.817 GPM
CALIBRATION TIME: 05:29 PM CALIBRATION FACTOR: 356 AVERAGE TEMPERATURE (°F): 76.1 °F
CALIBRATION DURATION: 0:5:37 ALCOHOL CONCENTRATION (%): 63%

◀ ◁ 3 OF 3 ▷ ▶ DELETE CALIBRATION PRINT CALIBRATION REPORT DONE

Calibrating the system is easy and intuitive. Highlighted instructions navigate a Zero Ion engineer through a three point calibration *low/mid/high* process. Data from calibration is automatically saved into a report and can be accessed remotely as well as through an internal search.

SPECIFICATIONS

WEIGHTS AND DIMENSIONS

28" x 53 1/4" x 53" (288 Lbs)

POWER REQUIREMENTS

110-120 VAC 10 amps 60 Hz
230 VAC 5 amps 50/60 Hz

TESTING METHOD

dynamic test method
spray under immersion

TEST SOLUTION

Isopropanol 99%
75% Isopropanol/ 25% Deionized Water (By Volume)

TEST CELL SIZES

12" x 12" / 30cm x 30cm
18" x 18" / 46cm x 46cm
24" x 24" / 61cm x 61cm
custom test cells available

INCLDUE ACCESSORIES

test solution
calibration solution
pipette
hydrometer
wireless keyboard and mouse

STANDARDS COMPLIANCE

IPC Tm 650
J-STD 001
WS 6536

NOISE LEVEL

60 db

CONTROL SYSTEM

Windows 10 operating system
Teguar all-in-one PC and graphic user interface

CALIBRATION SOLUTION

NaCl and H2O

CONSTRUCTION MATERIALS

hrs - hot rolled steel frame
silver hammer tone powder coat finish
304 gauge stainless steel seamless plumbing
polypropylene test cell

CONSUMABLES

test solution
calibration solution
DI media filter

AQUEOUSTECH.COM

Our website is filled with service support articles, videos, white papers and other information on industry best practices and cleaning profiles. As well as links to our webinars, in person training seminars and the *Reliability Matters* podcast.



PHONE & EMAIL

With more than 30 years of cleaning and cleanliness testing experience at Aqueous Technologies, our support team is trained to trace symptoms to cause and share solutions in a direct and friendly manner.

VIDEO LIBRARY

A wide variety of service support videos are available on the topics of installation, maintenance and even larger service procedures. Our video library assists Trident engineers and maintenance technicians with performing services as effortlessly as possible.

