



INCORPORATED
Precision Industrial System
SENSOR MANUFACTURER



D-2 Incorporated

Water Separation Instrument WSI Product Brochure

Part Number: JF-WSI
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The JF-WSI (WSI) Water Separation Instrument's Automated Measurement is the future of the Oil and Gas Industry as it saves labor, increases precision, decreases wait time.

Advantages of the D-2 WSI

1. ASTM D8073-16 Listed, ASTM D1655 Appendix X1.13.2, X1.13.2.2.
2. CAN/CGSB-3.23 as per section 9.5, the WSI D8073 can now be used per CGSB.
3. Automated measurement technology, reduce(s) human error and reduce(s) user training.
4. Accurate test of water separation characteristics of jet fuel
5. Rapid Fuel Assessment, takes 10 minutes to run, no operator oversight needed
6. Single Result, readings not impacted by weak surfactants such as SDA.
7. Replicates true surfactant impact on fuel filterability, more precise, no false negatives, API 5th Edition Filter Materials.
8. Sonic Mixer automates sample mixing: produces uniform emulsification.
9. Labor Saving - far easier to use, quicker to run with no false negatives or positives.
10. USB Data output capability, 100% data storage in PC FAT compatible files that are Date and Time stamped.
11. Unit monitors consumables and waste levels, eliminating the need for operator oversight.
12. Lower cost per sample run due to straightforward and fewer test supplies. Saving operator expenses.
13. Display Menu Screens Provide Easy Access to WSI Parameters.
14. See www.d-2inc.com for WSI Water Separation Instrument Demonstration Video on YouTube!



D-2 Incorporated's WSI is Providing a next generation test to better model field filter stand performance:

In order to provide a unique solution to the industry's field filter stand performance concerns, D-2 Inc. and Seta Analytics have combined to develop a new test technology and method. The WSI, short for Water Separation Instrument, is a modern, fully automated, water separation test designed for your laboratory environment. It provides a new industry test for fuel water separability, a test that better predicts full-scale filter stand performance. A test that readily discriminates weak from strong surfactant interference in filter performance. A test that is not sensitive to approved additives, but, rapidly and repeatedly detects the presence of non-approved additives. A test that uses modern 5th Edition API materials in line with the same materials used in your filter stand.

One of the most beneficial advantages to our WSI is the fully automated sample handling. To operate the instrument a sample and test filter is (are) mounted, (there upon the) test is fully automated by the press of the start test button. All actions are reported to the screen right up to final report. Simultaneously an internal SD memory card (records) a full data file. This method uses a patented Sonic Mixing Technology that allows us to eliminate any variables with water droplet size and ensures the same amount of energy is applied to each sample. By automating the process, the method truly eliminates the many issues with human sample preparation, which greatly increases accuracy.

The elimination of (a) weak surfactant's effect on the results eliminates any false negatives or changing of values when SDA is present. By eliminating the problems associated with weak surfactants we have greatly increased the precision and eliminated the need to change the values if SDA is present. An optional built in conductivity sensor can also be added to record user fuel conductivity.

Our technology has an easy to use, (large), modern touch screen display. This display walks the user through the process and alerts them to any issues with the sample. Our method fully automates the process, thus eliminating the many issues that can arise from human interaction in test variables. Even solvent waste bottles

are monitored and the device will alert when they are full.

A low cost expendable filter lowers the sample disposable cost. The ability to use low cost disposables will save the user considerable operating cost, in addition to the reduction in labor and training associated with current manual methods.

The solvent used in the method is widely available and is a Laboratory Grade Isopropyl Alcohol <IPA> Propanol.

Why Measure Filterability of Distillate Fuels and Hydro-Carbon Chemicals?

Filters are an integral part of the fuel system. The removal of dirt and water from the fuel is critical to aircraft maintenance, today's modern aircraft need fuel that is provided "fit for purpose". The ability to rapidly and accurately establish if a fuel will degrade these filters is an essential element of the aircraft's critically monitored fuel delivery system. Now a new test method that is far more accurate and easy to run is available.

WSI Specifications:

Measurement Range: 50-100 WSI Units

Conductivity: 0-2,000 pS/m

Temperature: 15°C to 35°C

Sample Size: 230 mL

Standard WSI Water Separation Instrument

*Repeatability: $0.1915 * (X + 16.393)$ mg/kg

*Reproducibility: $0.3894 * (X + 8.9616)$ mg/kg

Resolution: 0.1 (Digital Readout), 0.1°C, 0.1 pS/m

Sensor Type: 1 PPB Water Detector Optic, Platinum, AC Flow Thru

Calibration: SRM Materials, High and Low Values. NIST Traceable & ASTM D2624

Environmental Storage Temp: -40°C to 80°C

Power: Universal, AC 85-264 VAC 42-63 Hertz

Outputs: USB, Digital Display, FAT Compatible files

ASTM D8073-16 Test Method Listed, D1655

Appendix X1.13.2 and X1.13.2.2

Markings: CE, ROHS, UL, CAN/CGSB-3.23-2019

WSI Water Separation Instrument is the future of testing filterability of fuel.



Water Separation Instrument Applications and Support



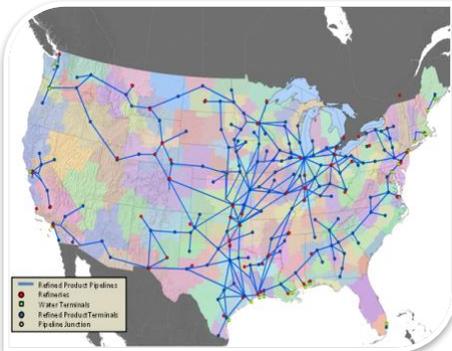
Refinery Run Down Lines

In the future you may be able to use the WSI at your refinery run down line. This will ensure all the fuel leaving your refinery will pass the Table 1 specifications for Water Separation.



Marine and Truck Offloading and Loading Terminals

When fuel is transferred from one mode of transport to another it often is required to meet Table 1 specs. With our WSI at your terminal, we can fully automate this process. Our rapid screening process decreases wait time, also eliminates any down time due to false negatives.



Pipeline Distribution Terminals

Pipeline Distribution Terminals are an ideal location for use of the WSI. Due to transfer of product these facilities must meet the specifications when transferring fuel. By increasing the accuracy and decreasing the wait time, your distribution terminals will run more smoothly.



Fixed Base Operators (Airports)

Rapid screening of fuel filterability is extremely important for airports. As the fuel enters the wing of the aircraft, it must be fit for use. First thing sampled in an incident is the fuel; make sure your fuel; passes the test for filterability with the WSI.



D-2 Incorporated Direct Customer Support

Fully Supports all of our equipment with direct technical support. We are an ISO 9001:2008 Quality Certified Manufacturer. All of our equipment and services are covered by our one year limited warranty.

Fuel Filterability

JF-WSI (WSI) Water
Separation Instrument

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