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D-2 Incorporated

Hydro-Light/Digital Free Water Detector,
Product Brochure

JF-WA1: For Commercial Use

JF-WA1-N: Navy Version

NSN:6640-01-642-9285

JF-WA1-A: Air Force Version

NSN: 6640-01-680-6773

JF-WA1-M: U.S. Marine Version

Revision 7: 28-SEP-2022
Drawing Number: 480-001



D-2 Incorporated has improved its industry leading measurement instrumentation for the ASTM Test Method D3240, the measurement of free water in Aviation Turbine Fuel, aka Jet Fuel. The Hydro-Light now offers its same high precision measurement with a longer lasting calibration period and High Stability verification targets (Patent Pending).

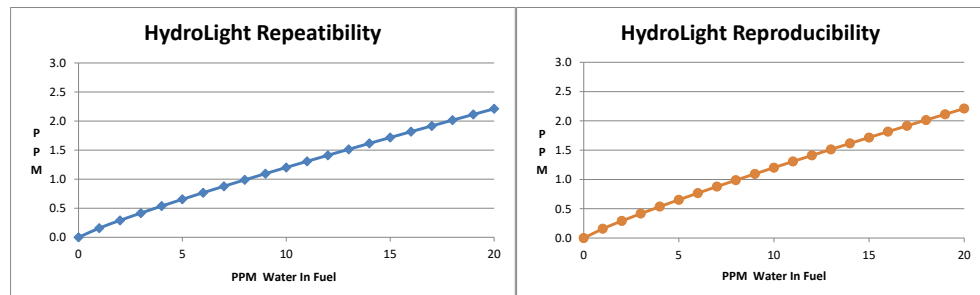
What are the advantages of the Hydro-Light?

1. Listed in ASTM D3240 “Standard Test Method for Undissolved Water in Aviation Turbine Fuels”
2. Fully automated device produces greater accuracy and reliable results.
3. Comes with a new High Stability verification standard shuttle. This now provides field confirmation that the instrument has maintained its factory calibration. See D-2’s website for video demonstration, www.d-2inc.com.
4. Minimal maintenance required. Since the technology used is optical, maintaining cleanliness is the only requirement, which is best achieved by storage within the supplied carrying case between uses.
5. Highest precision of any instrument available for test method ASTM D3240. Precision is approximately four times as accurate in terms of repeatability and reproducibility. See graph from independent third-party study on page 3.
6. Uses LED technology and can last > 45 years even if left on the entire duration.
7. USB Connectivity enables further benefits:
 - A. The device can be powered through a USB port via a computer or portable battery.
 - B. Allows the transfer of data to a PC in real time.
8. D-2 has become a certified manufacturer of the 25mm test pads used per ASTM D3240 test requirements. No need for a secondary source.
9. Measures full range of 0-50 ppm with one sample size.
10. Dramatically reduces your current repair & maintenance costs with the Hydro-Light.
11. Available Models:
JF-WA1-N: NSN 6640-01-642-9285
JF-WA1-AF: NSN 6640-01-680-6773
JF-WA1, JF-WA1-M: High Stability Shuttle

Highest Repeatability and Highest Reproducibility in ASTM D3240 thanks to automated precision measurement and LED technology.

Our JF-WA1 Hydro-Light was adopted into ASTM D3240 in 2009. The Hydro-Light was accepted into the method after displaying remarkable results during the full ASTM ILS independent precision study. Precision results are shown in the graph below. The Hydro-Light posted greatly improved precision over older black light type instruments.

Also, by fully automating the measurement process, we have reduced operator time and training, and eliminated human error from affecting the results. Furthermore, saving you significant time and money in operations, and eliminating laboratory down times.



Graph is supported by ASTM RR 1156, ASTM D3240.

The Higher Stability True Fluorescent targets, as seen below, are installed in one verification shuttle that is compatible with the existing Hydro-Light testing chamber. The high range side is on one side of the shuttle and the low range side is on the reverse side.

Measurement Device Field Verification



The Hydro-Light comes with the capability to verify the calibration of the device. The calibration remains valid, provided the instrument reads within the printed ranges on each side of the shuttle.

The Hydro-Light comes supplied with a new highly stable, true fluorescent, verification shuttle that is used in the calibration of the device at the factory. This shuttle will accurately determine if the instrument has held its calibration.

Note: ASTM D3240-22 method was revised, advising operators that calibration is valid as long as the verification shuttle reads within tolerance.

Now when using the High Stability Shuttle (480-291), the user can verify correct calibration prior to each use, no longer requiring annual return for factory calibration.

Note: As part of the factory calibration, we will provide new standards for your shuttle. Also, as part of the factory calibration we can update your measurement device to the **High Stability** verification shuttle. There is no “re-training” for the device’s use.

It couldn’t be simpler. You just slide the verification shuttle into the Hydro-Light and read the digital output. The shuttle has the standard values printed on each side for the high/low values. If the instrument readings fall outside the specified range/tolerance, simply return to D-2 for a certified factory calibration.

For a full demonstration of the calibration verification process please see our website at www.d-2inc.com.

Field Versatility

Another important aspect of the Hydro-Light is the ability to use this device in the field. The Hydro-Light, with the correct accessories, can be used anywhere in the world without the need for dedicated electrical power. The Hydro-Light can be powered with our optional, portable, USB Battery. This battery allows for 24 hours of continuous operation for the Hydro-Light.

Also included, as part of the standard equipment, is the rugged Carrying Case (JF-WA1-CC). This case is waterproof and certified to Military Specifications, (IAW MIL-STD-810). This should be used for storage of the measurement device and when the device is sent back to the factory for calibration.

The JF-WA1 Field Verification procedure provides immediate digital results confirming the factory calibration.

An Ergonomically improved design allows the user to simply push the slide fully into the device to obtain a digital reading on the display. Since the instrument is continually sampling, the user should allow at least two display updates to guarantee a full measurement cycle.

Easy to use shuttle design reduces human interaction with the pad and helps improve the precision of the test.

Below, each side of the original verification shuttle can be seen. It has been used successfully in the field since 2010.



Hydro-Light Accessories

Items shown are not required for operation of the device, but they all increase “Field Versatility”.



Hydro-Light 25mm Test Pads

D-2 Inc has become a certified manufacturer of the standard test pads that are used in the testing, per ASTM D3240. Sold as a box set of 50, each individually packed in a foil wrapper with a two-year viability date stamped on the package.



Hydro-Light Portable Battery Pack

The JF-WA1-BAT is a portable battery pack for powering the JF-WA1 Hydro-Light. The battery connects via a JF-WA1-USB cable, which allows for field testing. (Cable sold separately) The battery pack can supply 1.2 Ah. The instrument will operate for 24 hours on a single charge. With each JF-WA1 test taking only seconds; the battery allows many samples to be taken before a recharge is needed.



Standard Mini USB Cable

The JF-WA1-USB is a Standard A to 5 Pin Mini B, 6' USB Cable. It is used to either power or serially communicate with the JF-WA1 Hydro-Light.



D-2 Incorporated Direct Customer Support

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

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