

Water Activity for volatile samples

metergroup.com/food/products/aqualab-tdl-water-activity



The sophisticated technology volatile samples deserve

AQUALAB TDL

The volatility problem

Measuring water activity in samples such as sauces, dressings, tobacco, spices, or teas has traditionally been difficult. The reason: they contain volatile compounds that interfere with chilled mirror and capacitance sensors.

Laser speed. Laser accuracy. Laser simplicity.

As world experts in water activity, it wasn't enough to engineer an instrument that directly measured water activity in most foods. So we created the TDL, which uses a laser sensor capable of accurately measuring even the most difficult volatiles. It's easy to use and takes only minutes to measure any sample—even soy sauce, pure alcohol, gasoline, and tobacco. In fact, CORESTA (Cooperation Centre for Scientific Research Relative to Tobacco) specifies the TDL as the only sensor that can accurately measure water activity in tobacco products. Respected by customers and third party scientists alike, the TDL delivers readings you can completely trust no matter what the sample contains.

Cuts through the volatility problem with laser precision

When it comes to measuring water activity of volatiles, readings don't get more precise. That's because the TDL uses a laser tuned to the absorption band of water. The laser beam—less than one nanometer wide—locks on to water molecules no matter what the concentration of volatiles. The TDL is even able to correctly measure the water activity of pure alcohol.

Measuring volatile compounds has never been easy. Until now.

Despite being a complex instrument, the TDL is easy to use. Its sensor has no moving parts and is housed in a fully sealed sample chamber. Best of all, it doesn't require user calibration. You're five minutes away from an accurate water activity no matter what the sample is.

Accurate readings in only 5 minutes

The TDL's laser takes five minutes to make a measurement of most samples. Compared to other instruments that take almost an hour, this adds up to significant time savings and quicker quality measurements no matter what ingredients are in your sample.

Volatility meets its match

Laser accuracy. Low-maintenance usage. Lightning fast measurement. The TDL stands alone, letting you measure water activity in previously impossible-to-measure samples.

Features

- Fast: water activity readings in about 2 minutes
- Accurate: $\pm 0.005 a_w$
- Accurately read any sample, including those with volatiles
- Verifiable with independent salt standards
- Repeatable: different users, different locations, same result
- Portable: weighs just 7 pounds
- Easy to use: precise a_w readings with minimal training
- Secure: offers administrative control over calibration and data

Specifications

Sensor Type	Tunable diode laser
Water Activity Accuracy	$\pm 0.005 @ 25 \text{ }^\circ\text{C}$
Water Activity Resolution	0.0001 a_w
Water Activity Range	0.000 – 1.000 a_w
Water Activity Repeatability	0.001 a_w
Read Time*	$\leq 5 \text{ min}$
Temperature Control	25 $^\circ\text{C}$ standard; 15 to 50 $^\circ\text{C}$ (with calibration)
Temperature Adjustment Increment	1 $^\circ\text{C}$



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Sample Temperature Accuracy*	±0.2 °C
Sample Temperature Resolution	0.01 °C
Temperature Stability	User-selectable range, internal thermoelectric controlled
Sample Dish Capacity	7.5 ml recommended (15 ml full)
Program Identification	Alphanumeric, programmable to display product name, lot, or product ID number
Data Storage	8,000 readings
Data Communications	USB
Display	128 x 64 pixel graphical display with backlighting
Case Dimensions	26.7 x 17.8 x 12.7 cm
Case Material	Machined aluminum frame; Lustran 433 (ABS) with fire retardant
Weight	3.1 Kg (6.83 lbs.); instrument only: 6.55lb = 2.97 kg
Power	110 to 220 VAC, 50/60 Hz warranty: one year parts and labor
Operating Environment	4 to 50 °C; 90% relative humidity (noncondensing)
Certifications	CE
Warranty	One year parts and labor

*AQUALAB TDL is calibrated to a NIST traceable temperature standard.

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