

Technical Information

1

■ Knurled thumb screws require no tools to open the case and sensor chamber for maintenance.

2

■ Quality customized parts reduce component count for longest service intervals.

3

■ Patented sensor technology. (*Chilled-mirror dewpoint method*)

4

■ User-selectable internal temperature control.

5

■ Accurate and fast: ± 0.003 on samples from 0.100^* to $1.000a_w$, in 5 minutes or less.

*Call Decagon for lower a_w requirements.

6

■ Verification standards are available to obtain optimum performance.

7

■ Simple operation. Just close the drawer and turn the knob.



■ *Precise temperature control 15–40°C $\pm 0.2^\circ\text{C}$ using pushbuttons. AquaLab does the rest.*

Save valuable bench space and eliminate the extra cost of a bulky water bath, too.

AquaLab® Series 3 TE gives you a temperature-stable sampling environment without an external water bath. The “TE” stands for *thermoelectric* (Peltier) control. AquaLab TE allows you to choose (on-screen) a

temperature from 15 to 40°C. You select the precise temperature control, to $\pm 0.2^\circ\text{C}$ using pushbuttons and AquaLab does the rest. Temperature is expertly managed with internal thermoelectric components. No additional equipment or

messy connections required. Save your valuable bench space and eliminate the extra cost of a bulky water bath, too. ■

**AQUA
LAB**

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AquaLab Specifications

Water Activity Meter Series 3 model TE

Temperature control:

15° to 40°C ±0.2°C.

Operating environment:

5 to 43° C (41 to 110° F)

20 to 85% relative humidity.

Sensors:

1. Infrared sample surface temperature.
2. Cooled-mirror condensation dewpoint.

Universal Power:

110V to 220V AC, 50/60Hz.

Display:

20 x 2 alphanumeric dot-matrix LCD with backlighting.

Accuracy:

±0.003 a_w

Range:

0.100* to 1.000 a_w

*Call Decagon for lower a_w applications.

Resolution:

±0.001 a_w

Data communications:

RS232A compatible, 8-data bit ASCII code, 9600 baud, no parity, 1 stop bit (cable included).

Weight:

3.2 kilograms

Shipping Weight:

5.2 kilograms

Warranty:

Three year, parts and labor.

Case material:

Powder painted aluminum.

Sample dish capacity:

7ml recommended (15ml full).

Enclosure size:

24.1 x 22.9 x 8.9 cm.



AquaLab Series 3 TE offers you the industry's best water activity measurement (±0.003 accuracy) in 5 minutes or less. Guaranteed. ■

Reasons for sample temperature control:

Research purposes.

- Comparison of the a_w of different samples independent of temperature.
- Effects of temperature on sample's a_w .
- Accelerated shelf-life studies.
- Packaging requirements.
- Isotherm studies.

Government or company regulations.

- Temperature may be essential when measuring a_w levels near critical values especially government regulations or critical control points. The most common specification is 25°C, though 20°C is sometimes indicated.

Extreme ambient temperature fluctuations.

- If your lab temperature varies by ±5°C daily, and you require better than 0.01 a_w precision, you may want a temperature controlled model.

Temperature affects water activity by changing:

- Water binding.
- Dissociation of water
- Solubility of solutes.
- State of the matrix.

The effect of temperature on water activity is product specific. One cannot predict the direction of change of water activity with temperature, since it depends on how temperature affects the above factors product specific. For this reason, accurate measurement is necessary. ■

Optional Verification Standards:

24 single-use vials per box, 3 boxes per carton, single or assorted formulas.

Documentation with each box:

Certificate of Analysis.
Materials Safety Data Sheet (MSDS).

Shelf life: Expiration 1 year.

Salt Formulas:

Sodium Chloride (NaCl):
0.760 a_w 6molal
Lithium Chloride (LiCl):
0.500 a_w 8.5molal
Lithium Chloride (LiCl):
0.250 a_w 13.3molal

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