TEWAMETER® TM 300

Courage & Khazaka

Tewameter® TM 300

BENEFITS

- Reproducible and accurate TEWL measurement
- Measures TEWL continuously without influencing the skin surface
- Stable measurement achieved quickly with no waiting time between measurements
- Small probe head size minimizes influence of air turbulence inside probe
- Low weight has no influence on skin structure
- Does not require frequent, complicated and time consuming recalibration
- Calibration data stored in the probe
- Simple check calibration to ensure accuracy of measurements
- Measure skin surface water loss (SSWL)
- A range of accessories are available for different applications

Transepidermal water loss (TEWL) is the water that passes through the skin and evaporates from the surface in order for the outer cell layers to remain sufficiently moisturised. It is measured in g/m2/h and can be used to measure skin functionality, in particular barrier function.

The Tewameter® is a world renowned TEWL measurement device. It is an open chamber measurement device developed in 1990 which has been used in countless scientific studies since then. The Tewameter® TM 300 is the culmination of many years experience in production of transepidermal water loss equipment, feedback from users and advances in electronics. It is a giant step forward offering the user greater flexibility, stability and speed than was previously possible.

MEASUREMENT PRINCIPLE

The open chamber method of TEWL measurement is based on the diffusion principle in an open chamber

$dm/dt = - D * A * dp/dx$

Where: A = surface in m2, m = water transported (in g), t = time (h), D = diffusion constant (=0.0877 g/m/h(mm Hg), p = vapour pressure of the atmosphere (mm Hg), x = distance from skin to point of measurement (m). The probe consists of a hollow cylinder with

two pairs of sensors measuring temperature and humidity, one pair slightly higher than the other. It measures the moisture at two different sites and from this the TEWL can be calculated.

FIELDS OF APPLICATION

- Ideal for product development, claim support, efficacy testing, and multicentric studies
- Can be used for objective clinical assessment in dermatology and occupational medicine
- Can be used for monitoring new-borns and detecting skin damage
- In-vitro testing of permeability
- Assessing TEWL and SSWL in a range of research applications
- Suitable for sweat studies

AVAILABLE FORMATS

MULTIPROBE ADAPTER SYSTEM

The Tewameter® TM 300 probe can be plugged in to all of the computer driven MPA devices (MPA 2, MPA 6, MPA 10 & Cutometer® dual MPA 580)

MULTI DISPLAY DEVICE MDD 4

The Tewameter® TM 300 is available as a stand alone device through the MDD 4. Supplied with a room condition sensor it is possible to add a further two measurements. In addition to the colour screen for displaying results the MDD 4 can be connected to a computer and measurements recorded using the MPA software.

WIRELESS PROBE

Measurements are transmitted via radio to a small receiver unit RR 200 which is connected to the computer at the USB port. The values can be transmitted from a distance of 5-10 m. The values are collected using special MPA Wireless software. The probes are battery operated.

TECHNICAL INFORMATION

Dimensions: Cylinder: height 2 cm, Ø 1 cm, Weight: 90g, Probe length: 15.3 cm, cable length: 1.3 m Resolution: Humidity: ±0.01 % RH, Temperature: ±0.01 °C; Accuracy within 10°C to 40°C and for TEWL values lower than 70g/m2/h: relative humidity (RH): ±1.5% RH in the range of 30% RH to 90%; ±2.5% RH in the range of 90% RH to 100% RH; ±2.5% RH in the range of 0% RH to 30% RH; waterloss: ±0.5 g/m2/h for RH= 30%; ±1.0 g/m2/h for RH =30% temperature: ±0.5 °C. Technical changes may be made without prior notice.