

A close-up photograph of a person's shoulder and neck, showing smooth, dark skin. The person's head is tilted slightly, and their chin is visible at the top of the frame. The lighting is soft, highlighting the texture of the skin.

DELFIN

VapoMeter® (VX) Presentation

2026

Introducing

The New

VapoMeter® (VX)

At Delfin Technologies, we empower better lives through innovative solutions that measure, analyze, and unlock valuable insights into skin health.









What Does It Measure?

Transepidermal water loss (TEWL)

- ✓ Measures TEWL (transepidermal water loss) in vivo and the evaporation rate in vitro in g/m²h
- ✓ Closed chamber measurement principle
- ✓ Water evaporation through skin is detected with humidity sensor
- ✓ Application areas:
 - Skin barrier function evaluation
 - Product R&D, claims validation, performance characteristics of skin care products
 - Effect of skin care, treatment and nutrition
 - Skin irritation
- ✓ In vitro studies*

*VapoMeter® SWL5 model available for diffusion cell / in vitro studies

What's New in VapoMeter® (VX)?

Key innovations

- ✔ Smart ergonomic design with high-resolution display
 - ✓ Increased user convenience with optimized screen placement and clear visuals for both right and left-handed users
- ✔ Faster & More Accurate Calibration Process
 - ✓ Automatic sensor calibration for even more precise and effective measurement
 - ✓ On-screen prompt indicates when calibration is required
- ✔ Built-in skin temperature sensor
 - ✓ Temperature measured directly at the contact site
 - ✓ TEWL and skin temperature measured simultaneously
 - ✓ Helps quality control, and better interpretation of results
- ✔ Remote software updates
 - ✓ Built-in connectivity ensures continuous access to the latest features and improvements



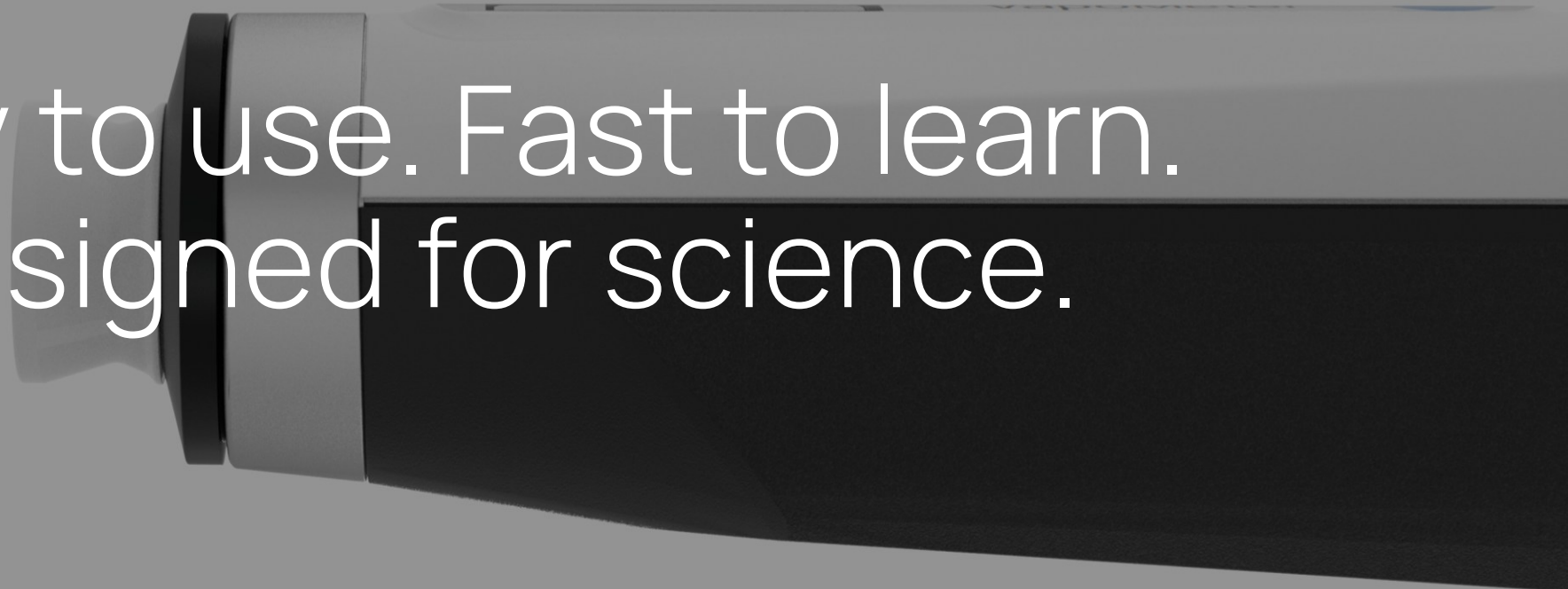
What's New in VapoMeter® (VX)?

Key innovations

- ✔ Bluetooth & Wi-Fi Connectivity
 - ✓ Built-in connectivity ensures seamless data transfer without cables
- ✔ Intelligent guidance and error prevention
 - ✓ Improves inter-operator repeatability and study robustness
 - ✓ Step-by-step intuitive guidance ensures accurate measurements every time.
 - ✓ Enhanced accuracy and reproducibility thanks to a stricter zero reference
- ✔ Single-Interface Configuration
 - ✓ Only one adapter for more accurate and stable measurement
- ✔ Sensor check procedure
 - ✓ Enables routine performance verification before studies
- ✔ ESG-friendly, reusable design
 - ✓ Supports sustainability and corporate ESG goals



INTRODUCING THE NEW VAPOMETER® (VX)



Easy to use. Fast to learn.
Designed for science.

Skin measurement devices that advance skin science

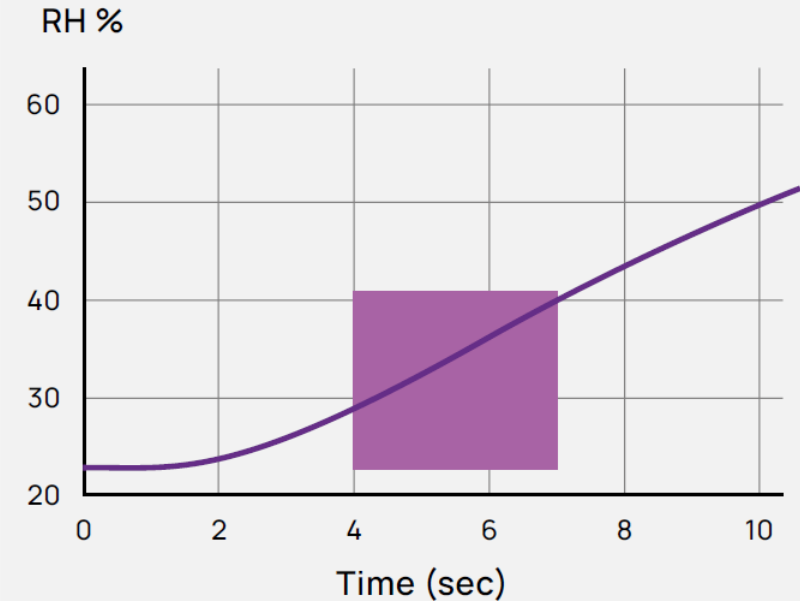
Easy Operation with Trusted Science

Same validated method. Modern experience.

- ✓ Benefits of optimized closed-chamber
- ✓ Unaffected by ambient airflows like breathing, air conditioning, etc.
- ✓ Orientation free and can be used at any angle
- ✓ Has no saturation at high TEWL values
- ✓ Measurement range up to 300g/m²h
- ✓ Fast, measuring time 7 – 12 seconds depending on the skin area RH

Measurement Precision Improved by 25%

Measurement principle. TEWL is calculated from the RH increase in the closed chamber.





Smart Simplicity. Reliable Science.

Powered by Delfin's validated closed-chamber technology

The new VapoMeter® (VX) delivers fast and repeatable TEWL measurements that are independent of air movements, making it ideal for both laboratory and on-site testing. With improved usability, plug-in calibration, and real-time skin temperature tracking, VapoMeter® (VX) helps you focus on results.

Advanced algorithm accounts for local temperature and humidity dynamics — for more stable, repeatable TEWL results.

VapoMeter® (VX)

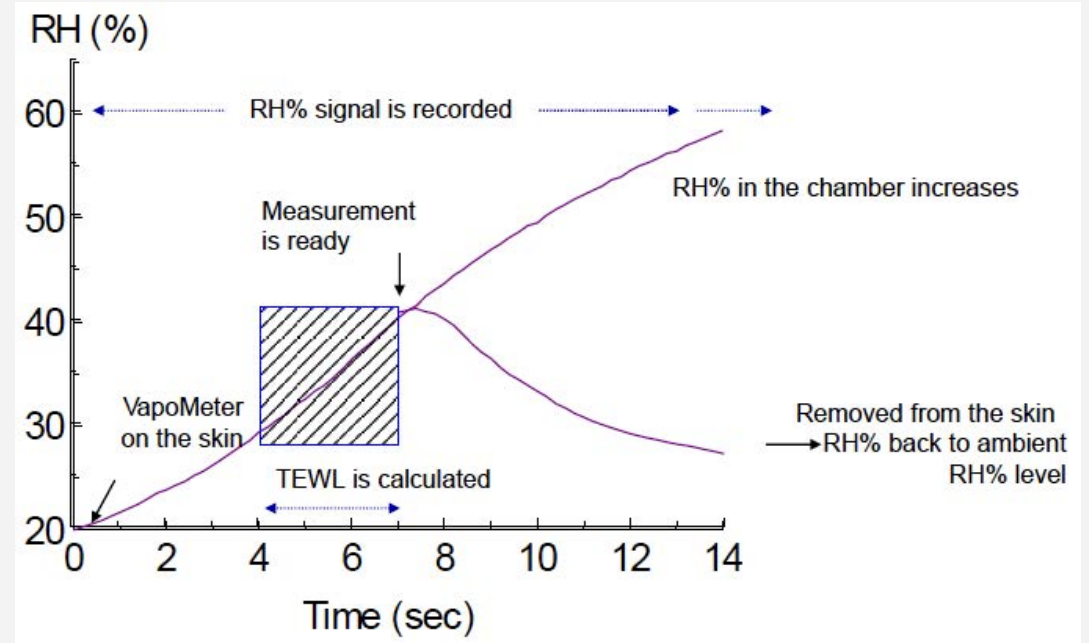
Measurement Principle

The VapoMeter® (VX) measures TEWL using a closed-chamber method. When the probe is placed on the skin, it creates a sealed environment where relative humidity (RH%) increases due to water vapor evaporating from the skin surface.

Once the signal stabilizes ("measurement ready"), the device calculates TEWL based on the rate of humidity increase within the chamber.

After removal, the humidity returns to ambient levels, confirming the dynamic response of the system.

This method provides a direct, contact-based, and reproducible assessment of skin barrier function.



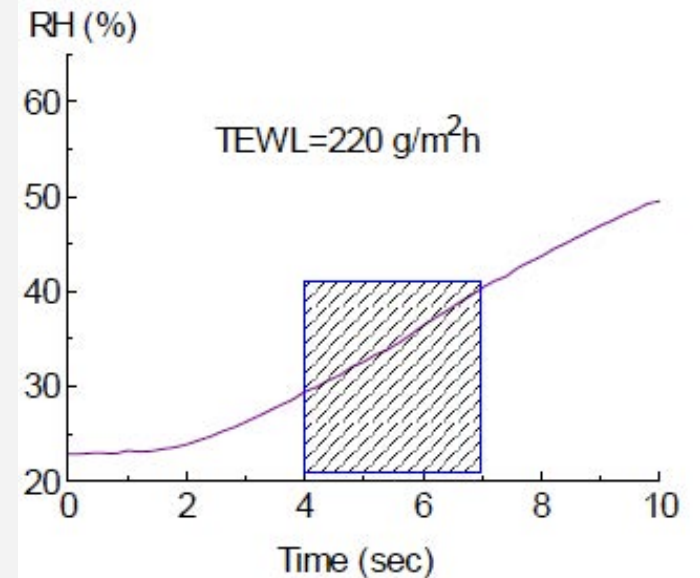
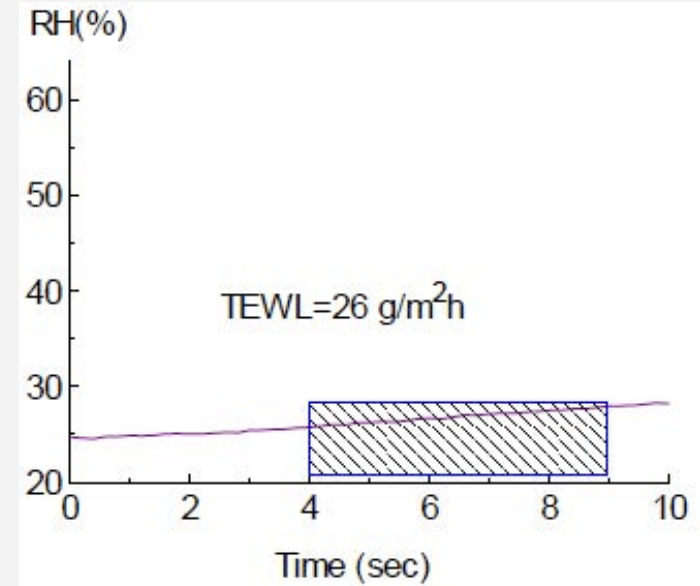
VapoMeter® (VX)

Measurement Principle

Humidity sensor in the closed chamber

- Humidity inside the closed chamber increases
- water evaporation rate ($\text{g/m}^2\text{h}$) is calculated from the slope

Nuutinen J., Alanen E., Autio P., et al. A closed unventilated chamber for the measurement of transepidermal water loss. Skin Res. Technol. 9: 85-89, 2003



Utilized in Various Study Settings Across Industries

Measurement and study applications



Skin measurements (In vivo)

- Skin barrier function, Penetration studies
- Effect of skin care, treatment and nutrition
- Wound healing
- Sympathetic skin response, Hyperhidrosis
- Skin irritation
- Water loss through nails, scalp, lips
- Animal health and Zoology



Diffusion cell measurement (In Vitro)

- Basic idea is to ensure *in vitro* sample integrity when applied to Franz Cell / Diffusion Cell
- Suitable adapters for diffusions cells



Wide Applicability in Cosmetic Product R&D

Cosmetic claim validation

- ✓ Skin Barrier Protection / Repair
- ✓ Reduction in Water Loss
- ✓ Occlusive or Protective Effect
- ✓ Soothing / Sensitive Skin Claims
- ✓ Comparison of Product Performance
- ✓ Pre-Post Stress Recovery
- ✓ Skin Ageing
- ✓ Atopic Dermatitis
- ✓ Peeling skin (desquamation)
- ✓ Roughness
- ✓ Pollution
- ✓ Scalp sensitivity
- ✓ Nail hydration



Pharmaceutical Studies And Clinical Trials

Pharmaceutical research applications

- ✓ Atopic Dermatitis, Eczema, and Psoriasis
- ✓ Barrier Damage from Topical Treatments or Devices
- ✓ Safety and Irritation Testing (Patch or Repeat Insult Tests)
- ✓ Wound Care and Healing Dynamics
- ✓ Diabetes and Peripheral Skin Health
- ✓ Contact Dermatitis: Occupational or Drug-Induced
- ✓ Systemic Drug Impact on Skin Barrier
- ✓ Photodamage and Environmental Exposure Studies
- ✓ Skin sample integrity (in vitro)

Benefits that Save Time And Trouble.

VapoMeter® (VX) supports your research

- ✔ Objective data collection
- ✔ Efficacy and safety assessments
- ✔ Regulatory compliance
- ✔ Product development research
- ✔ Cost-effectiveness in research
- ✔ Understanding of skin physiology and biology
- ✔ Investigating skin diseases
- ✔ Personalization and innovation
- ✔ Evaluating the impact of environmental factors on skin





Trusted. Validated. Proven.

Scientific reference

- ✔ [List of reference](#) for scientific studies related to VapoMeter® and transepidermal water loss (TEWL) measurements.
- ✔ 1000+ Scientific articles
- ✔ Trusted by leading companies in cosmetics and pharmaceutical field



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