

3D MMD

Fabric Moisture Management Analyser

3D MMD follows the spreading of a controlled liquid dose, wetting development on both fabric surfaces and subsequent drying. Dual-sided IR imaging and an adjustable specimen angle enable comparative evaluation of different materials and liquids.



Upper and lower IR imaging • Adjustable specimen angle
4.3-inch touchscreen PLC/HMI • Time-dependent 2D and 3D analysis

Measurement principle and analysis

A controlled liquid dose is applied to the specimen. Upper and lower infrared cameras simultaneously observe IR contrast between wet and dry regions. The wetting boundary, spreading area and their change over time are evaluated in dedicated software. The method visualises wetting and drying behaviour without relying on temperature measurement.

Test sequence

01 Prepare the specimen

Mount the fabric in the holder and set its initial inclination.

02 Apply the liquid

Select the liquid type and volume for the experiment and apply a controlled dose.

03 Observe both surfaces

Follow spreading and the onset of wetting on the lower surface. Adjust the angle as required by the test plan.

04 Evaluate drying

Review changes in the wet region over time using graphical and numerical analysis.

Analysis outputs

- Surface spreading area and spreading rate
- Wetting transfer time from the upper to the lower surface
- Drying profile and the evolution of the wet region
- Effects of specimen angle, liquid type, coatings and finishes

Software features

Dedicated analysis software supports combined evaluation of upper and lower surface images. Time-dependent 2D and 3D visualisations, graphs and numerical results support comparative examination of wetting, transfer and drying stages.

University and industry cooperation

Developed through cooperation between Ege University and PROWHITE Teknoloji A.Ş. The patent belongs to Ege University; manufacturing and sales are carried out by PROWHITE Teknoloji A.Ş. under licence.

Applications and specifications

Technical and functional textiles; sportswear and outdoor fabrics; medical and hygiene textiles; protective clothing; home textiles; nonwovens; coating and finishing development; university and R&D laboratories.

Study area	Example liquids
Reference liquids	Distilled or deionised water; demineralised water; dilute surfactant solutions.
Sweat and sportswear	Acidic or alkaline synthetic perspiration; sweat-like liquids with different salt concentrations.
Hygiene and medical	Synthetic urine; 0.9% NaCl solution; low-viscosity hydrophilic solutions.
Home textiles	Dilute detergent or softener-residue solutions; beverage simulants.
Coatings and finishes	Liquids for comparing fluorine-free repellent, silicone-based or hydrophilic finishes.
Industrial liquids	Low-viscosity oil-water emulsions; coolant and process-water simulants.
Viscosity comparison	Water; 10-30% glycerol-water mixtures; dilute polymer solutions.

Technical specifications

Parameter	Description
Imaging	Upper and lower IR cameras
Analysis method	Non-contact IR-contrast imaging
Specimen position	Adjustable inclination
Operator panel	4.3-inch touchscreen PLC/HMI
Software	Time-dependent 2D and 3D analysis
Dimensions W × D × H	640 × 655 × 575 mm
Weight	16 kg

Request a quote

PROWHITE Teknoloji A.Ş.

www.prowhite.com.tr | info@prowhite.com.tr | +90 212 671 02 58

Gökevler Mah. 563. Sokak No: 9/A, 34516 Esenyurt / İstanbul / Türkiye