

KES-QM

Warm/Cool Feeling Measurement Tester

The sensation of coldness or warmth when skin is touching an object, is referred to as the “coldness and warmth feeling”, which varies depending on the amount of heat transferred from the skin to the object. This device measures such feeling by evaluating the “ q_{max} ” value (peak heat flux).

KES-QM can be used to evaluate such products as bedding material meant to offer a feeling of coldness in summer, and underwear material meant to offer contact warmth in winter.

Measurement Example

- Evaluation of mattress pad's feeling of coolness
- Evaluation of coolness of cooling gel sheet
- Thermal sensation measurement for underwear
- Automotive interior product texture evaluation
- Evaluation of refreshing properties of cosmetics

Test standard:

- JIS L 1927 Textiles-Measurement method of cool touch feeling property
- GB/T 35263-2017 Textiles-Testing and evaluation for cool sensation at contact instant
- CNS15687, L3272 Method of test for the instantaneous cool sensation fabrics
- Method of test for the instantaneous cool sensation fabrics



FEATURES

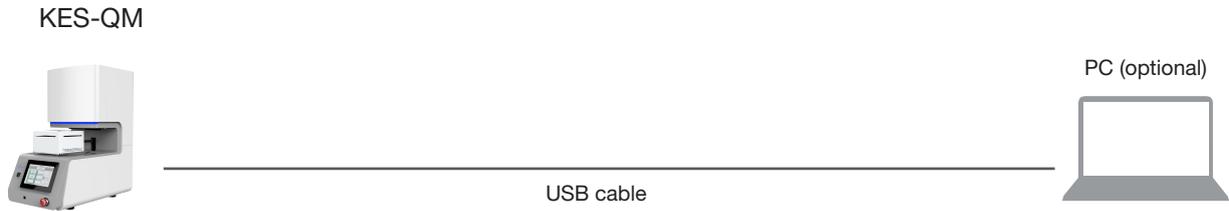
● **Design that simulates touching an object**

The load and contact area of the heat plate that contacts the target sample are designed to simulate the feeling you experience when touching an object. This technology allows a maximum heat transfer rate that is closer to human sensation can be measured.

● **Up to 10 consecutive automatic measurements**

Automatic measurements can be performed up to 10 consecutive times. The automation has also improved the accuracy of the measurement values.

System configuration



Measurement screen sample on the main unit touch panel



▲ Thermophysical property (q_{max})

Acquired data

Measurement item	Characteristic value	Measured quantity	How to read the data
Thermophysical property	q_{max}	Peak value of heat flow	The larger the value, the colder it feels

PC output data

The q_{max} values are displayed using the dedicated software. Data is saved in the CSV format for each measurement. Note: Waveforms are not displayed.

KES-QM Warm/Cool Feeling Measurement Tester

Dimensions / weight (approx.)	W330 × D620 × H664 (mm) / 42 kg	Heater control	Combination of PID control and output in voltage proportional to temperature difference
Power supply	100 to 240 V AC, 50/60 Hz Maximum power consumption 250 W	Configurable temperature	T-Box: Room temperature to 40°C (increments of 0.1°C) Thermo Cool: 10°C to 40°C (increments of 0.1°C)
Measurement environment	20~30°C / 50~70%RH 20 to 30°C / 50 to 70%RH No condensation. Keep the temperature and humidity stable during measurement. (Standard conditions: 20°C / 65%RH) Note: The tester must be installed at a location with minimal effect from airflow and vibration.	Sample dimensions	180 × 180 mm (standard) Thickness: 25 mm (or less)
Measurement unit configuration	T-Box: 30 × 30 (mm) Thermo Cool: 118 × 118 (mm)	Display	Touch panel system: Projected capacitive type Screen size: 7 inch wide Resolution: 800 × 480 (WVGA) Effective display area: 152.4 × 91.44 (mm)
Temperature display	Unit: Celsius Minimum display: 0.1°C	Configuration	Stabilization time: 0 to 60 (min), configurable with increments of 1 min Operation sound: ON/OFF switchable Display of data transfer confirmation screen: ON/OFF switchable
Coldness and warmth feeling evaluation value	q_{max} [W/cm ²]	Data check	Touch panel display: Maximum 10 × 3 (times) Import using application: Maximum 30 (times)
Number of automatic measurements	1 to 10 times	⚠ Precautions	● To use this product correctly and safely, be sure to thoroughly read the Operation Manual before use.

Please be aware that the contents are subject to change without notice.



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