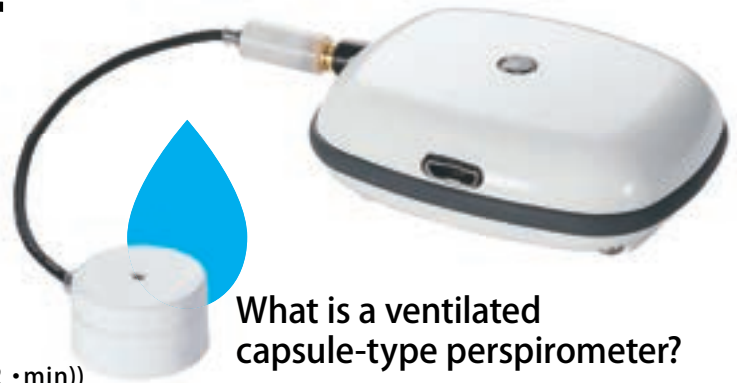


Wearable sweat sensor SKW-1000



A wearable sensor that utilizes a ventilated capsule-type perspirometer*.

● It is possible to measure the local sweat rate (unit: $\text{mg}/(\text{cm}^2 \cdot \text{min})$) without restraint during exercise and daily life.

[Product dimensions]

55 mm × 17 mm × 46 mm (body)

$\varnothing 20 \times 11 \text{mm}$ (sensor part attached to the skin)

● It is also possible to replace only the sensor part attached to the skin.

● Compatible with Bluetooth LE.

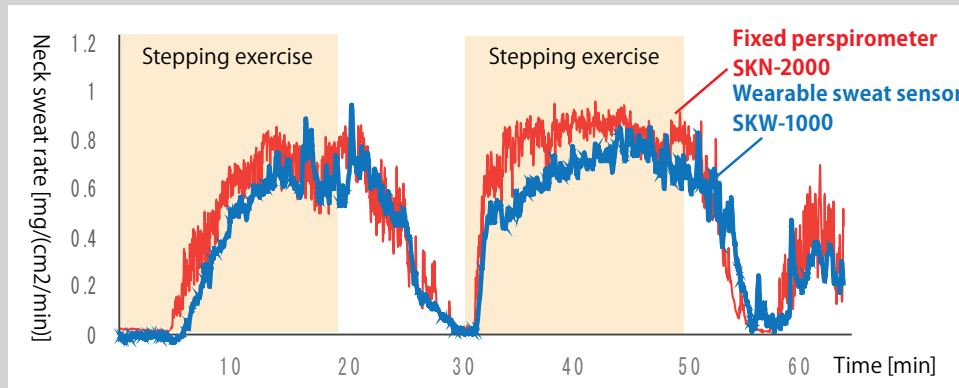
• Data can be recorded using a smartphone, tablet, or PC

What is a ventilated capsule-type perspirometer?

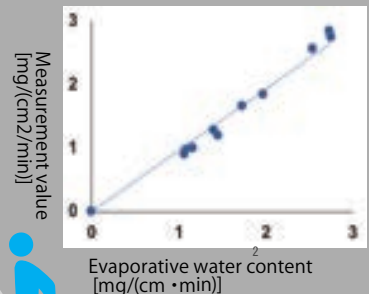
This is the standard for sweat measurement, capable of measuring changes in the local sweat rate with high response and high accuracy. Air is supplied to a capsule covering the skin, and the humidity of the air before and after it passes through the skin is measured using two humidity sensors, and the sweat rate is quantified based on the measurement value differential.

Comparison with conventional perspirometers

The SKW-1000 is capable of measuring the amount of sweat produced during light exercise and activities of daily living, similar to conventional fixed devices.

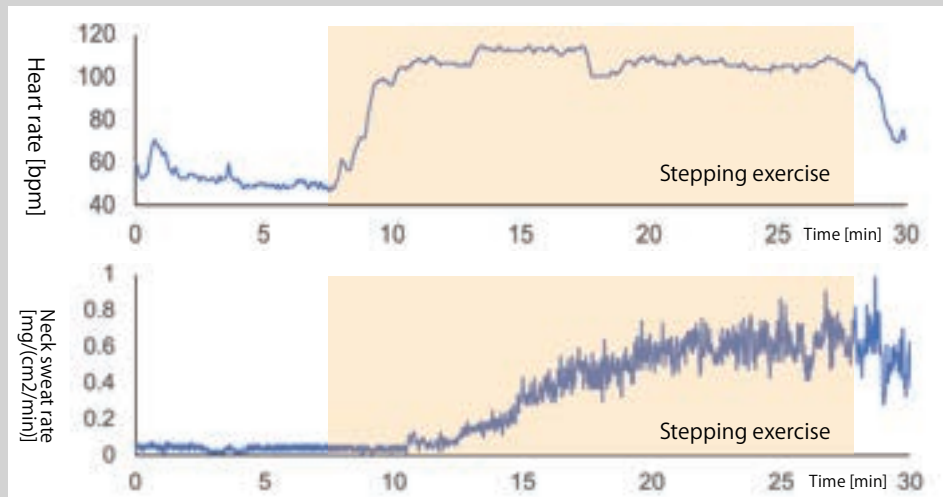


As with conventional devices, the measured value is calibrated through comparison against the quantity of water evaporated per unit time.



Measurement example: Simultaneous measurement of sweat rate and heart rate during exercise

The included app makes it easy to measure sweat rate and heart rate simultaneously.



The sensor component of the SKW-1000 was attached to the neck, and data were collected simultaneously with the commercially available heart rate sensor OH1+ (POLAR). (Subject: Male in his 30s)



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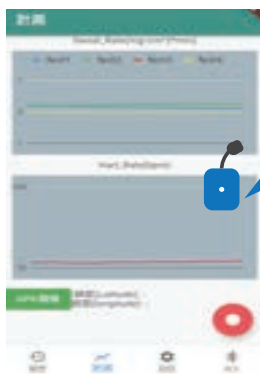
Wearable sweat sensor SKW-1000



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Simplifies "sweat" measurements.

Measurement data can be recorded on an Android device that supports Bluetooth LE. The evaluation version app is also compatible with Windows 10, Mac, and Android tablets.



Android measurement app

For Android smartphones only. Records the sweat rate and GPS position at the same time. Makes it easy to manage data on smartphones.



Evaluation version measurement app

Compatible with Windows 10, Mac, and Android tablets. * Google Chrome (web browser) must be installed to run the evaluation version measurement app.

[Shared functionality]

- * Up to 4 SKW-1000 units can be connected simultaneously
- * Commercially available Bluetooth LE-compatible heart rate monitors can be connected simultaneously
- * Real-time display of measurement data * Recorded data can be saved (csv format)



Log function (SKW-1000S only)

Sweat data is wirelessly transmitted and simultaneously recorded in the internal memory. By connecting the device to a Windows PC after measurement, recorded data can be viewed and saved as a CSV file. Can be used for sweat measurement without a recording device, or as a backup when wireless communication is unstable.

Applications

- A simple measurement of sweat rate to measure the degree of sweating as an objective index of thermal comfort.
- A simple measurement of thermal sweating during outdoor exercise or work.

Specifications

| Model name | SKW-1000 | SKW-1000S |
|--------------------------|--|-----------|
| Number of channels | 1Ch | |
| Measurement performance | Accuracy: $\pm 20\%$ (for evaporative water content) Measurement range: 0-2 mg/(cm/min) | |
| Communication standard | Bluetooth LE | |
| Power supply | Lithium-ion secondary battery (4 hours of continuous operation) | |
| Included measurement app | Android app, evaluation app | |
| Log function | None | 16 hours |
| Usage environment | 15-35°C, 30-70%RH (Recommended environmental conditions: 23.5°C, 60%RH) | |
| Dimensions | 55 mm × 17 mm × 46 mm (main unit) φ 20 × 11 mm (skin-mounted sensor) | |
| Weight | ~35 g | |

*The two devices described herein are intended for research purposes only and cannot be used for clinical purposes.

Use example

The SKW-1000 comprises a main body and a sensor unit attached to the skin. The main body is affixed to clothing, etc., and the sensor unit is attached to the measurement site using a capsule pad (sold separately).



Example of neck placement

[Warning] When sweating, humidity increases inside clothing, and measurements may be inaccurate.

