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Operation Manual
µClimat 3D

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Feedback

Requests for information or usage of these –or parts of these- instructions can be addressed to:

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Date of publication

Jan 29, 2024

Version info

V 1.2

Corrections / suggestions may always be addressed to:
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Your help is greatly appreciated.

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Principal of Operation

The µClimat is a sensor mat that measures the temperature and relative humidity in a regular grid of sensing points. It was specifically designed for the use in layered flexible materials such as mattresses or car seats.

It can be used to evaluate the micro climate between the human body (or any other source of heat and moisture) and the supporting material, or within the material itself.

The µClimat 3D allows the parameters to be measured in multiple layers, to map the influence of different materials or thicknesses thereof on the spatial distribution of temperature and humidity over time.

The properties of the µClimat sensor at a glance:

- The µClimat is light, thin, flexible, stretchable and porous.
- The mechanical characteristics of the tested setup largely remain unaltered by the measurement.
- The µClimat sensor mats are available with an Inter Sensor Distance (ISD) 110 mm [4.32”]
- The µClimat 3D comes standard without a sleeved embodiment (for minimal interference with the heat and moisture transfer) and with a dedicated measurement HUB (4 channels).
- The µClimat uses a modular sensor technology which makes mat sizes possible from 220 mm by 220 mm to as large as 2640 mm by 2200 mm.

Package Content

- 4 µClimat sensor mats
- 4 sensor cables
- 1 4-channel measurement hub
- 1 USB cable

Prepare the computer

Minimal requirements of the computer (not included):

- Windows 10 (or later)
- minimal 1 USB 2.0 port

Installation steps:

- Download the latest version of the software from the support page: https://www.custom8.be/sensor-mats/microclimate/support/
- Follow the instructions provided by the install package.
- In some cases the driver of the sensor hub also needs to be installed explicitly. This driver can also be downloaded from the support page

Prepare the measurement

1. Prepare the sample by combining different layers of material or by slicing an existing combination into separate layers. For comparative reasons, different samples should best have consistent layer dimensions.
2. Use a sensor cable to connect each layer to the measurement hub:
    a. open the zif connector of the sensor cable (push black part forward with your finger nails), **gently slide the zif connector** over the connector of the sensor mat and close the zif connector of the sensor cable
    b. the other side of the sensor cable has a connector with a thread that fits only 1 way onto its opposite pole on the hub. **Gently push** the cable's connector against the hub's connector, and twist the cable's connector until it slides further over the hub's connector, then tighten the cable's screw. **Never try to force** the connection by pushing it hard into the hub's connector, as a pin may break off
3. Connect the measurement hub to the PC using the USB cable
4. Plug in the mains connector of the measurement hub.
5. Start the software

Your µClimat 3D is now ready to use.

Important Notes

For optimal operation, it is important to observe some guidelines regarding the use and handling of the sensors:

- Always close the software and **power down** the measurement hub before changing connections between units or between the sensor mat and the hub to prevent short circuits and damage to the electronics
- **Never fold** the sensor mat (respect the minimum bending radius)
- Avoid direct contact on the sensors; use a pressure distribution layer
- **Avoid** the use of an **uneven subsurface** like metal grids or similar directly underneath the sesnsor mat; apply a pressure distribution layer material when necessary
- Questions/Problems/Suggestions: please mail to support@custom8.be