



Objective Comfort Measurement

The DressMAN 3.3

In which thermal environmental conditions do we feel comfortable?
The question of thermal comfort in a vehicle, aircraft or building can be answered objectively and reliably with the Fraunhofer DressMAN system.

The DressMAN-sensor measures the individual variables air temperature, air movement, thermal radiation and solar radiation and uses them to calculate the equivalent temperature based on the heat balance of the human skin.

The sensor system consists of 16 to 60 sensors distributed over the entire body of a person or manikin. The individually recorded results are converted into an overall thermal sensation value using an algorithm specially developed at Fraunhofer IBP and validated with the aid of test persons.

Our DressMAN 3.3 also features a series of contact sensors integrated into the system, which enable the transfer of heat between a seat and a person, to be measured at nine different points on the person's back and thighs. These measurement data are also integrated into the algorithm for determining overall thermal comfort.

The sensor system can be operated as a wireless sensor network (Zigbee mesh). The measurement values are recorded by a separate measurement data acquisition device or alternatively via an interface to a common bus format (e.g. CAN bus).

Areas of expertise

- Objective measurement of comfort in vehicles, aircraft and buildings
- Evaluation of local climate control measures
- Equivalent temperature measurement according to DIN EN ISO 14505-2
- Variable placement through wireless sensor network (Zigbee – 802.15.4)
- Interface to common bus systems (CAN bus)

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