



- 1 Use of the DressMAN system in an office
- 2 Use of the DressMAN system in a vehicle
- 3 Measuring sensor, mounted onto the manikin's hat

Photo acknowledgment: © Fraunhofer IBP

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OBJECTIVE COMFORT MEASUREMENT WITH DRESSMAN 3.2

How thermally comfortable does a person feel in a vehicle, aircraft or building? This question can be answered reliably, objectively, and through measurements with our DressMAN sensor system.

DressMAN imitates the thermal balance of the human skin and measures the so-called equivalent temperature, a kind of perceived temperature that takes the factors air temperature, thermal radiation, air flow, humidity and solar radiation into account.

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 3.2 also features a series of contact sensors integrated into the system, which enable the transfer of heat and moisture 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 either cable-based or in 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)