

## **TITLE: SURVEY ON THE AIR-CONDITIONING DUVET ACCORDING TO DR SCHULZ**

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This study should help to calculate the improvements resulting from the newly designed air-conditioning duvet ClimaBalance®. To this end, a calculation model and an associated calculation program were developed with which the differences between a conventional duvet and the air-conditioning duvet as regards heat and damp release can be calculated on the basis of already known experiences and measuring results.

The calculations resulted in the following: with duvets without air-conditioning zone most of the humidity from the body is not released, with air-conditioning zones, however, the release of humidity is more than doubled. The same goes for thermal transfer: for beds with air-conditioning zones a balance between produced and released heat is achieved more quickly, this prevents a heat accumulation as in traditional beds.

Two physical laws explain the superiority of ClimaBalance®: diffusion and convection: “In duvets without air-conditioning zones, vapor is released through diffusion only, in the duvet with air-conditioning zones, vapor is released through diffusion and convection.” But the diffusion process is also enhanced thanks to the air-conditioning zones.

“The relatively free diffusion section of the air-conditioning zones and their small thickness promote diffusion so that the air-conditioning zones also boost diffusive fabric clearance.”

Ripperger’s survey summarizes the following benefits of ClimaBalance®:

- Improved release of the humidity and heat produced by the human body;
- Less humidity in the bed;
- Improved adaptation of the humidity and heat release to the conditions of the human body.