



VERU

Modular Test Facility for Energy and Indoor Environment Investigations

*Test room with operator panel
for controlling test sequences*
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Particularly in the case of innovative and complex façade systems, the façade parameters required to optimize the design of a building in terms of energy efficiency cannot often be determined with sufficient accuracy using conventional laboratory testing methods.

Transferring characteristic data obtained from laboratory samples to the entire façade reaches its limits where complex, inhomogeneous structures are concerned. To evaluate the physical characteristics of such façades, in addition to laboratory tests, measurements can be carried out at the VERU Modular Test Facility for Energy and Indoor Environment Investigations on the Fraunhofer IBP field test site in Holzkirchen.

The VERU tests focus on the integral investigation of façades, interior spaces and building services as a whole. As a result, practical conclusions can be drawn about energy consumption as well as about visual and thermal

comfort. The multi-story building made from reinforced concrete makes it possible to test conventional and innovative façade or building envelope systems of almost any type. For this purpose, VERU is equipped with a comprehensive basic range of supply, measurement and control technology. The façade elements can be mounted on the east, south and west sides of the building using predefined support systems. Thanks to the modularity of the cells located behind the façade elements with variable spatial depth, practical studies can be carried out on a 1:1 scale under real weather conditions and different usage scenarios.



VERU Modular Test Facility for Energy and Indoor Environment Investigations — façade view © Fraunhofer IBP



Example of a test room in VERU © Fraunhofer IBP

Services

- Comprehensive evaluation of innovative façade solutions
- Evaluation of façade-integrated system technology
- Product development, product optimization
- Analysis of the glare situation on façades (determination of luminance distribution)
- Determination of the daylight factor
- Testing of artificial lighting concepts
- Testing of the control behavior of sun-shading and artificial lighting systems
- Evaluation of thermal comfort
- Comparative studies in identically oriented test rooms
- Assessment of façade solutions to increase planning reliability for architects, planners and clients (functional mock-up)
- Data preparation for the creation and validation of simulation models for thermal building simulations
- Measurement of sound insulation, detection of sound sources, determination of sound absorption

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With our highly adaptable test facility, we can address energy and indoor climate issues in the context of modern office façades.



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