

FOCUS OF RESEARCH

We use a large amount of energy for lighting, heating and cooling buildings. Therefore energy saving is especially effective in these domains. Enhanced use of daylight and both thermal insulation during winter and thermal protection during summer can considerably reduce our energy needs. High efficient glazing, solar protection devices as controllable blinds and transparent areas are used to improve energy efficiency. Spectral optophysical and photometric parameters enable us to optimally use such products.

We investigate opaque and transparent building materials like glass, membranes, foils/films, solar protection materials and coatings. We determine their luminous and solar characteristics like transmittance, reflectance and absorptance as well as color rendering and total solar energy transmittance.

The accreditation by the German Accreditation Body DAkkS is covering the wavelength between 280 nm and 50,000 nm.



Flexible accreditation according to
DIN EN ISO/IEC 17025:2005
for test laboratory
Moisture/Mortar/Radiation/Emissions

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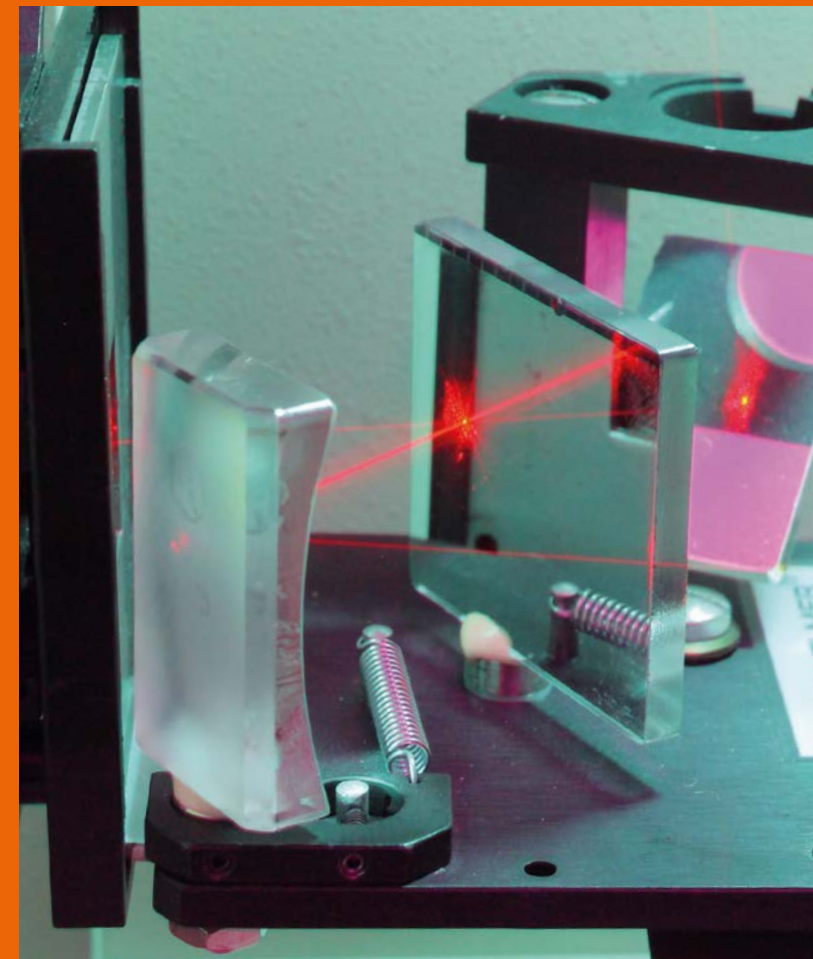
KASSEL BRANCH

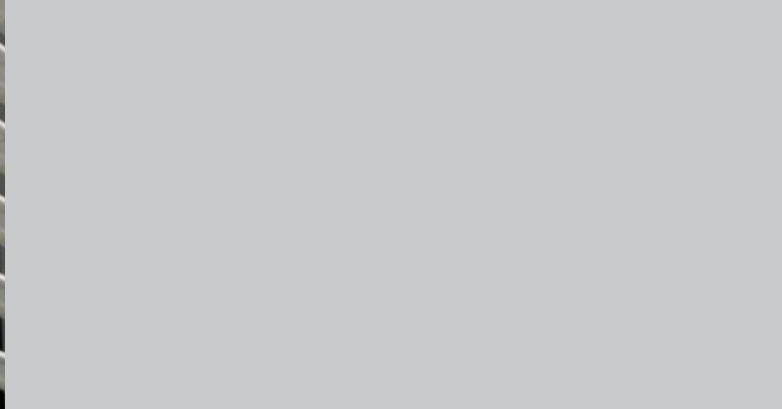
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SPECTRAL MEASUREMENTS





WE MEASURE

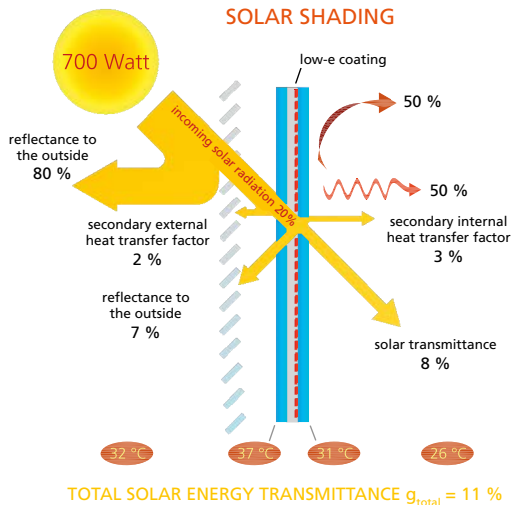
- solar radiation
300 nm to 2,500 nm (UV,VIS, near IR)
- thermal radiation
2,500 nm to 50,000 nm (MIR-FIR)

WE DETERMINE

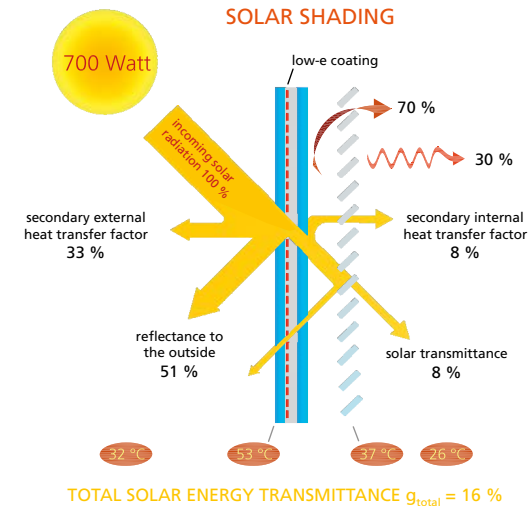
- opto-physical parameters like transmittance, reflectance and absorptance in relation to UV-, VIS- and total solar radiation according to DIN EN 410
- emissivity according to DIN EN 12898
- total solar energy transmittance g_{total} of multiple glazing combined with solar protection devices according to DIN EN 13363 (parts 1 and 2)
- U-values of glazing according to DIN EN 673
- visual and thermal comfort according to DIN EN 14501
- color rendering index R_a according to DIN 6169 resp. DIN 410
- other parameters on request

Our calculations and analyses are conducted with programs developed at the Fraunhofer IBP.

THERMAL INSULATION GLAZING WITH EXTERNAL SOLAR SHADING



SOLAR CONTROL GLAZING WITH INTERNAL SOLAR SHADING



WE MONITOR

- the quality according to DIN EN ISO/IEC 17025

OUR EQUIPMENT

- a high-performance double-beam spectrometer with an integrating sphere for shortwave spectral measurements
- Fourier spectrometer (FT-IR) with an integrating sphere for long wave spectral measurements.

OUR TESTING

takes place in the testing laboratory for Moisture, Mortar, Radiation and Emissions, which has got the flexible accreditation by the German Accreditation Body DAkkS. This certifies the high scientific competence and professional qualification of the testing laboratory. Therefore it is authorized - in addition to employing standard test methods - to develop new or modify and improve existing test methods.

WE ARE EXPERIENCED

Our laboratory has been performing spectral measurements for more than 30 years now.