

# diffusil®

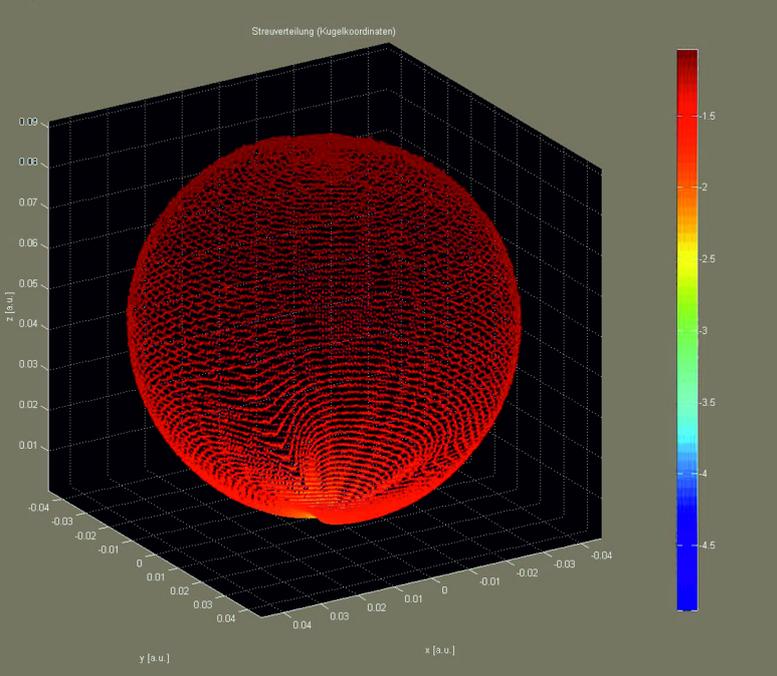
## The perfect lambertian quartz diffusers

diffusil diffusers are made of a special opaque synthetic fused silica glass (99,999% SiO<sub>2</sub>). They are designed to create an almost perfect lambertian light output over a wide wavelength range, regardless if they are used in transmission (diffusil-T) or reflection (diffusil-R) mode. diffusil diffusers are the ideal light scattering element for light sources and optical sensors working in the range of 190 – 3200 nm. Millions of tiny little gas bubbles inside the ultra-pure synthetic fused silica glass are the secret of the optical behavior of diffusil diffusers. They act as optical scattering centers. The gas bubbles of diameters of approx. 4 µm are distributed

homogeneously in the glass volume and lead to these extraordinary optical results. Due to this working principle neither surface defects nor surface contamination affect the scattering profile of diffusil diffusers. Unlike other diffuser materials diffusil diffusers can withstand temperature shocks of several hundred degrees and harsh chemical environments without any damages. Besides the most commonly used shapes such as square or round planeparallel discs, customized diffuser shapes and sizes are available as well. Even special, precisely adjusted scattering profiles can be delivered. Surface qualities can be chosen as “honed” or “polished”.

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## Applications

- Incident-angle independent homogenization of light beams in transmission
- Incident-angle independent homogenization of light beams in reflection
- Optical power absorber
- wavelength range from UV to NIR
- Applicable up to 1000 °C
- Applicable in strong acids and bases
- Reflection standards
- Reflection targets
- Generation of characteristic BSDF data
- Production of customized components

## Specifications

Minimum size	2 x 2 mm
Maximum size	160 x 200 mm or 160 x 160 mm
Maximum diameter	160 mm
Thickness	0.3 - 25.0 mm
Surface	honed or polished

Permanent development of the production process in order to realize larger sizes  
 Customized surface treatment possible