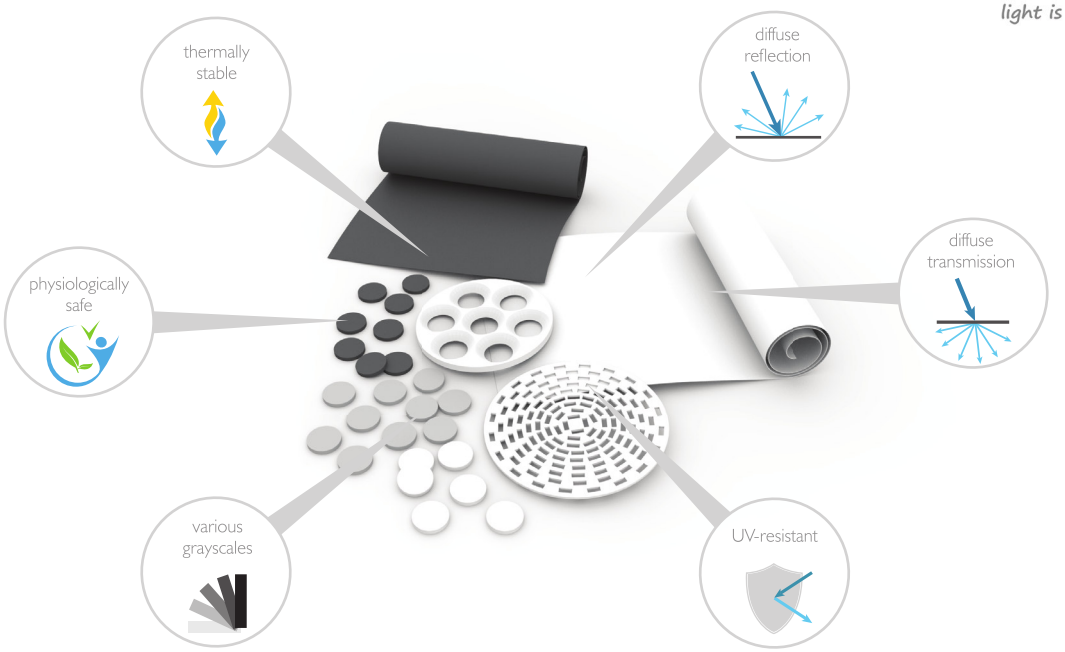
Spectralex Optical Diffuser Films

LakePhotonics
light is our passion



Description

Optical diffusers are made from our high-purity optical PTFE (Spectralex). Produced as a thin film, Spectralex can be used in a wide range of different applications in the field of diffuse light scattering.

Optical diffusers are also intended to be as colour-neutral as possible in many different applications. Using Spectralex diffusers guarantees a constant Lambertian light throughput over a wide wavelength range.

The unique material structure of the Spectralex diffuser films means that they have very low back-scatter characteristics when used as diffuse transmission films. The thinner the film, the higher its transmission factor.

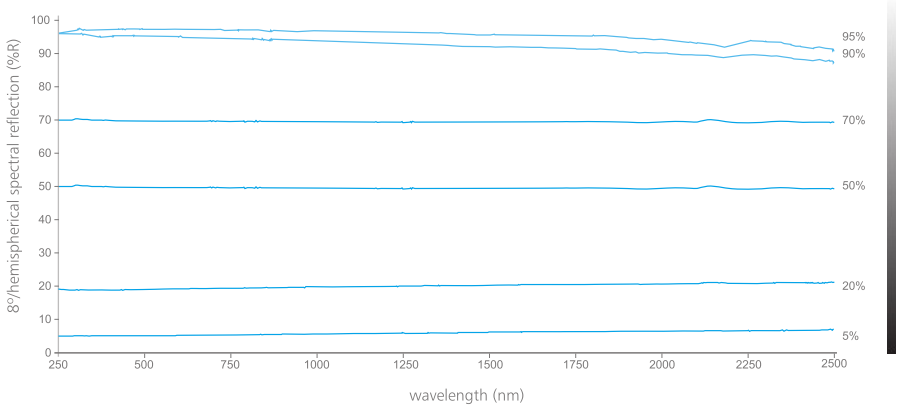
Spectralex's excellent properties mean that the optical diffusers are resistant to heat, cold, moisture and UV radiation and have universal chemical resistance.

Our Spectralex diffuser films are available in different reflection levels and dimensions, providing us with flexibility in addressing your requirements and allowing us to offer you the most cost-effective solution.

Application

- uniform light source
- cosine diffuser for optical detectors
- homogenous display and backlighting
- projection surface (laser)
- reflection softbox
- white balance reference
- contrast measurement
- LED-reflectors
- reflectance standards (stamped parts)
- homogenous surface reflector
- o.a. customized components

Reflectance graph



Calibration

Lake Photonics has a calibration laboratory for measuring the diffuse reflection of flat surfaces (spectral radiance factor ß(8°/d)). The measurements are taken using a UV-Vis-NIR spectrophotometer (Lambda 950S) by PerkinElmer®. The spectral range of the measurements is between 250 and 2450nm. The measurement data is traceable to the National Metrology Institute of Germany (PTB), and is provided electronically in measuring steps of 1nm. A certificate with printed measured values in 50nm steps is also provided.

Optical properties

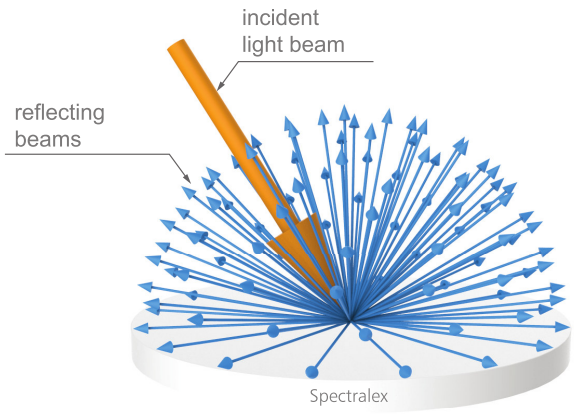
laser damage threshold (LDT)	~8 J/cm³
refractive index	~1,38
surface homogeneity	+/- 0,1%R

* various grayscales available

70%R, 50%R, 20%R, 5%R	
surface homogeneity (grayscales):	+/- 1 %R
linearity of the spectrum (grayscales):	+/- 0,5 %

Technical properties

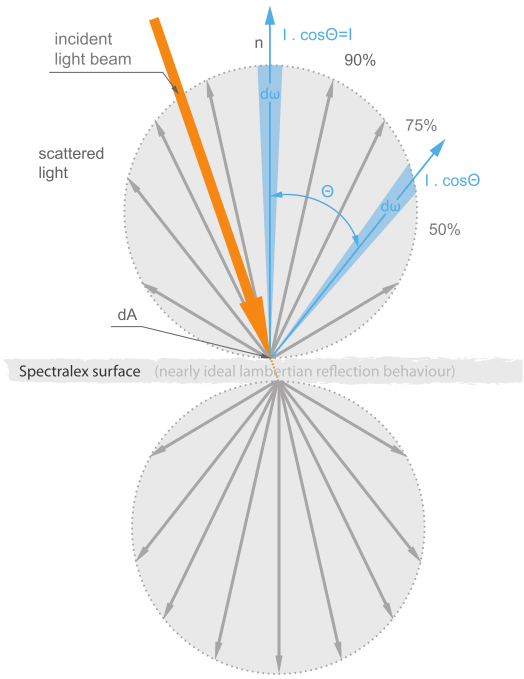
working temperature	-200°C – 260°C
humidity range	0% – 100% RH



Physical properties

- universal chemical resistance
- resistance to UV radiation
- insoluble in water (hydrophobic, nonpolar)
- physiologically safe

Lambert's Cosine law



Order information

White Diffusers

article number	reflectance value (%R)	transmission value (%T)	dimensions length x width x height
WDF-050-95	95	5	500 x 500 x 2mm
WDF-030-95	95	5	300 x 300 x 2mm
WDF-020-95	95	5	200 x 200 x 2mm
WDF-050-90	90	10	500 x 500 x 1mm
WDF-030-90	90	10	300 x 300 x 1mm
WDF-020-90	90	10	200 x 200 x 1mm
WDF-050-85	85	15	500 x 500 x 0,5mm
WDF-030-85	85	15	300 x 300 x 0,5mm
WDF-020-85	85	15	200 x 200 x 0,5mm
WDF-050-70	70	30	500 x 500 x 0,25mm
WDF-030-70	70	30	300 x 300 x 0,25mm
WDF-020-70	70	30	200 x 200 x 0,25mm
WDF-050-50	50	50	500 x 500 x 0,1mm
WDF-030-50	50	50	300 x 300 x 0,1mm
WDF-020-50	50	50	200 x 200 x 0,1mm

Gray Diffusers

article number	reflectance value (%R)	transmission value (%T)	dimensions length x width x height
GDF-050-70	70	0	500 x 500 x 1mm
GDF-030-70	70	0	300 x 300 x 1mm
GDF-020-70	70	0	200 x 200 x 1mm
GDF-050-50	50	0	500 x 500 x 1mm
GDF-030-50	50	0	300 x 300 x 1mm
GDF-020-50	50	0	200 x 200 x 1mm
GDF-050-20	20	0	500 x 500 x 1mm
GDF-030-20	20	0	300 x 300 x 1mm
GDF-020-20	20	0	200 x 200 x 1mm
GDF-050-05	5	0	500 x 500 x 1mm
GDF-030-05	5	0	300 x 300 x 1mm
GDF-020-05	5	0	200 x 200 x 1mm

*Through the adding of additives, the optical and physical properties can be changed.

Delivery information: Diffuser films will be supplied in a special protective package comprising of PE-nonwoven fabrics and Styropor®. With a size of 500x500mm and above, the diffusers will be supplied rolled.

For customized queries and further information, please contact us directly!

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