

# Solar Energy Technical Definitions



Performance Results (EN 410)	4 mm Single	4/12/4 mm Double
<b>Visible Light</b>		
Transmittance (VLT) %	71	64
Reflectance exterior / interior %	8/8	12/15
Glare reduction %	22	21
<b>Solar Energy</b>		
Transmittance %	39	35
Absorptance %	25	27
Reflectance %	36	38
UV protection [300 – 380 nm] %	>99	>99
Solar heat gain coefficient (g-value)	0,45	0,39
Light to solar heat gain ratio (VLT/SHGC)	1,57	1,64
Total solar energy rejected [90°] %	55	61
Total solar energy rejected [60°] %	60	68
UV Tdw-ISO [300 – 700 nm] %	45	41
Fade reduction %	48	45
Film thickness	50 µm	

Exemplary values of the AX PLUS N 75.

## EN 410:

European standard for determining the physical lighting and radiation values of building glazing. This is the industry standard for film suppliers in Europe. When comparing films, be sure to only compare values according to the same standard.

## Transmittance (%):

The percentage of solar radiation that is transmitted through the glazing/film. This is abbreviated with "VLT" (Visible Light Transmission) in the visible range.

## Absorptance (%):

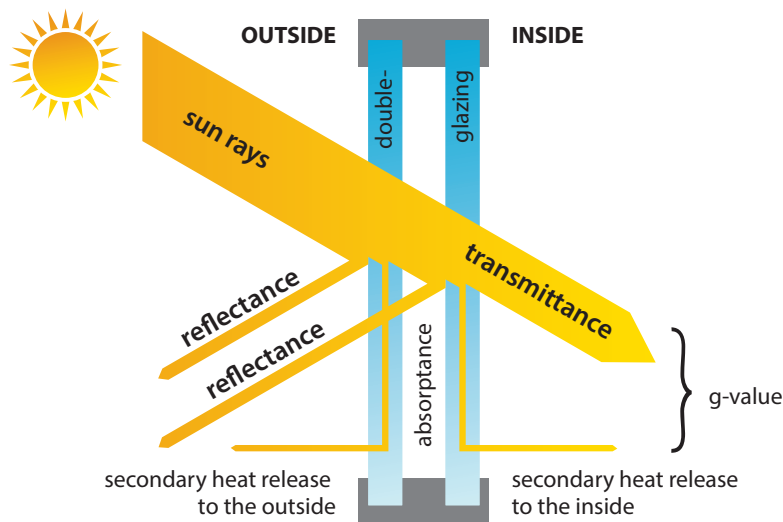
The percentage of radiation that is absorbed by the glazing/film. The absorbed solar energy on the glass is converted into heat, some of which remains in the glass and heats it up. Depending on the temperature gradient and other factors, the heat is proportionally released both inside and outside as secondary heat release.

## Reflectance (%):

The percentage of radiation, that is reflected by the glass. This creates the intensity of the mirror effect. When using dual-reflective films this mirror effect can differ greatly on inside and outside.

## UV Protection (%):

The percentage of blocked UV radiation. Usually, the information is provided in the range from 300 – 380 nm and thus covers the relevant range of UV-B and the majority of UV-A radiation.



The values vary depending on the film type and the glazing construction.

## Solar Heat Gain Coefficient (g-value):

The portion of solar energy that transmits through the glazing/film and leads to the increase in room temperature. According to EN 410, this includes the range of 300 – 2.500 nm.

## Light to Solar Heat Gain Ratio (VLT/g-value):

Indicates the ratio of brightness to sun protection. This value is usually only relevant if you want to achieve the brightest possible rooms with sun protection.

## Total Solar Energy Rejected (%):

The reciprocal of the g-value and a common indication of the effectiveness of sun protection in the film industry. Can be measured at a 90° angle (measured horizontally) or at a 60° angle. 60° is more like the sun's angle in the summer.

## UV Tdw (%):

The radiation transmission value responsible for fading. The smaller the value, the better the fading protection. For fading protection, it is recommended to use this value instead of the pure UV protection value. This can also be checked according to different standards. The Tdw-ISO variant is a generally recognized (as it is weighted) method. The "fade protection" value is another measurement method.

## Film Thickness:

Information in µm. 100 µm = 0.1mm. The information can be given with or without adhesive.