

Glossary of Terms Technical Support

Prepared by

DBS

DAYLIGHT BUSINESS SOLUTIONS

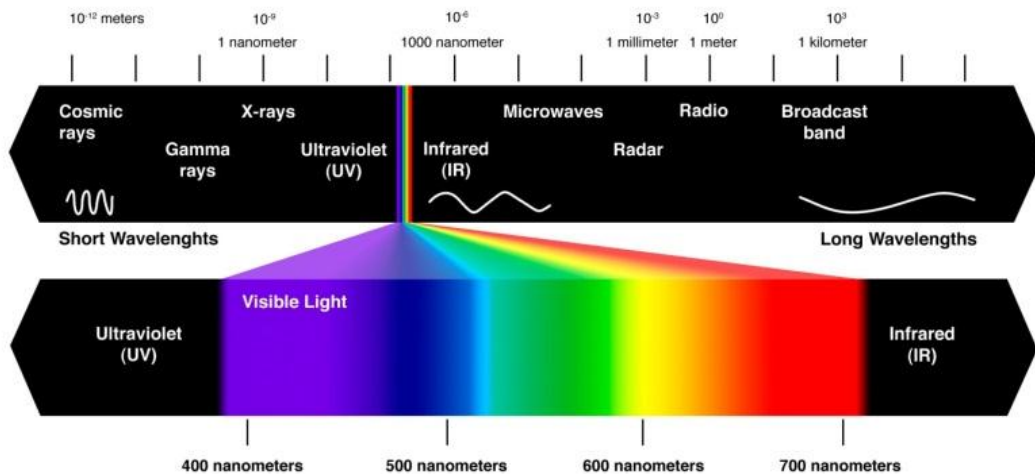
A licensed manufacturer and distributor of

 digitalglass®

SolaVeil®

Solar Spectrum

The sun's energy is known as solar radiation. It is also called the solar spectrum. The solar spectrum has 3 components- ultra violet radiation, visible light and infrared heat. Infrared is responsible for 53% of the sun's energy, visible light is responsible for 44% and UV 3%.



TSER represents the total solar energy (UV + Visible Light + Infrared Heat) being rejected. TSER does not tell you which wavelengths are being rejected, just the total amount of solar energy removed.

SHGC or Solar Heat Gain Coefficient, is the difference between SHGC and TSER is: $TSER = (1 - SHGC)$. TSER is the percentage of solar energy rejected (higher being better); SHGC is the amount of solar energy being transmitted (lower being better).

Not all window films perform the same:

Film 1 - TSER 50%	VLT 80%	IRT 16%
Film 2 - TSER 50%	VLT 20%	IRT 89%

These films look identical from TSER, but the 80% VLT film is a much higher performing film because it is spectrally selective, i.e. blocks out more infrared heat than visible light.

Luminous Efficacy helps with this comparison. It is defined as the VLT divided by the shading coefficient. Window films that score 1.0 or greater are "Spectrally Selective". The higher the Luminous Efficacy, the better you are rejecting the IR heat and transmitting visible light.

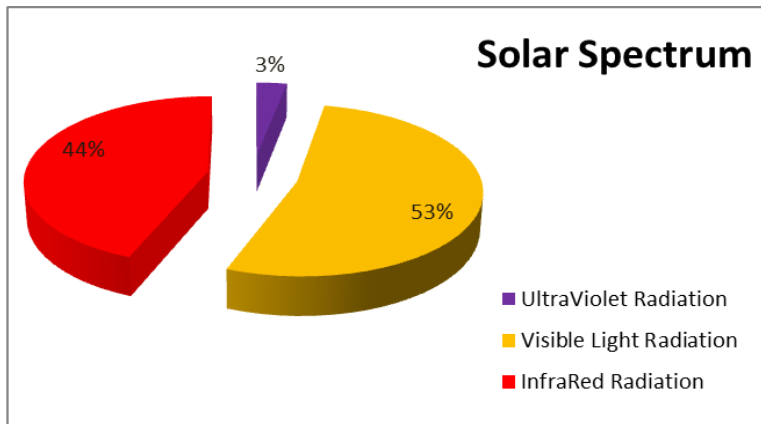
NOTES:

TSER: Total Solar Energy Rejected

VLT: Visible Light Transmitted

IRT: Infrared Radiation Transmitted

Solar Spectrum Definitions



Solar transmittance (T)

The percent of ultraviolet, visible and near infrared energy within the solar spectrum (300 to 2100 nanometers) that is transmitted through the window film/glass system. The lower the number, the less solar radiation transmitted.

Solar absorptance (A)

The percent of incident solar radiation that is absorbed by the window film/glass system. The lower the number, the less solar radiation absorbed.

Solar reflectance (R)

The percent of incident solar radiation that is reflected by the window film/glass system. The lower the number, the less solar radiation reflected.

Visible light transmittance (VLT)

The percent of total visible light that is transmitted, (from 380 to 780 nanometers), through the window film/glass system. The lower the number, the less visible light transmitted.

Visible light reflectance (VLR)

The percent of total visible light that is reflected by the window film/glass system. The lower the number, the less visible light reflected.

Visible Light Absorptance (VLA)

The percent total of visible light that is absorbed by the window film/glazing system.

Ultraviolet light blocked

The percent of ultraviolet (UV) that is blocked by the window film/glass system. The higher the number, the less ultraviolet transmitted.

Shading coefficient (SC)

The ratio of solar heat passing through window film to the solar heat gain that occurs under the same conditions if the window were made of clear, unshaded double strength window glass. The lower the number, the better solar shading qualities of the window film/glass system.

Solar heat gain coefficient (SHGC)

The ratio of the total solar heat passing through a given window product relative to the solar heat incident on the projected window surface at normal solar incidence (i.e. perpendicular to the glazing surface). The lower the coefficient number for a particular window film/glass system, the better it is able to reduce heat.

Total solar energy rejected (TSER)

The percent of total solar energy (heat) rejected by the window film/glass system. The higher the number, the more total solar energy (heat) is rejected

Light-to-Solar Gain Ratio (LSG)

The product's visible light transmitted divided by its solar heat gain coefficient (SHGC).

Luminous Efficacy

Ratio of visible light transmittance to the Shading Coefficient (VLT/SC). The higher this number is, the more efficient a film is at transmitting visible light without transmitting excessive heat.

Emissivity (E)

The measure of a surface's ability to absorb or reflect far-infrared radiation. The lower the emissivity rating, the better the insulating qualities of the window film/ glass system.

U-Value (U-Factor) (W/m² °K)

The amount of heat energy which transfers through an area of 1 m² with a temperature difference of 1°C. The lower the U-factor, the better insulating qualities of the window film/glass system.