



Solar Optical Properties Glossary

Total Solar Energy: all the energy in the solar spectrum that reaches us on the earth's surface. This includes UVA and UVB, Visible light, and Infrared energy up to roughly 2500nm.

Transmitted: the amount of total solar energy that passes through the glass, into the car.

Reflected: the amount of total solar energy that is reflected off of the glass and directed back outside. This energy does not come into the car.

Absorbed: the amount of total solar energy that is absorbed into the glass. This heats up the glass, making it hotter to the touch, and re-radiates a small amount of heat back into the car. The majority of absorbed energy is kept out of the car though.

Visible Light: the portion of the solar spectrum containing visible light we can see, from roughly 380nm up to 780nm, contains all the colors of the spectrum.

Transmitted: the amount of visible light that passes through the glass, into the car. This is how light or dark the film is.

Reflected Exterior: the amount of visible light that is reflected off the exterior surface of the window. This is seen when standing outside the car. A higher reflectance value means the window looks more like a mirror from the outside.

Glare Reduction: the reduction in visible light transmitted compared to clear unfilmed glass.

U Factor: heat transfer due to temperature differences outside and inside. Represents the amount of heat passing through 1 sq ft of glass in 1 hour for every 1 degree temperature difference between the outside and inside. A lower value means less heat passes through, and this is generally of interest for keeping heat inside in cold climates.

Median: refers to the part of the U Factor/U Value chart that applies to "mild winter" conditions.

Design: refers to the part of the U Factor/U Value chart that applies to "severe winter" conditions.

Ultraviolet Light Rejection: the amount of UV energy blocked by the film, either by reflecting or absorbing it. This energy does not enter the car.

Shading Coefficient: the ratio of heat passing through a filmed window to heat passing through clear unfilmed glass. A lower number means better heat rejection.

Solar Heat Gain Coefficient: similar to the shading coefficient, except this value also takes into account energy that is re-radiated back into the car from the glass heating up due to increased absorption. Again, a lower number means better heat rejection.

Total Solar Energy Rejection: the total amount of solar energy that is kept out of the car. Although not accurate, this is commonly referred to as heat rejection.

Infrared Rejection: the amount of infrared (IR) energy that is blocked by the film, either by reflecting or absorbing. This value is for the whole IR region of the solar spectrum, roughly 780nm up to 2500nm.