

TERMINOLOGY

- **Light Transmission (LT)**

The ratio of the light flux transmitted through the glass to the incident light flux expressed by the illuminant CIE D65 (with a spectral distribution between 380 and 780 nm).

- **Light Reflection (LR)**

The ratio of the light flux reflected by the glass to the incident light flux expressed by the illuminant CIE D65.

- **Ultra-violet Transmission (UV)**

Proportion of ultra-violet radiation transmitted (spectrum range between 280 and 380 nm).

- **Direct Energy Transmission (DET)**

Percentage of solar energy flux transmitted directly through the glass with spectral distribution between 300 nm and 2150 nm

- **Energy Reflection (ER)**

Percentage of solar energy flux reflected by the glass.

- **Energy Absorption (EA)**

Percentage of solar energy absorbed by the glass sheet or sheets.

- **Solar Factor (SF) or Total Energy Transmission**

Ratio of total solar energy flux entering through the glass to the incident solar energy.

The total energy is the sum of the incoming solar energy by direct transmission (DET), and the energy reradiated by the glass to the inside atmosphere after being absorbed by the glass (EA).

The calculation takes account of the following :

- sun at 30° above the horizon at a right angle to the façade;
- ambient temperature equal to outward temperature;
- surface heat exchange coefficients: internal : 8 W/m².K
external : 23 W/m².K

- **Shading Coefficient (SC)**

The shading coefficient is calculated by dividing the solar factor by 0.87, which is the solar factor of a 3 mm clear float glass.

- **Short Wave Shading Coefficient (SWSC)**

Direct Energy Transmission (DET) divided by 0.87.

- **Long Wave Shading Coefficient (LWSC)**

Proportion of absorbed energy transfer to the interior divided by 0.87

- **U-value (Europe)**

Heat-transfer coefficient (based on CEN-ISO 9050 standards):

The heat-transfer coefficient (or U-value) is the amount of heat in watts transmitted per hour through 1 m² of wall (glass) with a difference of 1° Kelvin between the inside and the outside (W/m².K).

The U-value is calculated for the wall's surface heat exchange coefficient :

- internal : 8W/m².k
- external : 23 W/m².K

The lower the U-value, the less heat is transmitted through the glazing material.

• **U-value (American Standard)**

Heat-transfer coefficient (based on standard ASHRAE conditions) calculated under the following conditions :

	Summer (day)	Winter (night)
Outside temperature	+32°C	-18°C
Inside temperature	+24°C	+21°C
Wind speed	12 km/hr	24 km/hr
Ambient air speed	0	0
Solar radiation	783 W/m ²	0

• **Relative Heat Gain (RHG)**

The total heat gained through glazing for a specific set of conditions.

The Relative Heat Gain is calculated as follows:

$$[\text{Shading Coefficient SC} \times 630 \text{ W/m}^2] + [8^\circ\text{C} \times \text{summer k-value}].$$

Conversion factors in American units:

$$1 \text{ W/m}^2 = 0.317 \text{ BTU/ft}^2$$

$$1 \text{ W/m}^2.\text{K} = 0.176 \text{ BTU/hr.}/\text{ft}^2/^\circ\text{F}$$

Light Transmission, Total Solar and UV data are based on laboratory spectrophotometric measurements weighted using an appropriate method.

Solar factor and (European) U-value calculations are in accordance with ISO 9050-1990.

