

REFLECTIVE BLINDS/ENERGY SHIELD:

Performance Data for Reflective roller Blinds mounted 25mm inside 3mm clear glass window with standard aluminium frame.

MODELLING RESULTS: OPTICS 5 AND WINDOW 5, AUGUST 2002

Data Source: Dr . P. LYONS, AWA Inc.

Product	Centre-glass U-value	Best % change in centre-glass U-value	Whole-window U-value	Best % change in whole-window U-value	Centre-glass SHGC	Best % change in centre-glass SHGC	Whole-window SHGC	Best % change in whole-window SHGC	Visible transmittance (centre glass)	Visible transmittance (whole window)	Damage-weighted (fading) transmittance (centre glass)	% Solar energy rejected
BASE CASE : glass and frame alone	4.523		5.341		0.870		0.851		89.9%	80.9%	0.720	
Super range of Reflective Blind films:												
Super Bronze/Silver 3% - UV : Silver facing towards glass	2.442	-46.0%	3.468	-35.1%	0.204	-76.6%	0.251	-70.5%	3.0%	2.7%	0.012	74.9%
Super Bronze/Silver 3% - UV : Bronze facing towards glass	2.442	-46.0%	3.468	-35.1%	0.312	-64.1%	0.348	-59.0%	2.9%	2.6%	0.012	65.2%
Super Grey/Silver 3% - UV : Silver facing towards glass	2.442	-46.0%	3.468	-35.1%	0.205	-76.4%	0.252	-70.4%	2.4%	2.2%	0.011	74.8%
Super Grey/Silver 3% - UV : Grey facing towards glass	2.442	-46.0%	3.468	-35.1%	0.330	-62.1%	0.365	-57.1%	2.3%	2.1%	0.011	63.5%
Standard range of Reflective Blind films:												
Bronze/Silver 10% - UV : Silver facing towards glass	2.442	-46.0%	3.468	-35.1%	0.274	-68.5%	0.314	-63.1%	7.3%	6.6%	0.027	68.6%
Bronze/Silver 10% - UV : Bronze facing towards glass	2.442	-46.0%	3.468	-35.1%	0.357	-59.0%	0.389	-54.3%	7.1%	6.4%	0.026	61.1%
Grey/Silver 10% - UV : Silver facing towards glass	2.442	-46.0%	3.468	-35.1%	0.293	-66.3%	0.331	-61.1%	6.6%	5.9%	0.031	66.9%
Grey/Silver 10% - UV : Grey facing towards glass	2.442	-46.0%	3.468	-35.1%	0.381	-56.2%	0.411	-51.7%	6.4%	5.8%	0.030	59.0%
Gold/Grey 10% : Gold facing towards glass	2.442	-46.0%	3.468	-35.1%	0.333	-61.7%	0.367	-56.8%	7.1%	6.4%	0.029	63.3%
Gold/Grey 10% : Grey facing towards glass	2.442	-46.0%	3.468	-35.1%	0.360	-58.6%	0.392	-54.0%	6.9%	6.2%	0.029	60.8%
Bronze/Bronze 10% - UV : either side facing towards glass	2.442	-46.0%	3.468	-35.1%	0.475	-45.4%	0.495	-41.8%	8.9%	8.0%	0.032	50.5%
Grey/Grey 10% - UV : either side facing towards glass	2.442	-46.0%	3.468	-35.1%	0.450	-48.3%	0.473	-44.4%	5.8%	5.2%	0.029	52.7%

Definitions and notes:

U-Value: The coefficient of thermal transfer. This is the rate of heat transfer from the hot side to the cold side.

It is the inverse of the R value or the thermal resistance ($U = 1/R$, and is expressed in watts/square metre/degree Kelvin)

The U-Value is independent of the sun .

Solar Heat Gain Coefficient, SHGC: The fraction of solar radiation admitted through a window or skylight, both directly transmitted and absorbed and subsequently released inward.

The SHGC has replaced the shading coefficient as the standard indicator of a window's shading ability.

SHGC can be expressed in terms of the glass alone, or can refer to the entire window assembly.

It is expressed as a number between 0 and 1. the lower the window's SHGC, the less solar heat it transmits, and the greater its shading ability.

Standard Window for which this performance data is calculated: Aluminium frame 1.5 metres X 1.8 metres, that is 2.7 sq.metres, with 3mm window glass and the blind 25mm in from the glass.

Preliminary **sensitivity analysis** has shown little variation in performance as the distance from the glass is increased to 100mm, but these calculations still await validation.

Copyright: PC & VG Schweinsberg T/A Reflective Blinds, Energy Shield (Australia) Pty. Ltd. & Australian Windows Association Inc.