

**Site**

Dulles International Airport

**Location**

Washington, DC

**Window Film**

Soft Horizons V33

**Product Series**

Neutral Series



**SITUATION**

In the past, passengers who traveled through the main terminal at Dulles International Airport suffered in the summer, when temperatures reached into the high 90s, with uncomfortable heat and eye-straining glare. More than sixteen million passengers use the terminal annually, with some four million coming from overseas, which makes for a lot of hot and bothered travelers! The main terminal at Dulles is a large building that makes maximum use of glass within its structure. Designed by world-renowned architect Eero Saarinen and expanded in 1996, the terminal, set in 11,000 acres of land, is 1,240 feet in length and covers over 1,000,000 square feet in area. Thirty-five passenger airlines serve 44,000 passengers a day with direct non-stop service to 75 US and 28 foreign cities, operating from 90 gates. Not only was a huge amount of glass integrated into the complex design, but also the many individual pieces were crafted to an irregular configuration.

**SOLUTION**

The task was to incorporate solar control — diminish heat and glare — in the individual segments of this aesthetically pleasing but complicated glass arrangement. Vista™ by LLumar® V33 Soft Horizons window film was chosen to meet the solar control challenge. Installation called for difficult and detailed work. Each pane required tailor-made pieces of film and an artist's skill to achieve a precise fit. Vista V33 Soft Horizons film was fitted to 60,000 square feet of glass, with the installers at times suspended as high as sixty feet in the air to film trapezoid windows. The work took over 90 days and nights to complete.

**RESULT**

After the film was finally installed on the inside surfaces of the glass it reduced solar heat by 54 percent and effectively blocked sunlight to an eye-comfortable level of 34 percent, reducing glare by 62 percent. Today, passengers can traverse the Dulles Main Terminal in comfort and not be blinded by sun glare, thanks to Vista Window Film.

**Performance Data**

	% Total Solar Transmittance	% Total Solar Reflectance	% Total Solar Absorbance	% Visible Light Transmittance	% Visible Reflectance (exterior)	% Visible Reflectance (interior)	Winter U-Value	Shading Coefficient	% Ultraviolet Ray Protection (wavelengths 280-380nm)	Emissivity	Solar Heat Gain Coefficient	% Total Solar Energy Reflected	Light-to-Solar Heat Gain Ratio (LSG)	% Summer Solar Heat Gain Reduction	% Winter Heat Loss Reduction	% Glare Reduction
Clear Glass	83	8	9	90	8	8	1.03	1.00	29	0.84	0.86	14	1.05	-	-	-
Neutral Series																
Soft Horizons V33 SR CDF	31	19	50	34	21	18	1.05	0.53	>99	0.86	0.46	54	0.74	47	-1	62