

## CASE STUDY: An ongoing work of preservation

### Building

Marsh-Billings-Rockefeller Mansion

### Location

Woodstock, Vermont, USA

### Window Film

N-1065 SR CDF (Neutral)

### Type

Solar Control Film



## SITUATION

Named for several prominent conservationists, the Marsh-Billings-Rockefeller Mansion and National Historical Park came under the auspices of the United States National Park Service in 1987. Today, the Park Service continues to manage and preserve the mansion along with its surrounding 550-acre mountain forest. The mansion abounds in precious irreplaceable furnishings, draperies, artwork, paneling, and floors that needed protection from the damaging rays of the sun.

## SOLUTION

Seeing how other national landmark sites have met similar challenges, the National Park Service turned to LLumar Window Film for help. LLumar N-1065 SR CDF, a solar control window film, reduces the sun's most damaging rays and is virtually invisible from either side of the glass. The Park Service had the film professionally installed on over 2,700 square feet (250 square meters) of complex multi-paneled windows.

## RESULT

Today, the treasures residing in the Marsh-Billings-Rockefeller Mansion are protected from 99% of the sun's harmful UV rays. This protection was achieved without affecting the mansion's original, elegant window façade. Visitors to the mansion are unaware that its windows are filmed, but the Park Service knows its valuable exhibits are protected from damage by the sun for generations to come.

## 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 Rejected	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	0	0	0
Neutral Series																
Neutral films reduce glare, provide good heat rejection and are specified where a soft, neutral appearance is desired. These films are made with sputtered technology. Neutral films are scratch-resistant and shield 99% of UV rays.																
N-1065 SR CDF (Neutral)	65	9	26	67	10	9	1.03	0.82	99	0.84	0.71	29	0.94	18	0	26

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The solar performance data reported for LLumar architectural window films was captured using the National Fenestration Rating Council's (NFRC) standard guidelines for window film solar performance measurement as measured on single pane, 1/8 inch (3mm), clear glass. All values averaged from routinely accumulated quality control data.