

Return on investment in as little as 1.3 years



SITUATION: The Temple College campus, which is made up of residential, recreational, and educational buildings spreading over 114 acres, faced a serious energy challenge. With rising fuel costs and related global strains on fossil fuel resources, energy expenses were sharply increasing. Temple College retained the services of Johnson Controls Inc., a global Energy Services Company (ESCO), who determined that numerous large glass windows were contributing substantially to the campus' overall energy inefficiency.

SOLUTION: Following a LLumar Energy Audit, using U.S. Department of Energy DOE-2 analytics, Johnson Controls determined that LLumar Energy Saving Window Film, which would significantly reduce summer solar heat gain and winter heat loss through these windows, should be an important part of an effective energy-saving strategy for the college. To maximize performance, they selected LLumar E-1220. When installed on glass, this low emissivity (low-E) window film reduces solar energy passing through the glass by 85% and improves window insulating properties by as much as 25%.

RESULTS: The Temple College window film project, 30,000 square feet (2787 square meters) in all, was estimated to return annual energy savings of \$33,917 with a return on investment in approximately 3.6 years. The individual building return on investment varied from as low as 1.3 years to 8.6 years (for buildings with lower energy consumption) with 3.6 years being the cumulative net return. Actual results were impressive: a 193 KW summer peak demand savings and an annual savings of 410,000 kilowatt hours.

Building
Temple College
 Location
Temple, Texas
 Film
E-1220 SR CDF (Silver)
 Type
Solar Control Film

“LLumar delivered an annual savings of 410,000 kilowatt hours.”

Performance Data

Low-E Series

E-1220 SR CDF (Silver)

% Total Solar Transmittance	% Total Solar Reflectance	% Total Solar Absorptance	% Visible Light Transmittance	% Visible Reflectance (exterior)	% Visible Reflectance (interior)	Winter Merit U-Value	Shading Coefficient	% Ultraviolet Reflected	Emissivity	Solar Heat Gain Coefficient	% Total Solar Energy Rejected	Light-to-Solar Heat Gain Ratio	% Summer Solar Heat Gain Reduction	% Winter Heat Loss Reduction	% Glare Reduction
8	58	34	12	66	70	0.77	0.18	99	0.36	0.15	85	0.80	82	25	87

Low-E film provides superior energy conservation by reducing winter heat loss through windows. It is scratch-resistant, shields 99% of UV rays, reduces glare, and has the highest heat rejection performance of all LLumar films. It is suitable for commercial applications where summer and winter energy control are major concerns.