Window Attachments: The Next Big Energy-Saving Measure?

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D+R International on behalf of the

Attachments Energy Rating Council (AERC)

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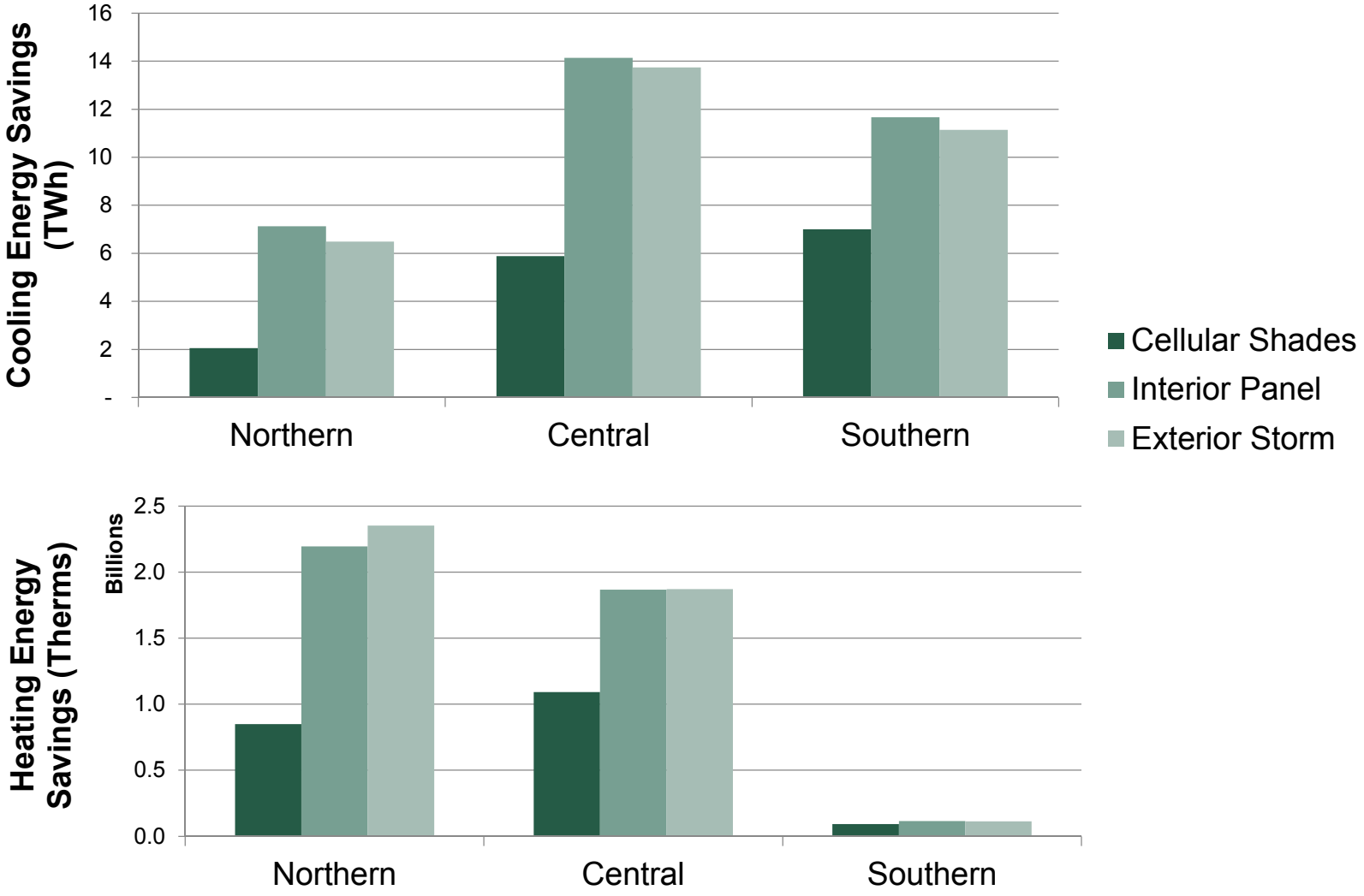
Annual Savings Potential Across Product Types

Potential	Adoption	Heating (Billion Therms)	Cooling (TWh)
Technical	100%	2-4.3	14.9-31.5
Achievable	10%	0.2-0.4	1.4-3.1
	20%	0.4-0.8	2.8-6.2
	50%	1-2.15	7.45-15.75

- For gas heating and electric A/C homes ~25% of homes in the US

Technical Annual Savings Potential by Climate Zone



Household-Level Annual Savings – Typical Home

Average Household Savings in Million BTU (LBNL Weighted Scenario)				
Region	Cities in Region	Cellular Shades	Exterior Storm Windows	Interior Panels
Northern	Boston, **Chicago**, Denver, Minneapolis	5.4	14.8	15.9
Central	Atlanta, Fort Worth, **San Francisco**, Washington DC	6.5	13.0	13.1
Southern	New Orleans, Phoenix, **San Antonio**, Tampa	6.6	9.5	8.6

Thank You

Questions?

How can window attachments save energy?

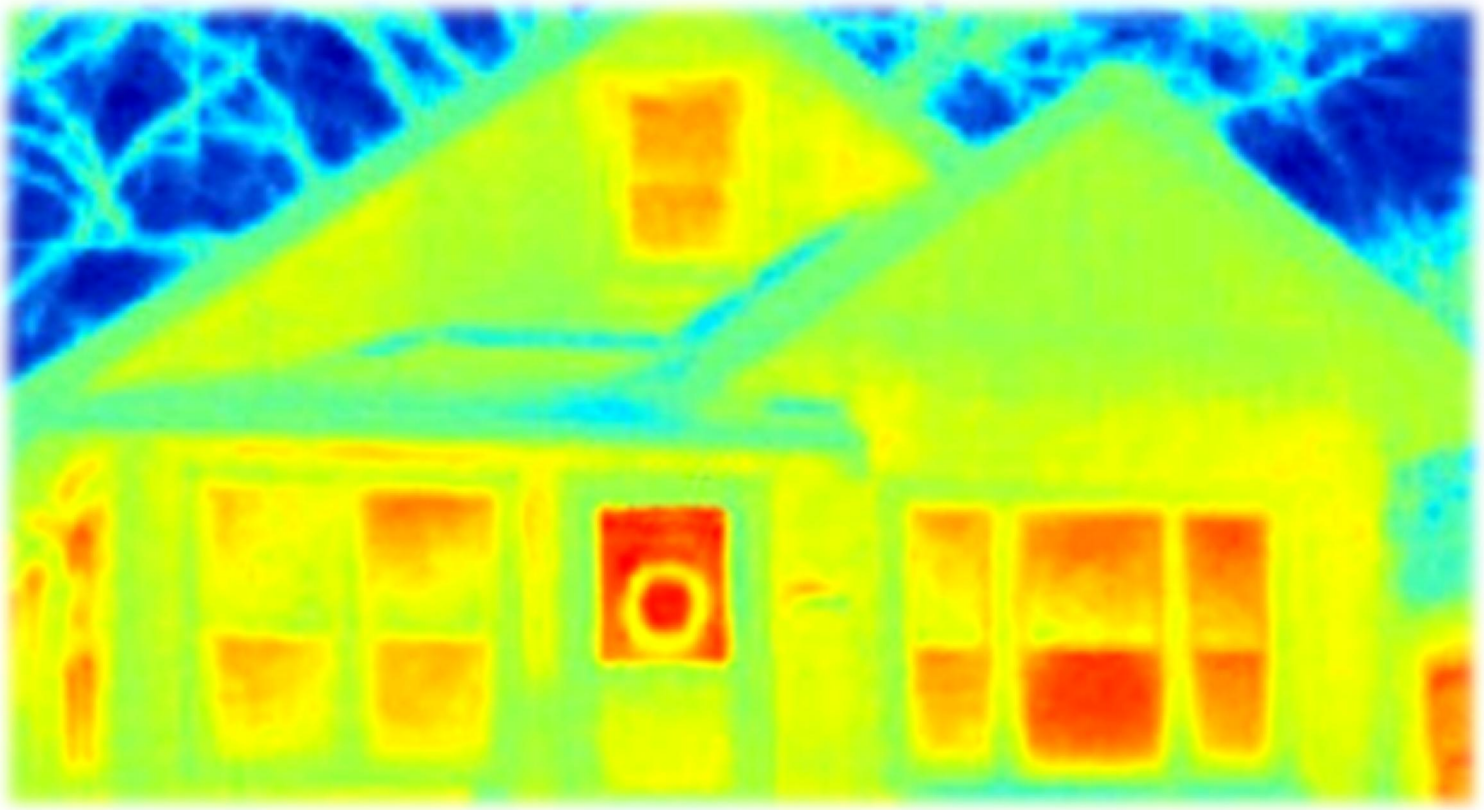
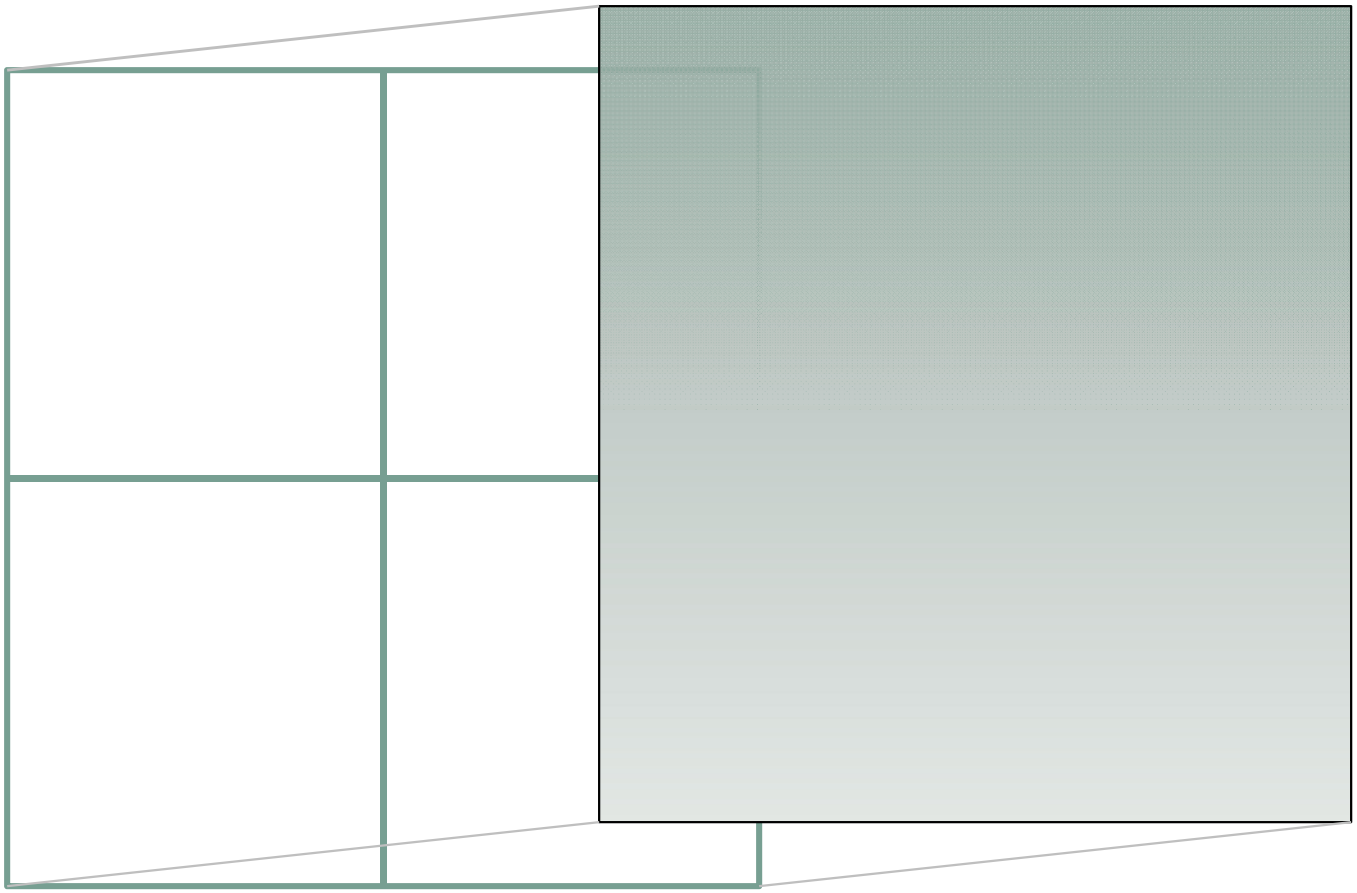


Image courtesy of Larson Manufacturing

Energy Efficient Window Attachments



Cellular Shades

Images courtesy of Hunter Douglas, Larson, Newell, and Springs

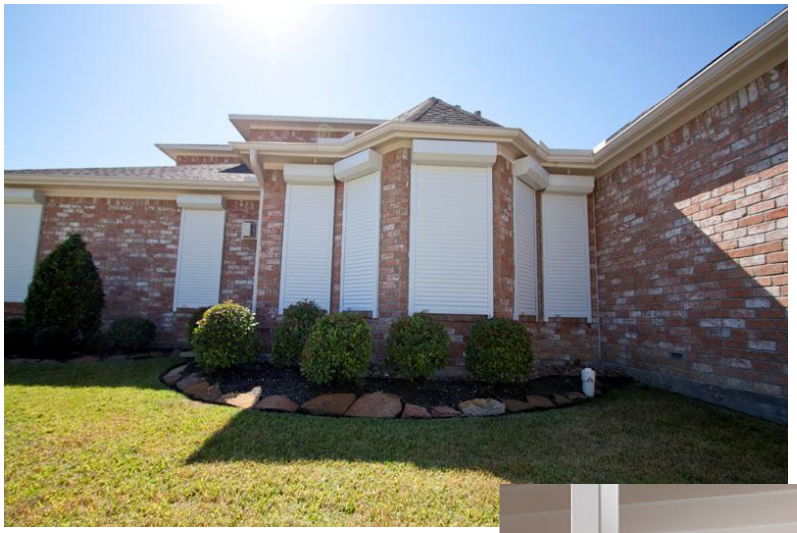
Low-e Panels and Storm Windows

Interior Panel

Storm Windows

Images courtesy of Larson Manufacturing

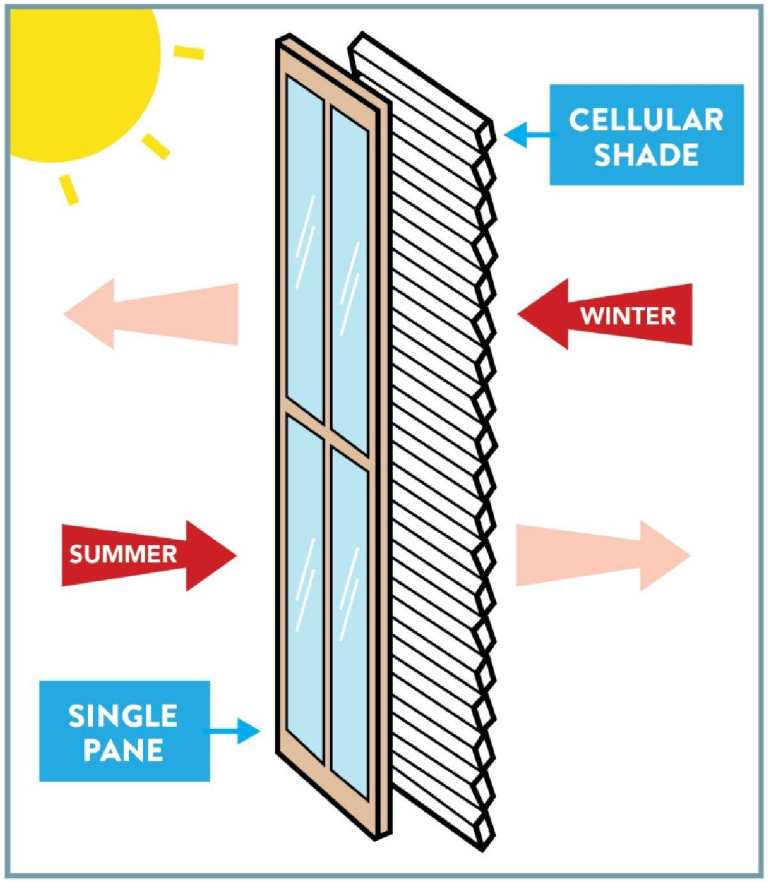
Exterior Shades, Shutters, and Awnings

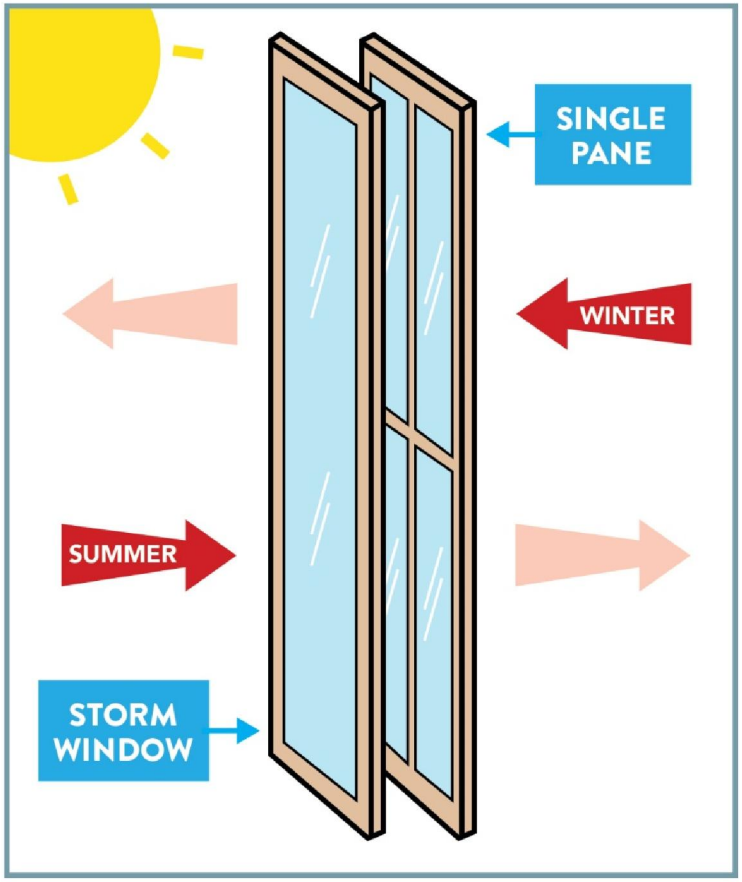


Images courtesy of Rollac and ___

How Window Attachments Work

- Reduce heat flow in summer and winter





Can the savings potential for Cellular Shades be realized?

- 85% of windows have a covering
- Rapid stock turnover
  - **154 million – 235 million** window coverings sold each year
    - The majority of shipments are vinyl or metal horizontal blinds – **85 million** units

Can the savings potential for Low-E Storm Windows and Interior Panels be realized?

- **37%** of installed base is still single pane windows
- **Less than 2%** of windows are replaced each year

Low-E Panels/Storm Windows
Stocked at major DIY retailers in many states
<$100 per opening
Can be self-installed

Estimation Method

- Methodology (See Paper)

- Key limitations

Basis for National and Regional Estimates

Curcija, D., M. Yazdanian, C. Kohler, R. Hart, R. Mitchell, and S. Vidanovic. 2013. *Energy Savings from Window Attachments.* Prepared for U.S. Department of Energy. Berkeley, Calif.: Lawrence Berkeley National Laboratory.

Frey, P., R. Harris, M. Huppert, K. Spataro, J. McLennan, J. Heller, and M. Heater. 2012. *Saving Windows, Saving Money: Evaluating the Energy Performance of Window Retrofit and Replacement.* Seattle, Wash.: National Trust for Historic Preservation's Preservation Green Lab.

Research and Presentation Funded by

Coming Soon

- **January 1, 2017**
  Independent third-party certified energy-performance ratings from the Attachment Energy Rating Council (AERC)

- Field studies

Questions:

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