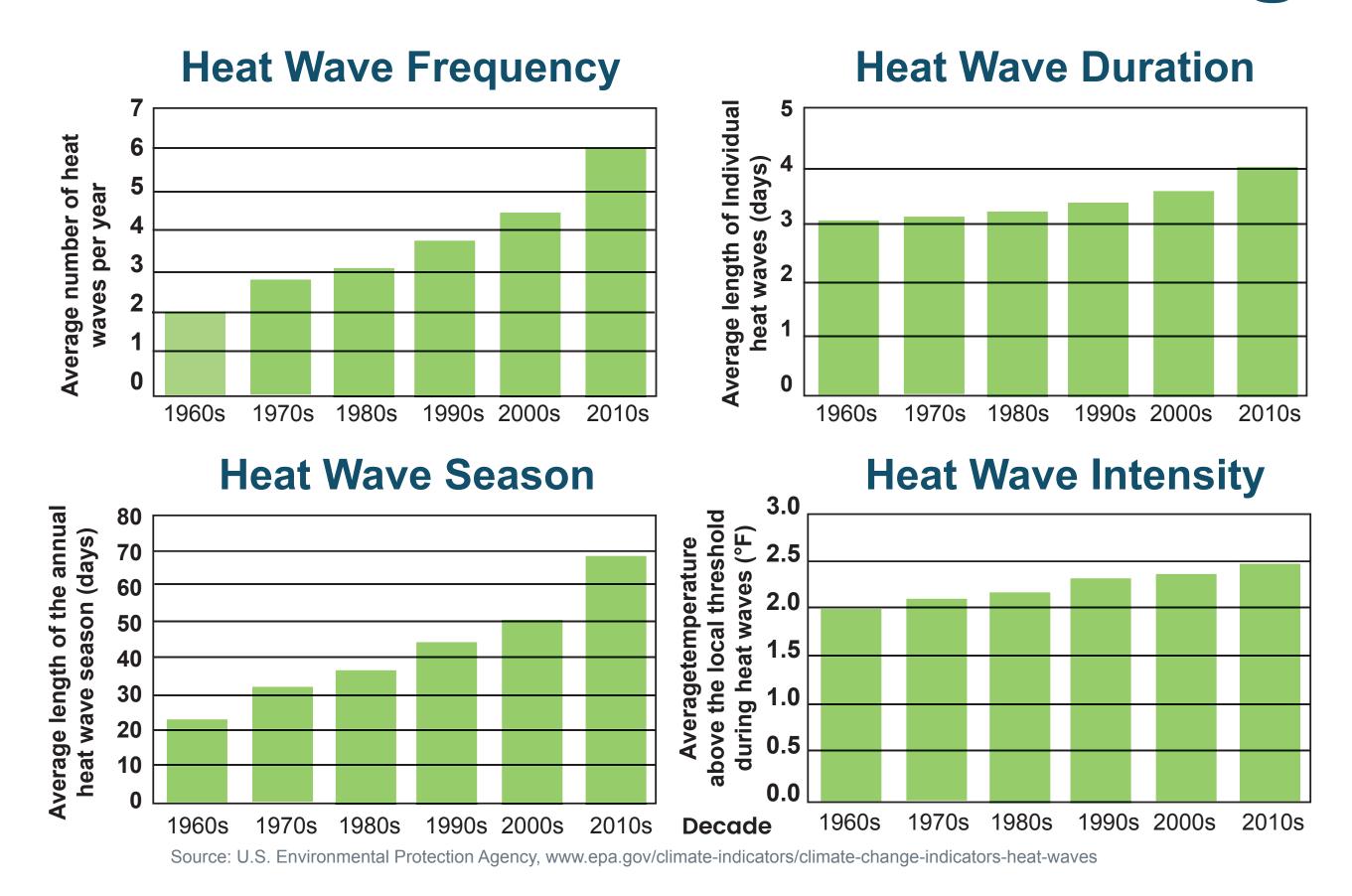
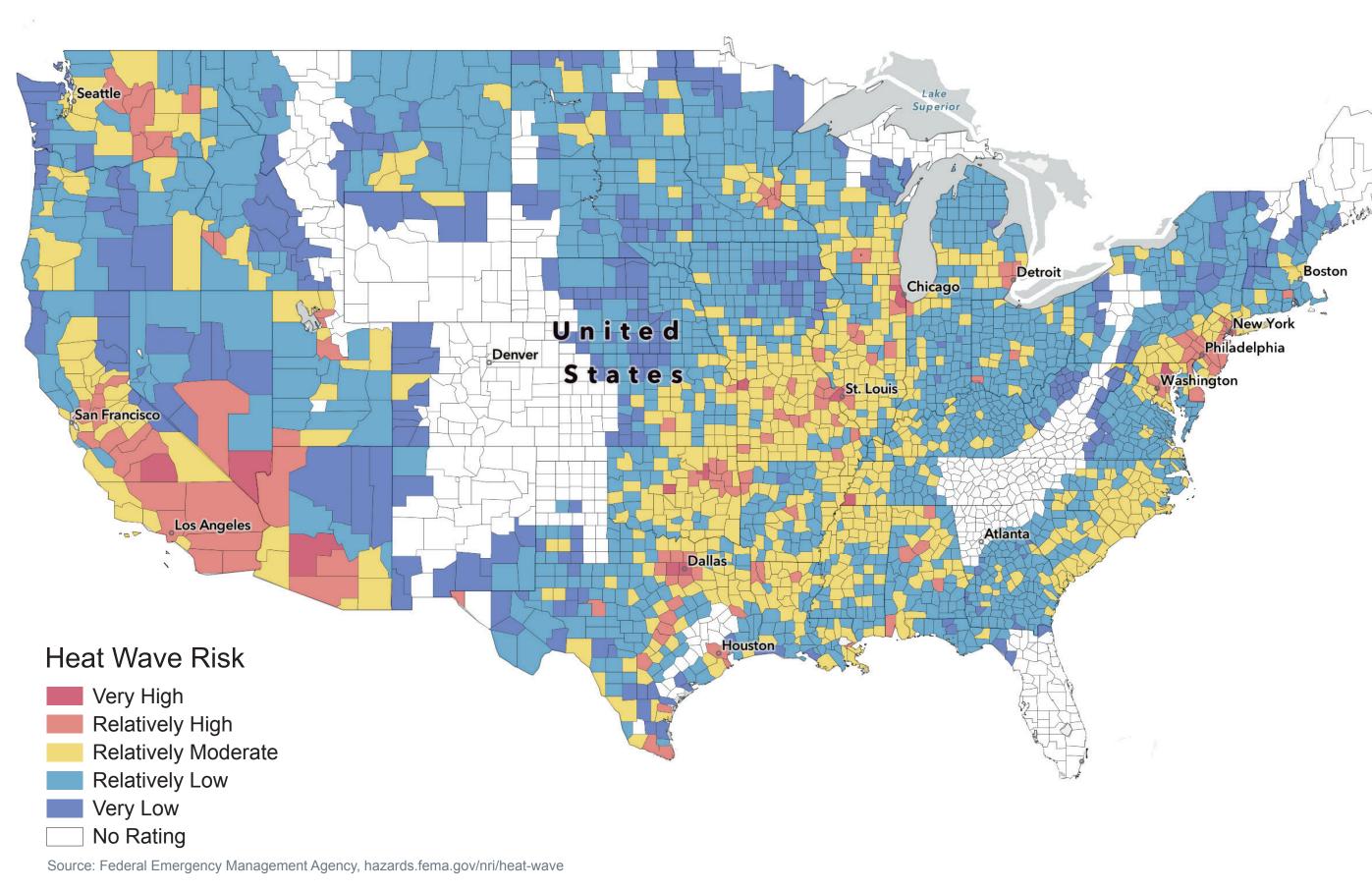
Window Coverings that Can Take the Heat

Heat Waves are Increasing



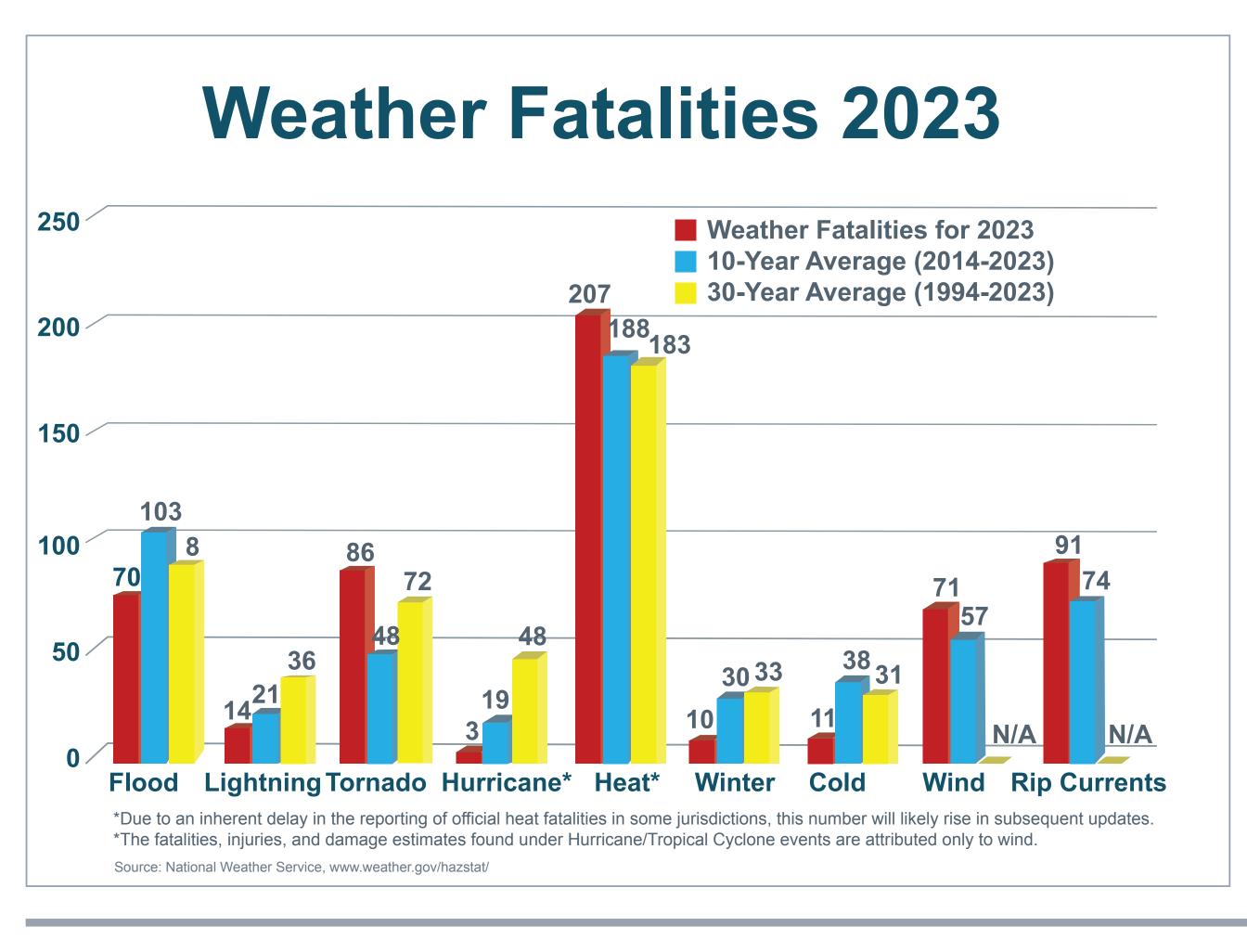
All U.S Regions are at Risk



Heat Waves are Fatal

Extreme heat is the most deadly of all weatherrelated hazards.

702 heat-related deaths each year 9,235 hospitalizations each year 67,512 emergency department visits















Baby It's Hot Outside!

When the sun is beating down, shading your windows is one of the best ways to keep out unwanted solar heat. Window attachments like cellular shades, roller shades, storm windows with low-emissivity coatings, and solar screens are effective, low-cost steps home owners and renters can implement to help keep their homes cooler in summer and livable longer in extreme heat events. Some of these measures, like cellular shades and low-e storm windows, can also help keep in the heat in the winter. Research by the U.S. Department of Energy's Pacific Northwest National Laboratory has proven the energy and cost savings of these low-cost DIY retrofits. See the Building America Solution Center's Disaster Resistance guidance for more on these and other ways to protect homes and occupants from extreme hot weather events. https://basc.pnnl.gov/disaster-resistance

Shading your windows is one of the best ways to keep out unwanted solar heat gain.

Interior Window Shading Systems:

There are many devices and approaches that can reduce solar heat gain from inside the home. Insulated cellular shades have been shown to provide significant savings, especially when automated or manually operated on an optimized schedule for solar heat blocking in summer and beneficial gain in winter. View-preserving systems like lowemissivity coatings on glass and solar screens provide views out but privacy against views in. At a minimum, choose light-colored drapes or blinds.

- Cellular, pleated, roller, or Roman shades Solar screens
- Low-emissivity windows and
- storm windows
- White or light blinds or drapes.



Solar screens allow some view while keeping out unwanted heat and providing privacy.

Exterior Window Shading Systems:

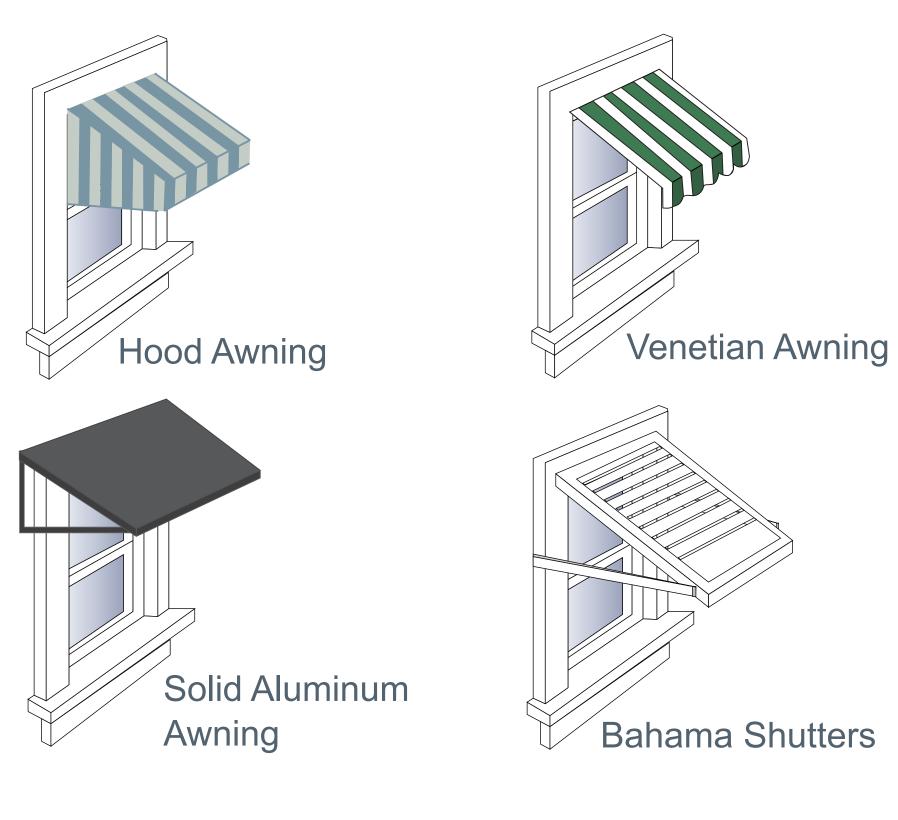
All else being equal, exterior shading devices are 8% to 10% more effective at keeping out heat than interior shading devices.

The best shading methods for south-facing windows are:

- Roof overhangs, porch roofs, second-story balconies
- Awnings
- Bahama shutters



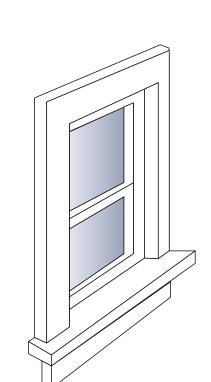
Roof Overhangs, Porch Roofs, Second-Story Balconies

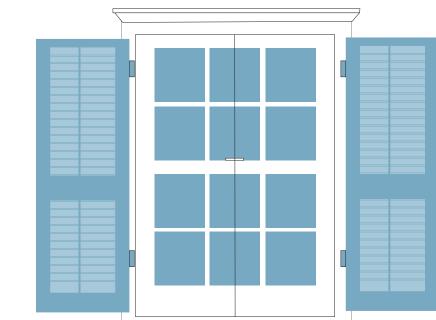




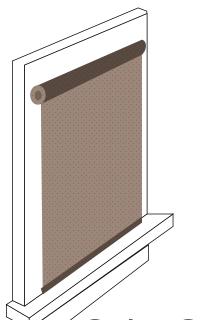
The best shading methods for east- and west-facing windows are:

- Low-emissivity windows and storm windows
- Solar screens
- Shutters
- Hurricane shutters
- Deep porches





Low-E Windows and Storm Windows



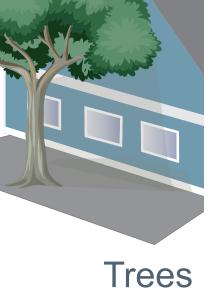




Solar Screens



Hurricane Shutters



Shutters

Source: Florida Solar Energy Center (FSEC), UCLA Energy Design Tools Group (Climate Consultant tool), PNNL

PNNL Window Attachments Research

Roller Shades

SAVINGS

\$220-\$360

Cellular Shades:

SAVINGS

\$280-\$770

Window attachments like cellular shades

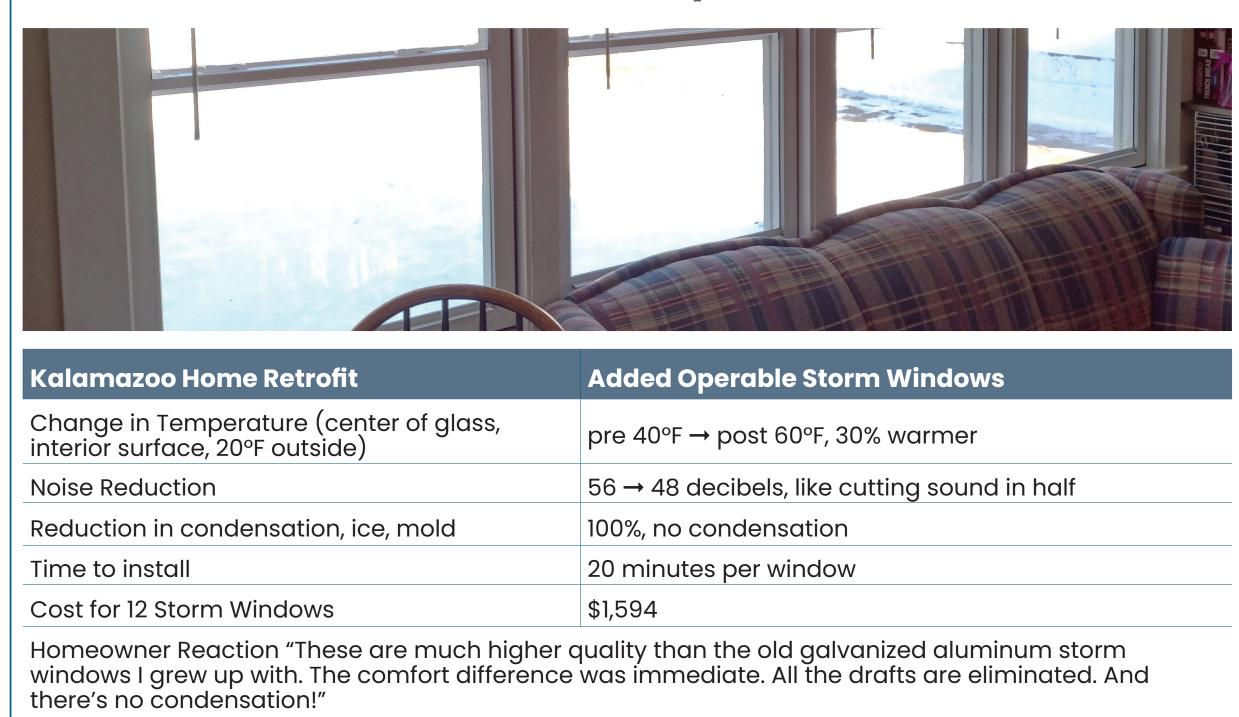




Awnings and exterior solar screens block the sun's heat before it reaches the window. Interior and exterior solar screens block the heat and glare while providing views out and privacy inside the home.



Storm Window Retrofit Case Study: Kalamazoo, MI



Solar Screens

SAVINGS

\$9-\$180

Storm Windows

SAVINGS

\$370-\$910

Pacific Northwest

and storm windows with low-emissivity coatings can provide energy savings in the winter and the summer.

- Easy installation 80% DIY
- Cuts HVAC load 10-33% in homes with single-pane or double-pane
- Operable, good looking
- Stays on for year-round comfort Preserves historic windows

Look for the AERC Label

The AERC label gives a climate rating showing how well the product performs in cold climates and warm climates. Window attachments for homes have been rated in these categories:

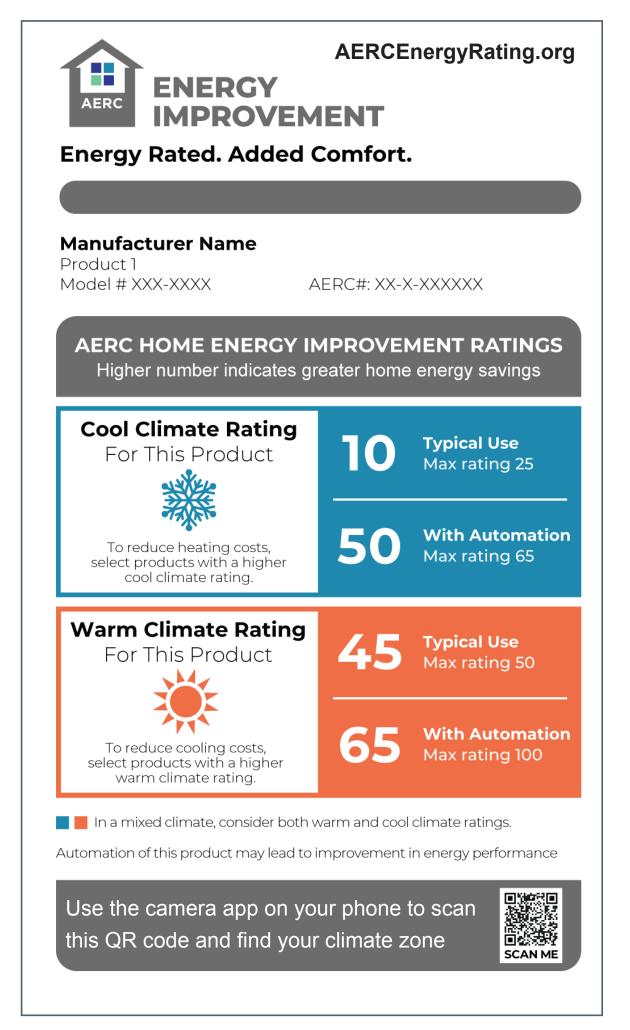
Product Categories



Not all Window Attachments are created equal!

Laboratory and field research by the Pacific Northwest National Laboratory showed that cellular shades (honeycomb blinds) were nearly twice as effective as vinyl blinds at preventing heat gain in summer and heat loss in winter. They also helped reduce lateafternoon peak energy demand.

PNNL's research helped lead to the formation of the Attachment Energy Rating Council (AERC). The AERC provides certification and product labeling to verify that window attachment products, such as awnings, cellular shades, pleated shades, roller shades, Roman shades, and storm windows. have been third-party tested for performance.



You are likely already buying window coverings for privacy. Look for the AERC rating to ensure energy savings as well.

