



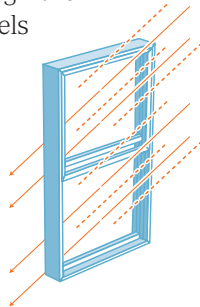
The Facts About Daylighting and Visible Transmittance

Daylighting the interior space of buildings is an important consideration for building design. Studies have shown that increased daylighting improves worker productivity, patient health, and students' grades. In addition, daylighting has the potential for significant energy savings, when integrated with lighting controls, by reducing the dependence on artificial lighting. Lighting systems not only add to the electrical demand, they also create heat that must be removed with additional air-conditioning.

The potential daylighting for buildings is directly related to the number of windows, curtain walls, skylights, and other fenestration products that are installed on the building envelope. *NFRC 200 – Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidents* is the industry standard for rating, comparing, and ranking both the Solar Heat Gain and Visible Transmittance of all fenestration products.

New Technology: Less Heat Gain, More Light

The solar spectrum is made up of ultraviolet (UV) light, visible light, and infrared (IR) light. In the past, many commercial buildings used reflective or tinted glass products to reduce solar heat gain through the windows. Unfortunately, these products also reduce the amount of visible light. This reduction in Visible Transmittance (VT) can lead to an increase in the amount of artificial lighting needed in buildings. To take advantage of potential savings from daylighting, the industry has seen growth in the use of *spectrally selective glass*. This type of glass has special properties that actually block or re-radiate the infrared energy from the sun, reducing solar gain through the windows, while maintaining higher levels of visible light transmittance. This type of product is also available for use in residential windows, typically with a spectrally selective low-e coating on the interior surface of insulating glass units.



Daylighting can save anywhere from 30% to 60% in building energy usage when integrated with appropriate lighting controls such as photocell activated lighting or automated shading systems.

NFRC Offers Certified VT Ratings

Any fenestration supplier or contractor that wishes to obtain certified VT ratings may participate in NFRC's Certification Program. When the program guidelines are followed, participants are authorized to place an *NFRC Label* or *Label Certificate* on their product showing the certified VT rating (along with ratings for U-factor and solar heat gain coefficient). Builders, architects, and code officials should use these certified ratings to compare products and to assure that the products meet specifications and code requirements.



Visible Transmittance (VT) measures how much light comes through a product. VT is expressed as a number between 0 and 1. Heavily tinted products have a relatively low VT.

Manufacturers who participate in the NFRC Certification Program can have their products and product energy ratings listed in the *NFRC Certified Products Directory*. The *Directory* lists thousand of certified products and is available on line at www.nfrc.org.

NFRC administers an independent, uniform rating and labeling system for the energy performance of fenestration products, including windows, curtain walls, doors, and skylights. For more information on NFRC, please visit our Web site at www.nfrc.org or contact NFRC directly at 301-589-6372.



World's Best Window Co.
Millennium 2000+ Casement
 CPD/000-x-000
 Vinyl-Clad Wood Frame • Double-glazing, 1/2" Gap
 Argon-filled, Low-e-18.04 • Solar Control Coatings

ENERGY Performance

- Energy savings will depend on your specific climate, building, and use
- For more information about this product, contact the manufacturer at (phone number and/or web site)
- For more information about NFRC, visit NFRC's web site at www.nfrc.org

Technical Information								
Res	U-Factor	.32	Solar Heat Gain Coefficient	.45	Visible Transmittance	.58	Air Leakage	.3
Non-Res		A .31		B .45		C .60		D .3

Manufacturer stipulates that these ratings conform to applicable NFRC procedures for determining whole product energy performance. NFRC ratings are determined for a fixed set of environmental conditions and specific product sizes.

- A** **U-Factor** measures how well a product prevents heat from escaping a building. U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-Factor, the better. U-Factor is particularly important in northern climates.
- B** **Solar Heat Gain Coefficient (SHGC)** measures how well a product blocks heat caused by sunlight. SHGC is expressed as a number between 0 and 1. A lower SHGC means less heat gain. SHGC is particularly important in southern climates.
- C** **Visible Transmittance (VT)** measures how much light comes through a product. VT is expressed as a number between 0 and 1. Heavily tinted products have a relatively low VT.
- D** **Air Leakage (AL)** measures how much outside air infiltrates into a building through a window, door, or skylight. AL is rated for a total product and is measured in cubic feet per minute per square foot (cfm/ft²) at a standard equivalent pressure difference that equates to a nominal 25 mile per hour exterior wind velocity. Air leakage rates typically fall in a range from 0.1 to 0.3. The lower the AL, the better a product is at keeping outside air out – both cold air in the winter and warm air in the summer. AL is an optional rating, and manufacturers can choose not to include it on their NFRC labels.