



**GUARDIAN®  
CLIMAGUARD®**  
Residential Glass Solutions

## Introducing ClimaGuard 80/71 Low-E Glass for Northern Climates

### Meeting ENERGY STAR® and ER Scores with Low-E glass.

In chilly climates like the northern U.S. and Canada where winter temperatures regularly plummet below the freezing point, low-E glass in your windows is the first line of defense. New Guardian ClimaGuard 80/71 low-E coated glass is designed to maximize solar heat gain and retain indoor heat—and this helps windows, doors and skylights meet new ENERGY STAR® standards and ER scores in northern homes.

### *When it's sunny and cold outside, keep it sunny and warm inside.*

With a U-factor of 0.26 in an argon-filled double-glazed unit, ClimaGuard 80/71 minimizes heat loss through windows and helps maintain warmer room-side glass temperatures. Coupled with a solar heat gain coefficient of 0.71, the light and heat combine to brighten and warm a home naturally, resulting in greater comfort and lower energy bills.

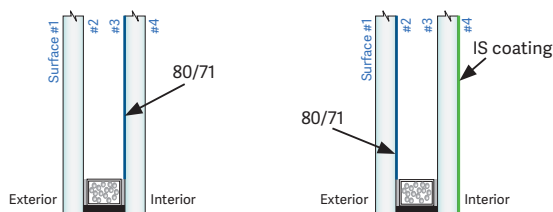
### Performance data and typical low-E coating applications:

Double Glazed	Visible Light				SHGC	U-Factor		
	Trans	Reflect Out	Reflect In	UV Trans		1/2" Gap Argon	5/16" Gap Argon	5/16" Gap Krypton
80/71 #3 surface	80%	14%	14%	44%	0.71	0.26	n/a	n/a
80/71 #2 + IS 4# surface	78%	15%	14%	41%	0.64	0.22	n/a	n/a

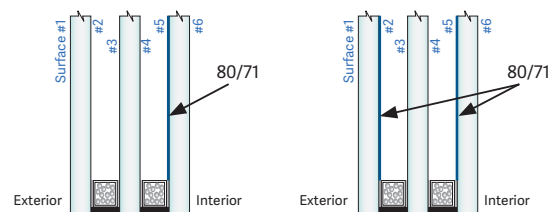
  

Triple Glazed	Visible Light				SHGC	U-Factor		
	Trans	Reflect Out	Reflect In	UV Trans		1/2" Gap Argon	5/16" Gap Argon	5/16" Gap Krypton
80/71 #5 surface	73%	20%	19%	37%	0.64	n/a	0.23	0.17
80/71 #2 & #5 surface	71%	18%	18%	28%	0.58	n/a	0.18	0.12

Configuration: 3.0mm clear glass, 90% Argon/10% Air filled and 90% Krypton/10% air filled.  
Performance data calculated for center-of-glass only (no spacer or framing) using the Guardian Performance Calculator.



Double-Glazed



Triple-Glazed



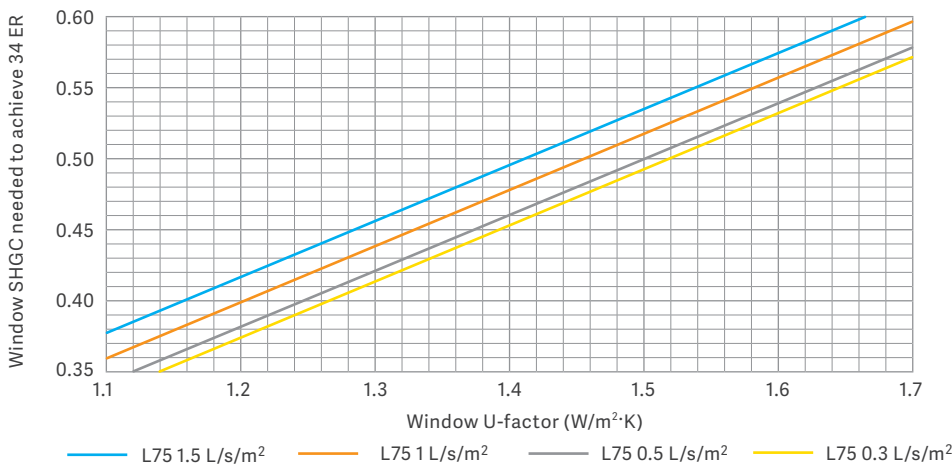


## ENERGY STAR® Canada — Version 5.0

Natural Resources Canada (NRCAN) has finalized ENERGY STAR® Version 5.0, effective January 1, 2020. Guardian Glass has developed ClimaGuard 80/71 low-E glass to help meet the new standard for windows, doors and skylights sold in Canada.

Version 5.0 requires a maximum U-factor of 1.22 ( $W/m^2 \cdot K$ ) or 0.21 ( $Btu/h \cdot ft^2 \cdot F$ ). As an alternative to the maximum U-factor, window manufacturers can calculate the Energy Rating (ER) score to achieve certification. The charts below illustrate the calculation to meet the minimum ER score of 34 needed for ENERGY STAR® window and door certification.

### ER Window Guide — Metric

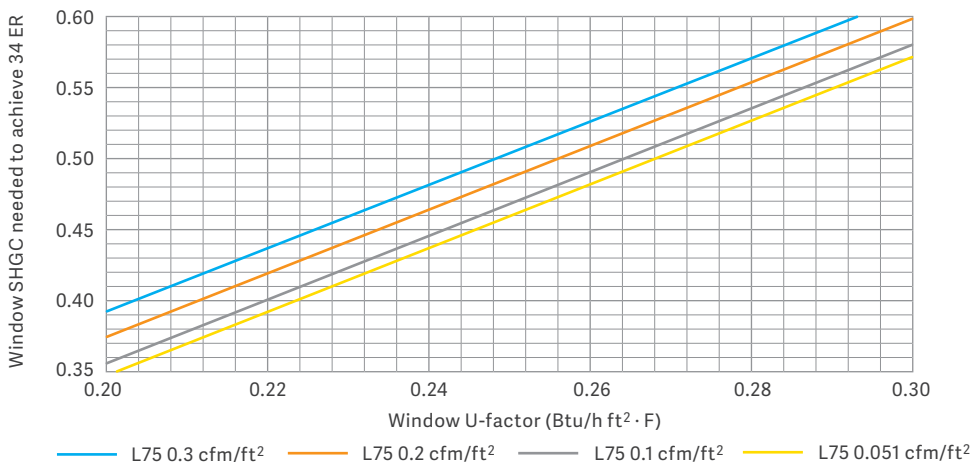


#### Example: Metric

A window with a  $\sim 1.4$  U-factor and  $\sim 1.5$  L/s/m<sup>2</sup> air leakage would need an SHGC of  $\sim 0.49$  or higher to achieve the minimum ER score of 34.

A window with a  $\sim 0.55$  SHGC and air leakage of  $\sim 0.5$  L/s/m<sup>2</sup> would need a U-factor below  $\sim 1.64$  to achieve a minimum ER score of 34.

### ER Window Guide — U.S. Standard



#### Example: U.S. Standard

A window with a  $\sim 0.26$  U-factor and  $\sim 0.1$  cfm/ft<sup>2</sup> air leakage would need an SHGC of  $\sim 0.49$  or higher to achieve the minimum ER score of 34.

A window with a  $\sim 0.47$  SHGC and air leakage of  $\sim 0.1$  cfm/ft<sup>2</sup> would need a U-factor below  $\sim 0.246$  to achieve a minimum ER score of 34.

All values are at the WINDOW level. This guide is intended to provide a quick reference for window performance in achieving a minimum ER of 34. These guides provide a rough estimate of total window performance relative to resulting ER score based on the Energy Star® ER calculation methodology. Provided for informational use only.