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.

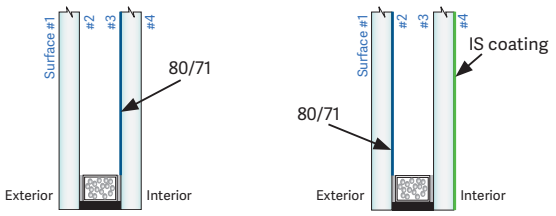
When it's sunny and cold outside, keep it sunny and warm inside.

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.

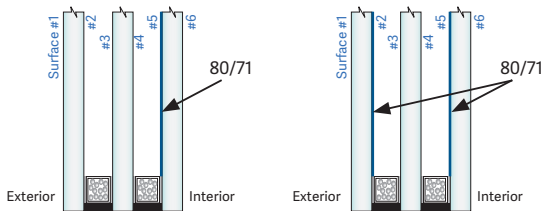
Performance data and typical low-E coating applications:

	Visible Light					U-Factor		
Double Glazed	Trans	Reflect Out	Reflect In	UV Trans	SHGC	1/2" Gap Argon	5/16" Gap Argon	5/16" Gap Krypton
80/71 #3 surface	80%	14%	14%	43 %	0.71	0.27	n/a	n/a
80/71 #2 + IS 4# surface	78%	15%	14%	41%	0.64	0.22	n/a	n/a
Triple Glazed								
80/71 #5 surface	73%	20%	19%	38%	0.64	n/a	0.23	0.17
80/71 #2 & #5 surface	71%	18%	18%	32%	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 LBNL Window 7.6, IGDB 71.



Double-Glazed



Triple-Glazed

GUARDIAN® GLASS

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GUARDIAN® CLIMAGUARD®

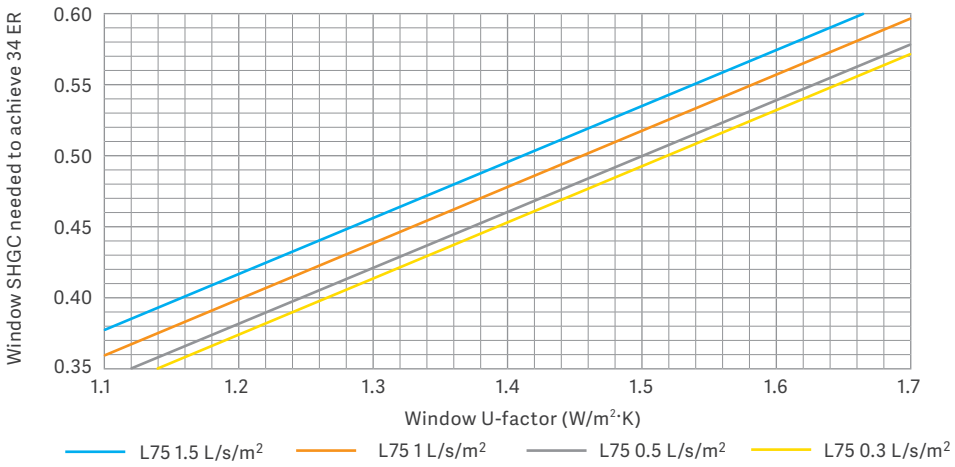
Residential Glass Solutions

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 ($Btu/h\ ft^2 \cdot F$). 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 minumum ER score of 34 needed for ENERGY STAR® window and door certification.

ER Window Guide — Metric

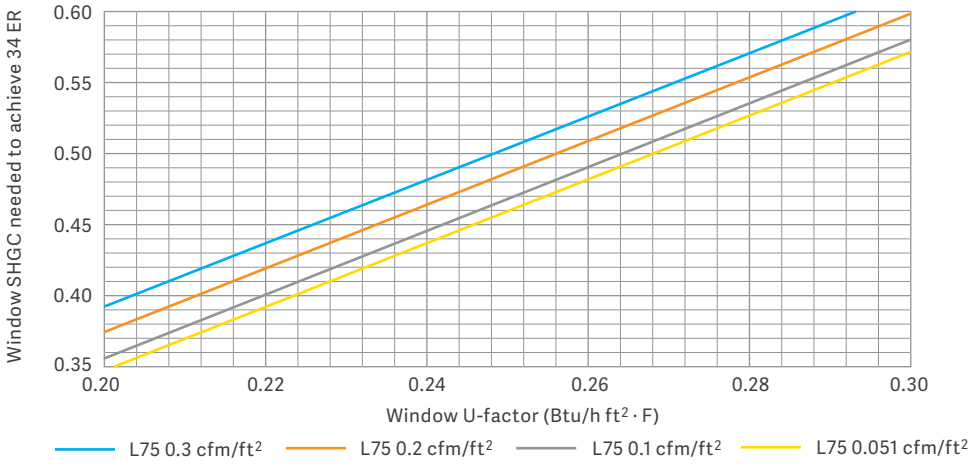


Example: Metric

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

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

ER Window Guide — U.S. Standard



Example: U.S. Standard

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

A window with a ~0.47 SHGC and air leakage of ~0.1 cfm/ft^2 would need a U-factor below ~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.

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