

LoE³-366 Glass

Cardinal LoE³-366® glass is the ultimate performance glass. It just might make all other low-e glass obsolete. LoE³-366 delivers the ideal balance of solar control and high visibility. And it provides the highest levels of year-round comfort and energy savings.

It's also the one glass you can use to be compliant in every ENERGY STAR zone – in a double-pane window. Couple it with LoE-i89®, and you're compliant in the North. Its low SHGC makes it compliant throughout the rest of the country as well. It's the perfect glass wherever you live.

Beats the heat. Keeps the view.

When the temperature soars, ordinary window glass just can't handle the heat. And tinted glass spoils the view. Cardinal LoE³-366, however, has been specially formulated to reject the sun's heat without affecting the view. It lets more light in and keeps more heat out. So your home stays cool and comfortable. Our patented LoE³-366 coating provides the ultimate in performance of all our LoE products.

What's more, LoE³-366 provides exceptional fading protection as well. It blocks 95% of the sun's damaging ultraviolet rays (a leading cause of fading), so it will help your furniture, carpets, curtains and wall coverings stay beautiful for years to come.

It's the perfect cold remedy, too.

During cold weather, the insulating effect of your windows has a direct impact on how your rooms feel. Typically, 75% of the exposed surface of a window is glass, and the temperature of the room-side of the glass directly affects the air temperature in the room. The better insulated the window glass, the warmer your room will be.

In fact, the Efficient Windows Collaborative (www.efficientwindows.org) suggests that when glass surface temperatures fall below 52°F, there is a risk of thermal discomfort. To maintain the best comfort during the winter, select a glass product that produces surface temperatures that will stay above this point during the coldest outdoor conditions.



One solution to beat everything and still **keep the view.**

The table below compares the room-side center of glass temperatures of different glass types against two different winter conditions.

INSIDE GLASS AND OUTSIDE TEMPERATURES

PRODUCT	OUTSIDE TEMP -20°F (-30°C)	OUTSIDE TEMP +20°F (-10°C)
Single-pane, clear	0°F (-19°C)	31°F (-3°C)
Double-pane, clear	37°F (2°C)	51°F (9°C)
Ordinary low-e (air fill)	46°F (7°C)	57°F (13°C)
LoE³ - 366 (air fill)	49°F (9°C)	58°F (14°C)
LoE³ - 366 (argon fill)	52°F (11°C)	60°F (15°C)

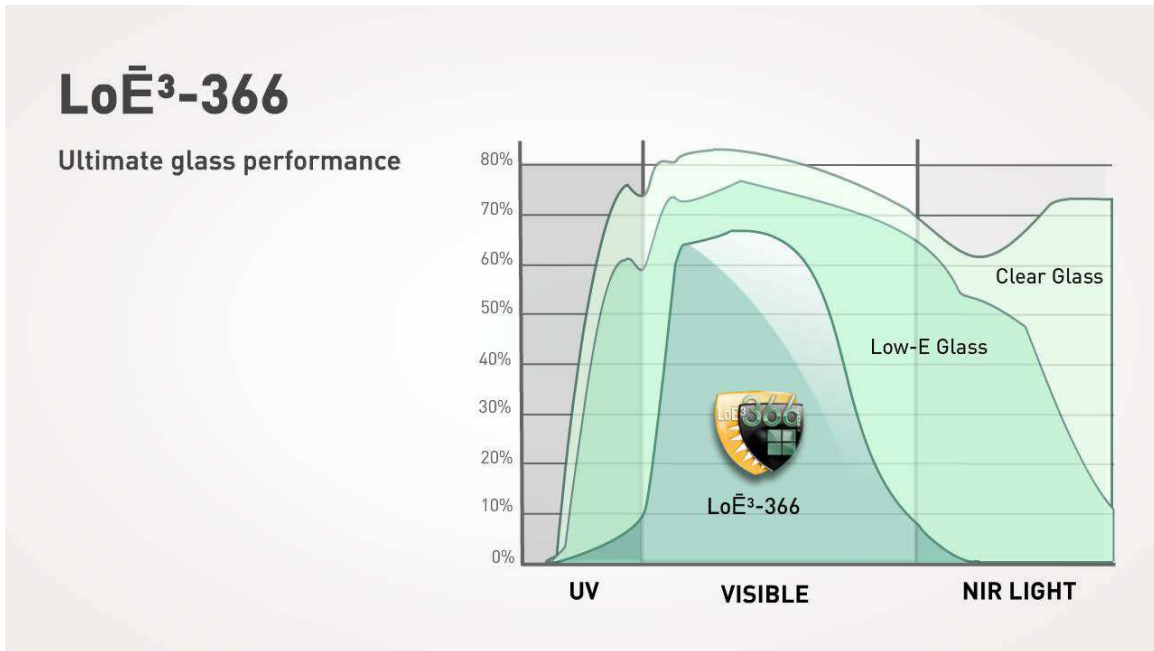
The superior insulating capability of Cardinal LoE³-366 is a key factor in the construction of comfortable windows for cold climates. The dramatic comfort improvement from windows with warm glass surfaces also means the relative humidity of the indoor air can be controlled and maintained properly. Proper humidity levels (not too much, not too little) will improve comfort and promote a healthier living environment.

Three layers of silver make the clear difference.

For years, Cardinal has been setting the standard for energy efficient glass. Top-of-the-line residential window and door manufacturers all rely on our high quality. Our patented state-of-the-art sputter coating processes are unmatched by any other glass manufacturer.

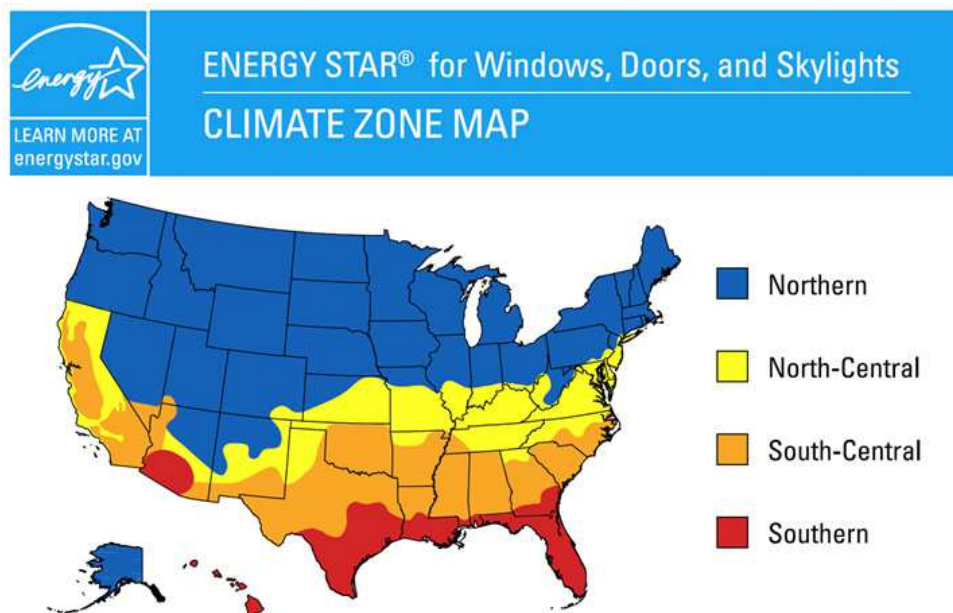
Now we've raised the bar. LoE³-366 adds a third layer of silver coating. Result: a clear coating that blocks even more solar gain, reflects heat, and lets the light stream in. LoE³-366 actually outperforms the tinted glass often used in warm climates.

Spectrally selective LoE³-366.



ENERGY STAR, everywhere.

The goal of the ENERGY STAR Windows program is to be better than code. LoE³-366 is the one low-E product that can qualify in all 4 climate zones: superior insulating value in the north, and clear solar control for everywhere else in the country.



GLASS PERFORMANCE

	VISIBLE LIGHT TRANSMITTANCE	SOLAR HEAT GAIN COEFFICIENT	WINTER U-FACTOR (AIR / ARGON)	UV	FADING TRANSMISSION
Single-pane, clear	90%	0.86	1.04 / –	0.71	0.84
Double-pane, clear	82%	0.78	0.48 / –	0.58	0.75
Ordinary low-e	76%	0.72	0.34 / 0.30	0.50	0.68
LoE³ – 366	65%	0.27	0.29 / 0.24	0.05	0.43

Definitions

Note: All values calculated using Window 6.3. (See <http://windows.lbl.gov/software/default.htm> and http://windows.lbl.gov/materials/optical_data/default.htm for more information on glass optical data and the Windows 6.3 program.) Emittance of ordinary (pyrolytic) low-E is 0.16.

Solar Heat Gain Coefficient – (SHGC) – The amount of solar radiation that enters a building as heat. The lower the number, the better the glazing is at preventing solar gain.

Fading Transmission – The portion of energy transmitted in a spectral region from 300 to 600 nanometers. This region includes all of the ultraviolet energy and part of the visible spectrum, and will give the best representation of relative fading rates. The lower the number, the better the glass is for reducing fading potential of carpets and interior furnishings.

U-Factor – This represents the heat flow rate through a window expressed in BTU/hr-ft².°F, using winter night weather conditions of 0°F outside and 70°F inside. The smaller the number, the better the window system is at reducing heat loss.

Cardinal actively supports and participates in the National Fenestration Rating Council (NFRC). Windows with **LoE³-366** that are rated and certified by the NFRC can comply with Energy Star™ requirements in all regions of the country. Northern zone will likely require the addition of **LoE-i89** on the 4th surface to comply with U-Factor requirements. (See https://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=WI for more information on the Energy Star windows program.)

You're always in season with LoE³-366 glass.

LoE³-366 is the ultimate performance glass, with energy savings throughout the year, in every part of the country. All with exceptional visibility. It's the perfect glass wherever you live.

LoE³-366 can be purchased in hurricane-resistant laminated glass, as well as in a variety of shapes and sizes.