




CARDINAL CG  ENGINEERING THE FUTURE OF COATED GLASS
A CARDINAL GLASS INDUSTRIES COMPANY





Cardinal LoE3-366® glass is the ultimate performance glass. It could make all other low-E glasses obsolete. LoE3-366 offers the ideal balance between solar control and high visibility. And it provides the highest level of comfort and energy savings year-round. It's also the glass you can use to qualify in every ENERGY STAR zone—in a double-pane window. Pair it with LoE-i89®, and you're compliant in the North. Its low SHGC makes it compliant in the rest of the country, too. It's the perfect glass no matter where you live.

When the temperature rises, ordinary glass can't withstand the heat. And tinted glass spoils your view. However, Cardinal LoE3-366 has been specially formulated to reject the sun's heat without affecting your view. It lets in more light and keeps more heat out. So your home stays cool and comfortable. Our patented LoE3-366 coating offers the best performance of any LoE product.

Additionally, LoE3-366 provides exceptional protection against fading. It blocks 95% of the sun's harmful ultraviolet rays (a leading cause of fading), helping your furniture, carpets, curtains, and wall coverings stay beautiful for years to come.



In cold weather, the insulating effect of your windows has a direct impact on the temperature in your rooms. Typically, 75% of a window's exposed surface is glass, and the temperature on the inside of the glass directly affects the air temperature in the room. The better the insulation, the warmer your room will be.

Indeed, the Efficient Windows Collaborative (www.efficientwindows.org) suggests that when the glass surface temperature falls below 52°F, there is a risk of thermal discomfort. To maintain optimal comfort during the winter, choose a glass product that produces surface temperatures that will remain above this point during the coldest outdoor conditions.



INTERIOR GLASS AND EXTERIOR TEMPERATURES

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

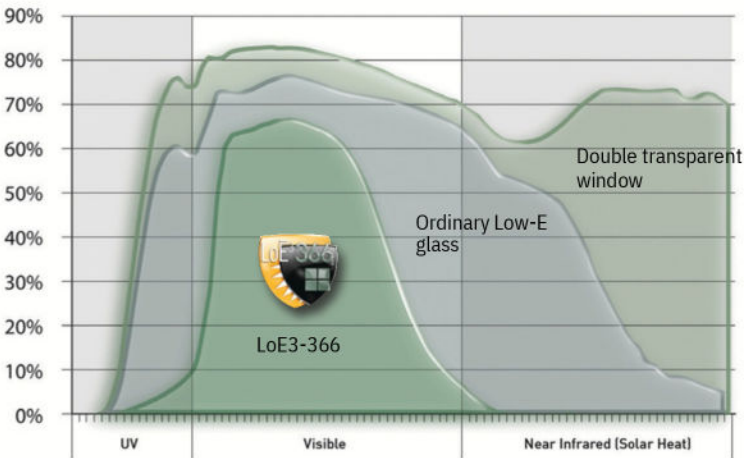
GLASS TYPE AND COATING	OUTSIDE TEMPERATURES	
	VERY COLD OUTSIDE -20°F (-30°C)	COLD OUTSIDE 20°F (-10°C)
	INDOOR TEMPERATURES	
Single panel, transparent	0°F (-19°C)	31°F (-3°C)
Double panel, transparent	37°F (2°C)	51°F (9°C)
Regular Low-e (air-filled)	46°F (7°C)	57°F (13°C)
LoE3-366 (air-filled)	49°F (9°C)	58°F (14°C)
LoE3-366 (argon filled)	52°F (11°C)	60°F (15°C)

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

A unique triple-layer coating.

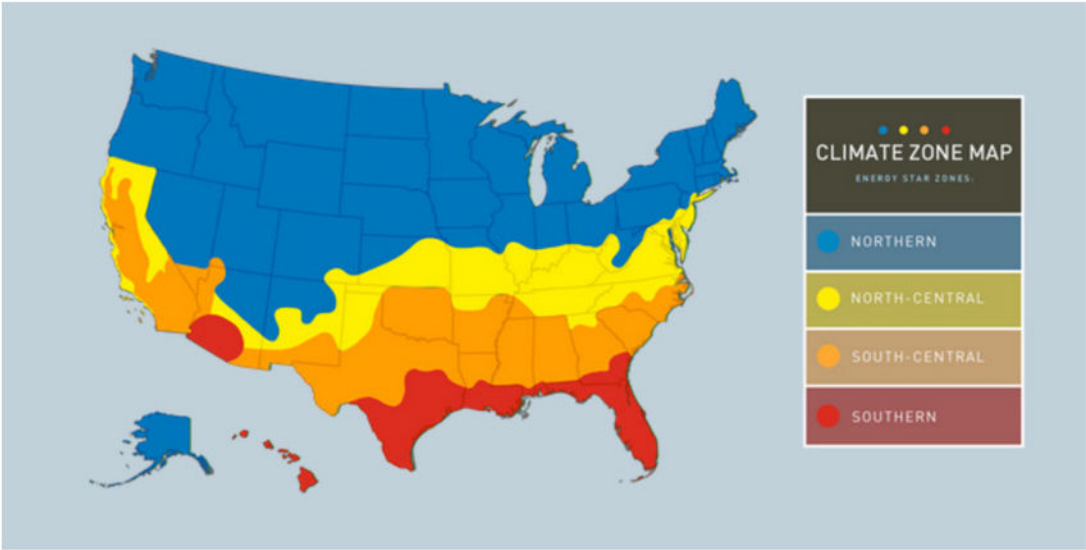
For years, Cardinal has set the standard for energy-efficient glass. Manufacturers of high-end residential windows and doors all rely on our high quality. Our patented powder-coating processes are unmatched by any other glass manufacturer.

Now we've raised the bar. LoE3-366 adds a third layer of silver coating. The result is a transparent coating that blocks even more solar gain, reflects heat, and lets light in. LoE3-366 actually outperforms tinted glass often used in hot climates.



ENERGY STAR, everywhere.

The goal of the ENERGY STAR Windows program is to exceed the code. LoE3-366 is the only low-emissivity product that can qualify in all four climate zones: superior insulation value in the North, and clear solar control everywhere else in the country.



GLASS PERFORMANCE

GLASS TYPE AND COATING	VISIBLE LIGHT			TRANSMISSION WEAKENING		SOLAR	U-FACTOR	
	TRANSMISSION	EXTERNAL REFLECTION	INTERNAL REFLECTION	UV	ISO	HEAT GAIN COEFFICIENT	IP/SI AIR FILLING	IP/SI AIR FILLING
Single panel, transparent	90%	8%	8%	0.71	0.84	0.86	1.04 / 5.91	—
Double panel, transparent	82%	15%	15%	0.58	0.75	0.78	0.48 / 2.73	—
Ordinary low-e	76%	17%	17%	0.50	0.68	0.72	0.34 / 1.93	0.30 / 1.70
LoE3-366	65%	11%	12%	0.05	0.43	0.27	0.29 / 1.65	0.24 / 1.36

LoE3-366 - Your choice for all seasons.



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

LoE3-366 LoE3-366 is available in hurricane-resistant laminated glass and in a variety of shapes and sizes.

To learn more about LoE3-366 and other Cardinal glass products, contact your window manufacturer, contractor, or architect.

