



HTR

Better glass. Better comfort.

LoE⁻180 • LoE²-272 • LoE³-366 • Neat+
Double pane • Triple pane • Argon • Super Spacer[®]

A contemporary guide for confident window selection

Technical values are center-of-glass unless noted.

The coating controls solar heat—not just heat loss

Choose the solar-gain strategy first; then choose pane count, argon fill and Super Spacer®.

COLDEST / PASSIVE SOLAR

LoE⁻-180

Welcomes winter sun

High solar gain • no Neat+

SHGC 0.69

BALANCED / FOUR SEASONS

LoE²-272

Moderates summer heat

Neat+ included free

SHGC 0.41

HOT SUN / FADE CONTROL

LoE³-366

Rejects more solar heat

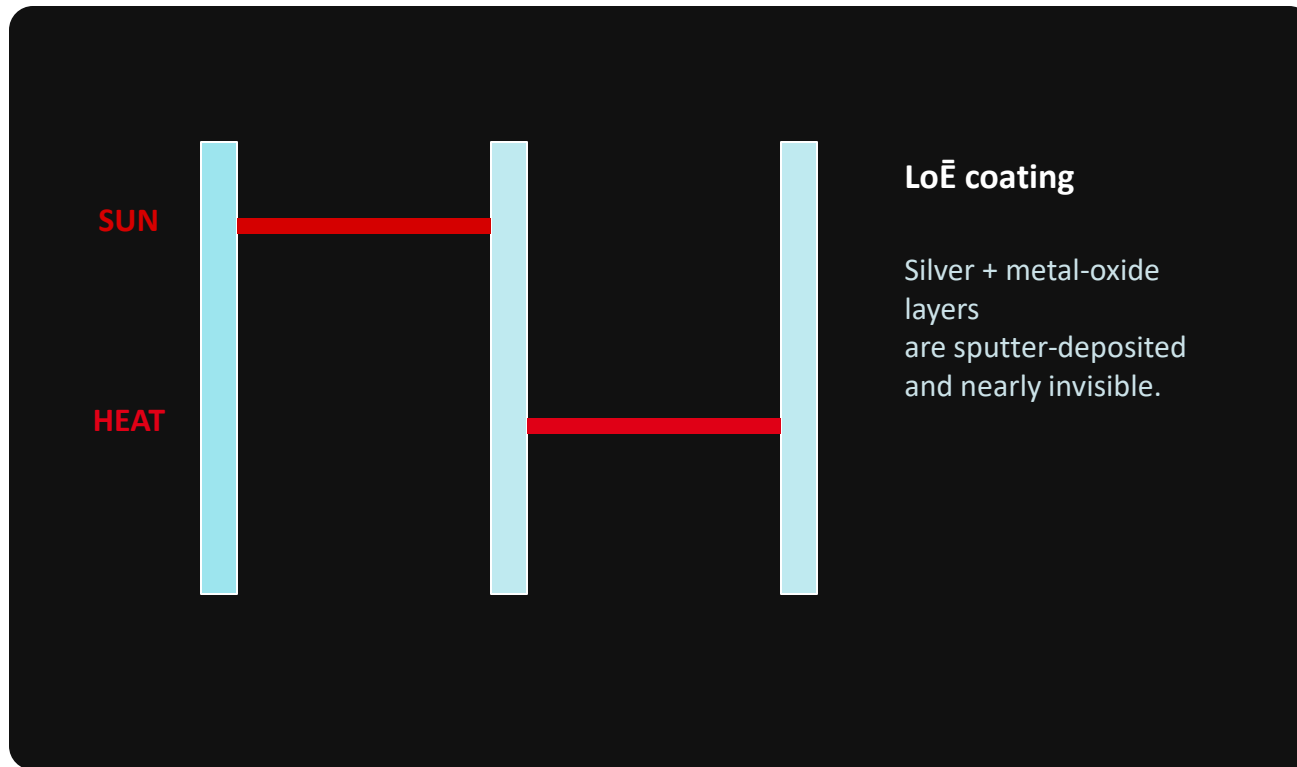
Neat+ included free

SHGC 0.27

All comparison values: 3 mm double-pane IGU, 13 mm cavity, 90% argon. Product-specific configurations can vary.

A microscopic coating redirects invisible heat

Low-emissivity layers remain transparent to daylight while reflecting long-wave infrared energy.



The coating surface position matters

#2 surface

Typical LoE²-272 / LoE³-366 placement

#3 surface

LoE-180 passive-solar placement

#1 exterior

Neat+ surface on our 272 and 366 packages

Important: coating selection changes SHGC, visible light and UV transmission. Pane count and gas fill primarily change insulation.

Three coatings, three distinct comfort strategies

Lower U-factor reduces heat flow. Lower SHGC reduces solar heat gain. Higher VT admits more daylight.

Product / best fit	Visible light	SHGC	U-factor	UV trans.
LoE ⁻ -180 no Neat+	79%	0.69	0.26	29%
LoE ² -272 Neat+ free	72%	0.41	0.25	16%
LoE ³ -366 Neat+ free	65%	0.27	0.24	5%

Apples-to-apples basis

3 mm glass • 13 mm airspace • 90% argon • center-of-glass values. Whole-window ratings depend on frame, size, Super Spacer profile and configuration.

Choose the solar response that fits the elevation

Orientation, shading, climate and room use should influence coating selection.

180	High solar gain South-facing cold-climate rooms	NO NEAT+	Winter heat can be an asset	Brightest of our three Low-E choices
272	Balanced control Mixed orientations / all-season comfort	NEAT+ FREE	Cuts solar gain to 0.41	Our versatile all-season package
366	Maximum solar control West / south exposure, cooling loads	NEAT+ FREE	Only 5% UV transmission	Strongest fade control of our three

Included free with LoE²-272 and LoE³-366.

40%

less dust vs. uncoated glass

25%

more photoactive than original Neat

≈3x

faster drying after sufficient UV exposure

How it works

- 1 Conductive surface dissipates static charge
- 2 Sunlight activates TiO₂ photocatalysis
- 3 Hydrophilic surface lets water sheet and dry faster

Our package rule

LoE-180 is supplied without Neat+. LoE²-272 and LoE³-366 always include Neat+ at no additional charge. Neat+ does not change visible light, SHGC or thermal performance.

Triple pane adds another insulated cavity—and more design leverage

The glass package must still be evaluated as part of the complete window.

DOUBLE INSULATED GLASS

2 panes • 1 argon cavity

- Standard sealed unit
- Overall thickness: 7/8 in.
- Cardinal LoE glass + Super Spacer®

TRIPLE INSULATED GLASS

3 panes • 2 argon cavities

- Optional high-performance unit
- Overall thickness: 1 3/8 in.
- Cardinal LoE glass + Super Spacer®

Example: LoE³-366 + Neat+ / clear / LoE-180 triple pane with 90% argon reaches center-of-glass U-factor 0.13.



OUR SEALED GLASS UNITS

Built in-house around a proven component stack

- | | | |
|---|-----------------------------|--|
| 1 | Cardinal LoE glass | Controls solar gain, daylight and UV |
| 2 | Super Spacer® | Flexible, no-metal warm-edge system |
| 3 | Argon gas | Reduces heat transfer in each cavity |
| 4 | Integrated desiccant | Helps manage moisture inside the unit |
| 5 | Secondary sealant | Supports gas retention and structural durability |
| 6 | In-house fabrication | Controls assembly, fill and finished quality |

Photographs show representative double- and triple-pane constructions.

Argon lowers heat transfer when the cavity and seals are engineered together

Cardinal's published LoE comparison values use a 90% argon / 10% air fill.

0.31 → 0.26

LoE-180 U-factor: air → argon

0.30 → 0.25

LoE²-272 U-factor: air → argon

0.29 → 0.24

LoE³-366 U-factor: air → argon

What preserves the benefit

— Optimized gap

Gas performance depends on cavity width.

— Barrier system

Super Spacer layers help control moisture and gas loss.

— Flexible edge

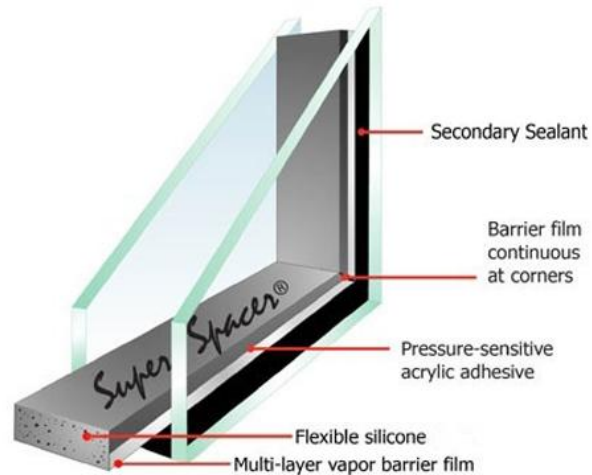
Foam construction moves with temperature cycling.

— Quality fill control

Published Cardinal data assumes 90% initial fill.

The flexible warm edge completes our insulated-glass package

Cardinal coated glass provides optical and solar performance; Super Spacer supports edge efficiency and durability.



FLEXIBLE • ALL-FOAM • NO METAL

Why we use it

- **Warmer glass edge** Reduces thermal transfer at the perimeter
- **Lower seal stress** Expands and contracts with temperature changes
- **Moisture control** Desiccated construction protects the cavity
- **Dual-seal design** Secondary sealant supports gas retention and strength
- **Clean sightline** A narrow, continuous edge appearance

Exact Super Spacer profile and secondary sealant follow our approved production specification.

Three Low-E packages—clearly defined

Tempered and laminated glass are also available for applicable safety, security and specialty requirements.

Package	Glass	Neat+	Availability / purpose
Passive-solar package	LoE ⁻¹⁸⁰	Not included	High solar gain; double or triple pane
Balanced package	LoE ²⁻²⁷²	Included free	All-season control; double or triple pane
Solar-control package	LoE ³⁻³⁶⁶	Included free	Low SHGC and strong UV reduction
Tempered glass	Available	Per package rule	Safety glazing where required or specified
Laminated glass	Available	Per package rule	Safety, security, sound or specialty use

ER ratings are not provided for tempered or laminated sealed units. Published performance values elsewhere in this guide are center-of-glass data.

THE TAKEAWAY

Specify the glass package, not just “Low-E.”

1

Three Low-E choices

180, 272 or 366—no other Low-E options

2

Pane count

Double or triple insulated glass

3

Argon + Super Spacer

Protect thermal performance and edge durability

4

Neat+ rule

Free with 272 and 366; not offered on 180

Primary sources

cardinalcorp.com/products/coated-glass • quanex.com/product/insulating-glass-spacers/dual-seal
Technical bulletins: Cardinal CG09–12/24 and CG04–06/24 • Manufacturer IGU specification

Tempered and laminated options are available; ER ratings are not provided on those units.