



Performance Data and Comparisons

The performance of Cardinal's LoE™ products are shown on the attached "Insulating Glass Performance Comparison" charts. The following products and combination of products are compared.

- IG units with nominal 3 mm and 6 mm glass substrates.
- IG units with clear, green, gray, and bronze non-coated glass substrates.
- IG units with LoE²-270™, LoE²-272™, LoE³-366™, and LoE²-240™ on the #2 glass surface.
- IG units with LoE-179™ on the #2 or #3 glass surfaces.
- IG units with green, gray, and bronze outdoor glass substrates with LoE-179™, LoE²-270™, LoE²-272™, LoE³-366™, and LoE²-240™ on the #3 Indoor glass surface.

Although the Winter U-factors are not affected when Cardinal's LoE™ coatings are used on the #2 or #3 surface, the Shading Coefficient and Solar Heat Gain Coefficient will be higher when the coatings are on the #3 glass surface compared to the #2 glass surface.

Cardinal IG Company does not recommend the use of LoE™ coatings on tinted substrates; therefore, there is no performance data listed for these combinations. However, Cardinal will supply IG units with a tinted lite outdoors and clear LoE™ coated products on (surface #3) indoors. When using LoE™/LoE²® coated glass with tinted outdoor glass substrates, the potential for having glass breakage from thermally-induced stress is increased compared to the use of these coatings with clear glass substrates.

Cardinal IG Company also does not recommend solar control LoE™ coatings (LoE²-272™, LoE²-270™, LoE³-366™, and LoE²-240™) be used on the #3 surface of an dual pane IG unit with a clear outdoor lite. These coatings are designed as second surface coatings in a dual pane IG unit. The only LoE™ coating recommended for use on the #3 surface of a dual pane IG unit with a clear outdoor lite is LoE-179™.



CARDINAL GLASS INDUSTRIES
INSULATING GLASS PERFORMANCE COMPARISON
(3 mm / 13.0 / 3 mm)

| Exterior Glass | Interior Glass | Visible Light | | | SHGC | SC | Center of Glass U-Factor (Btu/hr/ft ² /°F) | | Comfort | | UV Trans 310-380 nm | Tdw ISO/CIE 300-700 nm |
|-----------------------------|-----------------------------|---------------|-------------|------|------|------|---|-------|------------------------|--------|---------------------|------------------------|
| | | Trans. % | Reflectance | | | | Air | Argon | Indoor Glass Temp (°F) | | | |
| | | | % Out | % In | | | | | Winter | Summer | | |
| Clear | Clear | 82% | 15% | 15% | 0.78 | 0.89 | 0.48 | 0.46 | 45 | 92 | 58% | 75% |
| LoE-179™ (#2) | Clear | 79% | 14% | 14% | 0.65 | 0.75 | 0.32 | 0.28 | 54 | 88 | 24% | 61% |
| LoE ² -272™ (#2) | Clear | 72% | 11% | 12% | 0.41 | 0.47 | 0.30 | 0.25 | 56 | 84 | 16% | 55% |
| LoE ² -270™ (#2) | Clear | 70% | 12% | 13% | 0.37 | 0.42 | 0.29 | 0.25 | 56 | 83 | 14% | 53% |
| LoE ² -366™ (#2) | Clear | 65% | 11% | 12% | 0.27 | 0.31 | 0.29 | 0.24 | 56 | 83 | 5% | 43% |
| LoE ² -240™ (#2) | Clear | 40% | 14% | 10% | 0.25 | 0.29 | 0.30 | 0.26 | 55 | 86 | 16% | 35% |
| Clear | LoE-179™ (#3) | 79% | 14% | 14% | 0.70 | 0.80 | 0.32 | 0.28 | 54 | 96 | 24% | 61% |
| Green | Clear | 75% | 13% | 14% | 0.60 | 0.69 | 0.48 | 0.45 | 45 | 99 | 34% | 63% |
| Green | LoE-179™ (#3) | 72% | 13% | 14% | 0.53 | 0.61 | 0.32 | 0.28 | 54 | 94 | 15% | 53% |
| Green | LoE ² -272™ (#3) | 66% | 10% | 10% | 0.42 | 0.48 | 0.30 | 0.25 | 56 | 97 | 11% | 48% |
| Green | LoE ² -270™ (#3) | 64% | 11% | 12% | 0.69 | 0.45 | 0.29 | 0.24 | 56 | 97 | 10% | 46% |
| Green | LoE ² -366™ (#3) | 59% | 10% | 10% | 0.35 | 0.40 | 0.29 | 0.24 | 56 | 100 | 3% | 38% |
| Green | LoE ² -240™ (#3) | 37% | 9% | 14% | 0.42 | 0.48 | 0.30 | 0.26 | 55 | 117 | 10% | 30% |
| Gray | Clear | 57% | 9% | 13% | 0.60 | 0.70 | 0.48 | 0.45 | 45 | 95 | 32% | 50% |
| Gray | LoE-179™ (#3) | 54% | 9% | 13% | 0.52 | 0.60 | 0.32 | 0.28 | 54 | 95 | 14% | 42% |
| Gray | LoE ² -272™ (#3) | 50% | 8% | 9% | 0.38 | 0.43 | 0.30 | 0.25 | 56 | 96 | 10% | 38% |
| Gray | LoE ² -270™ (#3) | 48% | 8% | 11% | 0.35 | 0.40 | 0.29 | 0.25 | 56 | 97 | 9% | 37% |
| Gray | LoE ² -366™ (#3) | 45% | 8% | 10% | 0.29 | 0.34 | 0.29 | 0.24 | 56 | 99 | 3% | 30% |
| Gray | LoE ² -240™ (#3) | 28% | 7% | 14% | 0.38 | 0.44 | 0.30 | 0.26 | 55 | 116 | 9% | 24% |
| Bronze | Clear | 61% | 10% | 13% | 0.62 | 0.72 | 0.48 | 0.45 | 45 | 94 | 31% | 51% |
| Bronze | LoE-179™ (#3) | 59% | 9% | 13% | 0.54 | 0.62 | 0.32 | 0.28 | 54 | 95 | 14% | 43% |
| Bronze | LoE ² -272™ (#3) | 54% | 8% | 10% | 0.39 | 0.45 | 0.30 | 0.25 | 56 | 96 | 10% | 39% |
| Bronze | LoE ² -270™ (#3) | 52% | 9% | 11% | 0.36 | 0.42 | 0.29 | 0.25 | 56 | 97 | 9% | 37% |
| Bronze | LoE ² -366™ (#3) | 48% | 8% | 10% | 0.31 | 0.35 | 0.29 | 0.24 | 56 | 99 | 3% | 30% |
| Bronze | LoE ² -240™ (#3) | 30% | 8% | 14% | 0.40 | 0.46 | 0.30 | 0.26 | 55 | 117 | 9% | 25% |

NOTES:

- (1) Data was calculated using Window 5.2 computer program.
- (2) Calculations based on 13 mm (1/2") gap, with 3 mm (1/8") glass.
- (3) Comfort Indoor Glass Temperatures are for the center portion of the glass. NFRC 100-2002 environmental conditions used for calculations.
- (4) Tinted substrates listed above are generic and do not include selective substrates i.e. Azurite, Evergreen, Blue Green, and Greylite, etc.
For properties of other tinted substrates with LoE™ coatings, contact Cardinal Technical Services.

CARDINAL GLASS INDUSTRIES
INSULATING GLASS PERFORMANCE COMPARISON
(6 mm / 13.0 / 6 mm)

| Exterior Glass | Interior Glass | Visible Light | | | SHGC | SC | Center of Glass U-Factor (Btu/hr/ft ² /°F) | | Comfort | | UV Trans 310-380 nm | Tdw ISO/CIE 300-700 nm |
|-----------------------------|-----------------------------|---------------|-------------|------|------|------|---|-------|------------------------|--------|---------------------|------------------------|
| | | Trans. % | Reflectance | | | | Air | Argon | Indoor Glass Temp (°F) | | | |
| | | | % Out | % In | | | | | Winter | Summer | | |
| Clear | Clear | 80% | 15% | 15% | 0.72 | 0.83 | 0.47 | 0.45 | 45 | 96 | 48% | 70% |
| LoE-179™ (#2) | Clear | 77% | 14% | 13% | 0.61 | 0.70 | 0.32 | 0.27 | 55 | 93 | 21% | 58% |
| LoE ² -272™ (#2) | Clear | 70% | 11% | 11% | 0.40 | 0.45 | 0.29 | 0.25 | 56 | 87 | 14% | 53% |
| LoE ² -270™ (#2) | Clear | 68% | 12% | 12% | 0.36 | 0.41 | 0.29 | 0.25 | 56 | 86 | 13% | 50% |
| LoE ² -366™ (#2) | Clear | 63% | 11% | 11% | 0.27 | 0.31 | 0.29 | 0.24 | 56 | 85 | 4% | 41% |
| LoE ² -240™ (#2) | Clear | 37% | 13% | 10% | 0.24 | 0.28 | 0.30 | 0.25 | 56 | 88 | 13% | 32% |
| Clear | LoE-179™ (#3) | 77% | 13% | 14% | 0.65 | 0.75 | 0.32 | 0.27 | 55 | 100 | 21% | 58% |
| Green | Clear | 68% | 12% | 14% | 0.49 | 0.57 | 0.47 | 0.45 | 45 | 99 | 22% | 54% |
| Green | LoE-179™ (#3) | 66% | 11% | 13% | 0.43 | 0.50 | 0.32 | 0.27 | 55 | 95 | 10% | 47% |
| Green | LoE ² -272™ (#3) | 60% | 9% | 10% | 0.36 | 0.42 | 0.29 | 0.25 | 56 | 97 | 8% | 43% |
| Green | LoE ² -270™ (#3) | 58% | 10% | 11% | 0.35 | 0.40 | 0.29 | 0.25 | 56 | 97 | 7% | 41% |
| Green | LoE ² -366™ (#3) | 54% | 9% | 10% | 0.32 | 0.36 | 0.28 | 0.24 | 56 | 100 | 2% | 34% |
| Green | LoE ² -240™ (#3) | 32% | 8% | 13% | 0.36 | 0.41 | 0.30 | 0.25 | 56 | 114 | 6% | 26% |
| Gray | Clear | 42% | 7% | 12% | 0.48 | 0.56 | 0.47 | 0.45 | 45 | 101 | 20% | 37% |
| Gray | LoE-179™ (#3) | 40% | 7% | 12% | 0.40 | 0.47 | 0.32 | 0.27 | 55 | 97 | 9% | 31% |
| Gray | LoE ² -272™ (#3) | 36% | 6% | 9% | 0.30 | 0.35 | 0.29 | 0.25 | 56 | 96 | 7% | 28% |
| Gray | LoE ² -270™ (#3) | 35% | 6% | 10% | 0.28 | 0.32 | 0.29 | 0.25 | 56 | 96 | 6% | 27% |
| Gray | LoE ² -366™ (#3) | 33% | 6% | 9% | 0.24 | 0.28 | 0.29 | 0.24 | 56 | 97 | 2% | 22% |
| Gray | LoE ² -240™ (#3) | 19% | 6% | 13% | 0.30 | 0.35 | 0.30 | 0.25 | 56 | 110 | 6% | 17% |
| Bronze | Clear | 48% | 8% | 13% | 0.50 | 0.58 | 0.47 | 0.45 | 45 | 100 | 19% | 37% |
| Bronze | LoE-179™ (#3) | 46% | 7% | 12% | 0.43 | 0.50 | 0.32 | 0.27 | 55 | 97 | 9% | 32% |
| Bronze | LoE ² -272™ (#3) | 42% | 7% | 9% | 0.32 | 0.37 | 0.29 | 0.25 | 56 | 97 | 6% | 29% |
| Bronze | LoE ² -270™ (#3) | 41% | 7% | 10% | 0.30 | 0.34 | 0.29 | 0.25 | 56 | 97 | 6% | 28% |
| Bronze | LoE ² -366™ (#3) | 38% | 7% | 9% | 0.26 | 0.30 | 0.29 | 0.24 | 56 | 98 | 2% | 23% |
| Bronze | LoE ² -240™ (#3) | 22% | 6% | 13% | 0.32 | 0.37 | 0.30 | 0.25 | 56 | 112 | 5% | 18% |

NOTES:

- (1) Data was calculated using Window 5.2 computer program.
- (2) Calculations based on 13 mm (1/2") gap, with 6 mm (1/4") glass.
- (3) Comfort Indoor Glass Temperatures are for the center portion of the glass. NFRC 100-2002 environmental conditions used for calculations.
- (4) Tinted substrates listed above are generic and do not include selective substrates i.e. Azurlite, Evergreen, Blue Green, and Greylite, etc. For properties of other tinted substrates with LoE™ coatings, contact Cardinal Technical Services.
- (5) Some of the above IG constructions may require Heat Treating the glass to reduce the risk of thermal stress breakage. Please see TSB IG07 for guidelines.

The following sputtered and pyrolytic low-E coated products are grouped according to their construction make-ups for comparisons of optical and thermal performances. Performance values for the products listed below were calculated using the Lawrence Berkeley Window 5.2 Computer Program, and they are listed in the "Low-E Performance Comparison Table" on the following page.

Sputtered – Triple Silver Layer Products:

- Cardinal LoE³-366™
- PPG Solarban® 70 XL

Sputtered – Double Silver Layer Products:

- Cardinal LoE²-272™
- Cardinal LoE²-270™
- PPG Solarban® 60
- Viracon E1-2M
- Guardian ClimaGuard™ 71/38
- AFG Comfort Ti-AC™
- AFG Comfort Ti-R™
- AFG Comfort Ti-PS™

Sputtered – Double Silver Layer Sun Products:

- Cardinal LoE²-240™
- Viracon VE-155
- Guardian ClimaGuard™ 55/27

Sputtered – Single Silver Layer Products:

- Cardinal LoE-179™
- PPG Sungate® 100
- Viracon E1-85
- Guardian ClimaGuard™ 75/68

Pyrolytic – Oxide Coating Products:

- AFG Comfort E2™
- Pilkington N.A. Energy Advantage™
- Pilkington N.A. Solar E™
- PPG Sungate® 500

Triple Pane:

- LoE²-272™ #2 & #5
- LoE²-270™ #2 & #5
- LoE³-366™ #2 & #5
- LoE²-240™ #2 & LoE²-272™ #5
- LoE²-240™ #2 & LoE²-270™ #5
- LoE-179™ #2 & #5

Although there are other Low-E products in the industry, the attached listing includes the most commonly used. If further performance information is required on these or other Low Emissivity Products, please contact Cardinal Technical Services.

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CARDINAL GLASS INDUSTRIES
LOW-E INSULATING GLASS PERFORMANCE COMPARISON

| IG Configuration | Visible Light | | Center of Glass | | | | Aluminum Window (no thermal break) | | Aluminum Window (w/ thermal break) | | Alum. Clad Wood/ Reinforced Vinyl Window | | Wood/Vinyl Window | | | | | | | | | | |
|---|---------------|-------------|--------------------------------------|------------------------|------|----------|------------------------------------|----------|------------------------------------|------|--|-------|-------------------|------|-------|------|------|-------|------|------|----------|------|----------|
| | Trans. | Reflectance | U-Factor (Btu/hr/ft ² /F) | Indoor Glass Temp (°F) | | U-Factor | ISO/CIE | U-Factor | U-Factor | SHGC | Air | Argon | SHGC | Air | Argon | SHGC | Air | Argon | | | | | |
| | | | | % Out | % In | | | | | | | | | | | | | | SHGC | LSG | U-Factor | SHGC | U-Factor |
| Clear IG (e=-.840) | 82% | 15% | 15% | 0.78 | 1.05 | 0.48 | 0.46 | 45 | 90 | 58% | 75% | 0.85 | 0.83 | 0.70 | 0.58 | 0.57 | 0.64 | 0.48 | 0.47 | 0.57 | 0.43 | 0.42 | 0.56 |
| Low-E Sputtered Products - Triple Silver Layer | | | | | | | | | | | | | | | | | | | | | | | |
| Cardinal LoE ³ -366™ #2 (e=-.022) | 65% | 11% | 12% | 0.27 | 2.41 | 0.29 | 0.24 | 56 | 83 | 5% | 43% | 0.72 | 0.68 | 0.32 | 0.45 | 0.42 | 0.26 | 0.36 | 0.33 | 0.22 | 0.31 | 0.28 | 0.21 |
| PPG SolarBan 70XL #2 (e=-.018) | 64% | 12% | 13% | 0.27 | 2.37 | 0.29 | 0.24 | 56 | 83 | 6% | 43% | 0.71 | 0.68 | 0.32 | 0.45 | 0.42 | 0.26 | 0.36 | 0.33 | 0.22 | 0.31 | 0.28 | 0.21 |
| Low-E Sputtered Products - Double Silver Layer | | | | | | | | | | | | | | | | | | | | | | | |
| Cardinal LoE ² -272™ #2 (e=.042) | 72% | 11% | 12% | 0.41 | 1.76 | 0.30 | 0.25 | 56 | 84 | 16% | 55% | 0.72 | 0.69 | 0.43 | 0.45 | 0.42 | 0.37 | 0.37 | 0.34 | 0.32 | 0.32 | 0.29 | 0.31 |
| Cardinal LoE ² -270™ #2 (e=-.037) | 70% | 12% | 13% | 0.37 | 1.89 | 0.30 | 0.25 | 56 | 83 | 14% | 53% | 0.72 | 0.69 | 0.39 | 0.45 | 0.42 | 0.33 | 0.37 | 0.34 | 0.29 | 0.32 | 0.29 | 0.28 |
| PPG SolarBan 60 #2 (e=-.035) | 72% | 11% | 13% | 0.39 | 1.85 | 0.29 | 0.25 | 56 | 84 | 21% | 56% | 0.72 | 0.69 | 0.41 | 0.45 | 0.42 | 0.34 | 0.36 | 0.34 | 0.30 | 0.31 | 0.29 | 0.29 |
| Viracon E1-2M #2 (e=-.040) | 73% | 11% | 12% | 0.38 | 1.92 | 0.30 | 0.25 | 56 | 84 | 11% | 53% | 0.72 | 0.69 | 0.41 | 0.45 | 0.42 | 0.34 | 0.37 | 0.34 | 0.30 | 0.32 | 0.29 | 0.29 |
| Guardian ClimateGuard 71/38 #2 (e=-.027) | 71% | 10% | 12% | 0.39 | 1.82 | 0.29 | 0.24 | 56 | 83 | 24% | 56% | 0.72 | 0.69 | 0.41 | 0.45 | 0.42 | 0.35 | 0.36 | 0.33 | 0.30 | 0.31 | 0.28 | 0.29 |
| AFG Comfort TIAC #2 (e=-.037) | 62% | 29% | 23% | 0.40 | 1.55 | 0.30 | 0.25 | 56 | 83 | 30% | 51% | 0.72 | 0.69 | 0.42 | 0.45 | 0.42 | 0.36 | 0.36 | 0.34 | 0.31 | 0.32 | 0.29 | 0.30 |
| AFG Comfort TIR #2 (e=-.033) | 71% | 21% | 18% | 0.47 | 1.51 | 0.29 | 0.25 | 56 | 84 | 30% | 57% | 0.72 | 0.69 | 0.47 | 0.45 | 0.42 | 0.41 | 0.36 | 0.34 | 0.36 | 0.31 | 0.29 | 0.35 |
| AFG Comfort TIPS #3 (e=-.060) | 78% | 11% | 11% | 0.62 | 1.26 | 0.30 | 0.26 | 55 | 96 | 44% | 67% | 0.72 | 0.69 | 0.58 | 0.46 | 0.43 | 0.52 | 0.37 | 0.34 | 0.46 | 0.32 | 0.29 | 0.45 |
| Low-E Sputtered Sun Products | | | | | | | | | | | | | | | | | | | | | | | |
| Cardinal LoE ² -240™ #2 (e=-.057) | 40% | 14% | 10% | 0.25 | 1.60 | 0.30 | 0.26 | 55 | 86 | 16% | 35% | 0.72 | 0.69 | 0.30 | 0.46 | 0.43 | 0.24 | 0.37 | 0.34 | 0.21 | 0.32 | 0.29 | 0.20 |
| Viracon E1-55 #2 (e=-.092) | 49% | 11% | 16% | 0.36 | 1.36 | 0.31 | 0.27 | 55 | 88 | 16% | 36% | 0.73 | 0.70 | 0.39 | 0.47 | 0.44 | 0.33 | 0.38 | 0.35 | 0.28 | 0.33 | 0.30 | 0.27 |
| Guardian ClimateGuard 55/27 #2 (e=-.024) | 55% | 12% | 17% | 0.27 | 2.04 | 0.29 | 0.24 | 56 | 84 | 18% | 41% | 0.72 | 0.69 | 0.32 | 0.45 | 0.42 | 0.26 | 0.36 | 0.33 | 0.22 | 0.31 | 0.28 | 0.21 |
| Low-E Sputtered Products - Single Silver Layer | | | | | | | | | | | | | | | | | | | | | | | |
| Cardinal LoE ² -179™ #2 (e=-.110) | 79% | 14% | 14% | 0.65 | 1.22 | 0.32 | 0.28 | 54 | 88 | 24% | 61% | 0.74 | 0.71 | 0.60 | 0.47 | 0.44 | 0.55 | 0.38 | 0.35 | 0.48 | 0.33 | 0.30 | 0.47 |
| Cardinal LoE ² -179™ #3 (e=-.110) | 79% | 14% | 14% | 0.70 | 1.13 | 0.32 | 0.28 | 54 | 96 | 24% | 61% | 0.74 | 0.71 | 0.64 | 0.47 | 0.44 | 0.58 | 0.38 | 0.35 | 0.52 | 0.33 | 0.30 | 0.51 |
| PPG Sungate 100 #2 (e=-.096) | 78% | 12% | 13% | 0.57 | 1.37 | 0.31 | 0.27 | 53 | 89 | 35% | 65% | 0.73 | 0.70 | 0.55 | 0.46 | 0.43 | 0.49 | 0.38 | 0.35 | 0.43 | 0.33 | 0.30 | 0.42 |
| Viracon E1-85 #2 (e=-.088) | 79% | 12% | 13% | 0.58 | 1.36 | 0.31 | 0.27 | 55 | 87 | 31% | 64% | 0.73 | 0.70 | 0.55 | 0.47 | 0.43 | 0.49 | 0.38 | 0.35 | 0.43 | 0.33 | 0.30 | 0.43 |
| Guardian ClimateGuard 75/68 #2 (e=-.122) | 77% | 13% | 14% | 0.63 | 1.22 | 0.32 | 0.28 | 54 | 87 | 50% | 68% | 0.74 | 0.71 | 0.59 | 0.47 | 0.44 | 0.53 | 0.38 | 0.36 | 0.47 | 0.33 | 0.31 | 0.46 |
| Low-E Pyrolytic Products | | | | | | | | | | | | | | | | | | | | | | | |
| AFG Comfort E2 #3 (e=-.204) | 76% | 16% | 14% | 0.73 | 1.04 | 0.35 | 0.31 | 53 | 101 | 44% | 64% | 0.76 | 0.73 | 0.67 | 0.49 | 0.46 | 0.61 | 0.40 | 0.37 | 0.54 | 0.35 | 0.32 | 0.53 |
| Pilk/LOF Energy Adv. #3 (e=-.156) | 75% | 18% | 17% | 0.72 | 1.04 | 0.33 | 0.29 | 54 | 100 | 45% | 65% | 0.75 | 0.72 | 0.65 | 0.48 | 0.45 | 0.60 | 0.39 | 0.36 | 0.53 | 0.34 | 0.31 | 0.52 |
| Pilk/LOF Solar E #2 (e=-.166) | 54% | 11% | 16% | 0.46 | 1.17 | 0.34 | 0.30 | 53 | 91 | 38% | 51% | 0.75 | 0.72 | 0.46 | 0.48 | 0.45 | 0.40 | 0.39 | 0.37 | 0.35 | 0.34 | 0.32 | 0.34 |
| PPG Sungate 500 #3 (e=-.215) | 76% | 18% | 17% | 0.71 | 1.07 | 0.35 | 0.31 | 52 | 99 | 49% | 66% | 0.76 | 0.73 | 0.65 | 0.48 | 0.46 | 0.59 | 0.40 | 0.38 | 0.52 | 0.35 | 0.33 | 0.51 |
| Triple Pane Products | | | | | | | | | | | | | | | | | | | | | | | |
| LoE ² -272™ #2 & #5 | 57% | 13% | 13% | 0.35 | 1.63 | 0.19 | 0.15 | 61 | 94 | 5% | 40% | 0.65 | 0.63 | 0.38 | 0.38 | 0.36 | 0.32 | 0.30 | 0.28 | 0.28 | 0.25 | 0.23 | 0.27 |
| LoE ² -270™ #2 & #5 | 55% | 15% | 15% | 0.31 | 1.77 | 0.19 | 0.15 | 61 | 93 | 4% | 37% | 0.65 | 0.62 | 0.35 | 0.38 | 0.36 | 0.29 | 0.30 | 0.28 | 0.25 | 0.23 | 0.24 | 0.24 |
| LoE ³ -366™ #2 & #5 | 47% | 13% | 13% | 0.24 | 1.96 | 0.19 | 0.14 | 62 | 91 | <1% | 27% | 0.65 | 0.62 | 0.29 | 0.38 | 0.35 | 0.23 | 0.30 | 0.28 | 0.20 | 0.25 | 0.23 | 0.19 |
| LoE ² -179™ #2 & #5 | 69% | 18% | 18% | 0.57 | 1.21 | 0.21 | 0.17 | 60 | 95 | 10% | 48% | 0.66 | 0.64 | 0.54 | 0.40 | 0.37 | 0.48 | 0.31 | 0.29 | 0.43 | 0.26 | 0.24 | 0.42 |
| LoE ² -179™ #5 | 72% | 19% | 20% | 0.63 | 1.14 | 0.25 | 0.21 | 58 | 97 | 21% | 55% | 0.69 | 0.67 | 0.59 | 0.43 | 0.40 | 0.53 | 0.34 | 0.32 | 0.47 | 0.29 | 0.27 | 0.46 |

GENERAL NOTES:
 (1) Data was calculated using the Window 5.2 computer program with NRC validated spectral data files.
 (2) Calculations based on 1/2" gap for double pane, 3/8" gap for triple pane, 3 mm (1/8") glass, and a gas fill level of 90% Argon (unless noted otherwise (e.g. "Air" column)).
 (3) NRC 100-2002 environmental conditions used for calculations. Comfort Indoor Glass temperatures are for the center portion of the glass.
 (4) Window SHGC and U-factor are based on NRC Casement Single window using the following frame performances:
 - Frame U-factor & Frame width listed respectively as follows (operable): Aluminum 1.90, 2.25"; TB-Aluminum 0.88, 2.10"; Al. Clad Wood/Reinf. Vinyl 0.46, 2.80"; and Wood/Vinyl 0.30, 2.75"
 - Window frame solar absorption = 0.30
 (5) Warm edge is used with all windows (Window-5.2 edge correlation Class 3).
 (6) The UV Transmittance is determined as an average for wavelengths 310 - 380 nm.
 (7) UV Damage Weighted Transmittance (TDw) is the weighted average for wavelengths 300 - 700 nm (based on CIE 89/3).
 (8) Shading Coefficient (SC) can be calculated by dividing SHGC by 0.87.