



## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.15                              | 0.24                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.22                              | 0.26                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.37                              | 0.37                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | 44N (10 lbf)                      | 44N (10 lbf)               | 40 allowable            |
| Design Pressure                            | Residential          | 2400 Pa (50 psf)                  | 2400 Pa (50 psf)           | 15 psf minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | .20 lsm (.04 cfm/ft)              | .20 lsm (.04 cfm/ft)       | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

|                 |                                 |
|-----------------|---------------------------------|
| <b>MODEL #:</b> | <b>1010 &amp; 1015 Casement</b> |
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| <b>REVISION DATE:</b> | <b>8/27/12</b> |
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## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | Not Available                     | 0.30                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | Not Available                     | 0.30                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | Not Available                     | 0.54                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      |                                   |                            | 40 allowable            |
| Design Pressure                            | Residential          |                                   |                            | 15 PSF Minimum          |
| Water Penetration                          | Pass/Fail            |                                   |                            | Pass                    |
| Air Infiltration                           | Lower is better      |                                   |                            | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      |                                   |                            | Pass                    |
| Forced Entry Resistance                    | 10 is best           |                                   |                            | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

**MODEL #:** 2020 Single Hung & 2030 Horizontal Slider

**REVISION DATE:** 8/21/12



## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.14                              | 0.24                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.26                              | 0.30                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.43                              | 0.55                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | NA                                | NA                         | 40 allowable            |
| Design Pressure                            | Residential          | 2400 Pa (50 psf)                  | 2400 Pa (50 psf)           | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | .20 LSM (.04 cfm/ft)              | .20 LSM (.04 cfm/ft)       | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

\* Validated by 1010 physical test

**MODEL #:** **1040 & 1045 Casement Picture Window**

**REVISION DATE:** **8/27/12**



## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.17                              | 0.26                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.24                              | 0.28                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.4                               | 0.51                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | NA                                | NA                         | 40 allowable            |
| Design Pressure                            | Residential          | 2400 Pa (50 psf)                  | 2400 Pa (50 psf)           | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | .20 LSM (.04 cfm/ft)              | .20 LSM (.04 cfm/ft)       | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

\* Validated by 1010 physical test

**MODEL #:** **1050 & 1055 Picture window (double hung)**

**REVISION DATE:** **8/27/12**



## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                               | NFRC TEST                         |                            |                         |
|--|-------------------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                         | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better               | 0.15                              | 0.24                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better               | 0.22                              | 0.26                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards          | 0.37                              | 0.46                       | 60% is standard         |
| Thermal & Structural Results               |                               |                                   |                            |                         |
| Operating Force                            | Lower is better               | 44N (10 lbf)                      | 44N (10 lbf)               | 40 allowable            |
| Design Pressure                            | Residential                   | 2400 Pa (50 psf)                  | 2400 Pa (50 psf)           | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail                     | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better               | .20 lsm (.04 cfm/ft)              | .20 lsm (.04 cfm/ft)       | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec               | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best                    | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                               |                                   |                            |                         |
| U-Value (summer)                           | Lower is better               | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better              | 7.69                              | 5.88                       |                         |
| * validated by 1010 physical testing       |                               |                                   |                            |                         |
| <b>MODEL #:</b>                            | <b>1070 &amp; 1075 Awning</b> |                                   |                            |                         |

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## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.17                              | 0.26                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.24                              | 0.28                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.40                              | 0.51                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | 15 lbs                            | 15 lbs                     | 40 allowable            |
| Design Pressure                            | Residential          | 1920 Pa (40.0 psf)                | 1920 Pa (40.0 psf)         | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail            | 330 Pa (6.75 psf)                 | 330 Pa (6.75 psf)          | Pass                    |
| Air Infiltration                           | Lower is better      | .05 L/s/m (.01 cfm/ft)            | .05 L/s/m (.01 cfm/ft)     | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

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| <b>MODEL #:</b> | <b>1090 &amp; 1095 Double Hung</b> |
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## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.14                              | 0.25                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.30                              | 0.28                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.49                              | 0.50                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | NA                                | NA                         | 40 allowable            |
| Design Pressure                            | Residential          | 3600 Pa (75.00 psf)               | 3600 Pa (75.00 psf)        | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | .05 L/s/m (.01 cfm/ft)            | .05 L/s/m (.01 cfm/ft)     | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

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|-----------------|-----------------------------------|
| <b>MODEL #:</b> | <b>1140 &amp; 1145 Direct Set</b> |
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## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.17                              | 0.26                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.21                              | 0.24                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.33                              | 0.42                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | 103 N (23 lbf)                    | 103 N (23 lbf)             | 135N (30lbf) allowable  |
| Design Pressure                            | Residential          | 1200 Pa (25 psf)                  | 1200 Pa (25 psf)           | 15 PSF Minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | 1.25 L/s/m (.25 cfm/ft)           | 1.25 L/s/m (.25 cfm/ft)    | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

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| <b>MODEL #:</b> | <b>5930 &amp; 5935 Patio Door</b> |
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| <b>REVISION DATE:</b> | <b>8/27/12</b> |
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## PRODUCT ENERGY DATA

Thermal Efficiency: Security: Performance: Durability

| ENERGY STAR RATINGS                        |                      | NFRC TEST                         |                            |                         |
|--|----------------------|-----------------------------------|----------------------------|-------------------------|
| Description                                | Notes                | Triple glass<br>w/ 2 low-e/trigon | Double Pane<br>Low-e/argon | Energy Star<br>NAMI     |
| <b>U-Value</b><br>Overall Window           | Lower is better      | 0.17                              | 0.26                       | 0.35                    |
| <b>SHGC</b><br>Solar Heat Gain Coefficient | Lower is better      | 0.24                              | 0.28                       | Exceeds<br>Requirements |
| <b>VT</b><br>Visible Transmittance         | Exceeds<br>Standards | 0.40                              | 0.50                       | 60% is standard         |
| Thermal & Structural Results               |                      |                                   |                            |                         |
| Operating Force                            | Lower is better      | 52N (12.0 lbf)                    | 52N (12.0 lbf)             | 40 allowable            |
| Design Pressure                            | Residential          | 1920 Pa (40.0 psf)                | 1920 Pa (40.0 psf)         | 15 psf Minimum          |
| Water Penetration                          | Pass/Fail            | Pass                              | Pass                       | Pass                    |
| Air Infiltration                           | Lower is better      | .30 L/s/m (.06 cfm/ft)            | .30 L/s/m (.06 cfm/ft)     | .30 allowable           |
| Uniform Load structure                     | Held for 10 sec      | Pass                              | Pass                       | Pass                    |
| Forced Entry Resistance                    | 10 is best           | 10                                | 10                         | 6 allowable             |
| Insulated Glass Pack 1"                    |                      |                                   |                            |                         |
| U-Value (summer)                           | Lower is better      | 0.13                              | 0.17                       | Sealed<br>Glass Pack    |
| R-Value                                    | Higher is better     | 7.69                              | 5.88                       |                         |

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| <b>MODEL #:</b> | <b>1030 &amp; 1035 Horizontal Slider</b> |
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