## WASCO Dual Pane Option 1400/4500

## Notes on Glass Performance

Center glass performance data is only useful for comparing glass packages used in the same frame. NFRC whole window U-Factors are preferable for comparing different windows. Data calculated per ISO 15099 is not comparable to that calculated per EN673. EN673 uses different boundary conditions and a different model. EN673 will consistently calculate lower U-Factors for the same glass package.

| Coating                       | Notes                                 | Standard Makeup                     | Center Glass                      |
|-------------------------------|---------------------------------------|-------------------------------------|-----------------------------------|
|                               |                                       |                                     | Performance, ISO                  |
|                               |                                       |                                     | 15099                             |
| Cardinal LoE 180              | High solar gain (SHGC) LoE            | 7/8" (22mm) overall                 | U=0.259 Btu/hr-ft <sup>2</sup> °F |
|                               | coating optimized for                 | with 1/8" (3mm) thick               | (1.52 W/m <sup>2</sup> K)         |
|                               | northern climate                      | glass, LoE 180 coating              |                                   |
|                               | performance. The coating              | on surface #2 (inside of            | SHGC=0.645                        |
|                               | is applied to the interior            | the exterior pane), 5/8"            |                                   |
|                               | side of the exterior pane             | SuperSpacer premium                 | VT=0.793                          |
|                               | to help keep summer                   | spacer, 90% argon fill              |                                   |
|                               | inside glass temperatures             |                                     |                                   |
|                               | down, while still allowing            | Units over 15 ft <sup>2</sup> will  |                                   |
|                               | free solar heat in the                | have thicker glass while            |                                   |
|                               | winter. This glass will               | maintaining 7/8" overall            |                                   |
|                               | generally give the best               | thickness.                          |                                   |
|                               | energy performance for                |                                     |                                   |
|                               | our climate and will allow            | Tempered and units                  |                                   |
|                               | the most light in.                    | over 15 ft <sup>2</sup> supplied    |                                   |
|                               |                                       | standard with Cardinal              |                                   |
|                               |                                       | XL Edge spacer.                     |                                   |
| Cardinal LoE <sup>3</sup> 366 | Low solar gain (SHGC)                 | 7/8" (22mm) overall                 | U=0.250 Btu/hr-ft <sup>2</sup> °F |
|                               | triple LoE coating blocks             | with 1/8" (3mm) thick               | $(1.42 \text{ W/m}^2\text{K})$    |
|                               | unwanted solar heat. This             | glass, LoE <sup>3</sup> 366 coating |                                   |
|                               | glass is useful where a               | on surface #2 (inside of            | SHGC=0.271                        |
|                               | home has a large number               | the exterior pane), 5/8"            |                                   |
|                               | of unshaded east and                  | SuperSpacer premium                 | VT=0.648                          |
|                               | west windows which                    | spacer, 90% argon fill              |                                   |
|                               | cause excessive summer                |                                     |                                   |
|                               | heat buildup. This glass              | Units over 15 ft <sup>2</sup> will  |                                   |
|                               | will provide the greatest             | have thicker glass while            |                                   |
|                               | comfort at the sacrifice of           | maintaining 7/8" overall            |                                   |
|                               | energy performance and visible light. | thickness.                          |                                   |
|                               |                                       | Tempered and units                  |                                   |
|                               |                                       | over 15 ft <sup>2</sup> supplied    |                                   |
|                               |                                       | standard with Cardinal              |                                   |
|                               |                                       | XL Edge spacer.                     |                                   |

## WASCO Triple Pane Options 1400/4500

| Coating                           | Notes  | Standard Makeus                     | Center Glass                      |
|-----------------------------------|--|-------------------------------------|-----------------------------------|
| Coating                           | Notes  | Standard Makeup                     |                                   |
|                                   |  |                                     | Performance, ISO                  |
| 0 1: 1: 5:400 /: 5                |  | 4.0/0"/05                           | 15099                             |
| Cardinal LoE 180/LoE              | High solar gain (SHGC) LoE                     | 1 3/8" (35mm) overall               | U=0.133 Btu/hr-ft <sup>2</sup> °F |
| 180                               | coating optimized for                          | with 1/8" (3mm) thick               | (0.757 W/m <sup>2</sup> K)        |
|                                   | northern climate                               | glass, LoE 180 coating              |                                   |
|                                   | performance. This glass                        | on surface #2 (inside of            | SHGC=0.557                        |
|                                   | will generally give the                        | the exterior pane) and              |                                   |
|                                   | best energy performance                        | surface #5 (outside of              | VT=0.695                          |
|                                   | for our climate and will                       | the interior pane), clear           |                                   |
|                                   | allow the most light in.                       | glass center light,                 |                                   |
|                                   |  | SuperSpacer Premium                 |                                   |
|                                   | Use 366/180 glass for east and west walls with | spacer, 90% argon fill              |                                   |
|                                   | unshaded windows                               | Units over 15 ft <sup>2</sup> will  |                                   |
|                                   |  | have thicker glass while            |                                   |
|                                   |  | maintaining 1 3/8"                  |                                   |
|                                   |  | overall thickness.                  |                                   |
|                                   |  |                                     |                                   |
|                                   |  | Tempered and units                  |                                   |
|                                   |  | over 15 ft <sup>2</sup> supplied    |                                   |
|                                   |  | standard with Cardinal              |                                   |
|                                   |  | XL Edge spacer.                     |                                   |
| Cardinal LoE <sup>3</sup> 366/LoE | Low solar gain (SHGC)                          | 1 3/8" (35mm) overall               | U=0.127 Btu/hr-ft <sup>2</sup> °F |
| 180                               | triple LoE coating blocks                      | with 1/8" (3mm) thick               | (0.722 W/m <sup>2</sup> K)        |
|                                   | unwanted solar heat. This                      | glass, LoE <sup>3</sup> 366 coating | , , ,                             |
|                                   | glass is used for unshaded                     | on surface #2 (inside of            | SHGC=0.246                        |
|                                   | east and west windows                          | the exterior pane), LoE             |                                   |
|                                   | which cause excessive                          | 180 on surface #5                   | VT=0.566                          |
|                                   | summer heat buildup.                           | (outside of interior pane           |                                   |
|                                   |  | SuperSpacer Premium                 |                                   |
|                                   |  | spacer, 90% argon fill              |                                   |
|                                   |  |                                     |                                   |
|                                   |  | Units over 15 ft <sup>2</sup> will  |                                   |
|                                   |  | have thicker glass while            |                                   |
|                                   |  | maintaining 1 3/8"                  |                                   |
|                                   |  | overall thickness.                  |                                   |
|                                   |  |                                     |                                   |
|                                   |  | Tempered and units                  |                                   |
|                                   |  | over 15 ft <sup>2</sup> supplied    |                                   |
|                                   |  | standard with Cardinal              |                                   |
|                                   |  | XL Edge spacer.                     |                                   |
|                                   |  | AL LUGE SPACEL.                     |                                   |