

InnoNova NFRC/European Energy Performance Ratings - Triple Pane

North American Energy Ratings (NFRC 100, 200 and 500)

Product	Width (mm)	Height (mm)	Glass	NFRC U- factor (W/m ² -K)	NFRC U- factor (BTU/hr-ft2-F)	NFRC SHGC	NFRC VT	NFRC CR
Fixed window ⁴	1200	1500	4 mm 179 / 3 mm clr / 4 mm 179	1.08	0.19	0.44	0.54	70
			4 mm 272 / 3 mm clr / 4 mm 272	0.97	0.17	0.28	0.45	70
			4 mm 366 / 3 mm clr / 4 mm 366	0.97	0.17	0.19	0.36	70
Dual action window ⁴	1200	1500	4 mm 179 / 3 mm clr / 4 mm 179	1.14	0.20	0.38	0.46	70
			4 mm 272 / 3 mm clr / 4 mm 272	1.08	0.19	0.24	0.38	70
			4 mm 366 / 3 mm clr / 4 mm 366	1.02	0.18	0.16	0.31	70

European Energy Ratings (DIN EN 10077-1)

Product	Width (mm)	Height (mm)	Glass	Uw ⁵	Ug ⁶	g-value ⁷	Uf ⁸	PsiG ⁸
				W/m²-K	W/m²-K		W/m²-K	W/m-K
Fixed window ⁴	1230	1480	4 mm 179 / 3 mm clr / 4 mm 179	1.02	0.8	0.55	1.2	0.052
			4 mm 272 / 3 mm clr / 4 mm 272	0.94	0.7	0.35		
			4 mm 366 / 3 mm clr / 4 mm 366	0.94	0.7	0.24		
Dual action window ⁴	1230	1480	4 mm 179 / 3 mm clr / 4 mm 179	1.06	0.8	0.55		
			4 mm 272 / 3 mm clr / 4 mm 272	0.99	0.7	0.35		
			4 mm 366 / 3 mm clr / 4 mm 366	0.99	0.7	0.24		

Notes

- 1. Data applies to windows with no grids.
- 2. All glass units have low-E coatings on surfaces 2 and 5, warm edge stainless steel spacers and 90% argon gas fill.
 - 179 Cardinal 179 Low-E coating.
 - 272 Cardinal 272 Low-E coating.
 - 366 Cardinal 366 Low-E coating.
- 3. 4 mm 3 mm 4 mm glass thicknesses are Innotech minimum for triple glazing.
- 4. European frame sizes are Passivhaus sizes, NFRC values based on standard NFRC sizes.
- 5. Uw is the overall product U-value, similar to the NFRC U-factor, and is computed to DIN EN 10077-1, not DIN V 4108-4. European Uw calculations are performed by multiplying Ug values x glass areas, Uf values x frame areas, and PsiG values x daylight opening perimeter. *NFRC metric U-factors are not comparable to European Uw as they are computed under different environmental conditions.*
- 6. Ug is the center of glass U-value and has been calculated to DIN EN 673 by certified consultant. It is not comparable to the NFRC center of glass U-factor.
- 7. g-Value is the ratio of solar energy transmitted through a transparent component. It is independent of specimen size and does not include the influence of the frame. In this table the center-of-glass SHGC is used for the g-value. Note that the g-value and center-of-glass solar heat gain coefficient are not the same as the NFRC SHGC that is reported on NFRC labels, which represents whole product solar heat gain at a specified specimen size and includes transmission through window frames as well as solar shading from the frame members.
- 8. Uf is the frame-only U-value. PsiG is a linear coefficient representing thermal transmittance through the edge of glass condition, including the glass spacer/frame edge interface. There are no NFRC 100 equivalents for Uf and Ug. NFRC simulations evaluate the actual frame and frame-glass transmittance together, and more accurately.
- 9. Disclaimer:

Ratings apply to products evaluated under specified standards and at indicated sizes for comparison to other products evaluated under the same conditions. Ratings do not represent actual values for installed products under conditions that differ from the noted standards.