



NFRC Energy Values

The energy values in this report were calculated by Fenestration Testing Laboratories, Inc using the below Specifications, Software, Spectral Data Library and Baseline Product Data:

Manufacture: EnerLux Windows & Doors

Address: 4441 South 102nd Street
Omaha, NE 68127

Specifications: NFRC 100-2010: Procedure for Determining Fenestration Product U-Factor
NFRC 200-2010: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence.
NFRC 500-2010: Procedure for Determining Fenestration Product Condensation Resistance Values

Software: Therm 6.3.38.0, Window v6.3.67.0, Simulation Manual
Spectral Data Library: IGDB v24.0

Baseline Product Validation

The baseline product must be tested in accordance with NFRC 102 "Test Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems" to validate the U Values indicated. NFRC 100-2010 states "The baseline product is the individual product selected for validation testing". The individual product selected as the baseline product shall have a simulated U-factor within 0.10 Btu/h-ft²-F or 20% of the lowest simulated U-factor, whichever is greater.

Product Description	Product Number	Grouping ID Number	Pane Thickness #1	Pane Thickness #2	Pane Thickness #3	Gap #1 and #2	Gap Fill #1 and #2	Emissivity Surface # 2	Spacer	U Factor
1/8 LoE366-ARG-1/8 clear-ARG-1/8 clear	172	00	0.118	0.118	0.118	0.323	ARG	0.022	SS-D	0.22

2100 Series: Casement & Awning

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.27	3.7	0.46	52%	60
270	0.27	3.7	0.25	46%	59
366	0.26	3.8	0.19	43%	60
340	0.26	3.8	0.17	26%	59
180 ³	0.19	5.3	0.38	46%	71
270 ³	0.19	5.3	0.23	41%	71
366 ³	0.19	5.3	0.17	38%	72
340 ³	0.19	5.3	0.15	23%	71
180 ^{3 + i89}	0.18	5.5	0.36	45%	59
366 ^{3 + i89}	0.18	5.5	0.16	37%	59
180 ^{3 + i89 + K}	0.16	6.2	0.36	45%	63
366 ^{3 + i89 + K}	0.16	6.2	0.16	37%	64

2100 Series: Fixed Casement

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.27	3.7	0.54	62%	60
270	0.26	3.8	0.29	55%	58
366	0.25	4.0	0.22	51%	58
340	0.25	4.0	0.20	31%	57
180 ³	0.17	5.9	0.44	54%	70
270 ³	0.17	5.9	0.26	48%	71
366 ³	0.17	5.9	0.19	43%	67
340 ³	0.17	5.9	0.17	27%	70
180 ^{3 + i89}	0.15	6.7	0.42	53%	58
366 ^{3 + i89}	0.15	6.7	0.19	43%	58
180 ^{3 + i89 + K}	0.13	7.7	0.42	53%	63
366 ^{3 + i89 + K}	0.13	7.7	0.19	43%	63

2100 Series: Low Profile Picture

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.27	3.7	0.59	68%	60
270	0.26	3.8	0.32	60%	58
366	0.25	4.0	0.24	54%	58
340	0.25	4.0	0.22	34%	57
180 ³	0.17	5.9	0.48	60%	70
270 ³	0.17	5.9	0.29	53%	71
366 ³	0.17	5.9	0.21	49%	67
340 ³	0.17	5.9	0.20	30%	70
180 ^{3 + i89}	0.15	6.7	0.46	58%	58
366 ^{3 + i89}	0.15	6.7	0.21	48%	58
180 ^{3 + i89 + K}	0.13	7.7	0.46	58%	63
366 ^{3 + i89 + K}	0.13	7.7	0.21	48%	63

8000 Series: Double Hung

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.30	3.3	0.51	58%	55
270	0.30	3.3	0.27	51%	56
366	0.29	3.4	0.20	47%	56
340	0.29	3.4	0.19	29%	56
180 ^{3 + i89 + K}	0.21	4.8	0.39	51%	54
366 ^{3 + i89 + K}	0.21	4.8	0.18	41%	54

8000 Series: Horizontal Slider

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.30	3.3	0.51	58%	55
270	0.30	3.3	0.27	51%	56
366	0.29	3.4	0.20	47%	56
340	0.29	3.4	0.19	29%	56
180 ^{3 + i89 + K}	0.21	4.8	0.39	51%	54
366 ^{3 + i89 + K}	0.21	4.8	0.18	41%	54

5000 Series: Sliding Patio Door

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.31	3.2	0.53	61%	57
270	0.30	3.3	0.29	54%	58
366	0.30	3.3	0.21	50%	58
340	0.30	3.3	0.19	30%	58
180 ³	0.25	4.0	0.43	53%	62
270 ³	0.25	4.0	0.25	46%	62
366 ³	0.25	4.0	0.19	44%	62
340 ³	0.25	4.0	0.17	27%	62
180 ³ + i89	0.23	4.3	0.41	52%	51
366 ³ + i89	0.22	4.5	0.19	43%	51
180 ³ + i89 + K	0.19	5.3	0.41	52%	56
366 ³ + i89 + K	0.19	5.3	0.19	43%	56

6000 Series: Entry, French & Atrium

GLASS PACKAGE	U-FACTOR	R-FACTOR	SHGC	VT	CR
180	0.28	3.6	0.53	61%	63
270	0.27	3.7	0.25	43%	64
366	0.27	3.7	0.17	38%	64
180 ³	0.19	5.3	0.43	40%	68
270 ³	0.19	5.3	0.21	34%	68
366 ³	0.19	5.3	0.15	28%	68

Test Sizes

TYPE	SIZE (W X H)
Casement / Awning	24" x 59"
Fixed Casement	47" x 59"
Low Profile Picture	47" x 59"
Double Hung	47" x 59"
Horizontal Slider	59" x 47"
Sliding Patio Door	72" x 80"
Entry Door	37" x 96"

Definitions

U-Factor – A measure of the rate of non-solar heat loss or gain through a material or assembly. It is expressed in units of Btu/hr-sq ft-F (W/sq m-C). The lower the U-factor, the greater a window's resistance to heat flow and the better its insulating value.

R-Factor – A measure of the resistance of a glazing material or fenestration assembly to heat flow. It is the inverse of the U-factor ($R=1/U$) and is expressed in units of hr-sq ft-F/Btu. A high R-value window has a greater resistance of heat flow and a higher insulating value than one with a low R-value.

Solar Heat Gain Coefficient (SHGC) – A measure of how well a product blocks heat caused by sunlight. The SHGC is the fraction of incident solar radiation admitted through a window (both directly transmitted and absorbed) and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits in the house.

Visual Transmittance (VT) – A measure that shows how much light comes through a product. The visible transmittance is an optical property that indicates the amount of visible light transmitted. VT is expressed as a number between 0 and 1. The higher the VT, the more light is transmitted.

Condensation Resistance (CR) – A window's ability to avoid forming condensation on the glass. Condensation is the deposit of water vapor from the air on any cold surface whose temperature is below the dew point, such as cold window glass or frame that is exposed to humid indoor air.