

JANTEK INDUSTRIES THERMAL PERFORMANCE TEST REPORT

SCOPE OF WORK
ENERGY MISER DOUBLE HUNG

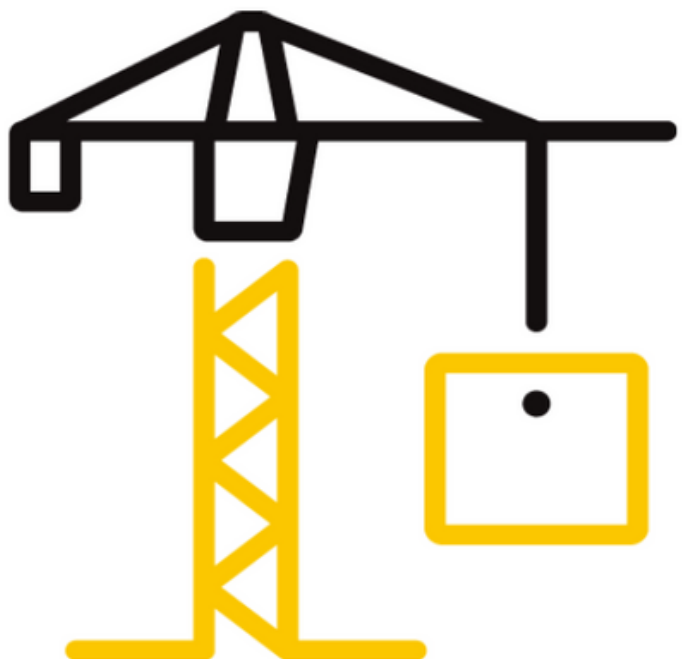
REPORT NUMBER
N8373.01-116-46 R0

TEST DATE
07/20/22

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TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

Report No.: N8373.01-116-46 R0

Date: 01/06/23

REPORT ISSUED TO

JANTEK INDUSTRIES, LLC WINDOWS & DOORS

230 Route 70 East

Medford, New Jersey 08055

SECTION 1

SCOPE

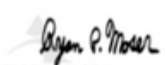
SERIES/MODEL: Energy Miser Double Hung

TYPE: Vertical Slider (Double Hung)


Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Jantek Industries, LLC Windows & Doors to evaluate the thermal performance per NFRC 102-2020. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek B&C test facility in York, Pennsylvania.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends five years after the test date. Test records, such as detailed drawings, datasheets, or other pertinent project documentation, will be retained for the entire test record retention period. Representative samples of the test specimen will be retained by Intertek B&C for a minimum of two and a half years from the submittal date to the Inspection Agency and no more than five years from the test date.

For INTERTEK B&C:

COMPLETED BY	Ryan P. Moser
TITLE	Technician Team Leader, IIRC
SIGNATURE	
DATE	01/06/23

RPM:pan

REVIEWED BY	Shon W. Einsig
TITLE	Project Lead, IIRC
SIGNATURE	
DATE	01/06/23

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TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

Report No.: N8373.01-116-46 R0

Date: 01/06/23

SECTION 2

SUMMARY OF TEST RESULTS

Standardized U-factor (Ust):

0.25 Btu/hr·ft²·F (CTS Method)

SECTION 3

TEST SPECIMEN SUMMARY

SERIES/MODEL	Energy Miser Double Hung
TYPE	Vertical Slider (Double Hung)
OVERALL SIZE	47-1/4" x 59" (1200 mm x 1499 mm) (Model Size)
NFRC STANDARD SIZE	47.2" x 59.1" (1200 mm wide x 1500 mm high)
TEST SAMPLE SUBMITTED BY	Client
TEST SAMPLE SUBMITTED FOR	Validation for Initial Certification (Production Line Unit) & Plant Qualification

SECTION 4

TEST METHOD

The specimens were evaluated in accordance with the following:

NFRC 102-2020, Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems

SECTION 5

MATERIAL SOURCE/INSTALLATION

The test specimen was provided by the client.

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side.

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Shon W. Einsig	Intertek B&C
Ryan P. Moser	Intertek B&C

TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

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SECTION 7

TEST SAMPLE DESCRIPTION

Frame

MATERIAL	VY: Vinyl		
SIZE	47-1/4" x 59" (Model Size)		
DAYLIGHT OPENING	N/A	GLAZING METHOD	N/A
EXTERIOR COLOR	White	EXTERIOR FINISH	Vinyl
INTERIOR COLOR	White	INTERIOR FINISH	Vinyl
CORNER JOINERY	Mitered / Welds / Unsealed		

Exterior Sash

MATERIAL	VI: Vinyl with Interlock Reinforced with Aluminum*		
SIZE	43-1/2" x 29-3/8"		
DAYLIGHT OPENING	40" x 25-7/8"	GLAZING METHOD	Exterior
EXTERIOR COLOR	White	EXTERIOR FINISH	Vinyl
INTERIOR COLOR	White	INTERIOR FINISH	Vinyl
CORNER JOINERY	Mitered / Welds / Unsealed		

Interior Sash

MATERIAL	VI: Vinyl with Interlock Reinforced with Aluminum*		
SIZE	44-1/2" x 29-3/8"		
DAYLIGHT OPENING	41" x 25-7/8"	GLAZING METHOD	Exterior
EXTERIOR COLOR	White	EXTERIOR FINISH	Vinyl
INTERIOR COLOR	White	INTERIOR FINISH	Vinyl
CORNER JOINERY	Mitered / Welds / Unsealed		

*All stiles and top and bottom rail contained Quanex AirCell™

Glazing Information

LAYER 1	SS	Guardian ClimaGuard 70/36 (e=0.036*, #2)	
GAP 1	0.38"	A8-S: Duraseal Spacer	100% Air*
LAYER 2	SS	Guardian ClimaGuard 70/36 (e=0.036*, #4)	
GAP 2	0.38"	A8-S: Duraseal Spacer	100% Air*
LAYER 3	SS	Clear	
GAS FILL METHOD	N/A*		

**Stated per the client/manufacture and can affect the validity of results*

N/A Non-Applicable

TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

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Date: 01/06/23

SECTION 7 (CONTINUED)

TEST SAMPLE DESCRIPTION (CONTINUED)

Weatherstripping

DESCRIPTION	QUANTITY	LOCATION
Polypile with center fin	3 Rows	All stiles and to rail
Polypile with center fin	1 Row	Interior meeting stile, bottom rail and sill
Flexible hollow wrapped foam gasket	1 Row	Bottom rail

Hardware

DESCRIPTION	QUANTITY	LOCATION
Plastic cam sweep/tilt lock	2	Interior meeting rail
Plastic keeper	2	Exterior meeting rail
Constant force balance	4	Two per jamb
Plastic tilt-latch	2	Top corners of exterior sash
Safety latch	2	Exterior sash stiles
Metal pivot bar	4	Bottom corners of each sash

Drainage

DRAINAGE METHOD	SIZE	QUANTITY	LOCATION
Weepslot	0.50" x 0.13"	6	Two per bottom corner of exterior sash, one per bottom corner of interior sash
Weep notch	4.00" x 0.50"	2	Sill
Weep notch	0.50" x 0.13"	2	Screen track

TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

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Date: 01/06/23

SECTION 8

THERMAL TRANSMITTANCE (U-FACTOR): MEASURED TEST DATA

Heat Flows

1. Total Measured Input into Metering Box (Qtotal)	412.94 Btu/hr
2. Surround Panel Heat Flow (Qsp)	52.44 Btu/hr
3. Surround Panel Thickness	4.00 inches
4. Surround Panel Conductance	0.0475 Btu/hr·ft ² ·F
5. Metering Box Wall Heat Flow (Qmb)	0.14 Btu/hr
6. EMF vs Heat Flow Equation (equivalent information)	0.0117*EMF + 0.015
7. Flanking Loss Heat Flow (Qfl)	9.37 Btu/hr
8. Net Specimen Heat Loss (Qs)	350.99 Btu/hr

Areas

1. Test Specimen Projected Area (As)	19.36 ft ²
2. Test Specimen Projected Frame Area (Af)	4.80 ft ²
3. Test Specimen Projected Glazing Area (Ag)	14.55 ft ²
4. Metering Box Opening Area (Amb)	36.11 ft ²
5. Metering Box Baffle Area (Ab1)	33.94 ft ²
6. Surround Panel Interior Exposed Area (Asp)	16.75 ft ²

Test Conditions

1. Average Metering Room Air Temperature (th)	69.78 F
2. Average Cold Side Air Temperature (tc)	-0.39 F
3. Average Guard/Environmental Air Temperature	71.23 F
4. Metering Room Average Relative Humidity	6.39 %
5. Metering Room Maximum Relative Humidity	7.30 %
6. Metering Room Minimum Relative Humidity	5.48 %
7. Measured Cold Side Wind Velocity (Perpendicular Flow)	12.66 mph
8. Measured Warm Side Wind Velocity (Parallel Flow)	NA mph
9. Measured Static Pressure Difference Across Test Specimen	0.00" ± 0.04" H ₂ O

Average Surface Temperatures

1. Metering Room Surround Panel	66.13 F
2. Cold Side Surround Panel	0.20 F

Results

1. Thermal Transmittance of Test Specimen (Us)	0.26 Btu/hr·ft ² ·F
2. Standardized Thermal Transmittance of Test Specimen (Ust)	0.25 Btu/hr·ft ² ·F

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Date: 01/06/23

SECTION 9

THERMAL TRANSMITTANCE (U-FACTOR): CALCULATED TEST DATA

CTS Method Results

1. Warm Side Surface Emittance of CTS (e1)	0.84
2. Warm Side Area-Weighted Surface Emittance of Specimen Frame (ef1)	0.90
3. Warm Side Area-Weighted Surface Emittance of Specimen Glazing (eg1)	0.84
4. Warm Side Surface Emittance of Surround Panel (esp1)	0.90
5. Warm Side Area-Weighted Surface Emittance in View of the Baffle (es1)	0.88
6. Warm Side Baffle Emittance (eb1)	0.92
7. Cold Side Baffle Emittance (eb2)	N/A
8. Equivalent Warm Side Surface Temperature (t1)	56.67 F
9. Equivalent Cold Side Surface Temperature (t2)	3.17 F
10. Warm Side Baffle Surface Temperature	69.03 F
11. Cold Side Baffle Surface Temperature	N/A F
12. Measured Warm Side Surface Conductance (hh)	1.38 Btu/hr·ft ² ·F
13. Measured Cold Side Surface Conductance (hc)	5.08 Btu/hr·ft ² ·F
14. Test Specimen Thermal Conductance (Cs)	0.34 Btu/hr·ft ² ·F
15. Convection Coefficient (Kc)	0.33 Btu/(hr·ft ² ·F ^{1.25})
16. Radiative Test Specimen Heat Flow (Qr1)	190.37 Btu/hr
17. Conductive Test Specimen Heat Flow (Qc1)	160.62 Btu/hr
18. Radiative Heat Flux of Test Specimen (qr1)	9.83 Btu/hr·ft ² ·F
19. Convective Heat Flux of Test Specimen (qc1)	8.30 Btu/hr·ft ² ·F
20. Standardized Warm Side Surface Conductance (hsth)	1.24 Btu/hr·ft ² ·F
21. Standardized Cold Side Surface Conductance (hstc)	5.28 Btu/hr·ft ² ·F
22. Standardized Thermal Transmittance (Ust)	0.25 Btu/hr·ft ² ·F

SECTION 10

TEST DURATION

1. The environmental systems were started at 16:03 hours, 07/19/22.
2. The test parameters were considered stable for two consecutive four hour test periods from 22:04 hours, 07/19/22 to 06:04 hours, 07/20/22.
3. The thermal performance test results were derived from 02:04 hours, 07/20/22 to 06:04 hours, 07/20/22.

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Report No.: N8373.01-116-46 R0

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SECTION 11

GLAZING DEFLECTION

	EXTERIOR SASH EXT. / INT.	INTERIOR SASH EXT. / INT.
EDGE GAP WIDTH	0.38" / 0.38"	0.38" / 0.38"
ESTIMATED CENTER GAP WIDTH upon receipt of specimen in laboratory (after stabilization)	0.38" / 0.38"	0.38" / 0.38"
CENTER GAP WIDTH at laboratory ambient conditions on day of testing	0.38" / 0.38"	0.38" / 0.38"
CENTER GAP WIDTH at test conditions	0.34" / 0.34"	0.31" / 0.34"

Glass collapse determined using a digital glass and air space meter

The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test.

"This test method does not include procedures to determine the heat flow due to either air movement through the specimen or solar radiation effects. As a consequence, the thermal transmittance results obtained do not reflect performances which are expected from field installations due to not accounting for solar radiation, air leakage effects, and the thermal bridge effects that have the potential to occur due to the specific design and construction of the fenestration system opening. The latter can only be determined by in-situ measurements. Therefore, it is important to recognize that the thermal transmittance results obtained from this test method are for ideal laboratory conditions and should only be used for fenestration product comparisons and as input to thermal performance analyses which also include solar, air leakage and thermal bridge effects."

Required annual calibrations for the Intertek B&C, 'thermal test chamber' (ICN 000001) in York, Pennsylvania were last conducted in May 2022 in accordance with Intertek B&C calibration procedure. A CTS Calibration verification was performed October 2021. A Metering Box Wall Transducer and Surround Panel Flanking Loss Characterization was performed April 2022.

The reported Standardized Thermal Transmittance (Ust) was determined using CTS Method, per Section 9.2(A) of NFRC 102.

TEST REPORT FOR JANTEK INDUSTRIES, LLC WINDOWS & DOORS

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Date: 01/06/23

SECTION 12

CTS CALIBRATION DATA

1. CTS Test Date	07/10/21
2. CTS Size	21.53 ft ²
3. CTS Glass/Core Conductance	0.42 Btu/hr·ft ² ·F
4. Warm Side Air Temperature	69.81 F
5. Cold Side Air Temperature	-0.36 F
6. Warm Side Average Surface Temperature	54.40 F
7. Cold Side Average Surface Temperature	3.80 F
8. Convection Coefficient (Kc)	0.33 Btu/(hr·ft ² ·F ^{1.25})
9. Measured Cold Side Surface Conductance (hc)	5.08 Btu/hr·ft ² ·F
10. Measured Thermal Transmittance	0.30 Btu/hr·ft ² ·F

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 2.19%.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called "Shared Risk Approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

"Ratings included in this report are for submittal to an NFRC licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those options identified on a valid Certificate of Authorization (CA) are to be used for labeling purposes."

The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen. The ratings were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy. The data acquisition frequency is 5 minutes.



MolimoTM
Architectural Product Testing

NFRC 100/200/500 THERMAL SIMULATION TEST REPORT

Report No.: 11235.01-111-24

Rendered to: Jantek Industries LLC
Medford, New Jersey

Series/Model: Energy Miser Double Hung

Report Date: 2/8/2022

CLIENT

INFORMATION: Jantek Industries LLC
230 NJ-70
Medford, New Jersey 08055

TEST LABORATORY: Molimo, LLC
1410 Eden Road
York, Pennsylvania 17402
717-916-6300

SERIES/MODEL: Energy Miser Double Hung

SIMULATION DATE: 2/2/2022

REPORT DATE: 2/8/2022

RETENTION DATE: 2/2/2027

PROJECT SUMMARY:

Molimo, LLC was contracted to perform testing on the above referenced product. Testing was performed to evaluate U-factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance performance of the product. The product description, test procedures, and test results are reported herein. The results are simulated values and were secured by using the following test methods. All results were calculated using the latest approved versions of THERM 7, WINDOW 7, OPTICS 6, and also the International Glazing Database.

ANSI/NFRC 100-2020: Procedure for Determining Fenestration Product U-Factors

ANSI/NFRC 200-2020: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

NFRC 500-2017: Procedure for Determining Fenestration Product Condensation Resistance Values

Program Versions Utilized: THERM/WINDOW 7.4;NFRC 101-2020[E1A9];NFRC Sim Manual 2020

SPECIMEN DESCRIPTION:

Type: VSDH - Vertical Slider, Double Hung
Frame Material: VY - Vinyl
Sash Material: VI - Vinyl w/ Reinforcement - Interlock
Standard Size: 1200 mm x 1500 mm (47 in x 59 in)

MODELING ASSUMPTIONS OR TECHNICAL INTERPRETATIONS:

None

SPECIALTY PRODUCTS TABLE:

The specialty products method allows manufacturers to determine overall product SHGC / Vt for any glazing option. The center of glass (COG) SHGC / Vt must be determined using the current approved version of WINDOW 7. The method gives overall product SHGC / Vt indexed on COG properties. All values used are truncated to 6 decimal places.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.002863	0.005585	0.008149
SHGC1	0.751315	0.671334	0.596031
VT0	0.000000	0.000000	0.000000
VT1	0.748453	0.665748	0.587883

$$\text{SHGC} = \text{SHGC0} + \text{SHGCc} (\text{SHGC1} - \text{SHGC0})$$

$$\text{VT} = \text{VT0} + \text{VTc} (\text{VT1} - \text{VT0})$$

VALIDATION MATRIX:

The following products are part of a validation matrix. Only one is required for validation testing.

Product	Report
None	-

SPACER DESCRIPTION:

Spacer Type	Primary Sealant	Secondary Sealant	Code
Quanex Duraseal Spacer	Butyl Rubber	-	A8-S

GRID DESCRIPTION:

Grid Size	Grid Type	Grid Pattern
3/16" x 5/8"	Rectangular - Painted Aluminum	NFRC Standard

REINFORCEMENT DESCRIPTION:

Location	Material
Lock and Keeper Rails	Aluminum

GAS FILL DESCRIPTION:

Fill Type	Method
95% Argon	Single Probe Timed

EDGE OF GLASS CONSTRUCTION:

Interior	Foam weatherstrip against glass
Exterior	PVC glazing bead against glass

WEATHERSTRIPPING:

Type	Quantity	Location
Mohair	3 rows	Top Rail, Jamb Stiles
Foam Rubber Gasket	1 row	Lock Rail, Keeper Rail, Bottom Rail
Mohair	1 row	Lock Rail, Head and Sill Frames

FRAME/SASH MATERIALS FINISH:

Interior	White PVC
Exterior	White PVC

Molimo, LLC is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through physical test results.

A copy of this report, detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Molimo, LLC for a period of five years from the original test date. At the end of this retention period, the service life of this report will expire.

Results obtained are simulated values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) simulated. This report may not be reproduced, except in full, without the written permission of Molimo, LLC.

The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, thermal bridging that may occur due to the specific design and construction of the fenestration system opening. This value is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those options identified on a valid Certificate of Authorization (CA) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The rating values were rounded in accordance to NFRC 601, *NFRC Unit and Measurement Policy*.

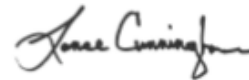
For MOLIMO, LLC:

Simulated By:



Joseph Descheemaeker
Project Manager - Simulations
Simulator-in-Responsible-Charge

Reviewed By:



Lance Cunningham
Manager - Operations / Sales

JRD:dro

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix A: NFRC 100/200/500 Summary Sheet (1)

Appendix B: Drawings (29)

This report was produced from controlled document template MMO-00087, Rev. 1, 1/29/2021.

Revision Log

Rev.#	Date	Pages	Revisions
.01	2/8/2022	All	Original report issued

Appendix A

NFRC 100/200/500 Summary Sheet

11235.01-111-24

NFRC 100/200/500 Summary Sheet
11235.01-111-24
Energy Miser Double Hung

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