



ASTM C1199 THERMAL PERFORMANCE TEST REPORT

Series/Model: Model M (Door Mount)
Type: Pet Door

Rendered To:
Access Magnetix, LLC.
3104 Old Kawkawlin Road
Bay City, MI 48706

QCT Project No.:
QCT-TH-11576

Report Date:
8/7/2020



Report No.: QCT-TH-11576

Page 1 of 8
Report Date: 08/07/2020

**ASTM C1199 THERMAL PERFORMANCE
TEST REPORT**

Rendered To:

Access Magnetics, LLC.
3104 Old Kawkawlin Road
Bay City, MI 48706

Test Sample Identification:

Series/Model: Model M (Door Mount)

Product Type: Pet Door

Overall Size: 360mm x 475mm (14-1/8" x 18-5/8")

Test Sample Submitted by: Access Magnetics, LLC.

Test Procedure:

U-factor tests were performed in a Guarded Hot Box in accordance with ASTM C1199-14, *Standard Test Method for Measuring the Steady-State Thermal Transmittance of Fenestration Systems Using Hot Box Methods*

Test Results Summary:

Standardized U-factor (U_{st}): 0.22 Btu/(hr·ft²·F) CTS Method



Report No.: QCT-TH-11576

Page 2 of 8

Report Date: 08/07/2020

Test Sample Description:

Size Specification:	Frame	Flap
Size (inches)	14-1/8" x 18-5/8"	12-5/16" x 16-3/8"

Construction:	Frame	Flap
Corners	Square cut	N.A.
Fasteners	Screws	Rivet
Sealant	None	None

Properties:	Frame	Flap
Material	Wood	Rubber/ T.P.O.
Exterior Color	White	Brown
Exterior Finish	Paint	N.A.
Interior Color	White	White
Interior Finish	Paint	N.A.

Reinforcement Description:

Location	Material
None	N.A.

Weatherstrip:

Type	Quantity	Location
Magnetic Strips	2 Rows	Flap perimeter

Insulation:

Type	Location
None	N.A.



Report No.: QCT-TH-11576

Page 3 of 8
Report Date: 08/07/2020

Measured Test Data:

Heat Flows	Quantity	Units
1. Total Measured Metering Box Input (Q_{total})	222.86	Btu/hr
4. Surround Panel Heat Flow (Q_{sp})	194.56	Btu/hr
2. Surround Panel Thickness	4	inches
3. Surround Panel Conductance (C_{sp})	0.0469	Btu/(hr·ft ² ·F)
5. Metering Box Wall Plus Flanking Loss (Q_{mb+fl})	0.03	Btu/hr
6. EMF vs. Heat Flow Equation (Equivalent Information)	7696.9(EMF)+51.051	
7. Net Test Specimen Heat Flow (Q_s)	28.26	Btu/hr

Areas	Quantity	Units
8. Specimen Projected Area (A_s)	1.83	ft ²
9. Specimen Projected Frame Area (A_f)	1.82	ft ²
11. Metering Box Opening Area (A_{mb})	64.00	ft ²
12. Metering Box Baffle Area Warm Side (A_{b1})	58.50	ft ²
13. Climate Room Baffle Area Cold Side (A_{b2})	80.00	ft ²
14. Surround Panel Interior Exposed Area (A_{sp})	62.17	ft ²

Test Conditions	Quantity	Units
15. Average Metering Room Air Temperature (t_h)	69.80	deg F
16. Average Climate Room Air Temperature (t_c)	-0.40	deg F
17. Average Guard Room Air Temperature (t_g)	76.42	deg F
18. Metering Room Average Relative Humidity	22.72	%
19. Measured Climate Room Wind Velocity (Perpendicular Flow)	15.04	mph
20. Measured Static Pressure Difference Across Test Specimen	0.00	psf
21. Surround Panel Warm Side Surface Temperature (t_{sp1})	67.26	deg F
22. Surround Panel Cold Side Surface Temperature (t_{sp2})	0.54	deg F

Thermal Transmittance	Quantity	Units
23. Specimen Thermal Transmittance (U_s)	0.22	Btu/(hr·ft ² ·F)
24. Standardized Thermal Transmittance (U_{ST} (CTS))	0.22	Btu/(hr·ft ² ·F)



Report No.: QCT-TH-11576

Page 4 of 8

Report Date: 08/07/2020

Calculated Test Data:

CTS Method	Quantity	Units
25. Room Side Surface Emittance of CTS (ϵ_1)	0.84	N.A.
26. Room Side Surface Emittance of Specimen Frame (ϵ_{fl})	0.90	N.A.
28. Room Side Surface Emittance of Exposed Surround Panel (ϵ_{SP1})	0.90	N.A.
29. Area Weighted Emittance of all Room Side Surfaces (ϵ_{S1})	0.90	N.A.
30. Metering Box Baffle Emittance (ϵ_{b1})	0.95	N.A.
31. Equivalent Room Side Surface Temperature (t_1)	58.75	deg F
32. Equivalent Climate Side Surface Temperature (t_2)	2.73	deg F
33. Room Side Baffle Temperature (t_{b1})	69.39	deg F
34. Climate Side Baffle Temperature (t_{b2})	0.25	deg F
35. Measured Warm Side Surface Conductance (h_h)	1.40	Btu/(hr·ft ² ·F)
36. Measured Climate Side Surface Conductance (h_c)	4.94	Btu/(hr·ft ² ·F)
37. Test Specimen Thermal Conductance (C_s)	0.2762	Btu/(hr·ft ² ·F)
38. Convection Coefficient (K_c)	0.32	Btu/(hr·ft ² ·F)
39. Radiative Test Specimen Heat Flow (Q_{r1})	16.49	Btu/hr
40. Conductive Test Specimen Heat Flow (Q_{c1})	11.77	Btu/hr
41. Radiative Heat Flux of Test Specimen (q_{r1})	9.03	Btu/(hr·ft ²)
42. Convective Heat Flux of Test Specimen (q_{c1})	6.44	Btu/(hr·ft ²)
43. Standardized Warm Side Surface Conductance (h_{STh})	1.38	Btu/(hr·ft ² ·F)
44. Standardized Cold Side Surface Conductance (h_{STc})	5.28	Btu/(hr·ft ² ·F)

Test Duration

- The environmental systems were started on
8/5/20 6:03 PM
- The test parameters were considered stable for two consecutive four hour test periods from
8/5/20 9:48 PM to 8/6/20 5:48 AM
- The thermal performance test results were derived from
8/6/20 1:48 AM to 8/6/20 5:48 AM

Condensation Thermocouples

1	28.5
2	47.4
3	59.2



Report No.: QCT-TH-11576

Page 6 of 8

Report Date: 08/07/2020

References:

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 at the conclusion of the test.

A full calibration of the Quast Consulting and Testing, Inc. 'thermal test chamber' in Mosinee, Wisconsin was conducted in 10/14/2019 in accordance with Quast Consulting and Testing, Inc. calibration procedure. A calibration check was performed in 08/22/2019.

"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 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."

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side. The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen.

"Rating included in this report are for submittal to an NFRC licensed Inspection Agency (IA) and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes." The rating values were rounded in accordance to the NFRC unit conversions and rounding policy document (NFRC 601-2010).

Quast Consulting and Testing, Inc. is a NFRC accredited testing laboratory and all tests conducted in full compliance with NFRC approved procedures.

The Standardized Thermal Transmittance (Ust) was determined using CTS Method per NFRC 102, Section 8.2.A.

The experimental uncertainty associated for this test was <0.6%.



Report No.: QCT-TH-11576

Page 7 of 8

Report Date: 08/07/2020

Detailed drawings, data files, a copy of this report and other pertinent project documentation will be retained by Quast Consulting and Testing, Inc. for a period of five years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire. Results obtained were secured by using the designated testing methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. This report is the exclusive property of the client so named herein and represents only the product tested. This report may not be reproduced, except in full, without the written consent of Quast Consulting and Testing, Inc.

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

Appendix A: Condensation Thermocouple Locations (1 page).

Appendix B: Drawings (7 pages).

Individual In Responsible Charge
Brian Sasman

Person Conducting Test
Jeff Zibton



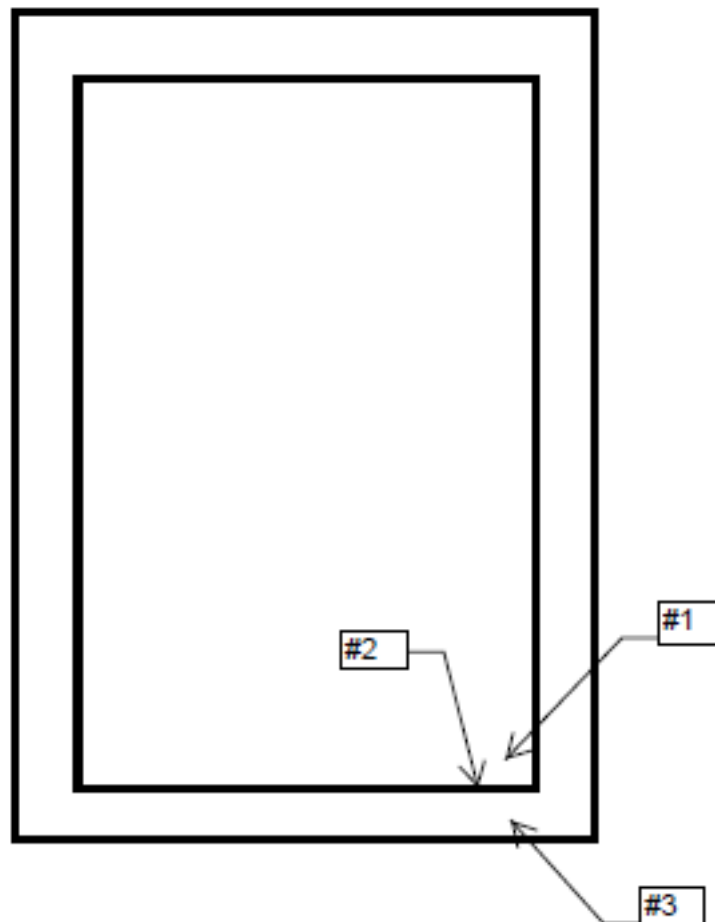
Report No.: QCT-TH-11576

Page 8 of 8

Report Date: 08/07/2020

Revision No.	Date	Description
0.00	08/07/20	Original report issued.

Appendix A: Condensation Thermocouple Locaton Diagram

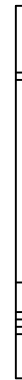
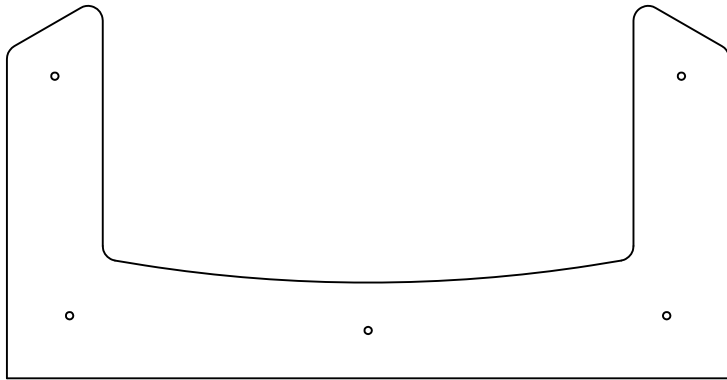
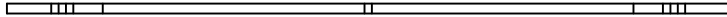




Appendix B: Drawings

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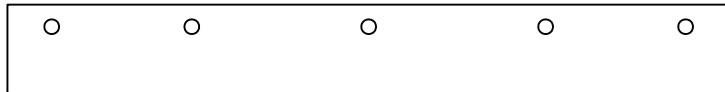
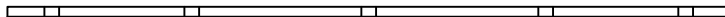
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CHEW GUARD
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MATL: POLYCARBONATE - .177 THICKNESS



CLAMP
(1) REQD
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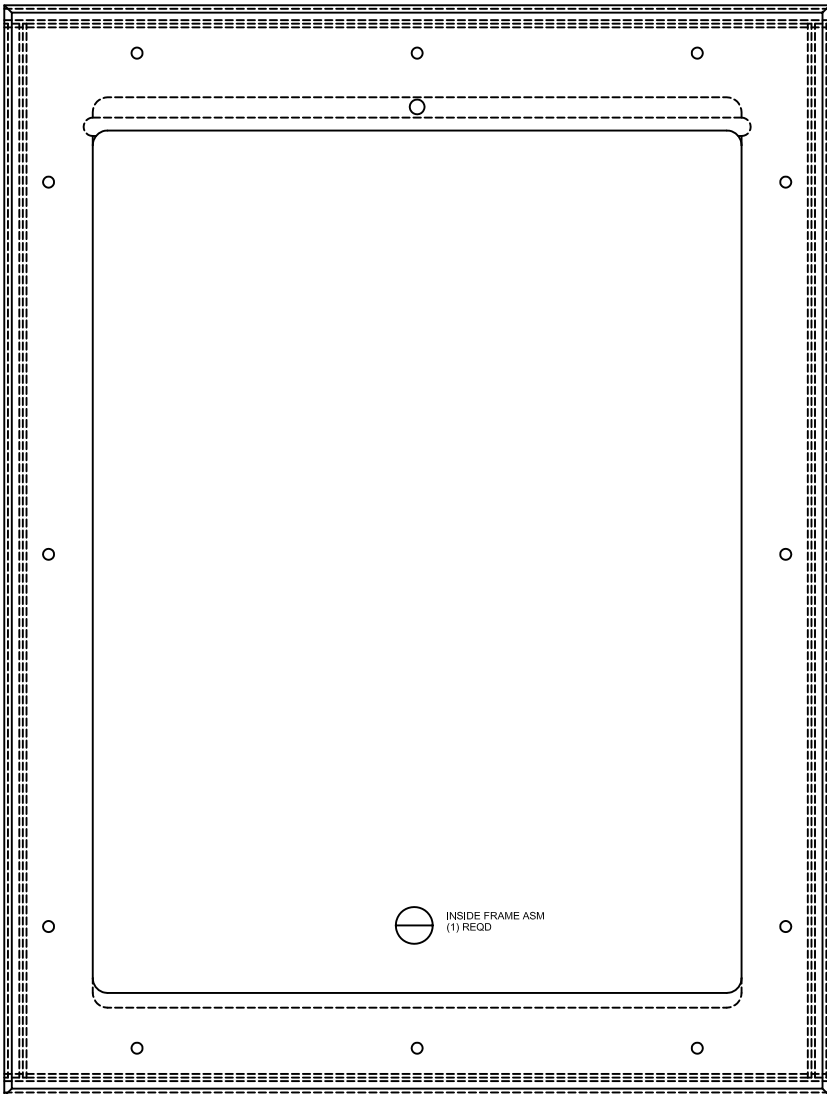
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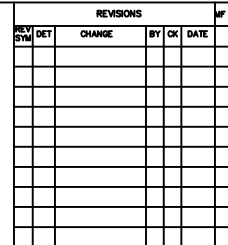
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INCHES
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