



**ASTM E 90 SOUND TRANSMISSION LOSS  
TEST REPORT**

**Rendered to:**

**ODL INCORPORATED**

**TYPE: Insulating Glass Unit**

<b>Summary of Test Results</b>			
<b>Data File No.</b>	<b>Glazing Option (Nominal Dimensions)</b>	<b>STC</b>	<b>OITC</b>
A8047.01A	1" IG (3/8" laminated exterior, 1/2" air space, 1/8" tempered interior), Glass temperature 75°F	37	30
A8047.01B	7/8" IG (3/8" laminated exterior, 1/16" air space, 3/16" decorative annealed, 1/8" air space, 1/8" tempered interior), Glass temperature 75°F	38	32
A8047.01C	1" IG (1/8" tempered, 3/4" air space, 1/8" tempered)	28	22
A8047.01D	1/2" IG (1/8" tempered, 1/4" air space, 1/8" tempered)	27	25
A8047.01E	15/16" IG (1/8" tempered, 1/4" air space, 3/16" decorative annealed, 1/4" air space, 1/8" tempered)	31	24

Reference should be made to Architectural Testing, Inc. Report No. A8047.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.



## ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

ODL INCORPORATED  
100 Mulder Drive  
Zeeland, Michigan 49464

Report No: A8047.01-113-11  
Test Date: 04/06/11  
Report Date: 04/21/11  
Expiration Date: 04/06/15

### **Test Sample Identification:**

**Type:** Insulating Glass Unit

**Overall Size:** 22" by 64"

### **Glazing (Nominal Dimensions):**

- Option A:** 1" IG (3/8" Laminated Exterior, 1/2" Air Space, 1/8" Tempered Interior), Glass Temperature 75°F
- Option B:** 7/8" IG (3/8" Laminated Exterior, 1/16" Air Space, 3/16" Decorative Annealed, 1/8" Air Space, 1/8" Tempered Interior), Glass temperature 75°F
- Option C:** 1" IG (1/8" Tempered, 3/4" Air Space, 1/8" Tempered)
- Option D:** 1/2" IG (1/8" Tempered, 1/4" Air Space, 1/8" Tempered)
- Option E:** 15/16" IG (1/8" Tempered, 1/4" Air Space, 3/16" Decorative Annealed, 1/4" Air Space, 1/8" Tempered)

**Project Scope:** Architectural Testing, Inc. was contracted by ODL Incorporated to conduct sound transmission loss tests on insulating glass units. A summary of the results is listed in the Test Results section, and the complete test data is included as Appendix B of this report. The samples were provided by the client.

**Test Methods:** The acoustical tests were conducted in accordance with the following:

*ASTM E 90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.*

*ASTM E 413-10, Classification for Rating Sound Insulation.*

*ASTM E 1332-10a, Standard Classification for Rating Outdoor-Indoor Sound Attenuation.*

*ASTM E 2235-04, Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods.*

**Test Equipment:** The equipment used to conduct these tests meets the requirements of ASTM E 90. The microphones were calibrated before conducting sound transmission loss tests. The test equipment and test chamber descriptions are listed in Appendix A.

**Sample Installation:** Sound transmission loss tests were initially performed on a filler wall that was designed to test 48" by 72" and 72" by 48" specimens. The filler wall achieved an STC rating of 68.

A filler wall reducing element was used to reduce the test opening size to 24-1/2" wide by 66-1/2" high. The reducing element consisted of a double 2x4 wood stud wall construction with three layers of 5/8" drywall on both sides. The stud cavities in the wall were insulated with two layers of R-13 fiberglass insulation. The window was placed on a foam isolation pad in the new test opening. Duct seal was used to seal the perimeter of the window to the test opening on both sides. The interior side of the window frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing.

**Test Procedure:** The sound transmission loss test consisted of the following measurements: One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms, at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.