



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 100989233

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**SOUND AND PRESSURE DROP TESTING OF
A BETA PRESSURE INDEPENDENT SINGLE
DUCT AIR TERMINAL, MODEL SDV350**

RENDERED TO

**BETA INDUSTRIAL L.L.C.
P.O. BOX 50708,
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INTRODUCTION

This report gives the results of Sound Power Level and Pressure Drop tests, which were conducted on a Beta Pressure Independent Single Duct Air Terminal, Model SDV350. The sample was selected and supplied by the client and received at the laboratories on January 22, 2013. The unit appeared to be in new, unused condition.

<u>Section No. *</u>	<u>Title of Test</u>
7	Primary Airflow Rate, cfm
7	Radiated Sound Power Level, dB
7	Discharge Sound Power Level, dB

The results contained herein are for technical evaluation only and are applicable only to the specific specimens referenced herein.

The tests herein reported have not been performed at the request of the Air Conditioning, Heating and Refrigeration Institute (AHRI), and use of these findings in any advertising or other literature shall state therein that the test is not part of the AHRI Certification Program.

*AHRI Standard 880-2008

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GENERAL

Authorization to test the sample came from Intertek India. The sample was selected and supplied by the client and received at the laboratories on January 22, 2013. The unit appeared to be in new, unused condition.

TEST METHOD

The laboratory method used in conducting this series of tests was in accordance with Industry Standards AHRI 880-2008, "Performance Rating of Air Terminals" and ASHRAE 130-2008, "Methods of Testing Air Terminal Units".

The reference sound source used for this test was a calibrated Bruel & Kjaer Type 4204, which conforms to the above standard. Airflow was measured employing a nozzle metering station and a Dwyer Inclined Manometer Model No. 424-5.

Equipment	Calibration Date	Due Date	S/N	Model	Brand	Asset
Microphone/Pre - DF	3/22/2012	3/22/2013	2381159	4942	Brüel and Kjær	E449
Pulse Analyzer	3/19/2012	3/19/2013	2519258	7539	Brüel and Kjær	E446
Reference Sound Source	7/27/2012	7/27/2015	2036621	4204	Brüel and Kjær	A230
Manometer Incline	3/16/2012	3/16/2013	-	424-5	Dwyer	F166
Manometer Incline	3/16/2012	3/16/2013	S39C	424-5	Dwyer	F167
Microphone Calibrator	3/19/2012	3/19/2013	2130586	4231	Brüel and Kjær	A227

All static pressures in this report have been corrected to standard conditions.

TEST SPECIMEN

The test specimen consisted of a Beta Pressure Independent Single Duct Terminal Unit, Model SDV350. The terminal measured 22 3/4 inches in length by 20 inches in width by 17 1/2 inches in height. The inlet measured 14 in diameter while the outlet measured 19 by 16 1/2 inches. The sheet metal thickness measured 0.039 inches. The terminal was lined with 1/2 inch thick dual density insulation. The base terminal was tested with a flowcross inlet flow sensor.



RESULTS OF TEST – Model SDV350

Measurement of the minimum operating pressure at 100% of standard airflow.

<u>Rated Airflow</u> 2100 cfm	<u>Measured</u> -0.02 in. H ₂ O
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For the Casing Radiated Sound Power Level Test, the terminal was mounted in accordance with paragraph 6.1.4.2 of AHRI Standard 880-2008 and Figure 12 of ASHRAE 130-2008.

<u>Octave Band Center Frequency Hertz</u>	<u>Radiated Sound Power Level Lw dB re 10⁻¹² Watt</u>
125	63
250	62
500	54
1000	47
2000	41
4000	35
8000	27*
Air Volume in cfm	2100
Operating Pressure in. H ₂ O	1.5

For the Discharge Sound Power Level Test, the unit was mounted in accordance with paragraph 6.1.4.1 of AHRI Standard 880-2008 and Figure 8 of ASHRAE 130-2008.

<u>Octave Band Center Frequency Hertz</u>	<u>Discharge Sound Power Level Lw dB re 10⁻¹² Watt</u>	
	<u>Test #1</u>	<u>Test #2</u>
125	76	63
250	75	58
500	66	58
1000	65	50
2000	64	45
4000	61	39
8000	58	32
Air Volume in cfm	2100	2100
Operating Pressure in. H ₂ O	1.5	Minimum

*Sound Power Level data denoted with an asterisk has reached ambient levels in the test room or is determined by instrument limitations. Actual levels are less than or equal to the levels indicated.

REMARKS

1. Ambient Temperature: 69 - 70° F
2. Relative Humidity: 19 - 22%
3. Barometric Pressure: 28.08 – 28.64 Inches Hg

CONCLUSION

The test method employed for this test has no pass-fail criteria; therefore, the evaluation of the test results is left to the discretion of the client.

Dates of Tests: January 31 through February 1, 2013

Report Approved by:

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Attachments: None