



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 100989233

Date: March 5, 2013

REPORT NO. 100989233CRT-001d

**SOUND AND PRESSURE DROP TESTING OF
A BETA PRESSURE INDEPENDENT SINGLE
DUCT AIR TERMINAL, MODEL SDV150**

RENDERED TO

**BETA INDUSTRIAL L.L.C.
P.O. BOX 50708,
DUBAI, U.A.E.**

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 SDV150. 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 SDV150. The terminal measured 17 inches in length by 10 1/8 inches in width by 10 1/4 inches in height. The inlet measured 6 in diameter while the outlet measured 9 3/8 by 8 3/4 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 SDV150

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

<u>Rated Airflow</u> 400 cfm	<u>Measured</u> 0.07 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	55
250	48
500	46
1000	39
2000	31
4000	25
8000	28*
Air Volume in cfm	400
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	74	61
250	73	58
500	68	52
1000	64	40
2000	62	31
4000	57	29
8000	52	24*
Air Volume in cfm	400	400
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

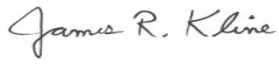
The test method employed for this test has no pass-fail criteria; therefore, the evaluation of the test results is left to the discretion of the client.

Dates of Tests: January 31 through February 1, 2013

Report Approved by:


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Attachments: None