

University of Illinois Department of Agricultural and Biological Engineering
Bioenvironmental and Structural Systems Lab
Final Report

Project Number: 09342
Test Date: December 16, 2009

Fan:		Motor:		Shutter:
Make- <i>Schaefer</i>		Make- <i>Marathon</i>		Material- <i>aluminum</i>
Model- <i>363S12-E</i>		Model- <i>DWF56B17T20F</i>		# Doors- <i>11 per column</i>
Blade dia.- <i>36.6"</i>		Hp- <i>1/2</i>		# Columns- <i>2</i>
Orifice dia.- <i>37"</i>		RPM- <i>1725</i>		Door length <i>20.7"</i>
		Volts- <i>115/230</i>		Location- <i>intake</i>
Blade:		Amps- <i>4.6/2.3</i>		
Number- <i>3</i>		Hz- <i>60</i>		Guards:
Shape- <i>propeller</i>		Phase- <i>1</i>		Description- <i>wire</i>
Material- <i>galvanized steel</i>		S. F.- <i>1.0</i>		Spacing- <i>1" x 2"</i>
Pitch- <i>-</i>				Location- <i>exhaust</i>
Clearance- <i>0.2"</i>		Housing:		
		Material- <i>galvanized steel</i>		Discharge Cone:
Drive Sheaves:		Intake area- <i>40.6"x41"</i>		Depth- <i>none</i>
Drive dia.- <i>2.8", AK28</i>		Discharge- <i>40.8"x41"</i>		Minor dia.- <i>-</i>
Axle dia.- <i>9.3", AK94</i>		Depth- <i>30.3" top, 23"</i>		Major dia.- <i>-</i>
		<i>0</i>		
Notes:	<i>AFR</i>	<i>0.34</i>		

Test Conditions:

T(wb):	53.5	Barometric pressure, recorded	29.82
T(db):	75.5	Barometric Pressure, corrected	29.69

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	9340	511	230.0	1.78	381	24.5
0.05	8390	511	229.6	1.83	391	21.4
0.10	7270	510	229.9	1.90	409	17.8
0.15	5290	509	229.6	1.98	429	12.3
0.20	2890	507	230.2	2.08	452	6.4
0.25	930	505	229.7	2.28	497	1.9