

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

Project Number: 09331
Test Date: December 15, 2009

Fan:		Motor:		Shutter:
Make- <i>Schaefer</i>		Make- <i>Emerson</i>		Material- <i>aluminum</i>
Model- <i>486S1-E</i>		Model- <i>T63ZZCLB-1385</i>		# Doors- <i>14 per column</i>
Blade dia.- <i>48.5"</i>		Hp- <i>1</i>		# Columns- <i>2</i>
Orifice dia.- <i>49"</i>		RPM- <i>1725/1425</i>		Door length <i>26.6"</i>
		Volts- <i>115/230</i>		Location- <i>intake</i>
Blade:		Amps- <i>8.4/4.2</i>		
Number- <i>6</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>1.4</i>		Spacing- <i>1" x 2"</i>
Pitch- <i>0</i>				Location- <i>exhaust</i>
Clearance- <i>0.3"</i>		Housing:		
		Material- <i>galvanized steel</i>		Discharge Cone:
Drive Sheaves:		Intake area- <i>52.6" x 52.9"</i>		Depth- <i>none</i>
Drive dia.- <i>2.6", MA26</i>		Discharge- <i>52.8" x 52.6"</i>		Minor dia.- <i>-</i>
Axle dia.- <i>11.3" o.d., AK114</i>		Depth- <i>30" top</i>		Major dia.- <i>-</i>
		<i>21" bottom</i>		
Notes:	<i>AFR</i>	<i>0.53</i>		

Test Conditions:

T(wb):	55.5	Barometric pressure, recorded	29.73
T(db):	78	Barometric Pressure, corrected	29.60

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	18800	385	230.5	3.84	795	23.6
0.05	17400	384	230.3	4.00	826	21.1
0.10	15800	384	229.8	4.11	848	18.6
0.15	13500	383	229.8	4.24	879	15.4
0.20	9300	382	229.6	4.42	921	10.1
0.25	5800	381	229.8	4.62	964	6.1