

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

Project Number: 12483
 Test Date: July 11, 2012

Fan:	Motor:	Shutter:
Make- <i>Schaefer</i>	Make- <i>FHP</i>	Material- <i>aluminum</i>
Model- <i>573CF112C-1-HE</i>	Model- <i>A6K17NB16</i>	# Doors- <i>15 per column</i>
Blade dia.- <i>57"</i>	Hp- <i>1.5</i>	# Columns- <i>2</i>
Orifice dia.- <i>57.7"</i>	RPM- <i>1725</i>	Door length <i>29.6"</i>
	Volts- <i>115/230</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>13.6/6.8</i>	
Number- <i>3</i>	Hz- <i>60</i>	Guards:
Shape- <i>propeller</i>	Phase- <i>1</i>	Description- <i>wire</i>
Material- <i>cast aluminum</i>	S. F.- <i>1.0</i>	Spacing- <i>1.5" concentric</i>
Pitch- <i>-</i>		Location- <i>exhaust</i>
Clearance- <i>0.4"</i>	Housing:	Discharge Cone:
	Material- <i>fiberglass</i>	Depth- <i>39.5"</i>
Drive Sheaves:	Intake area- <i>58.4" x 58.5"</i>	Minor dia.- <i>57.7"</i>
Drive dia.- <i>2.3" o.d.</i>	Discharge- <i>57.7" o.d.</i>	Major dia.- <i>67"</i>
Axle dia.- <i>8.3" o.d.</i>	Depth- <i>28" top</i>	
	<i>27" bottom</i>	

Notes: *60 Hz test

Test Conditions:

T(wb): 65	Barometric pressure, recorded	29.43
T(db): 80	Barometric Pressure, corrected	29.29

							SI Units			
Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	Static Pressure (Pa)	Airflow (m ³ /hr.)	(m ³ /hr)/W	W/1000m ³ /hr
0.00	26900	457	230.6	4.66	944	28.5	0	45700	48.4	21
0.05	24500	457	230.2	4.84	984	24.9	12	41600	42.3	24
0.10	21400	456	230.5	4.98	1018	21.0	25	36400	35.7	28
0.15	14500	455	230.0	5.17	1061	13.7	37	24600	23.2	43
0.20	8400	454	230.1	5.46	1128	7.4	50	14200	12.6	79
0.22	4800	453	230.4	5.58	1156	4.2	55	8200	7.1	141