

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

Project Number: 11224
 Test Date: June 29, 2011

Fan:	Motor:	Shutter:
Make- <i>Schaefer</i>	Make- <i>Leeson</i>	Material- <i>aluminum</i>
Model- <i>575CF1G-3</i>	Model- <i>A6T17NB106A</i>	# Doors- <i>15 per column</i>
Blade dia.- <i>57.3"</i>	Hp- <i>1</i>	# Columns- <i>2</i>
Orifice dia.- <i>57.8"</i>	RPM- <i>1760</i>	Door length <i>29.7"</i>
	Volts- <i>208-230/460</i>	Location- <i>intake</i>
	Amps- <i>3.2/1.6</i>	
Blade:	Hz- <i>60</i>	Guards:
Number- <i>5</i>	Phase- <i>3</i>	Description- <i>wire</i>
Shape- <i>propeller</i>	S. F.- <i>1.25</i>	Spacing- <i>1.5" concentric</i>
Material- <i>galvanized steel</i>		Location- <i>exhaust</i>
Pitch- <i>-</i>		
Clearance- <i>0.3"</i>	Housing:	Discharge Cone:
	Material- <i>fiberglass</i>	Depth- <i>39"</i>
Drive Sheaves:	Intake area- <i>58.6"x 59"</i>	Minor dia.- <i>57.8"</i>
Drive dia.- <i>2.2" o.d.</i>	Discharge- <i>57.8" o.d.</i>	Major dia.- <i>67"</i>
Axle dia.- <i>9.3" o.d.</i>	Depth- <i>28" top</i>	
	<i>26.8" bottom</i>	

Notes: 0

Test Conditions:
 T(wb): 63.5 Barometric pressure, recorded 29.45
 T(db): 77.5 Barometric Pressure, corrected 29.32

							SI Units		
Static Pressure	Airflow						Static Pressure	Airflow	
(in.H2O)	(cfm)	rpm	Volts	Amps	Watts	cfm/Watt	(Pa)	(m ³ /hr.)	(m ³ /hr)/W
0.00	27000	390	230.0	3.09	849	31.8	0	45900	54
0.05	25300	389	230.1	3.18	892	28.4	12	43100	48.3
0.10	23200	388	229.8	3.26	928	25.0	25	39400	42.4
0.15	20600	387	229.6	3.30	948	21.7	37	35000	36.9
0.20	14900	388	229.4	3.27	931	16.0	50	25300	27.2
0.25	9300	387	230.7	3.30	951	9.8	62	15900	16.7
0.28	6000	387	230.2	3.31	965	6.2	70	10200	10.5