

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

Project Number: 11214
 Test Date: June 28, 2011

Fan:	Motor:	Shutter:
Make- <i>Schaefer</i>	Make- <i>Marathon</i>	Material- <i>aluminum</i>
Model- <i>575CF112G-1-HE-M</i>	Model- <i>5KCR48WN0920T</i>	# Doors- <i>15 per column</i>
Blade dia.- <i>57.3"</i>	Hp- <i>1.5</i>	# Columns- <i>2</i>
Orifice dia.- <i>57.8"</i>	RPM- <i>1725</i>	Door length <i>29.7"</i>
	Volts- <i>208-230</i>	Location- <i>intake</i>
	Amps- <i>6.7-6.2</i>	
Blade:	Hz- <i>60</i>	Guards:
Number- <i>5</i>	Phase- <i>1</i>	Description- <i>wire</i>
Shape- <i>propeller</i>	S. F.- <i>1.2</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>2.4" 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): 65	Barometric pressure, recorded	29.39
T(db): 78	Barometric Pressure, corrected	29.26

							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	28900	411	232.1	5.07	1131	25.5	0	49000	43.4
0.05	27100	408	229.7	5.26	1167	23.2	12	46000	39.4
0.10	25000	406	229.9	5.38	1198	20.9	25	42500	35.5
0.15	22400	404	229.6	5.46	1215	18.5	37	38100	31.4
0.20	18700	404	231.0	5.44	1218	15.4	50	31800	26.1
0.25	13000	405	231.2	5.36	1200	10.9	62	22200	18.5
0.30	6500	401	229.4	5.50	1224	5.3	75	11000	9