

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

Project Number: 11213
 Test Date: June 28, 2011

Fan:		Motor:		Shutter:
Make- <i>Schaefer</i>		Make- <i>Marathon</i>		Material- <i>aluminum</i>
Model- <i>575CF112G-1-HV-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>2.8" o.d.</i>		Discharge- <i>57.8" o.d.</i>		Major dia.- <i>67"</i>
Axle dia.- <i>10.3" 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 (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	Static Pressure (Pa)	Airflow (m ³ /hr.)	(m ³ /hr)/W
0.00	31400	448	229.0	6.20	1393	22.5	0	53400	38.3
0.05	30000	447	228.8	6.42	1444	20.7	12	50900	35.2
0.10	28100	445	229.1	6.60	1489	18.9	25	47800	32.1
0.15	26000	443	229.6	6.70	1514	17.2	37	44200	29.2
0.20	23300	440	228.9	6.80	1529	15.2	50	39600	25.9
0.25	19500	440	231.1	6.71	1522	12.8	62	33200	21.8
0.30	13900	442	231.4	6.57	1491	9.3	75	23600	15.9