

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

Project Number: 12614
 Test Date: August 29, 2012

Fan:	Motor:	Shutter:
Make- <i>Chore-Time</i>	Make- <i>GE</i>	Butterfly damper
Model- <i>53464-22</i>	Model- <i>5KCR48WN0711T</i>	Material- <i>Poly</i>
Blade dia.- <i>56.8"</i>	Hp- <i>1.5</i>	# Doors- <i>2</i>
Orifice dia.- <i>57.3"</i>	RPM- <i>1725</i>	# Columns- <i>-</i>
	Volts- <i>208-230</i>	Door length -
	Amps- <i>6.5-6.6</i>	Location- <i>exhaust</i>
Blade:	Hz- <i>60</i>	
Number- <i>3</i>	Phase- <i>1</i>	Guards:
Shape- <i>propeller</i>	S. F.- <i>1.1</i>	Description- <i>wire</i>
Material- <i>galvanized steel</i>		Spacing- <i>2" x 4" / 5.5" concentric</i>
Pitch- <i>-</i>		Location- <i>intake / exhaust</i>
Clearance- <i>0.2"</i>	Housing:	
	Material- <i>Poly</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>57.5" x 57.5"</i>	Depth- <i>34.8"</i>
Drive dia.- <i>3.0" o.d.</i>	Discharge- <i>56.6"</i>	Minor dia.- <i>56.6"</i>
Axle dia.- <i>9.9" o.d.</i>	Depth- <i>10.5"</i>	Major dia.- <i>69.8"</i>
	<i>0</i>	

Notes: 0

Test Conditions:

T(wb): 65.5	Barometric pressure, recorded	29.42
T(db): 80	Barometric Pressure, corrected	29.28

							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	30600	546	230.1	4.50	1034	29.6	0	52000	50.3	20
0.05	28900	545	229.7	4.83	1109	26.1	12	49200	44.3	23
0.10	27100	543	229.4	5.14	1179	23.0	25	46100	39.1	26
0.15	25100	542	230.2	5.42	1248	20.1	37	42700	34.2	29
0.20	22600	541	230.4	5.72	1319	17.1	50	38400	29.1	34
0.25	19300	539	230.0	6.00	1383	13.9	62	32800	23.7	42
0.30	14500	538	230.1	6.17	1422	10.2	75	24600	17.3	58