

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

Project Number: 12615
 Test Date: August 29, 2012

Fan:	Motor:	Shutter: Butterfly damper
Make- <i>Chore-Time</i>	Make- <i>Marathon</i>	Material- <i>Poly</i>
Model- <i>53464-21</i>	Model- <i>5KCR48WN0800AT</i>	# Doors- <i>2</i>
Blade dia.- <i>56.2"</i>	Hp- <i>1.5</i>	# Columns- <i>-</i>
Orifice dia.- <i>56.6"</i>	RPM- <i>1725</i>	Door length -
	Volts- <i>230</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>6.2</i>	
Number- <i>3</i>	Hz- <i>60</i>	Guards:
Shape- <i>propeller</i>	Phase- <i>1</i>	Description- <i>wire</i>
Material- <i>galvanized steel</i>	S. F.- <i>1.3</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>
Blade dia.- <i>3.0" o.d.</i>	Discharge- <i>56.6"</i>	Minor dia.- <i>56.6"</i>
Orifice dia.- <i>9.9" o.d.</i>	Depth- <i>10.5"</i>	Major dia.- <i>69.8"</i>

Notes:

Test Conditions:

T(wb): 65.5	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	34100	545	230.1	5.68	1307	26.1	0	57900	44.3	23
0.05	32400	543	229.6	6.11	1400	23.1	12	55000	39.3	25
0.10	30400	542	229.7	6.48	1487	20.4	25	51600	34.7	29
0.15	28400	540	229.5	6.86	1568	18.1	37	48200	30.7	33
0.20	25800	539	230.5	7.21	1653	15.6	50	43800	26.5	38
0.25	22900	538	229.8	7.56	1726	13.2	62	38800	22.5	44
0.30	16100	537	229.7	7.73	1763	9.1	75	27300	15.5	65