

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

Project Number: 08361
Test Date: December 19, 2008

Fan:		Motor:		Shutter:	
Make-	<i>J & D</i>	Make-	<i>Emerson</i>	Material-	<i>galvanized steel</i>
Model-	<i>VBG55A3C151</i>	Model-	<i>T63ZZDNA-1840</i>	# Doors-	<i>2</i>
Blade dia.-	<i>55"</i>	Hp-	<i>1.5</i>	# Columns-	<i>-</i>
Orifice dia.-	<i>55.5"</i>	RPM-	<i>1725</i>	Door length -	
		Volts-	<i>115/208-230</i>	Location-	<i>exhaust</i>
		Amps-	<i>10.8/5.4</i>		
Blade:		Hz-	<i>60</i>	Guards:	
Number-	<i>3</i>	Phase-	<i>1</i>	Description-	<i>wire</i>
Shape-	<i>propeller</i>	S. F.-	<i>1.5</i>	Spacing-	<i>2"x4" / 2" concentric</i>
Material-	<i>cast aluminum</i>			Location-	<i>intake / exhaust</i>
Pitch-	<i>-</i>				
Clearance-	<i>0.3"</i>	Housing:		Discharge Cone:	
		Material-	<i>galvanized steel</i>	Depth-	<i>36.6"</i>
Drive Sheaves:		Intake area-	<i>57.6" x 57.7"</i>	Minor dia.-	<i>55.5"</i>
Drive dia.-	<i>3.45" o.d. AK34</i>	Discharge-	<i>55.5"</i>	Major dia.-	<i>63.8"</i>
Axle dia.-	<i>10" o.d.</i>	Depth-	<i>20.1"</i>		

Notes: *blade JF3*

Test Conditions:

T(wb):	57	Barometric pressure, recorded	29.01
T(db):	78	Barometric Pressure, corrected	28.88

Static

Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	31000	578	229.9	6.71	1495	20.7
0.05	29000	577	229.9	6.98	1552	18.7
0.10	26900	576	229.8	7.26	1615	16.7
0.15	24600	574	229.7	7.50	1663	14.8
0.20	22200	573	230.0	7.67	1705	13.0
0.25	19400	573	229.6	7.78	1732	11.2
0.30	13400	572	230.0	7.68	1709	7.8