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

Project Number: 24139
Test Date: February 20, 2024

Fan:		**Motor:**		**Shutter:**	*Butterfly damper*
Make-	*Eurusfan*	Make-	*EURUS AgriTec*	Material-	*plastic*
Model-	*VFA2-50HO-D3IM-CBM*	Model-	*YFE3-112L3C-10BX*	# Doors-	*2*
Blade dia.-	*51.2"*	Hp-	*1100 Watt*	# Columns-	-
Orifice dia.-	*51.6"*	RPM-	*690*	Door length	-
		Volts-	*200*	Location-	*exhaust*
Blade:		Amps-	*8.1*		
Number-	*3*	Hz-	*60*	**Guards:**	
Shape-	*propeller*	Phase-	*3*	Description-	*wire*
Material-	*poly*	S. F.-	*1.15*	Spacing-	*1.3" x 3.4" / 4" concentric*
Pitch-	-			Location-	*intake / exhaust*
Clearance-	*0.2"*	**Housing:**			
		Material-	*Fiberglass*	**Discharge Cone:**	
Drive Sheaves:		Intake area-	*56.5" x 56.5"*	Depth-	*35"*
Drive dia.-	*direct*	Discharge-	*51.6" dia.*	Minor dia.-	*51.6"*
Axle dia.-	*drive*	Depth-	*22.5"*	Major dia.-	*60.9"*

Notes: ** 60 Hz test.*

Test Conditions:
T(wb) F: 54.5
T(db) F: 74.3 Barometric Pressure 29.33 (In. Hg)

							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	**28900**	693	199.6	7.47	1284	**22.5**	0	49200	38.3	26
0.05	**27600**	691	199.2	7.57	1344	**20.5**	12	46900	34.9	29
0.10	**26000**	689	199.2	7.69	1408	**18.5**	25	44200	31.4	32
0.15	**24400**	687	199.5	7.78	1461	**16.7**	37	41500	28.4	35
0.20	**22400**	686	199.2	7.87	1513	**14.8**	50	38100	25.2	40
0.25	**20400**	685	199.2	7.94	1548	**13.2**	62	34600	22.3	45
0.30	**17800**	684	199.2	7.95	1549	**11.5**	75	30300	19.6	51