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

Project Number: 24137
Test Date: February 20, 2024

Fan:
Make- *Eurusfan*
Model- *VFA2-50HO-C3IM-CBM*
Blade dia.- *51.2"*
Orifice dia.- *51.6"*

Blade:
Number- *3*
Shape- *propeller*
Material- *poly*
Pitch- -
Clearance- *0.2"*

Drive Sheaves:
Drive dia.- *direct*
Axle dia.- *drive*

Motor:
Make- *EURUS AgriTec*
Model- *YFE3-112L3B-10BX*
Hp- *1100 Watt*
RPM- *690*
Volts- *380*
Amps- *4.3*
Hz- *60*
Phase- *3*
S. F.- *1.15*

Housing:
Material- *Fiberglass*
Intake area- *56.5" x 56.5"*
Discharge- *51.6" dia.*
Depth- *22.5"*

Shutter: *Butterfly damper*
Material- *plastic*
Doors- *2*
Columns- -
Door length -
Location- *exhaust*

Guards:
Description- *wire*
Spacing- *1.3" x 3.4" / 4" concentric*
Location- *intake / exhaust*

Discharge Cone:
Depth- *35"*
Minor dia.- *51.6"*
Major dia.- *60.9"*

Notes: ** 60 Hz test.*

Test Conditions:
T(wb) F: 54.3
T(db) F: 74.1
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	**29000**	696	380.2	4.08	1290	**22.5**	0	49300	38.2	26
0.05	**27500**	694	380.2	4.14	1357	**20.3**	12	46700	34.4	29
0.10	**26100**	693	380.1	4.18	1409	**18.5**	25	44300	31.4	32
0.15	**24200**	691	380.1	4.24	1464	**16.6**	37	41200	28.1	36
0.20	**22700**	690	380.2	4.29	1515	**15.0**	50	38500	25.4	39
0.25	**20600**	689	380.1	4.32	1540	**13.4**	62	35100	22.8	44
0.30	**18000**	688	380.1	4.33	1552	**11.6**	75	30600	19.7	51