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

Project Number: 24136
Test Date: February 20, 2024

Fan:
Make- *Eurusfan*
Model- *VFA2-50HF-B3IM-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- *YFE3-112L4A-10BX*
Hp- *1500 Watts*
RPM- *690*
Volts- *230*
Amps- *9.0*
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: 54.1
T(db) F: 73.8
Barometric Pressure 29.33 (In. Hg)

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	SI Units Static Pressure (Pa)	Airflow (m^3/hr.)	(m^3/hr)/W	W/1000m^3/hr
0.00	**32600**	694	230.8	8.26	1716	**19.0**	0	55400	32.3	31
0.05	**31200**	693	230.7	8.37	1788	**17.4**	12	52900	29.6	34
0.10	**29700**	691	230.3	8.49	1859	**16.0**	25	50400	27.1	37
0.15	**28000**	690	230.3	8.58	1908	**14.7**	37	47600	25	40
0.20	**26100**	689	230.0	8.64	1953	**13.4**	50	44400	22.7	44
0.25	**24000**	689	230.4	8.65	1959	**12.2**	62	40800	20.8	48
0.30	**21600**	689	230.4	8.67	1970	**11.0**	75	36800	18.7	54