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

Project Number: 24143
Test Date: February 21, 2024

Fan:
Make- *Eurusfan*
Model- *VFA2-50HO-E3IM-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- *YFE3-100L2B-8BX*
Hp- *1100 Watt*
RPM- *705*
Volts- *200*
Amps- *6.0*
Hz- *50*
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: ** 50 Hz test.*

Test Conditions:
T(wb) F: 54.2
T(db) F: 73
Barometric Pressure 29.20 (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	**29000**	715	200.8	5.26	1225	**23.7**	0	49200	40.2	25
0.05	**27800**	712	200.8	5.39	1281	**21.7**	12	47200	36.8	27
0.10	**26100**	710	200.8	5.55	1348	**19.4**	25	44400	32.9	30
0.15	**24400**	707	200.8	5.68	1405	**17.4**	37	41500	29.5	34
0.20	**22900**	705	200.8	5.80	1449	**15.8**	50	38900	26.8	37
0.25	**20900**	703	200.8	5.91	1495	**14.0**	62	35600	23.8	42
0.30	**18600**	703	200.8	5.94	1512	**12.3**	75	31600	20.9	48