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

Project Number: 22056
Test Date: January 12, 2022

Fan:
Make- *Eurusfan*
Model- *VFA2-24HO-A3IM-CS*
Blade dia.- *26"*
Orifice dia.- *26.5"*

Blade:
Number- *6*
Shape- *propeller*
Material- *plastic*
Pitch- -
Clearance- *.3"*

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

Motor:
Make- *Eurusdrive*
Model- *YFE3-100M2-6B3*
Hp- *0.375 kW*
RPM- *960*
Volts- *380*
Amps- *1.3*
Hz- *50*
Phase- *3*
S. F.- *1.15*

Housing:
Material- *fiberglass*
Intake area- *30" x30"*
Discharge- *26" dia*
Depth- *19"*

Shutter:
Material- *plastic*
Doors- *9 per column*
Columns- *2*
Door length *15"*
Location- *intake*

Guards:
Description- *wire*
Spacing- *2" concentric*
Location- *exhaust*

Discharge Cone:
Depth- *23"*
Minor dia.- *26.5"*
Major dia.- *32.5"*

Notes: *50 Hz test*

Test Conditions:

T(wb) F:	53	Barometric pressure, recorded	29.35
T(db) F:	72	Barometric Pressure, corrected	29.23 (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	**7940**	980	380.3	1.15	402	**19.7**	0	13500	33.5	30
0.05	**7590**	979	380.3	1.16	419	**18.1**	12	12900	30.8	32
0.10	**7240**	978	380.3	1.18	437	**16.6**	25	12300	28.2	36
0.15	**6880**	977	380.3	1.19	455	**15.1**	37	11700	25.7	39
0.20	**6450**	976	380.3	1.20	472	**13.7**	50	11000	23.2	43
0.25	**5850**	975	380.3	1.21	472	**12.4**	62	9900	21.1	47
0.30	**4740**	974	380.3	1.21	480	**9.9**	75	8100	16.8	60