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

Project Number: 13569
Test Date: October 24, 2013

Fan:
Make- *Chore-Time*
Model- *54659-42*
Blade dia.- *56.8"*
Orifice dia.- *57.3"*

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

Drive Sheaves:
Drive dia.- *3.0" o.d.*
Axle dia.- *9.9" o.d.*

Motor:
Make- *Marathon*
Model- *5K48WN4495A*
Hp- *1.5*
RPM- *1725 // 1425*
Volts- *200-230/380-460//20(*
Amps- *5.9-5.5/2.9//5.9-5.8/9.5/2.9*
Hz- *60 // 50*
Phase- *3*
S. F.- -

Housing:
Material- *Poly / powder coat ste*
Intake area- *55.8" x 55.8"*
Discharge- *57.3"*
Depth- *31.5"*

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

Guards:
Description- *wire*
Spacing- *2" x 4" / 5.5" concentric*
Location- *intake / exhaust*

Discharge Cone:
Depth- *34.8"*
Minor dia.- *56.6"*
Major dia.- *69.8"*

Notes: *0*

Test Conditions:

T(wb):	56.5	Barometric pressure, recorded	29.51
T(db):	78	Barometric Pressure, corrected	29.38

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	**29800**	538	229.7	3.70	1041	**28.6**	0	50600	48.7	21
0.05	**28100**	537	229.8	3.86	1116	**25.2**	12	47800	42.8	23
0.10	**26300**	536	229.9	4.01	1187	**22.2**	25	44700	37.6	27
0.15	**24200**	535	229.6	4.16	1256	**19.2**	37	41000	32.7	31
0.20	**21600**	534	229.7	4.30	1319	**16.4**	50	36700	27.8	36
0.25	**18500**	533	229.7	4.40	1364	**13.5**	62	31400	23	43
0.30	**14100**	533	229.9	4.46	1397	**10.1**	75	24000	17.2	58