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

Project Number: 07478
Test Date: November 20, 2007

Fan:
Make- *Better Air*
Model- *LPF-1800C*
Blade dia.- *18.4"*
Orifice dia.- *18.6"*

Blade:
Number- *6*
Shape- *propeller*
Material- *plastic*
Pitch- -
Clearance- *.1"*

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

Motor:
Make- *FHP*
Model- *M099906*
Hp- *1/3*
RPM- *1625*
Volts- *115/230*
Amps- *3.6/1.8*
Hz- *60*
Phase- *1*
S. F.- *1.0*

Housing:
Material- *plastic*
Intake area- *18.4" x 18.4"*
Discharge- *18.6" dia.*
Depth- *21.5" top*
20" bottom

Shutter:
Material- *plastic*
Doors- *6*
Columns- *1*
Door length- *19.2"*
Location- *Intake*

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

Discharge Cone:
Depth- *19.3*
Minor dia.- *18.6"*
Major dia.- *24"*

Notes: *prototype discharge cone*

Test Conditions:

T(wb):	65.5	Barometric pressure, recorded	29.33
T(db):	81.5	Barometric Pressure, corrected	29.19

# Open Nozzle	Noz. Dia. (inch)	Pressure Drop (in.H2O)	Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
2	8	2.34	0.00	4325	1545	230.4	1.77	387	11.2
2	8	2.18	0.04	4179	1533	230.5	1.82	396	10.6
2	8	2.16	0.05	4155	1528	230.0	1.81	400	10.4
2	8	1.98	0.10	3983	1515	229.8	1.88	410	9.7
2	8	1.79	0.15	3787	1501	229.5	1.91	417	9.1
2	8	1.59	0.20	3569	1483	229.6	1.96	424	8.4
2	8	1.41	0.25	3360	1478	229.8	1.98	428	7.9
2	8	1.20	0.30	3099	1475	230.0	2.00	426	7.3