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

Project Number: 07479
Test Date: November 20, 2007

Fan:
Make- *Better Air*
Model- *LPF-1400C*
Blade dia.- *14.3"*
Orifice dia.- *14.6"*

Blade:
Number- *6*
Shape- *propeller*
Material- *plastic*
Pitch- -
Clearance- *0.2"*

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

Motor:
Make- *FHP*
Model- *M099905*
Hp- *1/3*
RPM- *1625*
Volts- *115/230*
Amps- *2.6/1.3*
Hz- *60*
Phase- *1*
S. F.- *1.0*

Housing:
Material- *plastic*
Intake area- *14.4" x 14.4"*
Discharge-
Depth- *21" top*
19.3" bottom

Shutter:
Material- *plastic*
Doors- *4*
Columns- *1*
Door length- *15.1*
Location- *Intake*

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

Discharge Cone:
Depth- *19.5"*
Minor dia.- *14.6"*
Major dia.- *18.6"*

Notes: *prototype discharge cone*

Test Conditions:

T(wb):	64.5	Barometric pressure, recorded	29.28
T(db):	81	Barometric Pressure, corrected	29.14

# Open Nozzle	Noz. Dia. (inch)	Pressure Drop (in.H2O)	Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
2	8	0.93	0.00	2721	1565	230.0	1.31	295	9.2
2	8	0.87	0.04	2630	1560	230.6	1.34	297	8.9
2	8	0.85	0.05	2607	1559	230.0	1.33	301	8.7
2	8	0.77	0.10	2481	1554	230.4	1.35	306	8.1
2	8	0.69	0.15	2348	1550	230.1	1.35	306	7.7
2	8	0.61	0.20	2207	1549	230.3	1.36	304	7.3
1	8	0.57	0.25	1062	1625	230.2	1.12	258	4.1
1	6	1.26	0.30	892	1607	230.7	1.20	273	3.3