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

Project Number: 07492
Test Date: November 20, 2007

Fan:
Make- *Better Air*
Model- *MPF-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- *Vostermans*
Model- *MPF-1400*
Hp- *0.19 kW*
RPM- *1600*
Volts- *240*
Amps- *1.0*
Hz- *60*
Phase- *1*
S. F.- -

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 cone*

Test Conditions:

T(wb):	62.5	Barometric pressure, recorded	29.23
T(db):	78.5	Barometric Pressure, corrected	29.10

# Open Nozzle	Noz. Dia. (inch)	Pressure Drop (in.H2O)	Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
1	8	2.63	0.00	2291	1627	230.5	0.99	196	11.7
1	8	2.48	0.04	2225	1618	230.5	1.02	197	11.3
1	8	2.43	0.05	2202	1617	230.0	1.02	197	11.2
1	8	2.19	0.10	2091	1604	230.4	1.07	210	10.0
1	8	1.95	0.15	1973	1592	230.0	1.09	212	9.3
1	8	1.70	0.20	1842	1585	230.3	1.12	220	8.4
1	8	1.41	0.25	1677	1584	229.6	1.10	218	7.7
1	6	1.49	0.30	968	1622	230.4	1.00	197	4.9