

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

Project Number: 07486
Test Date: November 20, 2007

Fan:
 Make- *Better Air*
 Model- *MPF-2000C*
 Blade dia.- *20.4"*
 Orifice dia.- *20.7"*

Motor:
 Make- *Vostermans*
 Model- *4E50*
 Hp- *1/2*
 RPM- *1600*
 Volts- *240*
 Amps- *2.0*
 Hz- *60*
 Phase- *1*
 S. F.- *-*

Shutter:
 Material- *plastic*
 # Doors- *7 per column*
 # Columns- *2*
 Door length- *10.4"*
 Location- *intake*

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

Housing:
 Material- *plastic*
 Intake area- *20.4"x20.4"*
 Discharge- *20.7" dia.*
 Depth- *21.3" top*
 19.3" bottom

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

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

Discharge Cone:
 Depth- *18.4*
 Minor dia.- *20.7*
 Major dia.- *26.4"*

Notes: *prototype cone*

Test Conditions:

T(wb): 64 Barometric pressure, recorded 29.24
 T(db): 80 Barometric Pressure, corrected 29.10

# Open Nozzle	Noz. Dia. (inch)	Pressure		Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
		Drop (in.H2O)	Static Pressure (in.H2O)						
3	8	1.46	0.00	5129	1557	230.3	1.88	423	12.1
3	8	1.35	0.04	4931	1537	230.2	1.95	438	11.3
3	8	1.33	0.05	4895	1535	230.5	1.94	436	11.2
3	8	1.22	0.10	4678	1518	230.5	2.02	452	10.3
3	8	1.10	0.15	4440	1499	229.9	2.06	456	9.7
3	8	0.97	0.20	4167	1474	229.9	2.14	469	8.9
3	8	0.84	0.25	3887	1453	229.5	2.17	480	8.1
3	8	0.70	0.30	3534	1444	229.8	2.20	484	7.3