

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

Project Number: 07490
Test Date: November 20, 2007

Fan:
 Make- *Better Air*
 Model- *MPF-1600*
 Blade dia.- *16.4"*
 Orifice dia.- *16.7"*

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

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

Motor:
 Make- *Vostermans*
 Model- *4E40*
 Hp- *0.28 kW*
 RPM- *1600*
 Volts- *240*
 Amps- *1.2*
 Hz- *60*
 Phase- *1*
 S. F.- *-*

Housing:
 Material- *plastic*
 Intake area- *16.5" x 16.5"*
 Discharge- *16.7" dia.*
 Depth- *21" top*
 19.5" bottom

Shutter:
 Material- *plastic*
 # Doors- *5*
 # Columns- *1*
 Door length- *17.2*
 Location- *intake*

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

Discharge Cone:
 Depth- *none*
 Minor dia.- *-*
 Major dia.- *-*

Notes:

Test Conditions:

T(wb): 62 Barometric pressure, recorded 29.23
 T(db): 79 Barometric Pressure, corrected 29.10

# Open Nozzle	Noz. Dia. (inch)	Pressure		Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
		Drop (in.H2O)	Static (in.H2O)						
2	8	1.01	0.00	2832	1525	230.5	1.27	280	10.1
2	8	0.94	0.04	2731	1516	230.0	1.28	281	9.7
2	8	0.91	0.05	2694	1512	230.1	1.30	284	9.5
2	8	0.83	0.10	2565	1502	229.8	1.31	288	8.9
2	8	0.73	0.15	2412	1496	230.3	1.33	289	8.3
2	8	0.63	0.20	2231	1496	230.1	1.31	285	7.8
1	8	2.01	0.25	2004	1508	230.2	1.31	280	7.2
1	8	1.14	0.30	1508	1543	229.9	1.21	269	5.6