

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

**Project Number:** 07487  
**Test Date:** November 20, 2007

**Fan:**  
 Make- *Better Air*  
 Model- *MPF-1800*  
 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- *Vostermans*  
 Model- *4E45*  
 Hp- *0.37 kW*  
 RPM- *1600*  
 Volts- *240*  
 Amps- *1.5*  
 Hz- *60*  
 Phase- *1*  
 S. F.- *-*

**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- *none*  
 Minor dia.- *-*  
 Major dia.- *-*

**Notes:**

**Test Conditions:**

T(wb): 64.5 Barometric pressure, recorded 29.24  
 T(db): 80.5 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)						
2	8	1.80	0.00	3799	1531	229.9	1.81	385	9.9
2	8	1.68	0.04	3670	1519	230.4	1.87	399	9.2
2	8	1.64	0.05	3626	1512	229.5	1.87	394	9.2
2	8	1.49	0.10	3450	1496	229.5	1.93	403	8.6
2	8	1.33	0.15	3265	1483	229.5	1.95	416	7.8
2	8	1.19	0.20	3088	1475	229.6	1.97	412	7.5
2	8	1.02	0.25	2858	1473	229.5	1.96	414	6.9
2	8	0.86	0.30	2623	1481	229.6	1.93	412	6.4