

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

Project Number: 07476
Test Date: November 20, 2007

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

Motor:
 Make- *FHP*
 Model- *M099907*
 Hp- *1/2*
 RPM- *1625*
 Volts- *115/230*
 Amps- *5.2/2.6*
 Hz- *60*
 Phase- *1*
 S. F.- *1.0*

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): 65.5 Barometric pressure, recorded 29.35
 T(db): 81.5 Barometric Pressure, corrected 29.21

# Open Nozzle	Noz. Dia. (inch)	Pressure		Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
		Drop (in.H2O)	Static (in.H2O)						
2	8	3.86	0.00	5554	1591	229.8	2.50	563	9.9
2	8	3.65	0.04	5401	1583	230.0	2.54	573	9.4
2	8	3.61	0.05	5368	1582	229.7	2.54	573	9.4
2	8	3.37	0.10	5187	1572	230.0	2.62	578	9.0
2	8	3.16	0.15	5024	1565	229.8	2.64	589	8.5
2	8	2.90	0.20	4817	1557	229.9	2.70	601	8.0
2	8	2.65	0.25	4601	1551	229.8	2.72	607	7.6
2	8	2.33	0.30	4319	1543	229.9	2.76	615	7.0