

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

Project Number: 07453
Test Date: November 19, 2007

Fan:
 Make- *Better Air*
 Model- *LPF-3801-1C*
 Blade dia.- *36.4"*
 Orifice dia.- *37"*

Blade:
 Number- *3*
 Shape- *propeller*
 Material- *plastic*
 Pitch- *-*
 Clearance- *0.3"*

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

Motor:
 Make- *FHP*
 Model- *M009537*
 Hp- *1.0*
 RPM- *850*
 Volts- *230*
 Amps- *4.6*
 Hz- *60*
 Phase- *1*
 S. F.- *1.1*

Housing:
 Material- *plastic*
 Intake area- *41" x 41"*
 Discharge- *37" dia.*
 Depth- *27.8" top*
27" bottom

Shutter:
 Material- *plastic*
 # Doors- *12 per column*
 # Columns- *2*
 Door length- *20.8"*
 Location- *intake*

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

Discharge Cone:
 Depth- *19"*
 Minor dia.- *37"*
 Major dia.- *44.5"*

Notes:

Test Conditions:

T(wb): 60 Barometric pressure, recorded 29.44
 T(db): 77 Barometric Pressure, corrected 29.31

# Open Nozzle	Noz. Dia. (inch)	Pressure		Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
		Drop (in.H2O)	Static Pressure (in.H2O)						
6	8	3.13	0.00	14911	821	230.3	4.83	1099	13.6
6	8	2.82	0.05	14156	818	230.3	4.91	1107	12.8
6	8	2.52	0.10	13383	816	230.0	4.95	1112	12.0
6	8	2.24	0.15	12619	817	230.2	4.96	1115	11.3
6	8	1.93	0.20	11714	816	230.2	4.95	1122	10.4
6	8	1.60	0.25	10665	817	230.2	4.95	1113	9.6
6	8	1.18	0.30	9156	820	230.1	4.83	1088	8.4
shutter removed									
6	8	3.70	0.00	16205	829	230.2	4.56	1032	15.7