

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

Project Number: 07482
 Test Date: November 20, 2007

Fan:
 Make- *Better Air*
 Model- *LPF-1200C*
 Blade dia.- *12.4"*
 Orifice dia.- *12.6"*

Motor:
 Make- *FHP*
 Model- *M099905*
 Hp- *1/3*
 RPM- *1625*
 Volts- *115/230*
 Amps- *2.6/1.3*
 Hz- *60*
 Phase- *1*
 S. F.- *1.0*

Shutter:
 Material- *plastic*
 # Doors- *4*
 # Columns- *1*
 Door length- *13.3"*
 Location- *Intake*

Blade:
 Number- *6*
 Shape- *propeller*
 Material- *plastic*
 Pitch- *-*
 Clearance- *0.1"*

Housing:
 Material- *plastic*
 Intake area- *12.5" x 12.5"*
 Discharge- *12.6" dia.*
 Depth- *21" top*
 19.5" bottom

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

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

Discharge Cone:
 Depth- *19.8"*
 Minor dia.- *12.6"*
 Major dia.- *16.2"*

Notes: *prototype cone*

Test Conditions:

T(wb): 65 Barometric pressure, recorded 29.25
 T(db): 81 Barometric Pressure, corrected 29.11

# Open Nozzle	Noz. Dia. (inch)	Pressure		Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
		Drop (in.H2O)	Static (in.H2O)						
1	8	2.14	0.00	2069	1636	230.1	1.12	250	8.3
1	8	1.95	0.04	1978	1635	229.9	1.11	252	7.8
1	8	1.91	0.05	1955	1635	230.1	1.12	253	7.7
1	8	1.71	0.10	1852	1636	229.7	1.11	250	7.4
1	8	1.49	0.15	1726	1637	230.0	1.11	250	6.9
1	8	1.27	0.20	1596	1644	229.8	1.08	245	6.5
1	4	2.11	0.25	512	1670	230.3	1.00	228	2.2
1	4	1.40	0.30	416	1663	229.7	1.02	235	1.8