

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

Project Number: 07494
 Test Date: November 20, 2007

Fan:		Motor:		Shutter:	
Make-	<i>Better Air</i>	Make-	<i>Vostermans</i>	Material-	<i>plastic</i>
Model-	<i>MPF-1200C</i>	Model-	<i>4E30</i>	# Doors-	<i>4</i>
Blade dia.-	<i>12.4"</i>	Hp-	<i>0.12 kW</i>	# Columns-	<i>1</i>
Orifice dia.-	<i>12.6"</i>	RPM-	<i>1600</i>	Door length-	<i>13.3"</i>
		Volts-	<i>240</i>	Location-	<i>Intake</i>
Blade:		Amps-	<i>0.6</i>		
Number-	<i>6</i>	Hz-	<i>60</i>	Guards:	
Shape-	<i>propeller</i>	Phase-	<i>1</i>	Description-	<i>wire</i>
Material-	<i>plastic</i>	S. F.-	<i>-</i>	Spacing-	<i>2" concentric</i>
Pitch-	<i>-</i>			Location-	<i>exhaust</i>
Clearance-	<i>0.1"</i>	Housing:		Discharge Cone:	
		Material-	<i>plastic</i>	Depth-	<i>19.8"</i>
Drive Sheaves:		Intake area-	<i>12.5" x 12.5"</i>	Minor dia.-	<i>12.6"</i>
Drive dia.-	<i>direct</i>	Discharge-	<i>12.6" dia.</i>	Major dia.-	<i>16.2"</i>
Axle dia.-	<i>drive</i>	Depth-	<i>21" top</i>		
			<i>19.5" bottom</i>		

Notes: *prototype discharge cone*

Test Conditions:

T(wb):	62	Barometric pressure, recorded	29.23
T(db):	77	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)						
1	8	1.22	0.00	1558	1635	230.0	0.59	112	13.9
1	8	1.11	0.04	1486	1626	229.7	0.60	116	12.8
1	8	1.08	0.05	1462	1622	229.7	0.62	117	12.5
1	8	0.96	0.10	1378	1613	229.7	0.62	123	11.2
1	8	0.81	0.15	1268	1604	230.0	0.68	130	9.8
1	8	0.66	0.20	1140	1596	229.8	0.66	130	8.8
1	4	2.55	0.25	561	1631	230.5	0.59	116	4.8
1	4	1.82	0.30	474	1615	230.5	0.63	126	3.8