

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

Project Number: 10097
Test Date: February 23, 2010

Fan:		Motor:		Shutter:	
Make-	<i>Termotecnica Pericoli s.</i>	Make-	<i>ABB</i>	Material-	<i>aluminum</i>
Model-	<i>EOS53/1.5-6</i>	Model-	<i>M3AA 090 LB-4</i>	# Doors-	<i>8</i>
Blade dia.-	<i>52.1"</i>	Hp-	<i>1.1 kW (1.5 hp)</i>	# Columns-	<i>1</i>
Orifice dia.-	<i>52.7"</i>	RPM-	<i>1740/1440</i>	Door length-	<i>48.1"</i>
		Volts-	<i>400/230</i>	Location-	<i>exhaust</i>
Blade:		Amps-	<i>2.6/4.5</i>		
Number-	<i>6</i>	Hz-	<i>60/50</i>	Guards:	
Shape-	<i>propeller</i>	Phase-	<i>3</i>	Description-	<i>wire</i>
Material-	<i>aluminum</i>	S. F.-	<i>-</i>	Spacing-	<i>1" x 4"</i>
Pitch-	<i>-</i>			Location-	<i>intake</i>
Clearance-	<i>0.3"</i>	Housing:		Discharge Cone:	
		Material-	<i>galvanized steel</i>	Depth-	<i>none</i>
Drive Sheaves:		Intake area-	<i>52"x52"</i>	Minor dia.-	<i>-</i>
Drive dia.-	<i>3.5" o.d.</i>	Discharge-	<i>50"x49.5"</i>	Major dia.-	<i>-</i>
Axle dia.-	<i>12" o.d.</i>	Depth-	<i>16"</i>		
			<i>0</i>		

Notes: *60Hz test

Test Conditions:

T(wb):	55	Barometric pressure, recorded	29.26
T(db):	78	Barometric Pressure, corrected	29.13

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	Static Pressure (Pa)	Airflow m ³ /hr	W/1000m ³ /hr
0.00	24100	473	239.3	4.28	1496	16.1	0	40900	37
0.05	23100	472	239.7	4.38	1546	14.9	12	39200	39
0.10	22000	471	239.8	4.52	1611	13.7	25	37400	43
0.15	20800	470	239.6	4.66	1664	12.5	37	35400	47
0.20	19600	468	239.6	4.78	1716	11.4	50	33300	52
0.25	18100	467	239.5	4.91	1768	10.3	62	30800	57
0.30	16500	466	239.3	5.01	1815	9.1	75	28000	65
0.40	12400	465	239.2	5.18	1881	6.6	100	21100	89