

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

Project Number: 10108
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 -6</i>	Model-	<i>M2VA80D-4</i>	# Doors-	<i>8</i>
Blade dia.-	<i>52.1"</i>	Hp-	<i>0.75 kW (1 hp)</i>	# Columns-	<i>1</i>
Orifice dia.-	<i>52.7"</i>	RPM-	<i>1680/1400</i>	Door length-	<i>48.1"</i>
		Volts-	<i>400/230</i>	Location-	<i>exhaust</i>
Blade:		Amps-	<i>1.7/2.9</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>3.0" 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	29.27
T(db):	78	Barometric Pressure, corrected	29.14

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	20000	390	239.0	2.76	942	21.2	0	34000	28
0.05	18700	388	239.1	2.89	998	18.8	12	31800	31
0.10	17300	386	239.0	3.04	1045	16.5	25	29300	36
0.15	15600	385	239.1	3.12	1092	14.3	37	26400	41
0.20	13500	383	239.0	3.25	1128	12.0	50	23000	49
0.25	11100	382	239.1	3.33	1174	9.5	62	18900	62
0.30	8100	380	240.4	3.39	1194	6.8	75	13700	87
0.40	4200	374	240.4	3.76	1340	3.2	100	7200	186