

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

Project Number: 10106
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>	
		Amps- <i>1.7/2.9</i>			
		Hz- <i>60/50</i>		Guards:	
Blade:		Phase- <i>3</i>		Description- <i>wire</i>	
Number- <i>6</i>		S. F.- <i>-</i>		Spacing- <i>1" x 4"</i>	
Shape- <i>propeller</i>				Location- <i>intake</i>	
Material- <i>aluminum</i>					
Pitch- <i>-</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>3.6" 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: *50Hz test

Test Conditions:

T(wb): 55	Barometric pressure, recorded	29.27
T(db): 79	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	20200	393	230.2	3.05	934	21.6	0	34300	27
0.05	19000	391	230.2	3.13	972	19.5	12	32200	30
0.10	17400	388	230.2	3.24	1021	17.0	25	29500	35
0.15	15700	386	230.2	3.35	1072	14.6	37	26700	40
0.20	13700	384	230.9	3.44	1107	12.3	50	23200	48
0.25	11400	382	230.2	3.51	1136	10.1	62	19400	58
0.30	8100	381	230.2	3.56	1159	7.0	75	13800	84
0.40	4300	375	230.3	3.90	1293	3.3	100	7300	177