

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

Project Number: 10092
Test Date: February 22, 2010

Fan:		Motor:		Shutter:	
Make-	<i>Termotecnica Pericoli s.</i>	Make-	<i>ABB</i>	Material-	<i>aluminum</i>
Model-	<i>EOS53 / 2 - 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>3.8</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):	57	Barometric pressure, recorded	29.12
T(db):	79	Barometric Pressure, corrected	28.99

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	26200	515	238.6	5.25	1916	13.7	0	44600	43
0.05	25200	513	238.6	5.43	1980	12.7	12	42900	46
0.10	24200	511	238.5	5.55	2038	11.9	25	41200	50
0.15	23200	510	238.6	5.71	2104	11.0	37	39300	54
0.20	22100	508	238.8	5.85	2164	10.2	50	37500	58
0.25	20600	506	238.8	6.02	2226	9.3	62	35000	64
0.30	19200	504	239.0	6.16	2277	8.4	75	32600	70
0.40	15600	502	238.6	6.42	2358	6.6	100	26600	89