

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

Project Number: 16499
 Test Date: July 1, 2016

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>aluminum</i>
Model- <i>EOC 53s/2-6 60 hz</i>	Model- <i>M2AA 090 L4</i>	# Doors- <i>11</i>
Blade dia.- <i>52"</i>	Hp- <i>1.5 kW</i>	# Columns- <i>1</i>
Orifice dia.- <i>52.6"</i>	RPM- <i>1420 // 1730</i>	Door length <i>51.3"</i>
	Volts- <i>400/230 // 460/230</i>	Location- <i>intake</i>
Blade:	Amps- <i>3.5/6.0 // 3.0/5.2</i>	
Number- <i>6</i>	Hz- <i>50 // 60</i>	Guards:
Shape- <i>propeller</i>	Phase- <i>3</i>	Description- <i>wire</i>
Material- <i>galvanized steel</i>	S. F.- <i>-</i>	Spacing- <i>1.8" concentric</i>
Pitch- <i>-</i>		Location- <i>exhaust</i>
Clearance- <i>0.3"</i>	Housing:	
	Material- <i>galvanized steel</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>51.7" x 51.9"</i>	Depth- <i>24.3"</i>
Drive dia.- <i>3.4" o.d.</i>	Discharge- <i>52.6" dia.</i>	Minor dia.- <i>52.6"</i>
Axle dia.- <i>12" o.d.</i>	Depth- <i>20.8"</i>	Major dia.- <i>61.6"</i>

Notes: *60 Hz test

Test Conditions:

T(wb) F: 66	Barometric pressure, recorded	29.35
T(db) F: 77	Barometric Pressure, corrected	29.22 (In. Hg)

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	SI Units			
							Static Pressure (Pa)	Airflow (m ³ /hr.)	(m ³ /hr)/W	W/1000m ³ /hr
0.00	27100	448	230.1	4.19	1228	22.1	0	46100	37.5	27
0.05	25800	446	229.8	4.36	1306	19.8	12	43800	33.6	30
0.10	24500	445	232.0	4.52	1383	17.7	25	41600	30.1	33
0.15	22900	444	229.5	4.70	1467	15.6	37	38900	26.5	38
0.20	20900	442	232.1	4.90	1557	13.4	50	35500	22.8	44
0.25	18400	441	230.5	5.10	1631	11.3	62	31300	19.2	52
0.30	15700	440	230.6	5.24	1693	9.3	75	26700	15.8	63