

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

Project Number: 16471
 Test Date: June 29, 2016

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>aluminum</i>
Model- <i>EOC 53s/1,5-6 60hz</i>	Model- <i>M3AA90S4</i>	# Doors- <i>11</i>
Blade dia.- <i>52"</i>	Hp- <i>1.1 kW</i>	# Columns- <i>1</i>
Orifice dia.- <i>52.6"</i>	RPM- <i>1740 // 1450</i>	Door length <i>51.3"</i>
	Volts- <i>230 / 400</i>	Location- <i>intake</i>
Blade:	Amps- <i>4.8 / 2.8</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>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>3.1" 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: 63	Barometric pressure, recorded	29.47
T(db) F: 77.5	Barometric Pressure, corrected	29.34 (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	26200	435	230.2	4.02	1145	22.9	0	44500	38.9	26
0.05	25300	434	229.2	4.15	1210	20.9	12	42900	35.5	28
0.10	24000	433	230.6	4.32	1286	18.6	25	40700	31.7	32
0.15	22700	432	230.9	4.47	1359	16.7	37	38500	28.3	35
0.20	20800	431	230.4	4.65	1438	14.5	50	35400	24.6	41
0.25	18400	430	230.5	4.82	1512	12.2	62	31300	20.7	48
0.30	14900	428	230.4	4.98	1578	9.4	75	25300	16	62