

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

Project Number: 16470
 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 50hz</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>3.8" 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: *50 Hz test

Test Conditions:

T(wb) F: 63	Barometric pressure, recorded	29.47
T(db) F: 77	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	433	230.7	4.58	1137	23.0	0	44500	39.1	26
0.05	25100	432	230.6	4.68	1192	21.0	12	42600	35.7	28
0.10	23900	431	230.7	4.84	1274	18.7	25	40500	31.8	31
0.15	21800	429	230.5	5.01	1373	15.9	37	37100	27	37
0.20	19800	427	230.6	5.13	1428	13.8	50	33600	23.5	43
0.25	17100	426	230.5	5.23	1481	11.6	62	29100	19.7	51
0.30	14500	425	230.7	5.36	1541	9.4	75	24600	16	63