

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

Project Number: 16472
 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/1,5-3 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>3</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>3.55" 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	29.46
T(db) F: 78	Barometric Pressure, corrected	29.33 (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	26600	488	230.3	4.00	1133	23.4	0	45100	39.8	25
0.05	25100	487	230.2	4.11	1187	21.1	12	42600	35.9	28
0.10	23200	486	230.1	4.23	1246	18.7	25	39500	31.7	32
0.15	21100	485	229.6	4.35	1296	16.2	37	35800	27.6	36
0.20	18300	485	230.2	4.48	1355	13.5	50	31000	22.9	44
0.25	14200	484	229.7	4.58	1398	10.2	62	24100	17.3	58
0.30	10500	482	229.6	4.82	1504	7.0	75	17900	11.9	84