

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

Project Number: 12321
 Test Date: May 17, 2012

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>aluminum</i>
Model- <i>EOS42/1</i>	Model- <i>M2VA80B-4</i>	# Doors- <i>9</i>
Blade dia.- <i>41" (1040mm)</i>	Hp- <i>1 (0.75 kW)</i>	# Columns- <i>1</i>
Orifice dia.- <i>41.6" (1056mm)</i>	RPM- <i>1410 // 1690</i>	Door length <i>41.8" (1062mm)</i>
	Volts- <i>380-480/220-280</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>2/3.5 // 1.9/3.3</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>aluminum</i>	S. F.- <i>-</i>	Spacing- <i>0.8" x 4" (20x100mm)</i>
Pitch- <i>-</i>		Location- <i>intake</i>
Clearance- <i>0.3" (7mm)</i>	Housing:	
	Material- <i>galvanized steel</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>42.5"x42.5" (1080x1080mm)</i>	Depth- <i>none</i>
Drive dia.- <i>4.6" o.d. (110 p.d.)</i>	Discharge- <i>41.6" dia. (1056mm)</i>	Minor dia.- <i>-</i>
Axle dia.- <i>12" o.d.(305mm o.d.)</i>	Depth- <i>15.9" (404mm)</i>	Major dia.- <i>-</i>
		<i>0</i>

Notes: * 60 Hz test

Test Conditions:

T(wb): 57	Barometric pressure, recorded	29.46
T(db): 77	Barometric Pressure, corrected	29.33

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	15400	610	230.6	3.31	1097	14.0	0	26200	23.9	42
0.05	14800	608	230.0	3.44	1133	13.0	12	25100	22.1	45
0.10	14000	605	230.1	3.53	1171	12.0	25	23800	20.4	49
0.15	13200	603	230.1	3.62	1207	11.0	37	22500	18.6	54
0.20	12400	600	229.9	3.71	1243	9.9	50	21000	16.9	59
0.25	11400	597	229.9	3.80	1276	8.9	62	19300	15.1	66
0.30	10200	595	230.2	3.87	1304	7.8	75	17400	13.3	75