

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

Project Number: 12317
 Test Date: May 16, 2012

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>aluminum</i>
Model- <i>EOS42/0.75</i>	Model- <i>M2VA80A-4</i>	# Doors- <i>9</i>
Blade dia.- <i>41" (1040mm)</i>	Hp- <i>0.75 (0.55 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>380-420/220-240</i>	Location- <i>exhaust</i>
	Amps- <i>1.5/2.6 //1.4/2.4</i>	
Blade:	Hz- <i>50 // 60</i>	Guards:
Number- <i>6</i>	Phase- <i>3</i>	Description- <i>wire</i>
Shape- <i>propeller</i>	S. F.- <i>-</i>	Spacing- <i>0.8" x 4" (20x100mm)</i>
Material- <i>aluminum</i>		Location- <i>intake</i>
Pitch- <i>-</i>		
Clearance- <i>0.3" (7mm)</i>	Housing:	Discharge Cone:
	Material- <i>galvanized steel</i>	Intake area- <i>42.5"x42.5" (1080x1080mm)</i>
Drive Sheaves:	Discharge- <i>41.6" dia. (1056mm)</i>	Depth- <i>none</i>
Drive dia.- <i>4.6" o.d. (110 p.d.)</i>	Depth- <i>15.9" (404mm)</i>	Minor dia.- <i>-</i>
Axle dia.- <i>12" o.d.(305mm o.d.)</i>		Major dia.- <i>-</i>
		<i>0</i>

Notes: * 50 Hz test

Test Conditions:

T(wb): 56	Barometric pressure, recorded	29.37
T(db): 77	Barometric Pressure, corrected	29.24

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	13300	525	230.3	2.53	724	18.3	0	22600	31.2	32
0.05	12400	523	230.3	2.59	753	16.5	12	21100	28.1	36
0.10	11600	521	230.0	2.65	784	14.8	25	19700	25.1	40
0.15	10600	519	229.7	2.70	812	13.0	37	18000	22.1	45
0.20	9400	517	229.4	2.76	838	11.2	50	16000	19.1	52
0.25	8000	515	229.7	2.80	855	9.4	62	13600	15.9	63
0.30	6900	513	229.3	2.85	882	7.8	75	11700	13.3	75