

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

Project Number: 12324  
 Test Date: May 17, 2012

<b>Fan:</b>	<b>Motor:</b>	<b>Shutter:</b>
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>
	Amps- <i>2/3.5 // 1.9/3.3</i>	
<b>Blade:</b>	Hz- <i>50 // 60</i>	<b>Guards:</b>
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>	<b>Housing:</b>	
	Material- <i>galvanized steel</i>	<b>Discharge Cone:</b>
<b>Drive Sheaves:</b>	Intake area- <i>42.5"x42.5" (1080x1080mm)</i>	Depth- <i>none</i>
Drive dia.- <i>5.2" o.d. (125 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: \* 50 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 <sup>3</sup> /hr.)	(m <sup>3</sup> /hr)/W	W/1000m <sup>3</sup> /hr
0.00	14600	579	230.8	3.18	909	16.1	0	24900	27.4	37
0.05	13900	577	230.5	3.25	946	14.7	12	23700	25	40
0.10	13100	575	230.2	3.32	978	13.4	25	22300	22.8	44
0.15	12400	573	229.9	3.38	1007	12.3	37	21000	20.8	48
0.20	11400	571	229.7	3.44	1040	11.0	50	19400	18.7	54
0.25	10300	570	229.4	3.50	1066	9.6	62	17500	16.4	61
0.30	9100	568	229.2	3.54	1084	8.4	75	15500	14.3	70