

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

Project Number: 16503
 Test Date: July 1, 2016

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>galvanized steel</i>
Model- <i>EWD37</i>	Model- <i>M2AA 080 B6</i>	# Doors- <i>8</i>
Blade dia.- <i>36"</i>	Hp- <i>380-420/220-240// 42</i>	# Columns- <i>1</i>
Orifice dia.- <i>36.5"</i>	RPM- <i>910 // 1130</i>	Door length <i>37.3"</i>
	Volts- <i>380-420/220-240// 42</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>1.6/2.8 // 1.35/2.30</i>	
Number- <i>3</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>0.9" x 4"</i>
Pitch- <i>-</i>		Location- <i>intake</i>
Clearance- <i>0.3</i>	Housing:	
	Material- <i>galvanized steel</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>37.8" x 37.9"</i>	Depth- <i>none</i>
Drive dia.- <i>direct</i>	Discharge- <i>37.6" x 37.1"</i>	Minor dia.- <i>-</i>
Axle dia.- <i>drive</i>	Depth- <i>20.8"</i>	Major dia.- <i>-</i>
	<i>0</i>	

Notes: **60 Hz test*
Centrifugal shutter opener

Test Conditions:

T(wb) F: 65	Barometric pressure, recorded	29.40
T(db) F: 77	Barometric Pressure, corrected	29.27 (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	11600	1109	229.7	2.48	680	17.1	0	19700	29	35
0.05	10960	1105	230.1	2.53	704	15.6	12	18600	26.5	38
0.10	10260	1100	230.1	2.58	730	14.0	25	17400	23.9	42
0.15	9530	1097	230.1	2.63	752	12.7	37	16200	21.5	46
0.20	8870	1094	230.4	2.67	770	11.5	50	15100	19.6	51
0.25	8050	1090	230.3	2.71	791	10.2	62	13700	17.3	58
0.30	7180	1085	230.2	2.76	809	8.9	75	12200	15.1	66
0.35	6310	1081	230.1	2.81	833	7.6	87	10700	12.9	78
0.40	5160	1074	230.1	2.88	866	6.0	100	8800	10.1	99