

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

Project Number: 16502
 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>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>0.9" 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: **50 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	10720	935	230.6	2.72	633	16.9	0	18200	28.8	35
0.05	10240	932	230.6	2.78	664	15.4	12	17400	26.2	38
0.10	9720	928	230.6	2.82	693	14.0	25	16500	23.8	42
0.15	9170	924	230.7	2.87	721	12.7	37	15600	21.6	46
0.20	8650	921	230.7	2.90	738	11.7	50	14700	19.9	50
0.25	8050	917	230.6	2.93	758	10.6	62	13700	18	55
0.30	7330	914	230.6	2.97	782	9.4	75	12500	15.9	63
0.35	6670	911	230.5	3.00	799	8.3	87	11300	14.2	71
0.40	5930	907	230.6	3.04	823	7.2	100	10100	12.2	82