

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

Project Number: 16504
 Test Date: July 1, 2016

Fan:	Motor:	Shutter:
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>galvanized steel</i>
Model- <i>EWD31</i>	Model- <i>M2AA 080 B6</i>	# Doors- <i>7</i>
Blade dia.- <i>30.2"</i>	Hp- <i>380-420/220-240// 42</i>	# Columns- <i>1</i>
Orifice dia.- <i>30.5"</i>	RPM- <i>910 // 1130</i>	Door length <i>32.5"</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>0.2"</i>	Housing:	
	Material- <i>galvanized steel</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>33.3" x 33.3"</i>	Depth- <i>none</i>
Drive dia.- <i>direct</i>	Discharge- <i>32.6" x 33"</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	9080	935	230.4	2.50	645	14.1	0	15400	23.9	42
0.05	8760	932	230.4	2.54	668	13.1	12	14900	22.3	45
0.10	8400	928	230.4	2.59	695	12.1	25	14300	20.5	49
0.15	8070	924	230.5	2.64	720	11.2	37	13700	19	53
0.20	7710	921	230.5	2.68	741	10.4	50	13100	17.7	57
0.25	7240	918	230.5	2.72	763	9.5	62	12300	16.1	62
0.30	6780	915	230.5	2.76	781	8.7	75	11500	14.8	68
0.35	6390	912	230.5	2.81	800	8.0	87	10900	13.6	74
0.40	5800	909	230.5	2.83	813	7.1	100	9800	12.1	83