

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

Project Number: 16505
 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- 7
Blade dia.- 30.2"	Hp- 380-420/220-240// 42	# Columns- 1
Orifice dia.- 30.5"	RPM- 910 // 1130	Door length 32.5"
	Volts- 380-420/220-240// 42	Location- <i>exhaust</i>
Blade:	Amps- 1.6/2.8 // 1.35/2.30	
Number- 6	Hz- 50 // 60	Guards:
Shape- <i>propeller</i>	Phase- 3	Description- <i>wire</i>
Material- <i>aluminum</i>	S. F.- -	Spacing- 0.9" x 4"
Pitch- -		Location- <i>intake</i>
Clearance- 0.2"	Housing:	
	Material- <i>galvanized steel</i>	Discharge Cone:
Drive Sheaves:	Intake area- 33.3" x 33.3"	Depth- <i>none</i>
Drive dia.- <i>direct</i>	Discharge- 32.6" x 33"	Minor dia.- -
Axle dia.- <i>drive</i>	Depth- 20.8"	Major dia.- -
	0	

Notes: *60 Hz test
Centrifugal shutter opener

Test Conditions:

T(wb) F: 64.5	Barometric pressure, recorded	29.42
T(db) F: 77	Barometric Pressure, corrected	29.29 (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	8870	1115	230.5	2.23	643	13.8	0	15100	23.4	43
0.05	8510	1111	230.5	2.29	668	12.7	12	14500	21.7	46
0.10	8200	1107	230.5	2.34	692	11.9	25	13900	20.1	50
0.15	7880	1102	230.3	2.39	712	11.1	37	13400	18.8	53
0.20	7540	1099	230.3	2.44	731	10.3	50	12800	17.5	57
0.25	7140	1096	230.2	2.48	748	9.5	62	12100	16.2	62
0.30	6760	1093	230.3	2.52	765	8.8	75	11500	15	67
0.35	6380	1089	230.3	2.58	791	8.1	87	10800	13.7	73
0.40	5880	1084	230.3	2.64	816	7.2	100	10000	12.2	82