

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

Project Number: 16509  
 Test Date: July 1, 2016

<b>Fan:</b>	<b>Motor:</b>	<b>Shutter:</b>
Make- <i>Termotecnica Pericol</i>	Make- <i>ABB</i>	Material- <i>galvanized steel</i>
Model- <i>EWD26</i>	Model- <i>M2AA080A6</i>	# Doors- <i>6</i>
Blade dia.- <i>24.6"</i>	Hp- <i>230/400 // 230/460</i>	# Columns- <i>1</i>
Orifice dia.- <i>25"</i>	RPM- <i>905 // 1125</i>	Door length <i>27.9"</i>
	Volts- <i>230/400 // 230/460</i>	Location- <i>exhaust</i>
<b>Blade:</b>	Amps- <i>1.85/1.07 // 1.55/0.9</i>	
Number- <i>6</i>	Hz- <i>50 // 60</i>	<b>Guards:</b>
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>	<b>Housing:</b>	
	Material- <i>galvanized steel</i>	<b>Discharge Cone:</b>
<b>Drive Sheaves:</b>	Intake area- <i>28.6" x 28.6"</i>	Depth- <i>none</i>
Drive dia.- <i>direct</i>	Discharge- <i>28.3" x 28"</i>	Minor dia.- <i>-</i>
Axle dia.- <i>drive</i>	Depth- <i>20.3"</i>	Major dia.- <i>-</i>
	<i>0</i>	

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 <sup>3</sup> /hr.)	(m <sup>3</sup> /hr)/W	W/1000m <sup>3</sup> /hr
0.00	5650	1123	230.1	1.51	419	13.5	0	9600	22.9	44
0.05	5440	1118	229.1	1.56	439	12.4	12	9200	21	48
0.10	5250	1113	231.0	1.59	457	11.5	25	8900	19.5	51
0.15	5040	1109	231.1	1.64	477	10.6	37	8600	17.9	56
0.20	4810	1104	231.0	1.68	501	9.6	50	8200	16.3	61
0.25	4550	1100	231.0	1.72	518	8.8	62	7700	14.9	67
0.30	4290	1095	230.8	1.76	534	8.0	75	7300	13.7	73
0.35	3970	1091	230.7	1.79	545	7.3	87	6700	12.4	81
0.40	3550	1091	230.7	1.79	549	6.5	100	6000	11	91