

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

Project Number: 23093
 Test Date: April 12, 2023

Fan:		Motor:		Shutter:	<i>Butterfly damper w/ electric opener</i>
Make- <i>Eurusfan</i>		Make- <i>EURUS AgriTec</i>		Material- <i>plastic</i>	
Model- <i>VFE2-56HO-B3PM-CBA</i>		Model- <i>TFE5-100M6-70BXDVB3</i>		# Doors- <i>2</i>	
Blade dia.- <i>56.4"</i>		Hp- <i>1500 Watt</i>		# Columns- <i>-</i>	
Orifice dia.- <i>56.8"</i>		RPM- <i>690</i>		Door length- <i>-</i>	
		Volts- <i>220 - 240</i>		Location- <i>exhaust</i>	
Blade:		Amps- <i>5.6</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>plastic</i>		S. F.- <i>-</i>		Spacing- <i>2" / 4" concentric</i>	
Pitch-				Location- <i>exhaust</i>	
Clearance- <i>0.2"</i>		Housing:			
		Material- <i>Fiberglass</i>		Discharge Cone:	
Drive Sheaves:		Intake area- <i>63" x 63"</i>		Depth- <i>41</i>	
Drive dia.- <i>direct</i>		Discharge- <i>56.8" dia.</i>		Minor dia.- <i>56.8"</i>	
Axle dia.- <i>drive</i>		Depth- <i>27.5</i>		Major dia.- <i>68.5"</i>	

Notes: *230 VAC, 3 phase 60 Hz input

Test Conditions:

T(wb) F: 58.2
 T(db) F: 75.5 Barometric Pressure 29.19 (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	37800	689	230.5	3.64	1357	27.8	0	64200	47.3	21
0.05	36100	690	230.5	3.89	1456	24.8	12	61400	42.2	24
0.10	34300	690	230.0	4.16	1559	22.0	25	58200	37.3	27
0.15	32400	690	230.0	4.38	1634	19.9	37	55100	33.7	30
0.20	30400	690	230.0	4.59	1721	17.7	50	51600	30	33
0.25	28000	690	229.7	4.77	1791	15.7	62	47700	26.6	38
0.30	25000	690	229.6	4.86	1828	13.7	75	42500	23.3	43