

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

Project Number: 23088
 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>VFE2-50HO-A3PM-CBA</i>		Model- <i>TFE5-100M6-70BXDV</i>		# Doors- <i>2</i>	
Blade dia.- <i>51.4"</i>		Hp- <i>1500 Watt</i>		# Columns- <i>-</i>	
Orifice dia.- <i>51.6"</i>		RPM- <i>690</i>		Door length- <i>-</i>	
		Volts- <i>380-480</i>		Location- <i>exhaust</i>	
Blade:		Amps- <i>3.2</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" concentric</i>	
Pitch-				Location- <i>intake / exhaust</i>	
Clearance- <i>0.1"</i>		Housing:		Discharge Cone:	
		Material- <i>Fiberglass</i>		Depth- <i>35"</i>	
Drive Sheaves:		Intake area- <i>56.5" x 56.5"</i>		Minor dia.- <i>51.6"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>51.6"</i>		Major dia.- <i>61"</i>	
Axle dia.- <i>drive</i>		Depth- <i>22.3"</i>			

Notes: *380 VAC, 3 phase 50 Hz input

Test Conditions:

T(wb) F: 56.7
 T(db) F: 73.4 Barometric Pressure 29.31 (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	33300	690	380.7	2.52	1477	22.6	0	56600	38.3	26
0.05	32000	690	381.2	2.67	1565	20.4	12	54300	34.7	29
0.10	30300	690	381.5	2.81	1652	18.3	25	51500	31.2	32
0.15	28700	690	381.6	2.91	1721	16.7	37	48800	28.4	35
0.20	26900	690	381.9	2.99	1760	15.3	50	45700	25.9	39
0.25	24700	690	382.0	3.04	1792	13.8	62	42000	23.4	43
0.30	22400	690	382.0	3.08	1811	12.4	75	38100	21	48