

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

Project Number: 23084
 Test Date: April 13, 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>VFE2-36HP30-A3PM-CBA</i>		Model- <i>TFE5-100M8-100BXDV</i>		# Doors- <i>2</i>	
Blade dia.- <i>37.7"</i>		Hp- <i>3000 Watt</i>		# Columns- <i>-</i>	
Orifice dia.- <i>38.1"</i>		RPM- <i>1100</i>		Door length- <i>-</i>	
		Volts- <i>380-480</i>		Location- <i>exhaust</i>	
Blade:		Amps- <i>5.7</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>plastic</i>		S. F.- <i>-</i>		Spacing- <i>2" concentric</i>	
Pitch-				Location- <i>intake / exhaust</i>	
Clearance- <i>0.2"</i>		Housing:			
		Material- <i>Fiberglass</i>		Discharge Cone:	
Drive Sheaves:		Intake area- <i>43" x 43"</i>		Depth- <i>27.5"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>38.1" dia.</i>		Minor dia.- <i>38.1"</i>	
Axle dia.- <i>drive</i>		Depth- <i>21.3"</i>		Major dia.- <i>44.5"</i>	

Notes: *415 VAC, 3 phase 50 Hz input

Test Conditions:

T(wb) F: 58
 T(db) F: 75.9 Barometric Pressure 29.08 (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	22980	1160	414.0	3.46	2239	10.3	0	39000	17.4	57
0.05	22580	1160	414.1	3.56	2307	9.8	12	38400	16.6	60
0.10	22190	1160	414.3	3.65	2365	9.4	25	37700	15.9	63
0.15	21870	1160	414.5	3.75	2431	9.0	37	37200	15.3	65
0.20	21480	1160	414.7	3.84	2489	8.6	50	36500	14.7	68
0.25	21090	1160	415.0	3.94	2559	8.2	62	35800	14	71
0.30	20660	1160	415.1	4.03	2617	7.9	75	35100	13.4	75
0.40	19800	1160	415.4	4.21	2739	7.2	100	33600	12.3	81
0.50	18900	1160	415.8	4.36	2843	6.6	125	32100	11.3	89
0.60	17680	1160	416.1	4.51	2940	6.0	150	30000	10.2	98
0.70	16370	1160	416.3	4.62	3012	5.4	174	27800	9.2	108
0.80	15300	1160	416.3	4.69	3056	5.0	200	26000	8.5	118
0.90	13690	1160	416.3	4.70	3072	4.5	225	23300	7.6	132
1.00	11640	1159	416.2	4.61	3011	3.9	250	19800	6.6	152