

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

Project Number: 23083  
 Test Date: April 11, 2023

<b>Fan:</b>		<b>Motor:</b>		<b>Shutter:</b>	<i>Butterfly damper w/ electric opener</i>
Make- <i>Eurusfan</i>		Make- <i>EURUS AgriTec</i>		Material- <i>plastic</i>	
Model- <i>VFE2-36HP22-A3PM-CBA</i>		Model- <i>TFE5-100M7-100BXDV</i>		# Doors- <i>2</i>	
Blade dia.- <i>37.7"</i>		Hp- <i>2200 Watt</i>		# Columns- <i>-</i>	
Orifice dia.- <i>38.1"</i>		RPM- <i>1000</i>		Door length- <i>-</i>	
		Volts- <i>380-480</i>		Location- <i>exhaust</i>	
<b>Blade:</b>		Amps- <i>4.2</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>plastic</i>		S. F.- <i>-</i>		Spacing- <i>2" concentric</i>	
Pitch- <i>-</i>				Location- <i>intake / exhaust</i>	
Clearance- <i>0.2"</i>		<b>Housing:</b>			
		Material- <i>Fiberglass</i>		<b>Discharge Cone:</b>	
<b>Drive Sheaves:</b>		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: \*380 VAC, 3 phase 50 Hz input

**Test Conditions:**

T(wb) F: 58  
 T(db) F: 75.7                      Barometric Pressure                      29.47 (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	22450	980	380.7	3.23	1905	11.8	0	38100	20	50
0.05	21950	980	380.9	3.35	1974	11.1	12	37300	18.9	53
0.10	21560	980	381.1	3.44	2034	10.6	25	36600	18	56
0.15	21010	980	381.4	3.55	2102	10.0	37	35700	17	59
0.20	20480	980	381.6	3.66	2166	9.5	50	34800	16.1	62
0.25	19890	980	381.9	3.76	2228	8.9	62	33800	15.2	66
0.30	19240	980	382.0	3.87	2291	8.4	75	32700	14.3	70
0.40	18190	980	382.4	4.02	2387	7.6	100	30900	12.9	77
0.50	17020	980	381.1	4.17	2468	6.9	125	28900	11.7	85
0.60	15060	980	380.9	4.23	2507	6.0	149	25600	10.2	98
0.70	12660	980	380.7	4.14	2447	5.2	174	21500	8.8	114
0.80	6310	980	380.7	4.05	2392	2.6	199	10700	4.5	223