

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

Project Number: 23098  
 Test Date: April 13, 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>VFE2-56HP-A3PM-CBA</i>		Model- <i>TFE5-100M8-75BXDV</i>		# Doors- <i>2</i>	
Blade dia.- <i>56.4"</i>		Hp- <i>2200 Watt</i>		# Columns- <i>-</i>	
Orifice dia.- <i>56.8"</i>		RPM- <i>720</i>		Door length- <i>-</i>	
		Volts- <i>380-480</i>		Location- <i>exhaust</i>	
<b>Blade:</b>		Amps- <i>4.5</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" / 4" concentric</i>	
Pitch-				Location- <i>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>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: \*415 VAC, 3 phase 50 Hz input

Test Conditions:

T(wb) F: 58  
 T(db) F: 76 Barometric Pressure 29.10 (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	37600	700	414.5	2.64	1698	22.1	0	63800	37.6	27
0.05	36800	700	414.9	2.81	1813	20.3	12	62400	34.4	29
0.10	35500	700	415.4	2.99	1931	18.4	25	60300	31.2	32
0.15	34500	700	415.6	3.16	2041	16.9	37	58600	28.7	35
0.20	33400	700	415.8	3.33	2158	15.5	50	56700	26.3	38
0.25	32300	700	416.3	3.48	2255	14.3	62	54800	24.3	41
0.30	31000	700	416.7	3.64	2364	13.1	75	52600	22.3	45
0.40	28100	700	414.5	3.97	2563	10.9	100	47700	18.6	54
0.50	24800	700	414.9	4.20	2707	9.2	125	42100	15.6	64
0.60	19100	700	415.0	4.22	2723	7.0	149	32500	11.9	84
0.70	12400	700	414.9	4.15	2681	4.6	174	21100	7.9	127