

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

Project Number: 23085  
 Test Date: April 11, 2023

<b>Fan:</b>		<b>Motor:</b>		<b>Shutter:</b>	
Make- <i>Eurusfan</i>		Make- <i>EURUS AgriTec</i>		Material- <i>plastic</i>	
Model- <i>VFE2-50HO-A3PM-CR</i>		Model- <i>TFES-100M6-70BXDV</i>		# Doors- <i>16 per column</i>	
Blade dia.- <i>51.4"</i>		Hp- <i>1500 Watt</i>		# Columns- <i>3</i>	
Orifice dia.- <i>51.6"</i>		RPM- <i>690</i>		Door length <i>17.6"</i>	
		Volts- <i>380-480</i>		Location- <i>intake</i>	
		Amps- <i>3.2</i>			
<b>Blade:</b>		Hz- <i>50 // 60</i>		<b>Guards:</b>	
Number- <i>3</i>		Phase- <i>3</i>		Description- <i>wire</i>	
Shape- <i>propeller</i>		S. F.- <i>-</i>		Spacing- <i>2" concentric</i>	
Material- <i>plastic</i>				Location- <i>exhaust</i>	
Pitch-		<b>Housing:</b>		<b>Discharge Cone:</b>	
Clearance- <i>0.1"</i>		Material- <i>Fiberglass</i>		Depth- <i>33.3"</i>	
<b>Drive Sheaves:</b>		Intake area- <i>53.8" x 53.8"</i>		Minor dia.- <i>51.6"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>51.6"</i>		Major dia.- <i>61.2"</i>	
Axle dia.- <i>drive</i>		Depth- <i>22.3"</i>			

Notes: \*380 VAC, 3 phase 50 Hz input

Test Conditions:

T(wb) F: 58  
 T(db) F: 76.1                      Barometric Pressure                      29.38 (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	34000	690	379.4	2.53	1481	22.9	0	57700	39	26
0.05	32700	689	379.8	2.66	1557	21.0	12	55500	35.6	28
0.10	31200	689	380.1	2.78	1633	19.1	25	53100	32.5	31
0.15	29900	690	380.3	2.90	1700	17.6	37	50800	29.9	33
0.20	28300	690	380.7	3.00	1765	16.1	50	48200	27.3	37
0.25	26300	690	380.7	3.07	1806	14.6	62	44700	24.8	40
0.30	23800	689	380.7	3.10	1826	13.0	75	40400	22.1	45