

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

Project Number: 24141  
 Test Date: February 21, 2024

<b>Fan:</b>	<b>Motor:</b>	<b>Shutter:</b> <i>Butterfly damper</i>
Make- <i>Eurusfan</i>	Make- <i>EURUS AgriTec</i>	Material- <i>plastic</i>
Model- <i>VFA2-50HO-A3IM-CBM</i>	Model- <i>YFE3-100L2-8BX</i>	# Doors- <i>2</i>
Blade dia.- <i>51.2"</i>	Hp- <i>1100</i>	# Columns- <i>-</i>
Orifice dia.- <i>51.6"</i>	RPM- <i>710</i>	Door length -
	Volts- <i>380</i>	Location- <i>exhaust</i>
<b>Blade:</b>	Amps- <i>3.3</i>	
Number- <i>3</i>	Hz- <i>'50</i>	<b>Guards:</b>
Shape- <i>propeller</i>	Phase- <i>3</i>	Description- <i>wire</i>
Material- <i>poly</i>	S. F.- <i>1.15</i>	Spacing- <i>1.3" x 3.4" / 4" 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>56.5" x 56.5"</i>	Depth- <i>35"</i>
Drive dia.- <i>direct</i>	Discharge- <i>51.6" dia.</i>	Minor dia.- <i>51.6"</i>
Axle dia.- <i>drive</i>	Depth- <i>22.5"</i>	Major dia.- <i>60.9"</i>

Notes: \* 50 Hz test.

Test Conditions:

T(wb) F: 53.9  
 T(db) F: 72.6  
 Barometric Pressure 29.25 (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	29000	718	379.5	2.96	1249	23.2	0	49300	39.5	25
0.05	27900	716	379.5	3.01	1293	21.5	12	47300	36.6	27
0.10	26300	714	379.4	3.11	1375	19.1	25	44700	32.5	31
0.15	24700	712	379.3	3.17	1421	17.4	37	42000	29.5	34
0.20	23200	710	379.4	3.23	1465	15.8	50	39400	26.9	37
0.25	21400	708	379.3	3.28	1507	14.2	62	36300	24.1	42
0.30	18900	708	379.4	3.31	1525	12.4	75	32100	21	48