

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

Project Number: 24127  
 Test Date: February 19, 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>VFA2-56HO-D3IM-CBM</i>	Model- <i>YFE3-112L4C-10BX</i>	# Doors- <i>2</i>
Blade dia.- <i>56.4"</i>	Hp- <i>1500 Watt</i>	# Columns- <i>-</i>
Orifice dia.- <i>56.8"</i>	RPM- <i>690</i>	Door length - <i>-</i>
	Volts- <i>200</i>	Location- <i>exhaust</i>
<b>Blade:</b>	Amps- <i>10.3</i>	
Number- <i>3</i>	Hz- <i>60</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>63" x 63"</i>	Depth- <i>42.1"</i>
Drive dia.- <i>direct</i>	Discharge- <i>56.8"</i>	Minor dia.- <i>56.8"</i>
Axle dia.- <i>drive</i>	Depth- <i>27.5"</i>	Major dia.- <i>68.5"</i>

Notes: \* 60 Hz test

**Test Conditions:**

T(wb) F: 53.6  
 T(db) F: 75  
 Barometric Pressure 29.34 (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	38800	695	201.5	9.69	1808	21.4	0	65900	36.4	27
0.05	37000	693	201.0	9.86	1905	19.4	12	62900	33	30
0.10	35000	691	200.9	10.03	1990	17.6	25	59400	29.8	34
0.15	32900	689	200.9	10.18	2061	16.0	37	55900	27.1	37
0.20	30800	688	200.9	10.30	2130	14.4	50	52300	24.5	41
0.25	28500	687	200.5	10.42	2183	13.1	62	48500	22.2	45
0.30	25700	687	200.6	10.46	2215	11.6	75	43700	19.7	51