

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

Project Number: 24125
 Test Date: February 19, 2024

Fan:	Motor:	Shutter: <i>Butterfly damper</i>
Make- <i>Eurusfan</i>	Make- <i>EURUS AgriTec</i>	Material- <i>plastic</i>
Model- <i>VFA2-56HO-C3IM-CBM</i>	Model- <i>YFE3-112L4B-10BX</i>	# Doors- <i>2</i>
Blade dia.- <i>56.4"</i>	Hp- <i>1500 W</i>	# Columns- <i>-</i>
Orifice dia.- <i>56.8"</i>	RPM- <i>690</i>	Door length -
	Volts- <i>380</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>5.5</i>	
Number- <i>3</i>	Hz- <i>60</i>	Guards:
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>	Housing:	
	Material- <i>Fiberglass</i>	Discharge Cone:
Drive Sheaves:	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: 52.7
 T(db) F: 73.3
 Barometric Pressure 29.36 (In. Hg)

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	SI Units			
							Static Pressure (Pa)	Airflow (m ³ /hr.)	(m ³ /hr)/W	W/1000m ³ /hr
0.00	38700	692	381.0	5.16	1765	21.9	0	65700	37.2	27
0.05	36800	690	380.9	5.25	1863	19.8	12	62600	33.6	30
0.10	34800	688	380.9	5.34	1954	17.8	25	59100	30.2	33
0.15	32600	687	380.9	5.41	2024	16.1	37	55300	27.3	37
0.20	30400	685	380.9	5.48	2079	14.6	50	51700	24.9	40
0.25	28300	684	380.9	5.54	2130	13.3	62	48100	22.6	44
0.30	25400	684	380.9	5.56	2166	11.7	75	43100	19.9	50