

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

Project Number: 24130
 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>VFA2-56HE-B3IM-CBM</i>	Model- <i>YFE3-112L3A-10BX</i>	# Doors- <i>2</i>
Blade dia.- <i>56.4"</i>	Hp- <i>1100 Watt</i>	# Columns- <i>-</i>
Orifice dia.- <i>56.8"</i>	RPM- <i>690</i>	Door length - <i>-</i>
	Volts- <i>230</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>6.8</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: 53.4
 T(db) F: 74.4
 Barometric Pressure 29.31 (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	33900	696	230.4	6.32	1319	25.7	0	57600	43.7	23
0.05	32000	694	230.3	6.44	1393	23.0	12	54300	39	26
0.10	30100	692	230.4	6.58	1475	20.4	25	51200	34.7	29
0.15	28300	690	230.3	6.70	1548	18.3	37	48000	31	32
0.20	26200	688	230.3	6.81	1601	16.4	50	44600	27.8	36
0.25	23800	687	230.3	6.91	1654	14.4	62	40500	24.5	41
0.30	20700	686	230.3	6.93	1672	12.4	75	35200	21.1	47