

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

Project Number: 24129
 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-B3IM-CBM</i>	Model- <i>YFE3-112L4A-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>230</i>	Location- <i>exhaust</i>
Blade:	Amps- <i>9.0</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 29.32 (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	694	231.2	8.38	1786	21.7	0	65800	36.8	27
0.05	37000	692	230.7	8.53	1885	19.6	12	62800	33.3	30
0.10	34900	690	230.4	8.68	1972	17.7	25	59300	30.1	33
0.15	32700	688	230.6	8.82	2043	16.0	37	55600	27.2	37
0.20	30700	686	228.8	8.91	2109	14.5	50	52100	24.7	40
0.25	28500	685	229.0	9.01	2164	13.2	62	48400	22.4	45
0.30	25800	685	230.2	9.07	2185	11.8	75	43800	20.1	50