

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

Project Number: 22073
 Test Date: January 20, 2022

Fan:	Motor:	Shutter:
Make- <i>Eurusfan</i>	Make- <i>Eurusdrive</i>	Material- <i>plastic</i>
Model- <i>VFA2-56HF-A3IM-CS</i>	Model- <i>YFE3-112L3-8BX</i>	# Doors- <i>18 per column</i>
Blade dia.- <i>56.6"</i>	Hp- <i>2200 Watt</i>	# Columns- <i>3</i>
Orifice dia.- <i>57"</i>	RPM- <i>715</i>	Door length <i>19.9"</i>
	Volts- <i>380</i>	Location- <i>intake</i>
Blade:	Amps- <i>6.5</i>	
Number- <i>3</i>	Hz- <i>50</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>4"</i>
Pitch- <i>-</i>		Location- <i>exhaust</i>
Clearance- <i>0.2"</i>	Housing:	
	Material- <i>Fiberglass</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>60.5" x 60.6"</i>	Depth- <i>40"</i>
Drive dia.- <i>direct</i>	Discharge- <i>57" dia.</i>	Minor dia.- <i>57"</i>
Axle dia.- <i>drive</i>	Depth <i>27.5"</i>	Major dia.- <i>68"</i>

Notes: *50 Hz test

Test Conditions:

T(wb) F: 53	Barometric pressure, recorded	29.80
T(db) F: 74	Barometric Pressure, corrected	29.68 (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	Above chamber capacity									
0.05	Above chamber capacity									
0.10	Above chamber capacity									
0.15	40700	714	380.8	6.53	2778	14.6	37	69100	24.9	40
0.20	39100	713	380.8	6.61	2846	13.7	50	66500	23.4	43
0.25	37000	712	380.8	6.68	2901	12.8	62	62900	21.7	46
0.30	34700	711	380.8	6.73	2935	11.8	75	59000	20.1	50
0.35	32100	710	380.8	6.75	2955	10.9	87	54600	18.5	54
0.40	28400	710	381.0	6.75	2960	9.6	100	48200	16.3	61