

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

Project Number: 22054
 Test Date: January 12, 2022

Fan:	Motor:	Shutter:
Make- <i>Eurusfan</i>	Make- <i>Eurusdrive</i>	Material- <i>plastic</i>
Model- <i>VFA2-24HE-A3IM-CS</i>	Model- <i>YF-90M2-4B3</i>	# Doors- <i>9 per column</i>
Blade dia.- <i>26"</i>	Hp- <i>0.25 kW</i>	# Columns- <i>2</i>
Orifice dia.- <i>26.5"</i>	RPM- <i>1460</i>	Door length <i>15"</i>
	Volts- <i>380</i>	Location- <i>intake</i>
Blade:	Amps- <i>1</i>	
Number- <i>3</i>	Hz- <i>50</i>	Guards:
Shape- <i>propeller</i>	Phase- <i>3</i>	Description- <i>wire</i>
Material- <i>plastic</i>	S. F.- <i>1.15</i>	Spacing- <i>2" concentric</i>
Pitch- <i>-</i>		Location- <i>exhaust</i>
Clearance- <i>.3"</i>	Housing:	
	Material- <i>fiberglass</i>	Discharge Cone:
Drive Sheaves:	Intake area- <i>30" x30"</i>	Depth- <i>23"</i>
Drive dia.- <i>direct</i>	Discharge- <i>26" dia</i>	Minor dia.- <i>26.5"</i>
Axle dia.- <i>drive</i>	Depth- <i>19"</i>	Major dia.- <i>32.5"</i>

Notes: 50 Hz test

Test Conditions:

T(wb) F: 52.5 Barometric pressure, recorded 29.37
 T(db) F: 73 Barometric Pressure, corrected 29.25 (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	6410	1470	380.3	0.94	333	19.3	0	10900	32.7	31
0.05	6040	1469	380.3	0.96	350	17.3	12	10300	29.3	34
0.10	5640	1468	380.3	0.96	350	16.1	25	9600	27.4	37
0.15	5250	1467	380.3	0.97	350	15.0	37	8900	25.5	39
0.20	4810	1466	380.3	0.97	368	13.1	50	8200	22.2	45
0.25	4380	1466	380.3	0.97	368	11.9	62	7400	20.2	49
0.30	3860	1466	380.3	0.97	368	10.5	75	6600	17.8	56