

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

Project Number: 22055
 Test Date: January 12, 2022

Fan:	Motor:	Shutter:
Make- <i>Eurusfan</i>	Make- <i>Eurusdrive</i>	Material- <i>plastic</i>
Model- <i>VFA2-24HP-A3IM-CS</i>	Model- <i>YFE3-100M2-4B3</i>	# Doors- <i>9 per column</i>
Blade dia.- <i>26"</i>	Hp- <i>0.75kW</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>2</i>	
Number- <i>6</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: 53.5	Barometric pressure, recorded	29.37
T(db) F: 74.5	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	9700	1471	380.3	1.82	807	12.0	0	16500	20.4	49
0.05	9420	1470	380.3	1.84	833	11.3	12	16000	19.2	52
0.10	9170	1469	380.3	1.86	860	10.7	25	15600	18.1	55
0.15	8940	1468	380.3	1.89	878	10.2	37	15200	17.3	58
0.20	8720	1467	380.3	1.91	895	9.7	50	14800	16.6	60
0.25	8490	1466	380.3	1.92	911	9.3	62	14400	15.8	63
0.30	8240	1465	380.3	1.95	927	8.9	75	14000	15.1	66
0.35	7970	1464	380.3	1.96	931	8.6	87	13500	14.6	69
0.40	7630	1464	380.3	1.98	947	8.1	100	13000	13.7	73
0.45	7230	1463	380.3	1.98	948	7.6	112	12300	13	77
0.50	6720	1463	380.3	1.98	948	7.1	125	11400	12	83
0.55	6280	1463	380.3	1.99	965	6.5	137	10700	11.1	90
0.60	5500	1462	380.3	2.01	977	5.6	150	9300	9.6	105