

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

Project Number: 22188
 Test Date: March 11, 2022

Fan:		Motor:		Shutter:	
Make- <i>Eurusfan</i>		Make- <i>Eurusdrive</i>		Material- <i>plastic</i>	
Model- <i>VFA2-36HP-A3IM-CS</i>		Model- <i>YFE3-100L5-6BX</i>		# Doors- <i>12 per column</i>	
Blade dia.- <i>37.7"</i>		Hp- <i>1500 Watt</i>		# Columns- <i>2</i>	
Orifice dia.- <i>38"</i>		RPM- <i>965</i>		Door length- <i>20"</i>	
		Volts- <i>380</i>		Location- <i>intake</i>	
Blade:		Amps- <i>4.0</i>			
Number- <i>6</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" concentric</i>	
Pitch- <i>-</i>				Location- <i>exhaust</i>	
Clearance- <i>0.2"</i>		Housing:		Discharge Cone:	
		Material- <i>fiberglass</i>		Depth- <i>27.1"</i>	
Drive Sheaves:		Intake area- <i>40.3" x 40.3"</i>		Minor dia.- <i>38" dia.</i>	
Drive dia.- <i>direct</i>		Discharge- <i>38" dia.</i>		Major dia.- <i>44.9"</i>	
Axle dia.- <i>drive</i>		Depth- <i>21.2"</i>			

Notes: 0

Test Conditions:

T(wb) F: 53.5	Barometric pressure, recorded	29.37
T(db) F: 75	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	20300	972	380.7	3.34	1441	14.1	0	34500	23.9	42
0.05	19880	971	380.7	3.40	1497	13.3	12	33800	22.6	44
0.10	19340	970	380.8	3.47	1559	12.4	25	32900	21.1	47
0.15	18890	969	380.8	3.53	1602	11.8	37	32100	20	50
0.20	18390	968	380.8	3.60	1664	11.1	50	31300	18.8	53
0.25	17850	966	380.8	3.66	1715	10.4	62	30300	17.7	57
0.30	17360	965	380.8	3.72	1757	9.9	75	29500	16.8	60
0.40	16350	963	380.7	3.82	1843	8.9	100	27800	15.1	66
0.50	15040	961	380.7	3.92	1915	7.9	125	25600	13.3	75
0.55	14010	959	380.7	3.96	1952	7.2	137	23800	12.2	82
0.60	12290	958	380.7	4.01	1996	6.2	150	20900	10.5	96