

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

Project Number: 22451
 Test Date: August 16, 2022

Fan:		Motor:		Shutter:	
Make- <i>Eurusfan</i>		Make- <i>Eurusdrive</i>		Material- <i>plastic</i>	
Model- <i>VFA2-36HP22-A3IM-CS</i>		Model- <i>YFE3-112L1-6BX</i>		# Doors- <i>12 per column</i>	
Blade dia.- <i>37.7"</i>		Hp- <i>2200 Watt</i>		# Columns- <i>2</i>	
Orifice dia.- <i>38"</i>		RPM- <i>960</i>		Door length <i>20.2"</i>	
		Volts- <i>380</i>		Location- <i>intake</i>	
Blade:		Amps- <i>5.7</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>-</i>		Spacing- <i>4" concentric</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>40.3" x 40.3"</i>		Depth- <i>26.4"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>38" dia.</i>		Minor dia.- <i>38" dia.</i>	
Axle dia.- <i>drive</i>		Depth- <i>21.2"</i>		Major dia.- <i>44.9"</i>	

Notes: 0

Test Conditions:

T(wb) F: 65	Barometric pressure, recorded	29.37
T(db) F: 77	Barometric Pressure, corrected	29.24 (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	23690	975	379.8	4.47	1926	12.3	0	40300	20.9	48
0.05	23270	974	379.8	4.55	1994	11.7	12	39500	19.8	50
0.10	22830	973	379.8	4.62	2049	11.1	25	38800	18.9	53
0.15	22360	972	379.8	4.69	2100	10.6	37	38000	18.1	55
0.20	21910	971	379.8	4.77	2160	10.1	50	37200	17.2	58
0.25	21480	970	379.8	4.83	2212	9.7	62	36500	16.5	61
0.30	20970	968	379.8	4.90	2270	9.2	75	35600	15.7	64
0.40	19920	966	379.8	5.04	2373	8.4	100	33900	14.3	70
0.50	18700	965	379.8	5.14	2450	7.6	125	31800	13	77
0.60	16680	963	379.8	5.28	2550	6.5	149	28300	11.1	90
0.70	12040	963	379.7	5.26	2538	4.7	174	20500	8.1	124