

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

Project Number: 22117
 Test Date: January 27, 2022

Fan:		Motor:		Shutter:	
Make- <i>Eurusfan</i>		Make- <i>Eurusdrive</i>		Material- <i>plastic</i>	
Model- <i>VFA2-36HP37-A3IM-CS</i>		Model- <i>YF-112L2-6Bx</i>		# Doors- <i>12 per column</i>	
Blade dia.- <i>38"</i>		Hp- <i>3.7 kW</i>		# Columns- <i>2</i>	
Orifice dia.- <i>38.3"</i>		RPM- <i>950</i>		Door length <i>20"</i>	
		Volts- <i>380</i>		Location- <i>intake</i>	
Blade:		Amps- <i>8.6</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>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>27"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>38.3" dia</i>		Minor dia.- <i>38.3"</i>	
Axle dia.- <i>drive</i>		Depth- <i>21.5"</i>		Major dia.- <i>45.5"</i>	

Notes: 50 Hz test

Test Conditions:

T(wb) F: 55	Barometric pressure, recorded	29.46
T(db) F: 78	Barometric Pressure, corrected	29.33 (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	28800	955	380.2	7.18	3630	7.9	0	48900	13.5	74
0.05	28400	954	380.3	7.28	3701	7.7	12	48300	13.1	77
0.10	28000	953	380.3	7.36	3762	7.4	25	47500	12.6	79
0.15	27500	952	380.3	7.45	3828	7.2	37	46800	12.2	82
0.20	27100	951	380.3	7.53	3887	7.0	50	46100	11.9	84
0.25	26600	949	380.3	7.62	3955	6.7	62	45200	11.4	87
0.30	26100	948	380.3	7.70	4016	6.5	75	44300	11	91
0.40	25000	946	380.3	7.86	4128	6.1	100	42500	10.3	97
0.50	24000	944	380.3	7.99	4221	5.7	125	40800	9.7	104
0.60	22600	941	380.3	8.19	4366	5.2	149	38400	8.8	114
0.70	21400	940	380.3	8.27	4418	4.8	174	36300	8.2	122
0.80	20000	939	380.3	8.36	4485	4.5	199	34000	7.6	132