

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

Project Number: 22452
 Test Date: August 16, 2022

Fan:		Motor:		Shutter:	
Make- <i>Eurusfan</i>		Make- <i>Eurusdrive</i>		Material- <i>plastic</i>	
Model- <i>VFA2-36HP30-A3IM-CS</i>		Model- <i>YFE3-112L3-6BX</i>		# Doors- <i>12 per column</i>	
Blade dia.- <i>37.7"</i>		Hp- <i>3000 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>7.4</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: 66	Barometric pressure, recorded	29.39
T(db) F: 79	Barometric Pressure, corrected	29.26 (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	25920	973	379.8	5.83	2739	9.5	0	44000	16.1	62
0.05	25530	972	379.8	5.91	2803	9.1	12	43400	15.5	65
0.10	25140	971	379.8	6.00	2872	8.8	25	42700	14.9	67
0.15	24770	969	379.8	6.09	2939	8.4	37	42100	14.3	70
0.20	24360	968	379.8	6.17	3003	8.1	50	41400	13.8	73
0.25	23910	967	379.8	6.26	3065	7.8	62	40600	13.3	75
0.30	23490	966	379.8	6.35	3133	7.5	75	39900	12.7	79
0.40	22650	966	379.8	6.53	3264	6.9	100	38500	11.8	85
0.50	21680	964	379.8	6.69	3379	6.4	125	36800	10.9	92
0.60	20490	962	379.8	6.84	3484	5.9	149	34800	10	100
0.70	18960	960	379.8	6.93	3549	5.3	174	32200	9.1	110
0.75	17910	959	379.8	7.01	3604	5.0	187	30400	8.4	118
0.80	15590	959	379.8	7.07	3649	4.3	199	26500	7.3	138