

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

Project Number: 22219
 Test Date: April 18, 2022

Fan:		Motor:		Shutter:	<i>Butterfly</i>
Make- <i>Roxell</i>		Make- <i>Heze Gofee Motor Co</i>		Material- <i>fiberglass</i>	
Model- <i>Oxsano 07101016</i>		Model- <i>GFPM 1.5kW-650WH</i>		# Doors- <i>2</i>	
Blade dia.- <i>56"</i>		Hp- <i>2 (1.5 kW)</i>		# Columns- <i>-</i>	
Orifice dia.- <i>56.5"</i>		RPM- <i>650</i>		Door length -	
		Volts- <i>230</i>		Location- <i>exhaust</i>	
		Amps- <i>-</i>			
Blade:		Hz- <i>60</i>		Guards:	
Number- <i>3</i>		Phase- <i>1</i>		Description- <i>wire</i>	
Shape- <i>propeller</i>		S. F.- <i>-</i>		Spacing- <i>0.9" x 3.6" / 2.8" concentric</i>	
Material- <i>galvanized steel</i>				Location- <i>intake / exhaust</i>	
Pitch- <i>-</i>					
Clearance- <i>0.3"</i>		Housing:		Discharge Cone:	
		Material- <i>fiberglass</i>		Depth- <i>20.5"</i>	
Drive Sheaves:		Intake area- <i>59.5" x 60.5"</i>		Minor dia.- <i>56.5"</i>	
Drive dia.- <i>direct</i>		Discharge- <i>56.5"</i>		Major dia.- <i>64.5"</i>	
Axle dia.- <i>drive</i>		Depth- <i>25.8" top</i>			
		<i>24.8" bottom</i>			

Notes: * 230VAC , 60 Hz, 1 phase input. Speed controlled with single turn potentiometer.

Test Conditions:

T(wb) F: 58	Barometric pressure, recorded	29.41
T(db) F: 77.5	Barometric Pressure, corrected	29.28 (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	30400	545	230.5	3.98	1131	26.8	0	51600	45.6	22
0.05	28800	546	230.0	4.21	1198	24.0	12	48900	40.8	24
0.10	27000	546	230.0	4.39	1255	21.5	25	45800	36.5	27
0.15	24800	546	230.5	4.57	1321	18.8	37	42200	31.9	31
0.20	22400	546	230.4	4.72	1365	16.4	50	38100	27.9	36
0.25	19700	546	230.5	4.84	1408	14.0	62	33500	23.8	42
0.30	16200	546	230.3	4.87	1421	11.4	75	27500	19.4	52