

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

Project Number: 22198
 Test Date: March 17, 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 07101048</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>3</i>		Guards:	
Number- <i>3</i>		Phase- <i>3</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 , 50 Hz, 3 phase input. Speed controlled with single turn potentiometer.

Test Conditions:

T(wb) F: 65.5	Barometric pressure, recorded	29.23
T(db) F: 78.5	Barometric Pressure, corrected	29.11 (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	30800	550	230.4	2.96	1111	27.7	0	52300	47.1	21
0.05	29100	549	230.5	3.15	1183	24.6	12	49400	41.8	24
0.10	27200	550	230.6	3.30	1242	21.9	25	46300	37.2	27
0.15	25100	549	230.6	3.43	1298	19.4	37	42700	32.9	30
0.20	22800	549	230.6	3.58	1354	16.9	50	38800	28.7	35
0.25	20200	550	230.6	3.70	1392	14.5	62	34300	24.6	41
0.30	16900	550	230.5	3.74	1409	12.0	75	28800	20.4	49