

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

Project Number: 21281  
 Test Date: September 7, 2021

<b>Fan:</b>	<b>Motor:</b>	<b>Shutter:</b> <i>Butterfly</i>
Make- <i>Roxell</i>	Make- <i>Heze Gofee Motor Cc</i>	Material- <i>fiberglass</i>
Model-** <i>Oxsano-#07101000 / #07101008</i>	Model- <i>Roxell 20297</i>	# Doors- 2
Blade dia.- 56"	Hp- -	# Columns- -
Orifice dia.- 56.5"	RPM- -	Door length -
	Volts- -	Location- <i>exhaust</i>
<b>Blade:</b> <i>Powder coated</i>	Amps- -	
Number- 3	Hz- -	<b>Guards:</b>
Shape- <i>propeller</i>	Phase- 1	Description- <i>wire</i>
Material- <i>galvanized steel</i>	S. F.- -	Spacing- 0.9" x 3.6" / 2" x 2"
Pitch- -		Location- <i>intake / exhaust</i>
Clearance- 0.3"	<b>Housing:</b>	
	Material- <i>fiberglass</i>	<b>Discharge Cone:</b>
<b>Drive Sheaves:</b>	Intake area- 59.5" x 60.5"	Depth- 20.5"
Drive dia.- <i>direct</i>	Discharge- 56.5"	Minor dia.- 56.5"
Axle dia.- <i>drive</i>	Depth- 25.8" top	Major dia.- 64.5"
	24.8" bottom	

Notes: \*230 VAC, 60 Hz, 1 phase power input  
 \*\* Model 07101000 unassembled. Model 07101008 Partially assembled.

**Test Conditions:**

T(wb) F: 65.5	Barometric pressure, recorded	29.14
T(db) F: 78.5	Barometric Pressure, corrected	29.01 (In. Hg)

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	SI Units			
							Static Pressure (Pa)	Airflow (m <sup>3</sup> /hr.)	(m <sup>3</sup> /hr)/W	W/1000m <sup>3</sup> /hr
0.00	33600	644	229.7	9.41	1355	24.8	0	57100	42.1	24
0.05	32000	644	229.7	9.97	1446	22.1	12	54400	37.6	27
0.10	30300	642	229.7	10.41	1515	20.0	25	51600	34	29
0.15	28500	644	229.2	10.98	1610	17.7	37	48400	30.1	33
0.20	25000	644	230.3	11.64	1728	14.5	50	42400	24.6	41
0.25	22600	645	230.6	12.04	1795	12.6	62	38400	21.4	47
0.30	20100	645	230.2	12.22	1824	11.0	75	34200	18.8	53