

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

Project Number: 23254  
 Test Date: July 19, 2023

<b>Fan:</b>	<b>Motor:</b>	<b>Shutter:</b>
Make- Qingdao Super Husb	Make- QOMA AW	Material- galvanized steel
Model- QOMA-1430-1.5	Model- YSF90L-4	# Doors- 10
Blade dia.- 52"	Hp- 2.5 (1.8 kW)	# Columns- 1
Orifice dia.- 53"	RPM- 1420	Door length 52.8"
	Volts- 380	Location- exhaust
<b>Blade:</b>	Amps- 4.4	
Number- 6	Hz- 50	<b>Guards:</b>
Shape- propeller	Phase- 3	Description- wire
Material- galvanized steel	S. F.- 1.1	Spacing- 1" x 3.6"
Pitch- -		Location- intake
Clearance- 0.5"	<b>Housing:</b>	
	Material- galvanized steel	<b>Discharge Cone:</b>
<b>Drive Sheaves:</b>	Intake area- 52.8" x 52.8"	Depth- none
Drive dia.- 112 mm	Discharge- 52.8" x 52.8"	Minor dia.- -
Axle dia.- 13" o.d.(330mm)	Depth- 17.8"	Major dia.- -

Notes: \*50 Hz test. Centrifugally operated shutter opener.

Test Conditions:

T(wb) F: 63.1  
 T(db) F: 74.5                      Barometric Pressure                      29.21 (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	27300	470	379.9	4.22	1979	13.8	0	46400	23.4	43
0.05	26300	470	379.8	4.27	2018	13.0	12	44700	22.2	45
0.10	25200	469	379.8	4.33	2070	12.2	25	42800	20.7	48
0.15	24000	468	379.8	4.39	2110	11.4	37	40800	19.3	52
0.20	22800	467	377.5	4.45	2156	10.6	50	38700	17.9	56
0.25	21500	467	379.7	4.52	2218	9.7	62	36600	16.5	61
0.30	20100	466	379.8	4.60	2270	8.8	75	34100	15	67
0.35	18400	465	379.8	4.67	2326	7.9	87	31300	13.5	74
0.40	16600	464	379.8	4.73	2367	7.0	100	28100	11.9	84
0.45	14400	464	379.8	4.78	2400	6.0	112	24500	10.2	98
0.50	11800	463	379.7	4.82	2425	4.9	125	20000	8.3	121