

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

Project Number: 22190  
 Test Date: March 14, 2022

<b>Fan:</b>		<b>Motor:</b>		<b>Shutter:</b>
Make- <i>Eurusfan</i>		Make- <i>Eurusdrive</i>		Material- <i>plastic</i>
Model- <i>VFA2-36HE-A3IM-CS</i>		Model- <i>YFE3-100L3-6BX</i>		# Doors- <i>12 per column</i>
Blade dia.- <i>37.7"</i>		Hp- <i>550 Watt</i>		# Columns- <i>2</i>
Orifice dia.- <i>38"</i>		RPM- <i>965</i>		Door length- <i>20"</i>
		Volts- <i>380</i>		Location- <i>intake</i>
		Amps- <i>1.7</i>		
<b>Blade:</b>		<b>Housing:</b>		<b>Guards:</b>
Number- <i>3</i>		Material- <i>fiberglass</i>		Description- <i>wire</i>
Shape- <i>propeller</i>		Intake area- <i>40.3" x 40.3"</i>		Spacing- <i>4" concentric</i>
Material- <i>poly</i>		Discharge- <i>38" dia.</i>		Location- <i>exhaust</i>
Pitch- <i>-</i>		Depth- <i>21.2"</i>		
Clearance- <i>0.2"</i>				<b>Discharge Cone:</b>
				Depth- <i>27.1"</i>
<b>Drive Sheaves:</b>				Minor dia.- <i>38" dia.</i>
Drive dia.- <i>direct</i>				Major dia.- <i>44.9"</i>
Axle dia.- <i>drive</i>				

Notes: 0

Test Conditions:

T(wb) F: 54	Barometric pressure, recorded	29.45
T(db) F: 74	Barometric Pressure, corrected	29.33 (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	14540	973	380.2	1.51	613	23.7	0	24700	40.3	25
0.05	13780	972	380.3	1.54	648	21.3	12	23400	36.1	28
0.10	12970	970	380.2	1.57	678	19.1	25	22000	32.5	31
0.15	12190	969	380.2	1.60	700	17.4	37	20700	29.6	34
0.20	11400	967	380.2	1.63	718	15.9	50	19400	27	37
0.25	10450	966	380.2	1.64	736	14.2	62	17800	24.1	41
0.30	9290	966	380.2	1.64	736	12.6	75	15800	21.4	47