

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

Project Number: 12792
 Test Date: December 12, 2012

Fan: Make- <i>Munters Aerotech</i> Model- <i>VX55DF21CT-HR</i> Blade dia.- <i>55.3"</i> Orifice dia.- <i>55.6"</i>	Motor: Make- <i>Munters</i> Model- <i>Munters drive</i> Hp- RPM- Volts- <i>230</i> Amps- Hz- Phase- <i>1 phase input</i> S. F.-	Shutter: Material- <i>plastic</i> # Doors- <i>16 per column</i> # Columns- <i>3</i> Door length <i>18.8"</i> Location- <i>intake</i>
Blade: Number- <i>3</i> Shape- <i>propeller</i> Material- <i>cast aluminum</i> Pitch- <i>-</i> Clearance- <i>0.2"</i>	Housing: Material- <i>Fiberglass</i> Intake area- <i>58.6" x 58.3"</i> Discharge- <i>55.6" dia.</i> Depth- <i>26.3" top</i> <i>25" bottom</i>	Guards: Description- <i>wire</i> Spacing- <i>2" concentric</i> Location- <i>exhaust</i>
Drive Sheaves: Drive dia.- <i>direct</i> Axle dia.- <i>drive</i>		Discharge Cone: Depth- <i>35.5"</i> Minor dia.- <i>55.6"</i> Major dia.- <i>66.3"</i>

Notes: *Hitachi WJ200-022SF-CP drive*

Test Conditions:

T(wb) F: 56.5 Barometric pressure, recorded 29.62
 T(db) F: 79 Barometric Pressure, corrected 29.49 (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	33600	496	230.1	9.38	1284	26.1	0	57000	44.4	23
0.05	31500	496	230.2	9.83	1356	23.2	12	53500	39.5	25
0.10	29400	496	230.1	10.26	1423	20.7	25	49900	35.1	28
0.15	27200	496	230.2	10.55	1472	18.5	37	46200	31.4	32
0.20	23900	496	230.1	10.78	1508	15.8	50	40600	26.9	37
0.25	19100	496	230.1	10.73	1500	12.7	62	32400	21.6	46
0.30	6300	496	230.5	10.09	1402	4.5	75	10700	7.6	131