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

Project Number: 16478
Test Date: June 30, 2016

Fan:
Make- *Termotecnica Pericoli*
Model- *EOC 53s/1-6 50hz*
Blade dia.- *52"*
Orifice dia.- *52.6"*

Blade:
Number- *6*
Shape- *propeller*
Material- *galvanized steel*
Pitch- -
Clearance- *0.3"*

Drive Sheaves:
Drive dia.- *3.35" o.d.*
Axle dia.- *12" o.d.*

Motor:
Make- *ABB*
Model- *M2AA080B4*
Hp- *0.75 kW*
RPM- *1390 // 1710*
Volts- *230/400 // 230/460*
Amps- *3.46/2.0 // 3.0/1.77*
Hz- *50 // 60*
Phase- *3*
S. F.- -

Housing:
Material- *galvanized steel*
Intake area- *51.7" x 51.9"*
Discharge- *52.6" dia.*
Depth- *20.8"*

Shutter:
Material- *aluminum*
Doors- *11*
Columns- *1*
Door length *51.3"*
Location- *intake*

Guards:
Description- *wire*
Spacing- *1.8" concentric*
Location- *exhaust*

Discharge Cone:
Depth- *24.3"*
Minor dia.- *52.6"*
Major dia.- *61.6"*

Notes: **50 Hz test*

Test Conditions:

T(wb) F:	63	Barometric pressure, recorded	29.40	
T(db) F:	77	Barometric Pressure, corrected	29.27	(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	**22600**	369	230.7	2.93	783	**28.9**	0	38400	49	20
0.05	**21200**	367	230.6	3.04	839	**25.3**	12	36100	43	23
0.10	**19500**	365	230.7	3.16	907	**21.5**	25	33100	36.5	27
0.15	**17300**	363	230.8	3.28	965	**17.9**	37	29400	30.4	33
0.20	**13700**	361	230.7	3.41	1029	**13.3**	50	23300	22.6	44
0.25	**10100**	359	230.6	3.49	1071	**9.4**	62	17200	16	62
0.30	**7500**	356	230.5	3.69	1164	**6.4**	75	12700	10.9	91