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

Project Number: 10094
Test Date: February 23, 2010

Fan:
Make- *Termotecnica Pericoli s.*
Model- *EOS53/1.5-6*
Blade dia.- *52.1"*
Orifice dia.- *52.7"*

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

Drive Sheaves:
Drive dia.- *4.2" o.d.*
Axle dia.- *12" o.d.*

Motor:
Make- *ABB*
Model- *M3AA 090 LB-4*
Hp- *1.1 kW (1.5 hp)*
RPM- *1740/1440*
Volts- *400/230*
Amps- *2.6/4.5*
Hz- *60/50*
Phase- *3*
S. F.- *-*

Housing:
Material- *galvanized steel*
Intake area- *52"x52"*
Discharge- *50"x49.5"*
Depth- *16"*
0

Shutter:
Material- *aluminum*
Doors- *8*
Columns- *1*
Door length- *48.1"*
Location- *exhaust*

Guards:
Description- *wire*
Spacing- *1" x 4"*
Location- *intake*

Discharge Cone:
Depth- *none*
Minor dia.- *-*
Major dia.- *-*

Notes: **50Hz test*

Test Conditions:

T(wb):	54.5	Barometric pressure, recorded	29.25
T(db):	76.5	Barometric Pressure, corrected	29.12

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt	Static Pressure (Pa)	Airflow m^3/hr	W/1000m^3/hr
0.00	**24200**	473	230.2	4.60	1491	**16.2**	0	41100	36
0.05	**23100**	471	230.3	4.71	1541	**15.0**	12	39300	39
0.10	**22000**	470	230.3	4.83	1603	**13.7**	25	37400	43
0.15	**20800**	469	230.3	4.95	1647	**12.6**	37	35300	47
0.20	**19500**	467	230.3	5.05	1693	**11.5**	50	33100	51
0.25	**17900**	465	230.3	5.16	1744	**10.3**	62	30400	57
0.30	**16100**	463	230.2	5.26	1792	**9.0**	75	27400	66
0.40	**11800**	461	230.2	5.40	1844	**6.4**	100	20100	92