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

Project Number: 16468
Test Date: June 29, 2016

Fan:
Make- *Termotecnica Pericoli*
Model- *EOC 53s/2-6 50hz*
Blade dia.- *52"*
Orifice dia.- *52.6"*

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

Drive Sheaves:
Drive dia.- *4.0" o.d.*
Axle dia.- *12" o.d.*

Motor:
Make- *ABB*
Model- *M2AA 090 L4*
Hp- *1.5 kW*
RPM- *1420 // 1730*
Volts- *400/230 // 460/230*
Amps- *3.5/6.0 // 3.0/5.2*
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:	62.5	Barometric pressure, recorded	29.49	
T(db) F:	77	Barometric Pressure, corrected	29.36	(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	**27200**	451	230.8	4.99	1281	**21.2**	0	46200	36.1	28
0.05	**26100**	450	231.0	5.15	1371	**19.0**	12	44300	32.3	31
0.10	**25000**	448	231.0	5.27	1435	**17.4**	25	42500	29.6	34
0.15	**23600**	446	230.7	5.38	1490	**15.8**	37	40100	26.9	37
0.20	**21800**	445	230.9	5.54	1578	**13.8**	50	37100	23.5	43
0.25	**19800**	443	230.9	5.68	1650	**12.0**	62	33600	20.3	49
0.30	**16300**	441	230.9	5.84	1726	**9.5**	75	27700	16.1	62