

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

Project Number: 06036
Test Date: March 1, 2006

Fan:

Make- *Valco*
 Model- *HPM48W420LGAT*
 Blade dia.- *48"*
 Orifice dia.- *48.8"*

Blade:

Number- *3*
 Shape- *propeller*
 Material- *galvanized steel*
 Pitch- *-*
 Clearance- *0.8"*

Drive Sheaves:

Drive dia.- *4.0" o.d.*
 Axle dia.- *10.3" o.d.*

Motor:

Make- *GE*
 Model- *5KCR48WN0608X*
 Hp- *1.5*
 RPM- *1725*
 Volts- *115/230*
 Amps- *15.0/7.5*
 Hz- *60*
 Phase- *1*
 S. F.- *1.0*

Housing:

Material- *fiberglass*
 Intake area- *53" x 53"*
 Discharge- *48.8"*
 Depth- *26.3" top*
 22" bottom

Shutter:

Material- *aluminum*
 # Doors- *14 per column*
 # Columns- *2*
 Door length *26.8"*
 Location- *intake*

Guards:

Description- *wire*
 Spacing- *2"*
 Location- *exhaust*

Discharge Cone:

Depth- *26.4"*
 Minor dia.- *48.8"*
 Major dia.- *59" dia.*

Notes:

Test Conditions:

T(wb):	57	Barometric pressure, recorded	29.12
T(db):	78.5	Barometric Pressure, corrected	28.99

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	27300	677	230.0	6.93	1385	19.7
0.05	26200	676	229.9	7.23	1462	17.9
0.10	24900	674	229.6	7.54	1530	16.3
0.15	23700	673	229.9	7.81	1600	14.8
0.20	22400	671	230.2	8.08	1674	13.4
0.25	21000	670	230.2	8.35	1736	12.1
0.30	19200	668	229.8	8.69	1814	10.6