

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

Project Number: 06037
Test Date: March 1, 2006

Fan:

Make- *Valco*
 Model- *HGD48G420LGAT*
 Blade dia.- *48"*
 Orifice dia.- *48.8"*

Blade:

Number- *3*
 Shape- *propeller*
 Material- *galvanized steel*
 Pitch- *-*
 Clearance- *0.4"*

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- *Galvanized steel*
 Intake area- *54.8" x 54.8"*
 Discharge- *48.8" dia.*
 Depth- *18"*

Shutter:

Material- *galvanized steel*
 # Doors- *2*
 # Columns- *-*
 Door length -
 Location- *exhaust*

Guards:

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

Discharge Cone:

Depth- *34.5"*
 Minor dia.- *48.8"*
 Major dia.- *60"*

Notes:

Test Conditions:

T(wb):	58	Barometric pressure, recorded	29.09
T(db):	77	Barometric Pressure, corrected	28.96

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	27900	678	229.8	6.71	1320	21.1
0.05	26600	676	230.0	7.10	1420	18.7
0.10	25200	675	230.2	7.41	1504	16.7
0.15	23700	673	229.9	7.72	1581	15.0
0.20	22200	672	230.1	8.04	1662	13.3
0.25	20300	670	229.7	8.36	1738	11.7
0.30	18700	669	230.0	8.68	1819	10.3