

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

Project Number: 06038
Test Date: March 1, 2006

Fan:

Make- *Valco*
 Model- *HGD48G340MGAT*
 Blade dia.- *48"*
 Orifice dia.- *48.8"*

Blade:

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

Drive Sheaves:

Drive dia.- *3.5" o.d.*
 Axle dia.- *10.3" o.d.*

Motor:

Make- *Raydot*
 Model- *K56B06D27*
 Hp- *1.0*
 RPM- *1725/1425*
 Volts- *115/230*
 Amps- *9.6/4.8*
 Hz- *60*
 Phase- *1*
 S. F.- *1.4*

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):	78	Barometric Pressure, corrected	28.96

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	26500	638	230.0	5.10	1043	25.4
0.05	25000	636	230.0	5.47	1123	22.2
0.10	23500	634	230.0	5.82	1203	19.5
0.15	21800	632	230.0	6.17	1282	17.0
0.20	20000	630	229.9	6.55	1362	14.7
0.25	18200	628	229.5	6.85	1430	12.7
0.30	16200	626	229.7	7.23	1506	10.7