

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

Project Number: 06039
Test Date: March 1, 2006

Fan:

Make- *Valco*
 Model- *HGD48G340MNAT*
 Blade dia.- *48"*
 Orifice dia.- *48.8"*

Blade:

Number- *3*
 Shape- *propeller*
 Material- *cast aluminum*
 Pitch- *-*
 Clearance- *0.4"*

Drive Sheaves:

Drive dia.- *3.3" o.d.*
 Axle dia.- *9.3" 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):	59	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	25900	603	230.5	5.10	1040	24.9
0.05	24400	601	230.6	5.35	1100	22.2
0.10	22800	600	230.2	5.59	1152	19.8
0.15	21100	599	230.5	5.81	1196	17.6
0.20	19200	598	230.1	5.93	1229	15.7
0.25	17200	598	230.1	6.04	1246	13.8
0.30	15000	597	230.1	6.08	1261	11.9