

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

Project Number: 07226
Test Date: May 22, 2007

Fan:

Make- *American Coolair*
 Model- *NBRID52L-SQ*
 Blade dia.- *53"*
 Orifice dia.- *53.8"*

Blade:

Number- *4*
 Shape- *propeller*
 Material- *steel, painted*
 Pitch- *-*
 Clearance- *0.4"*

Drive Sheaves:

Drive dia.- *MA33, 3.3" o.d.*
 Axle dia.- *11.4" o.d.*

Motor:

Make- *Baldor*
 Model- *RM3116TEAO-HS*
 Hp- *1*
 RPM- *1425//1725*
 Volts- *220/440//230/460*
 Amps- *3.6/1.8//3.2/1.6*
 Hz- *50//60*
 Phase- *3*
 S. F.- *1.15*

Housing:

Material- *galvanized steel*
 Intake area- *57.3" x 57.3"*
 Discharge- *53.8" dia.*
 Depth- *25.8"*

Shutter:

Material- *galvanized steel*
 # Doors- *4*
 # Columns- *-*
 Door length *54" vertical*
 Location- *intake*

Guards:

Description- *wire*
 Spacing- *2"x2"/2" concentric*
 Location- *intake/exhaust*

Discharge Cone:

Depth- *32.4"*
 Minor dia.- *53.8"*
 Major dia.- *64.8"*

Notes: 0

Test Conditions:

T(wb):	62	Barometric pressure, recorded	29.48
T(db):	80	Barometric Pressure, corrected	29.34

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	26100	483	235.4	3.35	949	27.5
0.05	24600	481	234.2	3.46	1015	24.2
0.10	22900	480	234.3	3.59	1076	21.3
0.15	21000	478	234.3	3.73	1140	18.4
0.20	18600	476	234.3	3.86	1194	15.6
0.25	15700	475	234.0	3.97	1252	12.5
0.30	11800	473	234.0	4.07	1295	9.1