

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

Project Number: 09325
Test Date: December 15, 2009

Fan:

Make- *Grower Select/Winds*
 Model- *WS-F52B-HE*
 Blade dia.- *51.9"*
 Orifice dia.- *52.6"*

Blade:

Number- *3*
 Shape- *propeller*
 Material- *galvanized steel*
 Pitch- *27 deg.*
 Clearance- *0.4"*

Drive Sheaves:

Drive dia.- *3.8" o.d., MA38*
 Axle dia.- *AK104, 10.3" o.d.*

Motor:

Make- *Marathon*
 Model- *5KCR48WN0581CT*
 Hp- *1.5*
 RPM- *1725*
 Volts- *208-230*
 Amps- *6.7-6.2*
 Hz- *60*
 Phase- *1*
 S. F.- *1.2*

Housing:

Material- *galvanized steel*
 Intake area- *55.1" x 55.5"*
 Discharge- *52.6" dia.*
 Depth- *12.5"*

Shutter:

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

Guards:

Description- *wire*
 Spacing- *2"x4" / 2" concentric*
 Location- *intake/exhaust*

Discharge Cone:

Depth- *35"*
 Minor dia.- *52.6"*
 Major dia.- *64"*

Notes: AFR 0.78

Test Conditions:

T(wb):	55.5	Barometric pressure, recorded	29.65
T(db):	76.5	Barometric Pressure, corrected	29.52

Static Pressure (in.H2O)	Airflow (cfm)	rpm	Volts	Amps	Watts	cfm/Watt
0.00	28900	625	230.0	5.09	1122	25.8
0.05	27200	624	229.7	5.44	1198	22.7
0.10	25400	622	229.5	5.72	1271	20.0
0.15	23300	621	230.0	5.97	1340	17.4
0.20	21300	620	229.8	6.21	1396	15.3
0.25	19100	619	230.1	6.44	1450	13.2
0.30	16200	618	230.1	6.67	1504	10.8