

University of Illinois Department of  
Agricultural and Biological Engineering  
BESS Lab

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**Project Number:** 05234

**Test Date:** July 12, 2005

**Fan**

*Make:* American Coolair

*Model #:* MNBRDD52L

*Manufacturer:* American Coolair

*Blade Size:* 52.8"

*Orifice Dia.:* 53.3"

**Blade**

*Number:* 4

*Shape:* propeller

*Material:* painted steel

*Pitch:* -

*Clearance:* 0.3"

**Shutter Butterfly damper**

*Material:* galvanized steel

*# of Doors:* 2

*# of Columns:* -

*Door Length:* 55.5"

*Location:* exhaust

**Other Attachments:**

Discharge cone 40" deep, 53.3" i.d., 67.5" o.d.

**Motor**

*Make:* AO Smith

*Model #:* 327P776

*Phase:* 1

*H.P.:* 1

*Amps:* 11/5.5

*Volts:* 115/208-230

*RPM:* 1725

*S.F.:* 1.30

**Drive**

*Drive Pulley Dia.* 2.7" o.d.

*Axle Pulley Dia.:* 9.5" o.d.

**Housing**

*Material:* galvanized steel

*Intake Area:* 56" x 56"

*Discharge Area:* 53.3" dia.

*Depth:* 22.5"

**Guards**

*Description:* wire

*Spacing:* 2" x 2" intake  
2" concentric, exhaust

*Location:* intake/exhaust

## TEST RESULTS

### AMERICAN COOLAIR MNRDD52L

Test: 05234

Fan description:

53" belt drive fan, 1 hp AO Smith 327P776 motor,  
galvanized steel housing, butterfly damper,  
discharge cone and guards

Static Pressure  
in. water

Speed  
rpm

Airflow  
cfm

Efficiency  
cfm/Watt

0.00

489

26,300

26.9

0.05

487

24,900

23.8

0.10

485

23,100

20.9

0.15

483

21,100

18.2

0.20

482

19,200

15.8

0.25

480

16,900

13.2

0.30

477

13,400

9.9