

University of Illinois Department of  
Agricultural and Biological Engineering  
BESS Lab

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**Project Number:** 05240

**Test Date:** July 12, 2005

**Fan**

*Make:* American Coolair

*Model #:* MNBRDD52M 3 ph.

*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:* Emerson

*Model #:* P63EYE-3913

*Phase:* 3

*H.P.:* 1.5

*Amps:* 5.0-4.9/2.5//5.3-5.3/2.6

*Volts:* 208-230/460

*RPM:* 1725//1425  
60/50 hz

*S.F.:* 1.15

**Drive**

*Drive Pulley Dia.* 3.0" 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 MNRDD52M 3 ph	Static Pressure	Speed	Airflow	Efficiency
Test: 05240	<u>in. water</u>	<u>rpm</u>	<u>cfm</u>	<u>cfm/Watt</u>
▲ 3 phase	0.00	549	29,200	23.6
Fan description:	0.05	548	28,000	21.3
53" belt drive fan, 1.5 hp Emerson P63EYE-3913	0.10	547	26,700	19.7
motor, galvanized steel housing, butterfly damper,	0.15	546	25,000	17.6
discharge cone and guards	0.20	545	23,400	15.8
	0.25	544	21,700	14.2
	0.30	543	19,700	12.5