

University of Illinois Department of  
Agricultural Engineering  
BESS Lab

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**Project Number:** 97323V

**Test Date:** November 25, 1997

**Fan**

*Make:* Val

*Model #:* VAPMC-4821BD

*Manufacturer:* -

*Blade Size:* 48"

*Orifice Dia.:* 48.8"

**Blade Lau 203504**

*Number:* 3

*Shape:* propeller

*Material:* stainless steel

*Pitch:* -

*Clearance:* 0.4"

**Shutter**

*Material:* plastic

*# of Doors:* 17 per column

*# of Columns:* 3

*Door Length:* 17.5"

*Location:* intake

**Other Attachments:**

Discharge cone 48.8" i.d., 65" o.d., 37" deep

**Motor**

*Make:* Magnetek

*Model #:* 8-182505

*H.P.:* 1

*Amps:* 4.3/8.6

*Volts:* 230/115

*RPM:* 1725

*S.F.:* 1.4

**Drive**

*Drive Pulley Dia.:* 3.8" o.d.

*Axle Pulley Dia.:* 11" o.d.

**Housing**

*Material:* fiberglass

*Intake Area:* 54.8" x 55"

*Discharge Area:* 48.8" dia.

*Depth:* 26.5" top  
22" bottom

**Guards**

*Description:* wire

*Spacing:* 2" concentric

*Location:* exhaust

# TEST RESULTS

## VAL VAPMC-4821BD

|                                             | Static Pressure  | Speed      | Airflow    | Efficiency      |
|---------------------------------------------|------------------|------------|------------|-----------------|
|                                             | <u>in. water</u> | <u>rpm</u> | <u>cfm</u> | <u>cfm/Watt</u> |
| Test: 97323V                                | 0.00             | 591        | 24600      | 25.1            |
| Fan description:                            | 0.05             | 589        | 23100      | 22.4            |
| 48" belt drive, 1 hp Magnetek 8-182505      | 0.10             | 587        | 21300      | 19.5            |
| motor, fiberglass housing, plastic shutter, | 0.15             | 586        | 19500      | 17.4            |
| guard and discharge cone                    | 0.20             | 586        | 16900      | 14.6            |
|                                             | 0.25             | 584        | 12200      | 10.3            |
|                                             | 0.30             | 582        | 6100       | 4.9             |

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