

**University of Illinois, Department of Agricultural and Biological Engineering
 Bioenvironmental and Structural Systems Lab
 Circulating Fan Performance - Final Report**

Project Number: c12394
Test Date: June 15, 2012

| | | |
|-----------------------------|---------------------------|----------------------------|
| Fan: | Motor: | Guards: |
| Make- Termotecnica Pericoli | Make- ABB | Description- wire |
| Model- BKF53 | Model - M2VA60B-4 | Spacing- 1.3" x 1.3" |
| Size- 52" | Hp- 0.75 kW | Location- intake / exhaust |
| Orifice ϕ - - | RPM- 1410 // 1690 | |
| | Volts- 380/220 // 480/240 | |
| Blade: | Amps- 2/3.5 // 1.9/3.3 | |
| Number- 3 | Hz- 50 // 60 | |
| Shape- propeller | Phase- 3 | |
| Material- aluminum | S.F. - - | |

| | |
|------------------------------|----------------------------|
| Drive Sheaves: | Housing: Box |
| Drive o.d.- 3.4" (80 p.d.) | Material- galvanized steel |
| Axle o.d.- 12" (305 mm o.d.) | Depth- 7" |

Notes: *60 Hz test

5 x D Centerline Velocity (fpm): 630

Test Conditions:

| | | |
|-----------|--------------------------------|-------|
| T(wb): 65 | Barometric pressure, recorded | 29.41 |
| T(db): 84 | Barometric Pressure, corrected | 29.26 |

| D | Thrust | | | | | Thrust Efficiency Ratio |
|-----------------------|--------|-----|-------|------|-------|-------------------------|
| Impeller ϕ (in.) | (lbf) | rpm | Volts | Amps | kW | (lbf/kW) |
| 52.0 | 14.12 | 443 | 224.2 | 2.85 | 0.911 | 15.5 |

| | |
|---------------------------------|----------------|
| Airflow* (thrust cfm) | (thrust cfm/W) |
| 18400 | 20.2 |

*Airflow - ANSI/AMCA 230-12 Eq. 9.6 IP