

University of Illinois Department of  
Agricultural Engineering  
BEES Lab

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**Project Number:** 03042bd

**Test Date:** 4/29/03

**Fan**

*Make:* Big Dutchman

*Model #:* 60-50-5202

*Manufacturer:* Canarm

*Blade Size:* 50"

*Orifice Dia.:* 50.8"

**Blade**

*Number:* 50"

*Shape:* 3

*Material:* cast aluminum

*Pitch:* -

*Clearance:* 0.4"

**Shutter**

*Material:* plastic

*# of Doors:* 16 per column

*# of Columns:* 3

*Door Length:* 18"

*Location:* intake

**Other Attachments:**

**Motor**

*Make:* GE

*Model #:* 5K49PN4354

*H.P.:* 1

*Amps:* 3.9-3.5/2.2-2.0

*Volts:* 220-230/380-/415

*RPM:* '1725/1425

*S.F.:* 1.00

**Drive**

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

*Axle Pulley Dia.:* 9" o.d.

**Housing**

*Material:* fiberglass

*Intake Area:* 54" x52.3"

*Discharge Area:* 55" dia.

*Depth:* 44" top  
31" bottom

**Guards**

*Description:* wire

*Spacing:* 2"

*Location:* exhaust

TEST RESULTS

|                                               |                  |            |            |                 |
|-----------------------------------------------|------------------|------------|------------|-----------------|
| <b>BIG DUTCHMAN 60-50-5202</b>                | Static Pressure  | Speed      | Airflow    | Efficiency      |
| Test: 03042bd                                 | <u>in. water</u> | <u>rpm</u> | <u>cfm</u> | <u>cfm/Watt</u> |
| ▲ 3 phase, 380V, 50Hz                         | 0.00             | 567        | 23,500     | 21.3            |
| Fan description:                              | 0.05             | 565        | 22,000     | 19.2            |
| 50" belt drive, 1 hp GE 5K49PN4354 motor,     | 0.10             | 564        | 20,300     | 17.3            |
| fiberglass housing, plastic shutter and guard | 0.15             | 563        | 18,600     | 15.5            |
|                                               | 0.20             | 562        | 16,700     | 13.7            |
|                                               | 0.25             | 561        | 14,000     | 11.4            |
|                                               | 0.30             | 561        | 9,300      | 7.5             |