

University of Illinois Department of Agricultural and Biological Engineering
 Bioenvironmental and Structural Systems Lab
 Final Report

Project Number: 24199
 Test Date: April 9, 2024

| | | |
|-----------------------------------|-----------------------------------|-------------------------------|
| Fan: | Motor: | Shutter: |
| Make- <i>Better Air</i> | Make- <i>AG-I</i> | Material- <i>plastic</i> |
| Model- <i>FW-60/2</i> | Model- <i>A204HA6BA00</i> | # Doors- <i>19 per column</i> |
| Blade dia.- <i>60"</i> | Hp- <i>2.0</i> | # Columns- <i>3</i> |
| Orifice dia.- <i>60.5"</i> | RPM- <i>1725</i> | Door length <i>20.4"</i> |
| | Volts- <i>230</i> | Location- <i>intake</i> |
| Blade: | Amps- <i>9.5</i> | |
| Number- <i>3</i> | Hz- <i>60</i> | Guards: |
| Shape- <i>propeller</i> | Phase- <i>1</i> | Description- <i>wire</i> |
| Material- <i>galvanized steel</i> | S. F.- <i>1.0</i> | Spacing- <i>2" concentric</i> |
| Pitch- <i>-</i> | | Location- <i>exhaust</i> |
| Clearance- <i>0.3"</i> | Housing: | |
| | Material- <i>fiberglass</i> | Discharge Cone: |
| Drive Sheaves: | Intake area- <i>61.9" x 61.8"</i> | Depth- <i>none</i> |
| Drive dia.- <i>3.25" o.d.</i> | Discharge- <i>60.5" dia.</i> | Minor dia.- <i>-</i> |
| Axle dia.- <i>12" o.d.</i> | Depth- <i>34.5" top</i> | Major dia.- <i>-</i> |
| | <i>30.5" bottom</i> | |

Notes: 0

Test Conditions:

T(wb) F: 55.6
 T(db) F: 70.9
 Barometric Pressure 29.14 (In. Hg)

| Static Pressure (in.H2O) | Airflow (cfm) | rpm | Volts | Amps | Watts | cfm/Watt | SI Units | | | |
|--------------------------|---------------|-----|-------|-------|-------|----------|----------------------|-------------------------------|------------------------|--------------------------|
| | | | | | | | Static Pressure (Pa) | Airflow (m ³ /hr.) | (m ³ /hr)/W | W/1000m ³ /hr |
| 0.00 | 33000 | 458 | 231.4 | 8.44 | 1725 | 19.1 | 0 | 56000 | 32.5 | 31 |
| 0.05 | 30600 | 457 | 230.8 | 8.65 | 1767 | 17.3 | 12 | 52000 | 29.5 | 34 |
| 0.10 | 28000 | 456 | 230.9 | 8.81 | 1805 | 15.5 | 25 | 47500 | 26.3 | 38 |
| 0.15 | 25100 | 456 | 231.2 | 8.92 | 1834 | 13.7 | 37 | 42700 | 23.3 | 43 |
| 0.20 | 18400 | 457 | 231.4 | 8.72 | 1792 | 10.3 | 50 | 31200 | 17.4 | 57 |
| 0.25 | 11600 | 452 | 231.2 | 10.03 | 2080 | 5.6 | 62 | 19700 | 9.5 | 105 |
| 0.30 | 7000 | 450 | 230.9 | 10.48 | 2178 | 3.2 | 75 | 12000 | 5.5 | 182 |