

# Bioenvironmental and Structural Systems Lab

## Final Report

**Project Number:** 10429  
**Test Date:** September 15, 2010

### Fan:

Make- *Schaefer*  
 Model- *576CF112G-3-HV*  
 Blade dia.- *57"*  
 Orifice dia.- *58"*

### Blade:

Number- *6*  
 Shape- *propeller*  
 Material- *galvanized steel*  
 Pitch- *-*  
 Clearance- *0.5"*

### Drive Sheaves:

Drive dia.- *2.8" o.d.*  
 Axle dia.- *10.3" o.d.*

### Motor:

Make- *Leeson*  
 Cat. #: *117513.00*  
 Hp- *1.5*  
 RPM- *1750*  
 Volts- *208-230/460*  
 Amps- *4.6-4.8/2.4*  
 Hz- *60*  
 Phase- *3*  
 S. F.- *1.25*

### Housing:

Material- *fiberglass*  
 Intake area- *58.5" x 59"*  
 Discharge- *58" dia.*  
 Depth- *28.5"*  
*0*

### Shutter:

Material- *aluminum*  
 # Doors- *15 per column*  
 # Columns- *2*  
 Door length *29.6"*  
 Location- *intake*

### Guards:

Description- *wire*  
 Spacing- *1.5" concentric*  
 Location- *exhaust*

### Discharge Cone:

Depth- *25.5"*  
 Minor dia.- *58"*  
 Major dia.- *66.5"*

**Notes:** *0*

### Test Conditions:

|        |      |                                |       |
|--------|------|--------------------------------|-------|
| T(wb): | 65   | Barometric pressure, recorded  | 29.44 |
| T(db): | 79.5 | Barometric Pressure, corrected | 29.30 |

| Static Pressure<br>(in.H2O) | Airflow<br>(cfm) | rpm | Volts | Amps | Watts | cfm/Watt |
|-----------------------------|------------------|-----|-------|------|-------|----------|
| 0.00                        | 30900            | 414 | 229.9 | 4.60 | 1424  | 21.7     |
| 0.05                        | 29100            | 413 | 230.3 | 4.70 | 1473  | 19.8     |
| 0.10                        | 26900            | 411 | 230.3 | 4.80 | 1509  | 17.8     |
| 0.15                        | 25300            | 410 | 230.2 | 4.84 | 1529  | 16.5     |
| 0.20                        | 21900            | 410 | 230.2 | 4.84 | 1528  | 14.4     |
| 0.25                        | 16400            | 412 | 230.6 | 4.69 | 1471  | 11.1     |
| 0.30                        | 10400            | 408 | 230.7 | 4.91 | 1562  | 6.7      |