



# **VERSITILITY SET SQUARE FAN UNIFOIL BACKWARD CURVE**

**WHEELS:** Unifoil (Backward Curve)

**SIZES:** 12" - 49" Wheel Diameter

**CLASS:** I, II, & III

**PERFORMANCE:** 1,500 to 70,000 cfm  
and up to 13" SP.

**APPLICATION:** Commercial HVAC and  
light industrial. Commonly used in  
processes such as dust collection.

**ARRANGEMENT:** 1, 4 & 9

**DESIGN:** Robust square design with a  
small footprint provides a wide range  
of mounting possibilities.



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## **6100 SERIES**

 **Sheldons Engineering Inc.**  
*Leaders in Fan Technology*

Brochure # 6100B-03-05



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## SQUARE BODY CENTRIFUGAL FAN – 6000

### GENERAL SPECIFICATION.

The centrifugal fan shall be designed and manufactured by Sheldons Engineering to ensure reliable construction. Fan wheel shall be Unifoil™-backward curved/ Ultrafoil™-double thickness airfoil/backward inclined as shown in plans with all steel construction. Unless otherwise directed, fan arrangement, motor location, support base, rotation and discharge are as shown on the layout drawings.

### PERFORMANCE

Fan ratings shall be based on tests made in accordance with AMCA Standard 210. Flow shall be actual volumetric flow at the fan inlet. Fan static pressure is defined as static pressure at fan outlet less total pressure at fan inlet. Standard inlet density is to be taken as 0.75 lb/ft<sup>3</sup> with corrections for temperature, elevation, inlet static pressure, gas composition and humidity as defined in the schedule. Fans shall be selected to operate to the right of the peak static pressure at the given speed to ensure stable performance. Fan brake horsepower shall be equal to or less than specified at the given flow and fan static pressure.

### SOUND

Fan manufacturers shall provide sound power level ratings for fans tested and rated in accordance with AMCA Standards 300 and 301. Sound power ratings shall be in decibels (reference 10-12 watts) in eight octave bands. Sound power levels will be corrected for installation by the specifying engineer...dBA or sound pressure levels only are not acceptable.

### CONSTRUCTION

Fan housings are to be heavy -- min. 12 gauge, continuously welded construction with flanged and punched outlet. Housings with lock seams or spot welded construction are not acceptable. Bearing mounts to be welded perpendicular to the fan shaft.

Fan Size	Housing Gauge (Class I, II, and III)
12.25-20	12 ga (0.1046" – 2.7 mm)
22.25-40.25	10 ga (0.1345" – 3.4 mm)
44.5 – 49	7 ga (0.1793" – 4.6 mm)

### BEARINGS (belt driven fans)

Bearings are to be heavy duty, grease lubricated, precision anti-friction flange mounted, self-aligning deep groove ball. Bearings shall be designed for a minimum L-10 life of AMCA Class I: 15,000, AMCA Class II: 15,000 up to 24" Dia.—40,000 over, AMCA Class III: 40,000, when rated at the fan's maximum cataloged operating speed for the AMCA class.

### SHAFT (belt driven fans)

Shafts are to be ASTM A-108 steel, grade 1040/1045, precision turned, ground and polished. Grade 1018 steel is not acceptable. The shaft's first critical speed shall be at least 143% of the fan's maximum operating speed.



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## SQUARE BODY RADIAL BLADE CENTRIFUGAL FAN – 6000

### PAINT

All fan surfaces are to be thoroughly prepared prior to painting using a combination of washing and hand and power tool cleaning as required in SSPC-SP-3. After cleaning, all surfaces (except wheel) are to be coated with industrial grade alkyd enamel. Surfaces of bolted components not accessible after assembly shall be coated and allowed to dry prior to final assembly. Primer only will not be accepted.

### BALANCE & INSPECTION

All fans shall be precision balanced to ISO quality grade 2.5, report to be submitted with the maintenance manual. A final inspection by a qualified inspector prior to shipment is required to include: scope of supply confirmation, balance, welding, dimensions, bearings, duct and base connection points, paint finish and overall workmanship.

### ACCESSORIES

Accessories shall be provided as called for in the plans and specifications. Standard accessories include:

- Motor to be NEMA Design B 3/60/460-575V-1800 rpm, high efficiency TEFC 1.15 SF
- V-Belt Drives - Variable Speed/Constant Speed with min 1.5 SF
- Belt Guard or weather cover required
- Extended lubrication lines (nylon, copper or stainless steel) with fittings terminating in an accessible area.

Additional Features that may be required:

- Split pillow block bearings
- Access Door – bolted/quick opening or plug type with raised door
- Companion Flange (angle companion flange bolted to the fan inlet or outlet flange)
- Inlet or Outlet screen heavy gauge wire on 2" centres
- Above 300°F, Shaft cooling wheel required
- Above 500°F, high temperature aluminum paint required
- Vibration Isolation - Spring - Rubber-In-Shear
- Variable inlet vanes
- Spark Resistant Construction –
  - AMCA "A" All parts of the fan in contact with the air stream non-ferrous material
  - AMCA "B" Non-ferrous wheel and aluminum rubbing ring where shaft passes through Housing with shaft seal
  - AMCA "C" Aluminum inlet cone and Aluminum rubbing ring









































