

THE HVLS CHALLENGE

A SIDE-BY-SIDE COMPARISON



Airvolution^D
780



BIG ASS FANS
POWERFOIL X2.0 PLUS

1

MOTORS

The motor is the heart of any HVLS fan. It's the power that drives the blades and is critical to determining a fan's efficiency, performance and durability.

AirVolution^D
By MacroAir

AIR SUPERIORITY

The company that invented the HVLS fan has created the next generation. Introducing AirVolution-D. Take a look at the side-by-side comparison between the new AirVolution-D and conventional HVLS design. You'll see the advantages in power, efficiency, intelligence, and reliability at every turn.



MacroAir AirVolution-D 780

- Sensorless permanent magnet brushless DC motor, 2.1 Horsepower
- Gearless direct drive eliminates the gearbox, increasing efficiency and durability while decreasing noise and weight
- Only two moving parts, requiring zero maintenance
- Zero liquids, no oils that could leak from a gearbox
- IP66 rated for outdoor environments
- Hanging weight: 213 pounds
- Maximum RPMs: 64



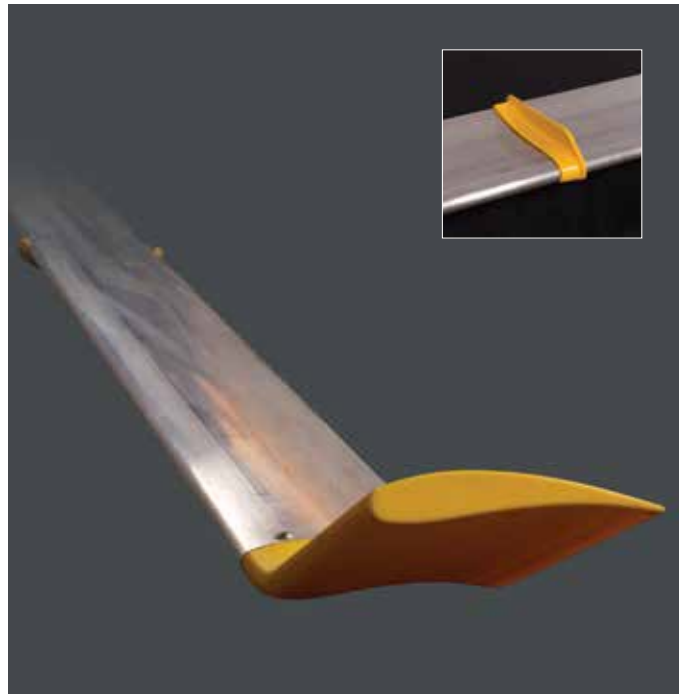
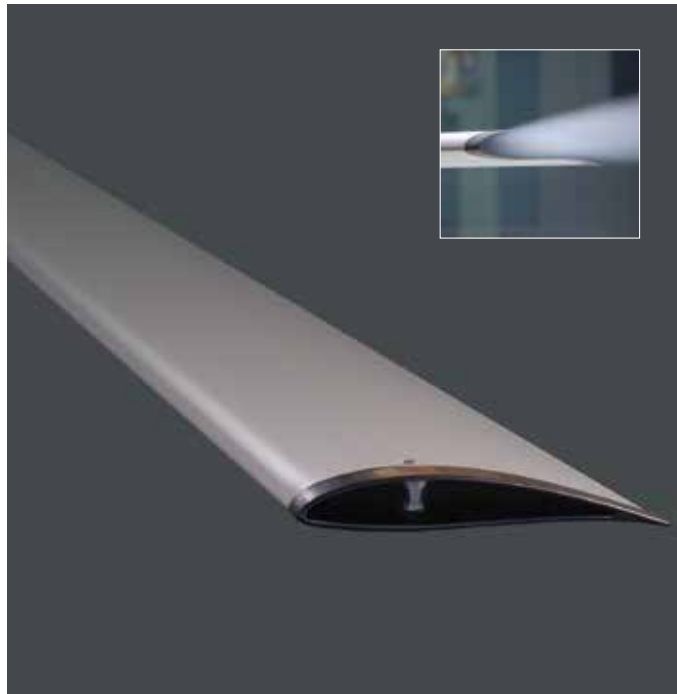
Big Ass Fan Powerfoil X2.0 Plus

- AC induction motor, 2.0 Horsepower
- Large, heavy custom gearbox
- Dozens of moving parts in motor and gearbox
- Gearbox is oil filled
- IP 55 rated, not for outdoors without costly upgrade
- Hanging weight: 419 pounds
- Maximum RPMs: 48

2

BLADES

The volume, velocity and coverage of an HVLS fan is significantly determined by the quantity, spacing, efficiency and design of the blades.



MacroAir AirVolution-D 780

- NASA inspired airfoil generates 45.5% blade efficiency at max, over the entire speed range
- Requires less energy for optimum airflow
- Extruded aluminum
- Anodized clearcoat finish resists dust accumulation and oxidation
- 6 blades create optimal spacing for maximum volume, velocity and air delivery to the space below

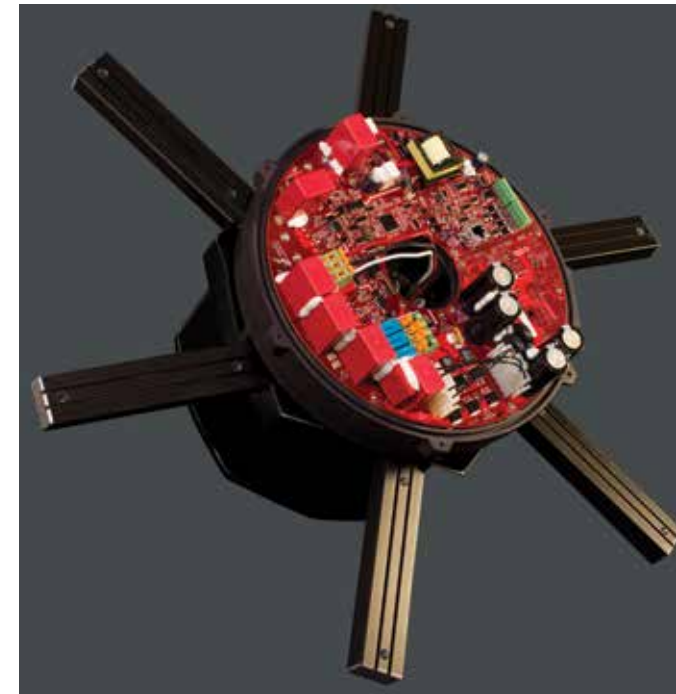
Big Ass Fan Powerfoil X2.0 Plus

- Airfoil design including winglets generates only 39.7% blade efficiency at max
- Requires more energy for optimum airflow
- Extruded aluminum
- Raw mill finish, anodization a significant upcharge
- 10 blades increases weight, lowers efficiency, does not produce more cfm

3

ELECTRONICS

The brains of an HVLS fan are in the electronics which affect reliability, features and end user convenience.



MacroAir AirVolution-D 780

- Onboard microprocessor customized for HVLS fan environments
- Broad range power input adapts to voltages automatically, including single or three phase power
- Broad range input allows fan to be run on 277 volt circuits
- Broad range input instantly adapts to power dips and spikes without interruption
- Electronics and motor rated to 60°C or 140°F, valuable in hot warehouses
- Accelerometer senses fan sway from wind, earthquakes, equipment collisions to shut down fan immediately

Big Ass Fan Powerfoil X2.0 Plus

- Off the shelf variable frequency drive
- Voltage specific vfd's required to match input power
- 277 volt VFDs not available
- VFDs have limited ranges for voltage variation before they shut down
- Rated to 50°C or 122°F before VFD could derate or reduce performance
- No accelerometer

4

INSTALLATION

Safety, simplicity, adaptability are all critical considerations when installing HVLS fans.



MacroAir AirVolution-D 780

- All mounting hardware included, customer selects their own mounting solution
- Rapidly adjusts for compound angles with patented ball mount, reduces install time significantly
- No guy wires required on typical installations with up to 10 foot drop height
- 38 inches minimum clearance recommended from fan blades to ceiling or deck above
- Fan hanging weight: 213 pounds, more manageable, faster to install

Big Ass Fan Powerfoil X2.0 Plus

- Each mounting solution is an additional option and added cost
- Customer or installer must accurately assess the mounting solution before ordering
- No guy wires required on typical applications up to 4 foot extensions
- 96 inches recommended from fan blades to ceiling or deck above
- Fan hanging weight: 419 pounds, may require additional structural support in some applications, structural engineering support often recommended

5

RELIABILITY

An HVLS fan warranty can save money and protect the investment. Fine print can significantly differentiate warranties



MacroAir AirVolution-D 780

- 50,000 running hours, full coverage, non pro-rated equates to 24 years based on average run hours per year
- Factory install not required, customer can self install or use installer of choice
- Three years warranty labor coverage for removal, re-install and freight for replacement unit



Big Ass Fan Powerfoil X2.0 Plus

- 7 years with no factory install, 15 years with factory install
- Factory installation requirement is typically a higher priced installation
- One year warranty labor coverage

A SIDE-BY-SIDE COMPARISON

Featuring the two leading industrial sized HVLS fans as of December 31, 2014.

	MacroAir AirVolution-D 780	Big Ass Fans Powerfoil X 2.0 Plus
Diameter	24'	24'
Weight	213 lbs.	419 lbs.
Motor Type	DC Brushless	AC Induction
Horse Power	2.1	2
Torque	125 ft lb (170Nm)	116 ft lb (157Nm)
RPM	64	48
Industrial Spacing	115 ft.	no info
Maximum Affected Area	22,000 sf	no info
Motor Efficiency @ Max RPM	73.2%	60.9%
Gearbox	none	custom gearbox
Drive	custom microprocessor	off the shelf VFD
Clearance from ceiling deck	38 inches	96 inches
# of Blades	6	10
Blade Material	aluminum	aluminum
Blade Finish	anodized	mill
Blade Design	NASA airfoil	airfoil
Winglets	none	yes
Blade Efficiency @ Max RPM	45.5%	39.7%
Centrifugal Cooling	yes, patented	no
Voltage Ranges	200 - 600 volts	200 - 600 volts
Broad Range Input Recognition	yes	no
Fan Diameter Recognition	yes	no
Accelerometer	yes	no
Temperature Rating	140 F / 60 C	122 F / 50 C
IP 66 outdoor rating	yes	no
Sound in decibels	54	< 55
Fire Control Relay	standard	standard
Warranty	50,000 hrs.*	7 or 15 years **
Warranty Labor	3 years	1 year

* MacroAir warranty is non prorated, factory install not required

** BAF warranty is non prorated, factory install required for 15 year warranty, without factory install warranty is 7 years

And the winner is: MacroAir's AirVolution-D 780 outperforms the competition in value, efficiency and any other measure of industrial fan performance.

MacroAir
engineers of air™

Learn more at macroairfans.com/airvolutionD.