

A large, industrial-style ceiling fan with five long, white blades and a central motor housing. The fan is suspended from a ceiling with a repeating pattern of stylized bird or arrow motifs. The background is a dark green gradient with faint, curved white lines suggesting airflow or motion.

KELLEY

HVLS Fans

Kelley's High Volume Low Speed fans are designed to provide an energy-efficient solution for large spaces. Using the laws of physics and aerodynamics, HVLS fans require much less energy than traditional HVAC systems, and provide year-round employee comfort and temperature control.

A Timeless Concept with Cutting-Edge Technology

The basic scientific principles behind High Volume Low Speed fans are not new. In fact, many cultures have been using large fans to slowly circulate air for hundreds of years. The simple laws of physics show that a gentle breeze is cooling, and any air speed beyond four or five miles per hour usually offers little, if any, additional cooling benefit. Today, engineers have combined the physics of slow-moving air with complex principles of aerodynamics to create an efficient, economical and environmentally-friendly solution for large spaces – the High Volume Low Speed (HVLS) fan.

A Better Fan for a Better Bottom Line

Kelley HVLS fans are designed to be the most functional and durable high volume low speed fans in the industry. The large, slow moving air mass produced by Kelley HVLS fans circulates air more efficiently and provides considerable benefits:

- Provides a more comfortable, uniform temperature for employees. Changes the perceived temperature of an employee by 8–10 degrees.
- Slow movement is quiet and non-disruptive to employees and the work environment.
- Air movement keeps facility floors dry – improving overall safety.
- Condensation is minimized – protecting the facility and product from moisture and mold.
- Helps circulate and minimize the effect of forklift exhaust as well as stagnant or musty air.

In refrigerated applications, Kelley HVLS fans produce a destratification of uneven temperatures at different heights in a building:

- Equalizes temperature to a +/- 1 to 2 degree difference from floor to ceiling.
- Improves environmental conditions at the top of storage racks.
- Reduces the load on air handlers and improves cycle times.



Sustainability Benefits

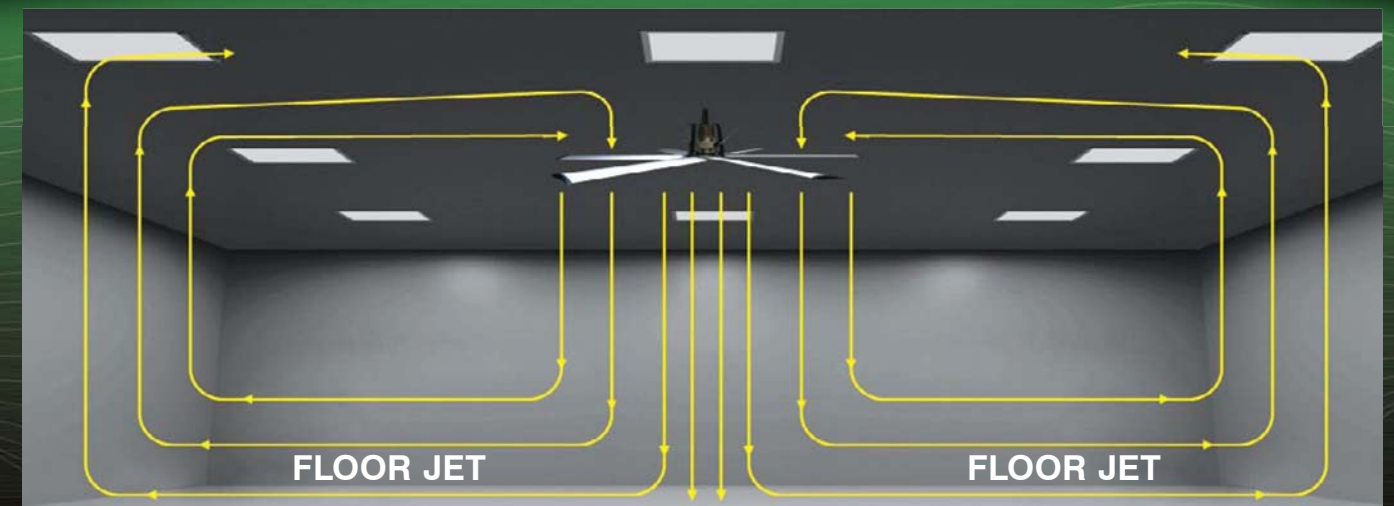
- Kelley HVLS fans re-circulate the heat trapped in the ceiling (destratification) – resulting in energy savings.
- 1 – 2 HP motors require little electricity to operate – a solar power option allows for the use of renewable energy to power the Kelley HVLS fan.
- Kelley HVLS fans can help increase the effectiveness of an air distribution system which can reduce the volume of outside air required to be pulled into the building.
- Fans provide a cooling effect which allows thermostat settings to be changed (raised in the summer / lowered in the winter) – according to the U.S. Department of Energy, for each degree a thermostat setting can be improved, a 3% reduction in fuel consumption can be achieved.
- The 6-blade Kelley HVLS fan has a smaller carbon footprint – less material required – less energy consumed to manufacture.

LEED® Certification Credits

The application of HVLS fans enables facilities to cut heating and cooling costs while increasing the effectiveness of a building's HVAC system. This contributes to LEED certification credits in categories such as Energy and Atmosphere, Indoor Environmental Quality and Innovation in Design.

HOW DOES AN HVLS FAN WORK?

High Volume Low Speed fans move large volumes of air at low speeds over very large areas. The fan blades produce a massive column of air that flows down to the floor and outward in all directions, creating a deep “horizontal floor jet” that ultimately circulates air up vertically and gets drawn back through the top of the fan. The result is more consistent temperature control, improved airflow / circulation and improved energy efficiency. In cooler months, the HVLS fan operates in reverse, circulating hot air trapped at ceiling level and creating a warmer and consistent mix of air throughout the facility (referred to as “destratification”).



HVLS FAN Key Components

Using patented technology that pioneered the HVLS fan industry, Kelley has designed the most effective HVLS fan on the market. At the core of every Kelley fan is a set of key components. Thoroughly tested and perfected for over a decade, these essential features work together to make the best fan in the business.

6-Blade Design

- Less torque than 10-blade fan - extends the life of the fan
- 30% lighter than 10-blade fan - reduces stress on building, lowers freight cost, eases installation
- Lowest Solidity Ratio in the industry – less sprinkler obstruction potential
- Fewer blades - lower carbon footprint - less material and energy required to manufacture



Hybrid Hub (Patent Pending)

- Design optimizes strength, long-term durability and weight
- Allows for fan to run in forward or reverse - superior air circulation based upon application
- H-Beam struts - superior blade connection to hub - allows blades to be inverted if application requires

Drive System/Controls

- Operates at slightly higher RPM which reduces torque on the system
- Advanced VFD (Variable Frequency Drive) - rated 98% efficient
- CE compliant motor cable and EMI/RFI shielded fittings [FCC Part #15 compliant]
- Controllers are E-stop compatible for shutdown by ESFR systems or other auxiliary shutdown devices



Blade-Lock Safety System™

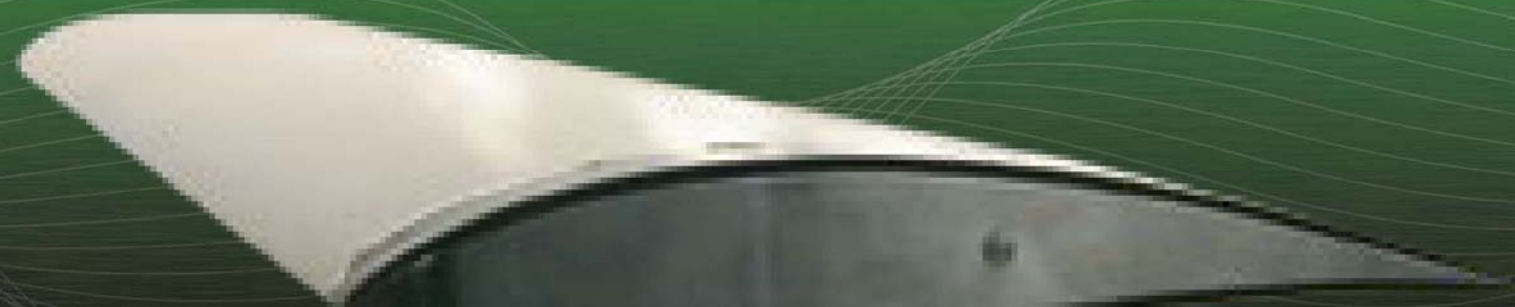
- Redundant safety system that interconnects the blades, hub, drive shaft and frame
- H-Beam struts ensure positive connection of blades to the Hybrid Hub
- Blade straps and retaining collars lock blades to the hub struts and to adjacent blades
- Safety plate attached to the frame prevents separation in the unlikely event of drive shaft failure
- Safety cables and guy wires provide additional security - further connecting the fan to the facility structure



BLADE DESIGN

WhisperFoil XL Blade

- Patented extruded aluminum blade design - 6063-T6 grade aluminum
- Blade creates largest, most dense column of air available
- Rigorously tested to ensure maximum amount of consistent airflow
- Greater air drawn & more downward airflow than blades with winglets or tips



FUSION FAN



Designed specifically to create a comfortable environment using the least amount of energy, the Kelley Fusion fan produces a large column of air to efficiently circulate the space and regulate the temperature of large facilities. The Fusion is suitable for a variety of environments, and its flexibility enables year-round savings.

Ideally Suited For:

- Warehousing & Distribution Centers
- Manufacturing
- Cold Storage/Food Manufacturing
- Convention Centers
- Aviation Facilities
- Sports Arenas
- Facilities In Humid Climates



DESIGN HIGHLIGHTS

Versatility

- Available with 1, 1.5 and 2 HP motors
- Available in 8 – 24 ft (2.4 – 7.3 m) diameters
- 1 fan circulates air in an area of 4,000 – 20,000 sq. ft. (371 – 1858 m²)

Circulation

- Produces 53,693 – 376,804 CFM (25 – 177 m³/sec) based on diameter and motor HP
- Highest Certified CFM rating in the industry
- Produces Air Current Depth of 3-9 feet (1-3 m) based on diameter and motor HP - this horizontal floor jet is large enough to wash over employees and ground obstructions
- Less friction and drag than standard 3 ft (1 m) fan for more efficient air movement
- 24 ft (7.3 m) fan throws out air at 5 times its diameter

Controls

- Supplied with 25 ft (7.82 m) of VFD cable for reduced cost of installation and controlled distance between control panel and fan
- Lockable service disconnect located in line of sight of fan, and complies with OSHA and NEC regulations
- 3 phase AC high voltage wiring is at ceiling height and out of reach of unauthorized personnel
- TC-ER rated motor cable kits meet NEC specifications for “open wiring” and do not require conduit
- Precision-speed controller includes EMI/RFI filter to comply with FCC, CE and EMC regulations

Energy Efficiency

- Requires only 0.361 – 1.65 KW to operate, costing less than \$0.15 per hour to run
- Contributes to LEED certification credits

FUSION-PV FAN

Our Fusion-PV (Photovoltaic) model takes the technology of an HVLS fan one step further by adding the environmental and energy-efficient benefits of solar power. The proprietary design and auxiliary power capability creates a stand-alone operating system capable of working in nearly any climate. Even better, the Fusion-PV does not sacrifice its effectiveness in controlling the temperature of large spaces - in fact, our 18' (5.5 m) diameter Fusion-PV puts out more airflow than some competitors' conventional 24' (7.3 m) fans. Renewable energy and low carbon footprint combine to provide years of reliable performance while supporting the environment and your company's bottom line.



Proven Technology/Stand-Alone Package

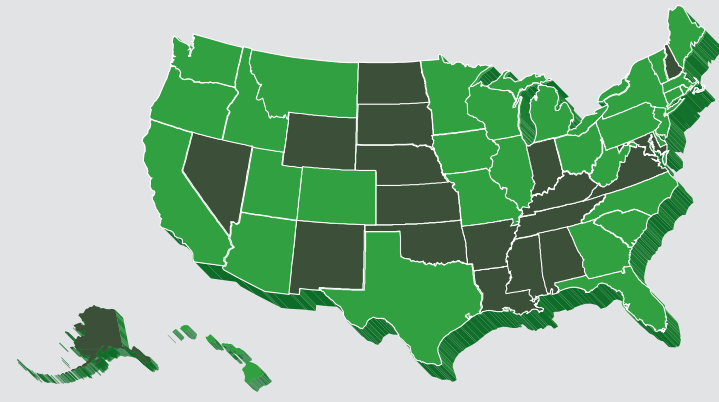
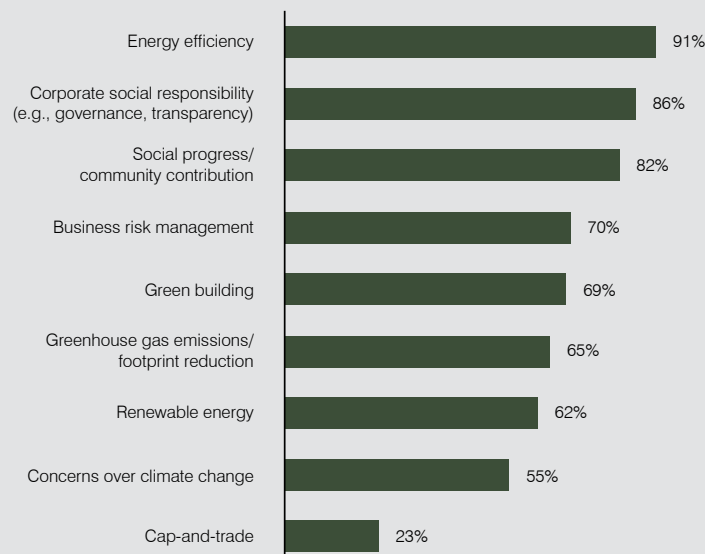
The Fusion-PV utilizes solar power components that have been proven reliable in other applications for over a decade. Three 185-watt mono-crystalline solar panels generate more than enough energy to run the Fusion-PV fan and mount on the roof using either non-penetration or penetration style mounting systems. The solar charge controller, custom wiring loom with service disconnect, and remote control all ensure consistent operation, and the optional auxiliary backup power system provides additional assurance that the Fusion-PV will remain operational in low sunlight situations.

Ideally Suited For:

- Food Storage
- Temperature Controlled Environments
- Energy-conscious facilities
- Ideal for LEED Certification

Companies are strengthening their commitment to sustainability and demonstrating the importance of energy savings, renewable energy and green building as part of their overall sustainability initiatives.

Key Components of Corporate Sustainability Programs
(according to all respondents)



■ Tax Incentive, Grant or Rebate Available
■ Multiple Incentives Available

Source: DSIRE Geographical Overview - February 2010
www.dsireusa.org



DESIGN HIGHLIGHTS

Versatility

- Available with 1/3 HP motor
- Available in 16, 18 & 20 ft (4.9, 5.5 & 6 m) diameters
- Solar panel mounting systems available as non-penetration or penetration

Circulation

- Produces 115,332 – 151,030 CFM (3,265.8 – 4,276.7 m3/min) based on diameter
- 1 fan covers 8,000 sq. ft. (743.2 m2)

Energy Efficiency

- Operation cost nears \$0 when run on full-solar power
- Will continue to operate at up to 60% of its power potential even on cloudy or rainy days.
- Optional auxiliary backup supplements solar power

Sustainable Design

- Includes three 185-watt solar panels
- Contributes to LEED certification credits

Controls

- Supplied with PV cable wiring loom assembly to connect solar panels to service disconnect
- Lockable service disconnect located in line of sight of fan, and complies with OSHA and NEC regulations
- Includes variable speed remote and integrated solar controller



ORBIT FAN

The Orbit is designed for spaces where ceiling height, sprinklers or ground obstructions may prevent the use of traditional HVLS fans. Small and powerful, the Orbit uses the same physics principles and technology of HVLS fans to produce a non-turbulent airflow of up to 26,432 cubic feet of air per minute, and costs less than 25 cents per day to operate. Its versatile structure allows strategic placement for optimal airflow, providing an energy-efficient replacement or supplement to traditional HVAC systems.

Ideally Suited For:

- Space or Ceiling Height Limitations
- Overhead Sprinklers or Other Immobile Obstructions
- Unconventional Construction



OPTIONS

Kelley's line of HVLS fans comes with various options to help tailor the fan to your specific application needs.

Motor Options

Stainless Steel Motor: Non-corrosive stainless steel motor won't rust under extreme environments. Recommended for use with Heresite Coated Fans.

Explosion Proof Motor: Suitable for environments that contain explosive or combustible materials.



Stainless Steel

Mounting Options

Extra Wide Beam Plate: Beams that are wider than 10.75" (273 mm) require use of Extra Wide Beam Plates for safe and secure mounting.

Super Short Mount: For applications with limited space or bridge cranes. Reduces vertical height from 36" (914.4 mm) to 32" (812.8 mm).

Extensions: Available in 1-ft (.3 m) increments up to 10' (3 m). Custom lengths are available to meet various insurance requirements.



Explosion Proof

Finish Options

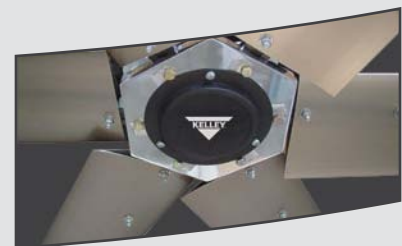
Heresite Coating: Recommended for use with Stainless Steel Motor, the powder-coated fan (except for motor and bolts) is sealed with a Heresite Coating, increasing the life of fan components. Designed for extremely corrosive environments.

Galvanized: Hot dip galvanized frame and mounting hardware provides rugged fan structure.

Color Options

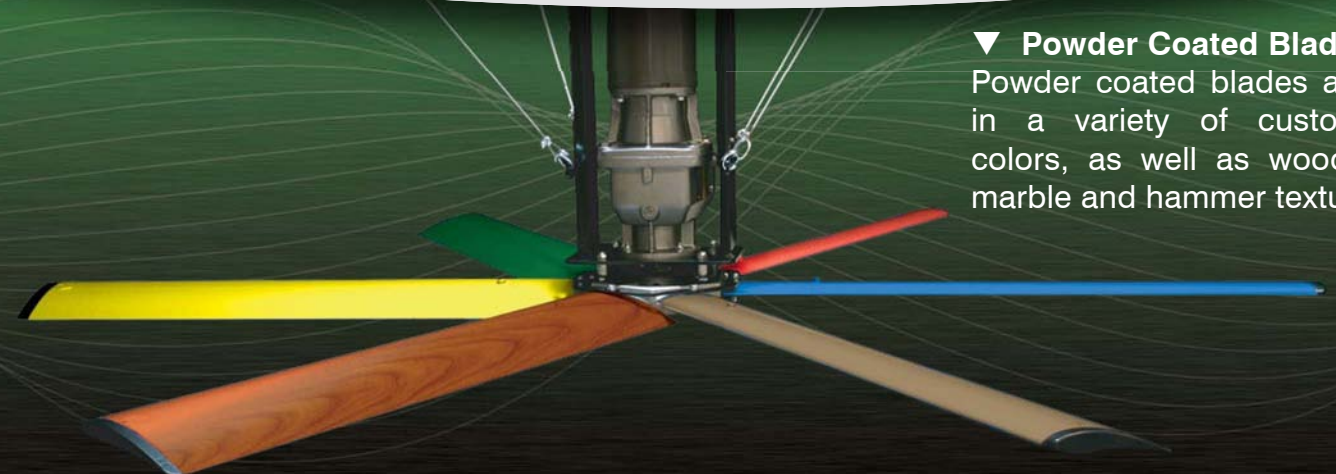
► Anodized Blades:

Standard silver anodized blades available in optional Champagne, Bronze or Black colors.



▼ Powder Coated Blades:

Powder coated blades available in a variety of customizable colors, as well as wood grain, marble and hammer textures.



DESIGN HIGHLIGHTS

Versatility

- Can be mounted to ceiling or walls
- Available with 3/8 HP motor and variable frequency drive

Energy Efficiency

- Lowest KW draw available (.265 kW)
- Operates for less than \$0.25 per day

Circulation

- 6 ft (1.8 m) diameter and WickerBill blade design provide maximum air circulation
- Produces 26,432 CFM (478.5 m³/min)
- Highest Certified CFM rating in the industry
- Air flow spread is 20 ft (6 m), and forward throw is 100 ft (30.5 m)

Controls

- Supplied with 25 ft (7.82 m) of VFD cable for reduced cost of installation and controlled distance between control panel and fan.
- Lockable service disconnect located in line of sight of fan, and complies with OSHA and NEC regulations
- TC-ER rated motor cable kits meet NEC specifications for "open wiring" and do not require conduit
- Precision-speed controller includes EMI/RFI filter to comply with FCC, CE and EMC regulations