

HVLS FAN101 GUIDE

Large spaces require a considerable amount of effort to ensure consistent temperatures throughout the area. In addition to the square footage of the space, one must consider outside temperatures, obstructions, products, and more. When adding in these external factors that are usually within the space, it can become overwhelming to know where to start.

While there are a number of conventional options you can turn to—ranging from HVAC units and high-speed floor fans to swamp coolers—these traditional options often fail to provide comprehensive solutions. High-volume low-speed (HVLS) ceiling fans have provided many organizations with a cost-effective and energy-efficient solution so the awareness and use of HVLS fans has increased significantly over the last 20 years.

With more HVLS fan options available today, ensuring your fan is compatible with your space is essential to maximize its performance. Every space is different and has different requirements such as voltage, allowable weight on the structure, obstructions, usage, and more.

Whether you work in a dairy farm or a manufacturing facility, a brewery, or a distribution center, HVLS fans are being recognized as effective tools in managing air quality. This guide is meant to help walk you and your organization through considerations before picking a specific HVLS fan.

INDOOR AIR QUALITY & CLIMATE CONTROL

What is indoor air quality?

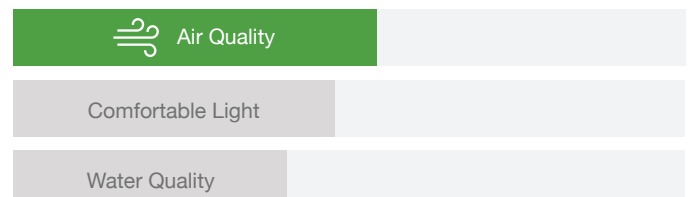
[EPA](#) refers to indoor air quality as the quality of air within and around buildings and structures, particularly as it relates to the health and comfort of the building's occupants. Poor air quality can lead to health effects that are not always experienced directly after exposure causing some side effects to show up years later. The U.S. Department of Labor's Occupational Health Administration (OSHA) runs a [Heat Illness Prevention Campaign](#) every year, educating organizations about working in extreme heat or humid conditions.

HVLS fans are made to consistently move large volumes of air at a slow speed in turn utilizing minimal energy. This allows HVLS fans to regulate temperature while preventing stagnant air and creating a comfortable environment.

58%

Workplace Wellness Perks That Matter

A survey of 1,600 workers reveals air quality as the most desired wellness perk in the workplace.



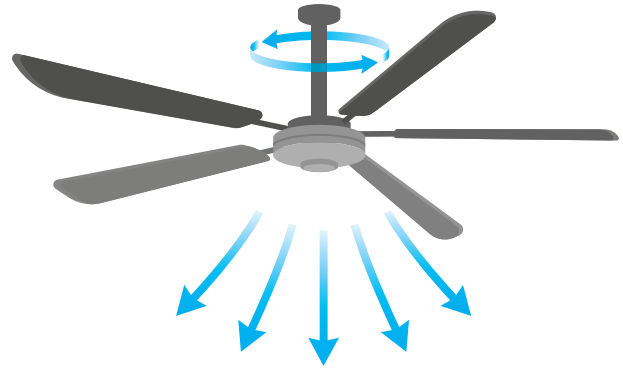
Source: Future Workplace, As Reported by Harvard Business Review.



Summer Months

Warm temperatures can become extremely uncomfortable for workers, in turn, decreasing worker productivity and untimely output. HVLS fans can move large amounts of air to create a breeze throughout the workspace, only costing about a dollar a day to run an efficient HVLS fan.

As heat rises, temperatures increase 0.5 degrees each foot. If you look at a building that is 20 feet from floor to rafters, the air will increase 10 degrees by the time it reaches the top. But the primary distinguishers come down to enhanced coverage area and efficiency, effectively creating a 10-12 degree perceived temperature difference in the warmer summer months.

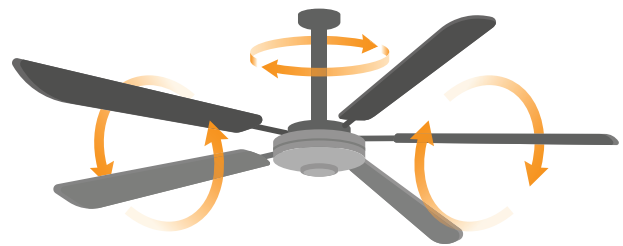


Blade Rotation Counter-Clockwise

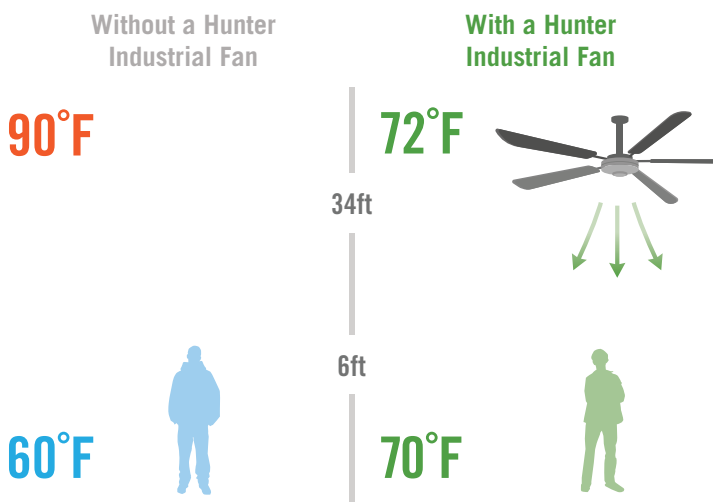


Winter Months

During winter, HVLS fans can run in reverse, allowing it to de-stratify and re-distribute air. When partnered with an HVAC system, this is extremely effective. When paired together, HVLS fans can yield a minimum of 30% savings on heating costs by increasing warm air at ground level and reducing heat loss through the roof.



Blade Rotation Clockwise



Air Mixing & Destratification

Using HVLS fans during winter months can:

- Save up to 30% on energy expenses
- Eliminate cold spots
- Provide a more warm, comfortable workspace
- Even out temperatures in area
- Prevent the flu or sickness related to cold environment



Moisture Control

On top of employee health, poor air quality can also pose product quality control risks such as spoilage. Moisture control is not only crucial for air quality, but it is also essential when thinking about condensation. If condensation is forming, it can present a significant safety hazard. With proper air movement, condensation can dry and, in turn, reduce fall risks, as well as pollutants and bacteria associated with moisture.

Under [OSHA law](#), employers are responsible for eliminating these known safety hazards. Making investments in products and solutions that help ensure environment regulations such as HVLS fans are not only a benefit but also a mandate.

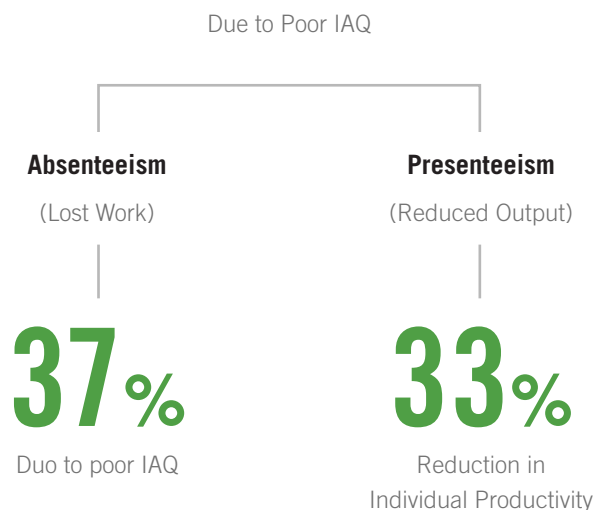
SPACE USAGE

While air quality and climate control are essential factors to consider, understanding the environment within your building's space is also crucial to your evaluation.

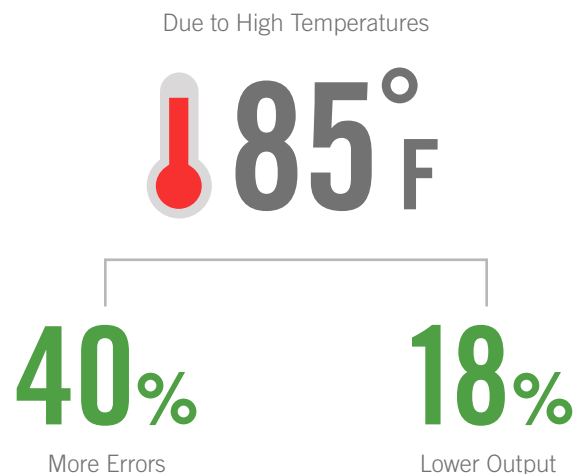
Whether you are considering a conventional method such as high-speed floor fans or more advanced like an HVLS fan, it is vital to consider the noise factor with these options. If you work within an environment that requires workers to be able to communicate, noisy floor fans with loud operations systems would cause a threat to safety and productivity.

In tandem, considering the number of people that will be in the area will dictate the airflow and ventilation needed. These plans will keep employees safe and comfortable to allow them to get work done efficiently. [According to the EPA](#), better workplace air quality can lead to high productivity and fewer employee sick days. HVLS fans are meant to work within your space and be a silent partner to ensure employee comfort and safety by working with your HVAC system, all while saving money.

PRODUCTIVITY LOSS



Source: [IAQ and Employee Productivity](#)



Source: [How to Improve Employee Safety and Productivity](#)

RESTRICTIONS

When considering installing an HVLS fan, it is important to understand any restrictions and requirements of the building and space. These factors will help you in deciding what HVLS fan is best for your environment.



Size of Space

The larger the space you need to cool, the larger fan you will need. HVLS fans come in various sizes, and each size is designed to provide movement of air for the specific range of spaces.



Obstructions

Obstructions have an impact on fan size and the number of fans that your facility needs. HVLS fans can be strategically placed between or around objects to ensure optimal airflow around them. Since HVLS fans hang from the ceiling, and safety requirements recommend, allow at least two feet between the fan blade and any other object.



Electrical Set Up

Knowing your electrical options, power needs, electrical placement and voltage is important to help figure out which fan motor will work with the electrical requirements of your facility. Most HVLS fan orders are custom made per facility electrical specifications. Viewing the breaker box is one way to determine your facility's required voltage.

HVLS Fan Diameter	Coverage Radius	Space between Fans	Minimum Space from Wall
8 ft.	30 ft.	60 ft.	12 ft.
12 ft.	35 ft.	70 ft.	18 ft.
16 ft.	45 ft.	90 ft.	24 ft.
20 ft.	52.5 ft.	105 ft.	30 ft.
24 ft.	57.5 ft.	115 ft.	36 ft.

BUDGET

Thinking about the upfront cost of a fan can be an easy mistake when looking into the cost of an HVLS fan. Since HVLS fans are meant to save costs over their lifetime it is essential to consider the following factors:



Installation

The heavier and more complicated the fan, the more expensive the installation will be.

Maintenance & Repair

Although HVLS fans are meant to lower costs within the given space, when they are installed, that doesn't mean that HVLS fans are entirely free from these factors. Choosing the wrong HVLS fan can increase the time and costs of maintenance and repairs; that is why it is important to consider warranty and energy usage.

Warranty

An HVLS warranty can save you time and money while providing the peace of mind that your fan will operate efficiently for years to come.

Energy Usage

HVLS fans are meant to help reduce energy usage if you pick the right HVLS fan. You can reduce energy costs with an HVLS fan by:

Identifying Comfort Levels – [OSHA](#) recommends an optimal climate range of 68-76 and humidity content in the range of 20-60%. In research conducted by the [Lawrence Berkeley National Laboratory](#), workplace performance increased when indoor temperatures were between 69.8 degrees and 71.6 degrees, with the highest level of productivity at 71.6 degrees. When indoor air temperature dropped or rose above this range, the human body typically prioritized keeping warm versus fueling the brain.

Lights & Machines – Both of these factors produce heat, and a strategic decision to reduce energy costs is to introduce more energy-efficient lighting and machinery. An alternative or additional option is to strategically place HVLS fans to destratify the layers, and redistribute the heat in places it is needed.

71.6°

**The ideal temperature for
workplace productivity**

PRODUCT CONSIDERATIONS

Now that you know you need an HVLS fan, how do you decide what HVLS fan is best for your organization? Below are some considerations when comparing HVLS fans:



Motors

The main differences between gearbox-driven and direct-drive motor units are sound, speed and price.

Gear Box Motors – have a limited life and require servicing, oil changes, seal replacements and more. They are also known to be increasingly louder and less reliable over time.

Direct Drive Motors – eliminate the gearbox and all its associated problems such as noise, weight, and moving parts. In fact, the overall direct interaction between an employee and a fan is virtually eliminated with some HVLS models. This feature is compounded by the maintenance-free aspect of those HVLS fans with direct drive motors, which also eliminate the risk of oil leaks and preventative maintenance posed by traditional gearbox motors.

DIRECT DRIVE MOTOR



- Maintenance free
- Silent operation
- Lightweight
- Designed to power large fans

GEARBOX MOTOR



- Limited life due to oil requirements
- Seals prone to failures
- Gear whine and wear
- Heavy
- Requires oversized gears to power large fans



Speed

Speed is not always an indication of performance. HVLS fans revolutions per minute (RPM) are lower than your typical home fan due to its large diameter and long blades allowing them to move more air. Looking into the fans RPM can improve the movement of air while using less power.



Controller

Ensuring that your HVLS controller allows for independent speed adjustments, scheduled start/stop times and the ability to start/stop based on temperature settings that can be preset are features to consider.



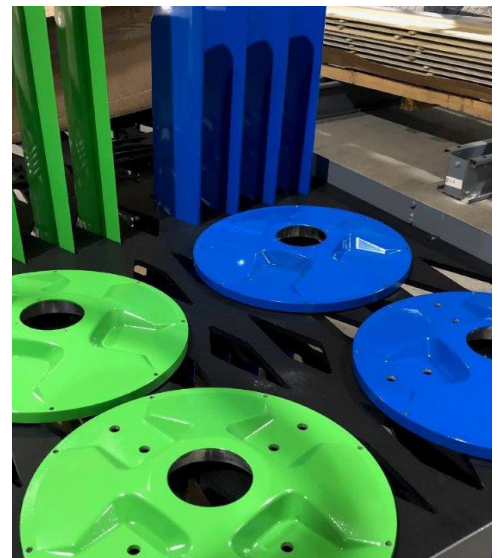
Installation

Gearless motors in HVLS fans have streamlined the installation process and cut the time in half. With no wires and a simplified mounting system the process is easier and faster.



Customizations

Color customizations are an important part in selecting a fan that fits your organization's branding and space.



HUNTER INDUSTRIAL FANS VS. THE COMPETITION

HUNTER TITAN

INSTALL TIME

2hr 12m

PEOPLE REQUIRED



MOTOR WEIGHT

83lbs.



51 MIN LESS
DOWNTIME

LEADING COMPETITOR

INSTALL TIME

3hr 4m

PEOPLE REQUIRED



MOTOR WEIGHT

219lbs.



DOUBLE PERSONEL
DOUBLE LABOR COST

50% More Efficient

HUNTER	1 hp	
COMPETITION		2 hp

32% Less Weight

HUNTER	200 lbs	
COMPETITION		294 lbs

22% Easier Installation (Install Costs)

HUNTER	\$1,800	
COMPETITION		\$2,300

32% Fewer Parts (Serviceable Components)

HUNTER	3	
COMPETITION		6

HUNTER INDUSTRIAL HVLS FANS

Now that you know the size of your space you can determine the type of fan you should buy. HVLS fans come in sizes ranging from 7 to 24 feet in diameter.



INPUT POWER OPTIONS

AC 1PH 200-240v 60Hz
AC 3PH 200-240v 60Hz
AC 3PH 380-480v 60Hz



INPUT POWER OPTIONS

AC 1PH 200-240v 60Hz
AC 3PH 200-240v 60Hz
AC 3PH 380-480v 60Hz

TITAN*

TITAN 24

24 ft Diameter
204 lb / 93 kg
71 RPM Maximum Speed
150 ft Diameter | 22,500 sq ft
Maximum Affected Area

TITAN 20

20 ft Diameter
190 lb / 86 kg
74 RPM Maximum Speed
125 ft Diameter | 15,625 sq ft
Maximum Affected Area

TITAN 18

18 ft Diameter
183 lb / 83 kg
95 RPM Maximum Speed
113 ft Diameter | 12,769 sq ft
Maximum Affected Area

TITAN 16

16 ft Diameter
175 lb / 79 kg
102 RPM Maximum Speed
100 ft Diameter | 10,000 sq ft
Maximum Affected Area

TITAN 14

14 ft Diameter
168 lb / 76 kg
105 RPM Maximum Speed
88 ft Diameter | 7,744 sq ft
Maximum Affected Area

ECO*

ECO 24

24 ft Diameter
159 lb / 72 kg
61 RPM Maximum Speed
120 ft Diameter | 14,400 sq ft
Maximum Affected Area

ECO 20

20 ft Diameter
145 lb / 66 kg
77 RPM Maximum Speed
100 ft Diameter | 10,000 sq ft
Maximum Affected Area

ECO 18

18 ft Diameter
138 lb / 62 kg
78 RPM Maximum Speed
90 ft Diameter | 8,100 sq ft
Maximum Affected Area

ECO 16

16 ft Diameter
135 lb / 61 kg
95 RPM Maximum Speed
80 ft Diameter | 6,400 sq ft
Maximum Affected Area

ECO 14

14 ft Diameter
128 lb / 58 kg
107 RPM Maximum Speed
70 ft Diameter | 4,900 sq ft
Maximum Affected Area

ECO 12

12 ft Diameter
101 lb / 46 kg
107 RPM Maximum Speed
60 ft Diameter | 3,600 sq ft
Maximum Affected Area

ECO 10

10 ft Diameter
94 lb / 43 kg
139 RPM Maximum Speed
50 ft Diameter | 2,500 sq ft
Maximum Affected Area

ECO 8

8 ft Diameter
87 lb / 40 kg
156 RPM Maximum Speed
40 ft Diameter | 1,600 sq ft
Maximum Affected Area



XP*

XP 14

14 ft Diameter
121 lb / 55 kg
108 RPM Maximum Speed
70 ft Diameter | 4,900 sq ft
Maximum Affected Area

XP 12

12 ft Diameter
117 lb / 53.2 kg
108 RPM Maximum Speed
60 ft Diameter | 3,600 sq ft
Maximum Affected Area

XP 10

10 ft Diameter
1080 lb / 49.1 kg
139 RPM Maximum Speed
50 ft Diameter | 2,500 sq ft
Maximum Affected Area

INPUT POWER OPTIONS

AC 1PH 100-120v 50/60Hz

XP 8

8 ft Diameter
104 lb / 47.3 kg
156 RPM Maximum Speed
40 ft Diameter | 1,600 sq ft
Maximum Affected Area

XP 7

7 ft Diameter
100 lb / 45.5 kg
200 RPM Maximum Speed
35 ft Diameter | 1,225 sq ft
Maximum Affected Area

*All Hunter Industrial Fans
are DOE 2020 Minimum
energy compliant



KEEPING YOUR BUSINESS IN THE COOL

Considering all these factors, HVLS fans are emerging as a comprehensive solution to improve energy savings, cost savings, and workforce health and safety conditions. Regardless of your industry, the company's success is ultimately built on the safety and health of its workforce. Safety is proven to be linked to the air employees' breath.

The importance of a building's air circulation and air management cannot be underestimated. Investments in the right HVLS solution for your facility can make radical transformations in a company's wellness standards while boosting its bottom line.

Improving your business outcome is important to us. Hunter Industrial HVLS fans focus on efficiency and ease and are engineered to provide optimal comfort for working environments.

CONTACT US