

## HIGH-VOLUME/LOW-SPEED FANS

When applying Revolution Fans for your facility, it is important to match your requirements with the fans' performance characteristics to help guide your selection.

### Air Movement

Revolution Fans move the most air over the largest area at the lowest cost.

In open areas, they will move air up to 85 feet from the fan's center in all directions.

The Revolution control box incorporates a variable frequency drive which allows them to be run at the desired speed.

### Cooling People

In warmer months, worker productivity and accuracy can be improved by lowering the effective temperature. Air speeds from 2-3 miles per hour have a cooling effect of 7-11 degrees.

#### Example:

The effective temperature corresponding to 84 degrees F and air speed of 3.3 mph is 73 degrees F.\*

Revolution Fans used for cooling are typically operated at or close to full power.

*\*Health & Safety Executive, United Kingdom*

### Destratification

In cooler months, Revolution Fans are typically operated at lower speeds to move the warm air trapped at the ceiling downward, mixing and equalizing building temperature from floor to ceiling. The minimum air speed needed for destratification is one half mile per hour.

Revolution Fans do not need to be run in reverse to achieve equalized temperatures.

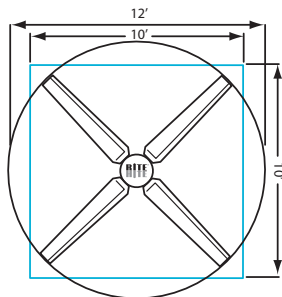
### Other Applications

Air movement from the Revolution Fan can help to disperse "pockets" of humid air or higher heat caused by some manufacturing processes.

Revolution Fans can increase air circulation within a facility, helping keep floors and products drier where needed.

### Other Considerations:

- ▶ Size does matter when placing Revolution Fans. Larger diameter fans will move air further down rack aisles and over some obstructions. Smaller diameter fans can be most effective in specific work areas or where installation space is limited.
- ▶ Place fans to minimize air flow obstructions and provide the greatest cooling effect for the most people.
- ▶ When possible, keep blade tips at least two fan blade lengths from walls or solid obstructions.
- ▶ Revolution Fans have minimum overhead clearance requirements based on fan diameter.
- ▶ Center fans in light or sprinkler grids when possible. (Example: a 12' diameter fan fits into a 10' grid.)



### Revolution Fan Models

Revolution Fans are available in four and two blade models with sizes ranging in diameter from 8' to 24'. Each fan creates varying air speeds for the zones illustrated on the following page.

## Air Movement Guidelines

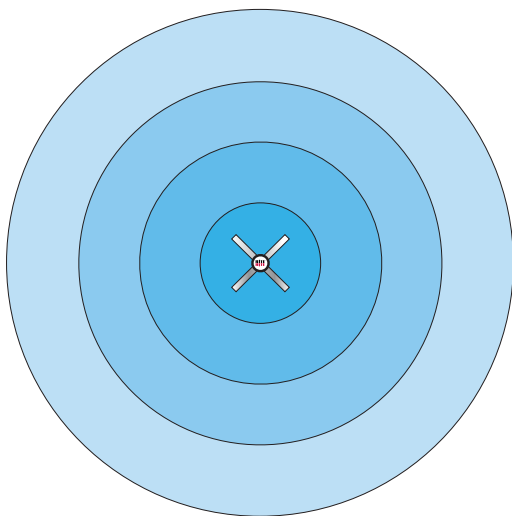
- ▶ When used for cooling people, choose a Revolution Fan that moves air a minimum of 2 miles per hour in the targeted zones.
- ▶ The minimum air speed needed for destratification is one half mile per hour.

### 4-blade Revolution Fans

	24'		20'		16'		12'		8'	
	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power
Zone 1	6.8 miles per hour	2.8	5.7	2.8	5.9	3.1	4.8	3.1	4.5	2.3
Zone 2	4.4	1.9	3.4	1.7	4.0	1.7	2.8	1.1	2.3	.8
Zone 3	2.9	1.4	2.7	1.4	2.7	1.1	2.3	.8	2.0	.6
Zone 4	2.3	.8	2.1	.8	2.1	.6	2.0	NA	1.6	NA

### 2-blade Revolution Fans

	24'		20'		16'		12'		8'	
	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power	Full Power	Half Power
Zone 1	4.7 miles per hour	1.6	3.6	1.5	3.4	1.4	3.0	1.4	2.3	1.1
Zone 2	2.5	1.1	2.4	1.1	1.6	1.1	1.5	1.1	1.1	.8
Zone 3	2.3	1.1	2.3	1.1	1.5	.9	1.5	.6	.8	.6
Zone 4	1.1	.6	1.1	.6	1.1	.6	.8	NA	.6	NA



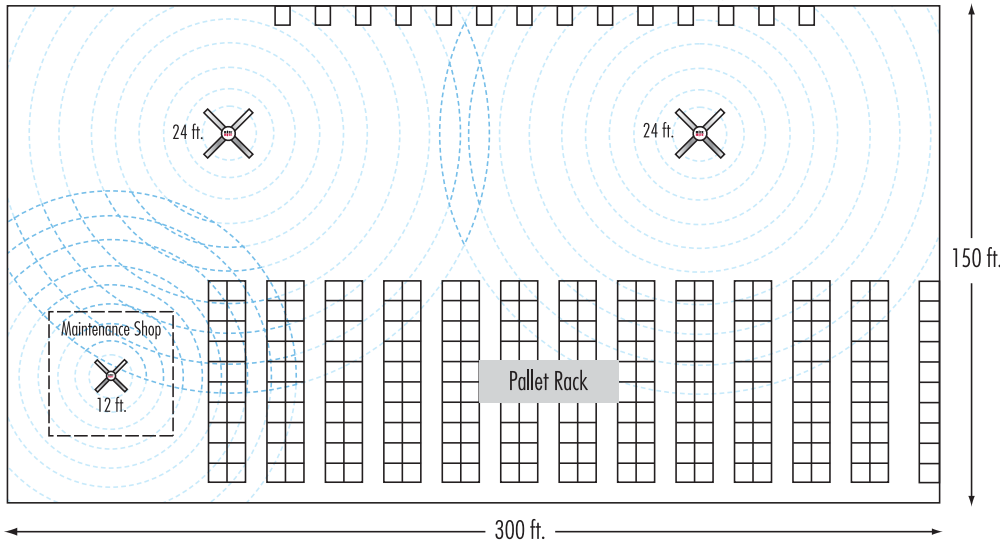
- Zone 1 – 20' from fan center (1,250 sq. ft.)
- Zone 2 – 40' from fan center (5,000 sq. ft.)
- Zone 3 – 60' from fan center (11,000 sq. ft.)
- Zone 4 – 85' from fan center (22,000 sq. ft.)

Results based on the following:

- Air speeds are the average velocity for each fan and zone.
- Air speeds were measured 48" from the floor.
- Fans were mounted 30' above the floor.

## Warehouse

(Drawing is conceptual only and not to scale.)



### So which fan is right for my facility?

This information is meant to help you select the Revolution Fan that is best for your needs. Your local Rite-Hite Representative can work with you to evaluate your specific application.

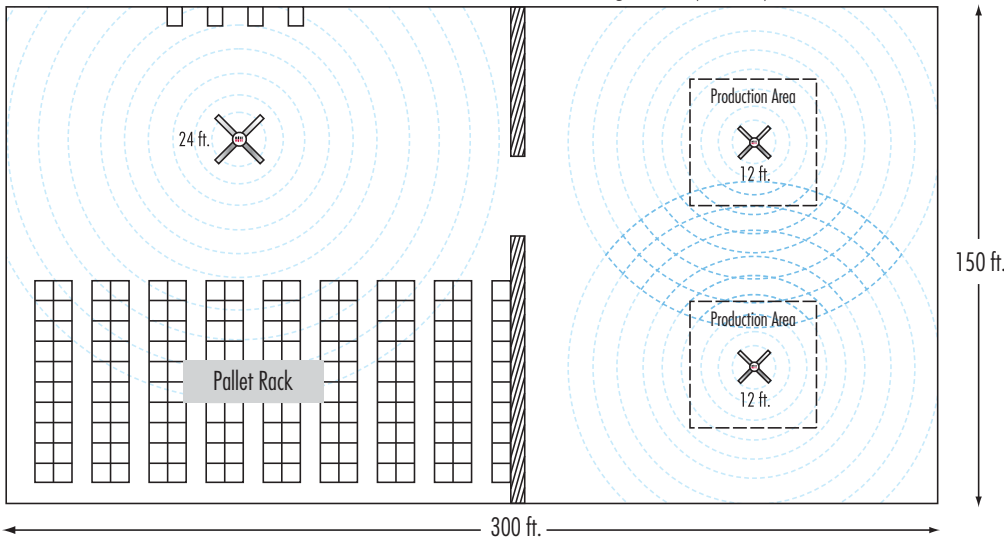
### Join the Revolution!

The best way to experience how a Revolution Fan can impact your facility is by installing one.

Rite-Hite's Exclusive Trial Program and One-Year Customer Satisfaction Money-Back Guarantee make it easy!

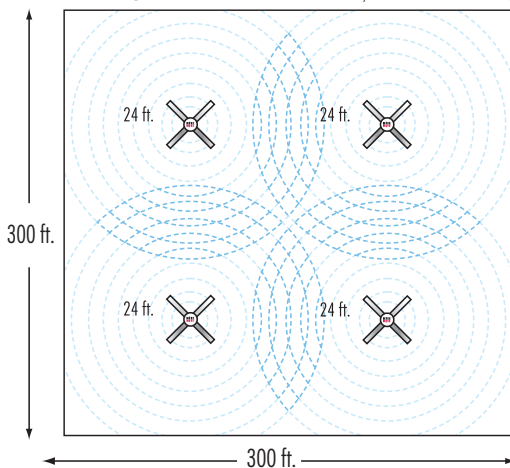
## Manufacturing with shipping and receiving

(Drawing is conceptual only and not to scale.)



## Wide-open area\*

(Drawing is conceptual only and not to scale.)



		Open Area Fan Requirements*				
		Width				
Length		100'	200'	300'	400'	500'
	100'	1	1 or 2	2	2 or 3	3
	200'	1 or 2	2	2 or 3	3 or 4	4 or 5
	300'	2	2 or 3	4 or 5		
	400'	2 or 3	3 or 4			
500'	3	4 or 5				

\*Grid and chart based on 30' ceiling heights and 24' diameter fans. Fans in open areas may cover up to 85 feet from the fan's center in all directions.

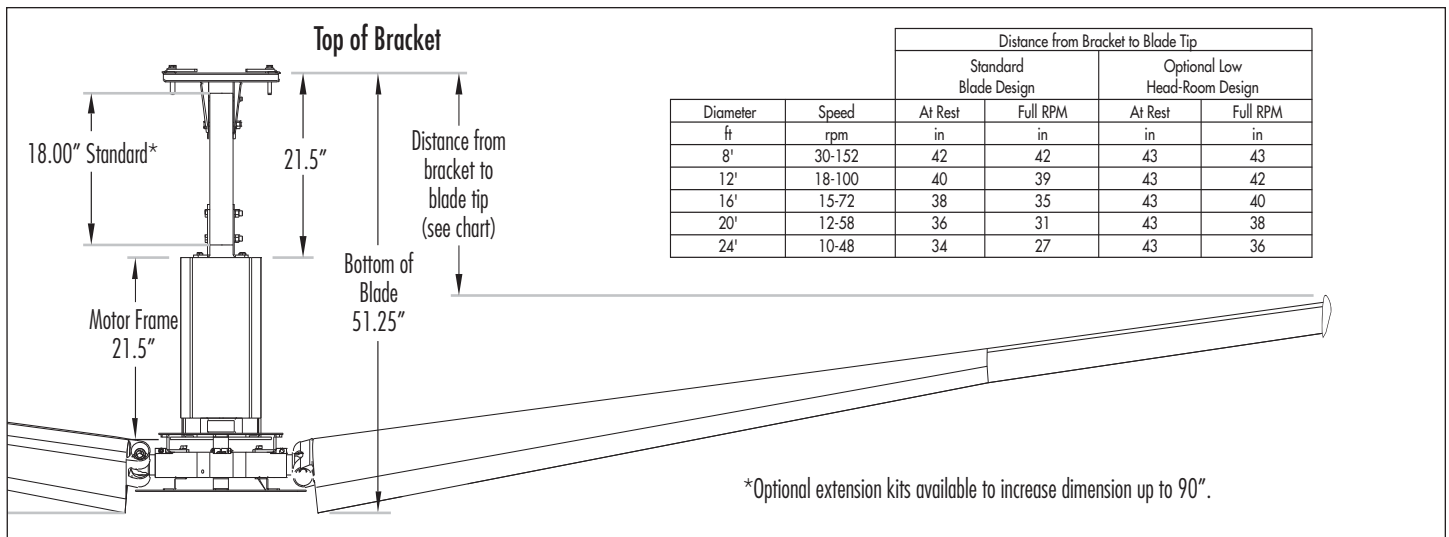
## The following standards are commonly used for the purpose of comparing and applying HV/LS fans:

ANSI/AMCA STANDARD 230-07  
 (230-07 supersedes 230-99) Laboratory Methods of Testing Air Circulating Fans for Rating and Certification. This standard has the following scope: "This standard may be used as the basis for testing air circulator fan heads, ceiling fans, box fans, table fans, and portable personnel coolers, or other air circulating devices when air is used as the test gas."

Revolution Fans tested to ANSI/AMCA standard 230-07 <sup>^</sup>		
	4-blade fans	2-blade fans
Fan Diameter	Full Power CFM~	Full Power CFM~
24'	428,000	255,000
20'	400,000	240,000
16'	365,000	225,000
12'	357,000	210,000
8'	295,000	190,000

<sup>^</sup>With a mounting height of 17' 10" from the ground.  
 ~ CFM is determined by a math formula that incorporates the thrust and size of the fan.

## Mounting dimensions and guidelines



- The Revolution Fan blades move upward to their operating position by the combination of centrifugal force and air pressure.
- Allow 12" additional clearance from obstructions whenever possible.
- Revolution Fans require open area over the fan blades for proper air intake. Failure to account for this will result in limited air movement.
- Custom brackets available; consult factory for details.



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