

WINTER ENERGY SAVINGS BY HEAT DESTRATIFICATION

Everyone knows that hot air rises. Buildings with ceilings higher than 8 feet have a significant amount of stored heat at the ceiling that will transfer through the roof and be lost and wasted. The higher the ceiling, the greater amount of energy loss potential from the stored heat at the top of the building. This heat/energy loss can be significantly reduced resulting in lower energy bills by the use of Canarm Ceiling Fans.

There can be as much as 25 degrees Fahrenheit difference between floor and ceiling. Heaters will be working when the floor level temperature is 65°F and there is already 80 degree air at the ceiling ready to be recycled. (See **Figure 1**). The use of Canarm Ceiling Fans in this situation will move this hot air down from the ceiling to create a more even air temperature throughout the building resulting in a more comfortable working environment and potentially reducing your energy bills by as much as 30%. (See **Figure 2**)

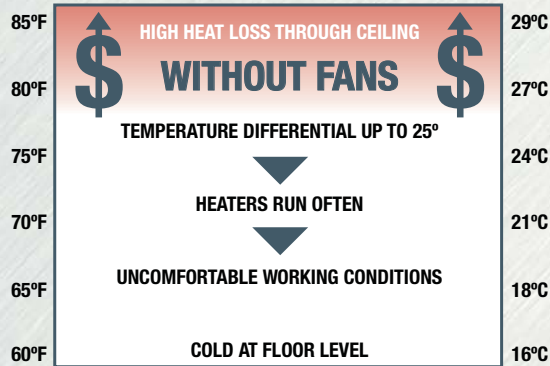


Figure 1

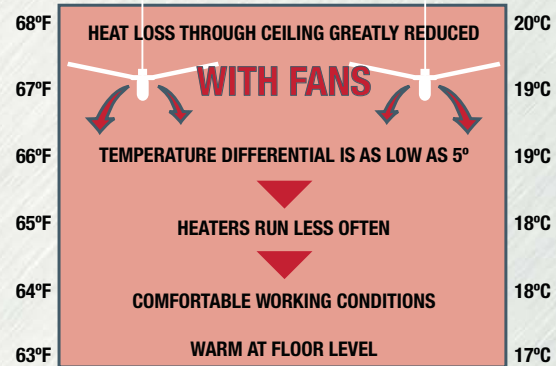


Figure 2

SHIPPING DOOR AIR CURTAIN

Cold air entering a building and heat loss from shipping doors is a significant waste of energy in cold weather. A Canarm ceiling fan can be positioned in front of the door pushing air down and out. When the shipping door is opened, the fan helps hold back cold air and the warm air is kept in.

HOW TO CHOOSE A FAN

Ceiling fan choice and layout is based on ceiling height and the floor area of the building. As the height of the ceiling increases, larger and more powerful fans are required to achieve destratification.

The floor air coverage of a fan will be greater the higher the ceiling of the building. This is because of the natural cone shape of the air pattern produced by the fan. *HPWP models have increased floor area coverage because of more powerful motors.

Canarm provides two types of fans:

- The traditional ceiling fan, low cost, good performance, great for dry locations.
- The HPWP high performance, water resistant models - great for more demanding applications with high moisture or greater air velocity requirements. Use the chart to help choose the correct fan size/type and quantity to suit your requirements.

Example:

What size and how many fans would be required for a building that is 100 feet wide x 200 feet long and has as ceiling height of 16 feet? A typical layout for a building is illustrated.

- By using the chart, we see that a ceiling height of 16 feet requires a CP56 (56" fan).
- Floor Area of the building = 100 feet wide x 200 feet long = 20,000 square feet.
- From the chart, we know that the Fan Floor Area Coverage of the CP56 model is 1100 square feet at a 16 foot ceiling height.
- Therefore, the number of fans required = Floor Area of building / Fan Floor Area Coverage 20,000 square feet / 1100 square feet = 18 fans.

Note: An additional fan should be used about 10 feet in front of each shipping door to act as an air curtain and reduce heating bills in the winter.

CEILING HEIGHT (FT.)	SUGGESTED FAN	FAN FLOOR AREA COVERAGE (SQ. FT.)	
		TRADITIONAL	HPWP
10-11	CP36	600	N/A
12-13	CP48	800	950
14-15		950	1150
16-17	CP56	1100	1400
18-19		1300	1600
20-21		1450	1800
22-25	CP60	N/A	2250
26-30		N/A	2700

