ICE ENERGY™

KEY BENEFITS

Saves Money, Increases Capacity, Improves Comfort and Reliability!

Slashes on-peak electrical bill demand fees associated with cooling
- *eliminates the summer on-peak demand charge by up to 95%*

Slashes on-peak electrical energy consumption associated with cooling
- *uses lower priced off-peak electricity*
- *lowest air conditioning system lifecycle cost*
- *uses less energy than a traditional air conditioning system*

Improves the energy efficiency ratio of your air conditioning system
- *capacity doesn't decrease on 95+ degree days*
- *runs the condensing unit during the coldest nighttime hours*
- *highly insulated, R18+ double-wall tank preserves the ice build*

Improves the comfort of your environment by reducing humidity
- *cooler evaporator temperature delivers superior dehumidification*
- *improved dehumidification: no start/stop "cycle-loss" effect*

Superior Performance
- *eliminate "freeze-up", a major source of summer complaints*
- *high operating efficiency*
- *liquid overfeed improves evaporator coil performance & efficiency*
- *small 200 watt magnetically coupled refrigerant pump*

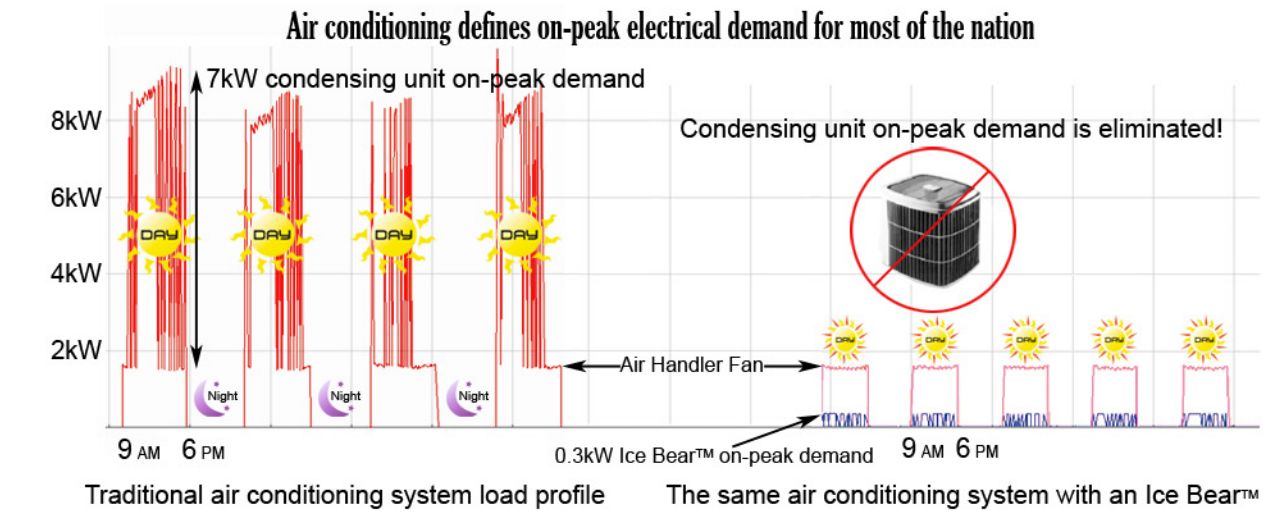
Assists LEED Building Certification
- *HVAC system energy optimization is worth up to 5 points*
- *the majority of LEED certified buildings use energy storage*

Complements Renewable Energy:
- *energy storage is a perfect complement to a PV system*
- *removes the largest daytime load from the system*
- *building thermal loads lag the solar generation cycle*
- *Ice Bear energy storage is 1/10th the cost of battery storage*

The Ice Bear™ is the world's first energy storage product for use with split, mini-split, and packaged air conditioning systems.

KEY FEATURES

- Up to 50 Ton-hours of capacity (42 Latent, 8 Sensible)
- ~ 50kW-hour energy consumption shifted to off-peak
- Up to 10kW on-peak demand reduction
- Uses < 300 watts on-peak to deliver cooling
- High reliability: 2 moving parts, 15 year design life
- Works with standard refrigerant-based air conditioning equipment
- Installed by your local HVAC contractor
- Small form factor: approximately 6'9"L x 5'9"W x 5'6" H
- Maintenance-free, UV resistant, rotomolded tank



PRODUCT DESCRIPTION

The Ice Bear is a low cost, off-the-shelf Distributed Energy Storage product for air conditioners that slashes up to 10kW of on-peak electrical demand. The Ice Bear shifts 50 kW-hours of energy consumption to off-peak, the equivalent to running a 10 SEER, 5-Ton air conditioner at full load for 8 hours. The Ice Bear is a water filled thermal battery that works with any condensing unit and evaporator coil. The installation and commissioning of an Ice Bear is simple, adding about one day of labor to a new air conditioning system project. The Ice Bear uses an equal or lesser amount of energy in a 24 hour period and consumes lower cost off-peak kilowatts. The Ice Bear boosts the efficiency and cooling capacity of your air conditioning system and eliminates costly evaporator coil "freeze-ups."

HOW IT WORKS

FIRST, A FEW KEY POINTS:

1. The Ice Bear complements the existing system used to cool your building
2. The Ice Bear is a thermal battery that works with standard evaporator coils and condensing units
3. The 500 gallons of water remains in the tank and refrigerant moves through copper supply and return lines to the evaporator coil
4. The Ice Bear's daytime cooling capacity of 7.5 tons is not affected by extreme 130 degree rooftop temperatures
5. An Ice Bear improves overall energy efficiency and building dehumidification

OFF-PEAK PERIOD: ICE MAKE or CHARGE MODE

The Ice Bear runs a 12 SEER, 5-Ton condensing unit to freeze water, recharging the thermal battery during off-peak hours. The system optimizes the efficiency of the condensing unit by running continuously until a block of ice is fully formed. The efficiency improves through the ice build as evening temperatures fall, on average 20 degrees lower. Typically, the Ice Bear consumes 48kW-hours of energy over 13 hours generating less than 4 kW of demand. The stored latent (ice) cooling capacity is 42-44 Ton-hours plus 6-8 hours of sensible (cold water) capacity. The user sets the ice-make clock, typically 7 PM to 9 AM however an input is available to accept a signal from a building automation control system or utility to either start or lock-out the condensing unit.

ON-PEAK COOLING PERIOD: ICE MELT or DISCHARGE MODE

When its hot outside, and when your building needs cooling, the 7,000 watt energy consuming and peak demand setting condensing unit is switched-off. That's exactly what your local utility wants you to do because it reduces peak demand and strain on the grid. But, with an Ice Bear you don't have to sacrifice your comfort as the energy you need for cooling has been stored in an ecologically friendly thermal battery. But the Ice Bear is a better cooling solution too! Traditional air conditioner system efficiency and capacity degrades as daytime temperatures climb. For example, a 5-Ton rooftop unit delivers only 4-Tons of cooling capacity when ambient temperatures rise above 95 degrees. The Ice Bear can deliver up to 7.5 Tons of cooling *regardless* of the ambient temperature. For example, when connected to a 7.5-Ton evaporator coil, the Ice Bear maintains an evaporator temperature of 50 degrees or less when the rooftop temperature is 130 degrees. During the day, your thermostat starts a 200 watt pump that delivers refrigerant to the evaporator coil. The Ice Bear uses the energy stored in the ice to condense the returning refrigerant, rejecting heat from the building.

CONTACT INFO

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