

# ICE BEAR<sup>®</sup> DISTRIBUTED ENERGY STORAGE

## PRODUCT SPECIFICATIONS



Ice Energy's Ice Bear distributed energy storage system enables a powerful change in how — and, more importantly, when — we consume energy for air conditioning, without sacrificing consumer comfort.

Using thermally efficient, off-peak power to produce and store energy for use by air conditioners the next day, the Ice Bear uses a fraction of the peak energy required by conventional systems. It requires no modification to existing ductwork or structure, and integrates seamlessly with standard rooftop and split-system air conditioners.

The Ice Bear unit creates and stores cooling energy at night by freezing water in an insulated storage tank. It cools during the day by circulating chilled refrigerant from that tank to the conventional air conditioning system, eliminating the need to run the energy-intensive compressor during peak daytime hours.

During off-peak hours, the conventional HVAC system operates as usual. Together, this unique hybrid system surpasses the overall efficiency and performance of conventional equipment alone.



## KEY BENEFITS

### FOR UTILITY COMPANIES

- Reduces thermal peak demand
- Delivers thermal efficiency through off-peak consumption
- Operates automatically, requiring no interaction by utility or consumer

### FOR THE CONSUMER

- Maximizes energy cost savings
- Qualifies for a growing number of utility rebate programs
- Earns LEED certification points
- Reduces a building's carbon footprint
- Improves solar PV payback by reducing daytime AC load
- Delivers superior cooling comfort to employees and customers

### FOR THE ENVIRONMENT

- Qualifies as a renewable portfolio resource
- Uses less polluting nighttime power, reducing CO<sub>2</sub> emissions as much as 40% and NO<sub>x</sub> by up to 55%
- Reduces dependence on fossil fuels
- Improves utilization and integration of wind and solar

## KEY FEATURES

### HIGH RELIABILITY

- 15 year design life
- Cooling mode uses two long-life pumps
- Extends compressor life by eliminating stop-start operation during hottest hours of the day

### WIDELY COMPATIBLE

- For commercial and residential rooftop and split systems from 3 to 10 Tons, and mini-splits from 3 to 5 Tons
- 30 Ton-hours of cooling at a load of up to 5 Tons
- Each Ice Bear<sup>®</sup> 30 unit can be applied to a 3 - 5 Ton system, or a single 5 ton stage of a 7.5 - 10 Ton system

### EASY INSTALLATION

- Can be installed on the roof or ground by an Ice Energy certified local HVAC contractor
- CoolData<sup>®</sup> controller programmed for utility savings

### LOW MAINTENANCE

- Simple 1 hour annual maintenance procedure

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## TECHNICAL SPECIFICATIONS



### SPECIFICATIONS

#### COOLING CAPABILITY

- Maximum Cooling Load ..... 5 Tons
- Total Storage Module Capacity ..... 30 Ton-hours

#### DAYTIME PEAK POWER REDUCTION

- On-Peak Demand Reduction ..... Up to 7kW
- On-Peak Electric Demand ..... 300 watts
- On-Peak Energy Efficiency ..... 200 EER
- Energy Shifted to Off-Peak ..... 35 kWh

#### NIGHTTIME ICE MAKE

- Copeland Scroll Compressor ..... 4.3 Ton
- Ice Make Time (full make) @ 55° F ..... 10 hours
- Ice Make Time (full make) @ 75° F ..... 11.5 hours

#### LINE SET RESTRICTIONS

- Length (Ice Bear to airside coil) ..... 150 feet
- Height (Ice Bear to coil above/max) ..... 35 feet
- Height (Ice Bear to coil below/max) ..... 20 feet

#### ICE STORAGE SECTION

- Tank Capacity (tap water) ..... 475 gallons
- Thermal Storage Capacity (latent) ..... 360,000 BTU

#### REFRIGERANT MANAGEMENT SYSTEM (RMS) & COMPRESSOR

- Refrigerant ..... R-410A

#### COOLDATA<sup>®</sup> SMARTGRID CONTROLLER

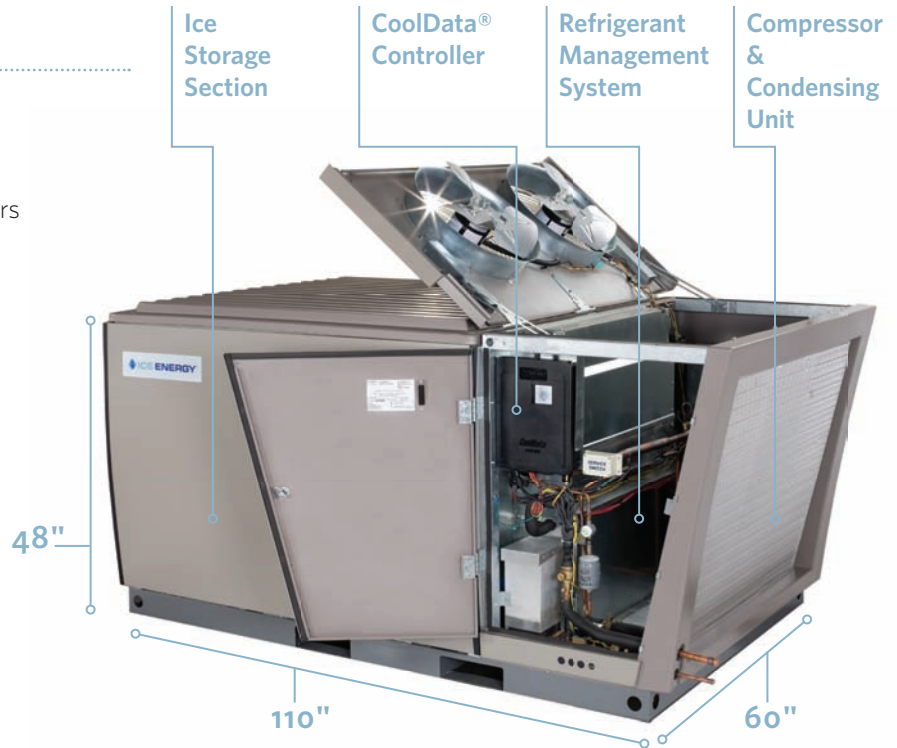
- Built-In Web Server & Data Logging
- NI LabVIEW On-Board Application Layer
- Historian
- 1-Wire Dallas Sensor Network

#### PHYSICAL PROPERTIES

- Size ..... 101" W x 60" D x 48" H
- Weight (dry) ..... 1,500 lb. (approx.)
- Weight (filled) ..... 5,500 lb. (approx.)
- Load Distribution (filled) ..... 155 lbs. per ft<sup>2</sup>

#### ELECTRICAL REQUIREMENTS (BY MODEL #)

- #IB30A-521: ..... 208/230 VAC, 1Φ, 50A min. service
- #IB30A-523: ..... 208/230 VAC, 3Φ, 30A min. service
- #IB30A-543: ..... 460 VAC, 3Φ, 20A min. service



### WARRANTY

Ice Energy products are warranted to be free from defects in workmanship and materials under normal use and service per the terms below. See full warranty for details.

- Tank & Ice Heat Exchanger ..... 5 years
- Compressor ..... 5 years
- Condensing Unit Heat Exchanger ..... 5 years
- Other Components ..... 1 year

### SUPPORT

For assistance with technical or sales support questions contact your Ice Energy representative, call us at 877-542-3232 or visit us online at [www.ice-energy.com](http://www.ice-energy.com).

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