

Ice Bear® 30 Hybrid Air Conditioner

PRODUCT OVERVIEW



ICE ENERGY®

DESCRIPTION

Hybrid cooling combines conventional air conditioning with Ice Energy's patented Ice Bear® energy storage technology, using each when it's most efficient and cost-effective, saving money and reducing impact on the environment.

The new Ice Bear® 30 Hybrid Air Conditioner delivers efficient cooling using only a fraction of the energy required by conventional systems, dramatically lowering electricity costs and reducing greenhouse gas emissions.¹ Air conditioning electrical demand, typically 40-45% of the total building electricity use during peak hours, is reduced by as much as 95%!

The Ice Bear® unit cools efficiently during the day by circulating refrigerant through coils in its ice storage tank, eliminating the need to run an energy-intensive compressor during peak daytime hours. Ice is then re-frozen each night when electricity generation is cleaner, more efficient and less expensive.

During off-peak hours, the conventional HVAC system operates as usual.

Together, this unique hybrid system surpasses the overall efficiency of conventional equipment alone, reducing more than 6,000 watts of peak energy consumption to as little as 300 watts.



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KEY BENEFITS

For Your Business

- Saves \$1,000s off your electric bill every year
- Qualifies for a growing number of utility rebate programs
- Provides improved comfort to your employees and customers
- Enables compliance with California's Title 24 2005 Building Code
- Assists LEED certification by earning up to 5 points
- Lowers a building's carbon footprint²
- Improves solar PV payback by reducing daytime air conditioning load

For Your Community

- Reduces the need to build new power plants to address the growing electricity demand for air conditioning
- Reduces the possibility of blackouts and brownouts

For The Environment

- Uses less polluting nighttime power, reducing CO₂ emissions as much as 40% and NO_x by up to 55%¹
- Reduces dependence on fossil fuels

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® 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® controller programmed for utility savings

Low Maintenance

- Simple 1 hour annual maintenance procedure

¹Emissions reductions from a study requested by the California Energy Commission, performed by independent environmental engineering firms on source energy fuel and emissions savings from shifting electricity usage to off-peak. Values represent potential savings in California. ²A 40% reduction in CO₂ emissions related to air conditioning translates to as much as 10% of a total building's carbon footprint associated with electricity use.

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TECHNICAL SPECIFICATIONS



ICE ENERGY®

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 60,000 BTU
300 watts
- 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® SmartGrid Controller

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

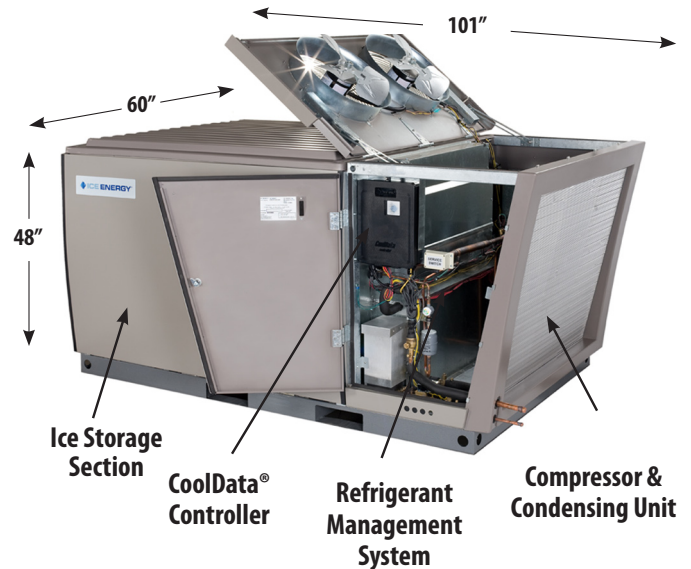
Physical Properties

- 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 ft²

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

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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.

Manufactured under the following U.S. Patents: 5,647,225 - 7,124,594 - 7,162,878 - 5,255,526 - D501,490 7,363,772 - D540,452 - D538,412. Additional patents pending.
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