

IceBear30

Transform commercial air conditioning load into a clean and flexible grid resource

The Ice Bear 30 is an intelligent, distributed ice battery for 3-20 ton commercial air conditioning units. During off-peak hours, it stores cooling energy by freezing water in an insulated storage tank while the conventional AC provides cooling as needed. During peak hours, ice-chilled refrigerant circulates from the Ice Bear 30 to the air conditioning system, eliminating the need for energy-intensive compressors.

Efficient: reduces peak cooling load by 95% and delivers 100% round-trip efficiency.

Reliable and cost-effective: designed to last 20 years, each unit only requires a one hour annual maintenance procedure. By eliminating stop-start operation during the hottest hours of the day, it also extends the AC compressor life.

Versatile: fully compatible with commercial rooftop and split systems from 3 to 20 Tons, and ductless units from 3 to 5 Tons.

Easy to install: integrates seamlessly with packaged or split HVAC units. Can be installed on the roof or ground by an Ice Energy certified local HVAC contractor.

Green: lowers CO2 emissions by up to 10,000 pounds per unit per year without generating any hazardous waste.

Ice Bear advantage for utilities

- Cost-effective alternative to new peaking generation
- Manages AC load and relieves congestion on peak with the award-winning CoolData® Controller
- Defers transmission and distribution investments
- Improves system efficiency & grid reliability
- Enables reliable integration of renewables
- Reduces greenhouse gas emissions
- Easy, rapid deployment at a multi-megawatt scale
- Creates local economic development opportunities

Ice Bear advantage for businesses

- Reduces air conditioning bills by up to 30%
- No or low cost system with rebates and utility incentives
- Extends life of HVAC system by up to 5 years
- Reduces building carbon footprint by 10% or more
- Delivers superior cooling comfort
- Stores excess solar generation
- Supports local installers
- Helps prevent blackouts by reducing stress on the grid

KASAB INTERNATIONAL ENERGY SERVICES

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IceBear30

Technical Specifications

Cooling Capability

- Maximum Cooling Load 10 Tons
- Total Storage Module Capacity 30 Ton-hours

Peak Power Reduction

- On-Peak Demand Reduction Up to 14kW
- On-Peak Electric Demand 300 watts
- Round Trip Efficiency w/ 12 SEER HVAC 95%
- Energy Shifted to Off-Peak 42 kWh

Off-peak 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

- Tank Capacity (tap water) 480 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 Lay... 
- Historian 
- 1-Wire Dallas Sensor Network 

Electrical Requirements (by model #)

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



Physical Properties

- Size 100 7/16" W x 60 3/8" D x 48 1/8" H
- Weight (dry) 1,400 lb. (approx.)
- Weight (filled) 5,400 lb. (approx.)
- Load Distribution (filled) 152 lbs. per sq.ft

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

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. All trademarks, logos and copyrights are the sole property of their respective owners. ETL Authorized.

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