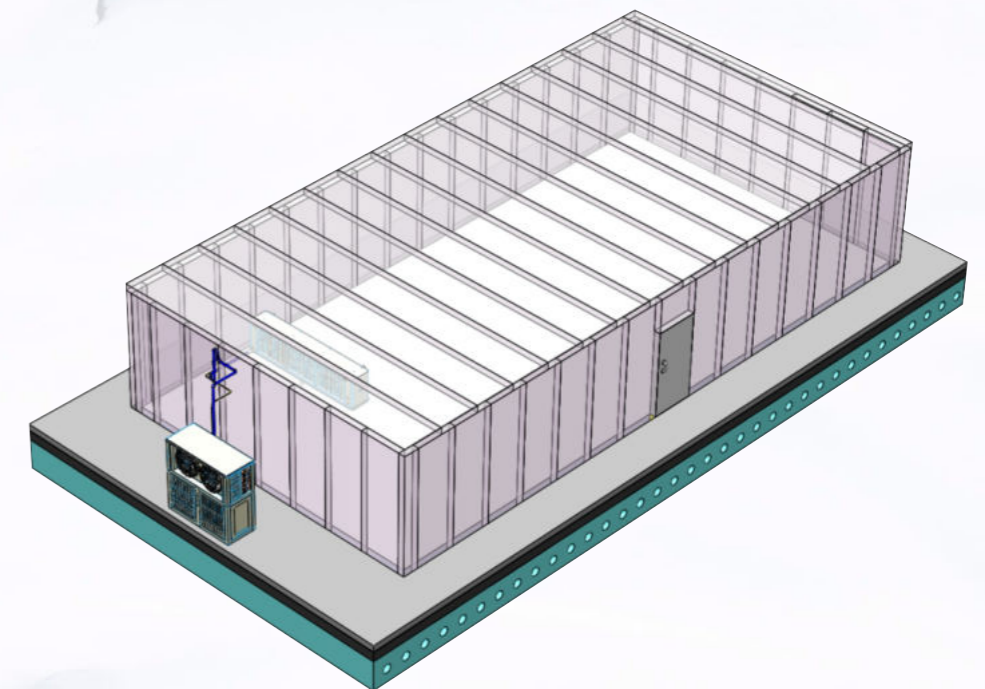**ARTECO™**

# COLD ROOM BROCHURE

**INTEGRATED COLD STORAGE SYSTEM SOLUTION
MANUFACTURER, SUPPLIER, AND
SERVICE PROVIDER**

**ARTECO™**

## GUANGDONG ARTECO REFRIGERATION CO., LTD.

# TABLE OF CONTENTS

**MAKE PEOPLE AND THE ENVIRONMENT ON EARTH MORE COMFORTABLE**

# COMPANY CULTURE

## VISION OF ARTECO

MAKE PEOPLE AND THE ENVIRONMENT ON EARTH MORE COMFORTABLE

## ARTECO VALUES

INNOVATIVE TECHNOLOGY ENPOWERS COLD CHAIN, CREATES PREMIUM LIFE

## ARTECO OBJECTIVES

CUSTOMER SATISFACTION, EMPLOYEE INVOLVEMENT, LEARNING AND INNOVATION, CONTINUOUS IMPROVEMENT

## Company Overview

ARTECO is a company dedicated to the research and development, manufacturing, design, and innovation of complete refrigeration equipment and energy-saving systems. We are a global leader in cold chain integration, providing comprehensive solutions, integration services, and supply chain support.

Driven by our 7 core refrigeration systems, we serve customers with an innovative spirit that has been cultivated over a century. Our business spans more than 100 countries worldwide.

The company can customize a complete set of cold storage equipment tailored to customer needs, including mobile cold storage, refrigerated containers, solar-powered cold rooms, and various other cold storage types.

ARTECO has a presence in major Chinese cities like Guangzhou, Shenzhen, Shanghai, Xi'an, and Zhengzhou, as well as international bases in Tokyo, Kuala Lumpur, and Riyadh, with a total of 10 offices across 9 countries.

Our strategic cooperations include well-known enterprises such as China Metallurgical Group, State Grid, China Construction, Gree, Huawei, ByteDance, Muyuan, New Hope, Yili, and Haier, among others.

We are associated with world-renowned brands like Panasonic, Bitzer, Emerson, and Frascold.
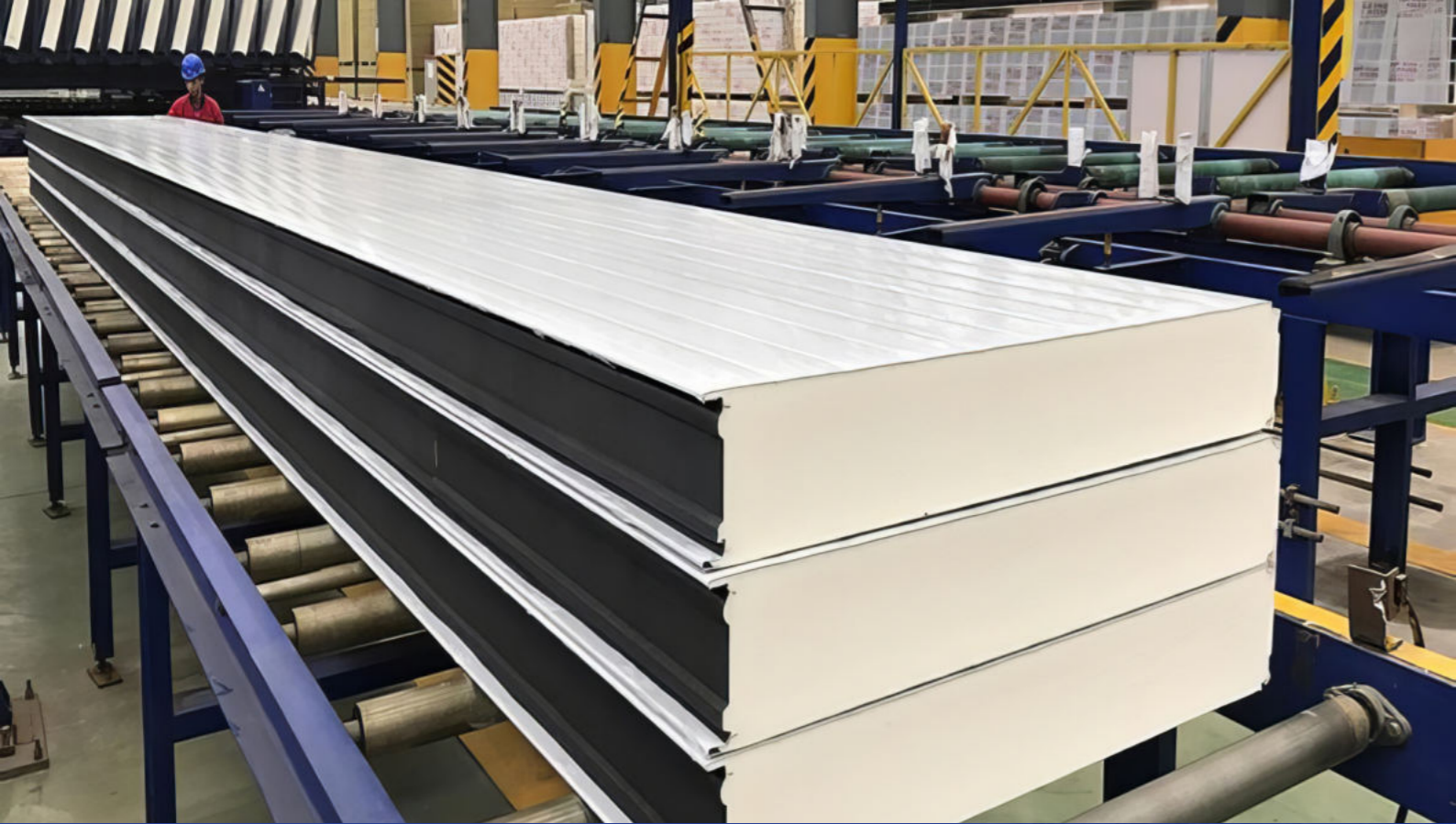
**Cold Source Equipment Manufacturing**

**Company Manufacturing**

# FOCUSED ON REFRIGERATION FOR MANY YEARS

Spanning an impressive 150,000 square meters, our company boasts a state-of-the-art manufacturing facility covering 30,000 square meters.Equipped with over 500 advanced CNC machining and high-end testing equipment, our facility houses a comprehensive range of domestic cutting-edge technology.We specialize in the design, manufacturing, and processing of various cold storage panel materials.Our intelligent, data-driven, and modular production process for cold storage and refrigeration systems ensures efficient and timely product delivery.Additionally, we undertake OEM/ODM cold storage solution designs to cater to diverse customer requirements.

# Enterprise Expansion



Asia

Europe

North America

Africa

Sorth America

Australia
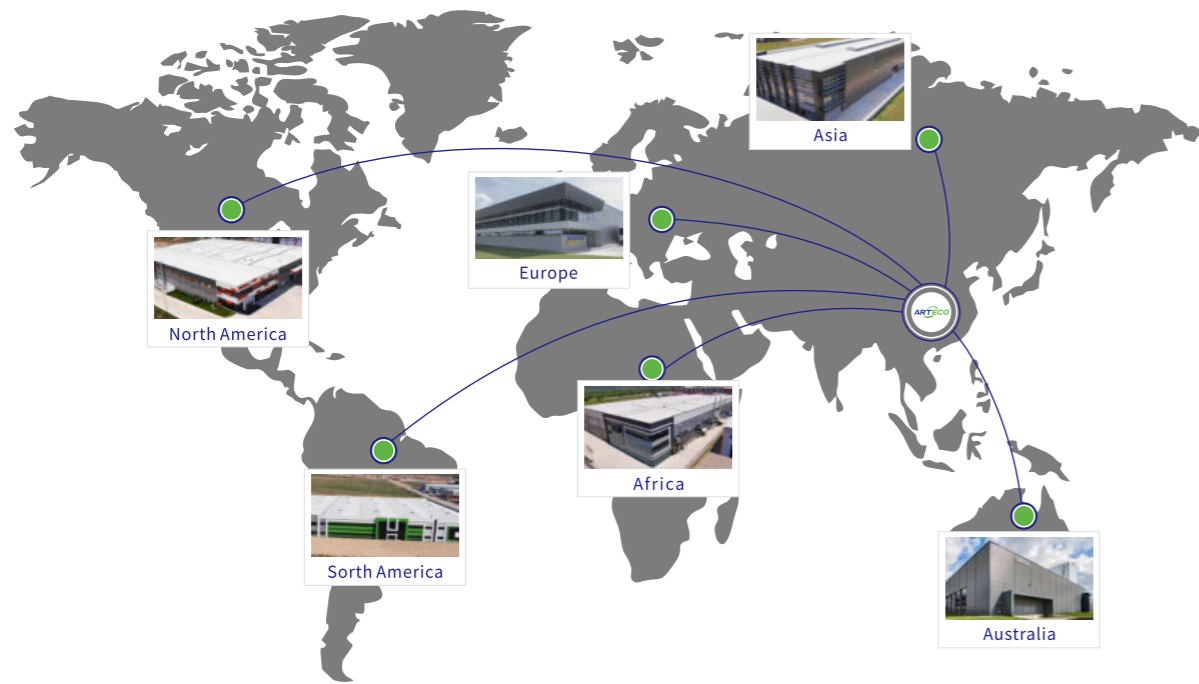
The company's business covers a number of modules in the cold chain, the main business involves: cold storage integration, unit chillers, super display cabinets, modular units and high and low temperature test chambers.

# Production Base



Tokyo

Zhengzhou

Shanghai

Shenzhen

Foshan

Malaysia

Australia

Saudi Arabia    Xi'An    Indonesia
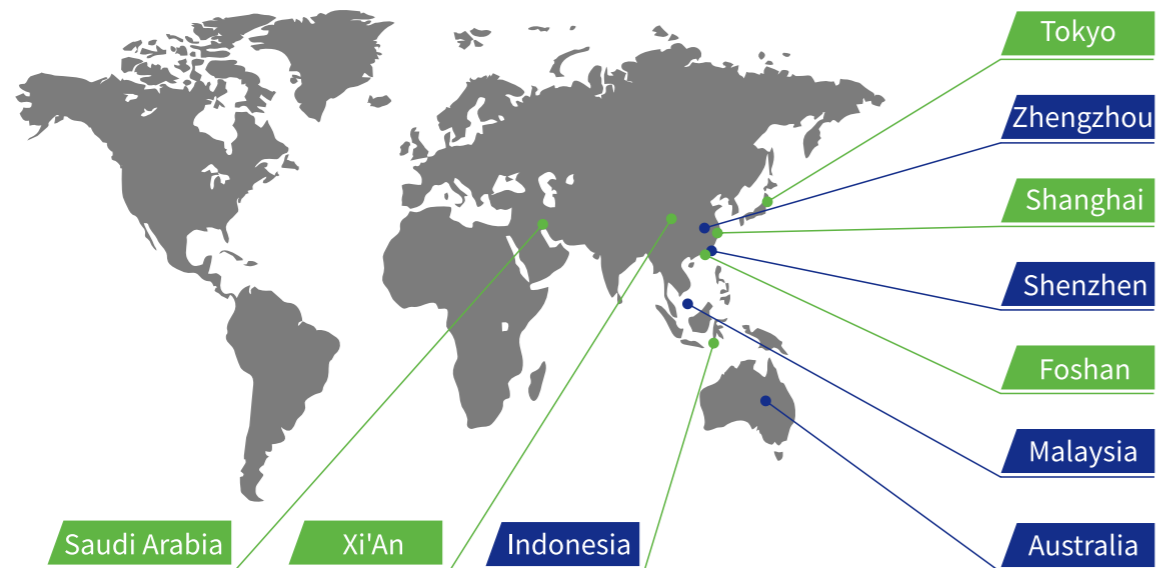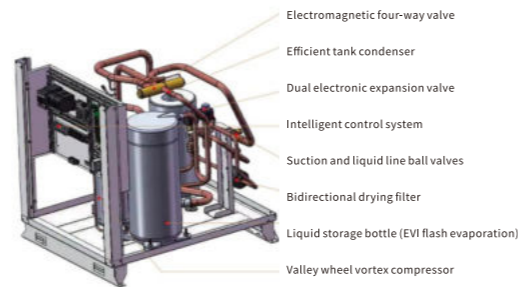
# Qualification & Certification



The company has obtained a number of cold storage patents and product copyrights and related industry honours, and has topped the list in the brand awareness selection.

# Technical Advantages

## Core Technology 1: Intelligent Integrated Design

Integrated Cold Source Design: The complete set design integrates built-in valves, various sensors, and functional modules, making the system design more stable.

Electromagnetic four-way valve
Efficient tank condenser
Dual electronic expansion valve
Intelligent control system
Suction and liquid line ball valves
Bidirectional drying filter
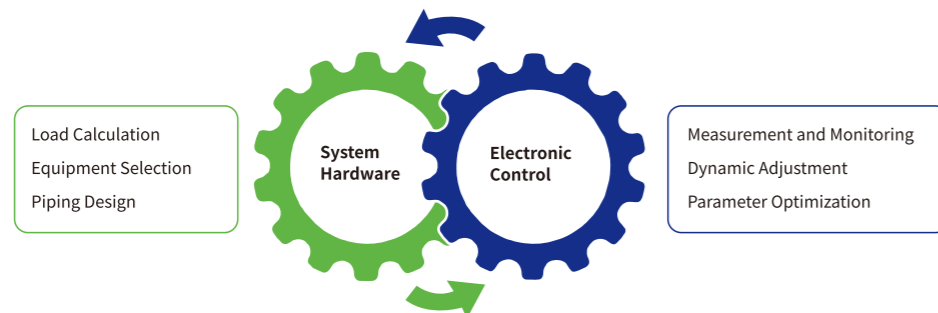Liquid storage bottle (EVI flash evaporation)
Valley wheel vortex compressor

Small cold storage uses a 1.4-15HP fully enclosed scroll compressor for cooling, which is quieter, more environmentally friendly, and energy-efficient

Medium or large cold storage uses a 3-50HP semi enclosed piston compressor for refrigeration, which is more powerful, efficient, and has a stronger cooling effect

Deep Integration of Electronic Flexible Control and Hardware Design: While fully leveraging the performance of the hardware, it also meets various operating conditions.

Load Calculation
Equipment Selection
Piping Design

System Hardware

Electronic Control

Measurement and Monitoring
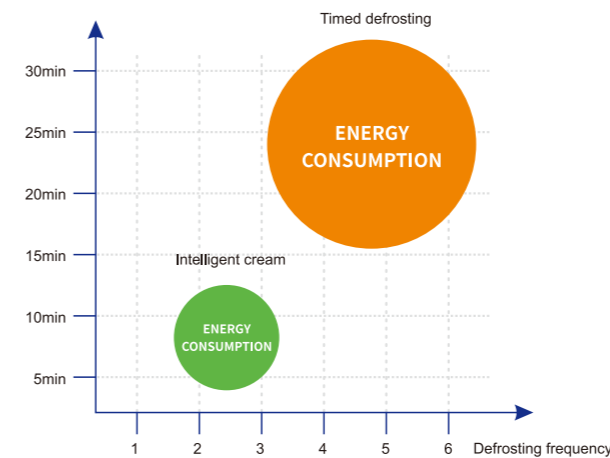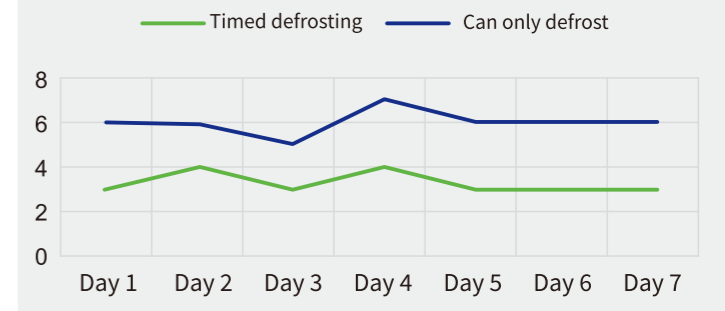Dynamic Adjustment
Parameter Optimization

## Core Technology 2: Intelligent Frost Design

Traditional timed electric heating defrosting often results in untimely and uneven defrosting, leading to ice blockage in the fan, high operating noise, and increased cold storage energy consumption. Intelligent defrosting technology effectively addresses these issues.

ARTECO's intelligent algorithm achieves on-demand defrosting, defrosting when frost is present, and no defrosting when there is no frost, completely eliminating ice blockage in the fan.

**Comparison of defrosting times**

Timed defrosting          Can only defrost

8
6
4
2
0

Day 1    Day 2    Day 3    Day 4    Day 5    Day 6    Day 7

Timed defrosting

30min
25min
20min
15min
10min
5min

ENERGY CONSUMPTION

Intelligent cream

ENERGY CONSUMPTION

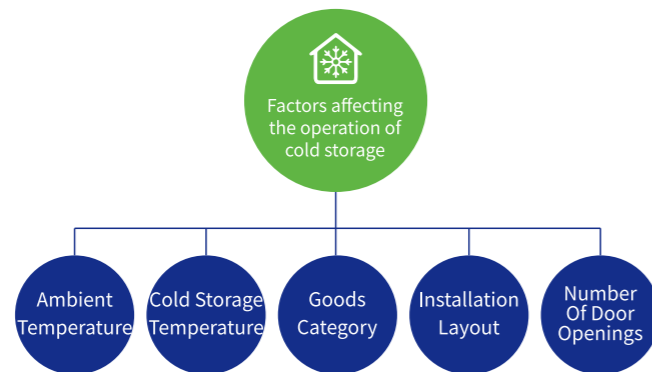1    2    3    4    5    6    Defrosting frequency

Compared to timed defrosting, intelligent defrosting reduces the number of defrosting cycles by 50%, the defrosting time by 70%, and overall defrosting energy consumption by 80%.
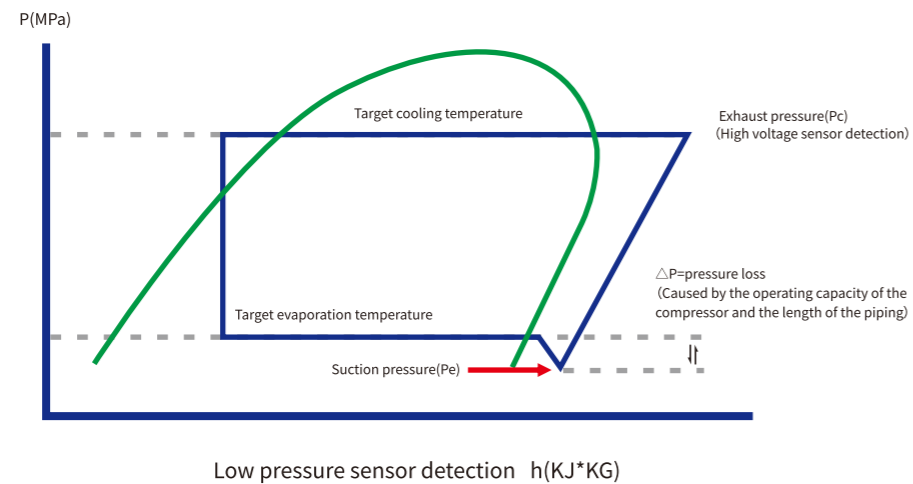
# Technical Advantages

## Core Technology 3: Adaptive Optimization Control Technology

Different system configurations, ambient temperatures, pipeline layouts, and usage habits in cold storage can significantly impact the operation of the cold storage. The adaptive optimization control technology is comprehensive and effective.
Real-time Monitoring: It continuously monitors the subtle changes in the operating status of the cold storage, making dynamic adjustments to keep the system running efficiently.

Factors affecting the operation of cold storage

- Ambient Temperature
- Cold Storage Temperature
- Goods Category
- Installation Layout
- Number Of Door Openings

Real-time adjustments to system pressure, superheat, and subcooling ensure continuous positive feedback, leading to improved energy efficiency.

P(MPa)

Target cooling temperature

Exhaust pressure(Pc)
(High voltage sensor detection)

Target evaporation temperature

△P=pressure loss
(Caused by the operating capacity of the compressor and the length of the piping)

Suction pressure(Pe)

Low pressure sensor detection  h(KJ*KG)

## Core Technology 4: Scientific calculation of various environmental factors

The construction of an intelligent modular cold storage solution involves various factors that affect temperature efficiency, including the external ambient temperature of the cold storage, the types of frozen items inside the cold storage, the layout of the internal space of the cold storage, the performance of the compressor outside the cold storage, and the frequency of door opening and exit. Various factors are comprehensively considered to scientifically calculate and optimize the cold storage construction, achieving maximum power saving and environmental protection effects
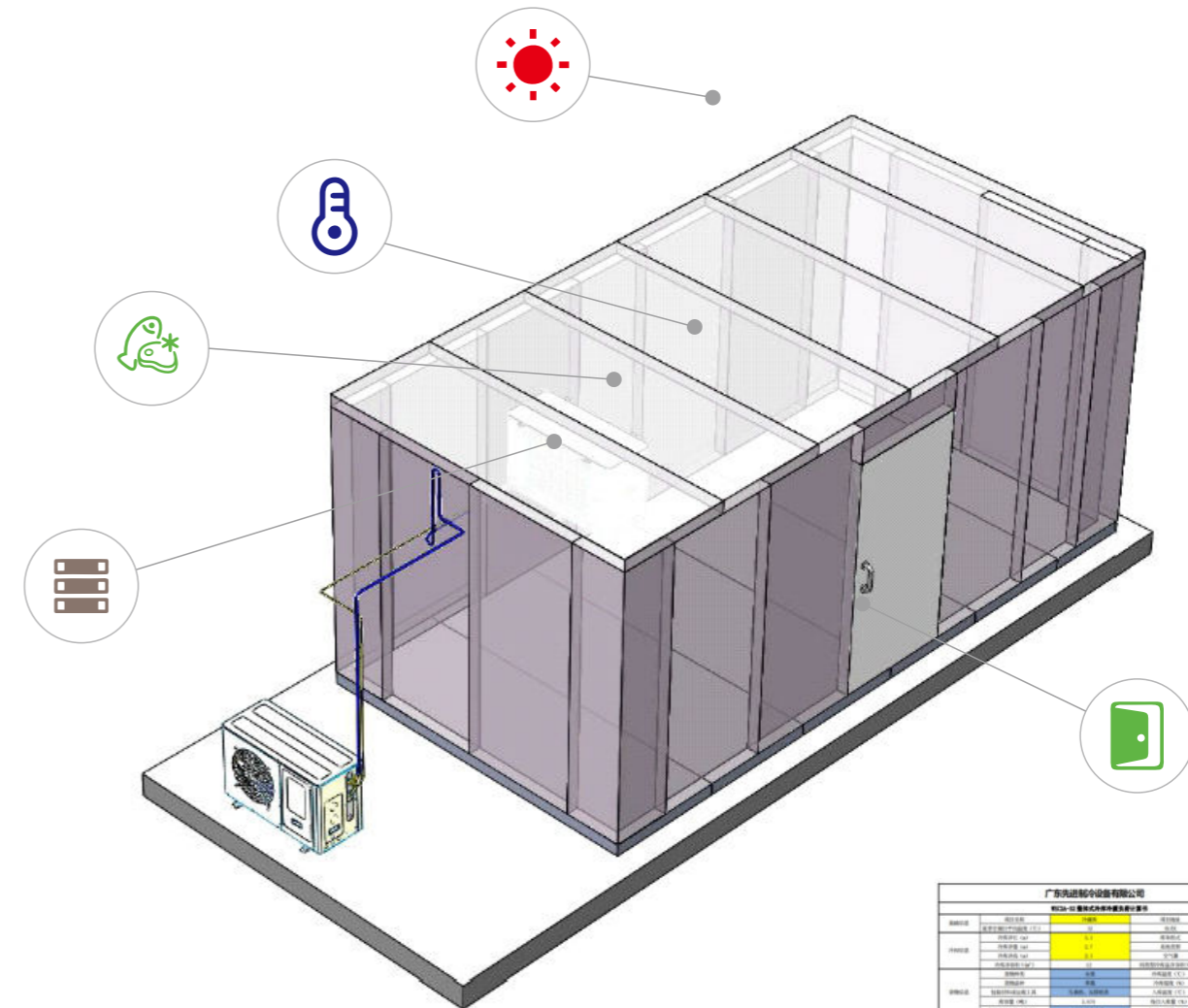
Scientific calculation of various environmental factors to determine the final result

# Main Product Types

## Mobile Cold Room

This product offers the advantages of mobility, big data connectivity, and high energy efficiency. With its compact size, it is particularly suitable for placement and use in farms, plantations, breeding facilities, and factories.

### Features:

Portable and mobile design, can be placed in farms, industrial areas, etc., and can be operational immediately upon delivery.

The perfect integration of overall cold room design, system design, and digital control ensures stable and efficient operation.

Energy-saving control with electronic expansion valve, saving 18% to 30% energy costs, equivalent to saving three months of electricity bills in a year.

Intelligent networking enables 24/7 monitoring, online fault diagnosis, and maintenance, enjoying professional and attentive service from ARTECO.

Ai Cold Cloud | Automatic Optimization | Electronic Throttling | Automatic Speed Adjustment

### Product Selection Table

| Serial Number | Size (m) | Cargo Capacity (tons) | Voltage | Temperature Range (°C) |
|---|---|---|---|---|
| 1 | 3*2*2.2 | 1-2 | 380V/220V | +10 ~ -18 |
| 2 | 4*2*2.5 | 2-3 | 380V/220V | +10 ~ -18 |
| 3 | 5.4*2.2*2.5 | 3-5 | 380V/220V | +10 ~ -18 |
| 4 | Customized size | / | 380V/220V | +10 ~ -18 |

## Blast Freezer Cold Room

Suitable for small and medium-sized enterprises engaged in the production of various frozen foods such as dumplings, noodles, seafood, steaks, hot pot ingredients, as well as central kitchens, large-scale canteens, and food distribution companies.

### Features:

Dedicated and efficient rapid cooling unit, achieving a temperature of -35°C in just 30 minutes, allowing for quick freezing within one hour.

Intelligent defrosting technology enables on-demand defrosting, ensuring 100% cooling capacity output, low energy consumption, and fast temperature reduction.

High-density insulation panels of 15cm thickness, with a thermal conductivity coefficient of <0.026W/M2K, capable of withstanding temperature differences of up to 70°C.

Smart networking enables 24/7 monitoring, online fault diagnosis, and maintenance, enjoying professional and attentive service from Arteco.

Ai Cold Cloud | Intelligent Defrosting | Automatic Optimization | Electronic Throttling | Automatic Speed Adjustment

### Product Selection Table
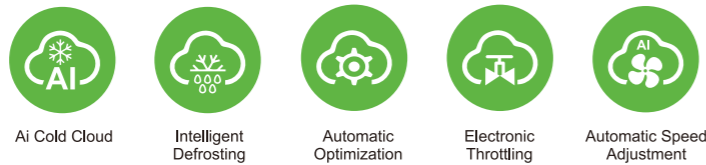
| Serial Number | Specifications (m) | Freezing Capacity (in terms of normal temperature water bags) | Voltage | Temperature Range (°C) |
|---|---|---|---|---|
| 1 | 3*2*2.2 | 500ML*600,6H | 380V/220V | -18 ~ -35 |
| 2 | 4*2*2.5 | 500ML*1000,8H | 380V/220V | -18 ~ -35 |
| 3 | 5.4*2.2*2.5 | 500ML*1500,10H | 380V/220V | -18 ~ -35 |
| 4 | Customized size | On demand | 380V/220V | -18 ~ -35 |

# Main Product Types

## Chain Restaurant Stainless Steel Cold Room

Specially designed for chain restaurants, star hotels, central kitchens, and similar establishments.

Ai Cold Cloud    Intelligent Defrosting    Automatic Optimization    Electronic Throttling    Automatic Speed Adjustment

### Features

Food-grade stainless steel material, compliant with NSF food-grade certification.

Integrated multiple energy-saving controls, including electronic expansion valve control, air velocity adjustment, and intelligent defrosting technology, resulting in energy savings of up to 30%.

Intelligent networking enables comprehensive monitoring of cold room temperature, energy consumption, door opening/closing, and other data, effectively monitoring cold room operations.
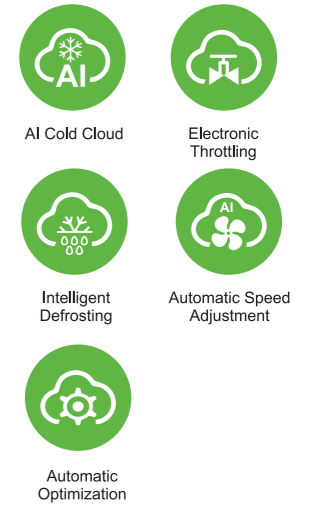
Smart defrosting and hot fluorine defrosting technologies prevent fan icing in the cold room, providing convenience and peace of mind. Regular maintenance reminders based on the refrigeration system conditions effectively enhance equipment lifespan.

### Technical Specifications:
### Single Temperature and Dual Temperature

Size: Customizable according to requirements.
Temperature Range: -25°C to 10°C, customizable.
Cooling Speed: From ambient temperature to -25°C, empty room, within 30 minutes.
Rated Power: High-efficiency unit, 3-25P set.
Power Supply: 220V/380V, customizable.
Refrigerant: Environmentally friendly refrigerant R404A.

## Container Cold Room / Lift-up Cold Room

Suitable for use in farms, construction sites, field locations, and similar environments.

AI Cold Cloud    Electronic Throttling    Intelligent Defrosting    Automatic Speed Adjustment    Automatic Optimization

### Features

Standard 20ft/40ft container design, can be directly deployed in construction sites, farms, and other scenes.

Supports trailer transportation, can be unloaded using forklifts and cranes, convenient for mobility.

Can be placed outdoors, resistant to sun and rain, ready to use at any time.

Equipped with intelligent hot fluorine unit, electronic expansion valve control, and intelligent defrosting technology, achieving 30% energy savings.

Smart networking enables comprehensive monitoring of cold room temperature, energy consumption, door opening/closing, and other data, effectively monitoring cold room operations.

Optional cold storage board for cooling, meeting refrigeration temperature requirements during power outages and while in a mobile state.

Supports various customization options: dual-temperature zone cold room, blast freezer cold room, cold storage with cold storage board, and other customized requirements.

### Product Selection Table

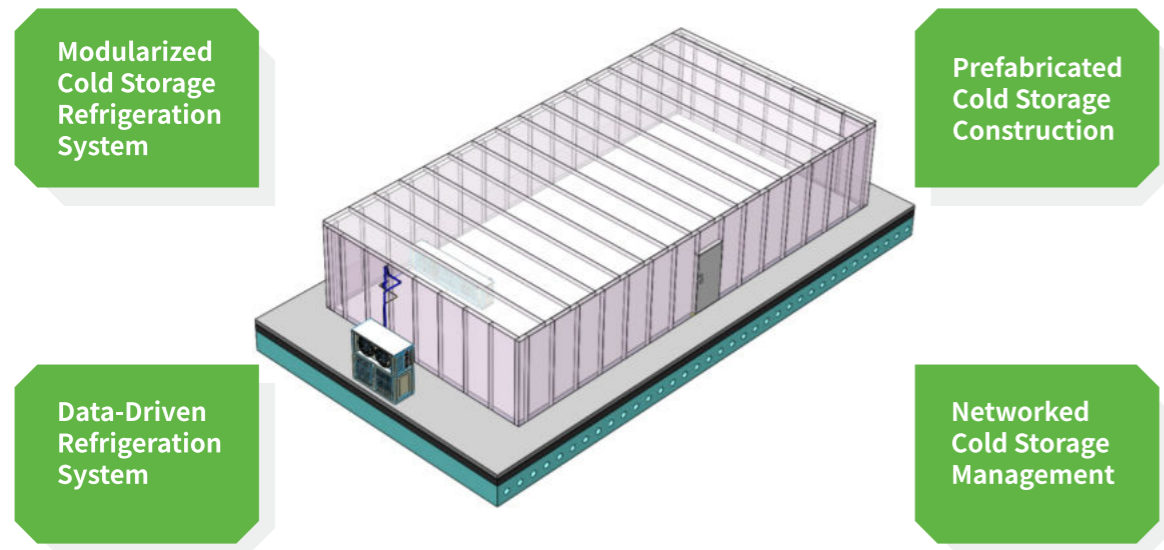| Container Size | Size (m) | Cargo Capacity (tons) | Voltage | Temperature Range (°C) |
|---|---|---|---|---|
| 20FT | 5.0*2.3*2.28 | 2.5 | 380V/220V | +10 ~ -18 |
| 20FT | 5.0*2.3*2.28 | 2.5 | 380V/220V | +10 ~ -18 |
| 40HQ | 11*2.3*2.55 | 6.6 | 380V/220V | +10 ~ -18 |
| 40HQ | 11*2.3*2.55 | 8.5 | 380V/220V | +10 ~ -18 |
| 20/40 | Customized size | / | 380V/220V | +10 ~ -25 |

# Main Product Types

## Modular Cold Room

Modular cold rooms offer flexible combinations and easy installation, allowing for the configuration of refrigeration units and control components according to user requirements. They can meet the personalized needs of various industries and users for temperature-controlled storage solutions.





Cold Chain Modular Refrigerated Warehouse

### Features:

**Standardization:** Modular assembly with standardized components for quick and convenient installation.

**Excellent Insulation:** High-quality steel panels with superior insulation properties, suitable for various applications.

**Customizable:** Flexibility to create different storage configurations based on specific requirements.

**Safety Design:** Easy identification of exits and optional safety emergency systems for added security.

**Modularized Cold Storage Refrigeration System**

**Prefabricated Cold Storage Construction**

**Data-Driven Refrigeration System**

**Networked Cold Storage Management**



Medical Care

Fresh Food

Cold Chain Logistics

Vaccinations

5G Power Station Industry

Modular Mobile Refrigeration

Precision Manufacturing

Peasant Farming

# Custom Cold Room Design

Based on ARTECO's extensive experience in cold room research, development, production, and large-scale delivery, ARTECO provides professional custom cold room services to customers, including technical consultancy, cold room design, equipment manufacturing, and production installation guidance. We accurately understand customer requirements and provide reliable and cost-effective cold room construction solutions to meet their needs.

Cold Chain Logistics Park Cold Storage
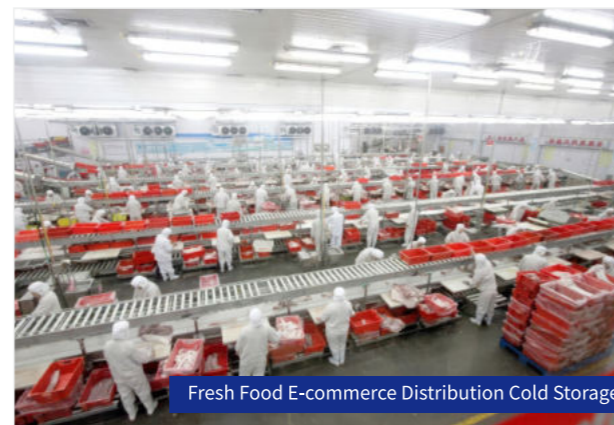
Cold Storage For Meat Slaughtering And Processing

Large-scale Agricultural Market Fruit Preservation Warehouse

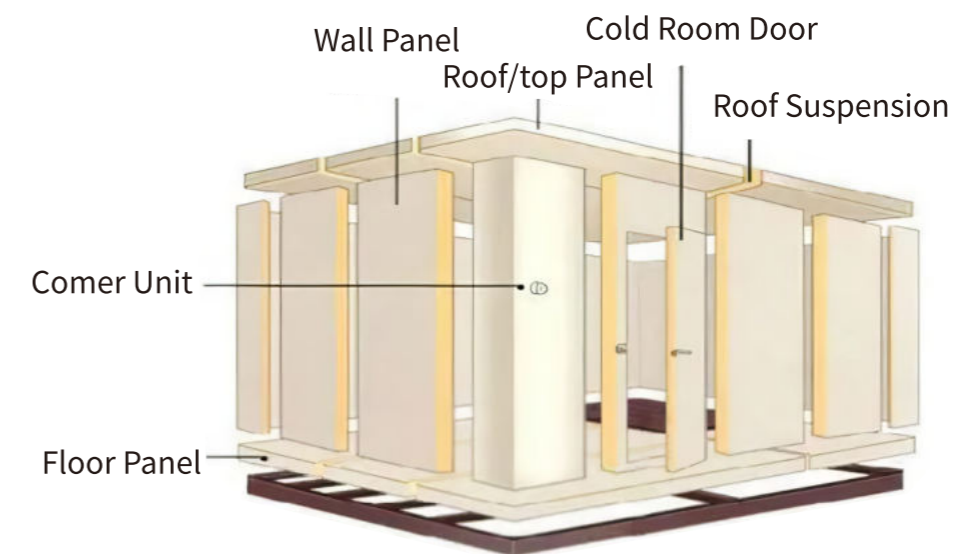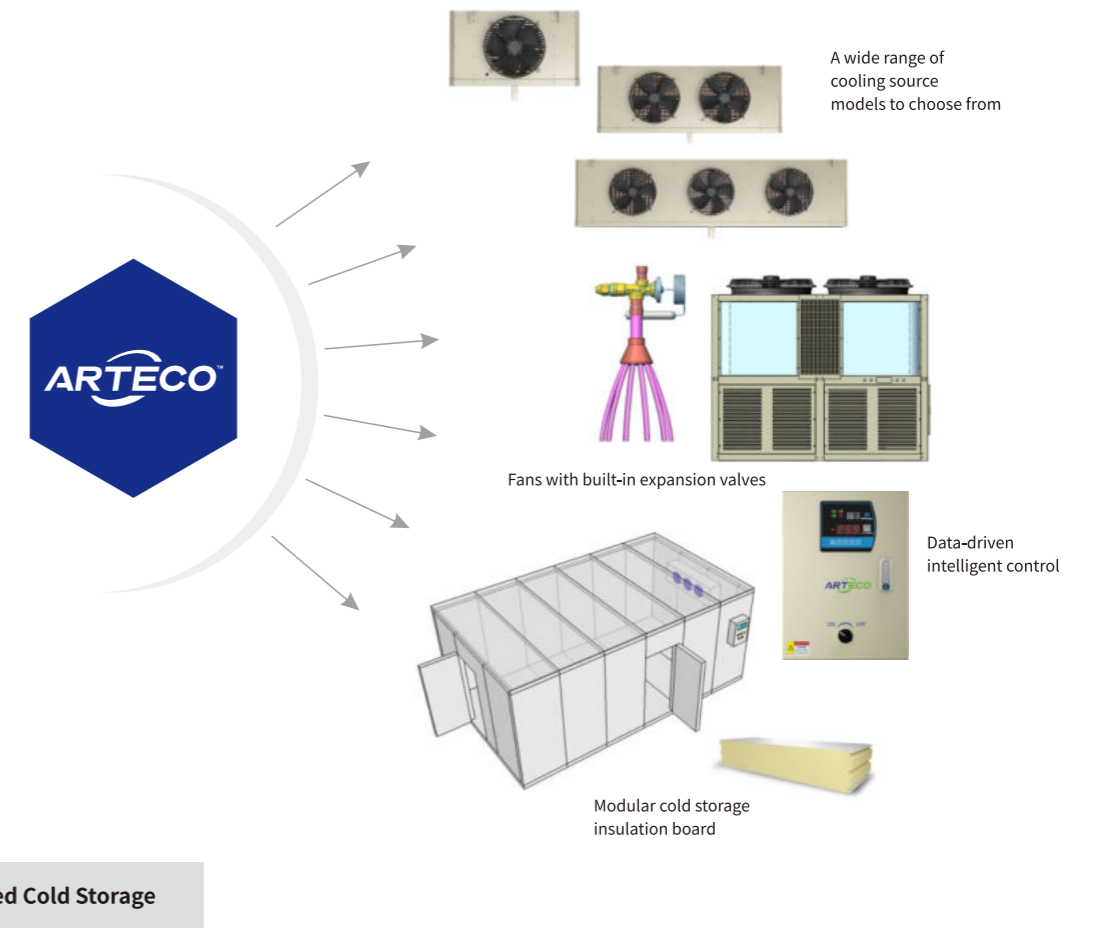Modernised Farming Cold Storage For Agricultural Products

Cold Storage For The Production And Processing Of Prepared Vegetables

Fresh Food E-commerce Distribution Cold Storage

# Refrigeration Equipment Selection

ARTECO offers a wide range of refrigeration equipment for different applications, including condensing units for various sizes of cold rooms. They are known for their expertise in customization and integration, providing reliable and high-quality solutions.

A wide range of cooling source models to choose from

Fans with built-in expansion valves

Data-driven intelligent control

Modular cold storage insulation board

Combined Cold Storage

Wall Panel

Cold Room Door

Roof/top Panel

Roof Suspension

Comer Unit

Floor Panel

# Condensing Units



BS Series Box-Type Condensing Unit
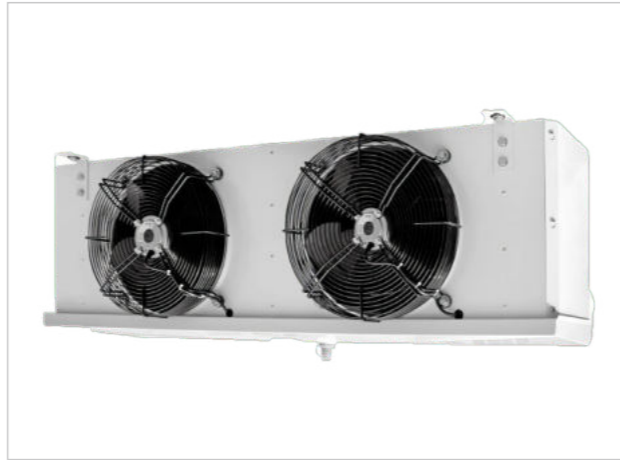


Air Cooler Series



BV Series Box-Type Condensing Unit



CP Series Semi-Hermetic Piston Compressor Water-Cooled Condensing Unit



Semi-Hermetic Piston Compressor Air-Cooled Condensing Units



Large Air-Cooled Condenser

# Our Partners

Global Customers

| Food Processing | Supermarkets | Cold Store | Industrial Refrigeration |
|---|---|---|---|
| Mcdonald's | WAL★MART | Yum! | APC by Schneider Electric |
| Chick-fil-A | Woolworths | ANHEUSER BUSCH | AMADA |
| PANDA EXPRESS | Carrefour | ICA Supermarket | UNITY PRIMA |
| Panera BREAD | Pão de Açúcar | MaEr Fan Motor | ZIEHL-ABEGG |

Customer Base in China



Lianhua · RT-MART · 乐购 · CHINA EASTERN · NEW HUADU · 华联超市 · 思念食品 · Global Logistic Properties 普洛斯 · SINOTRANS&CSC · SHANGHAI AIRPORT AUTHORITY · ZHENGBANG GROUP · GENERAL MILLS · BCIA · NEWHOPE LIUHE · Auchan