

# Emerson Copeland™ Integrated Cold Chain Solutions



Delivering Intelligent, Energy Efficient  
And Reliable Products

**COPELAND™**

  
**EMERSON™**

# About Emerson

Emerson is a global technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Our Emerson Automation Solutions business helps process, hybrid, and discrete manufacturers maximize production, protect personnel and the environment while optimizing their energy and operating costs. Our Emerson Commercial and Residential Solutions business helps ensure human comfort and health, protect food quality and safety, advance energy efficiency, and create sustainable infrastructure.

Emerson's commercial and residential solutions platform is the world's leading provider of heating ventilation, air conditioning and refrigeration solutions, for both residential and commercial applications. It is synonymous with innovation, reliability, energy efficiency and commitment towards a safe and green environment.

## Core Offerings

### Residential Heating & Air Conditioning

Technologies that deliver indoor comfort and reduce energy costs



### Commercial & Industrial Refrigeration

Proven refrigeration solutions to protect and safeguard food and the environment



Emerson's advanced compressors, condensing units, refrigeration components, control systems and electronic controls protect food quality while enabling operators to maximize equipment uptime and increase energy efficiency. Its integrated cold chain solutions assist retailers in food freshness preservation, transportation, refrigeration and marketing, making them the most preferred cold chain operations around the world.

### Commercial Heating & Air Conditioning

High-quality, reliable and energy efficient HVAC solutions for every type of work space



### Market Solutions & Services

Facility design, commissioning and energy management, including 24/7 energy monitoring





Cold Chain Center Gurgaon



# Emerson Cold Chain Centers

Cold Chain & Distribution Center Chakan

## Driving India's Cold Chain Industry Into The Future

A strong cold chain infrastructure is vital to make the step change required to reduce the amount of food being wasted in India. There is a growing need for adoption of energy efficient technologies to offset power shortages and raising awareness levels across the food chain on the value of leveraging technology, to scale up the Cold Chain Infrastructure in the country.

In an effort to instill best practices and promote the usage of green energy efficient technologies in the cold chain sector, Emerson has developed a state-of-the-art, 25,000-square-meter Cold Chain Centre of Excellence at Chakan, Pune which has rapidly risen to be recognized as the hub of cold chain solutions in India.

For North India, Emerson has developed a similar facility at Gurgaon. The Gurgaon Cold Chain center offers a wide spectrum of solutions and services that caters to all the needs of the industry. These include Project Design Services, Training and Education, Semi-Hermetic Service Center and more.

### 360° Offerings For India Cold Chain Industry

The 'Emerson Cold Chain & Distribution Center' has created a new benchmark with its 360° offerings in the cold chain industry. It showcases the wide range of technology and service solutions for the industry available from Emerson, including custom-built products like condensing units and racks suited for Indian conditions and market, as well as value added services like project design & educational services for cold chain.

#### Objectives

- Locally Designed & Manufactured Factory Built Energy Efficient Products For The India Market
- Project Design Support To Various Stakeholders In Cold Chain Ensuring That Projects Are Optimally Designed And The Right Refrigeration Equipment Is Selected.
- Educating India Cold Chain Industry On Best Design & Operating Practices, Leveraging Energy Efficient Technologies, System Operating Guidelines
- Deliver World-Class Service And Technical After Sales Support To Partners In The Refrigeration Industry
- Leading The Industry In Development Of Standards For Cold Chain & Transportation

# Project Design Services

## Refrigeration Solutions For Optimal Design Of Cold Storages

Building a world class refrigerated cold storage requires a solid understanding of the technical principles, thorough refrigeration system design knowledge and storage practices based on the commodity stored. An inefficient or improper design can lead to escalation of investment, operation costs & impact the quality of the produce stored in the cold storage.

That's where the Emerson Project Design Team comes in. Emerson Project Design Team is a highly specialized and experienced team of design engineers who will assist contractors, dealers and end-users, ensuring that cold chain projects are optimally designed and the right refrigeration equipment is selected.

Emerson Provides -

- Detailed Heat Load Calculation based on type of commodity stored & cold storage operation

- Full selection of Refrigeration Equipment to achieve Optimal Design & Improved Energy Efficiency
- Advanced Solutions with Networking, Communications & Monitoring Integrated Solutions for CA Cold Rooms, Humidity Controlled Cold Rooms, Ripening Chambers.

With our vast experience & knowledge of the cold chain industry, Emerson Project Design Team provides intelligent & energy efficient solutions that you can expect from a leader in the industry. We provide design solutions for a host of applications like Blast Freezers, Cold Storages, Ripening Chamber, Precooling Facilities, Food Retail, Process Chilling, Packhouses, CA Chambers and Milk Cooling.





## On-site Project Commissioning Support

Flexible assistance for successful project execution

Emerson's potent technical know-how, talented engineering staff, design expertise ensures we can actively support you at the installation and execution stage.

- Whether you're starting a new cold storage plant or advanced refrigeration units, look to Emerson for onsite technical support on your condensing units, racks, monitoring solutions. Our proven, streamlined planning and consistent project execution support processes are implemented by effective, certified technicians. We can identify and help reduce your potential installation, and operational risks early to ensure a safe, timely start-up.

- Technicians use their specialized expertise and a strong quality, environmental, safety, and health focus on-site as they analyze the many details to ensure your refrigeration units are properly installed, set up, and calibrated.

- After your start-up is complete, technicians issue a comprehensive report that includes all diagnostics and data-driven recommendations for ongoing proactive maintenance planning and promoting asset lifecycle management to maximize uptime and throughput.



# Training and Education

Promoting Energy Efficient Technologies, Best Practices & Increasing Awareness Levels Across Cold Chain



A sound understanding of refrigeration basics, storage conditions for various commodities, Cold Storage Design, Equipment Selection & Operating Guidelines can help in reduction of Food Wastage and result in improved Food Handling & Quality in the Cold Chain. In an effort to instill best practices and promote the usage of green energy efficient technologies in the cold chain sector, we have launched the 'Educational Services Program' which is 'Free Of Cost'. We have a world class 'Cold Chain Training Facility' featuring:

- Dedicated Training Classroom with Live Equipment & Products In Action
- Training Modules covering wide range of topics from Refrigeration Fundamentals, System Troubleshooting to advanced topics Like Cold Room Design based on Customer Requirements
- Live Freezer and Chiller Cold Rooms running on our Best-in-class efficiency Scroll Condensing Units

- Demonstrating Capacity Modulation through Emerson Digital Technology
- Demonstrating Advanced Refrigeration Controls and Remote Monitoring Systems to Optimize Systems & Reduce Maintenance Costs
- 'Live Refrigeration System Training Simulator' for Hands-on Training to Technicians and users in Refrigeration System Design, Installation and Commissioning Techniques.

From hands-on seminars to online tools, Emerson provides the training you need, in our Cold Chain Training Facility, Pune at a time that fits your schedule. All our training sessions are conducted by Emerson certified instructors who have an in-depth understanding of refrigeration principles, technology and extensive hands-on experience in the cold chain industry.



Live Freezer/Chiller Rooms



# Condensing Unit Assembly & Distribution Center

Manufacturing World Class Products, Quick Delivery & Excellent Service

Driven by the high demand for locally built, branded, quality products and a growing trend towards larger Cold Storages, Emerson has set up a Full Fledged Assembly Line at the new facility in Chakan. The layout and the performance of the Condensing Units is optimized using CAE facilities. The components are sourced internationally and have been subjected to stringent Qualification Standards of Emerson . The performance of Condensing Units is validated by testing in a suitable appliance at an ambient of 46°C. The highlights are:

- World class assembly line for the entire range of condensing units that can be built using scroll, reciprocating and semi-hermetic technology & multi-compressor rack systems
- Reduced delivery time and improved local after-sales support
- Dedicated Distribution Center for cold chain to stock the entire range of products ranging from compressors, flow controls to electronic controllers

- Local availability of spare parts to facilitate better support & Reduced lead times

Emerson Condensing Units are well received in the Indian market and have proven themselves with their robust and reliable design. These Units have already been successfully adopted in the Indian market and enjoy proven success. They are designed for varied cooling applications Like Cold Rooms, Banana Ripening, Fruits / Vegetables, Pharmaceutical, Industrial Chillers in Plastic / Rubber Industry etc.



# Semi-Hermetic Service & Scroll Tear Down Analysis Center

End-To-End Repair & Test Facility, Local Spare Part Availability



With our global expertise in the field of semi-hermetic & scroll technology, we have set up best-in-class processes and testing facilities to ensure the quality and reliability in compressor servicing. Built on global standards, the semi-hermetic repair center assists customers with in-depth equipment testing, complete overhaul of electrical and mechanical components and functional testing. The Scroll TDA center has the capability of providing root cause analysis for 2-30 horsepower models. Customers can avail:

- Complete Analysis set up for the entire range of semi-hermetic / Scroll models
- Complete overhaul of electrical and mechanical components and functional testing
- Local availability of Genuine Copeland Parts, engineered for long-term service and maximum performance

Emerson Service Centers have extensive product knowledge and provide prompt, professional, guaranteed repair service.

We are the only manufacturer with a full-fledged test facility for semi-hermetic compressors in India. Our Service Center is equipped with state-of-the-art test equipment to ensure flawless operation of semi-hermetic compressors after the repair process. The test results are evaluated against Emerson standards to ensure that the compressor passes all the standard qualification criteria for re-use. The compressor undergoes various tests like:

- Leakage Check for Compressors
- Vacuum Dehydration for Air / Moisture Removal
- Test board to check for electrical / oil pump performance, pressure build-up and leakages



**COPELAND™**

SPARE PARTS AND ACCESSORY CATALOGUE  
Catalogue de pièces détachées  
Ersatzteilkatalog

**EMERSON**

Last update: 09.01.2015

Part language / Teilsprache  
Document language / Dokumentensprache  
UI language / Oberflächensprache  
Viewer

English  
English  
English  
HTML mit Bilder/HTML with

Start

SYSTEMCHECK >>  
Automatic recognition of possible viewer >>  
Automatische Erkennung der möglichen Viewerarten >>

© Doover GmbH



# Wide Product Range

# Emerson Offers The Widest Range Of Products & Technologies From 1 To 250 HP For Cold Chain



Water-Cooled  
Semi-Hermetic CDU  
0.7-50 HP



Air-Cooled Semi-Hermetic CDU  
1-40 HP



Reciprocating Outdoor CDU  
1-6 HP



Air-Cooled Scroll CDU  
2-7.5 HP

**Emerson Cold  
Distribution**





Multi-Compressor Pack  
10-250 HP



2-Stage Semi-Hermetic CDU  
15-30 HP

**Chain &  
Center**



Scroll Indoor/Outdoor CDU  
2-15 HP



Scroll CDU  
With Vapor Injection  
7.5-20 HP



Water-Cooled Scroll CDU  
2-6 HP

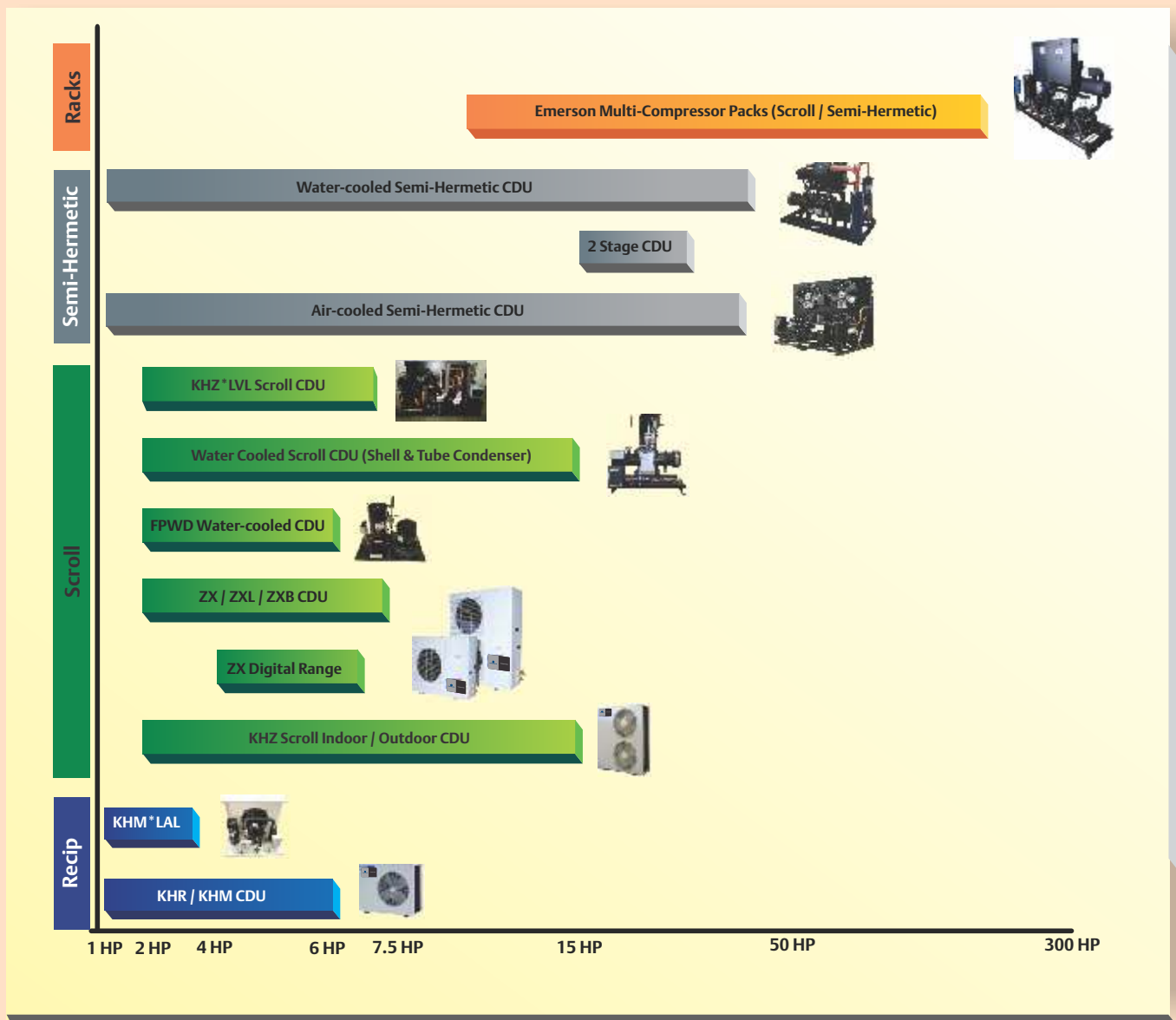


# Condensing Units

# Condensing Unit & Multi-Compressor Packs Range

Emerson offers the broadest, most reliable condensing unit product line possible. Leveraging the latest in compressor technology, each platform provides you the option to select the refrigerant, capacity, and application temperature combinations that meet your requirements. A huge variety of Copeland™ indoor and outdoor condensing units offer the right solution for applications in food retail, food service and industrial refrigeration.

- ▶ Scroll Condensing Units
- ▶ Reciprocating Condensing Units
- ▶ Semi-Hermetic Condensing Units
- ▶ Multi-Compressor Pack



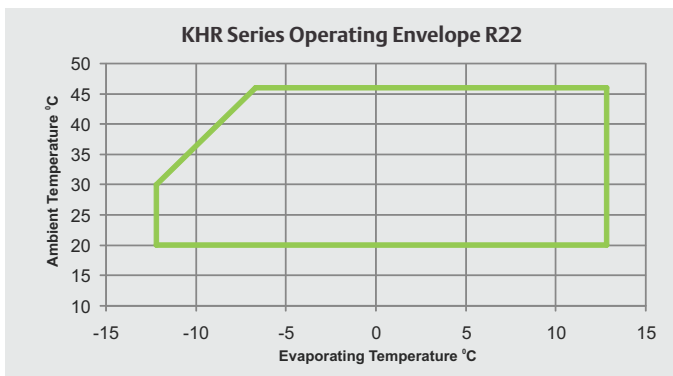


## Outdoor Reciprocating Condensing Units

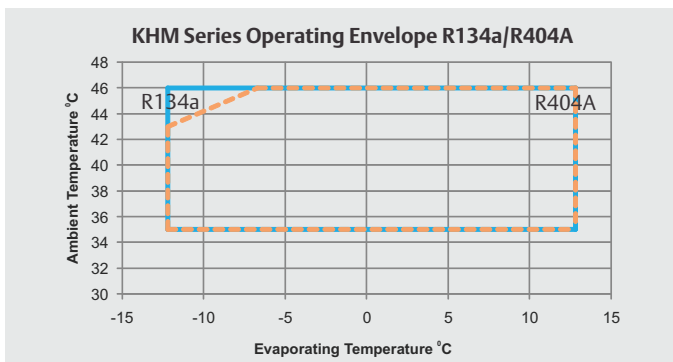
### Medium Temperature 1 to 6 HP

#### Features & Benefits

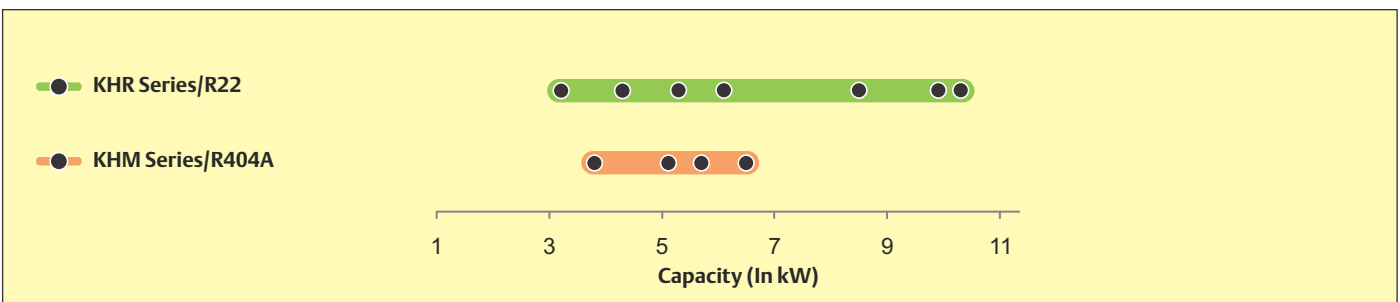
- Available from 1 to 6 HP with R22, R134a with outdoor platform
- Tropicalized design
  - Large condenser face area & higher CFM for elevated ambient conditions
  - Designed to operate at maximum ambient of 46°C
- Leading on energy efficiency
  - High efficiency Reciprocating (CR) Compressors
- Compact & sleek
  - Aesthetically designed & powder coated body to give it a sleek look
  - Compact with 30% lesser footprint
- Customized for market
  - Factory installed components according to the market requirement
- Complete protection against rain & dust
  - Standard weather proof housing to withstand extreme climate
- Silent in operation
  - Low noise fan for quiet operation
- **Standard equipment:** Outdoor Unit With Condenser Fan Motor Assembly, Fixed HP/LP Switches, Services Valves For Unit, Electrical Connectors
- **Optional equipment:** Receiver, Accumulator, Liquid Line Filter Drier, Moisture Indicator, Electrical Box



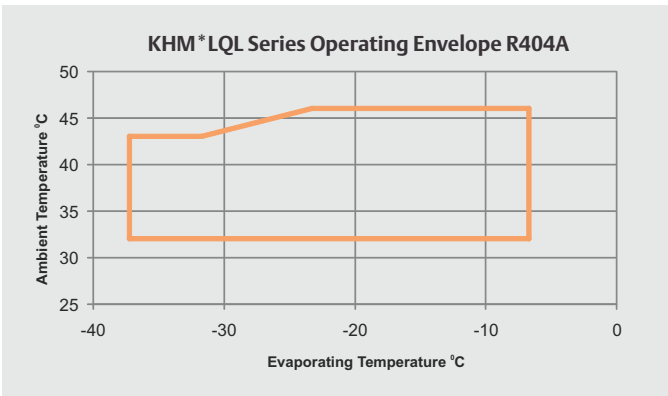
Note: Envelope in region, max return gas temperature of 18.3°C.  
For custom conditions, please use Product Selection Software



Note: Envelope in region, max return gas temperature of 18.3°C.  
For custom conditions, please use Product Selection Software



Note: The above capacity data are at the following condition. For MT - Ambient Temp.= +35°C, Evaporating Temp.= - 6.7°C, Return Gas Temp.= +18.3°C



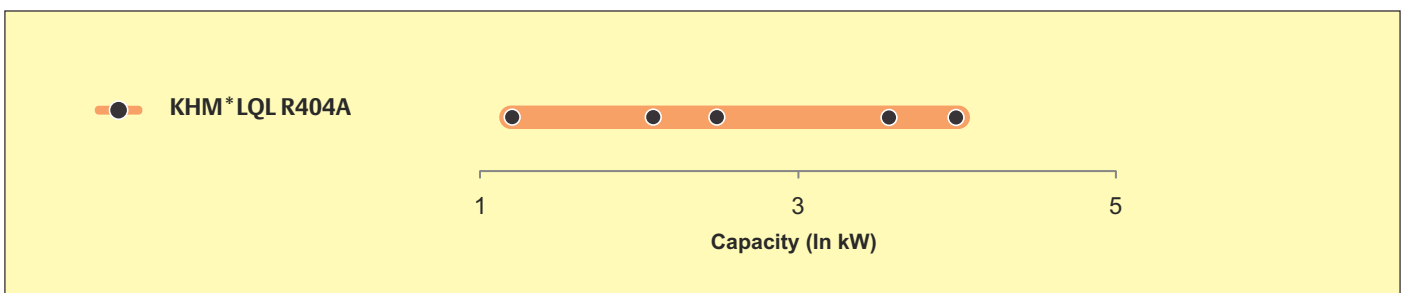
Note: Envelope in region, max return gas temperature of 32.2°C.  
For custom conditions, please use Product Selection Software

## Outdoor Reciprocating Condensing Units

Low Temperature 1 to 3 HP

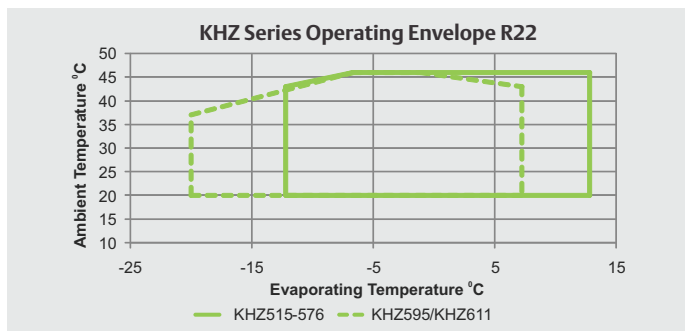
### Features & Benefits

- Available from 1 to 3 HP with R404A
- Designed for low temperature applications with envelope up to -37°C
- Optimized & tested in Copeland Labs for performance & reliability at max ambient of 46°C
- IP 65 grade pre-wired electrical junction box for safety
- **Standard Equipment:** Condenser Unit with Fan Motor Assembly, Receiver, Moisture Indicator, Dual HP / LP Switches, Solenoid Valve, Crankcase Heater, Accumulator, Electrical Junction Box

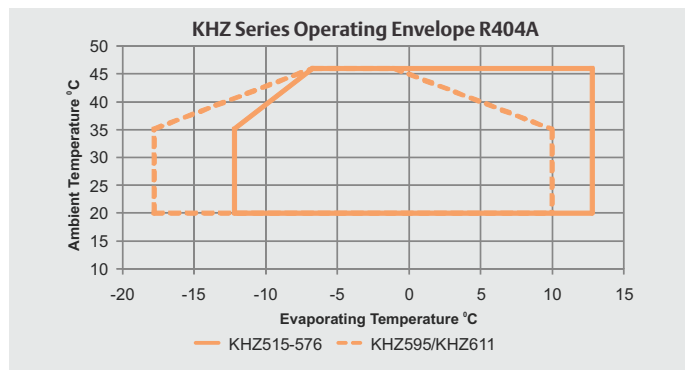


Note: The above capacity data are at the following condition. For LT - Ambient Temp.= +35°C, Evaporating Temp.= -23.3°C, Return Gas Temp.= +4°C





Note: Envelope in region, max return gas temperature of 18.3°C. For custom conditions, please use Product Selection Software



Note: Envelope in region, max return gas temperature of 18.3°C. For custom conditions, please use Product Selection Software

**Indoor / Outdoor Air-cooled  
Scroll Condensing Units**

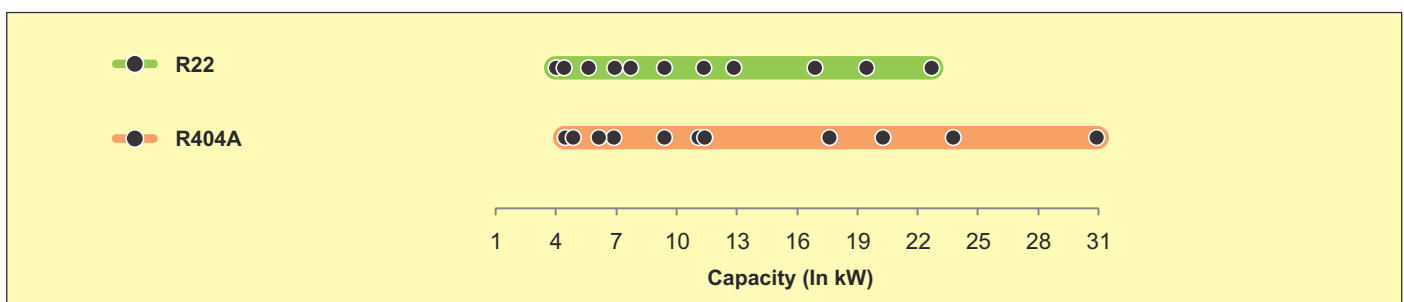
Medium Temperature 2 To 15 HP

Outdoor: 2 To 10 HP

Indoor: 12 To 15 HP

### Features & Benefits

- Available from 2 to 6.5 HP in outdoor range; 6.5 to 12 HP in indoor range
- Suitable for R22, R404A, R134a; Cold room & process chilling applications
- Large Condenser Face Area & Higher CFM for elevated ambient conditions
- Layout of components, tubing and electrical connections done to facilitate easy serviceability in field
- Comes with a robust & silent fan suited for high ambient conditions
- **Standard equipment:** Condenser with Fan Motor Assembly, Fixed Auto & Manual HP / LP, Service Valves, Electrical Connectors
- **Optional equipment:** Accumulator, Receiver, Liquid Line Filter Drier, Moisture Indicator, Electrical Box



Note: The above capacity data are at the following condition. For MT - Ambient Temp.= +35°C, Evaporating Temp.= - 6.7°C, Return Gas Temp.= +18.3°C

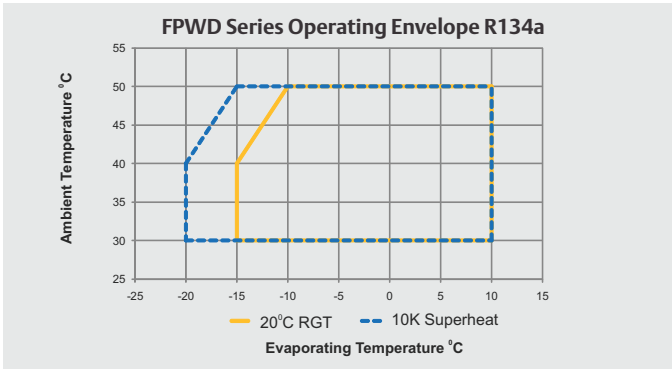


## Water-cooled Scroll Condensing Units

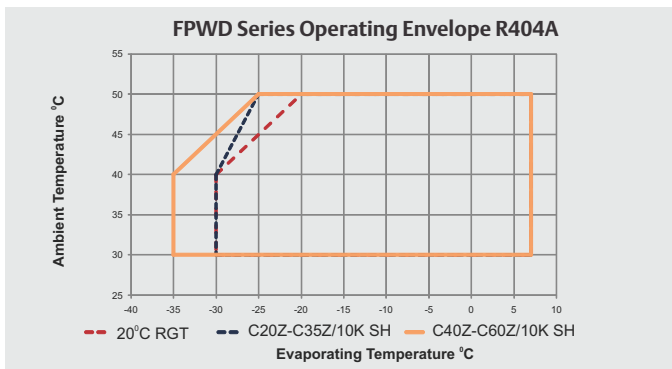
Medium / Low Temperature 2 To 6 HP

### Features & Benefits

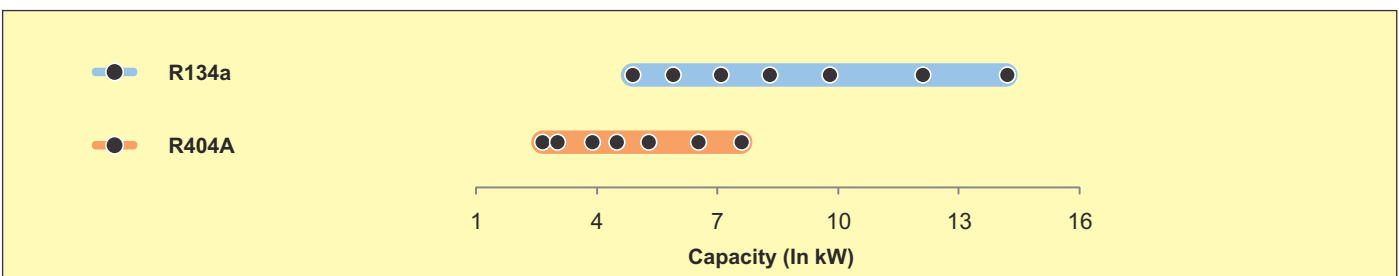
- 2 to 6 HP range for hotels and hospitality industry for Cold Chain
  - Chiller application: 2 to 6 HP; R134a / R404A
  - Freezer application: 2 to 6 HP; R404A
- Dual application models with both chiller & freezer application
- **Standard equipment:** Compact Unit with Co-Axial Heat Exchanger, ZB Compressor, Crankcase Heater, HP / LP Controls
- **Optional equipment:** Electrical Box, Water Valve



Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software



Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software



**Note:** The above capacity data are at the following condition. For MT – Condensing Temp.= +50°C, Evaporating Temp.= - 5°C, Return Gas Temp.= +20°C, Subcooling = 5K. For LT – Condensing Temp.= +50°C, Evaporating Temp.= - 25°C, Return Gas Temp.= +20°C, Subcooling = 5K

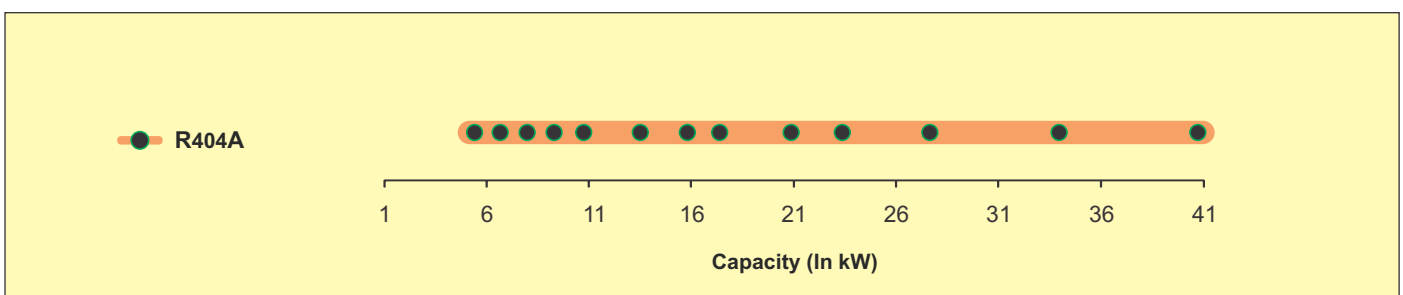


## Water Cooled Scroll CDU (Shell & Tube Condenser)

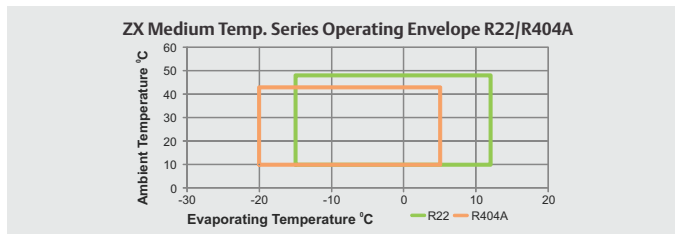
Medium Temperature 2 To 15 HP

### Features & Benefits

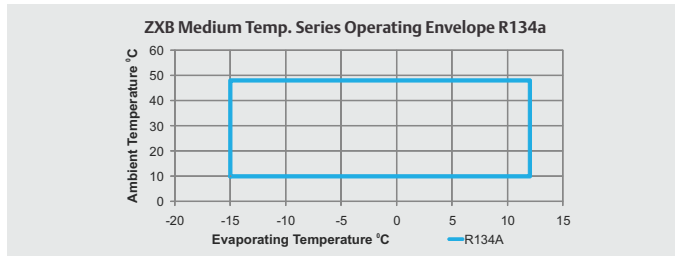
- High efficiency scroll for lower annual operating costs
- High efficiency water-cooled shell & tube heat exchanger
  - Designed with low fouling tubes to suit Indian water conditions
  - 2 pass & 4 pass versions available for optimized water velocity
  - Safety connections & service sockets provided on shell
  - Easy to open for maintenance & inspection
- Copeland ZB High efficiency medium temperature compressors from 2 to 15HP
  - Crankcase heater
  - Service valves
  - Oil sight glass
- HP / LP mounted
- Optional accessories: Condenser with liquid level sight glass, Liquid line filter drier, Suction accumulator, Oil separator, Vibration eliminator
- Qualified to use With R22, R404A



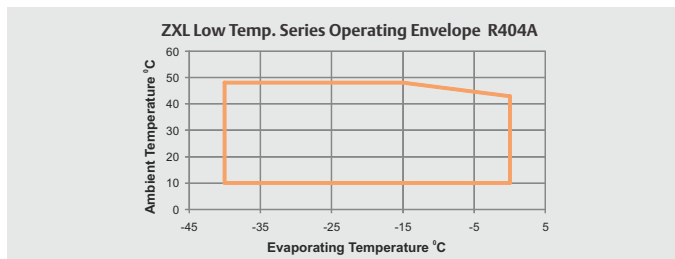
Note: The above capacity data are at LT condition. MT Condition: Condensing Temp.= +40 °C, Evaporating Temp.= 0°C, Return Gas Temp.= 18.33 °C, Subcooling = 0K



Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software  
For model ZX0750 (R22) Max Amb: 43°C, Max Evap: 5°C



Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software



Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please Use Product Selection Software

## ZX Advanced Scroll Outdoor Condensing Units

Medium / Low Temperature 2 To 7.5 HP

### Features & Benefits

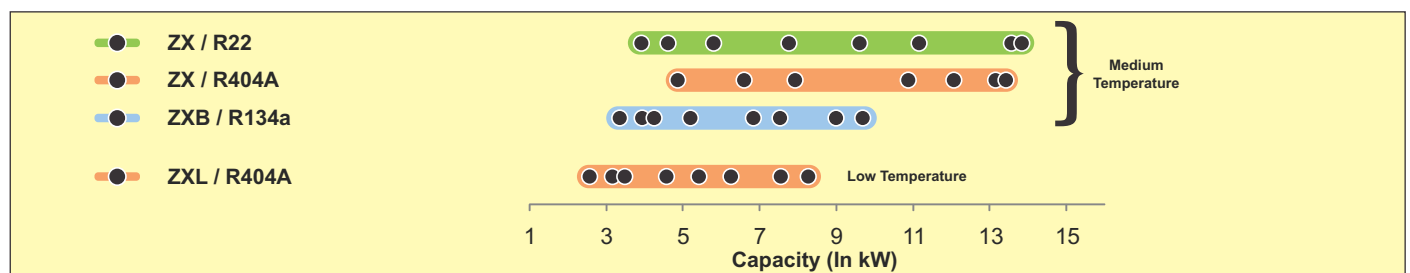
- 2 to 7.5 HP complete range for Cold rooms
  - Medium temperature ZX CDU : 2 to 7.6 HP (4-14KW)
  - Low temperature ZXL CDU : 2 to 7.5 HP (2-7KW)
- Qualified to use with R22, R404A, R407F, R134a
- Advanced diagnostic capabilities with In-built algorithms for system error prediction & increased system life
- ZXL range with vapor injection technology for higher efficiency
- Slim profile, lighter weight and optional wall mount capability
- **Standard Equipment:** Copeland Scroll™ Compressor, E2 Controller with Diagnostics Module, Fans with Speed Control, Liquid Receiver, Adjustable LP Safety Switches, Liquid Line Filter Drier / Sight Glass, Intelligent Store Solution Module
- **Optional Equipment:** Suction Accumulator, Oil Separator, Fixed LP Switch, Defrost Module



System Diagnostics



Vapor Injection



**Note:** The above capacity data are at the following condition. For MT - Ambient Temp.= +35°C, Evaporating Temp.= -5°C, Return Gas Temp.= +18.3°C  
For LT - Ambient Temp.= +35°C, Evaporating Temp.= -25°C, Return Gas Temp.= +5°C



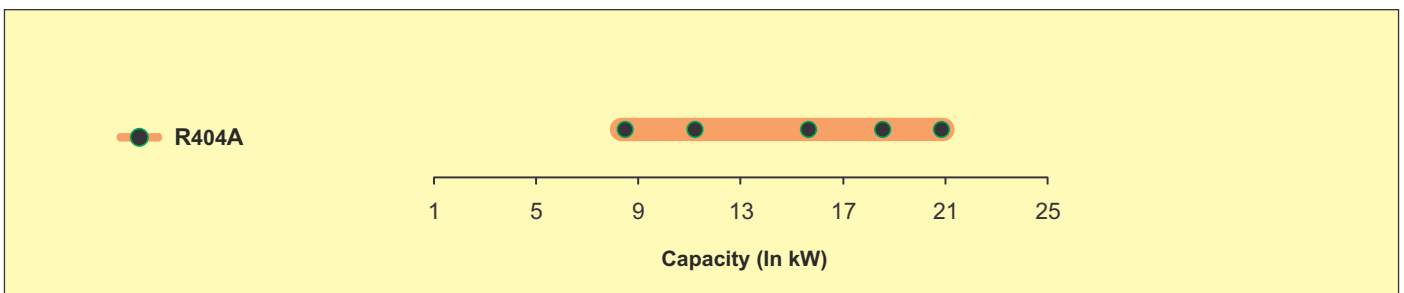
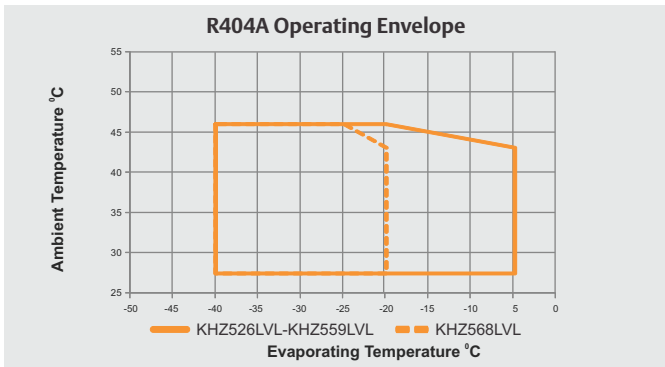
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## KHZ\* LVL Scroll Condensing Units With Vapor Injection

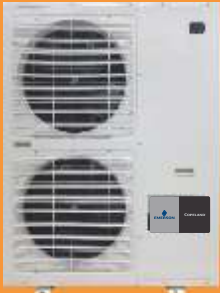
Low Temperature 7.5 To 20HP

### Features & Benefits

- ZFI vapor injection compressors with 15-20% higher efficiency; similar to 2-stage systems
- Reliable Scroll Technology with 70% fewer moving parts than reciprocating; low sound and vibration leading to reliable & peaceful operation & superior liquid handling ability
- Core Sense™ module for vapor injection
  - Low temperature operation reliability
  - High discharge line temperature protection
  - Direct communication function by using LED inside Coresense™
- With R404A refrigerant for LT applications
- Envelope till -40°C ; ambient of 46°C
- Factory Built with complete scope of supply
- **Standard Equipment:** Compressor with rotalock connections, economizer PHE circuit, receiver, fan motor, accumulator, sight glass/moisture indicator, filter drier, adjustable HP & LP, oil separator, crank case heater, coresense, electrical box, contactors
- **Optional Equipment:** Canopy



Note: The above capacity data are at the following condition. Ambient Temp.= +38°C, Evaporating Temp.= - 25°C, Return Gas Temp.= +18.3°C, Subcooling 2.8K

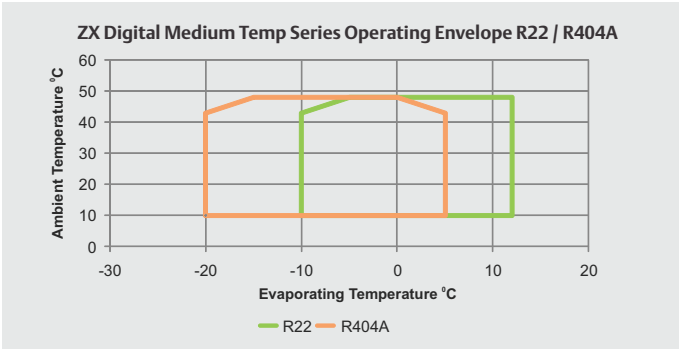


## ZX Digital Platform Scroll Condensing Units

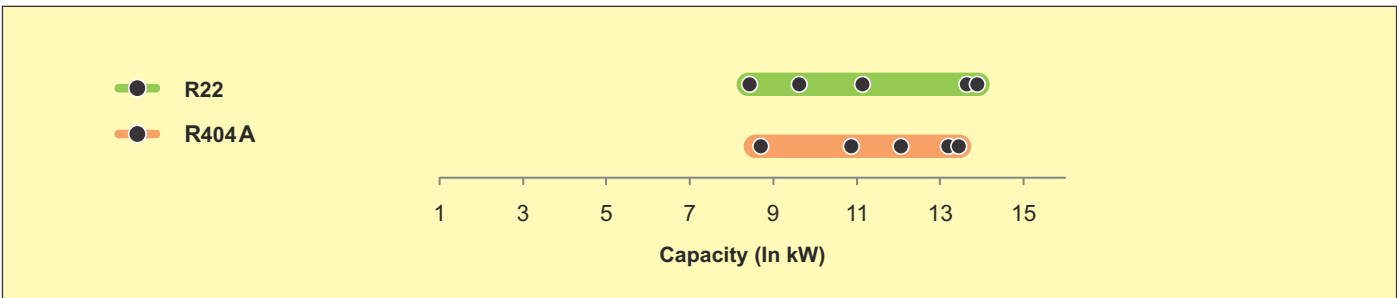
Medium Temperature 4 To 7.6 HP

### Features & Benefits

- Digital ZXD CDU: 4 to 7.6 HP
- Qualified to use with R22, R404A, R407F
- ZXD Range with continuous modulation from 10% to 100% ensuring a perfect match of capacity and power to the desired load
- Control precise room temperature and humidity & maintain food quality
- Less complicated compared to variable speed technologies; requires simple electronics
  - No inverter loss & motor switching loss (15-20%)
  - No EMC / EMI issues
- More reliable compared to other modulation technologies due to elimination of oil return issues
- Advanced diagnostic capabilities with in-built algorithms for system error prediction & increased system life
- **Standard equipment:** Copeland Scroll™ Compressor, Digital Scroll Controller, Oil Separator, Fixed LP safety Switches, Liquid Line Filter Drier / Sight Glass
- **Optional equipment:** Fan Speed Controller



Note: Envelope in region, max return gas temperature of 20°C for R404A, 10K superheat for R22. For custom conditions, please use Product Selection Software. For model ZXD0750 (R22) Max Amb: 43°C, Max Evap: 5°C



Note: The above capacity data are at the following condition. For MT - Ambient Temp.= +35°C, Evaporating Temp.= -5°C, Return Gas Temp.= +18.3°C

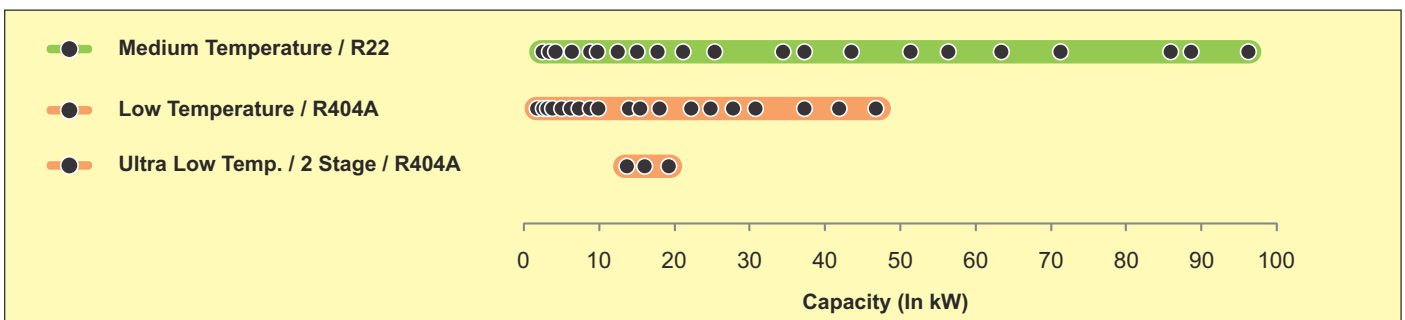


## Water-cooled Semi-Hermetic CDU

Low / Medium Temperature 0.7 To 50 HP

### Features & Benefits

- High efficiency water-cooled shell & tube heat exchanger
  - Designed with low fouling tubes to suit Indian water conditions
  - 2 pass & 4 pass versions available for optimized water velocity
  - Safety Connections & Service Sockets provided on shell
  - Easy to open for maintenance & inspection
- Copeland standard / stream semi-hermetic compressors from 0.7 to 50 HP
  - Crankcase heater
  - Service valves
  - Oil sight glass
- HP / LP mounted
  - OPS2 oil differential pressure switch
- Optional accessories: Capacity regulator kit, Condenser with liquid level sight glass
- Liquid Line Filter Drier



**Note:** The above capacity data are at the following conditions. For MT - Condensing Temp.= +40°C, Evaporating Temp.= - 5°C, Return Gas Temp.= 20°C. For LT - Condensing Temp.= +40°C, Evaporating Temp.= - 25°C, Return Gas Temp.= 20°C. For 2 Stage LT- Condensing Temp.= +40°C, Evaporating Temp.= - 40°C, Return Gas Temp.= 20°C

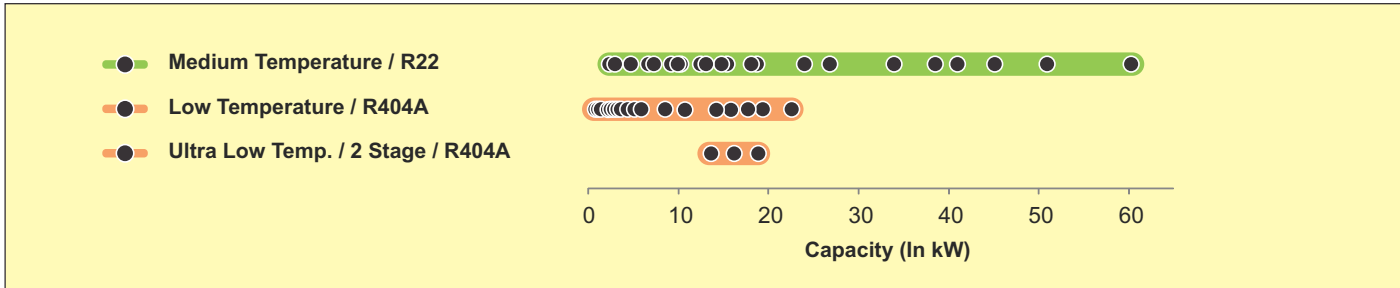


## Air-cooled Semi-Hermetic Condensing Units

Medium / Low Temperature 1 To 40 HP

### Features & Benefits

- Available in 3 options: Stream compressors with CoreSense™, Standard compressors & 2 stage units
- Stream Compressors with Unique Discus Valve Technology for 10-15% Higher Efficiency available
- Designed for high Ambient conditions, generously sized Condensers to Lower the Condensing Pressures & Increase Energy Savings
- Multi Refrigerant capability with R404A, R134a, R407A, R407C, R407F and R22
- **Standard equipment:** Air-cooled condensing unit with Copeland semi-hermetic reciprocating compressor, Condenser Fan Motor, HP / LP Switches With Automatic Reset, Discharge Line Vibration Eliminator, Receiver With Sight Glass, Shut Off Valve & Relief Valve Connection, Crankcase Heater
- **Optional equipment:** Electrical Box for Fans (Twin Fan Models), CoreSense™ Diagnostics (Only for Stream Compressors) Liquid line filter drier, moisture indicator, accumulator, oil separator, capacity control kit



Note: The above capacity data are at ARI MT & ARI LT condition. For ARI MT - Ambient Temp.= +35°C, Evaporating Temp.= - 6.7°C, Return Gas Temp.= +4.4°C. For ARI LT - Ambient Temp.= +32°C, Evaporating Temp.= - 23.3°C, Return Gas Temp.= +4.4°C. For 2 Stage Low Temp.- Ambient Temp.= +35°C, Evaporating Temp.= - 40°C, Return Gas Temp.= +20°C





## Emerson Multi-compressor Scroll/ Semi-Hermetic Pack

Low / Medium Temperature 10 To 250 HP

### Features & Benefits

- High efficiency Copeland Semi-Hermetic & Scroll compressors
- Robustly designed & engineered for high reliability
- Comprehensive range of 20-300 HP for low, medium & high temperature applications
- Multi refrigerant available in R404A, R22, R134a, R407 options
- Efficient active oil management system
- Choice of technology: Semi-Hermetic & Scroll packs
- Factory assembled; locally designed & manufactured; shorter lead times
- Flexible & saves on energy
  - High efficiency Copeland Semi-Hermetic & Scroll compressors
  - Rack algorithms to optimize rack performance
  - Option of VFD & Digital for capacity modulation
- Economical
  - India factory built units: competitive first cost and low running cost
  - Compact in relation to capacity
- Sophisticated but simple
  - Can be monitored and controlled remotely
- Secure & easy serviceability
  - Electronics & CoreSense™ diagnostics for fault analysis & troubleshooting
  - Factory installed system protectors to ensure safe operation
- Emerson wide service network



## Customized Refrigeration Units For Specific Cold Chain Applications

Emerson offers innovative and high value cold chain refrigeration solutions which are specially engineered to specific customer needs rather than 'catalogue' offerings. Our engineering team leverages products from our Copeland, Dixell & Flow platforms to deliver a locally engineered custom built solution. Our market-leading energy-saving and performance solutions maintain product quality during the production, storage, transportation and distribution phases, and are used in a wide range of sectors such as food & beverage, logistics, dairy, pharma etc.

- Improve the coefficient of performance (COP) of refrigeration equipment by leveraging specific technologies (i.e. reduce the electricity consumption per unit).
- Build more integrated and highly controlled systems of energy consumption in a complete refrigerated facility.
- Increase global coverage of highly efficient refrigeration solutions that embrace best practices.
- Cut your operating costs with an expertly designed and tested unit.

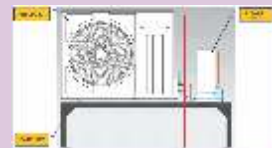
### Instant Milk/Process Chillers

- Instant milk chilling at collection centers
- Customized chilling units from 10-40HP
- Choice of control panel



### Rapid Milk Chilling Units

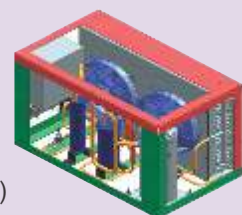
- Rapid milk chilling at farm level
- Designed upto 1000L/Day
- Customized CDUs with external PHE circuit



### Customized Refrigeration Solutions

### Transport Refrigeration Air Cooled Condensing Units

- Fitted with high efficiency copeland scrolls
- Specially designed for optimum performance with eutectic refrigeration systems.
- Tested for transport worthiness
- Available with full scope of supply
- Range: medium temperature ZS scrolls (1.5 ~ 6 HP)/ low temperature ZF dcrolls (1.5 ~ 5 HP)
- Single & three phase
- Refrigerant: R404A





# Compressors

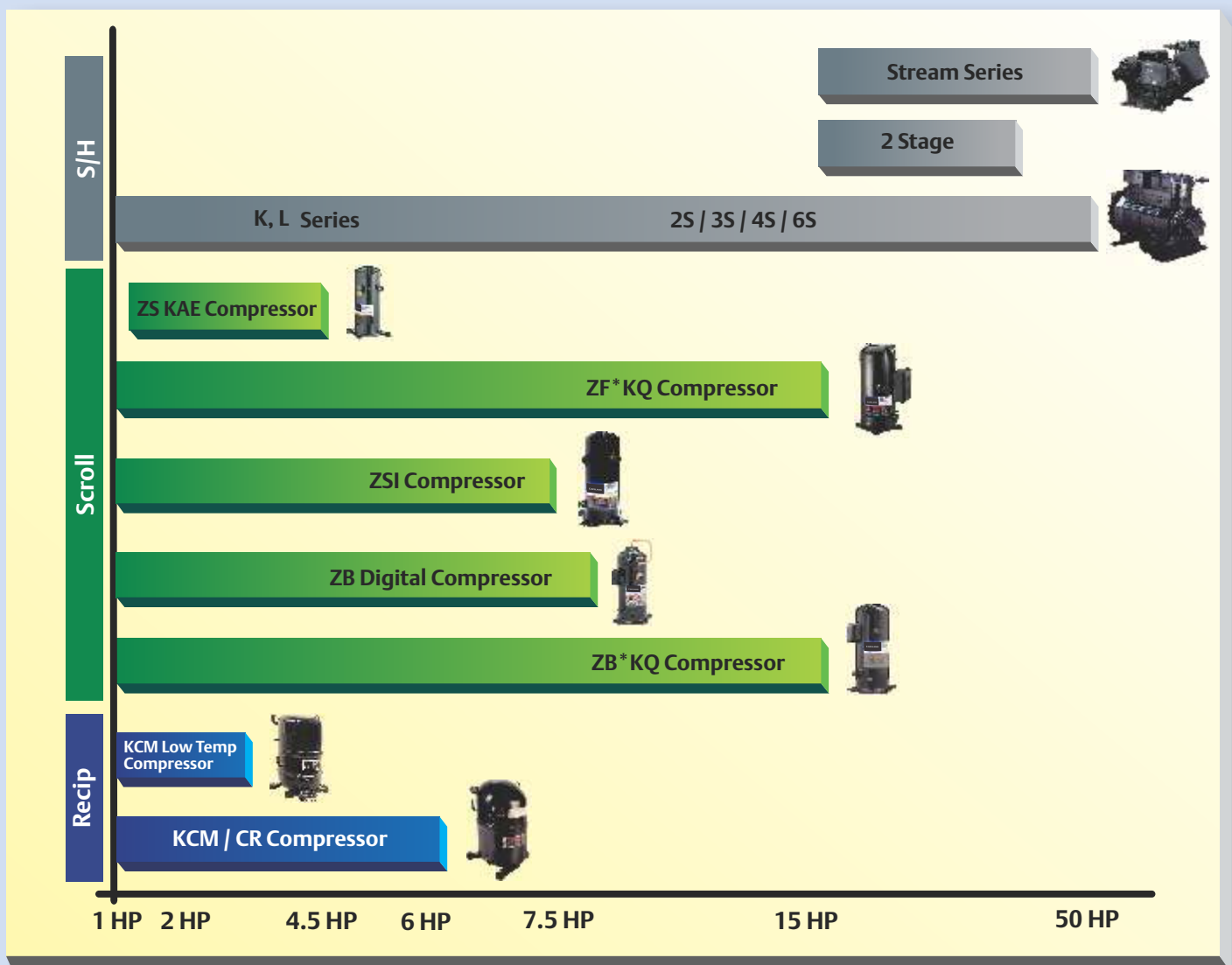
# Compressor Range

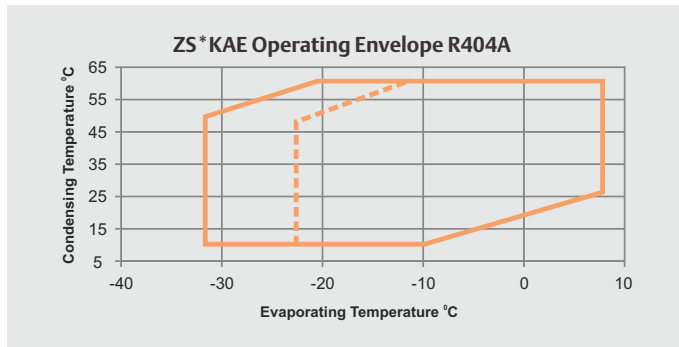
Copeland™ compressors are engineered for higher efficiency, lower sound levels, superior durability and unsurpassed reliability. They allow the integration of new and environmentally friendly refrigerants into systems, while seamlessly improving efficiency and performance levels.

**Scroll** – 2 to 15 HP Scroll Compressors for every application including commercial and industrial refrigeration, and refrigerated transport. Copeland Scroll™ compressors deliver unmatched performance and comfort for refrigerated facility owners and end-users alike. With over 100 million units manufactured worldwide, Copeland Scroll™ compressors have earned a reputation for reliability and lower energy costs.

**Semi-Hermetic** – 1 to 60 HP Reciprocating Compressors provide premium alternatives for systems requiring full temperature performance including low temperature evaporating conditions to -40°C.

**Hermetic Reciprocating** – 1 to 5 HP Hermetic Reciprocating Compressors provide cost-effective solutions to systems requiring a wide range of evaporating capability.





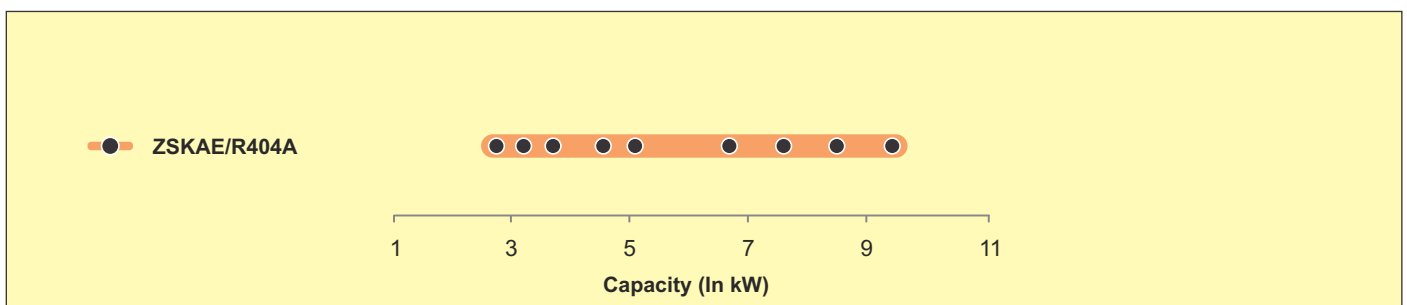
Note: Envelope in Region, max return gas temperature of 4.4°C.  
Envelope in Dotted Region, max return gas temperature of 18.3°C

## ZS\*KAE Scroll Compressors

### Extended Medium Temperature, 1.3 To 4.5HP

#### Features & Benefits

- Scroll Efficiency
  - 15% EER improvement over hermetic reciprocating compressors
- Wide operating envelope from -31°C To 7.2°C
- Scroll reliability
  - 70% Fewer Moving Parts Than Reciprocating
  - Superior Liquid Handling
- Smooth Scroll Movement
- Low Sound & Vibration
- Suitable For Cold Room, Transport Applications, walk-In refrigerators and freezers, soft serve machines, frozen beverage machines
- Qualified For R-404A, R-134a, R-407C, & R-22



Note: The above capacity data are at LT condition.

LT Condition: Condensing Temp.= +48.9°C, Evaporating Temp.= -25°C, Return Gas Temp.= 18.33°C, Subcooling = 0K

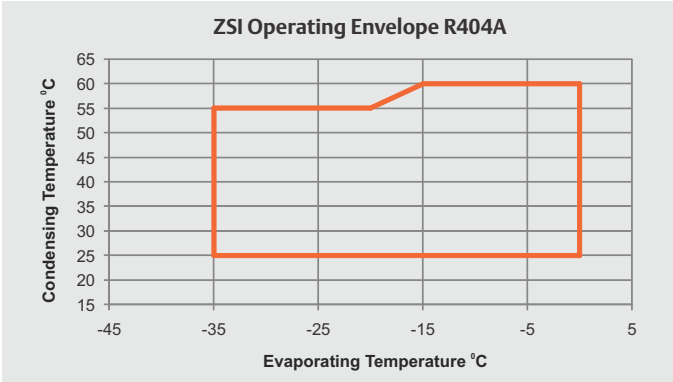


## ZSI Compressor

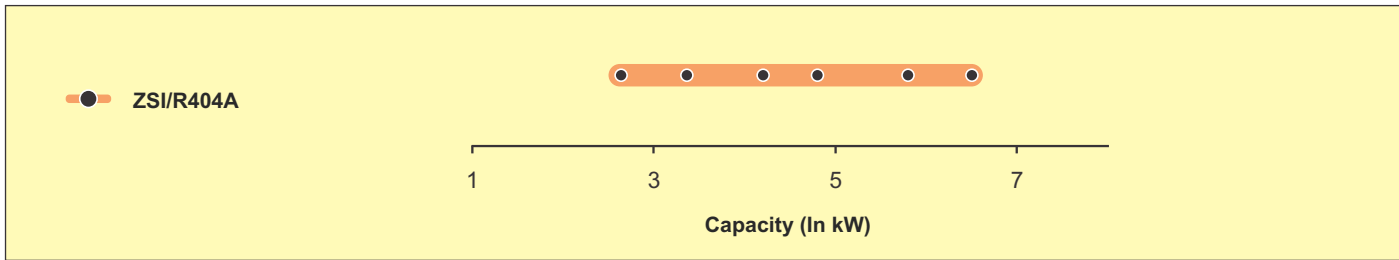
### Low Temperature 2 To 7.5 HP

#### Features & Benefits

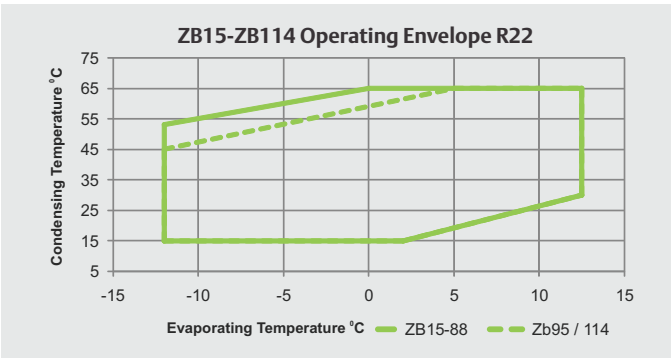
- High Efficiency Scroll For Lower Annual Operating Costs
- CoreSense™ Technology for Liquid Injection Control
  - Electronic Steady State Liquid Injection; Best performance during injection by controlling EXV opening for optimized injection amount at each operation condition
  - Multi-refrigerant Capability without changing injection device
  - High Discharge Line Temperature Protection
  - EXV Manual Operation for On-Site Diagnostics
  - Communication Capability (LEDs for hardware check, connector for monitoring by notebook, signal output for external device)
- Wide Application Envelope From -35 deg C To 0 deg C; Can Be Used For Medium Temperature Applications
- Light Weight & Compact
- Low Noise & Smooth Scroll Operation
- Qualified To Use With R22, R404A



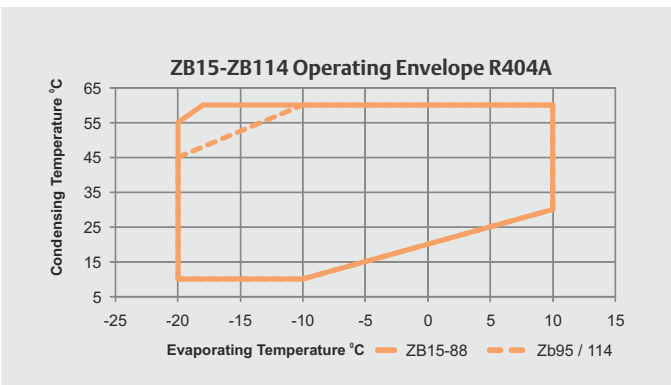
Note: Envelope In Region, max return gas temperature of 18.3°C



Note: The above capacity data are at LT condition. For LT Condition – Condensing Temp.= +45°C, Evaporating Temp.= -25°C, Return Gas Temp.= 18.33°C, Subcooling = 0K



Note: Envelope in region, max return gas temp. of 18.3°C. For custom conditions, please use Product Selection Software



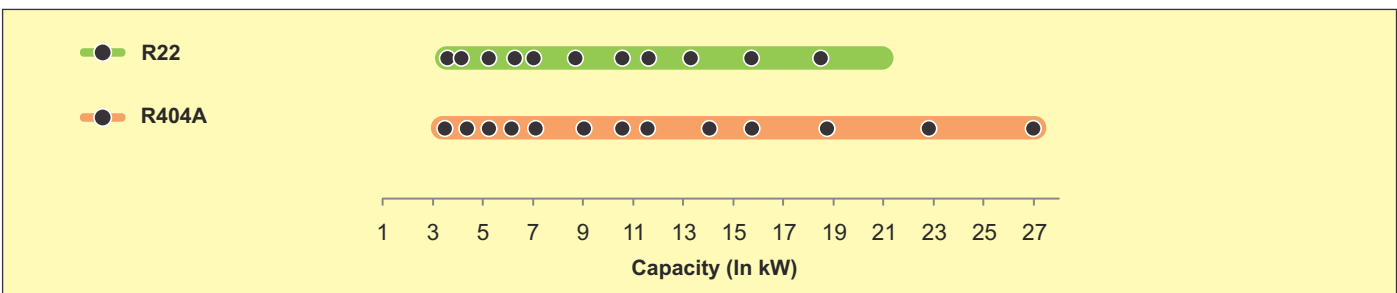
Note: Envelope in region, max return gas temp. of 18.3°C, For custom conditions, please use Product Selection Software

## ZB Scroll Compressor

### Medium Temperature 2 To 15 HP

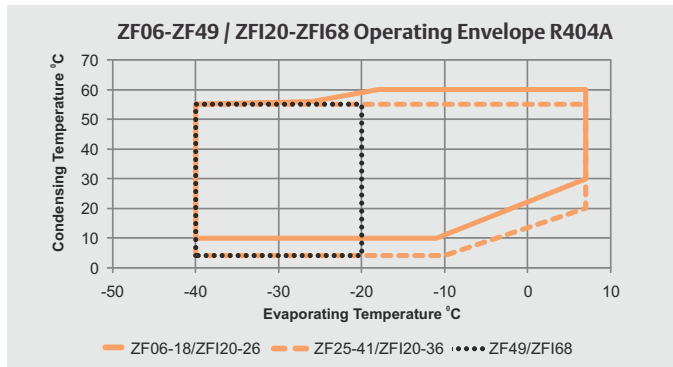
#### Features & Benefits

- Copeland Scroll™ axial and radial compliance for superior reliability and efficiency
- Wide operating envelope with 10°C condensing limit and fast pull-down capabilities
- High seasonal efficiencies as scrolls are designed at the condition where equipment runs most of the time
- Light weight and compact, half the weight of equivalent semi-hermetic compressors
- Available with R22, R404A, R134a & R407C
- Suitable for medium temperature chiller rooms
- Reliable refrigeration scrolls (COMPLIANT SCROLL®)
- Proven reliability and satisfied end users
- Full refrigeration features- Sight Glass, Rotalock Fitting
- High EER & low sound



Note: The above capacity data are at ARI MT. For ARI MT Condensing Temp.= +48.89°C, Evaporating Temp.= -6.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K





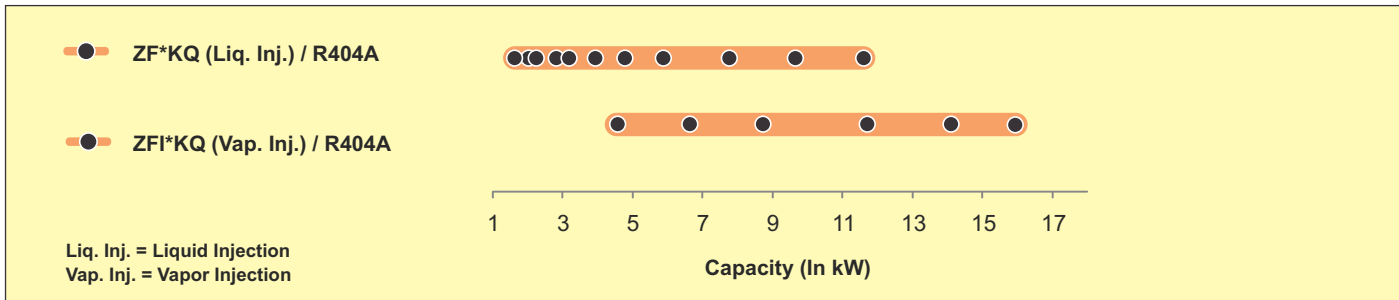
Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software

## ZF\* KQ Liquid Injection Scroll ZFI\* KQ Vapor Injection Scroll

Low Temperature 2 To 15 HP

### Features & Benefits

- ZF\*KQ models with liquid injection
  - Easy, efficient and reliable liquid injection to control discharge temperature & increase envelope via Discharge Temperature Control Valve (DTC)
- ZFI\*KQ models with enhanced vapor injection
  - Improved system capacity and efficiency by 40% and 25% respectively, making them the most efficient compressors on the market
  - Possibility to reduce the equipment and component sizes by using smaller compressors
- Available with R404A, R407A/F
- Wide application envelope from -40°C to 7°C evaporating temperature
- Comes with standard accessories:
  - ZF liquid injection compressor with DTC Valve, Suction / Discharge Valve Kits, Discharge Line Thermostat, Crankcase Heater
  - ZF vapor Injection Compressor With Suction / Discharge Valve Kits, Discharge Line Thermostat, Crankcase Heater, Plate Heat Exchanger, Solenoid Valve & TXV
- Light weight & smaller footprint enabling compact system Design



Note: The above capacity data are at ARI LT condition. For ARI LT – Condensing Temp.= +40.56°C, Evaporating Temp.= -31.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K

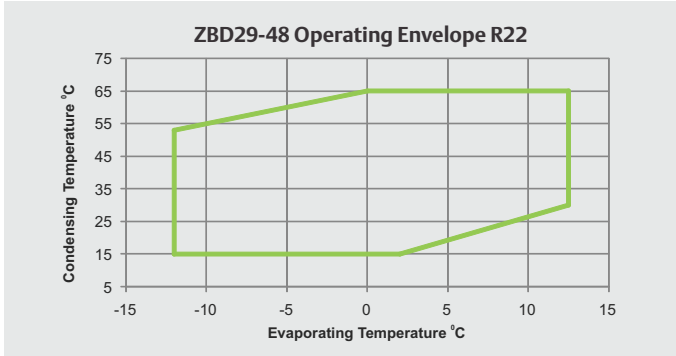


## ZBD Digital Scroll

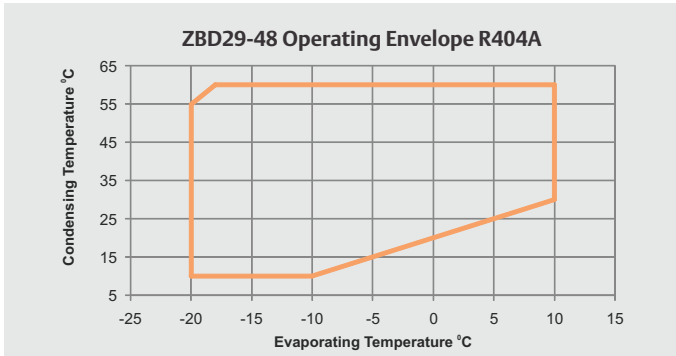
### Medium Temperature 4 To 7 HP

#### Features & Benefits

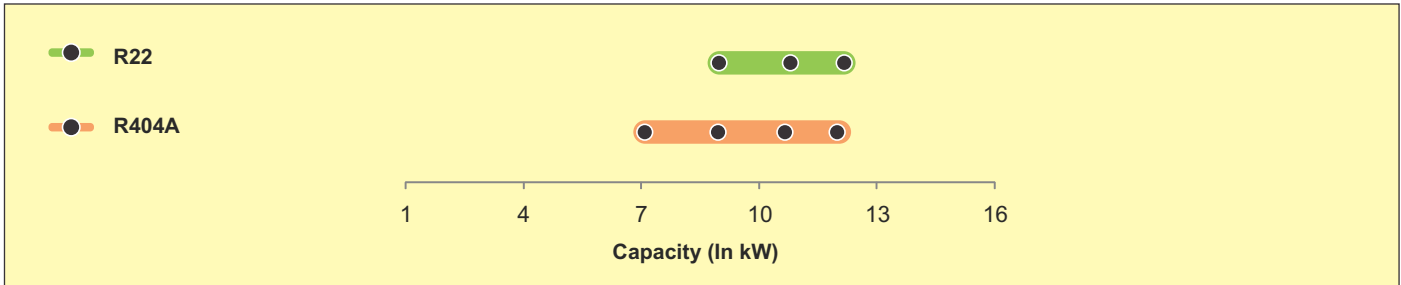
- Digital Scroll Technology provides higher efficiency compared to hot gas bypass systems or compressor cycling
- Continuous step-less modulation from 10% to 100% ensuring a perfect match of capacity and power to the desired load
- Proven scroll technology paired with mechanical unloading system provides greater reliability and efficiency
- Less complicated compared to variable speed technologies; requires simple electronics
- More reliable compared to other modulation technologies due to elimination of oil return issues
- Precise suction pressure control with associated energy savings
- Food quality is maintained by stable evaporating temperatures in the refrigerated areas
- Suitable for rack systems due to its varying load requirements
- Available with R22, R404A



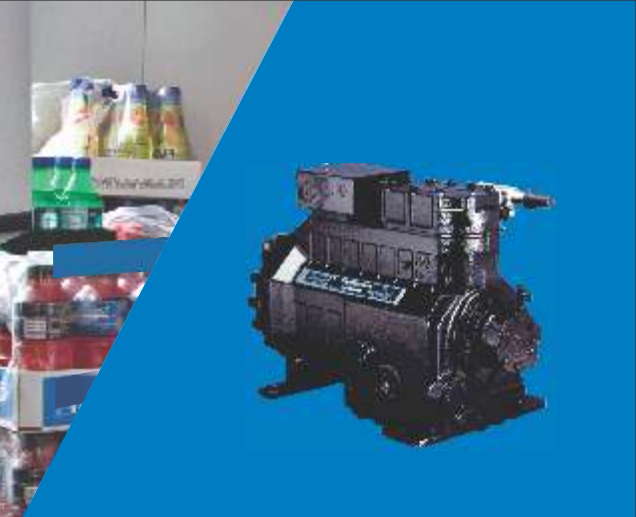
Note: Envelope in region, max return gas temp. of 18.3°C. For custom conditions, please use Product Selection Software



Note: Envelope in region, max return gas temperature of 18.3°C. For custom conditions, please use Product Selection Software



**Note:** The above capacity data are at ARI MT & ARI LT condition. For ARI MT Condensing Temp.= +48.89°C, Evaporating Temp.= - 6.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K

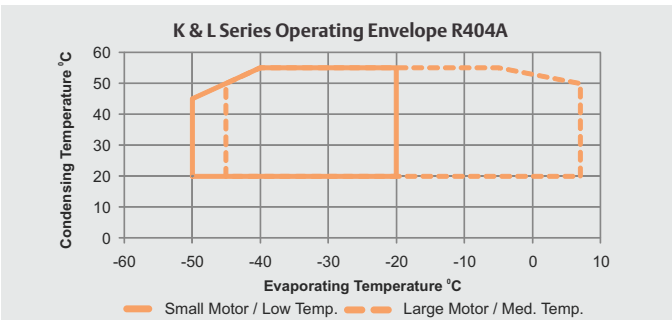


## K, L & S Semi-Hermetic Compressors

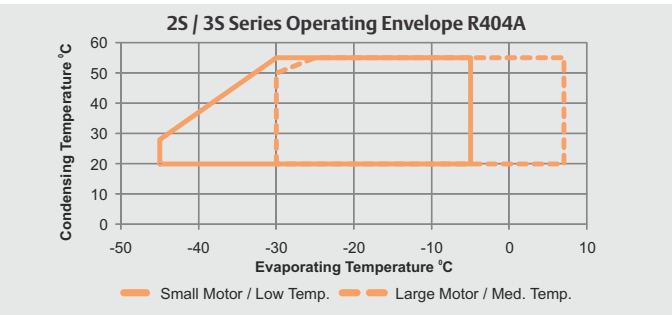
Medium / Low Temperature 0.5 To 60 HP

### Features & Benefits

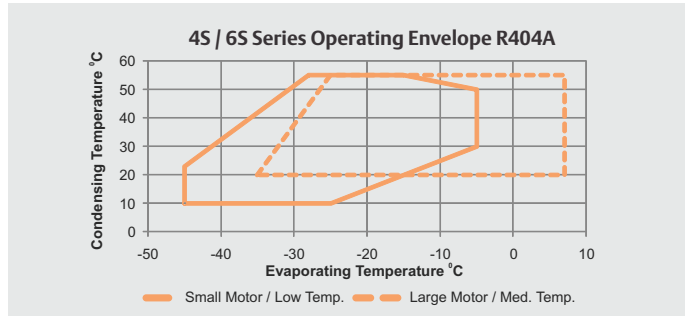
- Small 2, 3, 4, 6 and 8 cylinder compressors
- The K-series ranges : 0.5 to 2 HP, L-series : 2 to 4 HP, S-series : 4 to 60 HP
- One model for multi-refrigerants R404A, R134a, R407C and R22
- Integrated Oil Pump for maximum reliability
- Low condensing limits



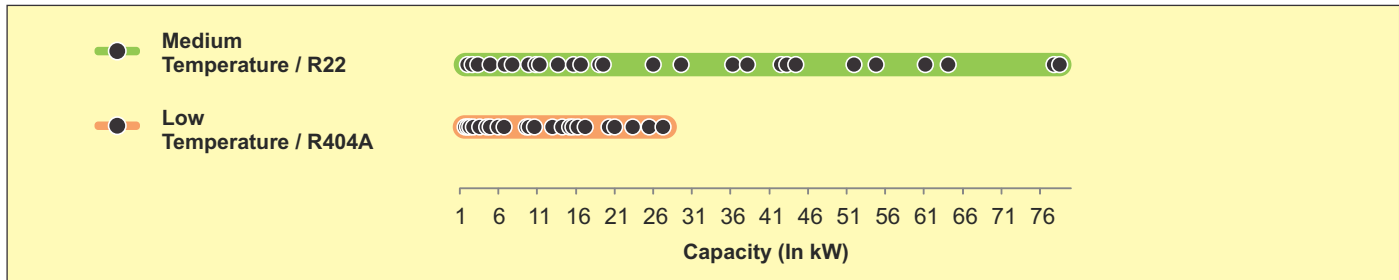
Note: Envelope in region, max return gas temperature of 20°C for R404A, the above envelope covers the major models in the series. For some specific models, the envelope will differ. Please use the Product Selection Software for detailed envelope



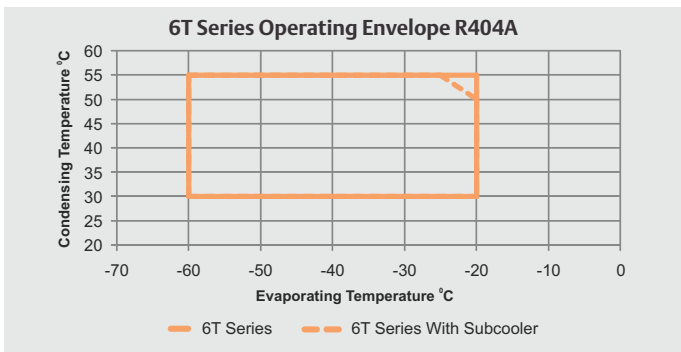
Note: Envelope in region, max return gas temperature of 20°C for R404A, the above envelope covers the major models in the series. For some specific models and refrigerants, the envelope will differ. Please use the Product Selection Software for detailed envelope



Note: Envelope in region, max return gas temperature of 20°C for R404A, the above envelope covers the major models in the series. For some specific models and refrigerants, the envelope will differ. Please use the Product Selection Software for detailed envelope



**Note:** The above capacity data are at ARI MT & ARI LT condition. For ARI MT Condensing Temp.= +48.89°C, Evaporating Temp.= - 6.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K, For ARI LT – Condensing Temp.= +40.56°C, Evaporating Temp.= - 31.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K



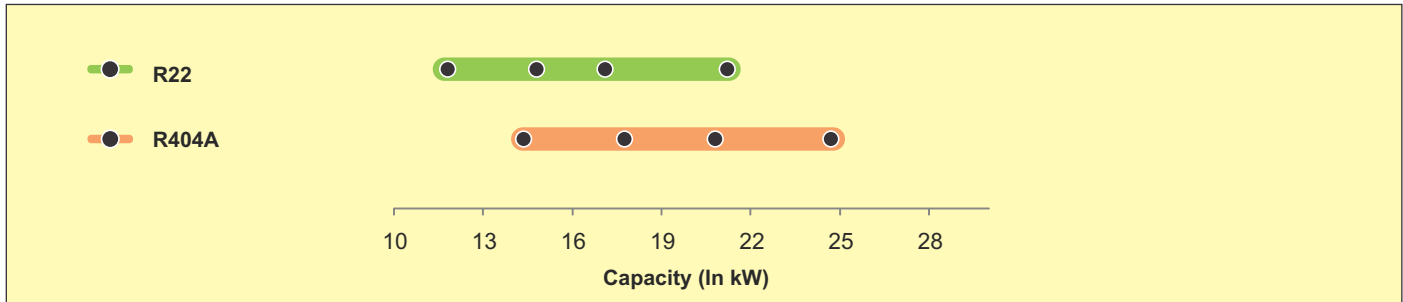
Note: Envelope in region, max return gas temperature of 20°C. For custom conditions, please use Product Selection Software

## 2- Stage Semi-Hermetic Compressors

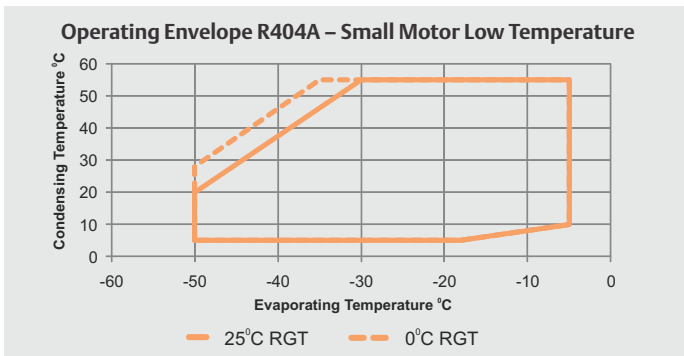
### Ultra Low Temperature 15 To 30 HP

#### Features & Benefits

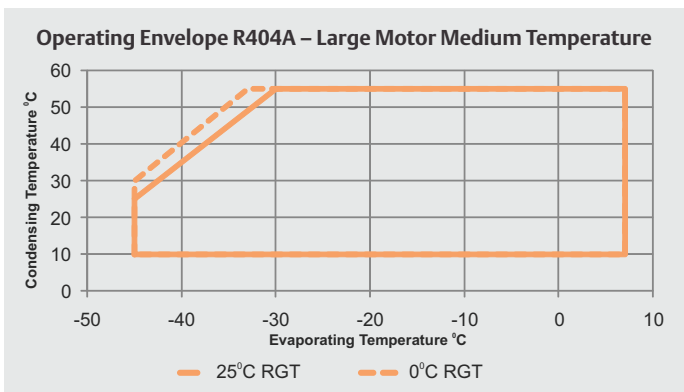
- 6T series available from 15 to 30 HP
- Designed for applications requiring extremely low evaporation temperatures
- R-22 / R-404A refrigerants
- Ultra low evaporating temperature till -60°C
- Liquid Sub-cooler to improve cooling capacity & energy efficiency



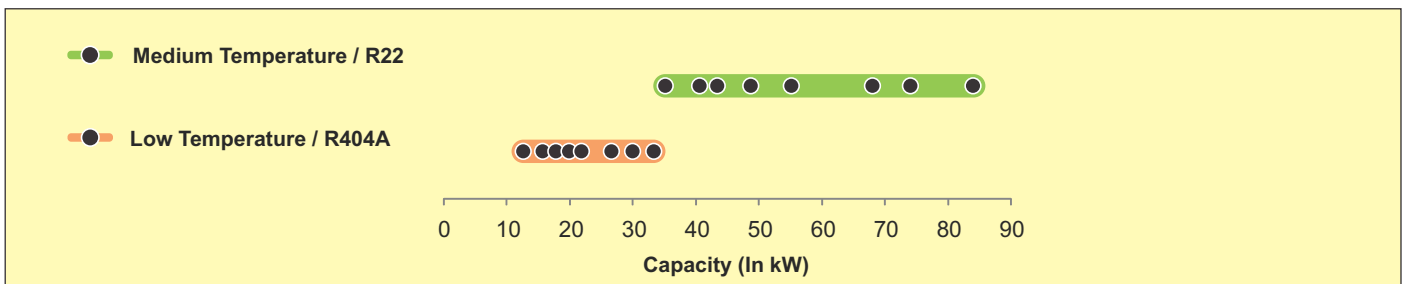
For 2 Stage LT- Condensing Temp.= +54°C, Evaporating Temp.= - 40°C, Return Gas Temp.= 20°C, Subcooling = 0K



Note: For envelopes with R134a, R407C, R22 refer to Product Selection Software



Note: For envelopes with R134a, R407C, R22 refer to Product Selection Software



**Note:** The above capacity data are at ARI MT & ARI LT condition. For ARI MT Condensing Temp.= +48.89°C, Evaporating Temp.= - 6.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K. For ARI LT – Condensing Temp.= +40.56°C, Evaporating Temp.= - 31.67°C, Return Gas Temp.= 18.33°C, Subcooling = 0K

## Stream Semi-Hermetic Compressor

Medium / Low Temperature 13 To 50 HP

### Features & Benefits

#### New 4 & 6 Cylinders Range

- Best-in-class performance - 10% more efficient than next best with unique Discus valve technology
- Multi-Refrigerant compressor for R404A, R407A / C / F, R134a

#### CoreSense™ Diagnostics

- Advanced protection & diagnostics module with communication
- Ensures increased equipment life time

#### Digital And VFD

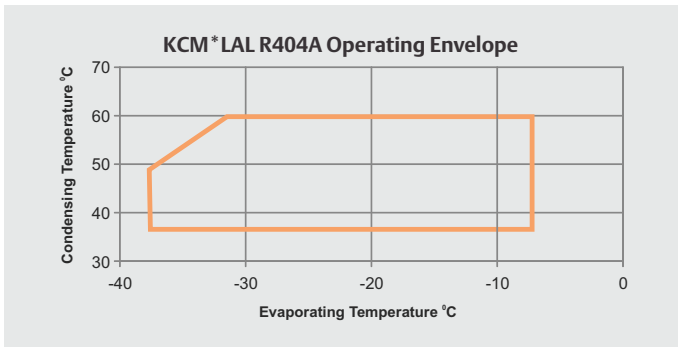
- Energy efficiency
- Simple continuous step-less capacity modulation

#### Stream Sound Shell

- Sound critical applications
- Makes stream the quietest compressor

#### New Range For CO2 Transcritical (MT)

- Best-in-class performance (efficiency & sound)
- Inverter release 30 to 70Hz



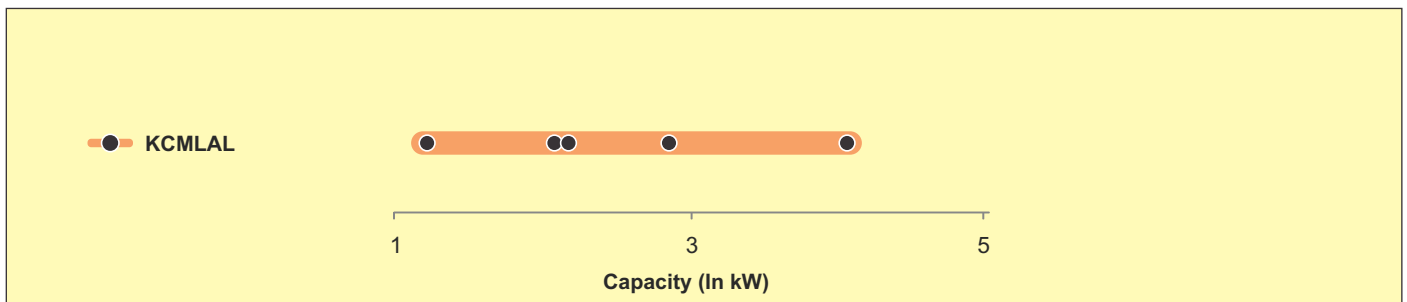
## KCM Reciprocating Compressors

### Low Temperature 1 To 3 HP

#### Features & Benefits

- Best in class energy efficiency
- Dedicated design for low temperature; optimized motor & gas suction path
- Proven reliability; Designed for high ambient climate
- Wide line up in R404A; Envelope upto -37° C

Suitable for freezer, frozen food, continuous ice cream freezer applications



Note: The above capacity data are at following condition.  
 For LT- Condensing Temp.= +50°C, Evaporating Temp.= -25°C, Return Gas Temp.= +4°C

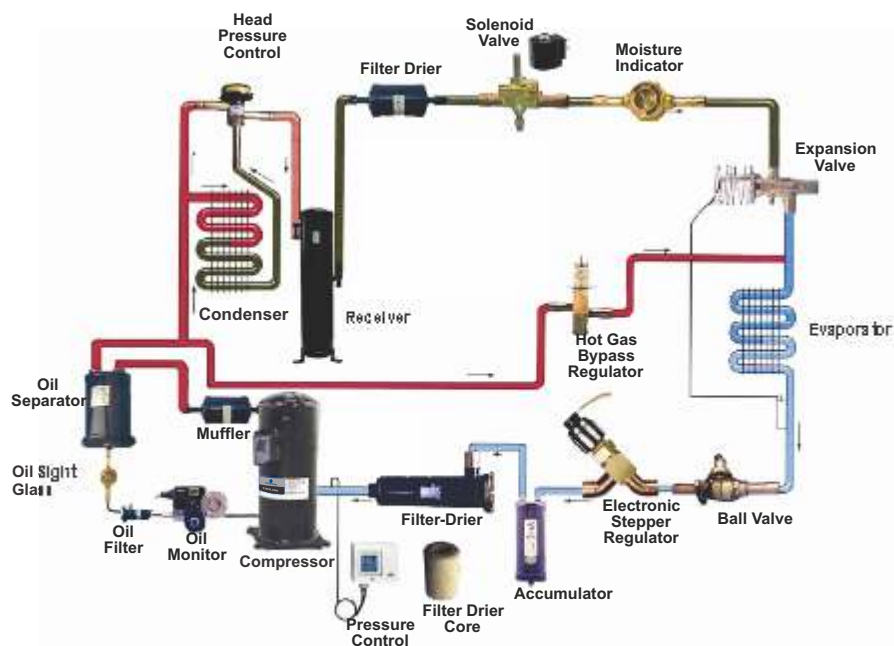
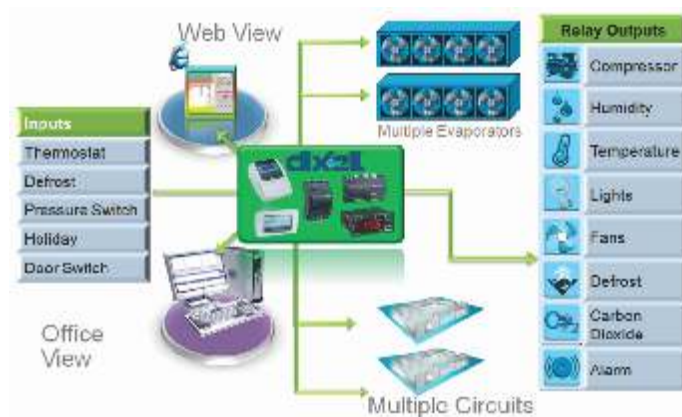
# System Controls

# System Solutions

Emerson offers system solutions for residential, commercial and industrial applications. Emerson's hardware and software control solutions are designed to improve system performance and save energy, while lowering downtime and maintenance costs.

Electronics - monitoring and maintenance in one complete solution.

Flow Controls - Emerson manufactures a wide variety of products designed to protect and control HVAC/R systems.







## ELECTRONICS

### Emerson Dixell™ Controllers For Cold Room

#### Parametric Controllers

- Hot Key for quick and easy Parameter Programming
- Instant visibility of machine status via Display Icons
- Innovative Suction Pressure Management of Rack Compressors
- Management of Anti – Sweat Heaters
- TTL or RS485 serial connection for Monitoring Systems
- Standard Communication Protocol ModBUS-RTU
- Dynamic setpoint – supermarket applications

#### Programmable Controllers

- Complete communication integrated solution, with WEB Server, ModBUS, and BACNET MS / TP & TCP-IP
- 80MB Memory for Alarm Management
- LINUX Operating System with ISaGRAF internal website
- UL approved

#### XWEB A Web Based Server With Linux OS – Supervisor & Monitoring System

- Better commissioning with Real Time Data Graphs
- Faster HACCP printout reports with a few clicks
- Up to 1 year temperature recording
- Possibility to modify the parameters of the connected devices remotely
- CRO for Compressor Rack Optimization





## Flow Controls

### Emerson Valves, Controls & System Protectors

- Thermal and electronic expansion valves
- Pressure transmitters and controls
- Rack, display case, condensing unit and fan-speed controllers
- Superheat and cold room controllers
- Oil management devices
- Suction accumulators
- System protectors and moisture indicators

#### Features & Benefits

- Best-in-class mechanical and electronic controls
- Application includes HFC, HCFC, CFC and CO<sub>2</sub>
- Wide operating range
- Hermetic and field serviceable options





## Cool Tools & Solutions

Emerson has developed software tools to facilitate precise calculation of heat load and energy for every project as well as recommendations of optimal systems for every application intended.

The tools are designed to help you analyse and define the performance of the electrical and mechanical data of your Copeland products swiftly and precisely.



### KOLDPRO™

The KoldPro tool is specially customized for India and is comprehensive and simple to use. It ensures quick & detailed load estimation for the Cold Room. This unique tool has a host of features that make it a must have for anyone associated with Cold Rooms. The features include -

- Weather data of 50+ cities
- Wide variety of food products with English-Hindi names
- Total equipment selection



### Mobile Apps

Emerson has a handy set of tools for compressor and condensing unit users. Ideal for engineers and technicians on the go.

You have on-the-go access to pressure, temperature conversions and superheat calculations amongst a host of other features. These include -

- Troubleshoot using the diagnostic information from the compressor's CoreSense™ module
- Cross-reference database for Emerson's valves, controls and system protectors
- Individual compressor / condensing unit selection & performance at user conditions



### Product Selection Software

This is an extremely handy software tool that allows you easy compressor / condensing unit model selection. Product Selection Software helps you ascertain -

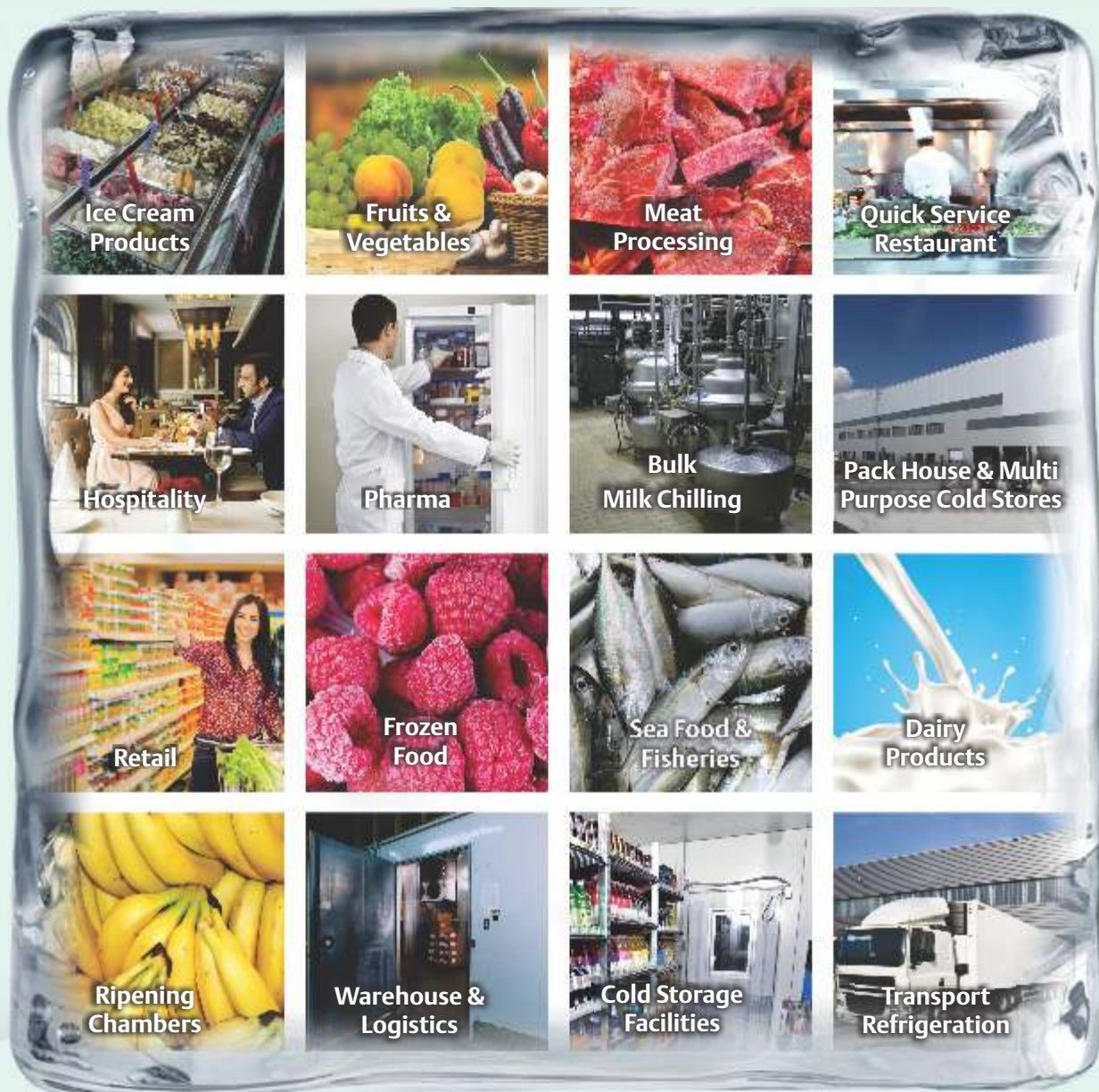
- Performance parameters at user defined condition
- Technical data / envelope
- Refrigerant properties
- Annual running cost of select cities



# Proven Projects

# Solutions For A Wide Range Of Cold Storage Facilities

We have successfully provided refrigeration systems for 2500+ cold storage facilities covering a wide range of applications like large distribution centers, cold storages & packhouses, ripening chambers, industrial chillers, pharma cold rooms, fruits & vegetables storage, food retail, food processing, ice cream processing & storage, bulk milk chilling, dairy cold rooms, packhouses & for many other applications



## Dairy Segment

**Application : Blast Chiller - Curd Processing**

**Product : Air-Cooled Stream Condensing Unit**

- Stream S/H Model: Air Cooled CDU 4MK-35X\* 2Nos
- Room Temp.: -5 °C
- Refrigerant: R404A
- Job Location: Mumbai



**Application : Ice Candy Manufacturing**

**Product : L Series Semi-Hermetic Compressors**

- 1 No (LA50-40E) Air-cooled CDU
- Evaporating Temperature: -23 °C
- Refrigerant: R404A
- Location: Vellore



**Application : Cold Room for Dairy Products**

**Product : Air-Cooled Stream Condensing Units**

- 4 Nos (W9-3SS-150X)
- Evaporating Temperature: 4 °C
- Refrigerant: R404A
- Location: Chennai



**Application : Cold Rooms and Deep Freeze Units**

**Product : Semi-Hermetic & Scroll Condensing Units**

- Model: 6 Nos \* V6-4ML-15X Semi-Hermetic CDU (Ice Cream Deep Freeze)
- 2 Nos \* Z9-6TJ-250X 2-Stage CDU (Ice Cream Hardening)
- 3 Nos \* KHZ529PQE (Anterooms)
- 2 Nos \* KHZ548PQL (Paneer & Other Products)
- Evaporating Temp.: -32 °C (Ice Cream Deep Freeze)
- -36 °C (Ice Cream Hardening)
- -5 °C (Paneer Storage)
- Refrigerant: R404A
- Location: Chennai



### Application : Freezer Rooms

### Product : Stream Compressors

- 3 Nos (6MI-40X) Condensing Units
- Room Temperature: -25 °C
- Refrigerant: R404A
- Location: Dindigul



### Application : Cold Room For Medium Temp Application (+2 C)

### Product : Air-Cooled Semi-Hermetic CDUs

- Type Of CDU: Air-cooled CDU (2 Units For One Cold Room) With Stream Compressor 4MK-35X
- Room Temperature: +2 °C
- Refrigerant:R404A
- Location: Mumbai



### Application : Milk Chilling

### Product : Water Cooled Semi-Hermetic Condensing Units

- Water Cooled Semi-Hermetic Condensing Unit Model: EWC-4MK35X-A 13-4 \* 2 Nos (Med Temp)
- Milk Temperature:
  - 2 To 4 °C For Milk Chilling Purpose
- Refrigerant: R404A
- Location: Baramati



### Application : Milk Chilling

### Product : Stream Compressor

- Stream Model: 6MI-40X-AWM D/D \* 1 Nos (Med Temp)
- Milk Temperature:
  - 2 To 4 °C For Milk Chilling Purpose
- Refrigerant: R404A
- Location: Ranchi





## Retail & Hospitality

**Application : Retail Freezer, Chiller Cases & Cold Rooms**

**Product : Multi Compressor Semi-Hermetic Rack**

- 3 Nos \* 4ML-15X Rack For LT Freezer System
- 3 Nos \* 3SSH-150E Rack For MT Chiller System
- Evaporating Temperature:
  - -35 °C For Freezer LT
  - -10 °C For Chiller MT
- Refrigerant: R404A
- Location: Thane



**Application : Super Market Display Cases & Multi Deck Chiller**

**Product : Multi-Compressor Semi-Hermetic Racks**

- Compressor Rack Model: EMP 33SE-030L (Low Temp.)  
EMP 33S-030M (Medium Temp.)
- Evaporating Temperature/ Refrigerant: R404A - For Low Temperature Application (-22 to -18 °C)  
R 22 – For Medium Temperature Application (2 to 4 °C)
- Location: Noida



**Application : Blast Chiller In Centralized Base Kitchen Of A Leading Hospital**

**Product : Semi-Hermetic Condensing Units**

- Air Cooled Semi-hermetic Condensing Unit Model:  
Z9-4SA-200X-AWM-106 X 02nos (Low Temp)
- Room Temperature:  
-3.5 To -5 °C For Blast Chilling Of Cooked Food (320 Kg)  
From 80 °C To +3 °C In Record Time Of 60-90 Mins
- Refrigerant: R404A
- Location: Gurgaon (Delhi NCR)



## Multi-Commodity Cold Storages

**Application : Freezer Rooms For Peas, Lemon & Mango**

**Product : Stream Semi-Hermetic Compressors**

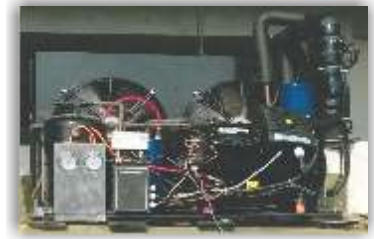
- 2 Nos \* 4ML-15X For LT System
- Evaporating Temperature: -25 °C
- Refrigerant : R404A
- Location: Surat



**Application : Ice Cream Hardening & Blast Freezer Application**

**Product : Stream Condensing Units**

- 1 Nos \* V6-4ML-15X-AWM
- Evaporating Temperature: -40 °C SST
- Refrigerant: R404A
- Location: Chennai



**Application : Ripening Chambers, Cold Storage & Pre-Cooling Chambers**

**Product : Air-Cooled Scroll & Semi-Hermetic Condensing Units**

- Models: KHZ529PQB \* 8 Nos  
KHZ611PAL \* 6 Nos  
KHZ611PAL \* 2 No.
- Evaporating Temperature:  
-2 °C (Pre-Cooler & Cold Rooms)  
10 °C (Ripening Chambers)
- Refrigerant: R404A (Pre-Cooler & Cold Room)  
R407C (Ripening Chamber)
- Job Location: Madhya Pradesh



**Application : Fruits & Vegetables Cold Storage**

**Product : Air-Cooled Scroll Condensing Units**

- Room Temp.: 2-4 °C
- Stream S/H Model: KHZ548PQE \* 25Nos
- Type Of CDU: Air-cooled CDU
- Location: Haryana



**Application: Multi Commodities & Frozen Food Cold Storage**

**Product: Scroll/ Semi-Hermetic Condensing Units**

- Semi-Hermetic Condensing Unit Model:  
V6-4ML-15X \* 2 Nos (Low Temp)
- Scroll Condensing Unit Model:  
KHZ566PQL \* 9 Nos (Med Temp)
- Room Temperature:
  - -20 °C For Freezer Cold Rooms LT
  - 2 To 4 °C For Multi Commodity Cold Rooms MT
- Refrigerant: R404A
- Location: Satara



**Application : Logistics/Pre-Cooling/Ripening/  
Frozen Food Cold Storage**

**Product : Scroll/ Semi-Hermetic Condensing Units**

- Semi-Hermetic Condensing Unit Model: Z9 – 6SL – 250X \* 8 pcs & Z9 – 6ST – 320X \* 4 pcs.
- Scroll CDU model: KHZ576PQG \* 8 pcs & KHZ545PQG \* 8 pcs.
- Room Temperature:
  - 14 °C For Ripening Chambers
  - 2 To 4 °C For Precooling Chambers
- Refrigerant: R134A
- Location: Vashi



**Application : Multi Commodity Cold Storage**

**Product : Semi-Hermetic Condensing Units**

- Semi-Hermetic Condensing Units: V6-4MF-13X \* 13 Nos & V6-4ML-15X \* 12 Nos
- Room Temperature:
  - -25 °C For Frozen Chambers
- Refrigerant: R404A
- Location: Guwahati



## Food Processing & Pack Houses

**Application : Freezer Room For Meat Storage**

**Product : Stream Compressors**

- 1 Nos \* 6MI-40X Condensing Unit
- Room Temperature: -25 °C
- Refrigerant: R404A
- Location: Kalpakkam



**Application : Banana Ripening**

**Product : HLR Mini Rack Units With Digital Technology**

- Model: 2 Pcs Of Horizontal Liquid Receiver Units (HLR31-ZBD90)
- Room Temperature: 10-12 °C
- Refrigerant: R404A
- Location: Chinnamannur, Theni



**Application : Grape Pre-Cooling**

**Product : Air-Cooled Stream Condensing Units**

- Stream S/H Model: Z9-4MH-25X \* 3 Pcs
- Room Temp.: 0 °C
- Refrigerant: R407C
- Location: Nashik



**Application : Integrated Fruit Processing With Pre Cooling Chambers, Multi Commodity Storage Chambers, Ripening Rooms & Freezer Rooms.**

**Product :Semi-Hermetic & Scroll Multi Compressor Racks/ Scroll Condensing Units**

- Semi-Hermetic Compressor Rack Model: EMP 44ME-140M-000 \* 1 Nos (Med Temp)
- Scroll Compressor Mini Rack Model: HLR 31-ZBDT 116KE-TFD \* 2 Nos (Med Temp)
- Scroll Condensing Unit Model: ZXL 060E-TFD \* 2 Nos (Low Temp)
- Reciprocating Condensing Unit Model: KHM511PQL \* 1 Nos (Med Temp)
- Room Temperature:
  - -31 °C For Freezer Rooms LT
  - 2 To 14 °C For Ripening Chambers MT
  - 2 To 4 °C For Multi Commodity Cold Storages MT
- Refrigerant: R404A
- Location: Anantapur



**Application : Grapes Precooling & Cold Storage Rooms**

**Product : Semi-Hermetic & Scroll Condensing Units**

- Semi-Hermetic Condensing Unit Model: Z9-4MJ-33X-AWM-106 \* 4 Nos (Med Temp)
- Scroll Condensing Unit Model: KHZ595 PAL-D56DA0 \* 4 Nos (Med Temp)
- Room Temperature:
  - 2 To 4 °C For Precooling/ Cold Rooms MT
- Refrigerant: R22
- Location: Nashik



**Application : Gamma Irradiation Based Packhouse For Vegetable Exports**

**Product : Stream Compressors**

- Stream S/H Model: 4MF-13X \* 6 Pcs
- Room Temp.: -20 °C
- Refrigerant: R404A
- Location: Haryana



**Application : Integrated Cold Chain Packhouse With Precooling & Cold Storages**

**Product : Semi-Hermetic & Scroll Condensing Units**

- Semi-Hermetic Condensing Unit Model:
  - V6-3SC-100X \* 2 Nos (Med Temp)
  - W9-4ST-200X \* 3 Nos (Med Temp)
  - Z9-4SJ-300X \* 2 Nos (Med Temp)
- Scroll Condensing Unit Model:
  - KHZ529PQG \* 1 Nos (Med Temp)
  - KHZ538PQG \* 13 Nos (Med Temp)
  - KHZ545PQG \* 6 Nos (Med Temp)
  - KHZ548PQG \* 7 Nos (Med Temp)
  - KHZ566PQG \* 9 Nos (Med Temp)
  - KHZ576PQG \* 5 Nos (Med Temp)
- Room Temperature:
  - 2 To 4 °C For Cold Storage Rooms MT
- Refrigerant: R404A, R134a
- Location: Baramati



**Fruit Processing & Pre-Cooling**

**Application : Grape Pre-Cooling**

**Product : Air-Cooled Semi-Hermetic Condensing Units**

- Model: Air-Cooled Semi-Hermetic CDU
  - W9-3SS-150X AWM (2 NOS)
  - Z9-4MJ-33X-AWM (4 NOS)
- Room Temp.: 2 to 4 °C
- Refrigerant: R22
- Location: Nashik



# Ice Cream Plants

## Application : Ice Candy Manufacturing

## Product : Stream Semi-Hermetic Compressors

- Machine With A Capacity Of 2000 Candies/hr Using Brine Chiller
- 1 Nos \* 4MM1- 20X For LT System With Water Cooled Condenser
- Evaporating Temperature:  $-30^{\circ}\text{C}$
- Refrigerant: R404A
- Location: Mumbai



## Application : Low Temp. Application for Ice Cream Candy Machine

## Product : Water-Cooled 2 Stage Semi-Hermetic Condensing Units

- Stream S/H Model: 6 THW-200E SUB (2 Nos.) With Water-Cooled Condenser
- Evaporating Temperature:  $-43^{\circ}\text{C}$
- Refrigerant: R404A
- Location: Kochi



## Application : Ice Cream Plant

## Product : Water Cooled Semi-Hermetic Condensing Units

- Semi-Hermetic Condensing Unit Model: EWC-4MF13X-A8-4 \* 3 pcs.
- Room Temperature:
  - $-25^{\circ}\text{C}$  Product Temperature
- Refrigerant: R404A
- Location: Bhopal



## Application : Ice Cream Plant

## Product : Scroll/ Semi-Hermetic Condensing Units

- Scroll Condensing Units (5-8HP) \* 9Nos
- Semi-Hermetic Units (13-40HP) \* 8Nos
- Room Temperature:
  - $-25^{\circ}\text{C}$  Product Temperature
  - $2$  To  $4^{\circ}\text{C}$  For Chillers
- Refrigerant: R404A
- Location: Ludhiana



## Logistics & Warehousing

**Application : Banana Ripening, Cold Storage**

**Product : Air-Cooled Semi-Hermetic Condensing Units**

- Stream S/H Model: S9-2SC-65X-EWL \* 4Nos Air-cooled CDU
- Room Temp.: 10 °C
- Refrigerant: R22
- Location: Delhi



**Application : Frozen Food & Meat Storage In Logistics**

**Product : Semi-Hermetic Multi Compressor Racks/ Condensing Units**

- Semi-Hermetic Multi Compressor Rack Model: EMP 44ME-140M-000 \* 1 Nos (Low Temp)
- Semi-Hermetic Condensing Unit Model: Z9-4SJ-300X-AWM-106 \* 4Nos (Med/Low Temp)
- Room Temperature:
  - -20 to -22 °C For Freezer LT
  - 2 To 4 °C For Chiller MT
- Refrigerant: R404A
- Location: Dadri



**Application : Integrated Cold Chain Logistics Facility**

**Product : Semi-Hermetic Condensing Units**

- Semi-Hermetic Condensing Unit Model: Z9-6MM-30X-AWM-106 \* 1 Nos (Low Temp)
- Semi-Hermetic Condensing Unit Model: Z96ST-320X-AWM-106 \* 1 Nos (Low Temp)
- Room Temperature:
  - -20 °C For Freezer Rooms LT
- Refrigerant: R404A
- Location: Kheda, Ahmedabad



## Industrial Chillers & Equipments

**Application : Water Chilling For Medium Temp. Application**

**Product : Stream Compressor**

- Stream S/H Model: Air-Cooled CDU With 6MK 1-50X AWM /D-D
- Temperature: +10 °C Water Temperature
- Refrigerant : R407C
- Location: Silvassa



**Application : Glycol Chilling Low Temp. for Soap Moulding Industry**

**Product : ZF Scroll**

- Scroll Compressor Model: ZF25KQE-TFD- 551; Air-Cooled CDU
- Product Operating Temp.: -25 to -20 °C
- Refrigerant : R404A
- Location: Mumbai



**Application : Water Chiller**

**Product : Stream Compressors**

- Water Chilling For Medium Temp; Anodizing Process
- Stream S/H Model: 6MJ- 45X AWM/D-D (2 No)
- Operating Condition: 12 °C Water Temperature
- Refrigerant: R 22
- Location: Nagpur



## Snow Parks

**Application : Snow Park Chamber**

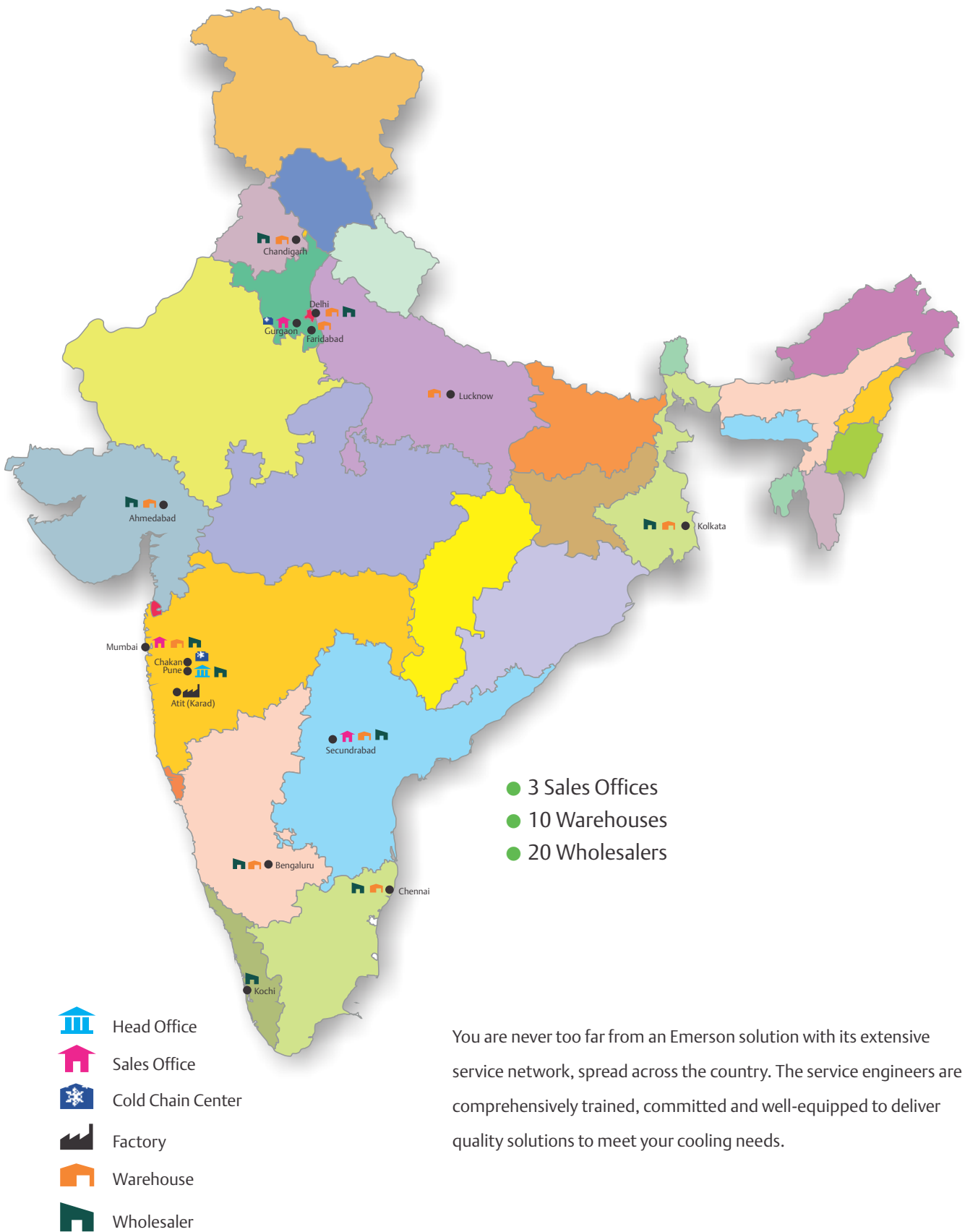
**Product : Water-Cooled Stream Condensing Units**

- Model: Water Cooled CDU With 6MK-50X\* 4Nos
- Room Temp.: -10 °C
- Refrigerant: R404A
- Location: Pune





# Cold Chain Footprint Across The Nation



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