

REFRA GALAXY CHILLERS



DESCRIPTION



Refra offers a comprehensive range of chillers designed to meet the diverse needs of small, medium, and high-power commercial and industrial applications.

Product Line Features

Galaxy line offers air-cooled chillers with a range of cooling capacities tailored for industrial and commercial buildings. Each model is designed with specific power demand in mind, from smaller capacities of 45 kW for the Galaxy Solo to larger capacities of 465 kW for the Galaxy Quad.

Environmental Responsibility

Refra Galaxy Chillers are manufactured using R290 refrigerant, known for its minimal environmental impact. This commitment to eco-friendliness aligns with Refra's dedication to sustainability and reducing carbon footprints in commercial and industrial settings.

Innovative Technology

High-quality EC fan motors and microchannel heat exchangers reduce energy consumption and emissions, while special modular assembly supports energy-saving options like built-in hydraulic modules and heat recovery systems.

Versatile Functionality

Each model can be tailored with additional options to meet specific application needs. With extensive power selection options and customizable features, Galaxy chillers can adapt to a wide range of industrial and commercial cooling requirements.

Enhanced Safety Features

Certain models feature the option to incorporate multiple circuits, ensuring continuous operation even in the event of a malfunction. This redundancy enhances system reliability and safeguards against downtime in critical applications.

User-Friendly Design

Refra prioritizes ease of installation and operation with a plug-and-play approach. This user-friendly design philosophy minimizes setup time and allows customers to quickly integrate and start utilizing their chiller systems.

Robust Construction

Each Refra heat pump is housed within a robust frame constructed from galvanized steel and coated with a protective layer, offering resistance against corrosion and environmental elements. Additionally, sound insulation materials reduce noise levels, ensuring a quieter operational environment.

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DESIGN FEATURES

COMPONENT	DESCRIPTION
Assembly parts	
Frame	Constructed from pre-coated galvanized steel sheets, our frames ensure exceptional durability. With a polymer powder coating applied at 200°C, our units achieve a corrosion resistance classification of C3, providing heightened protection against environmental elements. This process guarantees prolonged longevity and reliability in various operating conditions. Additionally, easily removable panels offer convenient access to internal components for maintenance. The standard unit features a soundproof compressor box with high acoustic impedance and sound-insulating materials for reduced operational noise.
Fans	EC fans excel in efficiency and capacity control due to their advanced technology. They offer precise cooling power adjustment, ensuring optimal performance while consuming less energy. This results in cost savings and a more environmentally friendly operation.
BPHE Superheater	BPHE superheater improves system efficiency by superheating and separating oil from the refrigerant before it enters the compressor, thereby enhancing the thermodynamic performance of the refrigeration cycle and reducing energy consumption. It protects against potential damage from liquid refrigerant, extending the compressor's lifespan and enhancing reliability.
Air heat exchanger - Condenser	Microchannel condensers reduce airside pressure drops and enhance thermal performance by providing efficient heat transfer through its compact design featuring flat tubes and multiple microchannels. Lightweight, corrosion-resistant construction ensures durability and reliable operation of our systems, as well as contribute to quieter operation and easier maintenance.
BPHE Evaporator	Copper-brazed plate heat exchangers offer a compact, efficient, and hassle-free solution for cooling in various design points. Each unit provides optimal performance, with special features ensuring top-notch thermal efficiency and reliability. This guarantees a long service life, even in conditions with exceptionally high design pressures.
Expansion valve	Electronic magnetic expansion valve for refrigeration cycles combines energy efficiency, reliability, safety, and planning efficiency in one robust solution. Its rapid transition from closed to 100% open in just 1 second, alongside precise feedback, ensures higher system stability and increased energy efficiency. With a linear magnetic actuator driving the valve directly, friction and mechanical play are eliminated, resulting in a maintenance-free design that offers unparalleled reliability and longevity. Safety is paramount, with a mechanical spring-loaded closure in case of power failure or cable disconnection, ensuring tight sealing without the cost of a solenoid valve. A3 certification for R290/propane refrigerant makes it ideal for eco-friendly equipment designs.
Compressors	Semi-hermetic reciprocating compressors, incorporating an oil management system, electric oil heater, and shut-off valves, are key elements within our systems. These compressors utilize refrigerant suction gas for cooling the electric motor and benefit from specialized electronic protection to prevent potential malfunctions. Moreover, they are installed on anti-vibration mounts to mitigate vibration transmission to the structure, thereby promoting smooth and dependable operation.

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DESIGN FEATURES

COMPONENT	DESCRIPTION
Assembly parts	
Electrical cabinet	Our electrical cabinet complies with EN 60204-1 standards, ensuring safety and reliability. This standard regulates the safety, functionality, and maintenance of electrical equipment in machines, aiming to prevent dangerous situations, simplify maintenance and repair, and enhance machine reliability and ease of operation.
Siemens Climatix Control Solution	Siemens Climatix PLC controllers enable remote control and easy online access to the entire management interface and data of Refra units. These controllers offer a broad range of control and monitoring functions. Their modular design and freely programmable I/Os provide flexibility for various custom applications. Integrated communication interfaces, such as Ethernet for Modbus IP and BACnet IP, offer additional connectivity options through various communication modules, while the remote HMI enhances both accessibility and ease of maintenance.

ENVIRONMENTAL RESPONSIBILITY

	Refra has been awarded with ATMO Approved label for using natural refrigerants, known for their low environmental impact, compared to synthetic alternatives. This certificate highlights innovation in HVACR technologies and emphasizes sustainability, ensuring products meet high standards of efficiency and reliability while complying with safety regulations. Globally recognized, the label signifies a commitment to eco-friendly cooling solutions and environmentally responsible choices in refrigeration.
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SAFETY MEASURES

Incorporating propane as a refrigerant necessitates rigorous safety protocols throughout our systems. We meticulously adhere to stringent regulations and implement advanced safety features to mitigate potential risks associated with propane's flammability and toxicity. Our equipment undergoes thorough testing and certification to ensure compliance with industry standards and regulations, including EN378. Furthermore, specialized safety measures, such as leak detection systems and ATEX-rated components, are integrated into our systems to safeguard against any potential hazards.

CONFORMITY OF CERTIFICATES

ISO 9001:2015 | All necessary PED certificates | LVD Certificate No. CE801.B17019 and No. CE801.B17026

REFRA GALAXY CHILLERS

ADDITIONAL OPTIONS THAT CAN BE INTEGRATED INTO REFRA GALAXY CHILLERS



Pump on/off 10m head

Designed for pumping of water or glycol mixtures without abrasive substances. "On/Off" function is used in applications where the pump only needs to operate when there is a demand for fluid flow.



Pump on/off 20m head

Designed for pumping of water or glycol mixtures without abrasive substances. "On/Off" function is used in applications where the pump only needs to operate when there is a demand for fluid flow.



Pump inverter 10m head

Designed for pumping of water or glycol mixtures without abrasive substances. Integrated inverter provides precise control over the flow rate of the fluid and ensures energy-efficient operation.



Pump inverter 20m head

Designed for pumping of water or glycol mixtures without abrasive substances. Integrated inverter provides precise control over the flow rate of the fluid and ensures energy-efficient operation.



Twin Pump on/off 10m head

Double pump setup, designed for pumping of water or glycol mixtures without abrasive substances. One pump serves as the base-load pump, while the second pump can serve as a reserve in the event of a fault.



Twin Pump on/off 20m head

Double pump setup, designed for pumping of water or glycol mixtures without abrasive substances. One pump serves as the base-load pump, while the second pump can serve as a reserve in the event of a fault.



Twin Pump inverter 10m head

Double pump setup, designed for pumping of water or glycol mixtures without abrasive substances, ensures reliable operation in case of an emergency and precise control over the fluid flow rate.



Twin Pump inverter 20m head

Double pump setup, designed for pumping of water or glycol mixtures without abrasive substances, ensures reliable operation in case of an emergency and precise control over the fluid flow rate.



Desuperheater

Utilizes the high-temperature energy of the superheated refrigerant gas to heat water. By using the waste heat generated during the cooling process, desuperheater can improve the overall energy efficiency of the system.



Trace heating

Maintains or raises the temperature of pipes and vessels through specially engineered cables to protect it from freezing at sub-zero temperatures.

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 <p>Thick insulation frame</p> <p>Additional 30-50 mm rock wool material for a super silent unit operation with double insulation reduces the sound level and strengthens the frame construction.</p>	 <p>Antivibration mounts</p> <p>Reduces and isolates the transmission of vibrations from the unit by using a rubber element with a metal casing.</p>
 <p>Flow switch</p> <p>Detects the flow of liquid medium in HVAC systems. Used as a safety device to ensure there is an adequate flow of the fluid, and to trigger an alarm or shut down the system in case of low flow.</p>	 <p>Flow meter</p> <p>Utilises ultrasonic transit-time technology to provide accurate and repeatable water-flow measurement and insures the correct measured flow. Monitors the performance and efficiency of the system, ensures the adequate flow of fluid.</p>
 <p>Check valve</p> <p>Allows fluid to flow in one direction only, and prevents backflow in the opposite direction. Recommended for systems with more than one heat pump, to prevent backflow and ensure proper fluid flow.</p>	 <p>Double safety valve</p> <p>Allows the user to work on the isolated valve for periodic inspection or replacement, while the line is completely operative and the system safety is integral.</p>
 <p>Aqua Aero</p> <p>Hydrophobic coating, which acts as a barrier and prevents corrosive agents from infiltrating the underlying metal surface in heat exchangers. Helps to lower energy consumption by reducing airside fouling in cooling coils, thus improving the overall energy efficiency of the system.</p>	 <p>Siemens cloud + modem GSM</p> <p>This kit provides remote access to the unit controller. The cloud provides all relevant equipment data and allows to evaluate and control it efficiently using leading IoT analytics tools. Customers who purchase Siemens Cloud option receive a full 2-year warranty on Refra unit.</p>
 <p>Vacon inverter</p> <p>Intelligent frequency inverter that controls AC motors efficiently and intelligently, allowing for precise speed regulation.</p>	 <p>Varipack</p> <p>Intelligent frequency inverter that controls AC motors efficiently and intelligently, allowing for precise speed regulation.</p>