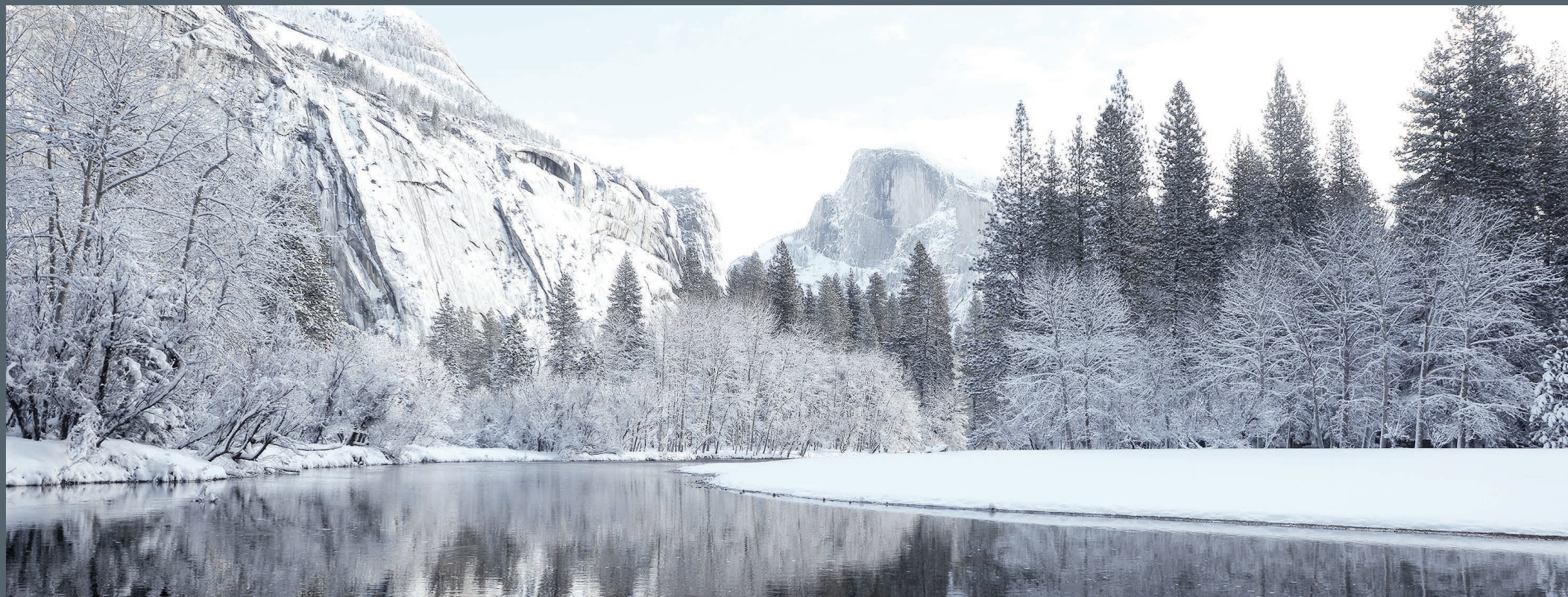




Industrial Frigo®

The original Frigo

ENGLISH

PRODUCT GUIDE



Industrial Frigo was founded in 1970 in Italy, near Lake Garda, thanks to an idea that came from an engineer with a passion for cooling systems. Strong principles and the goal of offering only high-quality products have allowed the company to establish itself as a leader in the creation, design and construction of advanced refrigeration systems.

Thanks to the support of an exceptionally talented team, Industrial Frigo has experienced exponential growth in recent years, conquering ever-wider world markets worldwide and different production to be able to respond to the specifics that the increasing market requires.

Industrial Frigo continues to be a family-run company but today it includes four foreign branches and a sales and service network in over 120 countries. Continuous research and technological development of environmentally friendly solutions are leading the company towards a new era of ecologically sustainable growth and innovation.



All Industrial Frigo products are compliant with **PED directive 2014/68/EU (ex 97/23/CE)**.



The Industrial Frigo corporate management system is certified by the **UNI EN ISO 9001 standard**.



Certification in compliance with standard **EC 303/2008** for the installation, maintenance and repair of equipment containing F-gas.



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1. CHILLERS

2. ENERGY SAVING SYSTEMS

3. DRY COOLERS

4. AIR TREATMENT

5. TEMPERATURE CONTROL UNITS

6. THERMO-CHILLER

7. PUMPING SKID

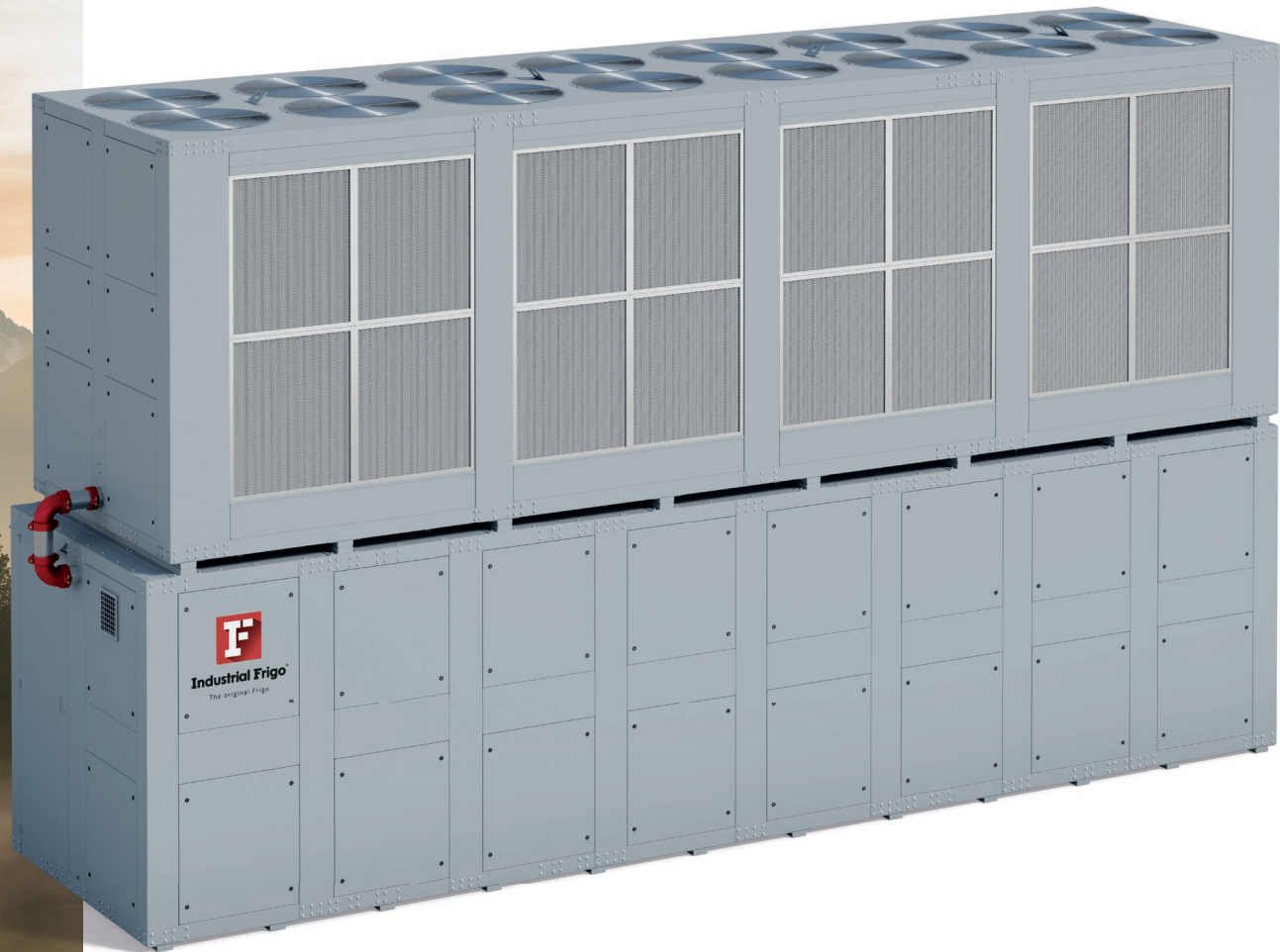
8. ACCESSORIES



CHILLERS

Wide range of highly efficient and reliable water chillers with air or water condensation, for indoor or outdoor installation. These units are designed for cooling plastic and rubber processing machinery, but are suitable for use in any industrial process. The air condensation versions can operate in particularly critical environments, with temperatures up to 53 °C; the water condensation versions are suitable for modular use with dry coolers or towers.

Available in modular version (for combinations with different units at different times), with internal tank or combinable with external tanks, with scroll compressors, screws or alternative systems.



ENERGY SAVING SYSTEMS

Water cooling systems making use of the potential of one or more chillers and of dry coolers, in order to obtain maximum energy saving with free cooling.

When the environmental temperature is lower than the process temperature, chilled water can be obtained with low energy consumption levels by disabling the chiller compressors and using the dry cooler. Some systems use different cooling units (chillers/ dry coolers) while others are available in a compact version featuring an incorporated free cooler.



DRY COOLERS

Highly efficient dry coolers, ideal for dispersing industrial process-generated heat into the external environment, with minimal electrical consumption levels. These coolers cover a vast range of power levels and allow for exploitation of adiabatic cooling if permissible in the specific environmental conditions (by using cardboard or plastic steaming panels). Available in special versions for operating with pure water (without glycol) in maximum safety conditions, even in rigid winter conditions.

Dry coolers are a valid and convenient alternative to evaporative towers, ensuring a noteworthy reduction of both operational costs and water consumption levels.



AIR TREATMENT

Wide range of units for treating waste air from industrial processes (especially for blown film extrusion systems or in the moulding of plastic materials) or for air conditioning of specific environments. The following are available:

- **Chiller units with air or water condensation**, with one or multiple areas, characterized by high efficiency levels thanks to the choice of high quality components;
- **Special air dehumidification units** with dryer rotor technology, useful for preventing condensation on mould surfaces, thus increasing productivity and reducing the number of discarded workpieces;
- **Air cooling units** characterized by a wide range of cooling capacity levels and air flow rates, totally customizable on the basis of client needs.



TEMPERATURE CONTROL UNITS

Temperature control units for precision temperature control in industrial processes such as plastic working, production of pharmaceutical materials or aluminium die-casting. Water thermo-regulators available for temperatures up to 180 °C and diathermic thermo-regulators available for temperatures up to 350 °C, with one or more operational areas and heating capacities between 3 and 36 kW. The cooling operation takes place either directly, with water from an external cooling system, or indirectly, via a heat exchanger.

Special aluminium die-casting units allow to use water evaporation for precise and effective cooling in up to 18 areas.



THERMO-CHILLER

Temperature control unit for use in industrial processes, featuring an incorporated water chiller, for installation on the machinery. Consists of a thermo-regulator with air or water condensation, for precision temperature control. Suitable for use in various industrial fields such as plastic and metal processing, drink bottling, production of pharmaceutical substances.

Units available with one or multiple areas, with heating capacities between 6 and 24 kW and cooling capacity up to 85 kW.

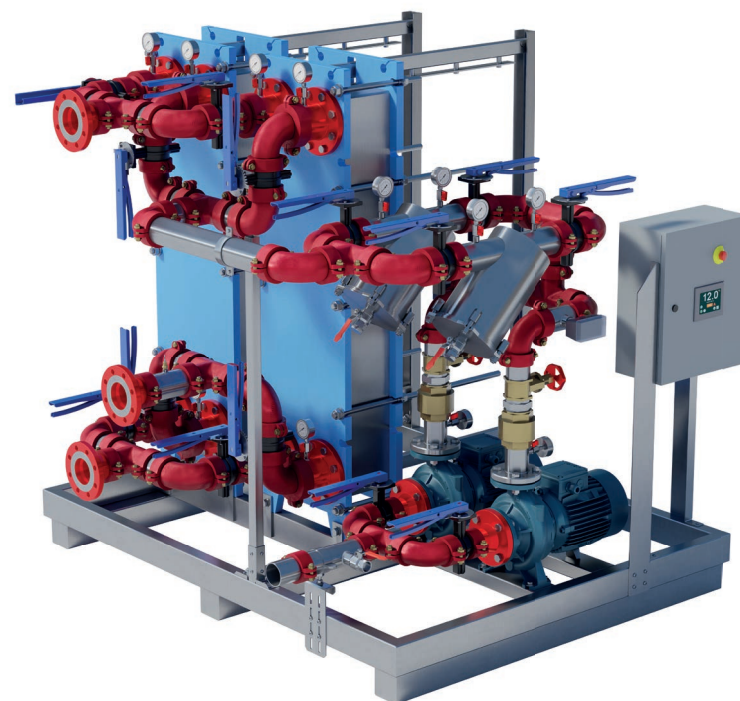


PUMPING SKID

Implementation of specifically designed pumping skid according to the customer's characteristic and needs. They include:

- Recirculation pumps for chiller or drycooler;
- User pumps;
- Inertial accumulation with atmospheric pressure tank;
- Electrical box with power and control components;
- Possibility to control user pumps with an inverter;
- Automatic tank loading.

Available also for external installations.



ACCESSORIES

In order to ensure a correct installation of the cooling system, it is possible to combine the cooling unit with one or more of the following accessories:

- **Remote panel** to control one or more cooling units from remote;
- **Glycol fillers** to replenish the cooling system with a correct mix of water and glycol;
- **Softener** devices to reduce water hardness and increase the lifespan of internal components;
- **"Y" water filters**, for protection of the cooling unit;
- **Plate heat exchangers** in stainless steel, for separating waste water from the water used in the cooling system;
- **Associated accessories:** automatic bypasses, remote panels, serial ports.



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4 SALES AND AFTER-SALE SERVICES
120 LOCAL SUPPORT POINTS



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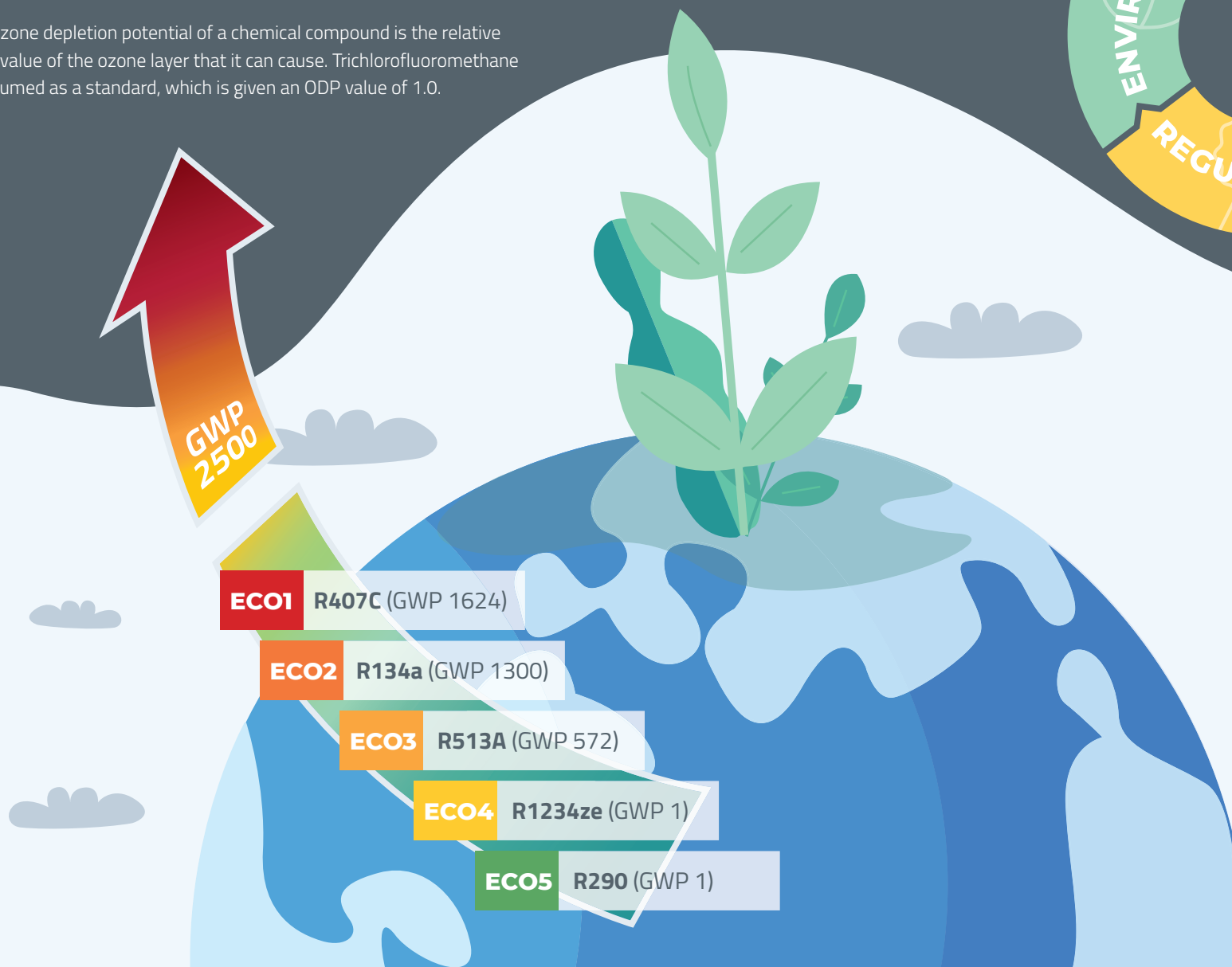
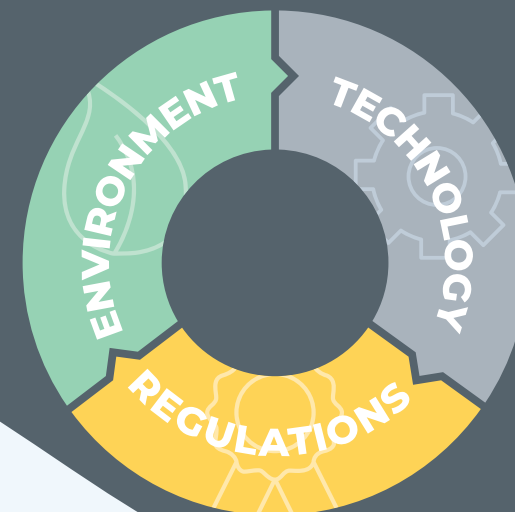

ECO REFRIGERANTS



WE ANTICIPATE INNOVATION WHILE RESPECTING THE ENVIRONMENT

GWP _ The global warming potential expresses the contribution to the greenhouse effect of a greenhouse gas relative to the effect of CO₂, whose reference potential is equal to 1.

ODP _ The ozone depletion potential of a chemical compound is the relative degradation value of the ozone layer that it can cause. Trichlorofluoromethane (R-11) is assumed as a standard, which is given an ODP value of 1.0.





ECO1

CHILLER UNITS FILLED WITH REFRIGERANT R407C

REFERENCE SERIES

GR • GT • SIREG

WATER

Water set point range: $-10\text{ }^{\circ}\text{C} \div +25\text{ }^{\circ}\text{C}$

Min temp. without glycol: $+8\text{ }^{\circ}\text{C}$

EXTERNAL AIR


Max air temperature: $48\text{ }^{\circ}\text{C}$

SUMMARY OF ENVIRONMENTAL BEHAVIOR

Global warming potential	GWP = 1624
Ozone depletion potential	ODP = 0

REFRIGERANT SAFETY

Flammability class	A1 not flammable
PED group	GROUP 2 not dangerous

COMPRESSORS AVAILABLE		
TYPE	Scroll	NOT APPLICABLE
ADVANTAGES	Excellent compromise between efficiency and reliability	
REGULATION	ON-OFF Multiscroll	



ECO2

CHILLER UNITS FILLED WITH REFRIGERANT R134a

REFERENCE SERIES

GF • GT ECO 2 • SIREG ECO2 • IFG

WATER

Water set point range: $-10\text{ }^{\circ}\text{C} \div +25\text{ }^{\circ}\text{C}$

Min temp. without glycol: $+6\text{ }^{\circ}\text{C}$

EXTERNAL AIR

Max air temperature: $53\text{ }^{\circ}\text{C}$

SUMMARY OF ENVIRONMENTAL BEHAVIOR

Global warming potential	GWP = 1300
Ozone depletion potential	ODP = 0

REFRIGERANT SAFETY

Flammability class	A1 not flammable
PED group	GROUP 2 not dangerous

COMPRESSORS AVAILABLE		
TYPE	Scroll	Screw
ADVANTAGES	Excellent compromise between efficiency and reliability	Perfect for high power levels
REGULATION	ON-OFF Multiscroll	Step / inverter



ECO3

CHILLER UNITS FILLED WITH REFRIGERANT R513A (XP 10)

REFERENCE SERIES

GK • GT ECO 3 • SIREG ECO3 • IFG ECO3

WATER

Water set point range: $-10\text{ }^{\circ}\text{C} \div +25\text{ }^{\circ}\text{C}$

Min temp. without glycol: $+6\text{ }^{\circ}\text{C}$

EXTERNAL AIR


Max air temperature: $48\text{ }^{\circ}\text{C}$

SUMMARY OF ENVIRONMENTAL BEHAVIOR

Global warming potential	GWP = 572
Ozone depletion potential	ODP = 0

REFRIGERANT SAFETY

Flammability class	A1 not flammable
PED group	GROUP 2 not dangerous

COMPRESSORS AVAILABLE		
TYPE	Scroll	Screw
ADVANTAGES	Excellent compromise between efficiency and reliability	Perfect for high power levels
REGULATION	ON-OFF Multiscroll	Step / inverter



ECO4

CHILLER UNITS FILLED WITH REFRIGERANT R1234ze

REFERENCE SERIES

GH • SIREG ECO4 • IFG ECO4

WATER

Water set point range: $-10\text{ °C} \div +25\text{ °C}$

Min temp. without glycol: $+6\text{ °C}$

EXTERNAL AIR

Max air temperature: 48 °C


SUMMARY OF ENVIRONMENTAL BEHAVIOR

Global warming potential	GWP = 1
Ozone depletion potential	ODP = 0

REFRIGERANT SAFETY

Flammability class	A2L slightly flammable
PED group	GROUP 2 not dangerous



COMPRESSORS AVAILABLE		
TYPE	Scroll	Screw
ADVANTAGES	Excellent compromise between efficiency and reliability	Perfect for high power levels
REGULATION	ON-OFF Multiscroll	Step / inverter



ECO5

CHILLER UNITS FILLED WITH REFRIGERANT R290

REFERENCE SERIES

GP • SIREG ECO5 • IFG ECO5

WATER

Water set point range: $-10\text{ }^{\circ}\text{C} \div +25\text{ }^{\circ}\text{C}$

Min temp. without glycol: $+6\text{ }^{\circ}\text{C}$

EXTERNAL AIR

Max air temperature: $48\text{ }^{\circ}\text{C}$



SUMMARY OF ENVIRONMENTAL BEHAVIOR

Global warming potential	GWP = 1
Ozone depletion potential	ODP = 0

REFRIGERANT SAFETY

Flammability class	A3 flammable
PED group	GROUP 1 dangerous



COMPRESSORS AVAILABLE		
TYPE	Scroll	Screw
ADVANTAGES	Excellent compromise between efficiency and reliability	Perfect for high power levels
REGULATION	ON-OFF Multiscroll	Step / inverter



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