PRODUCT GUIDE

50 YEARS 1970 - 2020

MADE IN ITALY

Industrial Frigo®

The original Frigo

PRODUCT GUIDE

www.industrialfrigo.com

A LEADING COMPANY AT WORLDWIDE LEVEL SPECIALIZING IN THE PRODUCTION OF COOLING SYSTEMS

Thanks to our enthusiasm, our team of experts and our values, we continue to search for perfection

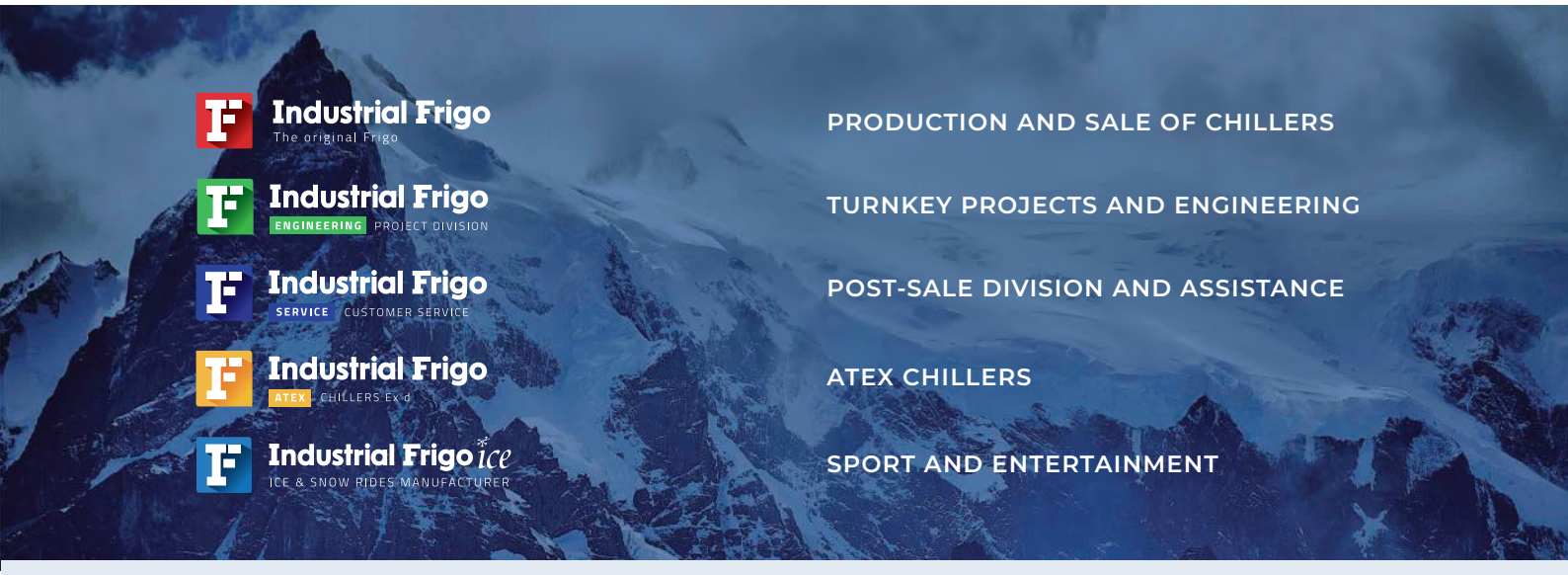
THE ORIGINAL FRIGO

THROUGHOUT THE WORLD

Industrial Frigo emerged 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 60 countries. Continuous research and technological development of environmentally friendly solutions are leading the company towards a new era of ecologically sustainable growth and innovation.



BUSINESS CERTIFICATIONS

EC CERTIFICATION

UNI EN ISO 9001

EAC CERTIFICATION

F-GAS CERTIFICATION

EX 94/9/EC

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.

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.

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.

THERMO-REGULATORS

Thermo-regulation 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 and 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.

POLYAMIDE NORMALIZATION UNIT

Special unit for humidification and normalization of polyamide components (PA6 and PA66). Thanks to this treatment, the parts quickly acquire excellent mechanical properties and dimensional stability (in just a few hours), allowing for reductions in production times.

The steamer allows for increased freedom when managing the settings of treatment cycles, such as the temperature (max 90°C) or the duration of each phase of the cycle. A touch screen panel on the machine allows the user to edit and monitor the process settings during each humidification cycle.

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.

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.

Industrial Frigo USA

Industrial Frigo DEUTSCHLAND

Industrial Frigo POLSKA

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Industrial Frigo DO BRASIL

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PRODUCT GUIDE - EN
12/19 - COD. 3200045

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Industrial Frigo ENGINEERING PROJECT DIVISION

Industrial Frigo SERVICE CUSTOMER SERVICE

Industrial Frigo ATEX CHILLERS Ex d

Industrial Frigo ice ICE & SNOW RIDES MANUFACTURER

ECO REFRIGERANTS

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ECO REFRIGERANTS

R407C, R134a, R513A, R1234ze, R290

ANTICIPIAMO L'INNOVAZIONE RISPETTANDO L'AMBIENTE

WE ANTICIPATE INNOVATION WHILE RESPECTING THE ENVIRONMENT

GWP - POTENZIALE DI RISCALDAMENTO GLOBALE

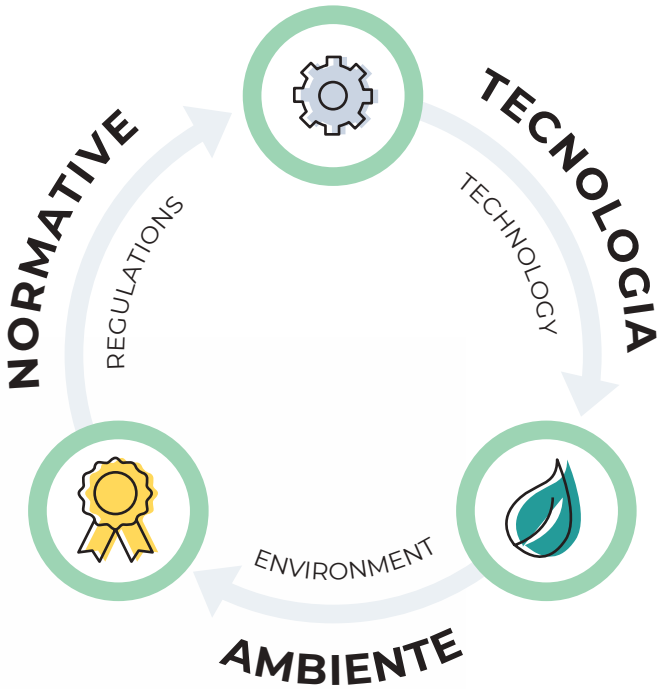
Esprime il contributo all'aumento dell'effetto serra di un gas refrigerante. L'indice si basa su una scala relativa che confronta il gas con la CO_2.

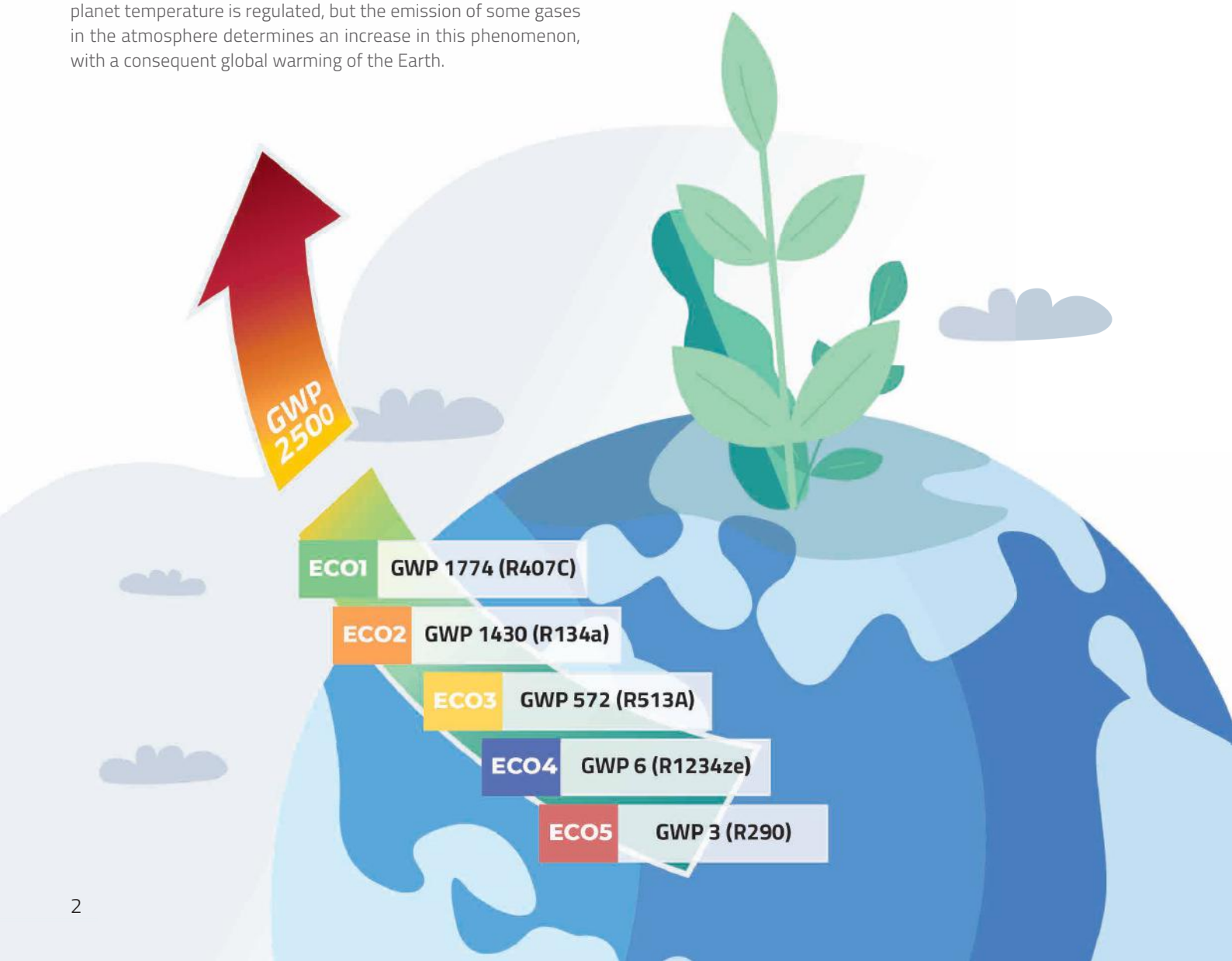
L'effetto serra è il fenomeno naturale di regolazione della temperatura del pianeta, ma l'immissione di alcuni gas in atmosfera determina un aumento del fenomeno con conseguente riscaldamento globale del pianeta terra.

GWP - GLOBAL WARMING POTENTIAL

The GWP value expresses the contribution a refrigerant gas makes to increase in the greenhouse effect. The index is based on a relative scale that compares gas with CO_2.

The greenhouse effect is the natural phenomenon by which the planet temperature is regulated, but the emission of some gases in the atmosphere determines an increase in this phenomenon, with a consequent global warming of the Earth.





ECO1

UNITÀ CARICATE CON
GAS R407C

CHILLER UNITS FILLED WITH
REFRIGERANT R407C

R407C

ACQUA	WATER	**Range set point acqua:** **Water set point range:** **-10°C ÷ +25°C**	**Min. temp. senza glicole:** Min temp. without glycol: **+8°C**
ARIA ESTERNA	EXTERNAL AIR	**Massima temperatura dell'aria: 48°C** Max air temperature: **48°C**	

QUADRO COMPORTAMENTO AMBIENTALE
SUMMARY OF ENVIRONMENTAL BEHAVIOR

Potenziale di eliminazione dell'ozono Ozone depletion potential	**ODP = 0**
Potenziale di riscaldamento globale Global warming potential	**GWP = 1774**

SICUREZZA REFRIGERANTE
REFRIGERANT SAFETY

Classe d'infiammabilità Flammability class	**A1** **non infiammabile** not flammable
Gruppo PED PED group	**GRUPPO 2** **non pericoloso** not dangerous

COMPRESSORI DISPONIBILI

COMPRESSORS AVAILABLE

TIPO Type	**Scroll** Scroll	**Alternativi a pistoni** Reciprocating	**Vite** Screw
RANGE Range	2 ÷ 1000 kW	2 ÷ 1000 kW	200 ÷ 1400 kW
VANTAGGI Advantages	**Ottimo compromesso tra efficienza e affidabilità** Excellent compromise between efficiency and reliability	**Ampio range di capacità** Wide capacity range	**Ideali per le grandi potenze** Perfect for high power levels
REGOLAZIONE Regulation	**ON-OFF Multiscroll** ON-OFF Multiscroll	**Step / inverter** Step / inverter	**Step / inverter** Step / inverter

ECO2

UNITÀ CARICATE CON
GAS R134a

CHILLER UNITS FILLED WITH
REFRIGERANT R134a

ACQUA	WATER	Range set point acqua: **-10°C ÷ +25°C** Water set point range: **-10°C ÷ +25°C**	Min. temp. senza glicole: **+6°C** Min temp. without glycol: **+6°C**
ARIA ESTERNA	EXTERNAL AIR	Massima temperatura dell'aria: **53°C** Max air temperature: **53°C**	

R134a

QUADRO COMPORTAMENTO AMBIENTALE
SUMMARY OF ENVIRONMENTAL BEHAVIOR

Potenziale di eliminazione dell'ozono Ozone depletion potential	**ODP = 0**
Potenziale di riscaldamento globale Global warming potential	**GWP = 1430**

SICUREZZA REFRIGERANTE
REFRIGERANT SAFETY

Classe d'infiammabilità Flammability class	**A1** **non infiammabile** not flammable
Gruppo PED PED group	**GRUPPO 2** **non pericoloso** not dangerous

COMPRESSORI DISPONIBILI

COMPRESSORS AVAILABLE

TIPO Type	**Scroll** Scroll	**Alternativi a pistoni** Reciprocating	**Vite** Screw
RANGE Range	2 ÷ 1000 kW	2 ÷ 1000 kW	200 ÷ 1400 kW
VANTAGGI Advantages	**Ottimo compromesso tra efficienza e affidabilità** Excellent compromise between efficiency and reliability	**Ampio range di capacità** Wide capacity range	**Ideali per le grandi potenze** Perfect for high power levels
REGOLAZIONE Regulation	**ON-OFF Multiscroll** ON-OFF Multiscroll	**Step / inverter** Step / inverter	**Step / inverter** Step / inverter

ECO3

UNITÀ CARICATE CON
GAS R513A (XP 10)

CHILLER UNITS FILLED WITH
REFRIGERANT R513A (XP 10)

ACQUA WATER	**Range set point acqua:** **Water set point range:** **-10°C ÷ +25°C**	**Min. temp. senza glicole:** Min temp. without glycol: **+6°C**
ARIA ESTERNA EXTERNAL AIR	**Massima temperatura dell'aria: 48°C** Max air temperature: **48°C**	

R513A

QUADRO COMPORTAMENTO AMBIENTALE
SUMMARY OF ENVIRONMENTAL BEHAVIOR

Potenziale di eliminazione dell'ozono Ozone depletion potential	**ODP = 0**
Potenziale di riscaldamento globale Global warming potential	**GWP = 572**

SICUREZZA REFRIGERANTE
REFRIGERANT SAFETY

Classe d'infiammabilità Flammability class	**A1** **non infiammabile** not flammable
Gruppo PED PED group	**GRUPPO 2** **non pericoloso** not dangerous

COMPRESSORI DISPONIBILI

COMPRESSORS AVAILABLE

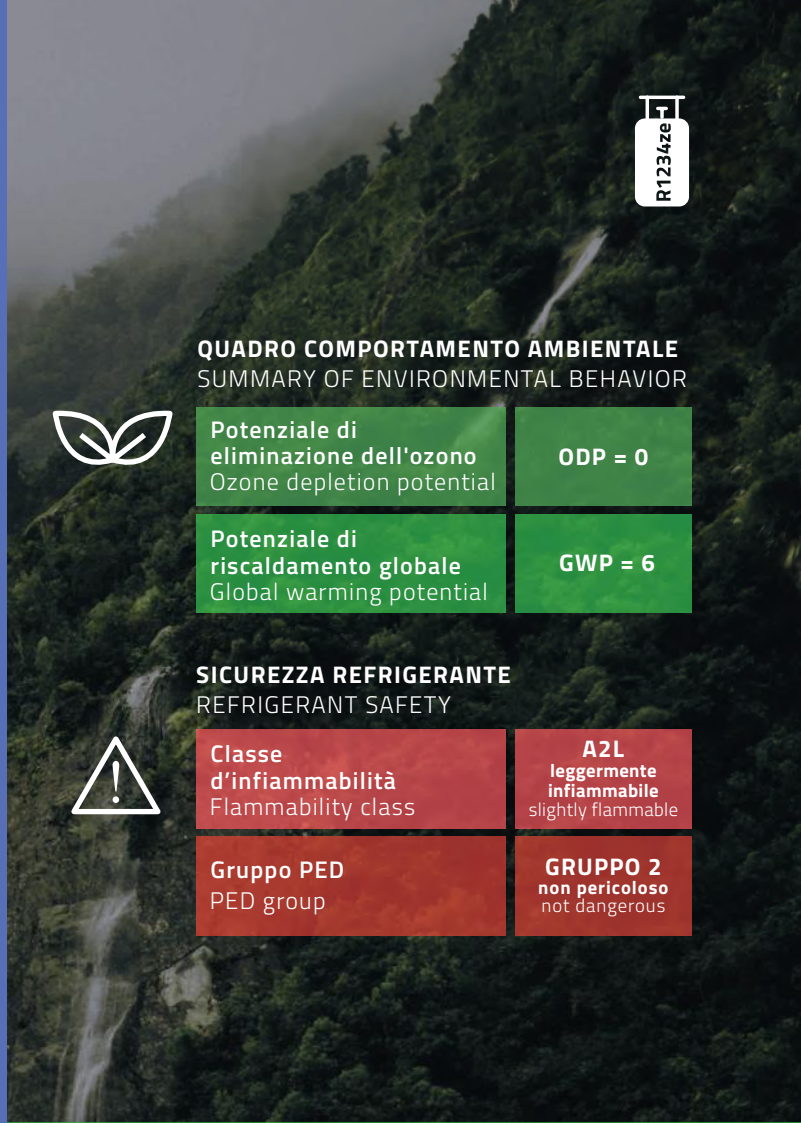
TIPO Type	**Scroll** Scroll	**Alternativi a pistoni** Reciprocating	**Vite** Screw
RANGE Range	5 ÷ 800 kW	2 ÷ 1000 kW	200 ÷ 1400 kW
VANTAGGI Advantages	**Ottimo compromesso tra efficienza e affidabilità** Excellent compromise between efficiency and reliability	**Ampio range di capacità** Wide capacity range	**Ideali per le grandi potenze** Perfect for high power levels
REGOLAZIONE Regulation	**ON-OFF Multiscroll** ON-OFF Multiscroll	**Step / inverter** Step / inverter	**Step / inverter** Step / inverter

ECO4

UNITÀ CARICATE CON
GAS R1234ze

CHILLER UNITS FILLED WITH
REFRIGERANT R1234ze

ACQUA WATER	Range set point acqua: **Water set point range: -10°C ÷ +25°C**	**Min. temp. senza glicole:** Min temp. without glycol: **+6°C**
ARIA ESTERNA EXTERNAL AIR	**Massima temperatura dell'aria: 53°C** Max air temperature: **53°C**	



QUADRO COMPORTAMENTO AMBIENTALE
SUMMARY OF ENVIRONMENTAL BEHAVIOR

Potenziale di eliminazione dell'ozono Ozone depletion potential	**ODP = 0**
Potenziale di riscaldamento globale Global warming potential	**GWP = 6**

SICUREZZA REFRIGERANTE
REFRIGERANT SAFETY

Classe d'infiammabilità Flammability class	**A2L** **leggermente infiammabile** slightly flammable
Gruppo PED PED group	**GRUPPO 2** **non pericoloso** not dangerous

COMPRESSORI DISPONIBILI

COMPRESSORS AVAILABLE

TIPO Type	**n.a** n.a	**Alternativi a pistoni** Reciprocating	**Vite** Screw
RANGE Range	-	2 ÷ 1000 kW	200 ÷ 1400 kW
VANTAGGI Advantages	-	**Ampio range di capacità** Wide capacity range	**Ideali per le grandi potenze** Perfect for high power levels
REGOLAZIONE Regulation	-	**Step / inverter** Step / inverter	**Step / inverter** Step / inverter

ECO5

UNITÀ CARICATE CON
GAS R290

CHILLER UNITS FILLED WITH
REFRIGERANT R290

ACQUA WATER		**Range set point acqua:** **Water set point range:** **-10°C ÷ +25°C**	**Min. temp. senza glicole:** Min temp. without glycol: **+6°C**
ARIA ESTERNA EXTERNAL AIR		**Massima temperatura dell'aria: 48°C** Max air temperature: **48°C**	

R290

QUADRO COMPORTAMENTO AMBIENTALE
SUMMARY OF ENVIRONMENTAL BEHAVIOR

Potenziale di eliminazione dell'ozono Ozone depletion potential	**ODP = 0**
Potenziale di riscaldamento globale Global warming potential	**GWP = 3**

SICUREZZA REFRIGERANTE
REFRIGERANT SAFETY

Classe d'infiammabilità Flammability class	**A3** **infiammabile** flammable
Gruppo PED PED group	**GRUPPO 1** **pericoloso** dangerous

COMPRESSORI DISPONIBILI

COMPRESSORS AVAILABLE

TIPO Type	**Scroll** Scroll	**Alternativi a pistoni** Reciprocating	**Vite** Screw
RANGE Range	30 ÷ 40 kW	50 ÷ 800 kW	370 ÷ 860 kW
VANTAGGI Advantages	**Ottimo compromesso tra efficienza e affidabilità** Excellent compromise between efficiency and reliability	**Ampio range di capacità** Wide capacity range	**Ideali per le grandi potenze** Perfect for high power levels
REGOLAZIONE Regulation	**ON-OFF Multiscroll** ON-OFF Multiscroll	**Step / inverter** Step / inverter	**Step / inverter** Step / inverter

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