



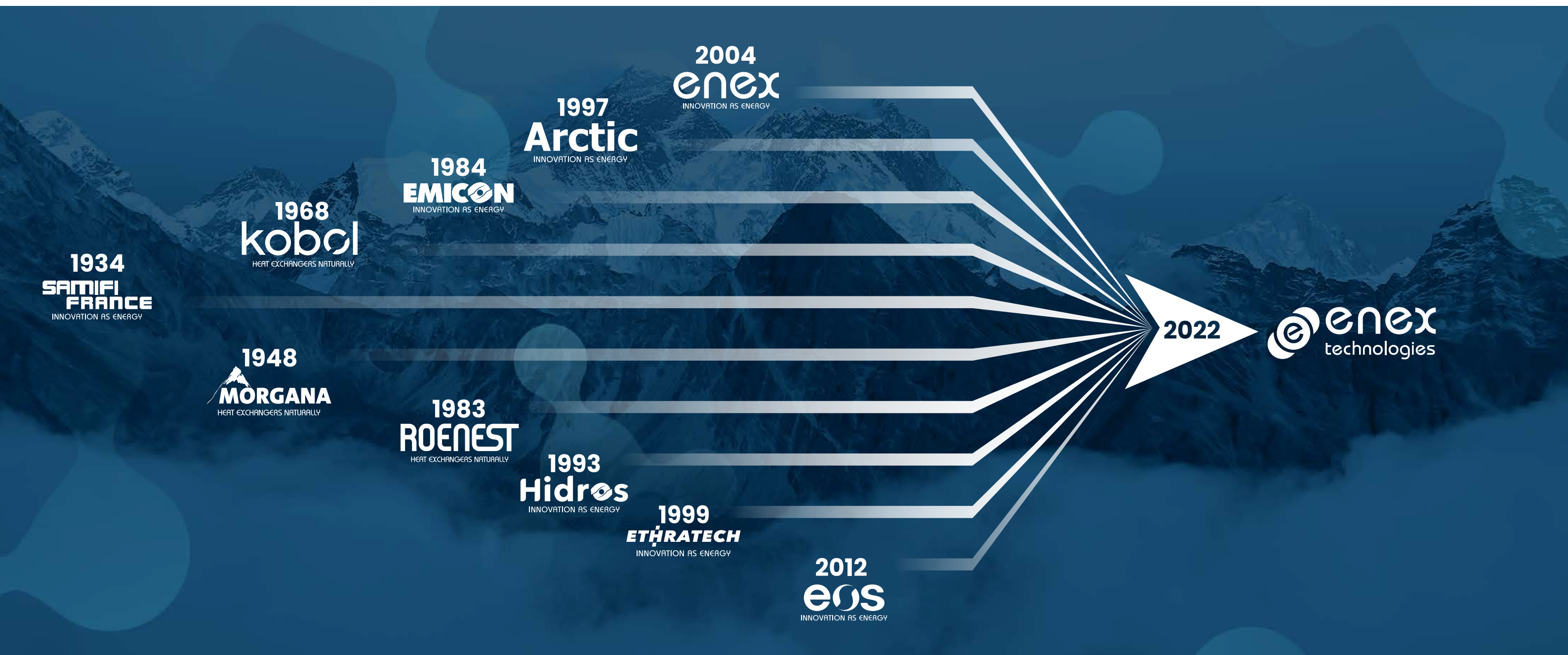
FIN & TUBE
HEAT EXCHANGERS
Products Catalogue

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About

Enex Technologies is a transformative world leader in natural and energy efficient cooling, heating, ventilation and refrigeration equipment that began in the 1930s by producing ammonia natural refrigeration equipment, later adding CO₂, water and propane as natural refrigerants with low global warming potential.

Pioneers and innovators in natural HVACR since the 1930s



Our numbers

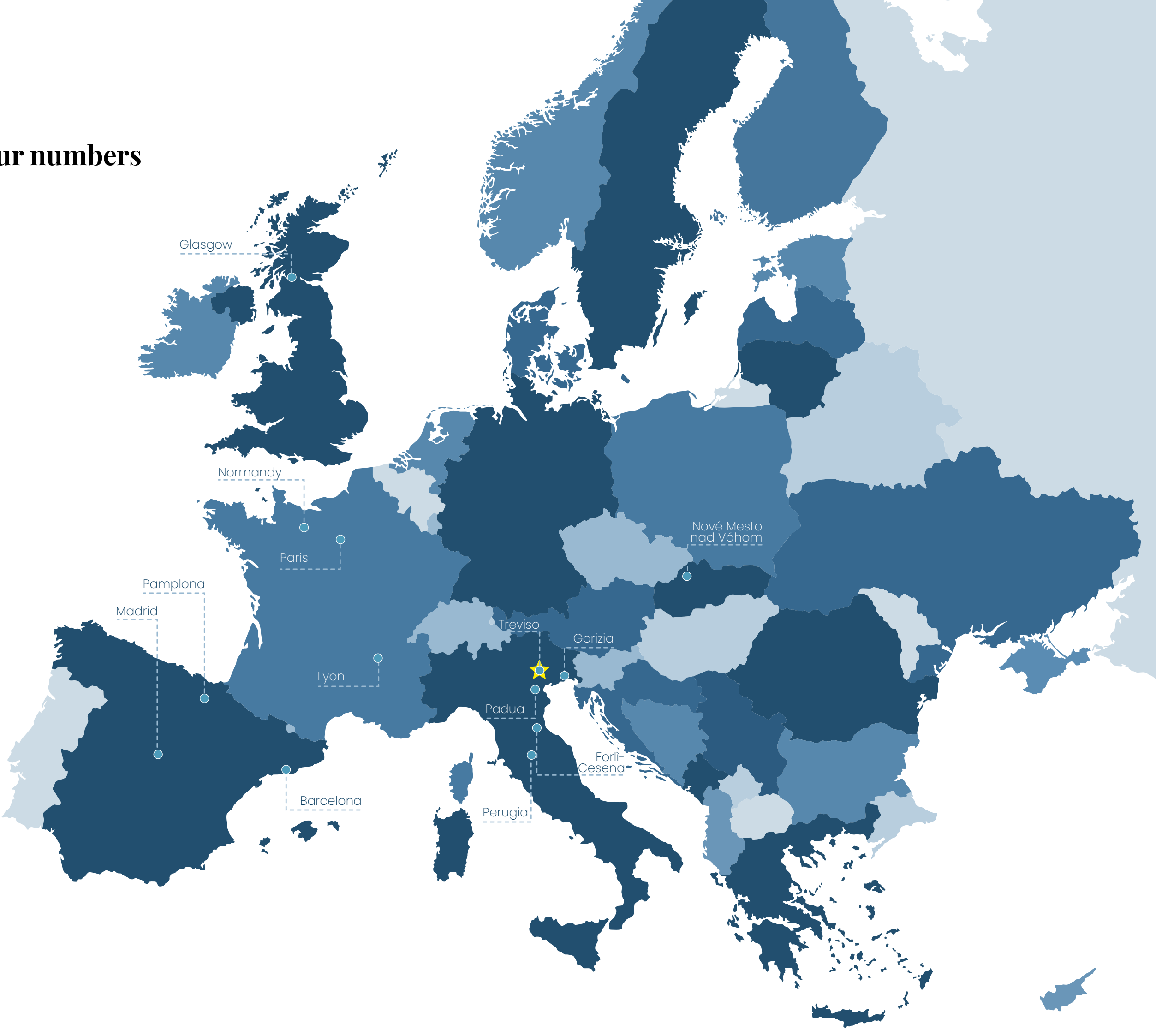
200M€
Revenues

1000+
Employees

12
Factories

125
Countries

- ★ Headquarter
- Manufacturing, R&D site and commercial office



Our segments

Our leading natural refrigerant, energy efficiency and energy transition technologies transform the HVACR industry.



COOLING

Our chillers are designed to operate efficiently with all refrigerants, generating cold water for climatization or industrial processes.



REFRIGERATION

Our commercial and industrial refrigeration systems are designed for high performance, quality, reliability and carbon footprint reduction through the use of natural refrigerants Ammonia and CO₂.



HEATING

Our high efficiency heat pump range using natural refrigerant CO₂ is a simple-to use, elegant solution for applications requiring high quantities of sanitary hot water.

We are driven by strong values to create a better and more sustainable world



SUSTAINABILITY

Buildings consume 40% of the energy used in the developed world. HVACR systems use 60% of the energy in buildings. Our high efficiency solutions are central to reducing global warming, and we strive every day to help our customers reduce their carbon footprint by using natural refrigerants.



INNOVATION

Always leading. From pioneering the efficient and safe use of natural refrigerants to helping the industry move away from gas heat towards systems that use electricity.



COMMUNITIES

We are a European industrial champion, building clean factories that support new jobs, growth and expansion to new markets.



DIVERSITY & INCLUSION

At Enex Technologies we ensure that every colleague feels respected, valued and motivated to support our customers, every day.



Our leading natural refrigerant, energy efficiency and energy transition technologies transform the HVACR industry

Enex Technologies is committed to developing and improving innovative and efficient low global warming technologies in HVAC, commercial and industrial refrigeration systems that reduce energy consumption and environmental impact.

Natural refrigerants

CO₂ (R744)

CO₂ is a naturally occurring, non-ozone-depleting refrigerant that addresses today's concerns about the global warming potential (GWP) of common F-gases. With a GWP of 1, CO₂ is widely and effectively used in commercial and industrial refrigeration systems.

AMMONIA (R717)

Ammonia is the most widely used natural refrigerant for large industrial applications. With a GWP of 0, ammonia is a cost-effective, efficient, and sustainable alternative refrigerant.

PROPANE (R290)

With its excellent thermodynamic properties and a GWP of 3, Propane is an energy efficient, reliable, versatile, and cost-effective natural refrigerant.

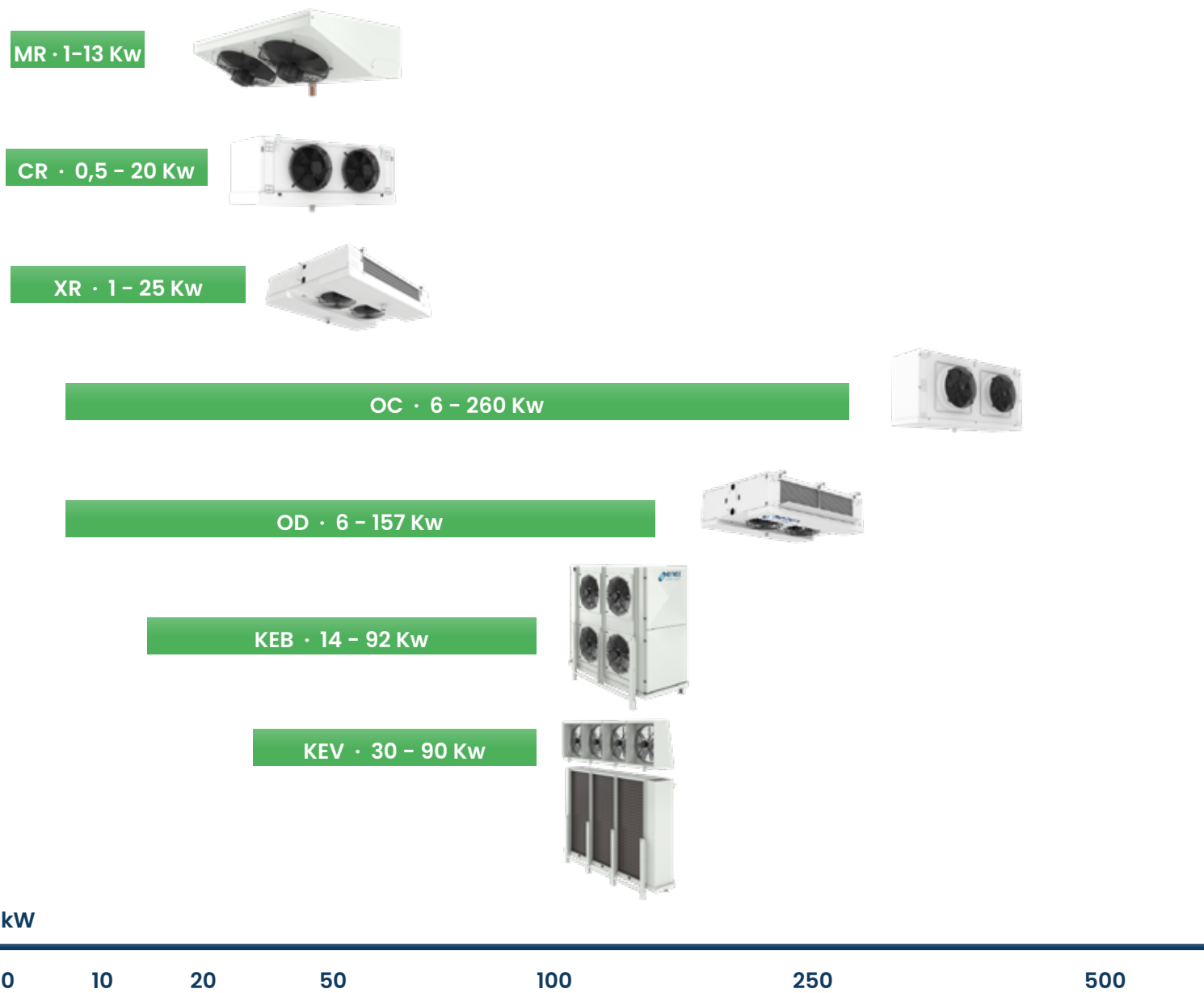
WATER (R718)

Indirect systems using pure water or brine mixtures to transfer heat are simple to install and easy to service in all applications.

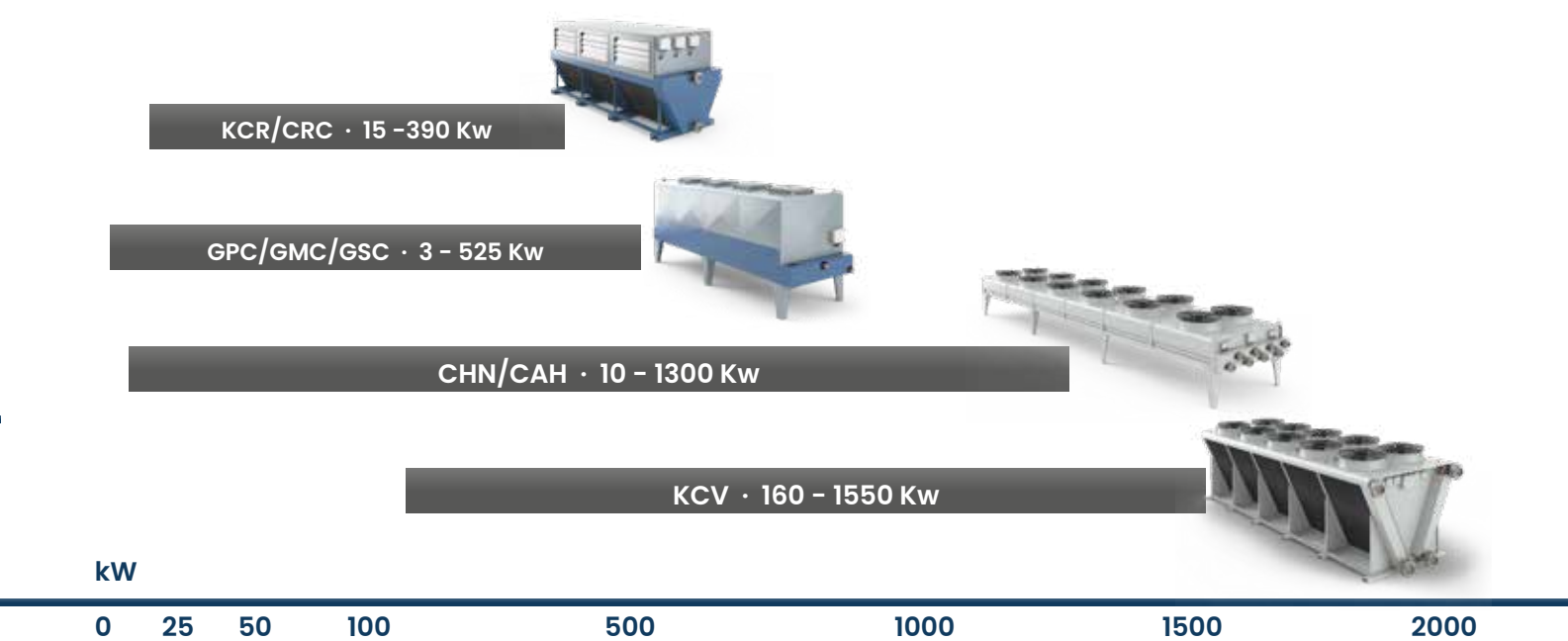
CO₂ Gas coolers



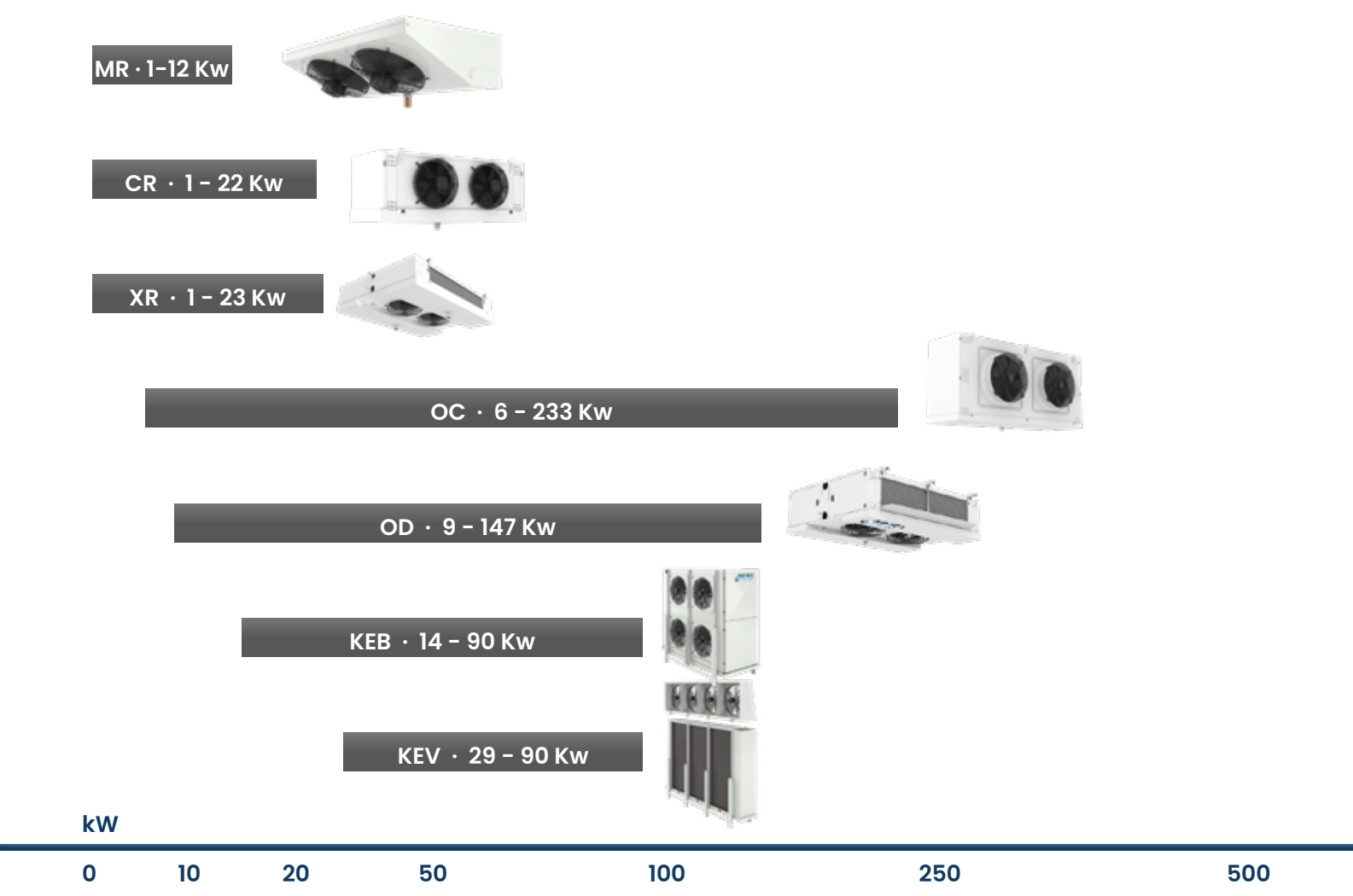
CO₂ Evaporators



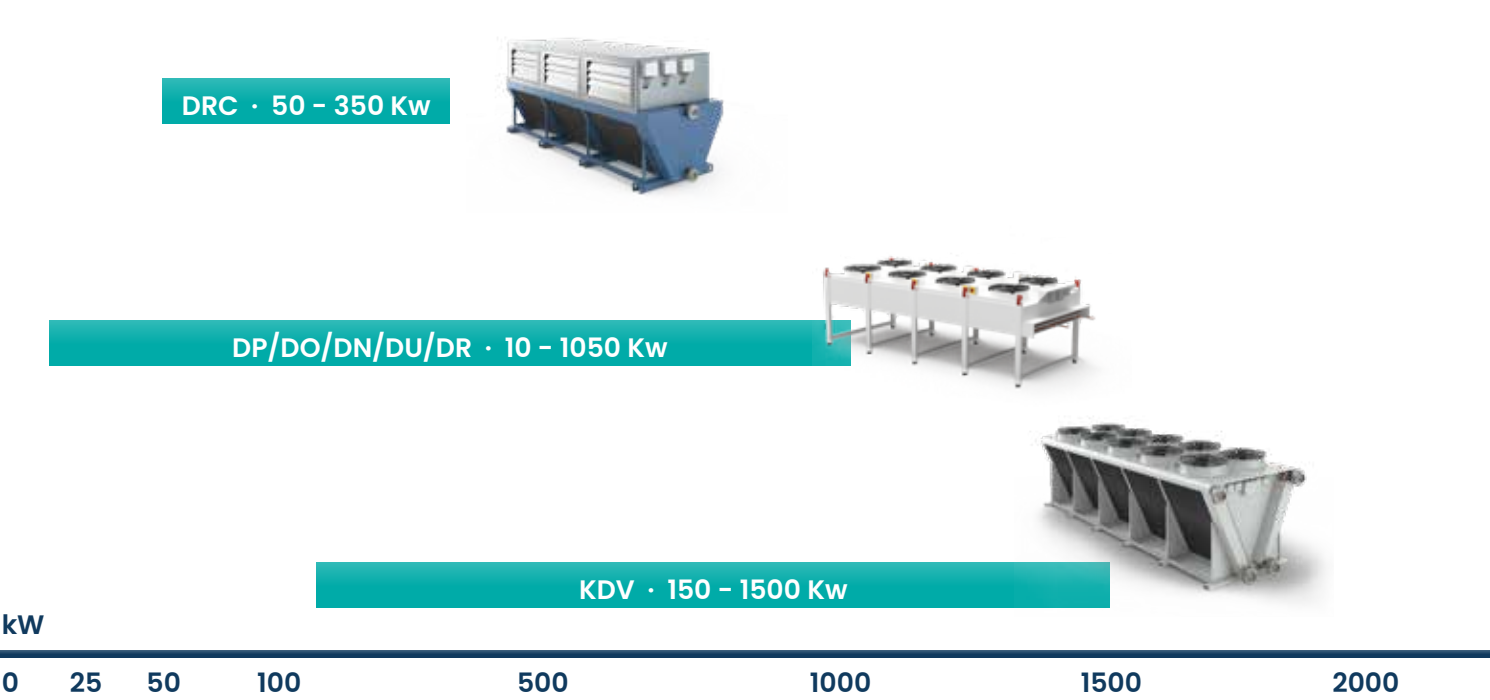
HFC-HFO Condensers



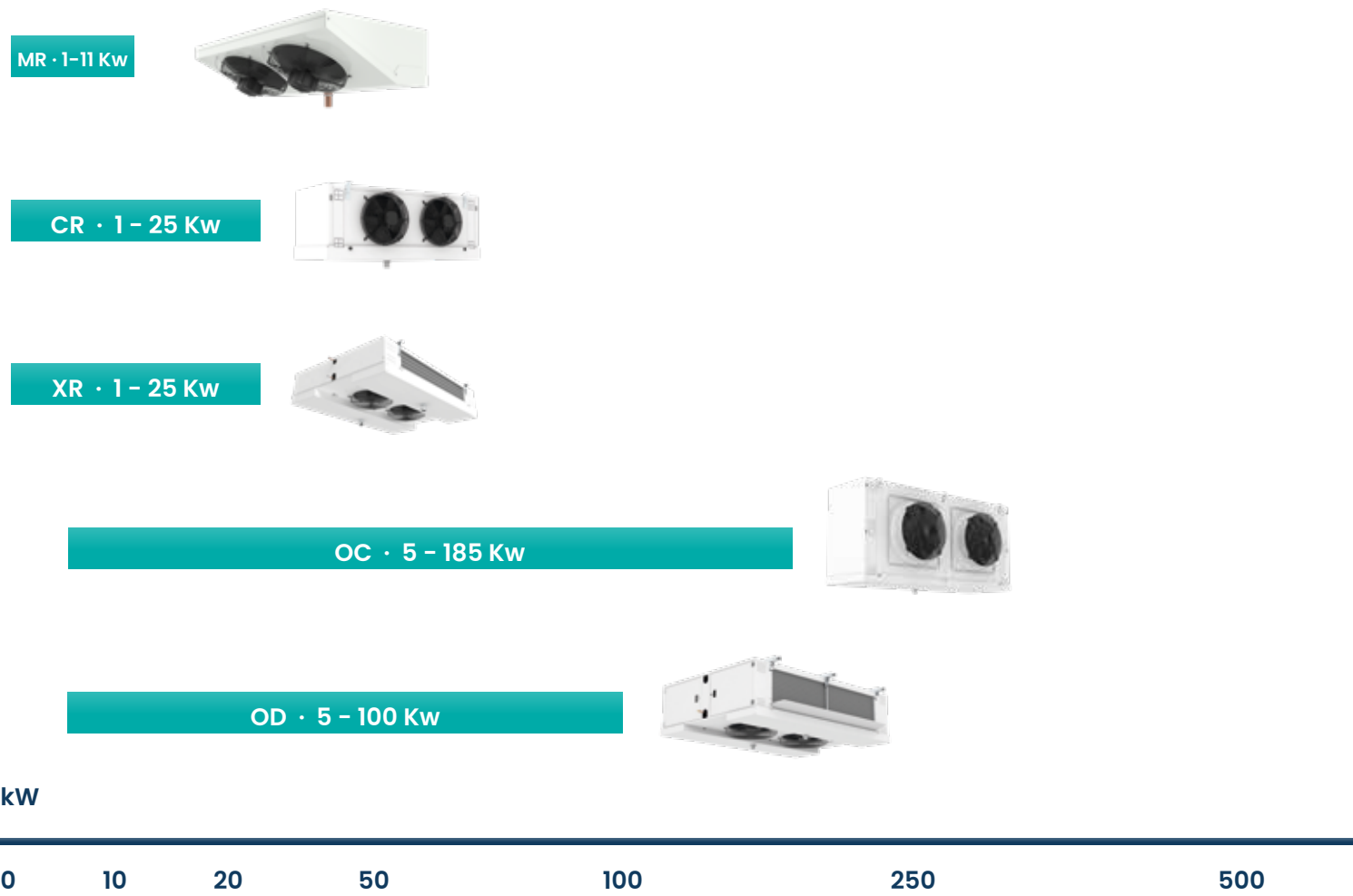
HFC-HFO Evaporators



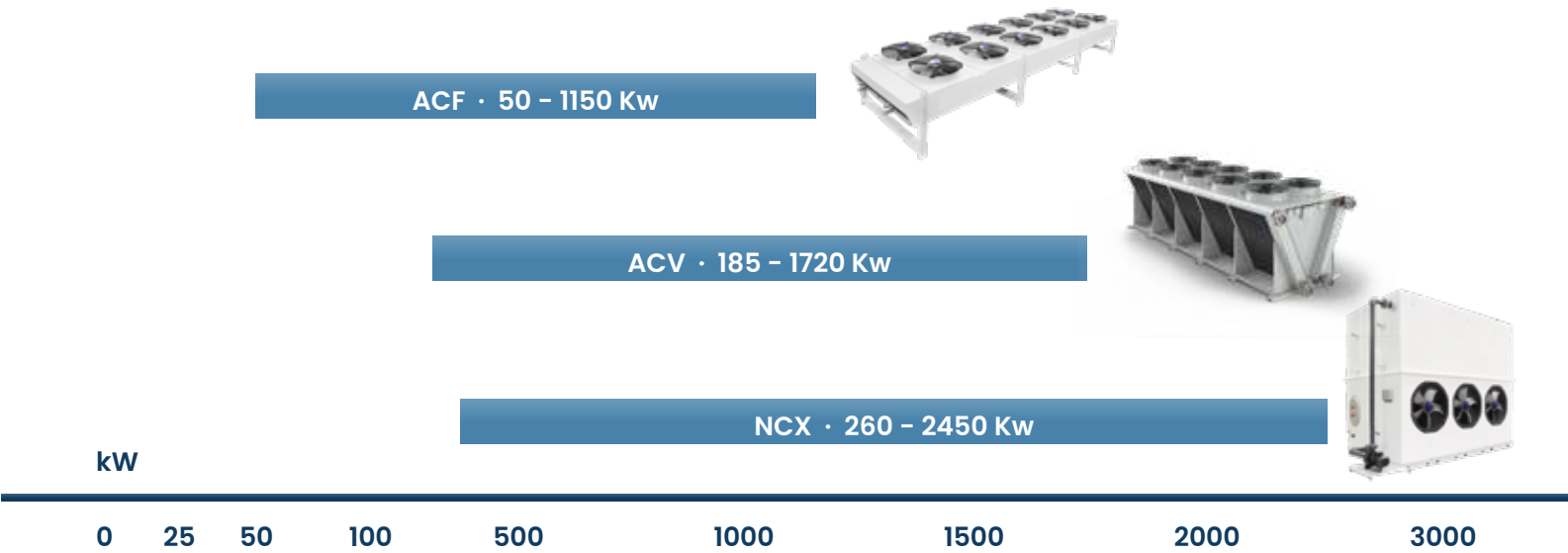
Dry Coolers



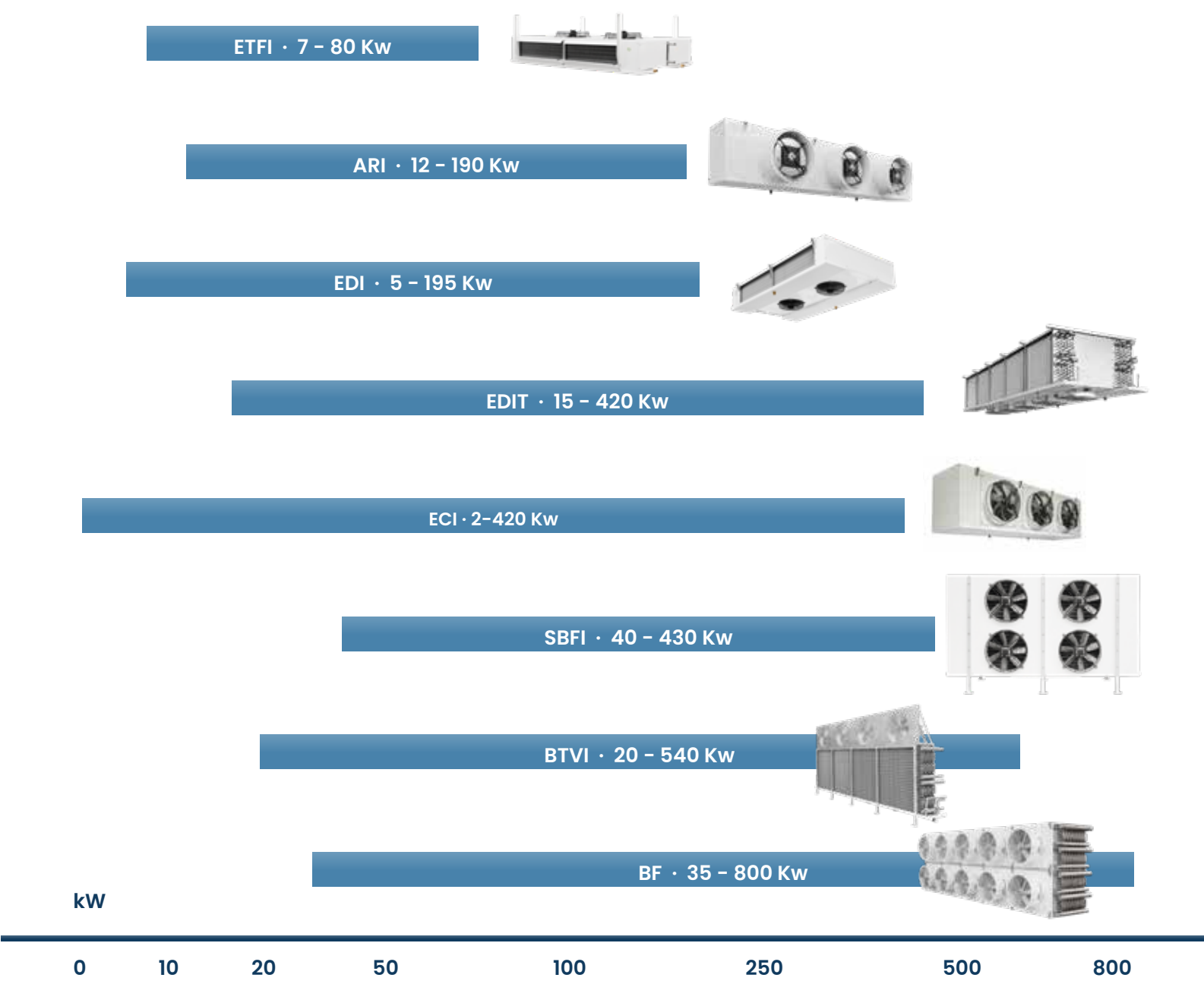
Brine Coolers



NH₃ Condensers



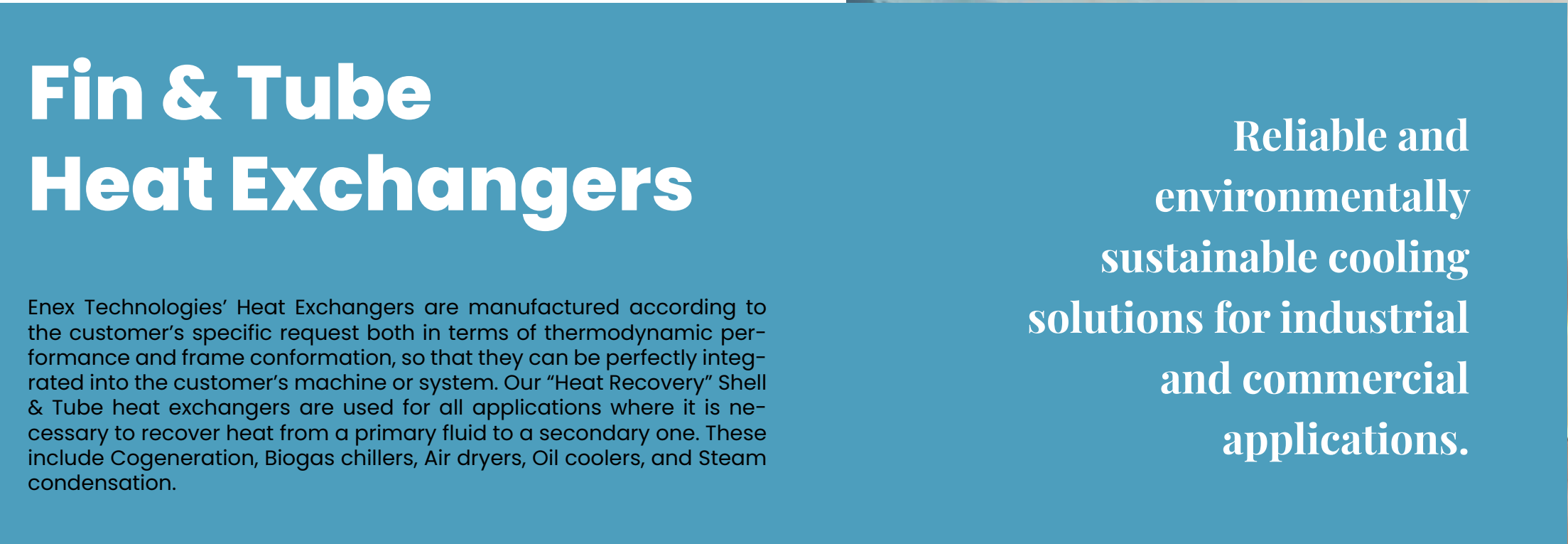
NH₃ Evaporators





Fin & Tube Heat Exchangers

Enex Technologies' Heat Exchangers are manufactured according to the customer's specific request both in terms of thermodynamic performance and frame conformation, so that they can be perfectly integrated into the customer's machine or system. Our "Heat Recovery" Shell & Tube heat exchangers are used for all applications where it is necessary to recover heat from a primary fluid to a secondary one. These include Cogeneration, Biogas chillers, Air dryers, Oil coolers, and Steam condensation.



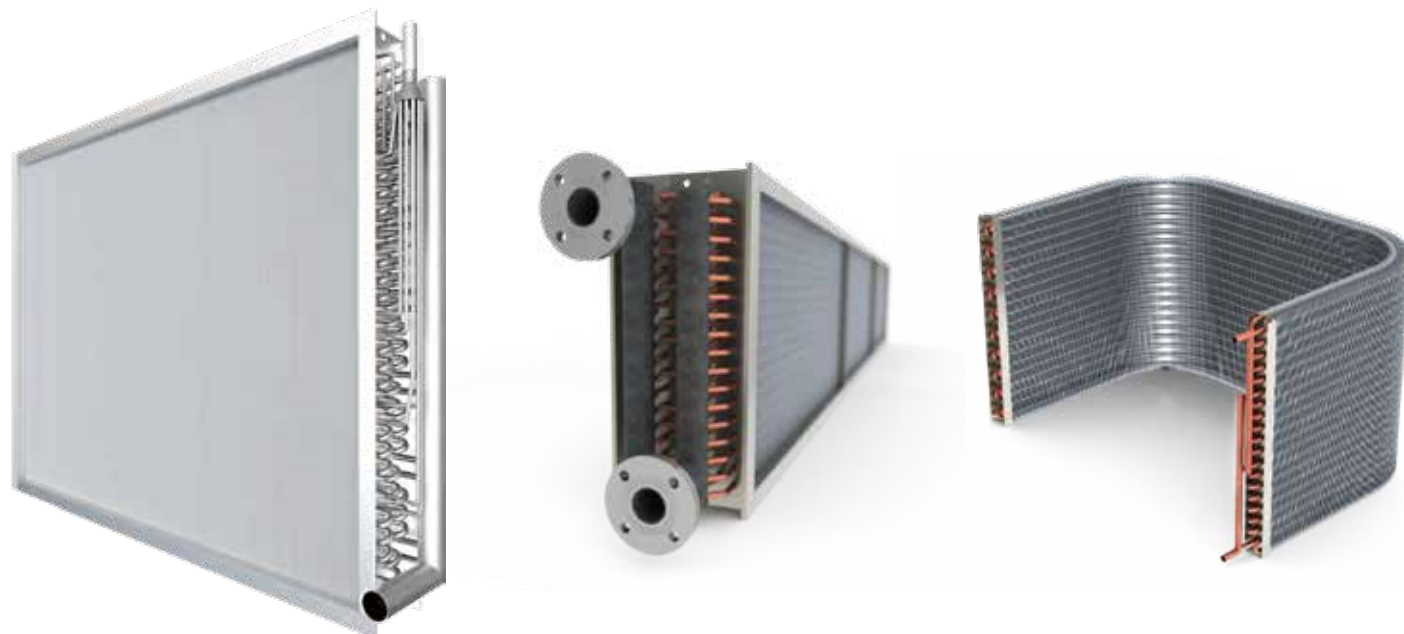
Reliable and environmentally sustainable cooling solutions for industrial and commercial applications.



FIN & TUBE HEAT EXCHANGERS

Finned pack heat exchangers, for single phase and phase changing fluids, specifically designed for Heating, Heat Recovery, Air Conditioning, Process and Refrigeration equipment.

COIL SERIES



ENEX TECHNOLOGIES presents its wide range of finned pack heat exchanger **Coils Series**, which ranks among the most complete in Europe, suitable for all residential, commercial, industrial and process heating, air conditioning, heat recovery and refrigeration applications. ENEX TECHNOLOGIES is the solution provider for the design, manufacturing and supply of heat exchangers with particular focus in HVAC&R.

ENEX TECHNOLOGIES offers to customers a wide spectrum of benefits coming from an history of design, production and distribution of more than 400 years of combined experience in over 125 countries, today the company is a reference point for technology and capacity for solutions in air conditioning, refrigeration, heating and cogeneration. The Group's production structure is divided into 5 locations in Italy, Spain (x2), France and Slovakia: all of them complementary and strategic factories, centers of excellence for the production of specific products. The Italian headquarters represents the heart of the company and is the driving force of innovation and technological development.

LEADING PROFESSIONAL SOLUTIONS IN HEAT REJECTION

The ENEX TECHNOLOGIES assessment of the COILS SERIES performance parameters under different conditions and control strategies is essential to adequately design and optimize the units for specific applications.

The present document is fully dedicated to the FINNED PACK HEAT EXCHANGERS range which can be segmented into 4 main types:

PHASE CHANGING COILS		SINGLE PHASE COILS
HEATING COILS	Condensers & Gas Coolers & Steam	Hot fluid
COOLING COILS	Evaporators	Hot fluid

MAIN FEATURES

HIGH PERFORMANCE

- High efficiency tubes and fins to increase the heat exchange while keeping the exchanger dimensions compact.

LONG PRODUCT LIFE

- We use only high quality components to meet all thermodynamic and product life cycle requirements.
- 10 surface treatments available to increase product life cycle in challenging environments.

CUSTOMIZATION ON DEMAND

- Highest level of customization available to meet application requirements.

SOFTWARES

- Thermodynamic REcalc software: is available for ENEX TECHNOLOGIES customers, for greater comfort and dynamism in the day-to-day activities. Executable and free downloadable calculation software.
- Feasibility check software: coil design check Web based PED and dimensional check software.

WIDE VARIETY OF Ø & GEOMETRIES

With 7 diameters available in 16 geometries, ENEX TECHNOLOGIES can optimize heat exchangers for any specific application. The ENEX TECHNOLOGIES range effectively meets every heat exchange requirement.

SAFETY

- Readies up to PS 140bar
- Resistance and leaks tests up to 200 bar
- Burst tests up to 420 bar
- Equipment pressurized with nitrogen at 2bar

QUALITY: ROBUSTNESS + RELIABILITY

- Strong and robust design using high-quality components ensure long life. .
- Product quality is ensured by inspecting the proper mechanical expansion of tubes into the fins; the welding of bends, nipples, and headers in an inert atmosphere; and the final pressure leak test in a water bath. During the final inspection, the product is checked against the customer's dimensional and qualitative specifications to ascertain its compliance.

SUSTAINABILITY

- Experts in natural refrigerant solutions, with a very low GWP.

TECHNICAL FEATURES

FINNED PACK

• The finned pack consists of drawn tubes mechanically expanded into fins provided with self-spaced collars, to ensure optimal heat exchange between tubes and fins, and regular spacing between fins.

TUBES

• ENEX TECHNOLOGIES heat exchangers are manufactured with high quality tubes, which can be smooth or internally grooved on all available diameters: 7 mm, 5/16", 3/8", 12 mm, 1/2", 5/8" and 16mm.

• The tubes are resistant to the vast majority of primary fluids, in heating and cooling applications alike.

FINS

• Fins are the result of high precision molding of aluminium, prepainted aluminium, hydrophilic, hydrophobic aluminium, and copper strips. The fins manufactured by ENEX TECHNOLOGIES are corrugated so as to improve the secondary heat transfer coefficient without heavily affecting the air pressure drops.

• Furthermore, this type of structure allows for condensate drainage and prevents dirt from obstructing the finned pack. Also available high precision molded louvered fins, the structure of which increases heat exchange efficiency.

	Copper	K65	Aluminium	Aluminium prepainted	Al-Mg	Aluminium hydrophilic	Aluminium hydrophobic	Galvanized steel	Stainless steel	Brass
Tubes	✓	✓							✓	
Fins	✓		✓	✓	✓	✓	✓			
Frame	✓		✓	✓				✓	✓	✓

FRAME

• The frame can be of galvanized steel, aluminium, copper, brass, or stainless steel, and is manufactured through a process of punching and deep drawing. The frame protects the finned pack and fastens the heat exchanger to the rest of the system.

HEADERS

• Headers are made of carbon steel or copper drawn tubes. The header collects all of the coil's parallel circuits into one tube that will be connected to the main circuit of the equipment.

DISTRIBUTORS

• ENEX TECHNOLOGIES offers Venturi-type distributors made from brass disks by turnings and drilling. Along with the welded copper capillary tubes, these distributors optimize coolant distribution in the parallel circuits of evaporators.

REFRIGERANTS

• In light of its long-standing commitment to product improvement and sustainability, ENEX TECHNOLOGIES uses materials that are compatible with new generation refrigerants, which ensure lower environmental impact and excellent performance.

COIL SERIES

OUR Ø & GEOMETRIES

Geom	Production plant	RECALC code	Pattern	Tube mat.	Tube diam. mm	Tubes spac. mm	Rows spac. mm	Max. Length mm	Max. Fin spac. mm
1	SP (KO)	S23-10	Triangle	Copper	9.52	25.40	22.00	6.000	5.5
5	IT (RE) SK (RE)	S22-8	Triangle	Copper	7.94	25.00	21.65	3.800	5.5
6	IT (RE), SP (KO), FR (MO), SK (RE)	S22-10	Triangle	Copper	9.52	25.00	21.65	11.000	6.0
7	IT (RE), SP (KO), SK (RE)	S22-7	Triangle	Copper	7.00	25.00	21.65	8.000	5.5
8	IT (RE)	S30-12	Triangle	Copper	12.70	35.00	30.31	11.000	5.5
9	SP (KO)	L35-10	Square	Copper	9.52	35.00	35.00	8.000	11.0
A	SP (KO)	L35-12	Square	Copper	12.00	35.00	35.00	8.000	11.0
C	SP (KO)	S25-12	Triangle	Copper	12.00	50.00	25.00	11.000	2.4
E	SP (KO)	S28-16	Triangle	Copper	15.88	55.00	27.50	6.000	10.0
H	SP (KO)	L55-16	Square	Copper	15.88	55.00	55.00	6.000	10.0
K	SP (KO)	S28-12	Triangle	Copper	12.00	31.75	27.50	6.000	10.0
L	FR (MO)	S39-16	Triangle	Copper	15.88	45.00	38.97	5.000	10.0
M	FR (MO)	S32-12	Triangle	Copper	12.00	37.50	32.47	5.000	6.0
P	SP (EO)	L50-16	Square	Aisi 304/316	15.88	50.00	50.00	11.000	11.0
S	SP (EO)	S25-16	Triangle	Aisi 304/316	15.88	50.00	25.00	11.000	11.0
T	SP (EO)	S57-22	Triangle	Aisi 304/316	22.22	65.42	56.66	11.000	11.0
F	SP (EO)	S35-16	Triangle	Aisi 304/316	15.88	40.00	34.65	11.000	8.0
R	SP (EO)	S60-16	Triangle	Aisi 304/316	15.88	60.00	30.00	11.000	4.0
U	FR (MO)	L45-16	Square	Copper	15.88	45.00	45.00	5.000	12.0
W	FR (MO)	S67-16	Triangle	Copper	15.88	77.94	67.50	5.000	12.0

IT (RE): Italy (Roen Est) / SP (KO): Spain (Kobol) / SP (EO): Spain (Eos) / FR (MO): France (Morgana) / SK (RE): Slovakia (Roen Est)

Max. weight by plant: IT (RE): 1.000kg / SP (KO): 3.000kg / SP (EO): 5.000kg / FR (MO): 3.000kg / SK (RE): 100kg

OUR RECOMMENDATION BY REFRIGERANT

Geom	CO2 (Evap)	CO2 (GC)	NH3	R290	H2O	HFC/HFO
1	✓				✓	✓
5	✓	✓		✓	✓	✓
6	✓	✓		✓	✓	✓
7		✓		✓		✓
8	✓				✓	✓
9	✓				✓	✓
A	✓				✓	✓
C					✓	✓
E					✓	✓
H					✓	✓
K	✓				✓	✓
L					✓	✓
M	✓				✓	✓
P			✓		✓	
S			✓		✓	
T			✓		✓	
F			✓		✓	
O			✓		✓	
U					✓	✓
W					✓	✓

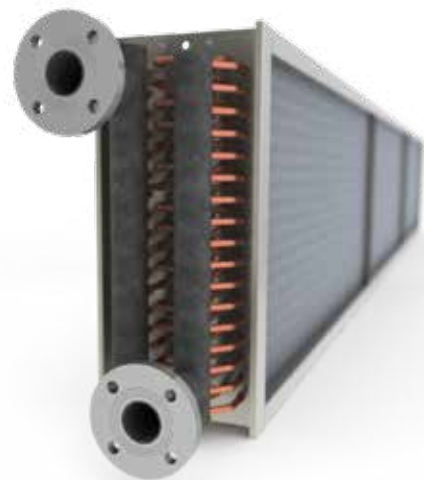
MAIN PRODUCT GROUPS RANGES

WATER COILS

ENEX TECHNOLOGIES "Water coils" are manufactured as per the customer's specific request both in terms of thermodynamic performance and frames shape, so that they can be perfectly integrated into the customer's machine or system.

Main characteristics:

- Compatible with most fluids in the liquid state as an example water, water-glycol mixtures, oil, diathermic fluids, etc.
- Wide variety of fittings and vents.
- Wide range of fin thickness and fins spacing.



WATER CUBES

ENEX TECHNOLOGIES "Water Cubes" are manufactured as per the customer's specific request both in terms of thermodynamic performance and frames shape, so that they can be perfectly integrated into the ducts or passages used in heating, ventilation, and air conditioning (HVAC).

3 main standard ranges available: Heating cubes, Cooling cubes, and Cooling insulated

Main characteristics:

- Compatible with most fluids in the liquid state as an example water, water-glycol mixtures, oil, diathermic fluids, etc.
- Highly customisable standard range.
- Headers in copper and brass fitting with drain valves.
- Drip tray with double water drainpipes in stainless steel as optional.
- Selection software available: Ask details to your account manager



PHASES CHANGING COILS

ENEX TECHNOLOGIES "Phase changing coils" are compatible with all the design requirements deriving from the current low GWP refrigerants available on the market. They are made as per the customer's specific request both in terms of thermodynamic requests,

structural needs, frame shape and performance.

So that they can be perfectly integrated into the customer's machine or system.

Main characteristics:

- Evaporators, condensers, reversible for heat pumps.
- Compatible with all synthetic refrigerants (including A2L), propane, CO2 and NH3.
- Cat. II PED certification available.
- Maximum design pressure 80 bar for use as CO2 evaporator.
- Maximum design pressure 140 bar for use as CO2 gas cooler.

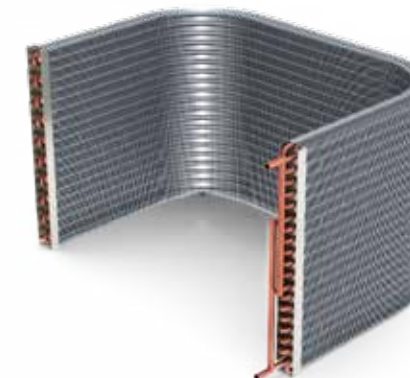


BENT COILS

ENEX TECHNOLOGIES "Bent coils" are suitable for use in encased outdoor/indoor units. The "C" or "L" shape allows to optimize the available space guaranteeing the required capacity to be perfectly integrated into the customer's machine or system. The exchanger can be configured according to the customer's request both as regards the dimensions and the materials used.

Main characteristics:

- Evaporators, condensers, reversible for heat pumps;
- Compatible with all synthetic refrigerants (including A2L), propane and CO2;
- Cat. II PED certification available;
- Very large dimensional limits (H x L x W), max 1700 x 3000 x 65 (pre bending).



SURFACE TREATMENTS

As the market is becoming more and more demanding in the field of coils protections against corrosion, ENEX TECHNOLOGIES developed a strong ability in selection, quotation and supply of different types of coils protections, in order to respond to customers requirements, such as (exemplificative and non-exhaustive list):

- Heresite
- Heresite + UV
- Epoxy painting – Pulver
- Epoxy painting – Cataphoresis
- Epoxy painting – Cataphoresis + UV
- Electrofin
- Electrofin + UV
- Thermoguard fanguard
- AquaAero
- Blygold



DISTINCTIVE TECHNOLOGICAL CHOICES OF THE RANGE

Very large dimensional possibilities of finned pack (H x L x W):
Minimum - 50 x 80 x 22 mm
Maximum - 2500 x 11500 x 800 mm

5 fins materials available

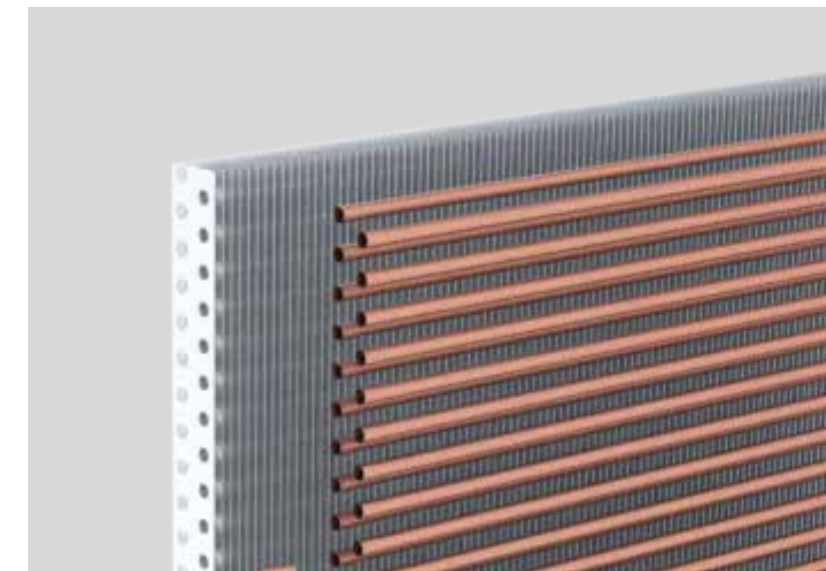
50 tubes available, smooth and grooved

Various materials available for the headers

Possibility of testing with helium test machine;

Various materials available for the frame, including:
galvanized steel, aluminum, stainless steel, copper...

Available high efficiency tubes and high efficiency fins to increase the heat exchange



+10 surface treatments available



Coils up to PS 140bar



Fin & Tube Heat Exchangers | Rev.1 Version September 2024 | ENG

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