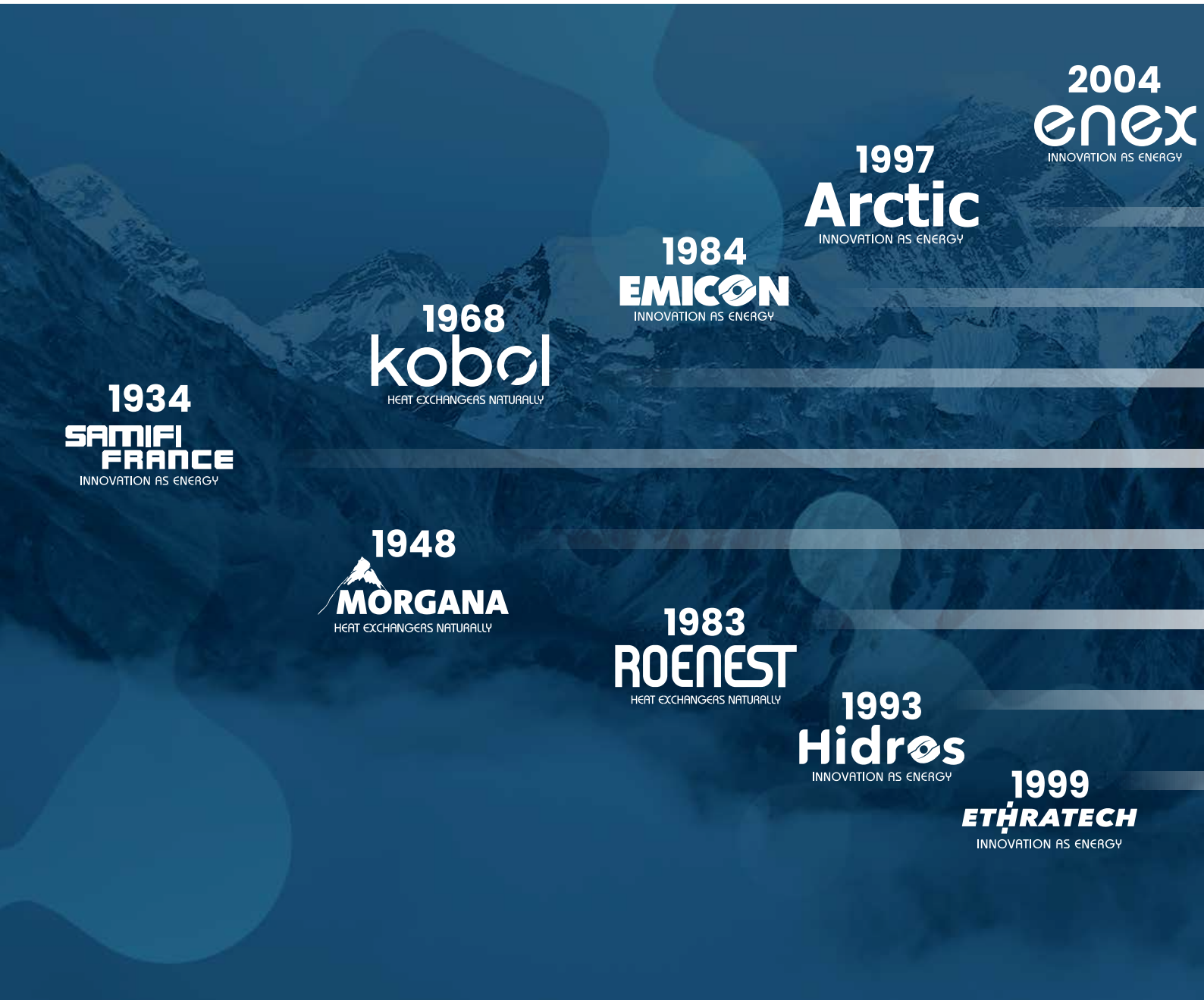
EMIBYTE for IT COOLING

Products catalogue

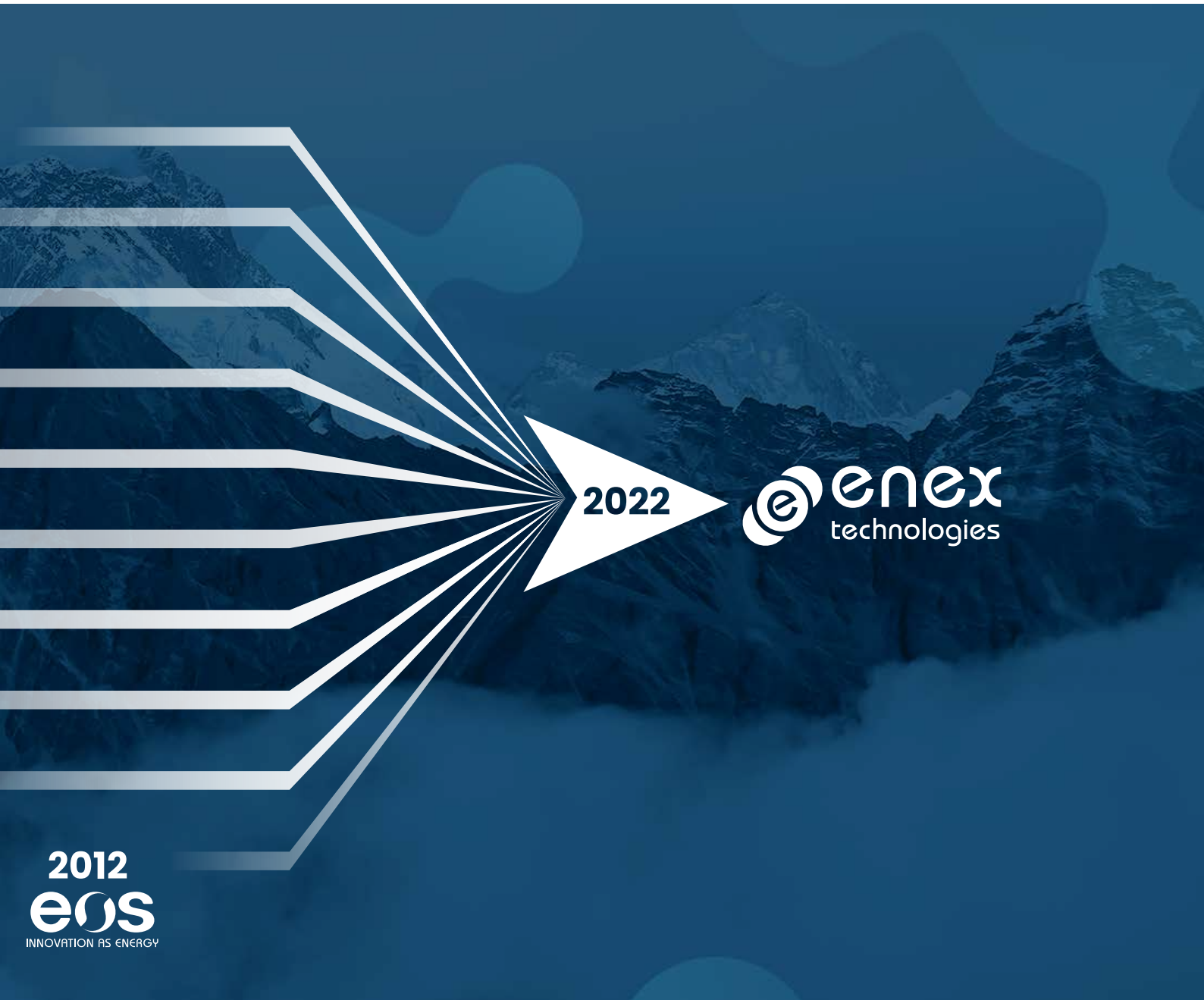
Index

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 CO_2, water and propane as natural refrigerants with low global warming potential.



Pioneers and innovators in natural HVACR since the 1930s



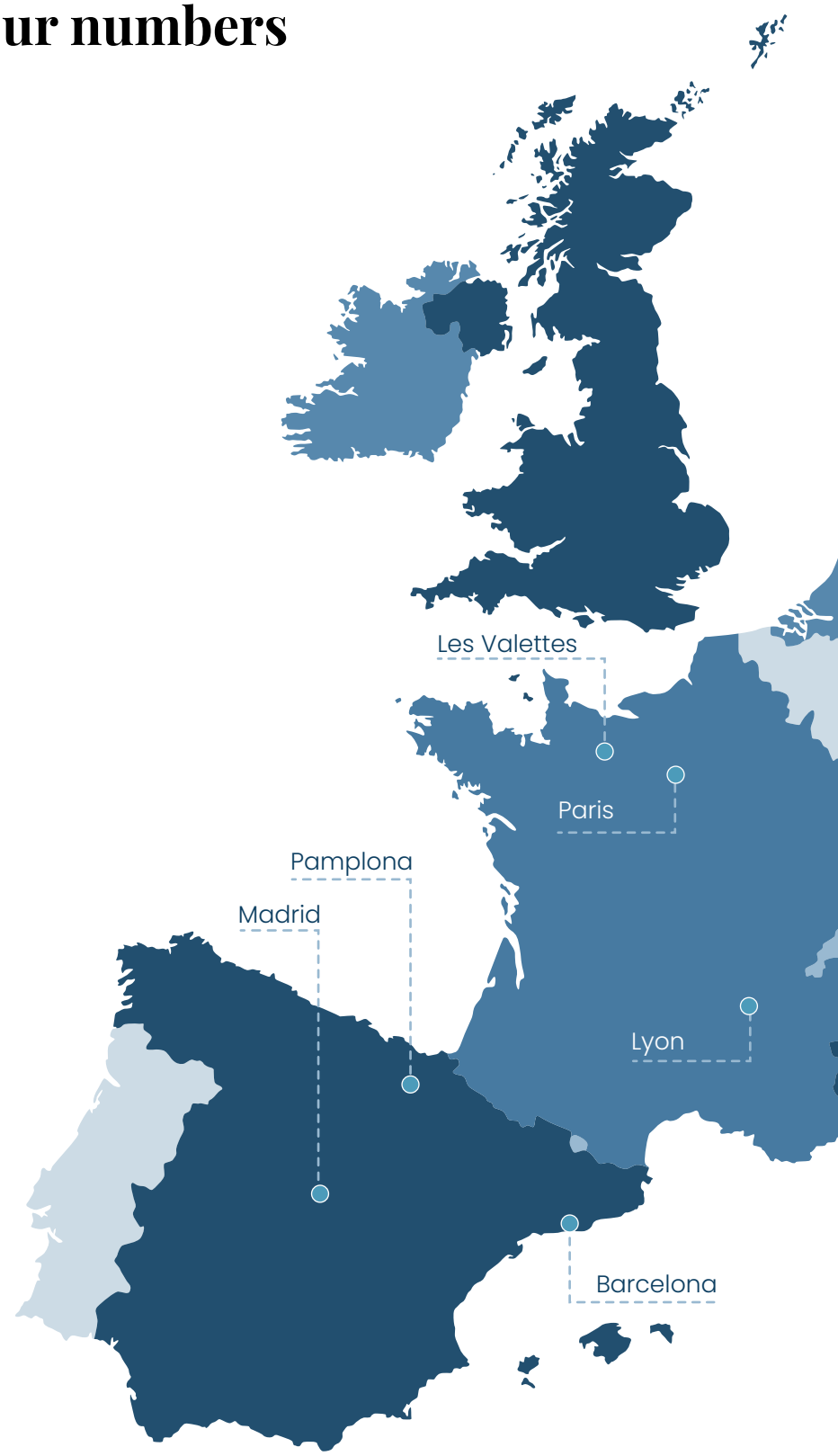
Our numbers

200M€
Revenues

1000+
Employees

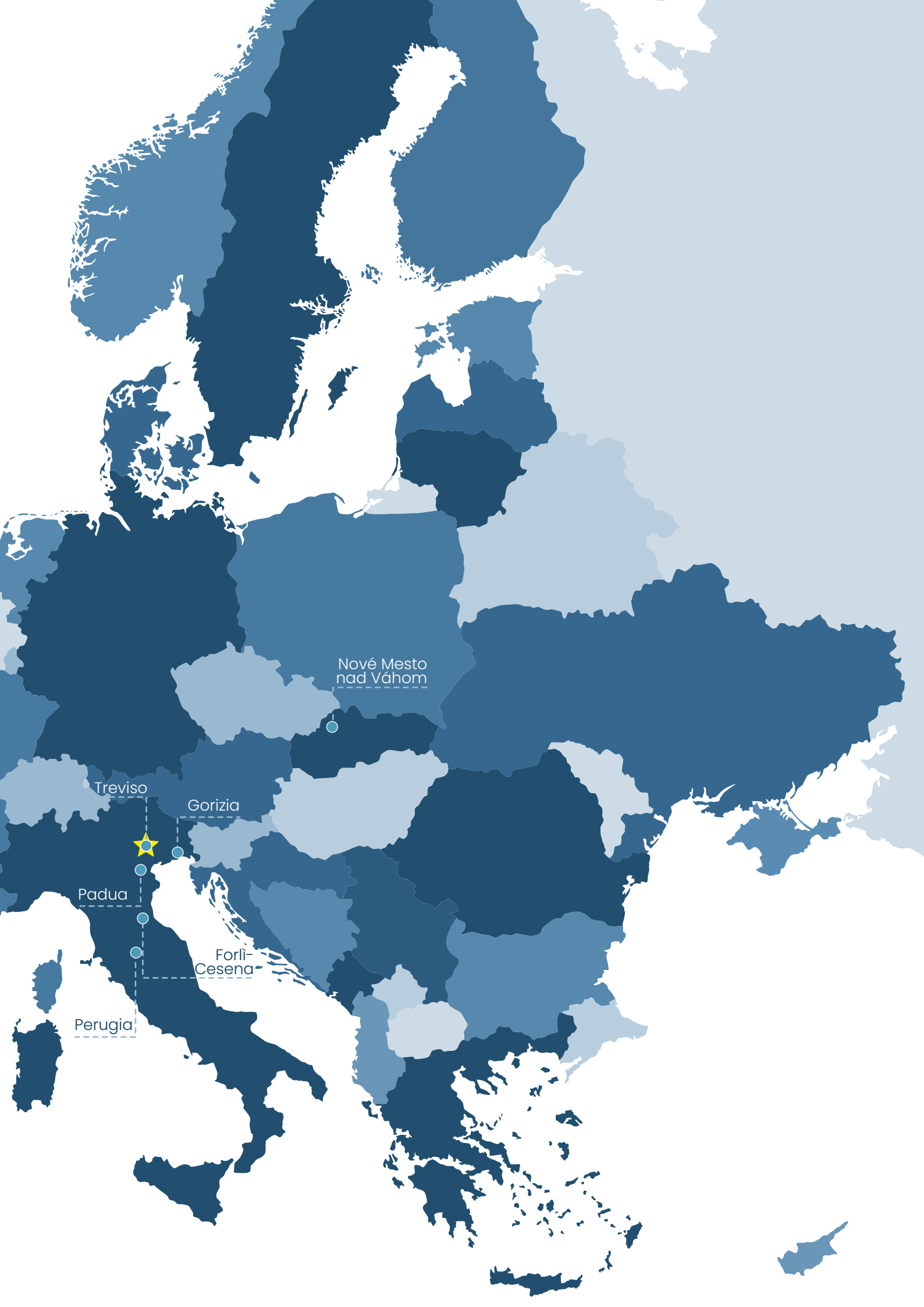
12
Factories

125
Countries



★ Headquarter

● Manufacturing, R&D site and commercial office


Nové Mesto
nad Váhom
Treviso
Gorizia
Padua
Forlì-
Cesena
Perugia

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 CO_2.

HEATING

Our high efficiency heat pump range using natural refrigerant CO_2 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

ENVIRONMENT

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.

THE EMICON LABS

CLIMATIC ROOMS

EMICON has **climatic rooms** and **testing stations** where units produced are subject to strict **functional** and **performance** tests, with the possibility of simulating the real design climatic conditions. A double hydronic circuit (hot and cold) allows to carry out **operation tests on all types** of units, both for IT Cooling and hydronic units, packaged, 2 or 4 pipes, air cooled, water cooled and split, up to a cooling capacity of 1500 kW.

It is possible, for our customers, to attend the functioning and performance test. Thanks to some webcams, it is possible to **remotely attend the test.**

CHARACTERISTICS

The climatic room is an environment inside of which, by means of auxiliary and heat recovery systems, we create a **controlled microclimate** in terms of air **temperature** and **humidity**, where the heat transfer fluids are treated according to the specific characteristics of the unit.
The types of units that can be tested are **air or water cooled units**, available as **chiller** or **reversible heat pump** versions according to **EN14511** standard.
The operating limits of fluid temperature can vary between **-5°C** and **65°C**. The ambient temperature (inside the room) can reach a maximum of 52°C for summer operation and a minimum of -7°C for winter cycle.

CLOSE CONTROL UNITS

EMICON's Laboratory allows the **performance test** of chilled water and air cooled direct expansion **close control units**, with the possibility to simulate climatic conditions from 15°C to 35°C.

PROPANE

We recently built a the test area **exclusively** dedicated to chillers and heat pumps operating with natural **Propane refrigerant (R290)**, making us able to carry out performance and functional tests of units with a cooling capacity up to 700 kW both in cooling only and in winter cycle reversible configurations. The use of **ATEX** components, refrigerant leak detection systems, connected to acoustic signals and forced-type exhaust systems guarantee a **high safety degree** in this area.

Mission critical **Cooling & Thermal management** has been Emicon core focus since 1984. Our range of precision air conditioning solutions have been designed for a wide range of applications where **close control**, **high precision cooling** is essential, including **data centres**, telecom switching stations, theatres, museum and high technological density environments in general. Throughout its history, the data center and server room has consistently been asked to do more: handle **more capacity**, deliver **more availability** and achieve **more efficiency**. Thanks to the resourcefulness and dedication of the people responsible for managing these business-critical facilities, they have largely responded. The question now is can they continue to do so within the existing paradigms, or are we on the verge of fundamental changes in data center technologies, designs and processes?

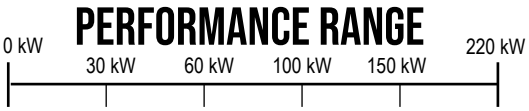
The result to this main question nowadays is **EMIBYTE**, the new partner in **IT cooling** with his new series of products entirely designed and produced in the **Emicon factories**.
Reliable, integrated cooling, from **chiller** and computer room **air conditioners**, tackles the issues head on to lower costs and reduce downtime risk. We provide **all levels of heat removal** for different sized rooms and applications. Whether you're building new, retrofitting, or modernizin, achieve a **healthy data center environment** with our **EMIBYTE** cooling solutions.

LEGEND

- AIR — Air cooled
- H2O — Water cooled
- Remote condensing
- FC — Free cooling
- High efficiency
- Silenced version
- Ultra-silenced version

- Cooling only
- Scroll Compressors
- Scroll inverter Compressors
- R410a — R410a Refrigerant (Kc)
- EC — Axial fan with EC motor
- EC — Plug-fan with EC motor

SERIE	FEATURES	COMPRESSOR	FANS	REFRIGERATNT
DX.A	AIR	Scroll	EC	R410a
DXi.A	AIR	Scroll inverter	EC	R410a
DXi.AF	AIR, FC	Scroll inverter	EC	R410a
DXi.H	H2O	Scroll inverter	EC	R410a
DXi.HF	H2O, FC	Scroll inverter	EC	R410a
WU	H2O		EC	
WUL	H2O		EC	
IR.DXi	AIR	Scroll inverter	EC	R410a
IR.WU	H2O		EC	
RCE	AIR		EC	R410a
RCE-S	AIR		EC	R410a



COMPONENTS

FULLY CUSTOMIZABLE AND INTUITIVE

TOUCH SCREEN DISPLAY

The new 4.3" touch screen designed to maximise the users system management experience. System usability is enhanced by the web server pages shown on the display relating to each individual controller connected to the network, allowing users to monitor the situation across the entire system from just one single location. Ethernet connectivity makes installation even more practical, without any constraints in terms of location relative to the monitored system.

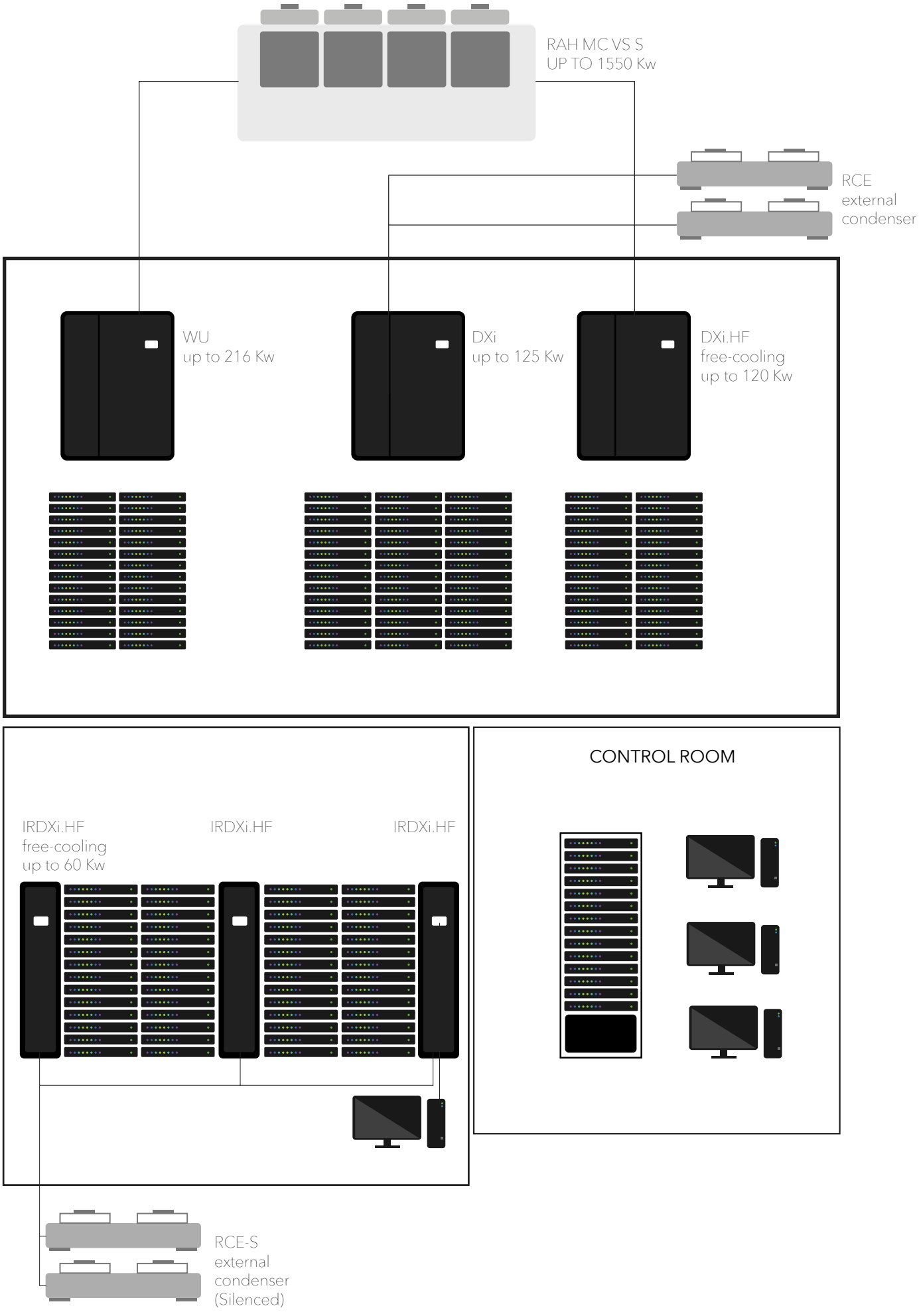
BUILT-IN TEMPERATURE AND HUMIDITY PROBE
Can share the values read with the colour display making the comprehension of operating data easier.
Micro-USB port
At the front, concealed by a faceplate, for easier access.

INVERTER SCROLL COMPRESSOR
The best solution in terms of variable cooling capacity

PRECISE TEMPERATURE CONTROL
Inverter compressor-based technology allows close monitoring and control of room temperature.

EC PREMIUM FAN
The new generation of Emicon EC Fan 2.0 is the core of EMIBYTE Precision Air Conditioner, significantly minimizing noise levels and increasing the efficiency of the unit.

ULTRASONIC HUMIDIFIER
Ultrasonic Humidifier option is the new ultrasound cool mist large room humidifier. It has been developed to control and maintain the desired level of humidity for a specific environment or in any large room or storage area constant.


RAH MC VS S
UP TO 1550 Kw
RCE
external
condenser
WU
up to 216 Kw
DXi
up to 125 Kw
DXi.HF
free-cooling
up to 120 Kw
IRDXi.HF
free-cooling
up to 60 Kw
IRDXi.HF
IRDXi.HF
CONTROL ROOM
RCE-S
external
condenser
(Silenced)

WU

WATER COOLED CLOSE CONTROL UNIT

Ductable close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.

Units fitted with EC INVERTER fans, upflow or downflow. These units are provided with 2 way modulating valve and servomotor. Unit has to be connected with an external chiller.

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector. NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions. The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4, M5 filtering section is to CEN-EN 779 with average degree of separation 90,1% ASHRAE. The filter is self-extinguishing. Switchboard to IEC 204-1 / EN60204-1.

Chilled water coil with copper tube and aluminium Blue-fins with hydrophilic coating treatment surface to reduce the pressure drops on the air side. Water circuit realized with pipes entirely coated with insulated material and bronze fittings, complete temperature probe and with 2 or 3-way modulating valve.

Control

Semi-graphic display 132x64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function modality.

VERSIONS

D - Downflow air supply
U - Up flow air supply
E - Front supply (Displacement)
B - Up supply, (Rear return)
V - Up supply (Down suction)

ACCESSORIES

- Remote user terminal
- Electric Heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Interface electronic board
- Air distribution plenum
- Condensing pump discharge
- Interface card for TCP/IP Protocol
- Longwork, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

TECHNICAL DATA

WU		80	150	190	250	310	440	550	640	700	840
Cooling capacity (Total) (1) ESP 20 Pa	kW	6,3	10,1	13	16,7	20,9	29,6	37	42,9	48	55,3
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	5,8	8,6	10,6	14,2	16,8	24,9	29,8	35,2	38,4	47,4
Tot. absorbed power (2) ESP 20 Pa	kW	0,3	0,3	0,4	0,6	0,7	0,9	1,1	1,2	1,2	1,7
SHR		0,92	0,85	0,81	0,84	0,8	0,84	0,80	0,81	0,79	0,85
Air flow	m^3/h	2550	2550	2550	4100	4100	7200	7200	9100	9100	13400
N° Fans	n°	1	1	1	1	1	1	1	1	1	1
ESP max.	Pa	563	517	480	445	405	570	522	349	337	338
Pressure drop coil + 2 way valve (standard)	kPa	32	20	28	41	31	31	31	34	40	34
Water flow	m^3/h	1,1	1,7	2,2	2,9	3,6	5,1	6,4	7,4	8,3	9,5
Power supply	V/ph/Hz					400/3/50+N+PE					
Humidifier											
Steam production (nominal)	kg/h	1,5	1,5	1,5	3,0	3,0	5,0	5,0	8,0	8,0	8,0
Steam production (max.)	kg/h	3	3	3	3	3	8	8	8	8	8
Max. absorbed power	kW	1,12	1,12	1,12	2,25	2,25	3,75	3,75	6,0	6,0	6,0
Max. absorbed current	A	5,0	5,0	5,0	10,0	10,0	5,5	5,5	8,7	8,7	8,7
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters											
Steps	n°	1	1	1	1	1	2	2	3	3	3
Power	kW	3,0	3,0	3,0	4,5	4,5	6,0	6,0	9,0	9,0	9,0
Absorbed current	A	4,3	4,3	4,3	6,5	6,5	8,7	8,7	13,0	13,0	13,0
Oversized electrical heaters											
Steps	n°	1	1	1	2	2	3	3	3	3	3
Power	kW	4,5	4,5	4,5	6,0	6,0	9,0	9,0	12,0	12,0	12,0
Absorbed current	A	6,5	6,5	6,5	8,7	8,7	13,0	13,0	17,3	17,3	17,3
Hot water coil											
Heating capacity (3)	kW	4,9	4,9	4,9	7,3	7,3	10,67	10,67	16,7	16,7	24,5
Water flow	m^3/h	0,85	0,85	0,85	1,3	1,3	1,86	1,86	2,91	2,91	4,3
Pressure drop (coil + 3 way valve)	kPa	36	36	36	31	31	48	48	56	56	46
Coil internal volume	dm^3	1,1	1,1	1,1	1,4	1,4	2,1	2,1	3,3	3,3	4,7
Condensing water pump											
Nominal flow	l/h	27,5	27,5	27,5	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	34	34	34	500	500	500	500	500	500	500
Max. discharge height (flow=0 m^3/h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier											
Nominal flow	l/h	-	-	-	-	-	-	-	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	900	900	900
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-	-	6,0	6,0	6,0
Dimensions and weight											
Frame	n°	1	1	1	2	2	3	3	4	4	4,5
Width	mm	550	550	550	750	750	980	980	1160	1160	1505
Depth	mm	550	550	550	550	550	750	750	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight	Kg	139	143	148	173	179	237	248	312	318	360

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

WU		960	1050	1300	1450	1600	1710	1900	2100	2300
Cooling capacity (Total) (1) ESP 20 Pa	kW	63,2	68,9	88,2	95,2	106,9	115,4	126,2	140,1	157,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	51,6	55,4	70,4	77,6	85,2	93,9	100,7	114,3	125,6
Tot. absorbed power (2) ESP 20 Pa	kW	1,9	2	2,2	2,7	2,9	3,1	3,3	3,5	3,8
SHR		0,81	0,80	0,79	0,81	0,79	0,81	0,79	0,81	0,79
Air flow	m^3/h	13400	13400	16600	20100	20100	23800	23800	29500	29500
N° Fans	n°	1	1	2	2	2	2	2	3	3
ESP max.	Pa	308	291	369	277	293	371	366	398	413
Pressure drop coil + 2 way valve (standard)	kPa	41	42	35	40	43	47	50	37	40
Water flow	m^3/h	10,9	11,9	15,2	16,4	18,4	19,8	21,7	24,1	27,1
Power supply	V/ph/Hz	400/3/50+N+PE								
Humidifier										
Steam production (nominal)	kg/h	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
Steam production (max.)	kg/h	8	8	8	8	8	8	8	8	8
Max. absorbed power	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	9,0	9,0	15,0	18,0	18,0	24,0	24,0	27,0	27,0
Absorbed current	A	13,0	13,0	21,7	26,0	26,0	34,6	34,6	39,0	39,0
Oversized electrical heaters										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	12,0	12,0	18,0	24,0	24,0	27,0	27,0	36,0	36,0
Absorbed current	A	17,3	17,3	26,0	34,6	34,6	39,0	39,0	52,0	52,0
Hot water coil										
Heating capacity (3)	kW	24,5	24,5	31,1	37,4	37,4	48,9	48,9	60,8	60,8
Water flow	m^3/h	4,3	4,3	5,43	6,5	6,5	8,5	8,5	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	46	46	53	34	34	48	48	42	42
Coil internal volume	dm^3	4,7	4,7	5,8	7,1	7,1	10,45	10,45	12,6	12,6
Condensing water pump										
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier										
Nominal flow	l/h	600	600	600	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight										
Frame	n°	4,5	4,5	5	6	6	7	7	8	8
Width	mm	1505	1505	1860	2210	2210	2565	2565	3100	3100
Depth	mm	850	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight	Kg	366	373	456	503	520	600	617	715	751

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

WUL

WATER COOLED CLOSE CONTROL UNIT
(EXTENDED VERSION)

Close control air-conditioners for vertical installation and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control.
Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general.
Units consist of two modules: the first housing the heat exchanger, usually placed over the floor, the second where EC inverter fans are fitted. Downflow air supply. These units are provided with modulating 2 way valve and servomotor. Unit has to be connected with an external chiller.

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector. NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions. The fan section includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated
electronic commutated system and continuous variation of the rotation speed.
Standard G4, M5 filtering section, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing. Switchboard to IEC 204-1/EN60204-1.
Chilled water coil with copper tube and aluminium Blue-fins with hydrophilic coating treatment surface to reduce the pressure drops on the air side. Water circuit realized with pipes entirely coated with insulated material and bronze fittings, complete temperature probe and with 2 or 3-way modulating valve.

Control

Semi-graphic display 132x64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function modality.

VERSIONS

D - Downflow air supply

ACCESSORIES

- Remote user terminal
- Electric Heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Interface electronic board
- Air distribution plenum
- Condensing pump discharge
- Interface card for TCP/IP Protocol
- Longwork, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

TECHNICAL DATA

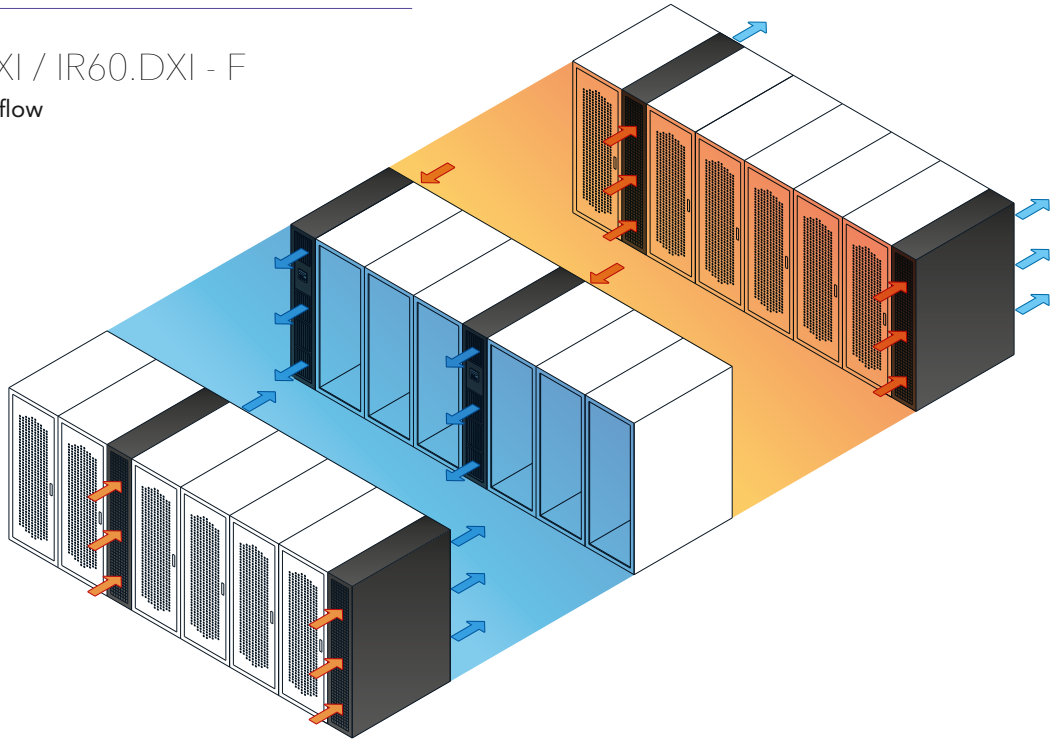
WUL		900	1350	1800	2200	2500	3200
Cooling capacity (Total) (1) ESP 20 Pa	kW	59,5	85	115,3	136,9	169,1	216,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	48,6	69,4	95	111,6	138,6	176,5
Tot. absorbed power (2) ESP 20 Pa	kW	1,6	2,5	2,9	3,8	5,2	5,4
SHR		0,82	0,82	0,82	0,82	0,82	0,82
Air flow	m^3/h	12000	16500	22000	26000	33000	41000
N° Fans	n°	1	1	2	2	2	3
ESP max.	Pa	239	161	295	160	150	318
Pressure drop coil + 2 way valve (standard)	kPa	28	24	37	24	33	52
Water flow	m^3/h	10,2	14,6	19,8	23,5	29,1	37,2
Power supply	V/ph/Hz			400/3/50+N+PE			
Humidifier							
Steam production (nominal)	kg/h	8	8	15	15	15	15
Steam production (max.)	kg/h	8	8	15	15	15	15
Max. absorbed power	kW	6	6	11,2	11,2	11,2	11,2
Max. absorbed current	A	8,7	8,7	16,2	16,2	16,2	16,2
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	2	2	2	2	3	3
Power	kW	7,4	7,4	14,8	14,8	22,2	29,6
Absorbed current	A	10,7	10,7	21,4	21,4	32,0	42,7
Hot water coil							
Heating capacity (3)	kW	29,7	41,37	54,98	65,62	81,32	101,37
Water flow	m^3/h	5,18	7,21	9,58	11,43	14,2	17,66
Pressure drop (coil + 3 way valve)	kPa	51	50	71	73	61	86
Coil internal volume	dm^3	7,6	11,54	13,47	15,28	17,27	22,23
Condensing water pump							
Nominal flow	l/h	390	390	390	390	390	390
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	4	4,5	5	6	7	8
Width	mm	1160	1505	1860	2210	2565	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980 + 550	1980 + 550	1980 + 550	1980 + 550	1980 + 550	1980 + 550
Weight	Kg	383	485	577	646	775	959

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

CONFIGURATIONS

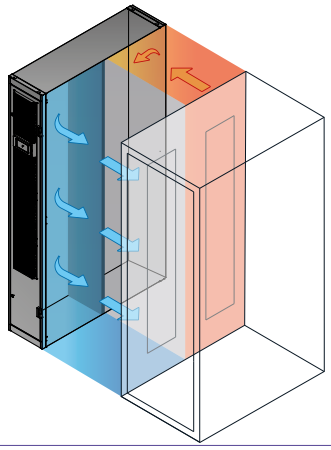
IR30.DXI / IR60.DXI - F

Frontal air flow



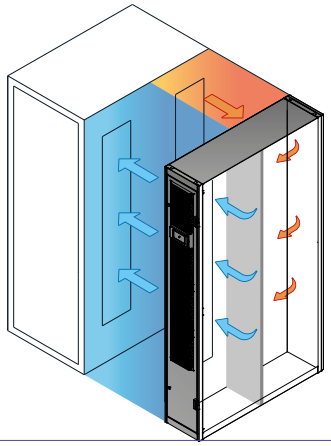
IR30.DXI - LR

Side air flow to the right



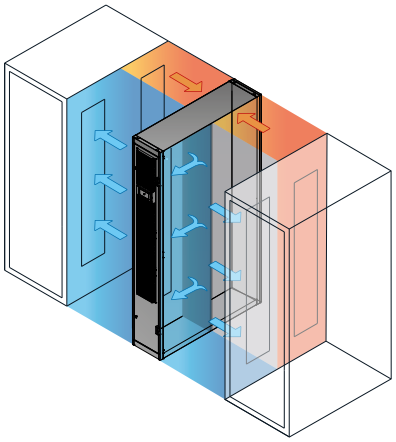
IR30.DXI - LL

Side air flow to the left

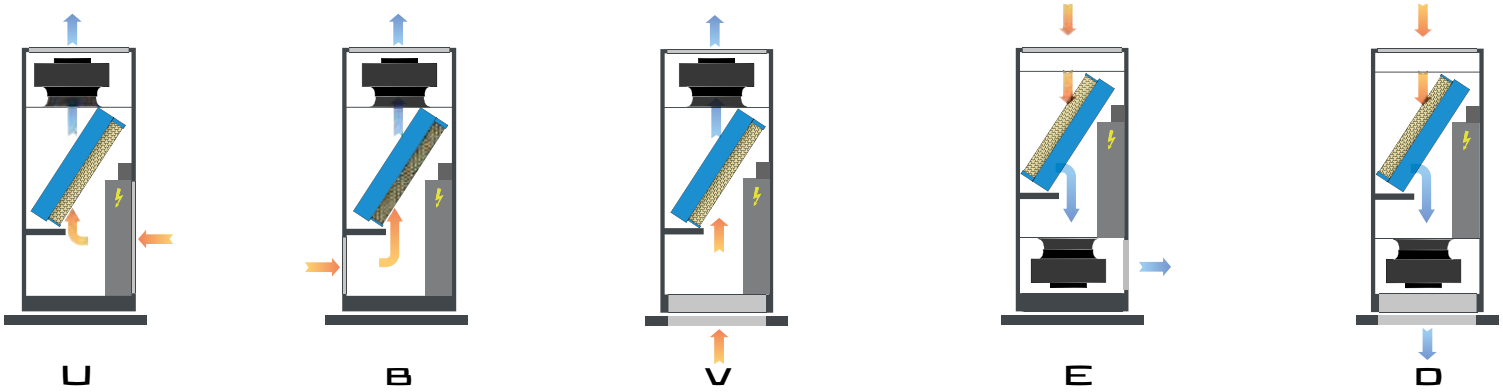


IR30.DXI - CL

Side air flow right and left (Close Loop)



AIR FLOW CONFIGURATIONS: DX / DXI / WU



Notes

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