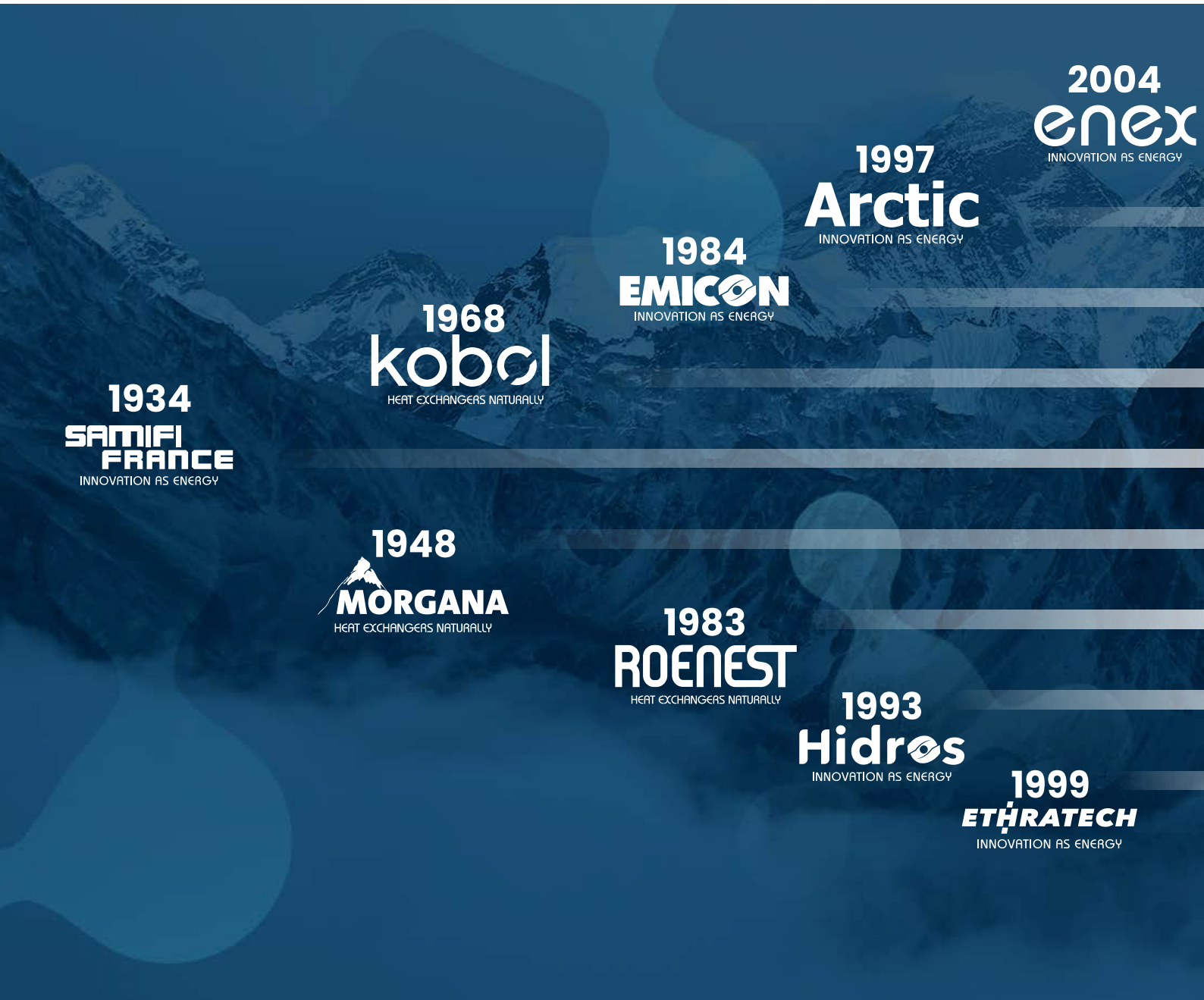
EMIBYTE for IT COOLING

Products catalogue

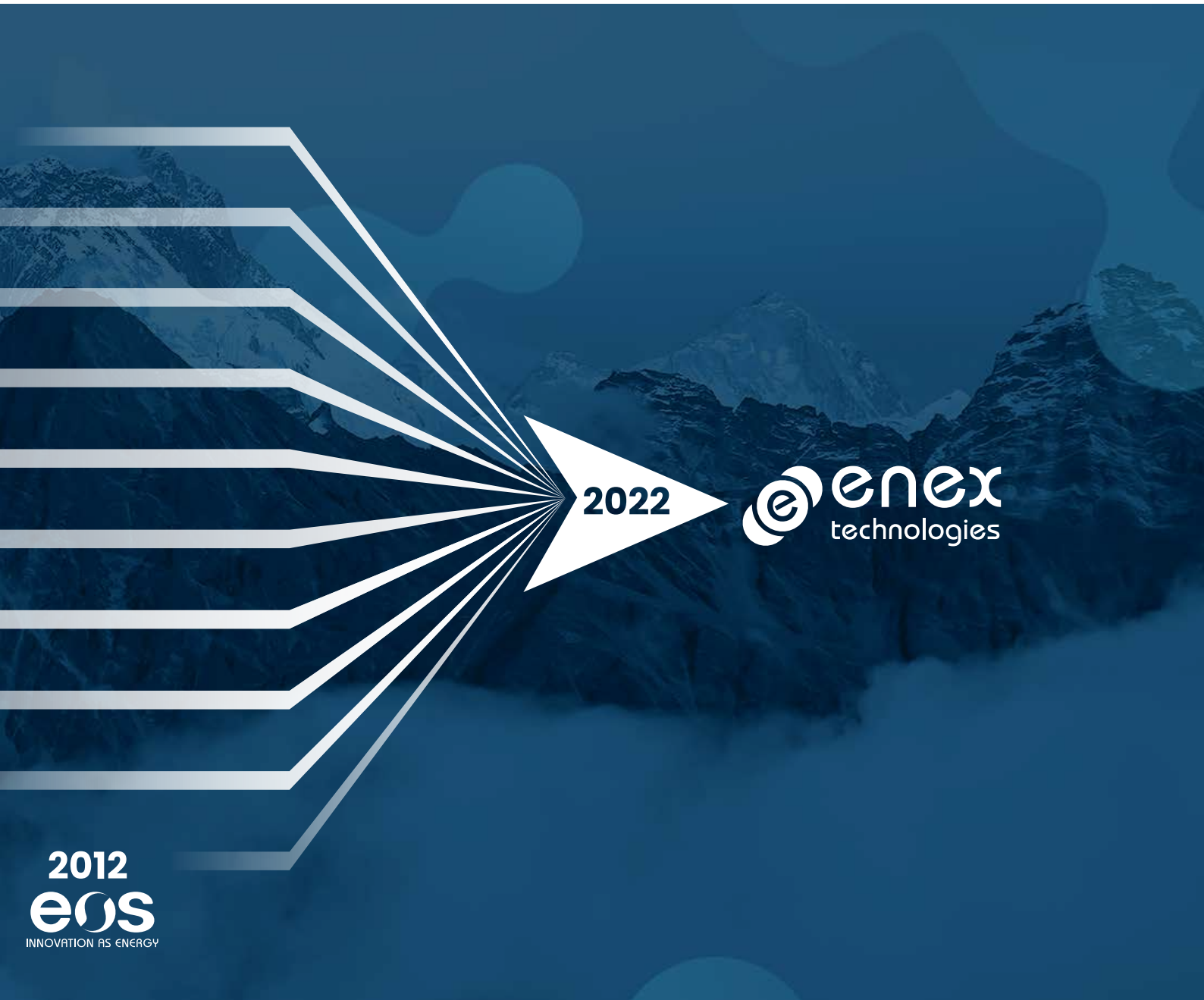
Index

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



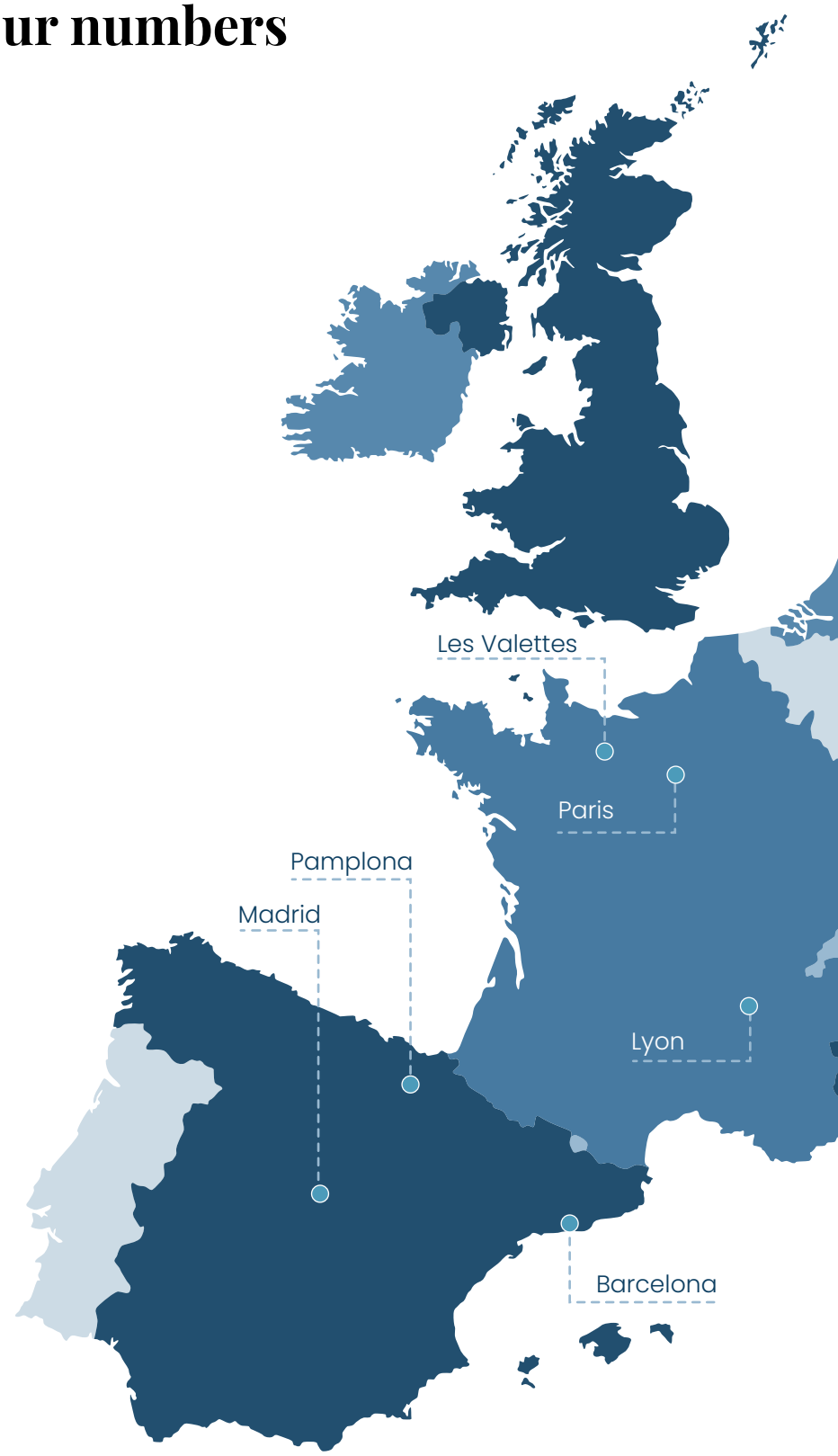
Our numbers

200M€
Revenues

1000+
Employees

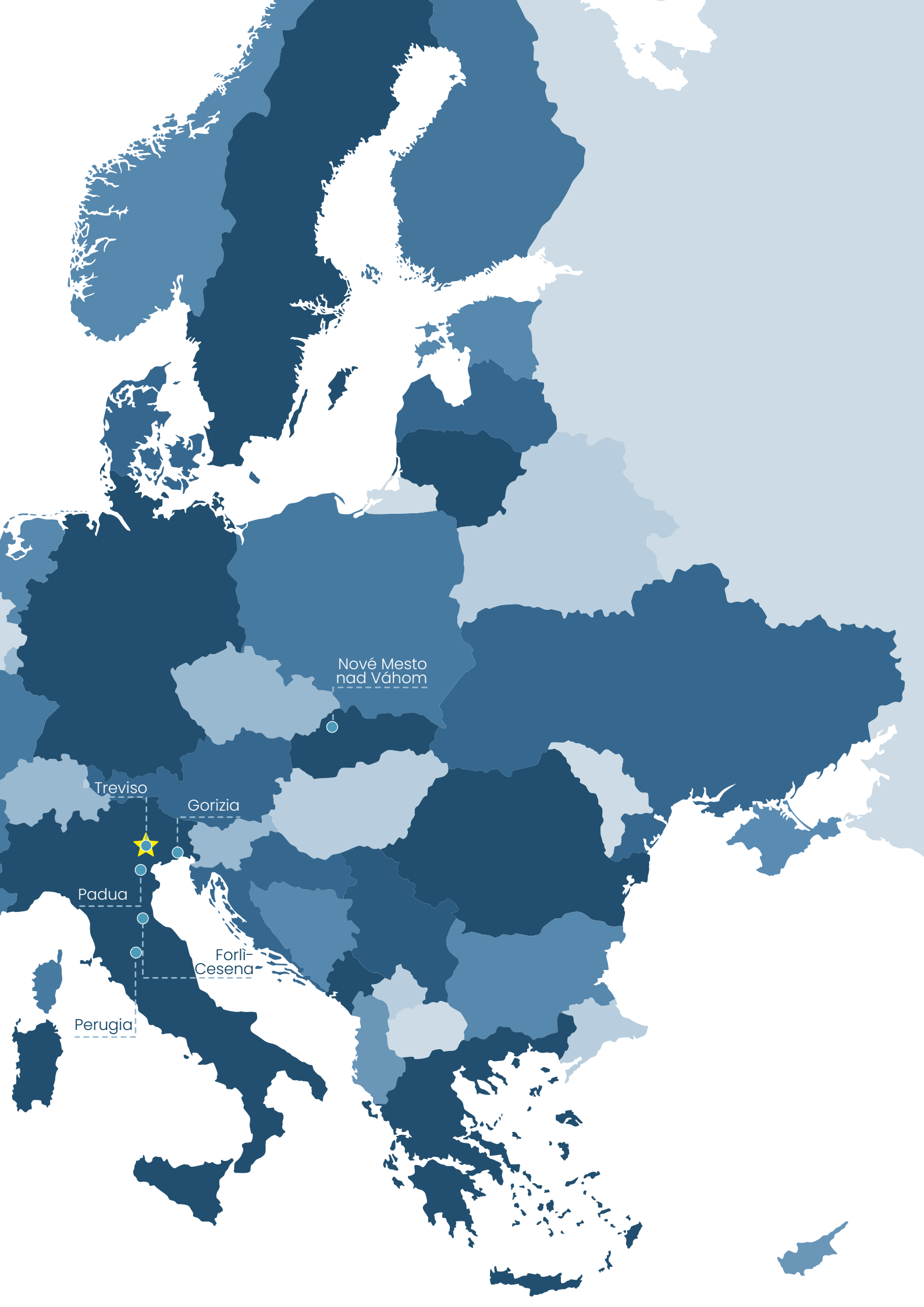
12
Factories

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	PERFORMANCE RANGE (0 kW – 30 kW – 60 kW – 100 kW – 150 kW – 220 kW)
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.

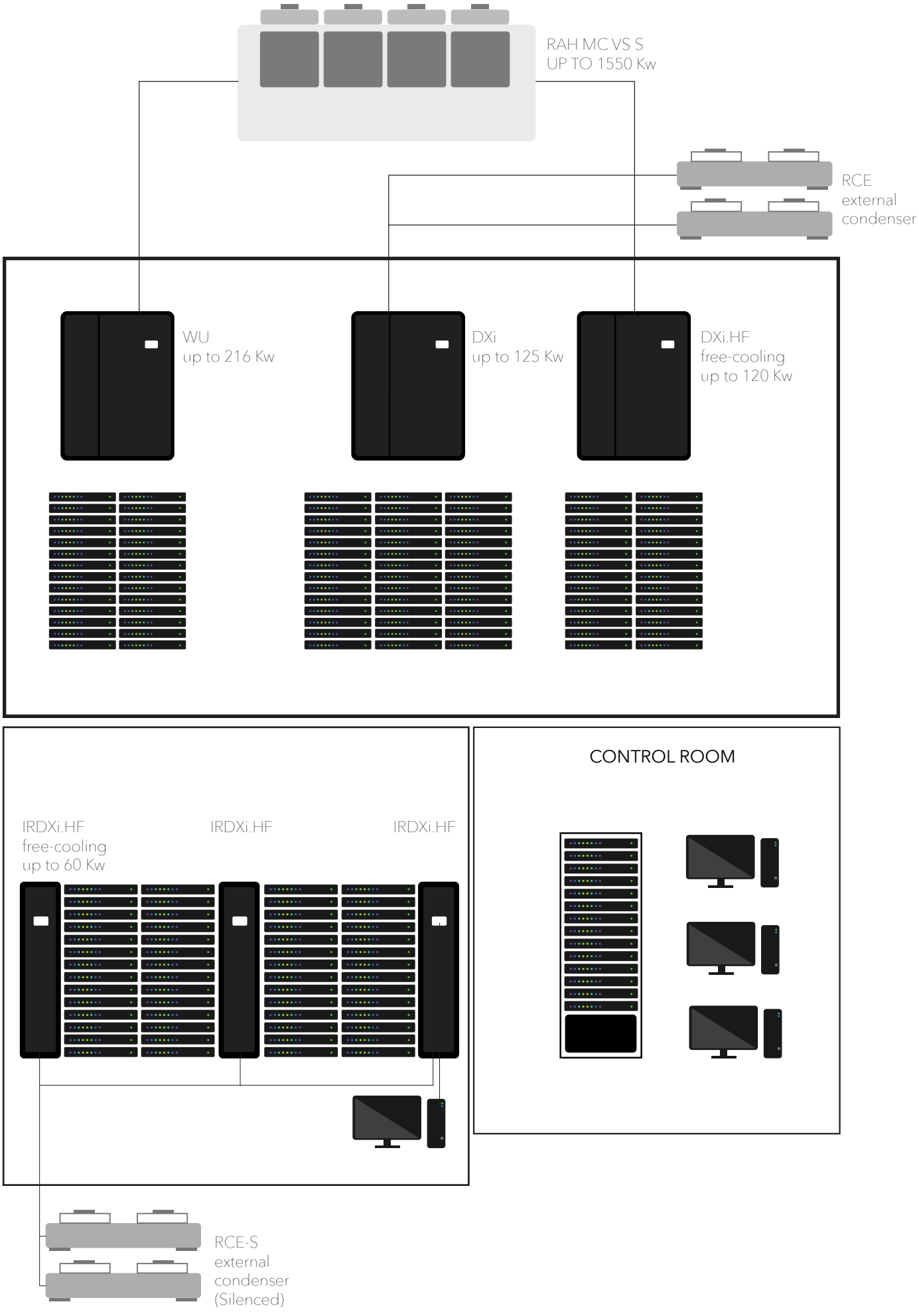
BUILT-IN TEMPERATURE AND HUMIDITY PROBE
Can share the values read with the colour display making the comprehension of operating data easier.
Micro-USB port
At the front, concealed by a faceplate, for easier access.

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.

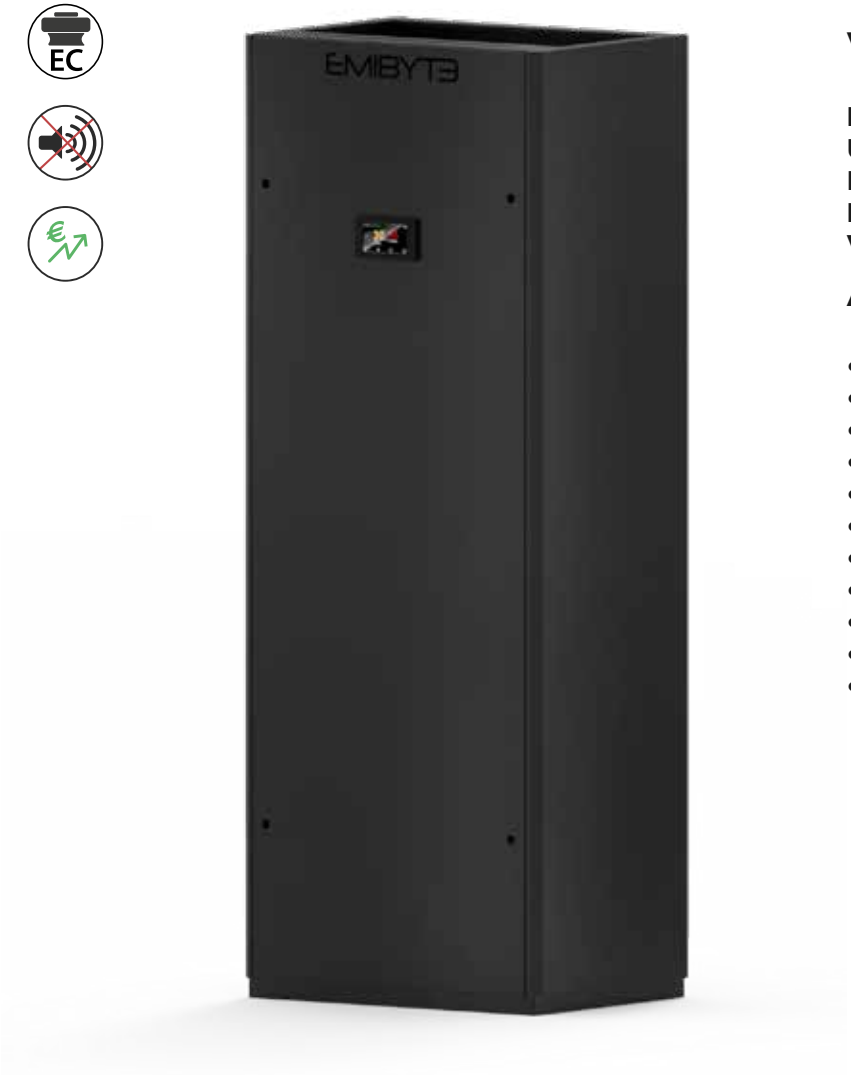

RAH MC VS S
UP TO 1550 Kw
RCE
external
condenser
WU
up to 216 Kw
DXi
up to 125 Kw
DXi.HF
free-cooling
up to 120 Kw
CONTROL ROOM
IRDXi.HF
free-cooling
up to 60 Kw
IRDXi.HF
IRDXi.HF
RCE-S
external
condenser
(Silenced)

DXi.HF

DIRECT EXPANSION CLOSE CONTROL UNIT
WATER COOLED WITH ADDITIONAL FREECOOLING COIL
AND INVERTER COMPRESSORS

Close control air-conditioners for vertical installations 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.

Direct expansion FREE-COOLING unit with INVERTER compressor is water cooled and it has to be connected to a remote dry cooler. INVERTER compressor allows the cooling capacity modulation according to the effective thermal load. This solution is suitable for applications with high partial loads and optimises the power input by reducing inrush current.
The unit is also equipped with electronic expansion valve, EC INVERTER fans, condenser and additional Free-cooling coil.



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

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to the galvanized sheet metal structures and panels with bevelled corner uprights to enhance its unique, clean and attractive design. The panels are lined with sound-insulating material to limit noise levels. Last generation of BLDC INVERTER compressor designed to deliver maximum cooling efficiency when you ned it most. This latest variable speed compressor technology allows CRAC system manufactures as Emicon to achieve superior performance. New generation EC Inverter centrifugal fan made in hight class technological material with 5 backward curved blades. Impeller with bionic 3D profile thanks to an innovative design in the form of a blade geometry with specific buckling. Special V-shaped rear edge allows a wide characteristic field. Together with the rotating diffuser that opens, exceptional performances of the impeller and the entire system are thus obtained. In combination with the undulated surface of the blade surface, a diffused sound emission takes place which guarantees a very low noise level.

Standard COARSE 60% (ISO EN 16890) EU4/G4 filtering section is fitted. The filter is self-extinguishing. The microprocessor controls the compressor activation times thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems.

Refrigerant circuit consisting of Electronic Expansion Valve, sight glass filter dryer on liquid line, pressure transducer with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories. Thanks to the double coil (Free-cooling water and Direct Expansion) the unit provides the highest saving match with full availability of the DX solution. The usage of Free cooling coil and the BLDC Inverter compressor allows maximizing the saving in mixed mode operation, so whenever the free-cooling is not able to fully take the load the compressors can work just to complete the missing cooling needs. Therefore Emicon DXI-HF can provide extremely high energy saving granting the highest availability of the application.

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.

TECHNICAL DATA

DXi.HF		181	251	381	392	531	532
Cooling capacity (Total) (1) ESP 20 Pa	kW	18,9	23,1	34,7	37,9	47,8	45,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	16,5	23,0	32,8	33,5	42,7	42,6
Tot. absorbed power (2) ESP 20 Pa	kW	4,35	5,67	4,55	8,48	10,9	10,9
SHR		0,87	0,99	0,94	0,88	0,89	0,93
Water flow	m^3/h	3,99	4,96	6,88	8,01	10,11	9,73
Air flow	m^3/h	5777	8260	11656	11656	14696	14696
Fan	n°	1	1	1	1	2	2
Max. ESP	Pa	570	361	375	376	398	398
EER	W/W	4,34	4,07	7,63	4,47	4,39	4,17
Maximum absorbed power	kW	10,6	11,5	16,4	18,6	24,3	23,0
Maximum absorbed current	A	21,0	21,2	25,6	37,6	36,9	42,4
Starting current	A	17,8	17,8	21,6	34,4	32,0	39,0
Power supply	V/ph/Hz			400/3/50+N+PE			
Free-cooling data							
Cooling capacity (Total) (3) ESP 20 Pa	kW	18,8	25,9	36,3	37,9	48,9	48,7
Tot. absorbed power (2) ESP 20 Pa	kW	0,85	1,12	0,88	1,56	1,88	1,82
SHR		0,84	0,87	0,88	0,84	0,84	0,84
Water flow	m^3/h	3,98	4,94	6,85	7,98	10,07	9,69
Total pressure drops	kPa	48,3	50,5	39,3	36,0	74,3	52,6
Humidifier							
Steam production (nominal)	kg/h	5	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	3,75	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	5,5	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
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	3	3	3	3	3
Power	kW	6,0	9,0	9,0	9,0	15,0	15,0
Absorbed current	A	9,12	13,7	13,7	13,7	22,8	22,8
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	9,0	12,0	12,0	12,0	18,0	18,0
Absorbed current	A	13,7	18,2	18,2	18,2	27,3	27,3
Hot water coil							
Heating capacity (4)	kW	10,6	16,7	24,5	24,5	31,1	31,1
Water flow	m^3/h	3,98	4,94	6,85	7,98	10,08	9,69
Pressure drop (coil + 3 way valve)	kPa	48	56	46	46	53	53
Coil internal volume	dm^3	2,1	3,3	4,7	4,7	5,8	5,8
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	1/1	2/2
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	2	1	2
Condensing water pump							
Nominal flow	l/h	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
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
Max. flow (prevalence = 0 m)	l/h	-	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	-	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	3	4	4,5	4,5	5	5
Width	mm	980	1160	1505	1505	1860	1860
Depth	mm	750	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	302	357	455	484	573	596
Weight (Configuration V)	Kg	306	361	461	490	579	603
Weight (Configuration D)	Kg	308	363	464	493	583	606
Weight (Configuration B)	Kg	306	361	461	490	579	603

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Free cooling: Ambient temperature 24°C, Relative humidity 50%, water inlet temperature 7°C, constant water flow
(4) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

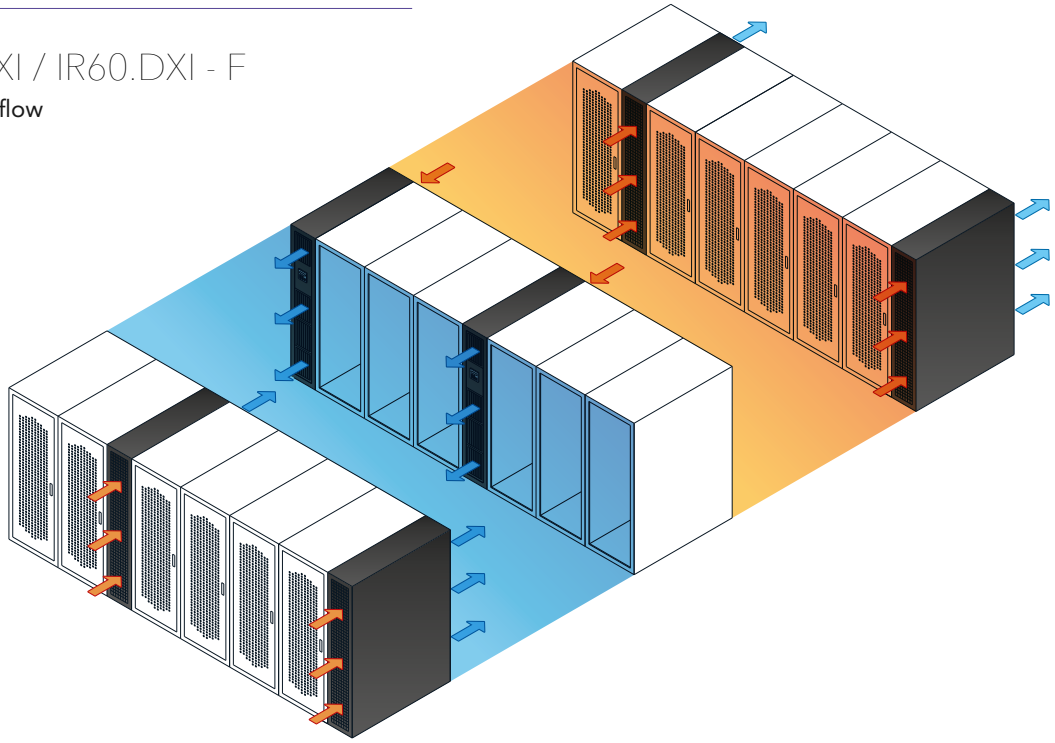
DXi.HF		631	652	742	761	931	952
Cooling capacity (Total) (1) ESP 20 Pa	kW	61,3	59,1	64,7	73,2	86,9	86,4
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	51,4	51,4	60,5	61,9	77,4	77,2
Tot. absorbed power (2) ESP 20 Pa	kW	13,9	13,2	14,6	16,6	19,9	19,7
SHR		0,83	0,87	0,93	0,84	0,89	0,89
Water flow	m^3/h	12,97	12,48	13,67	15,47	18,41	18,33
Air flow	m^3/h	17838	17838	21183	21183	26048	26048
Fan	n°	2	2	2	2	3	3
Max. ESP	Pa	356	356	401	401	434	434
EER	W/W	4,41	4,48	4,43	4,41	4,37	4,39
Maximum absorbed power	kW	45,7	48,8	56,7	59,9	45	49
Maximum absorbed current	A	73,9	75,7	87,7	94,4	76	74
Starting current	A	184	71,7	83,7	204	185	47
Power supply	V/ph/Hz			400/3/50+N+PE			
Free-cooling data							
Cooling capacity (Total) (3) ESP 20 Pa	kW	59,4	59,0	68,7	71,1	87,1	86,9
Tot. absorbed power (2) ESP 20 Pa	kW	2,43	2,31	2,66	2,81	3,25	3,02
SHR		0,85	0,844	0,84	0,84	0,84	0,84
Water flow	m^3/h	12,92	12,43	13,62	15,41	18,33	18,25
Total pressure drops	kPa	62,6	45,8	37,3	56,6	52,3	30,4
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	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
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°	3	3	3	3	3	3
Power	kW	18,0	18,0	24,0	24,0	27,0	27,0
Absorbed current	A	27,3	27,3	36,5	34,6	39,0	39,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	24,0	24,0	27,0	27,0	36,0	36,0
Absorbed current	A	36,5	36,5	41,0	39,0	52,0	52,0
Hot water coil							
Heating capacity (4)	kW	37,4	37,4	48,9	48,9	60,8	60,8
Water flow	m^3/h	12,92	12,43	13,62	8,5	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	34	34	48	48	42	42
Coil internal volume	dm^3	7,1	7,1	10,5	10,5	12,6	12,6
Compressors							
Circuits / Compressors	n°/n°	1/2	2/2	2/2	1/2	1/2	2/2
On / Off Compressors	n°	1	--	--	1	1	--
Inverter Compressors	n°	1	2	1	1	1	2
Condensing water pump							
Nominal flow	l/h	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
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°	6	6	7	7	8	8
Width	mm	2210	2210	2565	2565	3100	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	686	711	833	819	1003	1022
Weight (Configuration V)	Kg	693	718	841	828	1014	1032
Weight (Configuration D)	Kg	696	722	845	832	1019	1037
Weight (Configuration B)	Kg	693	718	841	828	1014	1032

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Free cooling: Ambient temperature 24°C, Relative humidity 50%, water inlet temperature 7°C, constant water flow
(4) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

CONFIGURATIONS

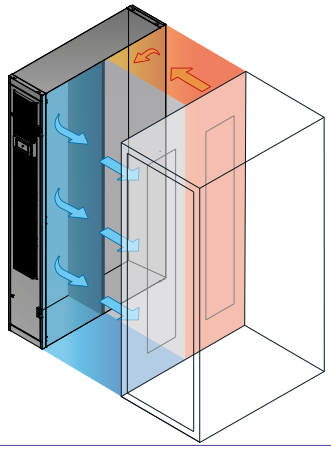
IR30.DXI / IR60.DXI - F

Frontal air flow



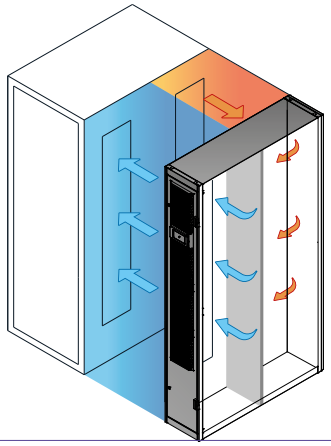
IR30.DXI - LR

Side air flow to the right



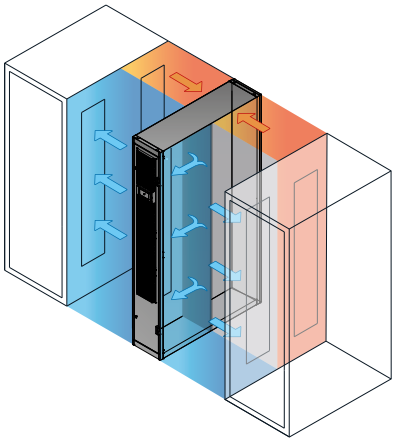
IR30.DXI - LL

Side air flow to the left

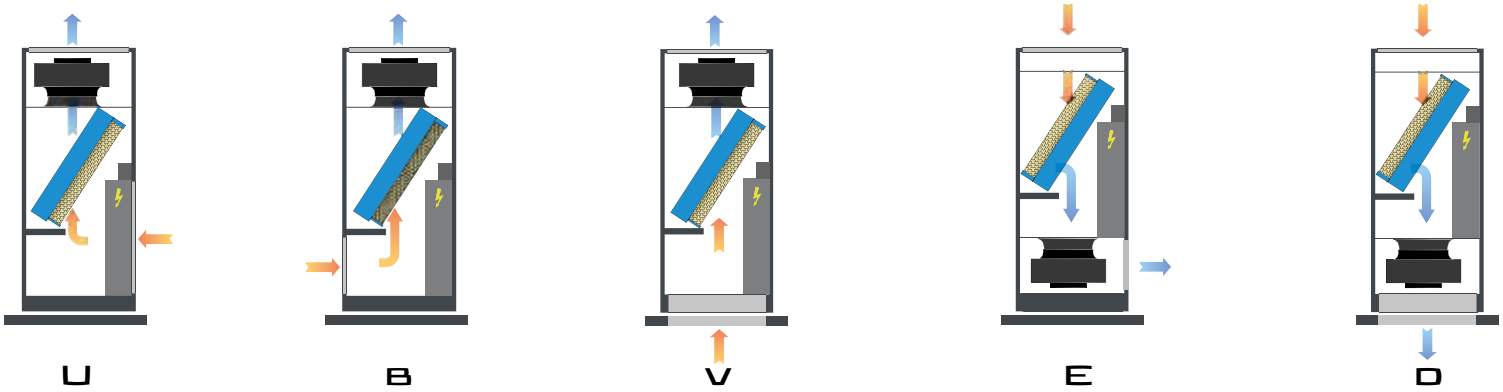


IR30.DXI - CL

Side air flow right and left (Close Loop)



AIR FLOW CONFIGURATIONS: DX / DXI / WU



Notes

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