

EMIBYTE

IT-Precision Cooling solutions

Ready to enhance the efficiency of your cooling systems for small and large data centers.



INNOVATION & COMFORT

PROJECT AIR CONDITIONING EVOLUTION GOES ON

Thanks to its experience and to the wide technical background of its designers, Emicon is one of the most advanced manufacturers of air conditioners for the residential, industrial, process and data center air conditioning market. It designs, manufactures and distributes chillers, precision air conditioners, roof tops, heat pumps and special conditioners to answer all the special needs, thanks to the ability to produce personal solutions.

Emicon's "Innovation and Comfort" promise is a combination widely appreciated in Italy and internationally thanks to projects for Great Works, Calculation Centers, Banks and air-conditioning works for Museums and Galleries, where the preservation of masterpieces of extreme value require very sophisticated air-conditioning solutions. It is not a coincidence that since 1984 the company has earned the distinction of "avant-garde" reality because it has been able to take care of its presence on the market: it has continuously updated its knowledge, built a network of different and complementary skills, widened its production range to ensure a more complete offer than ever before, it has developed a flexible and dynamic attitude in order to satisfy all customers needs.

THE ENVIRONMENT



The research of environmental quality represents for Emicon AC a basic choice for all technological applications realized each time. On this purpose, environmental compatibility means efficiency optimization, mainly facing two topical subjects: sound level and ozone problems.

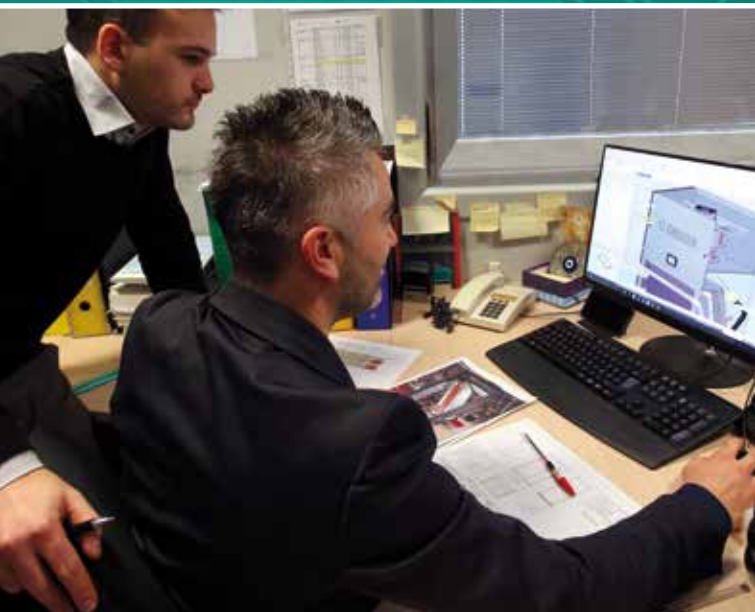
It is the awareness of environmental issues that moved Emicon AC to endure with research, devel-

opment and certification, to add to its catalogue units that use new refrigerants with low environmental impact such as HFO 1234ze and R290 with very high efficiency and low GWP (= 6 and 3).

ENVIRONMENTAL POLICY RESEARCH & QUALITY

In order to assure the end customer satisfaction, keeping a leadership position on the market and at the same time aiming to a continuous improvement of the company internal working conditions and of its environmental performances, Emicon intends to promote in its organization the culture of Quality and Environment Protection and it is therefore extremely important the pollution preventing and the constant respect of the environmental regulations.

Emicon is perfectly aware that market requests are the driving motor of the company activity and that an organization methodically managed in its processes represents a topical factor for the customer satisfaction. In order to achieve such results, Emicon believes it is important to develop and to improve its Quality and Environmental Service as the basic tool for supporting all the company processes. On this purpose, it is really important for Emicon, for its own success, to aim to the training, the involvement and the motivation of the whole staff working in a healthy environment and with the necessary facilities for a correct execution of their own working activities.



ITALIAN DESIGN CUSTOMIZED SOLUTIONS

EMIBYTE was born from the synergy between professionals with specific roles and skills, built over time and forged by experience, who combine and integrate to offer a wide and incredibly complete service from air dehumidification to refrigeration to industrial and residential air conditioning.

It is this human capital that is the winning lever of Hidem Group.



EMIBYTE

Emicon "EMIBYTE" direct expansion cooling series is equipped with the most advanced industry technology, designed and tested in the Emicon laboratories guaranteeing precise cooling of data centers and server rooms.

It is equipped with R410A refrigerant, which ensures high levels of efficiency. Emicon EMIBYTE also includes new generation of 2.0 EC fans that ensure maximum energy efficiency. The complete design of the unit was further optimized with enhanced heat exchangers ensuring an overall high level of efficiency and conditioning capacity. In addition, EMIBYTE range of CRAC units also includes new EC Inverter Scroll compressor technology, which makes it an ideal solution able to expand hand in hand with business needs.



CLIMATIC TESTING ROOM FOR CLOSE CONTROL UNITS

YACHT LAB

Yacht laboratory, allows the performances check of air and water cooled close control units up to a cooling capacity of 150 kW and an air flow rate of 30.000 m³/h.

"Yacht" climatic chamber allows to test direct expansion, chilled water and dual coil close control units.

Air temperature: min 15°C / max 45°C.

Fluid temperature: min 5°C / max 25°C.

At the end of the test a certificate is issued with the performance of the unit at nominal conditions, seasonal and/or requested by the customer certifying the consumption and therefore the energy index.

Both laboratories are suitable for tests at 50 and 60 Hz.

EUROVENT certification can be obtain through our internal accredited laboratory.

Moreover, this new testing rooms will provide an additional service to our customers. Through this it will be possible to run the test in the presence of the end customer directly in the EMICON factory or remotely thanks to some webcams.



A DEDICATED RANGE

TECHNICAL FEATURES

- New foot print
- Cabinet frame with special insulated panels
- Special design alluminium condensing coil.
- Humidifier with Infrared technology (upon request)
- New Touch screen
- Electrical panel complete with control and safety devices
- G4-class efficiency air filters with dirty filter alert.
- Supply & Return air temperature sensor
- Electronic – EC Fans
- R410A scroll compressors with Inverter too
- Electronic expansion valve with SysDrive system
- Three-way control valves
- RS485 Modbus bus card
- Several interface combinations with Bacnet, Ethernet, LAN network, DCIM
- New COP Enhancer technology by Emicon for better EER and PUE
- Stand-By logic & Rotation Mode (Sleep mode) functionality
- Special double power (redundancy) supply from-to UPS



CONNECTIVITY

EMIBYTE Close Control air-conditioning, fits new Electronic graphic user interface essential for the correct operation of Information Technology equipment: processing and storage devices produce heat that needs to be removed in order to maintain optimum operating conditions, while at the same time ensuring minimum energy consumption

The high level supervision of multiple EMIBYTE units allows them to work together as a single and harmonized system optimizing room temperature and humidity.

Most of the main interface protocols (MODBUS, LONWORK, BACNET) are available and Emicon R&D remains at full disposal of any customer for further implementation.



EMIBYTE COP ENHANCER

EMIBYTE COP Enhancer is the tool which intelligently contributes to the performances of the cooling management by choosing the right portion of air or cooling involved in the system to create the optimal conditions thus to reduce the whole energy consumption in the loop system. This new software implemented by Emicon for new EMIBYTE range of Precision Cooling will help collocation companies to have precise metrics check like EER, PUE and other important cooling parameters data for the optimisation of their daily operation.



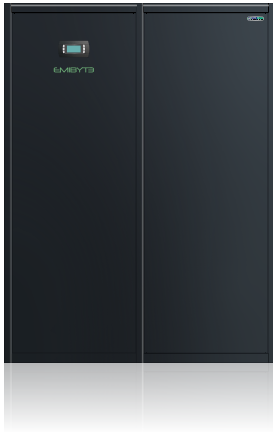
NEW ELECTRONIC CONTROL IS:

- Innovative control of the temperature as combined-action, which acts both on the return and on the supply with two-stage process.
- Management of inverter compressor (BLDC)
- Fine humidity regulation.
- Advanced management of electronic fans.
- Complete management of the remote condenser.
- Possibility of managing a network of up to 16 units.
- Duty/stand-by rotation modality.
- Possibility to regulate all units from the master unit temperature probe.
- Possibility with a single remote display, to access the operating parameters of each unit present in the plant.
- Alarm history for each unit, up to a maximum of 64 alarms.
- Energy Ventilation function that allows to keep only the digital and analogue output (0-10V) of the supply fan active at a settable value.
- “Night/Day” operating mode: this function will allow you to establish different operations between the daily and the night phase. With this function it is possible to reduce the acoustic impact, as it can be activated according to the site needs.
- Graphic user interface fitted as standard.



ROOM COOLING

New EMIBYTE close control perimeter units are ideal for integration within a high density conditioning system. Thanks to their optimized design and extensive laboratory testing, these units provide reduced electrical absorption, air flow, cooling capacity in different conditions, thanks to their new COP enhancer technology managed by the advanced electronic control fully compatible with a wide range of supervisor systems and DCIM.



CHILLERS

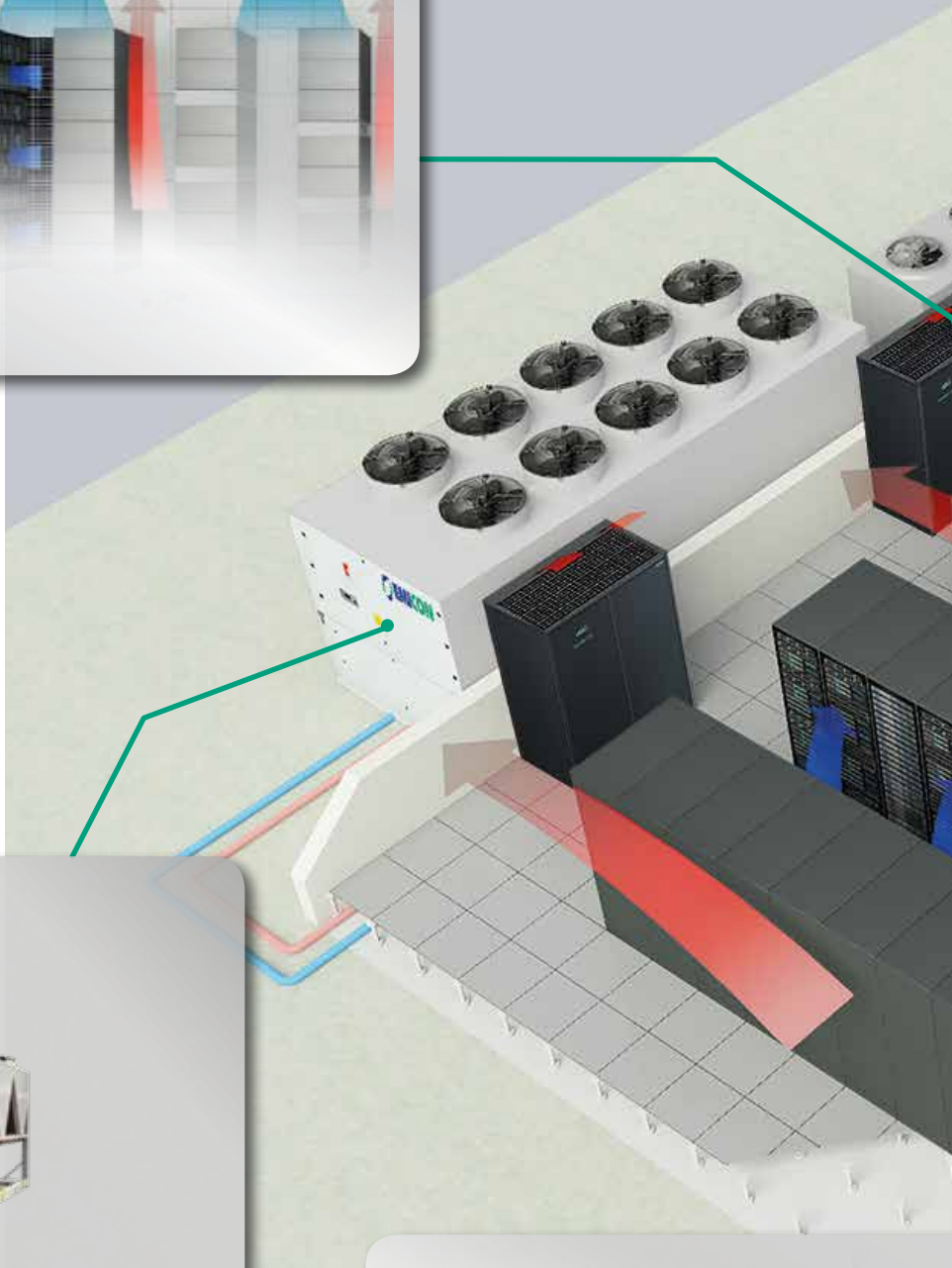


Emicon modular air cooled chillers are designed for external installation and are specifically suitable for cooling liquid solution in industrial application of air conditioning, commercial fields. The free-cooling and compressor functioning options make it ideal for data center applications with cooling needs ranging from 100 kW to above 1,2 MW.

The efficiency of this system is maximized when the free-cooling chiller operates at inlet water temperatures which are higher than standard levels. Emicon chillers range can perfectly integrate with high efficiency floor mount EMIBYTE close control units and EMI-In-Row units, guaranteeing outstanding energy savings and longer year-round free-cooling. Moreover, the compressor functioning mode is designed to operate as a back up when external temperatures exceed free-cooling limits. These features, together with EMIBYTE COP Optimizer system, will provide a complete cooling system solution, ensuring unparalleled data center energy savings and reliability.

IN ROW

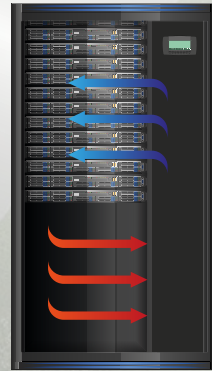
EMI-In-Row are specifically designed for high return air temperatures, the EMI-In-Row optimizes air distribution and maximizes efficiency, delivering both cost and energy-related savings. Efficiency is further enhanced through the use of the environmental friendly R410A refrigerant which ensures constant operation at the highest efficiency levels. The EMI-In-Row are also designed to optimize installation and minimize start up, connection and labor investments. Total cost of ownership advantages are also achieved as a result of the EMI-In-Row flexibility configuration. The units are available for integration with existing racks or as a bundled solution combined with racks, UPS and monitoring capabilities.





NEW EDGE DATA CENTER

ALL IN ONE



- Cooling
- Rack / Server
- UPS

The secure Edge Data Center provides complete enterprise-class datacentre functionality with the footprint of a standard IT rack.

Designed to operate in tough industries, it's IP55 compliant, very flexible and scalable, and it adapts to customer specific needs including very high service level objectives.



UPS



Safepower Modular SPM is based on modular architecture.

Each 10-40 kVA UPS module is housed in a single 19" plug-and-play drawer with hot-swap capability. It is virtually a complete UPS. Single points of failure are thus eliminated (decentralised architecture). In case a module needs to be replaced, it can be hot-swapped without effecting the operation of the other active modules.

It is easy to add power. The 3U-high plug-n-power drawers can be hot swapped allowing a vast vertical expansion (by populating the cabinet vertically) and horizontal expansion (by populating several columns).

EMIBYTE FEATURES

INVERTER SCROLL COMPRESSOR



The best solution in terms of variable cooling capacity.

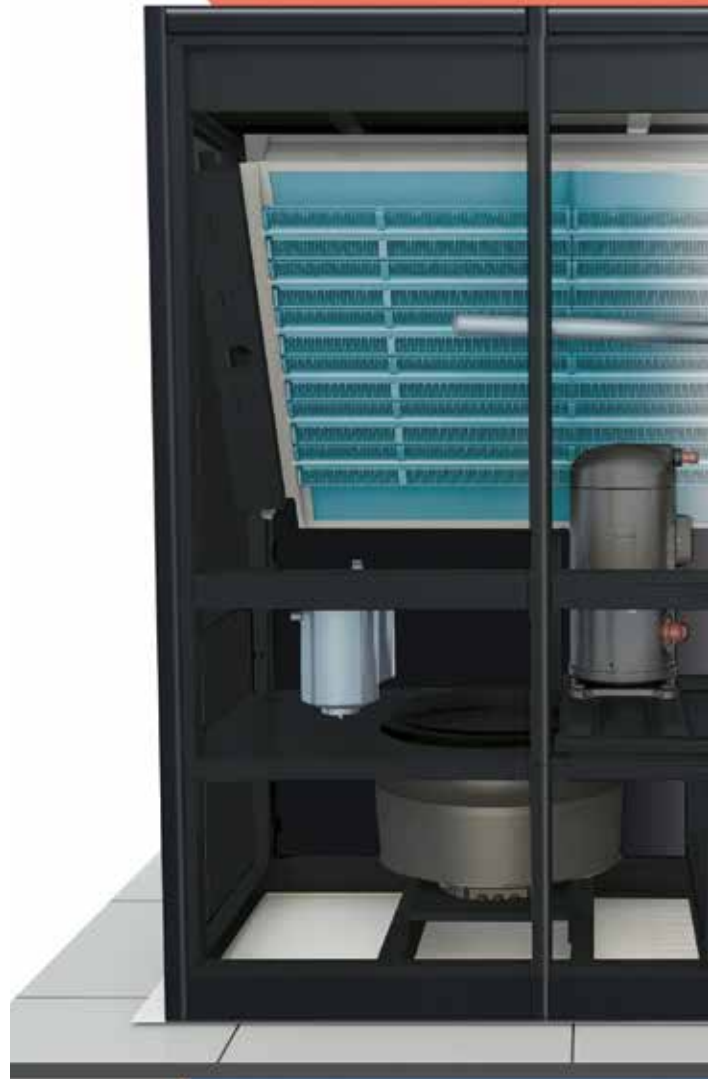
PRECISE TEMPERATURE CONTROL

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

EC FAN 2.0



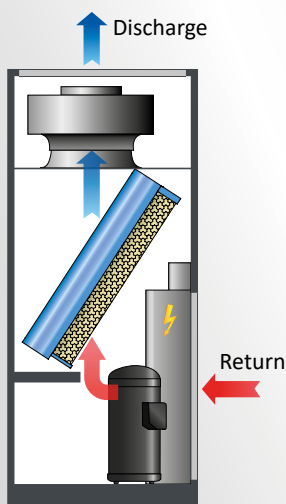
The new generation of Emicon EC Fan 2.0 is the core of EMIBYTE Precision Air Conditioner, significantly minimizing noise levels and increasing the efficiency of the unit.



EMIBYTE CONFIGURATIONS

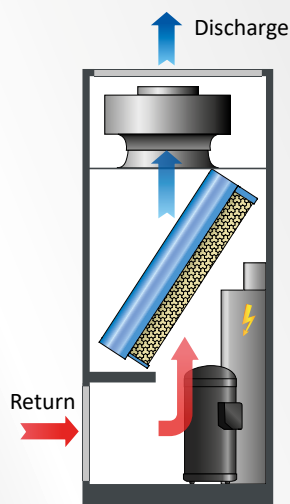
U

Front air return
Upflow air discharge



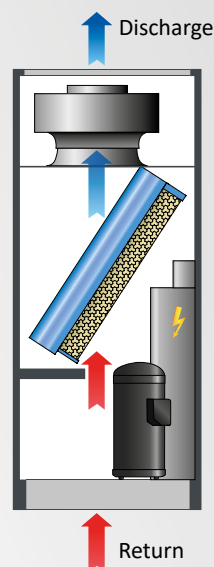
B

Back air return
Upflow air discharge



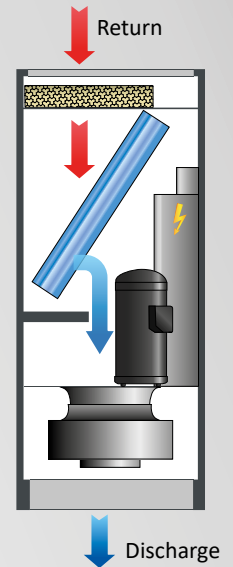
V

Bottom air return
Upflow air discharge



D

Top air return
Downflow air discharge





ELECTRONIC EXPANSION VALVE



This valve is designed to constantly optimize the refrigeration circuit's performance in order to achieve the highest efficiency also at partial load. The relevant valve management software is also embedded in the unit's control.

CONTROL



The new EMIBYTE electronic display is fully programmable by Emicon and allows the development of simple, intuitive and attractive interfaces for end users. The range of TFT touch screen displays can combine different colours and transparency levels using Alpha Blending technology

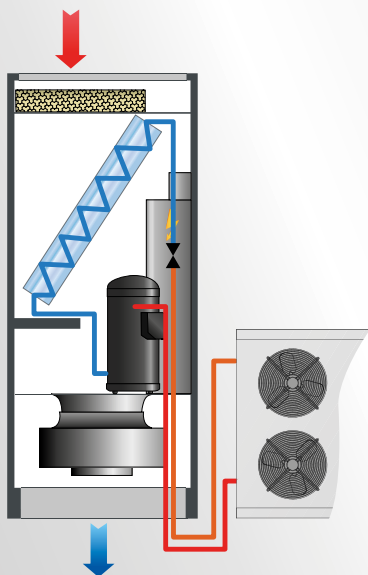
ULTRASONIC HUMIDIFIER



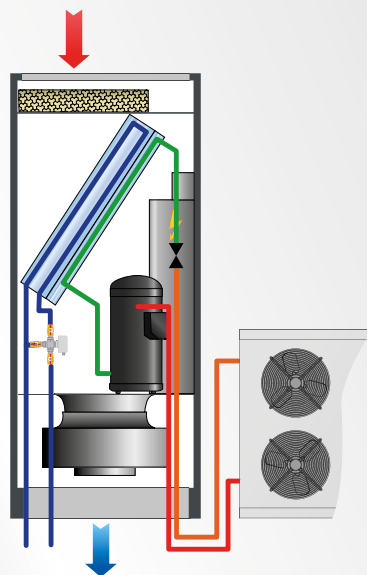
Get Perfectly-Controlled Humidity in Almost Any Large Room or Storage Area
It can Maintain 10 to 90% Humidity at Low Temperatures with Antibacterial and Demineralization Processes for the Best Quality Moisture for Food Preservation, Museums, Antique Shops, Cigar & Tobacco Humidors, Industrial Facilities and More.
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 constant.

EMIBYTE VERSIONS

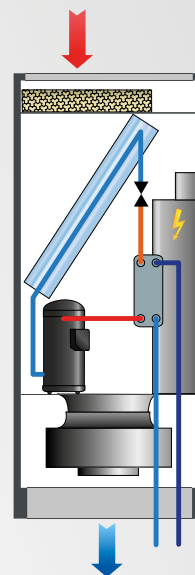
Direct expansion
with remote air condenser



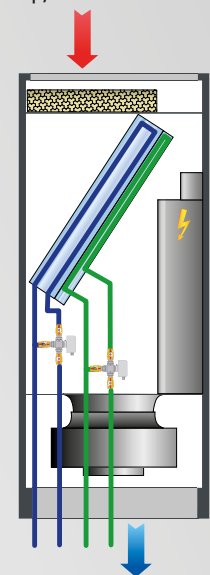
Direct expansion with
additional chilled water coil



Direct expansion with water
cooled condenser on board



Chilled water twin source
- Chilled water coil
- Tap/well water



TECHINICAL DATA

DXA Scroll - Single circuit		71	91	111	131	181	211	241	261	301
Cooling capacity (Total) ¹ R410A	kW	6,7	9,1	10,7	12,7	17,5	21,6	24,3	26,3	29,6
Cooling capacity (Sensible) ¹ R410A	kW	6,4	8,5	10,7	12,7	16,5	21,6	23,3	25,6	26,7
Total power consumption (compressors + fans)	kW	1,8	2,3	2,7	3,6	4,6	5,5	6,4	6,7	7,5
SHR		0,96	0,93	1,00	1,00	0,95	1,00	0,96	0,97	0,90
EER	W/W	3,81	3,89	3,97	3,55	3,78	3,93	3,83	3,91	3,95
Air Flow	m ³ /h	2.700	2.700	2.700	3.900	3.900	6.050	6.050	8.150	8.150
ESP max.	Pa	541	519	457	478	418	607	607	443	443
Weight	kg	179	181	190	214	222	315	315	359	366
Power steps	n°	1	1	1	1	1	1	1	1	1
Cabinet/Frame	n°	1	1	1	2	2	3	3	4	4

DXA Scroll - Single circuit		351	401	421	461	501	551	711	841	911
Cooling capacity (Total) ¹ R410A	kW	35,9	39,6	42,2	46,0	49,1	54,8	70,7	84,2	90,9
Cooling capacity (Sensible) ¹ R410A	kW	32,6	34,0	42,2	45,5	49,1	54,7	67,8	71,2	83,5
Total power consumption (compressors + fans)	kW	8,8	9,7	10,1	11,1	11,3	13,2	17,2	21,6	21,9
SHR		0,91	0,86	1,00	0,99	1,00	1,00	0,96	0,85	0,92
EER	W/W	4,09	4,11	4,19	4,15	4,33	4,15	4,10	3,91	4,15
Air Flow	m ³ /h	8.150	8.150	11.500	14.500	14.500	14.500	17.600	20.900	20.900
ESP max.	Pa	399	399	400	471	426	426	427	475	431
Weight	kg	377	391	488	532	550	550	686	757	789
Power steps	n°	1	1	1	1	1	1	1	2	2
Cabinet/Frame	n°	4	4	4,5	5	5	5	6	7	7

¹ 24°C Room Temp. 50% RH, Cond. 48°C

DXA Scroll - Double circuit		252	352	402	422	472	552	622	722
Cooling capacity (Total) ¹ R410A	kW	24,7	35,0	39,3	42,2	47,3	54,7	61,9	72,9
Cooling capacity (Sensible) ¹ R410A	kW	24,7	32,3	33,9	42,2	45,9	54,6	57,5	68,7
Total power consumption (compressors + fans)	kW	6,9	9,0	10,7	11,0	12,7	13,4	15,0	17,8
SHR		1,00	0,92	0,86	1,00	0,97	1,00	0,93	0,94
EER	W/W	3,56	3,90	3,69	3,84	3,72	4,07	4,14	4,10
Air Flow	m ³ /h	8.150	8.150	8.150	14.500	14.500	14.500	14.500	17.600
ESP max.	Pa	443	399	399	471	471	426	426	427
Weight	kg	386	415	415	552	551	572	587	648
Power steps	n°	2	2	2	2	2	2	2	2
Cabinet/Frame	n°	4	4	4	5	5	5	5	6

DXA Scroll - Double circuit		802	842	862	912	942	1022	1312	1352
Cooling capacity (Total) ¹ R410A	kW	80,2	84,2	85,7	91,1	93,5	101,6	131,0	135,1
Cooling capacity (Sensible) ¹ R410A	kW	71,6	71,2	71,7	84,3	85,3	88,1	110,9	112,5
Total power consumption (compressors + fans)	kW	19,5	21,6	25,0	21,9	25,2	26,1	32,9	34,1
SHR		0,89	0,85	0,84	0,93	0,91	0,87	0,85	0,83
EER	W/W	4,11	3,91	3,43	4,16	3,72	3,89	3,98	3,96
Air Flow	m ³ /h	17.600	20.900	20.900	20.900	20.900	20.900	25.700	25.700
ESP max.	Pa	427	475	475	431	431	431	452	452
Weight	kg	676	757	790	788	820	827	1111	1025
Power steps	n°	2	2	4	2	4	4	2	4
Cabinet/Frame	n°	6	7	7	7	7	7	8	8

¹ 24°C Room Temp. 50% RH, Cond. 48°C

Dimensions and number of fans

Size-Cabinet frame	n°	1	2	3	4	4,5	5	6	7	8
Width (L)	mm	550	750	980	1.160	1.505	1.860	2.210	2.565	3.100
Depth (D)	mm	550	550	750	850	850	850	850	850	850
Height (H)	mm	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980
number of fans	n°	1	1	1	1	1	2	2	2	3

EDi EC Scroll - Single circuit		101	121	141	171	201	251	271
Cooling capacity (Total) ¹ R410A	kW	9,9	12,3	14,4	17,1	20,2	25,2	27,4
Cooling capacity (Sensible) ¹ R410A	kW	9,4	10,0	10,3	13,6	16,7	20,6	24,5
Total power consumption (compressors + fans)	kW	3,0	3,7	4,3	5,2	6,0	7,0	7,0
SHR		0,95	0,82	0,72	0,80	0,83	0,82	0,89
EER		3,25	3,31	3,36	3,27	3,37	3,61	3,90
Air Flow	m ³ /h	3.900	3.900	3.900	3.900	3.900	6.050	6.050
ESP max.	Pa	442	442	442	529	460	603	607
Weight	kg	171	182	182	233	238	286	294
Minimum power modulation	%	40	40	40	40	40	40	40
Compressors number	n°	1	1	1	1	1	1	1
Cabinet/Frame	n°	2	2	2	2	2	3	3

EDi EC Scroll - Single circuit		351	521	631	821	971	1171	1361
Cooling capacity (Total) ¹ R410A	kW	35,7	52,0	63,4	81,9	97,3	117,1	136,1
Cooling capacity (Sensible) ¹ R410A	kW	27,8	39,2	51,5	65,7	78,2	94,2	112,9
Total power consumption (compressors + fans)	kW	9,4	14,2	16,8	21,5	25,1	30,7	35,0
SHR		0,78	0,75	0,81	0,80	0,80	0,81	0,83
EER		3,79	3,67	3,77	3,81	3,88	3,81	3,89
Air Flow	m ³ /h	6.050	8.150	11.500	14.500	17.600	20.900	25.700
ESP max.	Pa	607	400	450	427	427	431	452
Weight	kg	294	355	398	480	650	740	960
Minimum power modulation	%	30	30	30	30	30	30	30
Compressors number	n°	1	1	2	2	2	2	2
Cabinet/Frame	n°	3	4	4,5	5	6	7	8

¹ 24°C Room Temp. 50% RH, Max. INVERTER frequency

WU Chilled Water		80	150	190	250	310	440	550	640	700	840
Cooling capacity (Total) ¹ ESP 20 Pa	kW	6,27	9,97	13,52	17,32	21,58	30,62	38,30	44,54	49,64	57,14
Cooling capacity (Sensible) ¹ ESP 20 Pa	kW	5,84	8,60	10,57	14,15	16,79	24,89	29,79	35,19	38,36	46,27
Fans power consumption ² ESP 20 Pa	kW	0,27	0,32	0,37	0,61	0,69	0,90	1,04	1,13	1,20	1,75
SHR		0,93	0,86	0,81	0,85	0,81	0,85	0,81	0,82	0,80	0,84
Air Flow	m ³ /h	2.550	2.550	2.550	4.100	4.100	7.200	7.200	9.100	9.100	13.400
ESP max.	Pa	546	498	445	413	362	535	485	329	305	310
Weight	kg	139	143	148	173	179	237	248	312	318	410
Cabinet/Frame	n°	1	1	1	2	2	3	3	4	4	4,5

WU Chilled Water		960	1050	1300	1450	1600	1710	1900	2100	2300
Cooling capacity (Total) ¹ ESP 20 Pa	kW	65,76	71,35	91,36	100,97	110,76	119,81	130,62	148,51	163,28
Cooling capacity (Sensible) ¹ ESP 20 Pa	kW	51,73	55,40	70,43	79,05	85,23	93,81	100,75	116,42	125,60
Fans power consumption ² ESP 20 Pa	kW	1,85	65,00	2,14	2,64	2,81	3,00	3,21	3,46	3,76
SHR		0,82	0,81	0,80	0,81	0,80	0,81	0,80	0,82	0,80
Air Flow	m ³ /h	13.400	13.400	16.600	20.100	20.100	23.800	23.800	29.500	29.500
ESP max.	Pa	285	260	345	294	271	359	336	414	391
Weight	kg	420	430	475	520	528	605	622	758	779
Cabinet/Frame	n°	4,5	4,5	5	6	6	7	7	8	8

¹ 24° Room Temp. 50% RH, water 7/12°C.

² The electric power input of the fans must be added to the room load.

Humidifier output and electric heating capacity										
Size-Cabinet frame	n°	1	2	3	4	4,5	5	6	7	8
Max. humidifier capacity	kg/h	1,5	3	5	8	8	8	8	8	8
Max. heating capacity	kW	3	4,5	6	9	9	15	18	24	27
Max. n° of heating capacity	n°	1	3	2	3	3	3	3	3	3



EMICON A.C. S.p.A.
Via A. Volta, 49
47014 Meldola (FC)
ITALY

www.emiconac.it
emicon@emiconac.it



HIDEM
GROUP
www.hidemgroup.com

1601000040EN

