CLIVET

GUIDE EU ***2021***

PRODUCTS AND SYSTEMS

APPLIED

Inspiring Solutions since 1989

This document is dedicated to those looking for specialized advanced heating, air conditioning, air renewal and air purification solutions.

Solutions able to increase the comfort level in the places where we live, work and spend our free time.

Complete year round systems, focused on substantial energy savings and less dependency on the fossil fuels used by traditional HVAC solutions, such as natural gas or oil.

INSPIRING SOLUTIONS

This Guide is printed every year and presents all Clivet's products with the aim of providing a basis for decisions and evaluations.

More detailed information, updated regularly, is available in the “SYSTEMS AND PRODUCTS” area at www.clivet.com, www.clivetlive.com and on Clivet Apps, where they can be downloaded free of charge.

To keep up to date with Clivet news, follow us on our social networks:

ALWAYS READY FOR THE FUTURE

INSPIRING SOLUTIONS

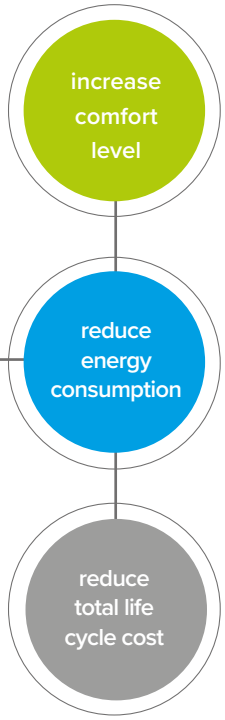
For over 30 years of working on the design, manufacturing and distribution of air conditioning and handling systems, combining high efficiency with minimal environmental impact, Clivet has developed solutions to ensure sustainable comfort and the well-being of people and the environment.
Designing and developing year-round air conditioning solutions with innovative technologies are part of Clivet's DNA, which means the company has always been ready for the future.

COMFORT FOR THE PLANET & PEOPLE

OUR VALUES

IN THE RESIDENTIAL, COMMERCIAL AND INDUSTRIAL SECTORS

Increasing comfort, saving energy and providing customers with the best value for the entire life cycle of the system: these are the values that inspire our systems for the residential, services and industrial sectors.



OUR NUMBERS

35
AGENCIES
IN ITALY

50.000 m²
OF PLANTS IN FELTRE,
BELLUNO - ITALY

90
COUNTRIES WE
EXPORT TO

640
EMPLOYEES
IN ITALY
AND ABROAD

7 BRANCHES:
GREAT BRITAIN,
GERMANY, INDIA,
RUSSIA, UAE,
CHINA, BALKANS

160
SERVICE CENTRES

2015
CLIVET LIVE IS BORN

2016
STRATEGIC ALLIANCE
WITH MIDEA GROUP

2020
MIDEA GROUP #307 FORTUNE GLOBAL 500
40.440 $M
OF MIDEA TURNOVER

Residential

Space load
Simultaneous cooling and heating
Outdoor air thermal load
Sanitary hot water

Offices

Space load
Simultaneous cooling and heating
Outdoor air thermal load
Sanitary hot water

Hotels

Space load
Simultaneous cooling and heating
Outdoor air thermal load
Sanitary hot water

Cinemas

Space load
Simultaneous cooling and heating
Outdoor air thermal load
Sanitary hot water

SPECIALISED SYSTEMS

for any application and climate

Today, buildings have to deliver an elevated and constant standard of well-being, regardless of the outside conditions.

Not all buildings are alike: depending on their use, there are considerable differences in terms of load intensity, simultaneous requests for hot and chilled water, domestic hot water production and air renewal.

That is why Clivet has created a series of specialised system solutions for applications that meet the specific needs of different buildings by optimising the overall efficiency in relation to traditional systems (boiler, chiller, AHU).
Clivet's specialised systems simplify the design and installation work, improve the control of the entire system, reduce the environmental impact and, at the same time, optimise the initial investment, reduce running costs, increasing the building's energy rating and therefore its value on the market.

Public buildings

Space load | Simultaneous cooling and heating | Outdoor air thermal load | Sanitary hot water

Shopping centres

Space load | Simultaneous cooling and heating | Outdoor air thermal load | Sanitary hot water

Hospitals

Space load | Simultaneous cooling and heating | Outdoor air thermal load | Sanitary hot water

Industry

Space load | Simultaneous cooling and heating | Outdoor air thermal load | Sanitary hot water

TINE DAIRY FOOD INDUSTRY, BRUMUNDDAL NORWAY

MONEDA BICENTENARIO, SANTIAGO CHILE

IL CENTRO, ARESE, MILANO ITALY

INNOPOLIS UNIVERSITY, KAZAN, TATARSTAN RUSSIA

LEGACY HOTEL, SANDTON, JOHANNESBURG SOUTH AFRICA

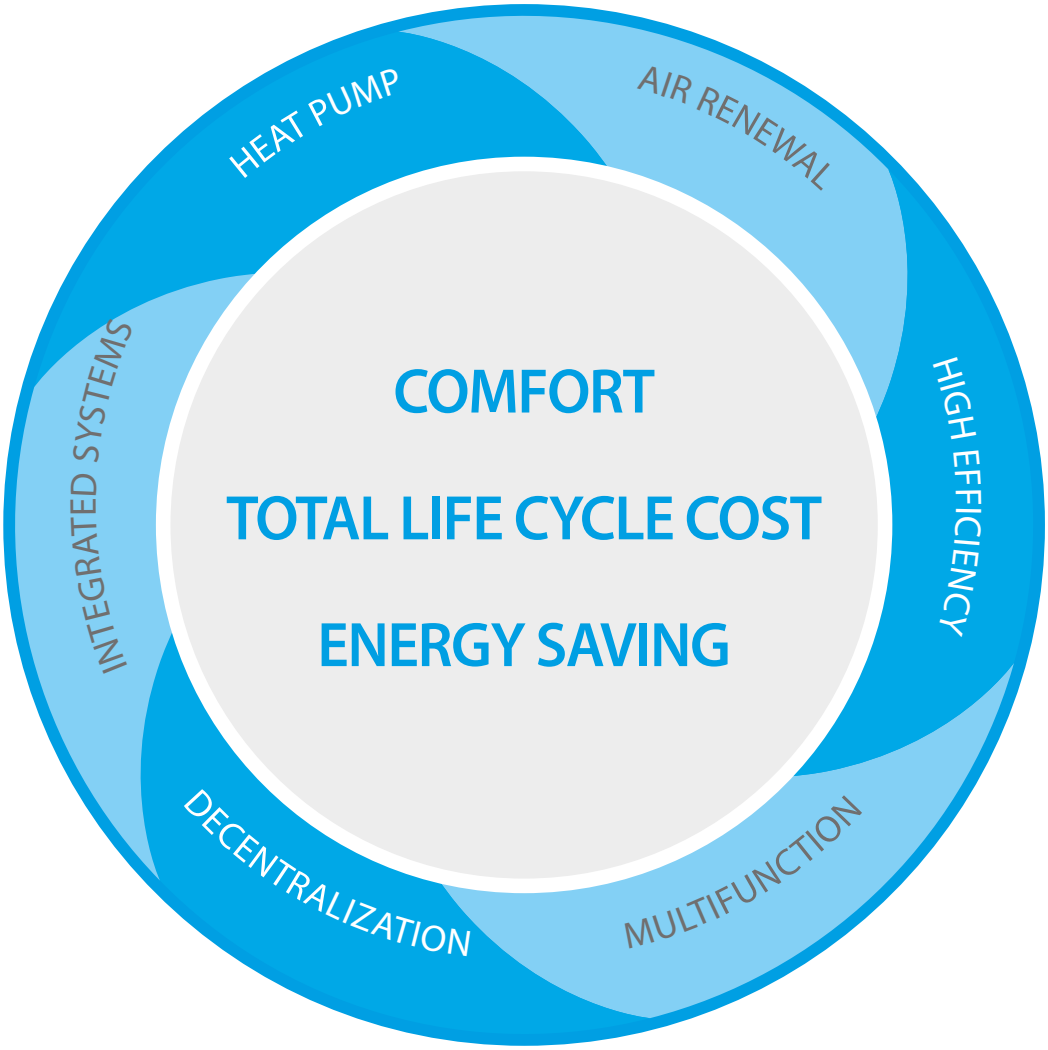
PIROGOV HOSPITAL, SOFIA BULGARIA

LOUVRE MUSEUM, ABU DHABI UNITED ARAB EMIRATES

TIDEL PARK CHENNAI INDIA

RANGIORA TOWN HALL, RANGIORA NEW ZEALAND

CLIVET principles



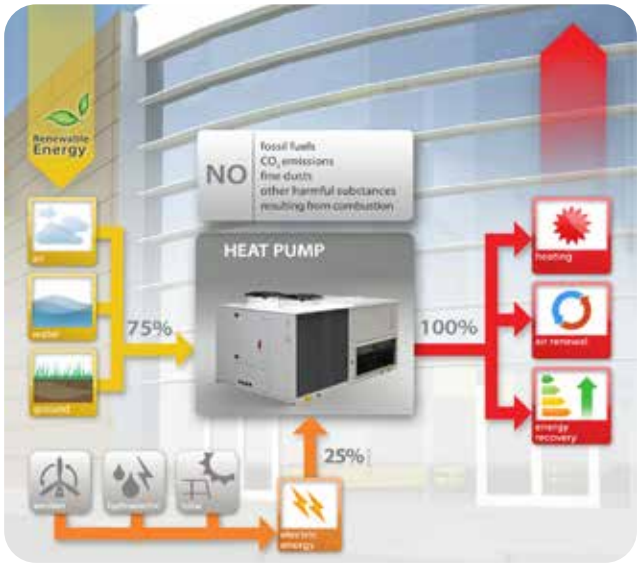
CLIVET PRINCIPLES
for the building evaluation

All Clivet systems are based on six key principles that make Clivet's products and systems unique.

These principles are the basis for making application-specific systems, which have always been part of Clivet's DNA.

They represent the foundation on which Clivet has built its new way of looking at systems, thereby becoming the reference for sustainable systems of the future.

Heat pump technology



Heat pumps are the technology of the future since they are significantly more efficient than traditional combustion systems:

- ✓ **Reductions of 50% in Primary Energy, CO_2 and Running Costs**
- ✓ **Extensive use of Renewable Energy**

Thanks to heat pumps, Clivet's systems guarantee:

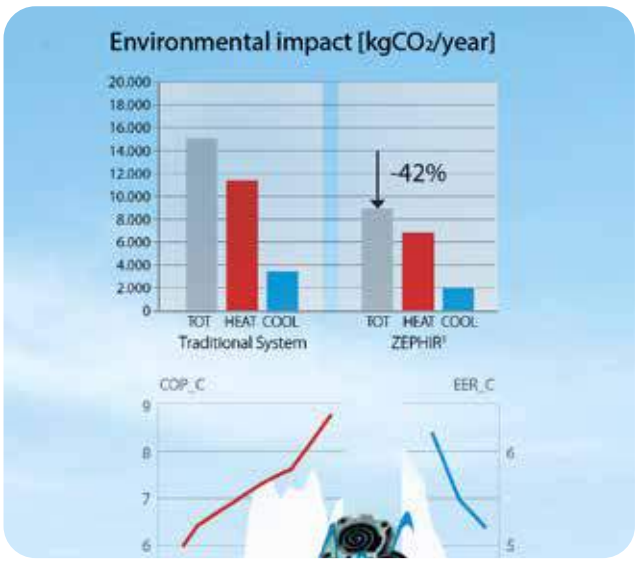
- ✓ A single system for both heating and cooling
- ✓ Controlled mechanical ventilation with innovative thermodynamic recovery
- ✓ Free production of domestic hot water in summer
- ✓ Simultaneous heating and cooling to fulfil simultaneous loads

Importance of air renewal

The quality of air inside modern airtight buildings is undermined by a number of pollutants.
The controlled mechanical ventilation system is essential to creating a more liveable environment.
Clivet's stand-alone system with thermodynamic energy recovery dedicated to ventilation has the following benefits:

- ✓ It recovers energy both in winter and in summer
- ✓ Reduces the load of outdoor air with a more efficient system and provides more energy for the rooms
- ✓ Reduces the capacity of the main generators by limiting their operation to seasonal peaks
- ✓ Dehumidifies in summer

High Seasonal efficiency



ZEPHIR³, Office Building in London, case study

Seasonal efficiency ensures the best way of understanding how energy is used when choosing the system to ensure year-round comfort.
Every application has different needs which vary depending on multiple factors, including different indoor and outdoor climatic conditions, crowding and thermal loads.
Clivet makes systems designed to meet the specific needs of every single application, thereby optimising the use of the system's resources to reach top seasonal efficiency levels thanks to:

- ✓ One systematic solution
- ✓ Use of the most favourable resources
- ✓ Full control over the system
- ✓ Continuous capacity modulation

Multifunction

Clivet's multifunction systems include all the functions to ensure year-round comfort.
They optimise the solution based on the needs of the various applications and integrate it in specialised products and in complete dedicated systems:

- ✓ Heating
- ✓ Cooling
- ✓ Domestic hot water
- ✓ Air renewal and purification
- ✓ Dehumidification

Decentralization

Example of floor-based decentralisation

In developing Clivet products and systems one aspect that was given great attention was how to rationalise the choices in terms of design and construction, which could affect the system's running costs and environmental impact for its entire life cycle.
Many years ago, Clivet successfully developed the principle of generating energy as close as possible to where it needs to be used:

- ✓ Modular systems that are active only where and when required
- ✓ Reduction or complete elimination of auxiliary consumption (for instance, pumping energy)
- ✓ Stand-alone system
- ✓ Easy to maintain and handle
- ✓ Adapts to the needs of the system

Integrated systems

Clivet designs its systems by integrating all the services required for each application.
The system's elements, optimised and industrially processed to work together, guarantee the highest efficiency and reliability.

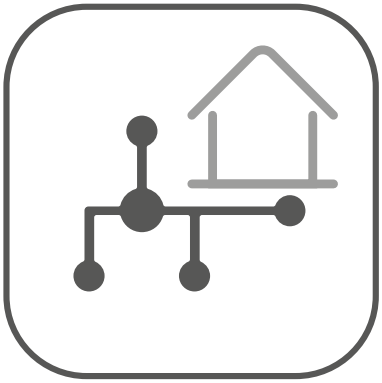
- ✓ Simplified design and installation
- ✓ Lower investment costs
- ✓ Quality of the systems
- ✓ Guaranteed performance

In 2019 the Clivet Digital Solutions division was born, offering products and solutions dedicated to the management and monitoring of air conditioning systems for all sectors, from residential to tertiary to industrial.

The optimisation system for the commercial and industrial sector

Optimising the operation of HVAC systems allows the efficiency of the plants to be maximised in the various working conditions, guaranteeing the reduction of energy consumption and ensuring continuity of operation in the production and distribution of thermo-cooling energy.
Clivet's **INTELLIPLANT** solution manages all the elements of medium and large hydronic systems, guaranteeing the best operating conditions for the lowest possible energy consumption.
Developed entirely by Clivet specialists, Intelliplant makes it possible to achieve the maximum efficiency of the system and the units it interfaces with, thanks to algorithms derived from Clivet know-how that make better use of the machine control logics than the most common generalist solutions on the market.

The control system for the residential sector



Correct thermoregulation of the entire air conditioning, heating, cooling, domestic hot water production, air renewal and purification and distribution of heat and cold is fundamental for total comfort inside our homes.
With **ELFOControl^3 EVO** Clivet offers a control system that with a simple touch on the screen allows you to control the individual elements of the system, managing up to 12 different climate zones.

The cloud-based remote monitoring and management system for all Clivet systems

Clivet Eye is the Cloud monitoring system for remote management from smartphones, tablets and PCs of units and systems for air conditioning, heating, air renewal and domestic hot water production.
With Clivet Eye you can monitor and manage all the Clivet systems located throughout the territory, even if they are of different types.
The Clivet Eye geographic map allows fast, constant and real time supervision of all the systems, highlighting their operating conditions in a simple and intuitive way.
Event notifications promptly warn of the presence of any anomalies in the functioning of the System.

CLIVET COMBINES THE BEST TECHNOLOGY

with an excellent product quality and performance certification system

The innovation for which Clivet has always stood out, is supported by an industrial framework that has adopted the standards envisaged by ISO 9001, since 1996, guaranteeing a quality management system designed to control company processes so that they are targeted at improving the efficacy and efficiency of the organisation, as well as at client satisfaction.
The works for the construction of the new Clivet innovation center are proceeding including a test room to test units up to 2000 kW with new generation refrigerant gases with air temperatures from -20 ° C to 60 ° C and water temperatures from +4 to + 60 ° C. Witness tests and two floors of offices
Clivet uses latest generation sheet metal folding, press and cutting machines for the mechanical production of its components.
High product quality standards are also guaranteed by the use of patented electronic controls.
Clivet only uses non-toxic and low environmental impact alloys for soldering, insulation and gases that comply with the strictest European standards, and the best components available on the market.

Certifications and safety

Clivet products comply with applicable product directives, as required in all EU countries, in order to guarantee an appropriate level of safety.

In 2015, Clivet became a partner of CasaClima. As a result, Clivet is now part of a network of companies renowned for their technical expertise and constant focus on sustainable home management.

With the aim of providing Customer satisfaction, Clivet S.p.A. has supplemented and certified its Quality, Environment and Safety Management Systems, in accordance with the ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 International Standards.

Clivet is committed in promoting the green building principles and has become a member of GBC Italia. This organization collaborates with USGBC, the U.S. nonprofit organization that promotes worldwide the LEED® system of independent certification.

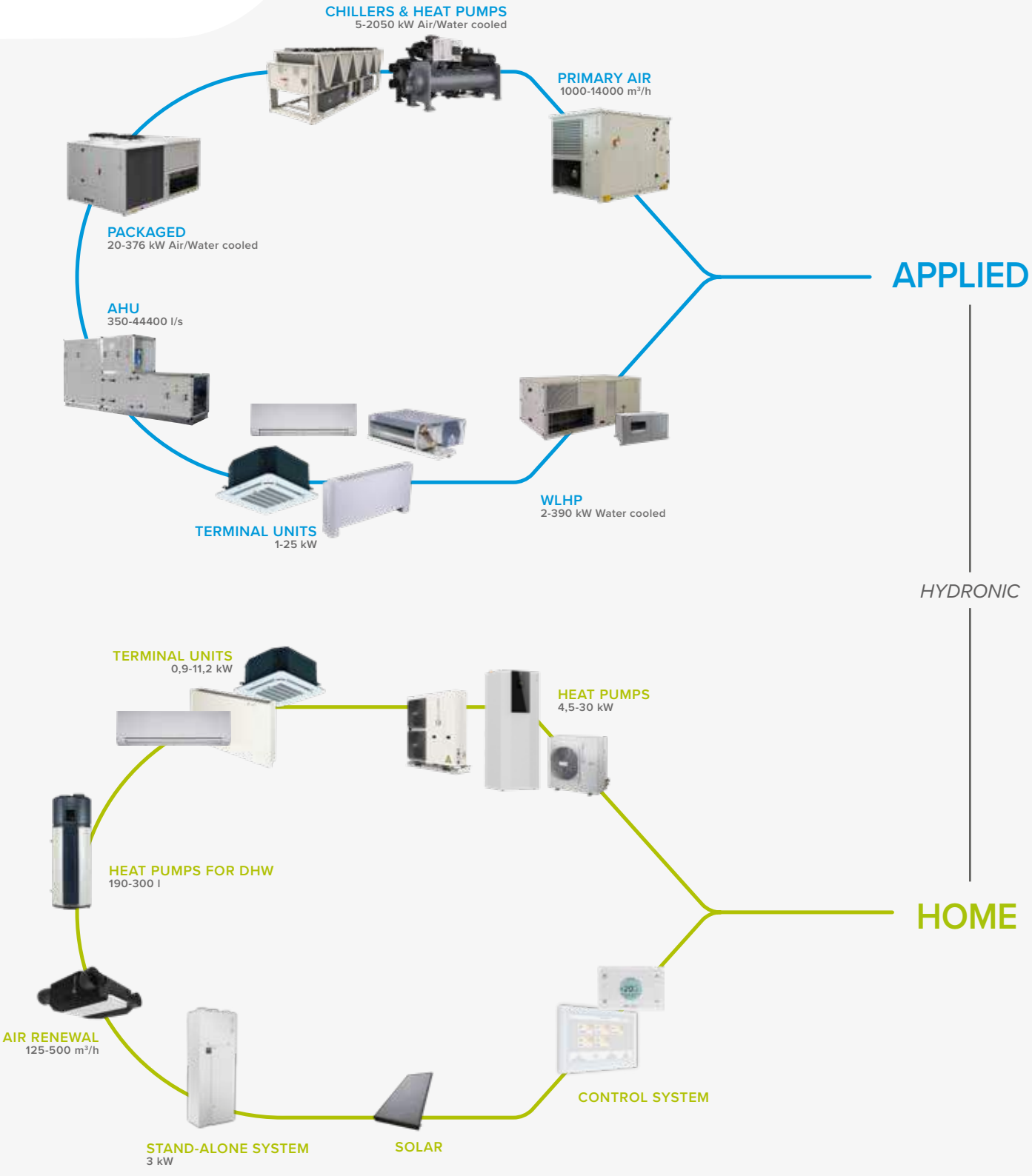
KEYMARK is a mark recognized in many European countries for the provision of incentives for the installation of heat pumps for room heating and the production of domestic hot water.
The countries that recognize the mark and the Certified Products are available on
www.heatpumpkeymark.com

Clivet participates in the EUROVENT "Liquid Chilling Packages and Heat Pumps", "Rooftops", "Air Handling Units" and "VRF" Certification programmes. The products concerned feature in the EUROVENT guide to certified products and on the website www.eurovent-certification.com. The programmes apply to water chillers up to 2000 kW, to rooftops up to 100 kW, to air handling units and to VRF up to 100 kW.

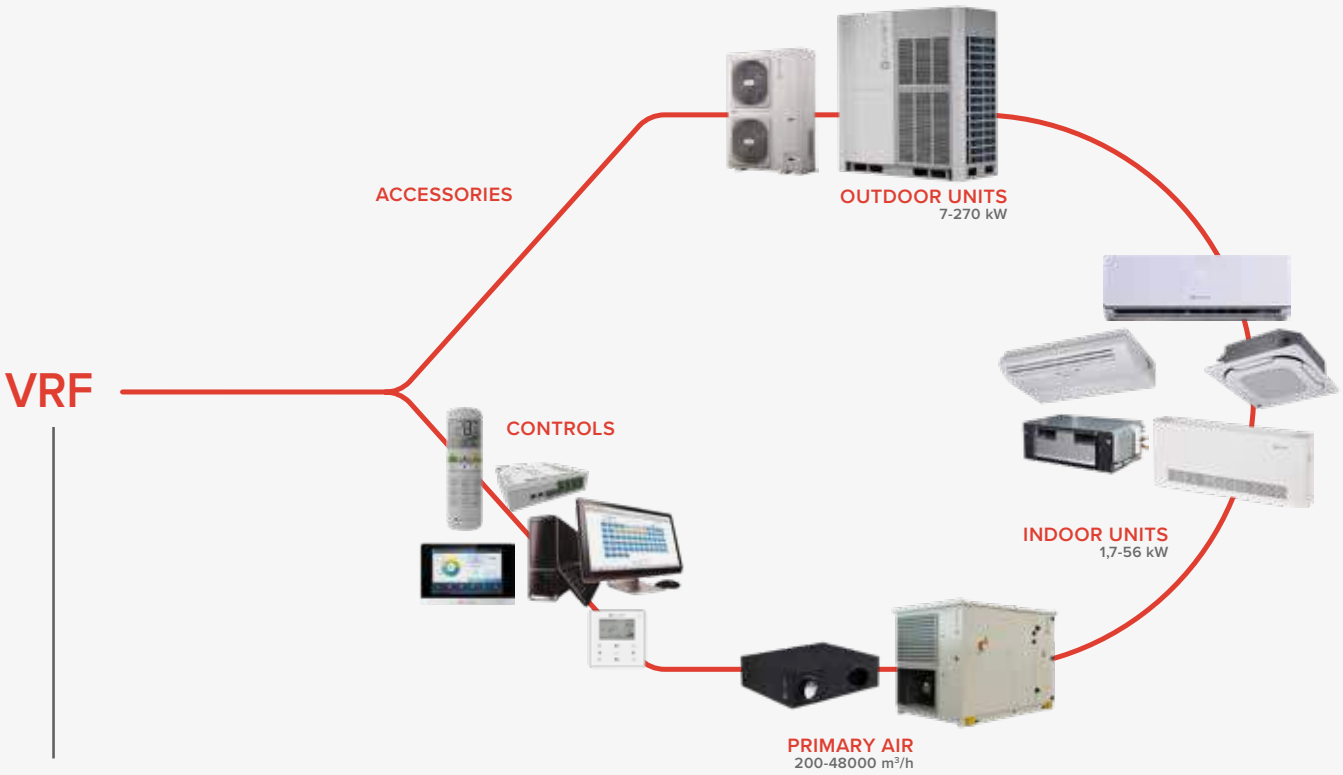
The wide range of Clivet products and complete systems comply with the requirements of the implementing measures for ErP (Energy related Products) Directives 2009/125/EC (Eco-design) and 2010/30/EU (Energy labelling), whose purpose is to reduce the energy consumption of products for heating, cooling, ventilation and hot water production, encouraging the user towards energy-efficient choices.
Directives 2009/125/EC and 2010/30/EU include the following Regulations: (EU) 206/2012, (EU) 626/2011; (EU) 811/2013, (EU) 812/2013, (EU) 813/2013, (EU) 814/2013; (EU) 1253/2014, (EU) 1254/2014; (EU) 2016/2281.

ALL TECHNOLOGIES FOR

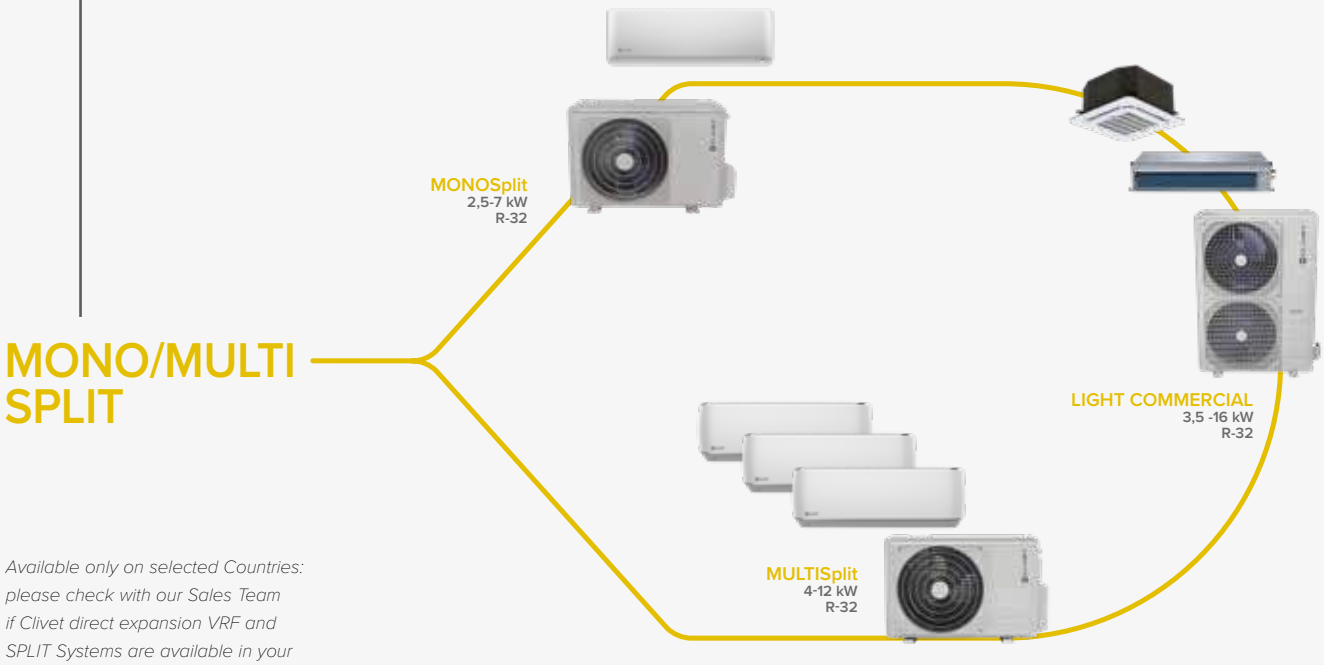
A COMPLETE PROPOSAL



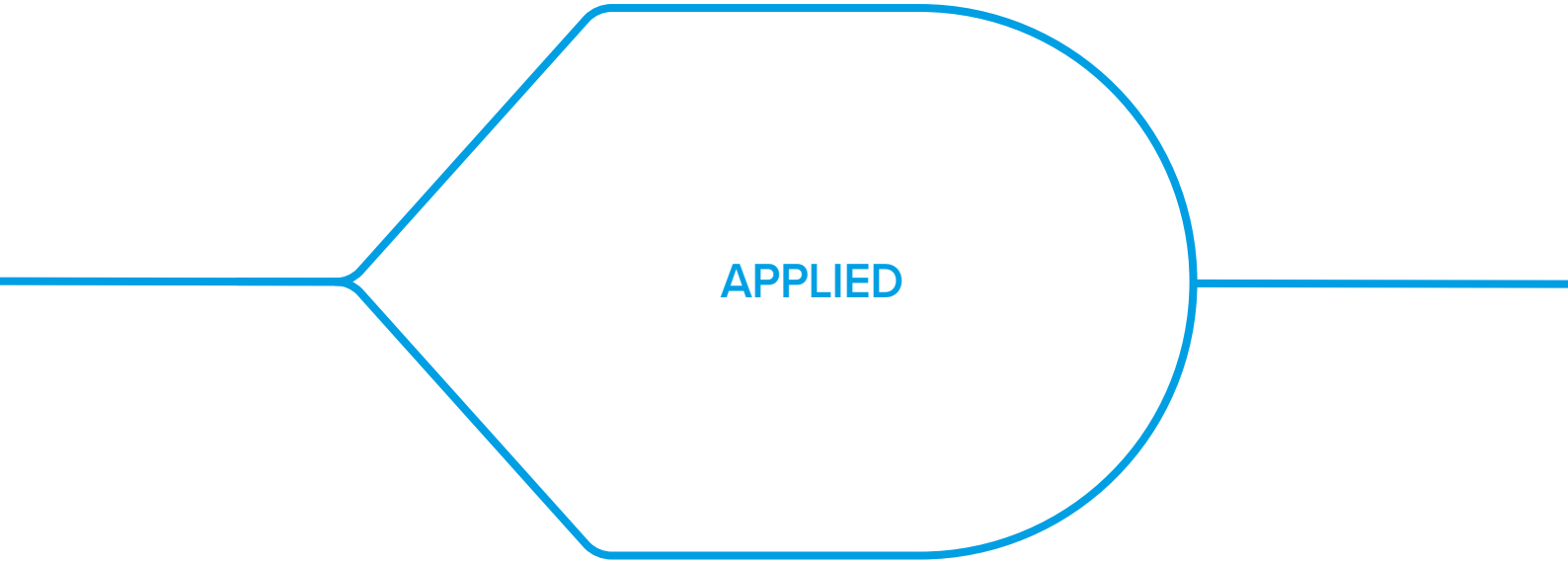
Heating, cooling, air renewal and domestic hot water production



DIRECT EXPANSION



Available only on selected Countries: please check with our Sales Team if Clivet direct expansion VRF and SPLIT Systems are available in your Country.


APPLIED

Small and Medium Commercial

	ELFOEnergy EDGE EVO/ SHEEN EVO ELFOEnergy EXTENDED INVERTER	ELFOEnergy MEDIUM / LARGE² ELFOEnergy VULCAN MEDIUM ELFOEnergy DUCT MEDIUM	ELFOEnergy STORM EVO ELFOEnergy MAGNUM
Capacity (A35/W7)	4 ÷ 98 kW	20 ÷ 216 kW	50 ÷ 354 kW
ErP compliance (heat pumps only)	ErP	ErP	ErP
Products	 R-32 R-410A	 R-410A	 R-32 R-410A R-410A
Chillers	WSAT-YSi DC INVERTER WSAT-XIN DC INVERTER EXC	WSAT-XEE EXC	WSAT-YES DC INVERTER WSAT-XIN DC INVERTER WSAT-XEM EXC PRM
High Temperature Chillers External Air			WSAT-YES DC INVERTER WSAT-XEM EXC
Free Cooling Chillers		WSAT-XEE FC EXC	WSAT-YES FC DC INVERTER
Heat pumps	WSAN-XIN DC INVERTER WSAN-YMi DC INVERTER WSAN-YSi DC INVERTER EXC	WSAN-XEE	WSAN-YES DC INVERTER WSAN-XIN DC INVERTER WSAN-XEM
High temperature water Heat pumps		WBAN	WSAN-XEM HW
Multi-function Heat pumps			WSAN-XIN MF DC INVERTER WSAN-XEM MF
Ducted units		WSN-XEE (heat pump)	

R-410A Scroll Compressors, Refrigerant R-410A

R-410A Inverter Scroll Compressor, Refrigerant R-410A

R-32 Inverter Scroll Compressors, Refrigerant R-32

Large Commercial and Industry

REMOTEX	SPINchiller[4] SPINchiller[3]	SCREWLine[4]-i SCREWLine[3]-i SCREWLine[3]
237 ÷ 680 kW	216 ÷ 1350 kW	204 ÷ 1523 kW
ErP	ErP	ErP
 R-410A	 R-32  R-410A	 R-1234ze R-513A  R-134a R-134a
MSRT-XSC3 EXC	WSAT-YSC4 EXC PRM WSAT-XSC3 EXC	WDAT-iZ4 EXC WDAT-iK4 EXC PRM WDAT-iL3 PRM
MSRT-XSC3 EXC	WSAT-YSC4 EXC WSAT-XSC3 EXC	WDAT-iZ4 EXC WDAT-IK4 EXC
	WSAT-XSC3 FC EXC	WDAT-SL3 FC EXC
MSRN-XSC3 EXC	WSAN-YSC4 EXC PRM	
	WSAN-XSC3 MF EXC	

R-134a Screw Compressors, Refrigerant R-134a

R-134a Inverter Screw Compressors, Refrigerant R-134a

R-513A Inverter Screw Compressors, Refrigerant R-513A

R-1234ze Inverter Screw Compressors, Refrigerant R-1234ze

Small and Medium Commercial

	ELFOENERGY Ground	ELFOENERGY Ground Medium[2]
Capacities (A35/W7)	6 ÷ 33 kW	34 ÷ 356 kW
ErP compliance (heat pumps only)	ErP	ErP
Products	 R-410A	 R-410A
Chillers		WSH-XEE2
Heat pumps with inversion on the water circuit		WSH-XEE2
Heat pumps with inversion on the refrigeration circuit	WSHN-EE	WSHN-XEE2
Multi-function heat pump		WSHN-XEE2 MF
Condenserless units		

R-410A Scroll Compressor, Refrigerant R-410A

R-410A Scroll Compressors, Refrigerant R-410A

R-134a Screw Compressors, RefrigerantR-134a

Large Commercial and Industry

SPINchiller[3]	SCREWLine[4]-i	Centrifugal Chiller
210 ÷ 395 kW	340 ÷ 1520 kW	800 ÷ 1930 kW
ErP	-	-
 R-410A	 R-513A	 R-1234ze  R-134A
WSH-XSC3	WDH-iK4 INVERTER	WCH-iZ INVERTER WCH-i INVERTER
WSH-XSC3	WDH-iK4 INVERTER	
WSHN-XSC3		
MSE-XSC3	MDE-SL3	

R-134A Inverter centrifugal Compressor, Refrigerant R-134a

R-1234ze Inverter centrifugal Compressor, Refrigerant R-1234ze

HYDRONIC System

System components

SERIES	SIZE FROM	TO	NAME		PAGE
Water chillers and Heat pumps - air source - axial fans					
WSAN-YMi	21	141	ELFOEnergy Edge EVO		24
WSAT-XIN / WSAN-XIN	141	171	ELFOEnergy Extended Inverter		26
WSAT-YSi / WSAN-YSi	10.1	40.2	ELFOEnergy Sheen EVO	New	28
WSAT-YES / WSAN-YES	18.2	35.2	ELFOEnergy Storm EVO	New	30
WSAT-YES FC	18.2	35.2	ELFOEnergy Storm EVO FC	New	32
WSAN-XEE	82	302	ELFOEnergy Medium		34
WSAT-XEE / WSAN-XEE	352	802	ELFOEnergy Large^2		36
WBAN	82	302	ELFOEnergy Vulcan Medium		40
WSAT-XIN / WSAN-XIN	18.2	45.2	ELFOEnergy Magnum		42
WSAT-XEM / WSAN-XEM	50.4	120.4	ELFOEnergy Magnum		44
WSAN-XIN MF	18.2	45.2	ELFOEnergy Magnum MF		46
WSAN-XEM MF	50.4	120.4	ELFOEnergy Magnum MF		48
WSAN-XEM HW	35.4	60.4	ELFOEnergy Magnum HW		50
WSAT-YSC4 / WSAN-YSC4	80.3	240.6	SPINchiller^4	New	52
WSAT-XSC3 / WSAN-XSC3	260.6	480.8	SPINchiller^3		56
WSAN-XSC3 MF	90.4	160.4	SPINchiller^3 MF		60
WSAT-XSC3 FC	90.4	360.6	SPINchiller^3 FC		64
MSRT-XSC3+CEV-XT / MSRN-XSC3+CEV-XN	90.4	240.4	Remotex		66
WDAT-iZ4	120.1	580.2	SCREWLine^4-i	New	70
WDAT-iK4	120.1	580.2	SCREWLine^4-i	New	72
WDAT-iL3	250.2	580.2	SCREWLine^3-i		74
WDAT-SL3 FC	200.2	580.2	SCREWLine^3 FC		76
Water chillers and Heat pumps - air source - centrifugal fans					
WSN-XEE	122	402	ELFOEnergy Duct Medium		78
Water chillers and Heat pumps - water source					
WSHN-EE	17	121	ELFOEnergy Ground		80
WSH-XEE2 / WSHN-XEE2	12.2	120.2	ELFOEnergy Ground Medium^2		82
WSH-XEE2 HW	19.2	80.2	ELFOEnergy Ground Medium^2 HW	New	84
WSHN-XEE2 MF	12.2	80.2	ELFOEnergy Ground Medium^2 MF		86
WSH-XSC3 / WSHN-XSC3	70.4	120.4	SPINchiller^3		90
WDH-iK4	120.1	540.2	SCREWLine^4-i	New	94
WCH-iZ	230	450	Centrifugal Chiller	New	96
WCH-i	250	550	Centrifugal Chiller		98
Condenserless water chillers - air source					
MSE-XSC3	90.4	160.4	SPINchiller^3		100
MDE-SL3	120.1	580.2	SCREWLine^3		102

WSAN-YMi

21÷141

ELFOEnergy Edge EVO

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 4,85 to 29,5 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

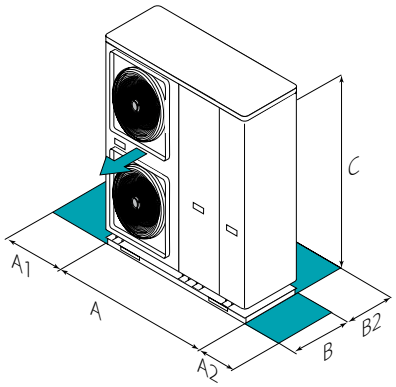
DC INVERTER

- **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor and fans, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.
- **ADVANCED TECHNOLOGY:** Hydrophilic battery for a guarantee of efficiency in all conditions, electronic expansion valve to optimize the operation of the cooling circuit with DC inverter compressor and fans. The unit can be equipped with a standard DC Inverter circulator, providing further energy savings through the modulation of water flow depending on the building thermal load and pressure drop.
- **EXTENDED OPERATING RANGE:** ELFOEnergy Edge Evo is able to meet the strictest requirements in terms of operating temperatures, with great efficiency. In cooling, its operation is guaranteed even with very low outside temperatures (from 46°C to -5°C), ideal for the requirements of IT applications. In heating, its operation is guaranteed down to external air temperatures of -25°C producing hot water of up to 60°C.
- **DOMESTIC HOT WATER ALL YEAR ROUND:** ELFOEnergy Edge Evo is able to produce domestic hot water at 60°C both in winter with outdoor temperatures down to -20°C and in summer with outdoor temperatures up to 43°C

functions and features

Heat pump | Air cooled | Outdoor installation | R-32 | Hermetic rotary | Full InverterDC | Electronic expansion valve | ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAN-YMi		21	31	41	61	71	81	91	101	121	141
A - Length		mm	1210	1210	1210	1404	1404	1404	1129	1129	1129	1129
B - Width		mm	402	402	402	405	405	405	440	440	440	440
C - Height		mm	945	945	945	1414	1414	1414	1558	1558	1558	1558
A1		mm	400	400	400	400	400	400	300	300	300	300
A2		mm	400	400	400	400	400	400	600	600	600	600
B2		mm	300	300	300	300	300	300	300	300	300	300
230/1/50	Operating weight	kg	99	99	99	158	158	158	-	-	-	-
400/3/50+N	Operating weight	kg	-	-	-	172	172	172	177	177	177	177

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VOLTAGE:

230M Supply voltage 230/1/50 (Standard)

400TN Supply voltage 400/3/50+N (sizes 61÷141only)

IBH Back-up electric heater (sizes 61÷81 only)
(only available with Direct Shipping)

technical data

Size		WSAN-YMi		21	31	41	61	71	81
230/1/50	Cooling capacity (EN 14511:2018)	(1)	kW	4,85	6,30	7,95	10,9	12,9	13,8
230/1/50	Total power input (EN 14511:2018)	(1)	kW	1,63	2,27	3,15	3,74	4,64	5,21
230/1/50	EER (EN 14511:2018)	(1)	-	2,98	2,77	2,53	2,92	2,78	2,65
230/1/50	SEER	(4)	-	4,71	4,99	4,92	4,85	4,73	4,54
230/1/50	$\eta_{s,c}$	(4)	%	185,4	196,6	193,8	191,0	186,2	178,6
230/1/50	Heating capacity (EN 14511:2018)	(2)	kW	4,80	6,70	8,60	12,4	14,1	16,2
230/1/50	Total power input (EN 14511:2018)	(2)	kW	1,33	1,88	2,50	3,52	4,06	4,72
230/1/50	COP (EN 14511:2018)	(2)	-	3,60	3,57	3,44	3,53	3,47	3,43
230/1/50	Water flow-rate (User Side)		l/s	0,23	0,30	0,35	0,52	0,62	0,66
230/1/50	Useful pump discharge head		kPa	59,9	50,5	37,9	79,7	66,6	61,1
230/1/50	Sound pressure level	(3)	dB(A)	49	52	55	54	55	56
230/1/50	Refrigeration circuits					1			
230/1/50	No. of compressor					1			
230/1/50	Type of compressor					ROTARY INVERTER			
230/1/50	Standard air flow		l/s	3050	3050	3050	6150	6150	6150
Directive ErP (Energy Related Products)									
230/1/50	ErP Energy Class - AVERAGE Climate - W35			A+++	A+++	A+++	A++	A++	A++
230/1/50	ErP Energy Class - AVERAGE Climate - W55			A++	A++	A++	A++	A++	A++
230/1/50	SCOP - AVERAGE Climate - W35	(4)		4,48	4,49	4,51	4,30	4,35	4,30
230/1/50	$\eta_{s,H}$	(4)	%	176,0	176,0	177,0	169,0	168,0	169,0
230/1/50	SCOP - AVERAGE Climate - W55	(4)		3,23	3,24	3,22	3,23	3,26	3,27
230/1/50	$\eta_{s,H}$	(4)	%	127,0	127,0	126,0	126,0	128,0	128,0

Size		WSAN-YMi		61	71	81	91	101	121	141
400/3/50+N	Cooling capacity (EN 14511:2018)	(1)	kW	10,9	12,9	13,8	17,0	21,0	26,0	29,5
400/3/50+N	Total power input (EN 14511:2018)	(1)	kW	3,72	4,62	5,19	5,57	7,12	9,63	11,6
400/3/50+N	EER (EN 14511:2018)	(1)	-	2,93	2,80	2,66	3,05	2,95	2,70	2,55
400/3/50+N	SEER	(4)	-	4,85	4,73	4,54	4,70	4,70	4,66	4,49
400/3/50+N	$\eta_{s,c}$	(4)	%	191,0	186,2	178,6	185,0	185,0	183,4	176,6
400/3/50+N	Heating capacity (EN 14511:2018)	(2)	kW	12,4	14,1	16,2	18,0	22,0	26,0	30,0
400/3/50+N	Total power input (EN 14511:2018)	(2)	kW	3,45	3,99	4,70	5,14	6,47	8,39	10,3
400/3/50+N	COP (EN 14511:2018)	(2)	-	3,59	3,54	3,45	3,50	3,40	3,10	2,90
400/3/50+N	Water flow-rate (User Side)		l/s	0,52	0,62	0,66	0,81	1,00	1,05	1,10
400/3/50+N	Useful pump discharge head		kPa	79,7	66,6	61,1	102	94,6	78,8	59,4
400/3/50+N	Sound pressure level	(3)	dB(A)	54	56	56	55	58	60	62
400/3/50+N	Refrigeration circuits						1			
400/3/50+N	No. of compressor						1			
400/3/50+N	Type of compressor						ROTARY INVERTER			
400/3/50+N	Standard air flow		l/s	6150	6150	6150	10650	10650	11200	11200
Directive ErP (Energy Related Products)										
400/3/50+N	ErP Energy Class - AVERAGE Climate - W35			A++	A++	A++	A+++	A+++	A+++	A++
400/3/50+N	ErP Energy Class - AVERAGE Climate - W55			A++	A++	A++	A++	A++	A+	A+
400/3/50+N	SCOP - AVERAGE Climate - W35	(4)		4,30	4,35	4,30	4,60	4,53	4,50	4,19
400/3/50+N	$\eta_{s,H}$	(4)	%	169	168	169	181	178	177	165
400/3/50+N	SCOP - AVERAGE Climate - W55	(4)		3,23	3,26	3,27	3,21	3,22	3,14	3,14
400/3/50+N	$\eta_{s,H}$	(4)	%	126,0	128,0	128,0	125,0	126,0	123,0	123,0

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B. /6 (°C) W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

IBHX Backup electric heater
KTFLX Hose kit for connection to the chiller/heat pump
KSAX 100-litre circuit breaker
QERAX Connection electrical panel of the DHW storage heater
ACS200X 200-litre domestic hot water storage tank
ACS300X 300-litre domestic hot water storage tank (size 21÷51)
ACS500X 500-litre domestic hot water storage tank
ACS2SX 200-litre domestic hot water storage tank with solar coil
ACS3SX 300-litre domestic hot water storage tank with solar coil (size 21÷51)
ACS5SX 500-litre domestic hot water storage tank with solar coil
3DHWX Three-way valve for domestic hot water
TANKX Buffer tank
KTCAMX Piping kit for the connection to the buffer tank on supply water side
KTCARX Piping kit for the connection to the buffer tank on return water side
T1BX Probe for auxiliary heating source T1B

Accessories whose code ends with "X" are supplied separately

WSAT-XIN WSAN-XIN

141÷171

ELFOEnergy Extended Inverter

Water chiller
WSAT-XIN: cooling only
WSAN-XIN: reversible heat pump
Air cooled
Outdoor installation
Capacity from 32,4 to 49,2 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

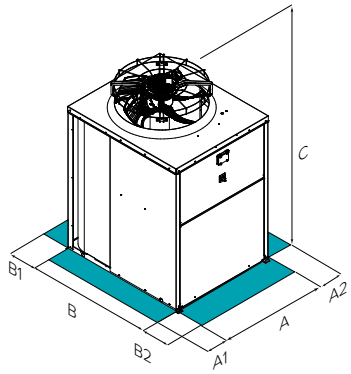
DC INVERTER

- **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.
- **MAXIMUM SILENCE:** ELFOEnergy Extended Inverter is at the top of its class, thanks to the optimized profile of the fan, and through the modulation of the fan and compressor depending on the external conditions and building thermal load.
- **COMPACT SIZE:** The continued research in product industrialization, has allowed to realize a very compact unit, a decisive factor to meet the requirements of flexibility to suit the characteristics of each building.

functions and features

Cool only (WSAT-XIN) | Heat pump (WSAN-XIN) | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | Full inverter DC | ELFOControl³ EVO | Intelliplant (WSAN-XIN)

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size WSAT-XIN		141	151	161	171
A - Length	mm	1341	1341	1341	1341
B - Width	mm	1159	1159	1146	1146
C - Height	mm	1520	1520	1770	1770
A1	mm	1000	1000	1000	1000
A2	mm	1000	1000	1000	1000
B1		1000	1000	1000	1000
B2	mm	1000	1000	1000	1000
Operating weight	kg	300	320	390	390

Size WSAN-XIN		141	151	161	171
A - Length	mm	1341	1341	1341	1341
B - Width	mm	1159	1159	1146	1146
C - Height	mm	1520	1520	1770	1770
A1	mm	1000	1000	1000	1000
A2	mm	1000	1000	1000	1000
B1		1000	1000	1000	1000
B2	mm	1000	1000	1000	1000
Operating weight	kg	310	330	400	400

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VERSION:

EXC Excellence

VOLTAGE:

400TN Supply voltage 400/3/50+N

technical data

Size	WSAT-XIN		141	151	161	171
Cooling capacity (EN14511:2018)	(1)	kW	32,4	36,4	43,2	48,1
Total power input (EN14511:2018)	(1)	kW	10,2	12,2	14,4	16,4
EER (EN14511:2018)	(1)	-	3,18	2,99	3,00	2,93
SEER	(4)	-	5,83	5,94	5,61	5,66
$\eta_{s,c}$	(4)	%	230,2	234,4	221,5	223,5
Refrigeration circuits		Nr	1			
No. of compressors		Nr	1			
Type of compressors		-	SCROLL INVERTER			
Standard airflow		l/s	4694	5139	5649	5833
Water flow-rate (User Side)		l/s	1,55	1,74	2,06	2,30
Useful pump discharge head		kPa	122	112	98	83
Standard power supply		V	400/3/50+N			
Sound pressure level	(3)	dB(A)	69	70	73	73

Size	WSAN-XIN		141	151	161	171
Cooling capacity (EN14511:2018)	(1)	kW	32,5	38,2	43,6	49,2
Total power input (EN14511:2018)	(1)	kW	12,2	14,4	16,2	19,1
EER (EN14511:2018)	(1)	-	2,67	2,66	2,69	2,58
SEER	(4)	-	5,39	5,17	5,34	5,22
$\eta_{s,c}$	(4)	%	212,5	203,8	210,6	205,8
Heating capacity (EN14511:2018)	(2)	kW	31,9	36,7	43,0	49,3
Total power input (EN14511:2018)	(2)	kW	9,88	11,5	13,6	15,7
COP (EN14511:2018)	(2)	-	3,23	3,20	3,17	3,14
Refrigeration circuits		Nr	1			
No. of compressors		Nr	1			
Type of compressors		-	SCROLL INVERTER			
Standard airflow		l/s	4694	5648	6672	6861
Water flow-rate (User Side)		l/s	1,55	1,83	2,08	2,35
Useful pump discharge head		kPa	122	107	97	79
Standard power supply		V	400/3/50+N			
Sound pressure level	(3)	dB(A)	69	70	73	73
Directive ErP (Energy Related Products)						
ErP Energy Class - AVERAGE Climate - W35			A+	A+	A+	A+
SCOP - AVERAGE Climate - W35	(4)		3,21	3,20	3,21	3,22
$\eta_{s,H}$	(4)	%	125,0	125,0	125,0	126,0

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B. /6 (°C) W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

AMRX Rubber antivibration mounts

HEDIF Diffuser for high efficiency axial fan (sizes 141÷171)

RCTX Remote control

CMSC2X Serial communication module with RS485 serial converter kit

KSAX 100-litre circuit breaker

PGFCX Finned coil protection grill (sizes 141÷171)

KTFLX Hose kit for connection to the chiller/heat pump.

KG4UPX Management kit up to 4 units in parallel by the two set point available for each unit

Only WSAN-XIN:

CMACSX Domestic hot water module

3DHWX Three-way valve for domestic hot water

Accessories whose code ends with "X" are supplied separately

HYDRONIC

NEW PRODUCT

ELFOEnergy Sheen EVO

Water chiller
WSAT-YSi: cooling only
WSAN-YSi: reversible heat pump
Air cooled
Outdoor installation
Capacity from 22,3 to 98,0 kW

Unit listed on www.eurovent-certification.com

ErP compliant

DC INVERTER

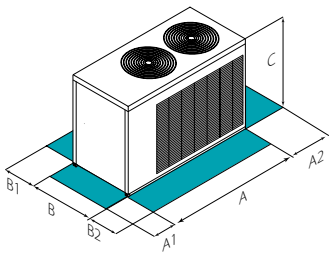
The **ELFOEnergy Sheen EVO** chillers and heat pumps are high efficiency packaged units for outdoor installation with the ecological R-32 refrigerant.

- **SEASONAL EFFICIENCY:** guaranteed by DC Inverter technology applied to the compressor and fans, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.
- **EXTENDED OPERATING RANGE:** ELFOEnergy Sheen Evo is able to meet the strictest requirements in terms of operating temperatures, with great efficiency. In cooling, its operation is guaranteed even with very low outside temperatures (from 48°C to -20°C). In heating mode it is also possible to produce hot water at 54°C down to -4°C outside air.

functions and features

Cool only (WSAT-YSi) · Heat pump (WSAN-YSi) · Air cooled · Outdoor installation · R-32 · Hermetic rotary · Hermetic Scroll · Full InverterDC · Electronic expansion valve · ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAT-YSi		16.2	20.2	24.2	30.2	35.2	40.2
A - Length		mm	2204	2204	2204	3221	3221	3221
B - Width		mm	1043	1043	1043	1089	1089	1089
C - Height		mm	1320	1320	1320	1510	1510	1510
A1		mm	800	800	800	800	800	800
A2		mm	800	800	800	800	800	800
B1		mm	800	800	800	800	800	800
B2		mm	800	800	800	800	800	800
Operating weight		kg	470	470	470	680	680	680

Size	WSAN-YSi		10.1	12.1	14.1	16.2	18.2	22.2
A - Length		mm	1876	1876	1876	2218	2218	2218
B - Width		mm	1005	1005	1005	1057	1057	1057
C - Height		mm	1176	1176	1176	1339	1339	1339
A1		mm	800	800	800	800	800	800
A2		mm	800	800	800	800	800	800
B1		mm	800	800	800	800	800	800
B2		mm	800	800	800	800	800	800
Operating weight		kg	300	300	300	480	480	480

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

TYPE OF FANS:

VEND DC high efficiency fan (Standard)

technical data

Size	WSAT-YSi		16.2	20.2	24.2	30.2	35.2	40.2
Cooling capacity (EN14511:2018)	(1)	kW	43,0	54,0	65,0	76,0	87,0	98.0
Total power input (EN14511:2018)	(1)	kW	13	17,2	23,6	23,4	28,3	35,1
EER (EN14511:2018)	(1)	-	3,30	3,14	2,76	3,25	3,07	2,79
SEER	(4)	-	4,97	4,81	4,65	5,37	5,15	4,95
$\eta_{s,c}$	(4)	%	196,0	189,0	183,0	212,0	203,0	195,0
No. of compressors		Nr	2					
Refrigeration circuits		Nr	1					
Type of compressors			ROTARY INVERTER				SCROLL INVERTER	
Standard airflow		l/s	6944	6944	6944	10417	10417	10417
Standard power supply		V	400/3/50+N					
Sound pressure level	(3)	dB(A)	65	66	67	66	68	69

Size	WSAN-YSi		10.1	12.1	14.1	16.2	18.2	22.2
Cooling capacity (EN14511:2018)	(1)	kW	22,3	25,8	29,0	42,0	48,0	55,0
Total power input (EN14511:2018)	(1)	kW	7,38	9,08	10,36	15,61	18,25	20,83
EER (EN14511:2018)	(1)	-	3,02	2,84	2,80	2,69	2,63	2,64
SEER	(4)	-	4,63	4,64	4,63	4,00	3,99	4,01
$\eta_{s,c}$	(4)	%	182,0	183,0	182,0	157,0	157,0	157,0
Heating capacity (EN14511:2018)	(2)	kW	24,3	27,1	31,4	48,6	54,0	62,0
Total power input (EN14511:2018)	(2)	kW	7,36	8,28	10,00	14,64	16,55	20,00
COP (EN14511:2018)	(2)	-	3,30	3,27	3,20	3,32	3,26	3,10
No. of compressors		Nr		1			2	
Refrigeration circuits		Nr	1					
Type of compressors			ROTARY INVERTER					
Standard airflow		l/s	12500	12500	12500	24000	24000	24000
Standara power supply		V	400/3/50+N					
Sound pressure level	(3)	dB(A)	59	60	60	68	69	70
Directive ErP (Energy Related Products)								
ErP Energy Class - AVERAGE Climate - W35			A++	A++	A++	A++	A++	A++
SCOP - AVERAGE Climate - W35	(4)		4,30	4,25	4,24	3,91	3,90	3,87
$\eta_{s,H}$	(4)	%	169,0	167,0	167,0	153,0	153,0	152,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

HYG1 Hydronic assembly with 1 ON/OFF pump

HYGU1V User side hydronic group with 1 inverter pump

ACC Storage tank

IFWX Steel mesh strainer on the water side

AVIBX Anti-vibration mount support

Only WSAN-YSi:

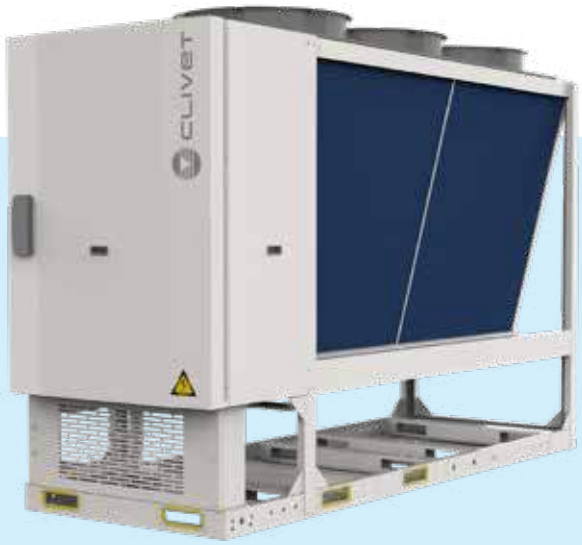
VACS DHW switching valve

Accessories whose code ends with "X" are supplied separately

WSAT-YES WSAN-YES

18.2÷35.2

NEW PRODUCT



ELFOEnergy Storm EVO

Water chiller
WSAT-YES: cooling only
WSAN-YES: reversible heat pump
Air cooled
Outdoor installation
Capacity from 53,3 to 85,0 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

DC INVERTER

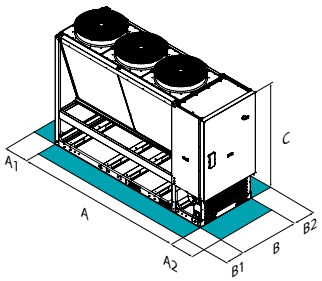
The **ELFOEnergy Storm EVO** chillers and heat pumps are high efficiency packaged units for outdoor installation with the ecological R-32 refrigerant. Thanks to the highest energy efficiency over the entire operating cycle, the domestic hot water production and high configurability, they are suitable for residential and tertiary applications.

- **ADVANCED TECHNOLOGY:** the new R-32 refrigerant, DC Inverter technology for the compressor and fans, a specially-conceived design for modularity that allows to hydraulically connect up to 4 units and manage up to 16 units in a local network, are some of the construction features.
- **EXTENDED OPERATING RANGE:** in cooling, its operation is guaranteed even with very low outside temperatures (from 52°C to -20°C), ideal for the needs of IT applications. In heating, its operation is guaranteed down to external air temperatures of -15°C producing hot water of up to 55°C. The two silent and super silent modes also ensure a greater acoustic comfort in the desired hours.

functions and features

Cool only (WSAT-YES)
Heat pump (WSAN-YES)
Air cooled
Outdoor installation
R-32
Hermetic rotary
Hermetic Scroll
Full Inverter DC
Electronic expansion valve
ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAT-YES		18.2	20.2	25.2	30.2	35.2
A - Length		mm	2364	2364	3220	3220	3220
B - Width		mm	1130	1130	1130	1130	1130
C - Height		mm	2152	2152	2155	2155	2155
A1		mm	800	800	800	800	800
A2		mm	800	800	800	800	800
B1		mm	500	500	500	500	500
B2		mm	500	500	500	500	500
Operating weight		kg	575	575	725	725	725

Size	WSAN-YES		18.2	20.2	25.2	30.2	35.2
A - Length		mm	2337	2337	3190	3190	3190
B - Width		mm	1130	1130	1130	1130	1130
C - Height		mm	2152	2152	2155	2155	2155
A1		mm	800	800	800	800	800
A2		mm	800	800	800	800	800
B1		mm	500	500	500	500	500
B2		mm	500	500	500	500	500
Operating weight		kg	580	580	780	780	780

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

TYPE OF FANS:

VENDC DC high efficiency fan (Standard)

technical data

Size	WSAT-YES		18.2	20.2	25.2	30.2	35.2
Cooling capacity (EN14511:2018)	(1)	kW	53,1	59,2	72,2	77,5	85,1
Total power input (EN14511:2018)	(1)	kW	16,7	19,9	22,9	25,2	29,1
EER (EN14511:2018)	(1)	-	3,10	3,00	3,21	3,20	3,10
SEER	(4)	-	4,85	4,84	4,89	4,81	4,74
$\eta_{s,c}$	(4)	%	191,0	191,0	193,0	190,0	186,0
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER			SCROLL INVERTER	
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V			400/3/50+N		
Sound pressure level	(3)	dB(A)	64	65	62	65	67

Size	WSAN-YES		18.2	20.2	25.2	30.2	35.2
Cooling capacity (EN14511:2018)	(1)	kW	53,3	58,9	72,0	77,7	85,0
Total power input (EN14511:2018)	(1)	kW	18,1	20,3	22,9	25,1	29,2
EER (EN14511:2018)	(1)	-	2,95	2,90	3,15	3,10	2,91
SEER	(4)	-	4,57	4,51	4,64	4,62	4,50
$\eta_{s,c}$	(4)	%	170,0	177,0	183,0	182,0	177,0
Heating capacity (EN14511:2018)	(2)	kW	53,0	66,0	79,3	84,7	91,0
Total power input (EN14511:2018)	(2)	kW	16,5	20,8	23,8	25,7	28,00
COP (EN14511:2018)	(2)	-	3,21	3,17	3,33	3,29	3,25
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER			SCROLL INVERTER	
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V			400/3/50+N		
Sound pressure level	(3)	dB(A)	65	65	66	67	67
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35			A++	A++	A++	-	-
SCOP - AVERAGE Climate - W35	(4)		4,04	4,03	4,08	4,07	4,06
$\eta_{s,H}$	(4)	%	159,0	158,0	160,0	160,0	159,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

HYGU1V User side hydronic assembly with 1 inverter pump
ACIMP Steel inertial storage tank
IFWX Steel mesh strainer on the water side
AVIBX Anti-vibration mount support
PGFC Finned coil protection grill
AMODX Water fittings for modular unit

Only WSAT-YES:

CCCME Microchannel e-coated coil

CCKMUX Pipe plug kit for modular units

Only WSAN-YES:

CCCA Copper / aluminium condenser coil with acrylic lining
CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment
3DHW Built-in 3-way valve for domestic hot water on the unit

Accessories whose code ends with "X" are supplied separately

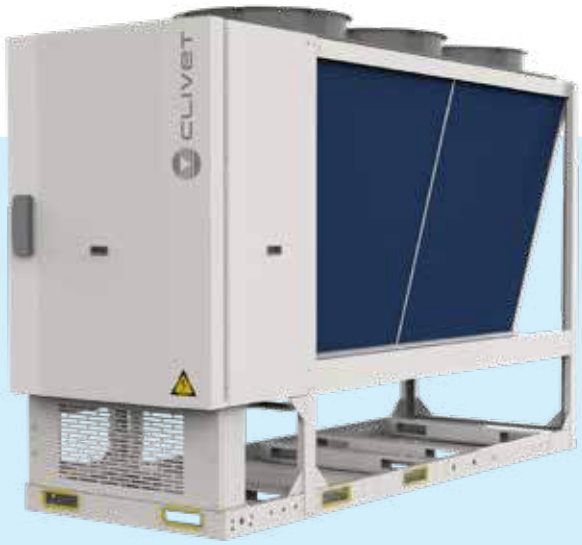
WSAT-YES FC

18.2÷35.2

ELFOEnergy Storm EVO FC

Liquid chiller with FREE-COOLING
Air cooled
Outdoor installation
Capacity from 50,4 to 80,8 kW

NEW PRODUCT



ErP compliant

DC INVERTER

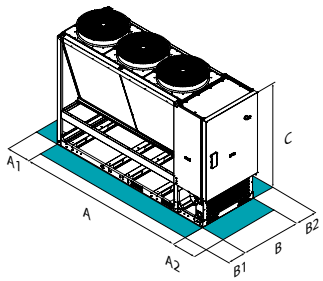
The **Storm EVO FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **SIGNIFICANT ENERGY SAVINGS:** when the fresh air temperature is lower than the return water temperature of the system, the FREE-COOLING system recovers coolness from the external setting and reduces compressor operations until they are completely stilled. In this way the requested cooling capacity is supplied at no cost.
- **ADVANCED TECHNOLOGY:** in addition to the new R-32 refrigerant, DC Inverter technology for the compressor and fans, it presents a specially conceived design for modularity that allows to hydraulically connect up to 4 units and manage up to 16 units in a local network. They can be also combined with cooling only units of Storm EVO series.

functions and features

Cool only (WSAT-YES) · Air cooled · Outdoor installation · R-32 · Hermetic rotary · Hermetic Scroll · FREE-COOLING · Full Inverter DC · Electronic expansion valve · ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAT-YES FC		18.2	20.2	25.2	30.2	35.2
A - Length		mm	2364	2364	3220	3220	3220
B - Width		mm	1130	1130	1130	1130	1130
C - Height		mm	2152	2152	2155	2155	2155
A1		mm	800	800	800	800	800
A2		mm	800	800	800	800	800
B1		mm	500	500	500	500	500
B2		mm	500	500	500	500	500
Operating weight		kg	659	659	850	850	850

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

TYPE OF FANS:

VENDC DC high efficiency fan (Standard)

FREE-COOLING:

FCD Direct FREE-COOLING (Standard)

FCI No-glycol FREE-COOLING

technical data

Size WSAT-YES FC			18.2	20.2	25.2	30.2	35.2
Free-Cooling Off							
Cooling capacity	(1)	kW	57,4	63,9	75,9	81,5	89,7
Total power input	(1)	kW	15,1	17,3	19,6	21,1	23,7
EER at full load	(1)	-	3,80	3,69	3,87	3,86	3,78
SEER	(4)	-	4,48	4,51	4,56	4,48	4,41
$\eta_{s,c}$	(4)	%	176,4	177,4	179,4	176,1	173,6
Free-Cooling diretto on							
Cooling capacity	(2)	kW	51,4	53,0	83,5	84,6	86,3
Total power input	(2)	kW	1,68	1,68	2,51	2,51	2,51
EER at full load	(2)	-	30,60	31,55	33,25	33,71	34,39
Refrigeration circuits		Nr	1				
No. of compressors		Nr	2				
Type of compressors		-	ROTARY INVERTER		SCROLL INVERTER		
Standard power supply		V	400/3/50+N				
Sound pressure level	(3)	dB(A)	64	65	62	65	67
Sound pressure level	(3)	dB(A)	82	82	81	84	85

(1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C

(2) Free-Cooling only data (compressors OFF) referred to the following conditions: internal exchanger water temperature = 15 / 10°C; entering external exchanger air temperature = 2°C D.B./1°C W.B.; glycol 30%

(3) The sound levels refer to standard unit with Axitop (no accessories) at full load, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measures are according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification, which provides for a tolerance of 3 dB(A) on the sound power level, which is the only acoustic data to be considered binding. If unit is set without Axitop, the sound power level presents an increase up to 3 dB(A). Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature =,35°C

(4) Data calculated according to the EN 14825:2018 Regulation

accessories

HYGU1V User side hydronic assembly with 1 inverter pump

ACIMP Steel inertial storage tank

IFWX Steel mesh strainer on the water side

AVIBX Anti-vibration mount support

PGFCX Finned coil protection grill

AMODX Water fittings for modular unit

CCME Microchannel e-coated coil

CCKMUX Pipe plug kit for modular units

Accessories whose code ends with "X" are supplied separately

WSAN-XEE

82÷302

ELFOEnergy Medium

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 24 to 72,8 kW

Unit listed on www.eurovent-certification.com

ErP compliant

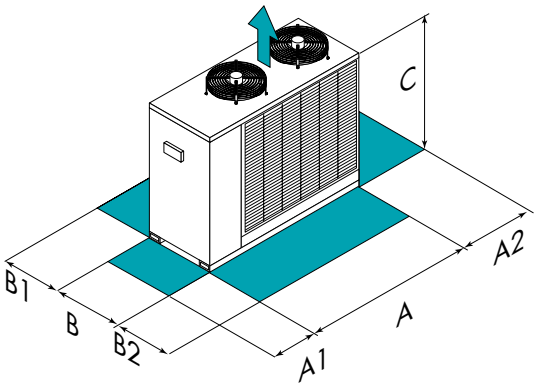
Heat pumps of the **ELFOEnergy Medium** range, ideal for the small-scale commercial sector, are specifically designed for outdoor installation.

- **HIGH ENERGY EFFICIENCY:** especially during operation at partial loads, thanks to the use of two compressors of different capacity operating on a single cooling circuit
- **HYDRONIC ASSEMBLY SUPPLIED AS STANDARD:** available with pumps with non-standard available head and/or with double pump
- **STORAGE TANK NOT NORMALLY NECESSARY** but available for applications where the quantity of water in the system is below limits.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | ELFOControl³ EVO | Ice protection system | Intelliplant

dimensions and clearances



Size	WSAN-XEE	82	102	122	162	182	222	262	302
A - Length	mm	1771	1771	1771	2012	2012	2012	2406	2406
B - Width	mm	680	680	680	1100	1100	1100	1100	1100
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	315	320	370	530	550	580	675	690

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- **B** Water low temperature

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery

OPERATION:

- **OHP** Operation in heat pump (Standard)
- **OHO** Heating-only operation

DOUBLE SET POINT:

- \- Double set point: not required (Standard)
- **DSPB** Double set point for water low temperature

technical data

Size	WSAN-XEE		82	102	122	162	182	222	262	302
Cooling capacity (EN 14511:2018)	(1)	kW	24,0	28,0	33,2	39,9	46,1	53,7	63,9	72,8
Total power input (EN 14511:2018)	(1)	kW	9,77	11,2	13,4	15,7	18,2	21,7	25,7	29,0
EER (EN 14511:2018)	(1)	-	2,46	2,49	2,48	2,55	2,54	2,47	2,49	2,51
SEER	(4)		3,47	3,66	3,56	3,28	3,46	3,55	3,65	3,65
$\eta_{s,c}$	(4)	%	130,8	138,3	134,4	123,2	130,4	133,8	137,9	138,0
Heating capacity (EN 14511:2018)	(2)	kW	28,4	32,5	37,0	45,1	52,6	61,1	71,5	82,8
Total power input (EN 14511:2018)	(2)	kW	9,42	10,7	12,1	14,5	17,0	19,7	22,8	26,2
COP (EN 14511:2018)	(2)	-	3,01	3,04	3,06	3,11	3,10	3,10	3,13	3,16
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors			SCROLL							
Standard airflow		l/s	2553	2545	2514	4965	4902	4778	7196	6971
Water flow-rate (User Side)		l/s	1,10	1,30	1,60	1,90	2,20	2,50	3,00	3,40
Useful pump discharge head		kPa	136	129	125	107	89	150	141	131
Standard power supply		V	400/3/50+N							
Sound pressure level	(3)	dB(A)	60	60	60	64	64	65	65	65
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	A+	A+	A+	A+
SCOP - AVERAGE Climate - W35	(4)	-	3,33	3,48	3,60	3,22	3,27	3,20	3,28	3,35
$\eta_{s,H}$	(4)	%	130,0	136,0	141,0	126,0	128,0	125,0	128,0	131,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN14511:2018 referred to the following conditions:Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **1PUR** Single-pump with reduced available head
- **1PUM** Single-pump with reduced available head
- **2PUS** Standard double pump
- **2PUR** Double pump with reduced available head (sizes 222÷302)
- **2PUM** Double pump with larger available head
- **ACC1** Teflon steel storage device
- **IFWX** Steel mesh strainer on the water side
- **MHP** High and low pressure gauges
- **MHPX** High and low pressure gauges
- **AMRX** Rubber antivibration mounts
- **PGCEX** Coil protection grilles outdoor air side
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **PM** Phase monitor
- **PMX** Phase monitor
- **RCMRX** Remote control via microprocessor control
- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSC7** Modbus/LON WORKS serial converter kit
- **CMSC9** Serial communication module for Modbus supervisor
- **PCDWX** Daily and weekly programming clock
- **SCP3X** Set point compensation according to the outside enthalpy
- **CLSE** Free contacts for alarm
- **PFCP** Power factor correction capacitors (cosfi > 0.9)

Accessories whose code ends with "X" are supplied separately

WSAT-XEE WSAN-XEE

352÷802

ELFOEnergy Large²

Water chiller
WSAT-XEE: cooling only
WSAN-XEE: reversible heat pump
Air cooled
Outdoor installation
Capacity from 84,4 to 216 kW

Unit listed on www.eurovent-certification.com

ErP compliant

Liquid chillers and heat pumps of the **ELFOEnergy Large²** range, ideal for the small-scale commercial sector, are specifically designed for outdoor installation.

ELFOEnergy Large² is available in EXCELLENCE version.

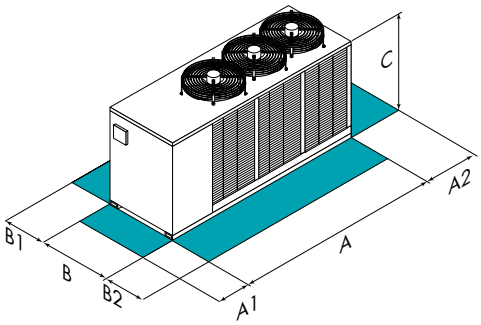
The EXCELLENCE version offers the highest efficiency both at full and at part load.

- **SILENT,** achieved thanks to the optimal sizing of the exchange surfaces and the use of high efficiency fans with "winglets"
- **SYSTEM INDUSTRIALIZATION** The units can also be supplied with pump assemblies, partial heat recovery and inertial storage tank already installed on board, bringing together all the system's main components in a single solution.

functions and features

Cooling only (WSAT-XEE)
Heat pump (WSAN-XEE)
Air cooled
Outdoor installation
R-410A
Hermetic Scroll
Ice protection system
FREE-COOLING
HydroPack
ECOBREEZE
Electronic expansion valve
Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAT-XEE		352	402	432	452	502	552	602	702	802
SC-EXC	A - Length	mm	3075	3075	3075	4025	4025	4025	4025	5025	5025
SC-EXC	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097	1097
SC-EXC	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805	1805
SC-EXC	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700
SC-EXC	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	Operating weight	mm	896	933	1024	1207	1234	1256	1302	1497	1544

Size	WSAN-XEE		352	402	432	452	502	552	602	702	802
SC	A - Length	mm	3075	3075	3075	3075	3075	4025	4025	5025	5025
SC	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097	1097
SC	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805	1805
SC	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
SC	A2	mm	700	700	700	700	700	700	700	700	700
SC	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC	Operating weight	mm	915	975	1059	1101	1126	1326	1341	1549	1564

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence
SC Compressors soundproofing (SC)

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- **B** Water low temperature

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery
- **R** Total energy recovery

ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Extremely low noise acoustic configuration

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)
- **CREFP** Device for fan consumption reduction of the external section at variable speed (phase-cutting)

VERSION (WSAT-XEE ONLY):

- **EXC** Excellence (Standard)

FREE-COOLING (WSAT-XEE ONLY):

- \- FREE-COOLING: not required (Standard)
- **FCD** Direct FREE-COOLING

technical data

Size		WSAT-XEE		352	402	432	452	502	552	602	702	802
SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	95,6	109	120	129	140	152	174	195	216
SC-EXC	Total power input(EN14511:2018)	(1)	kW	30,7	34,8	38,8	40,9	45,0	49,0	55,8	62,3	69,6
SC-EXC	EER (EN14511:2018)	(1)	-	3,12	3,13	3,10	3,15	3,12	3,10	3,12	3,13	3,11
SC-EXC	SEER	(4)	-	4,12	4,24	4,11	4,22	4,17	4,11	4,14	4,22	4,10
SC-EXC	$\eta_{s,c}$	(4)	%	161,9	166,7	161,6	165,8	163,9	161,5	162,4	165,8	161,0
SC-EXC	Refrigeration circuits		Nr					1				
SC-EXC	No. of compressors		Nr					2				
SC-EXC	Type of compressors		-					SCROLL				
SC-EXC	Standard airflow		l/s	12327	12248	12182	18373	18373	18216	18102	24227	24069
SC-EXC	Water flow-rate (User Side)		l/s	4,60	5,20	5,80	6,20	6,70	7,30	8,40	9,30	10,40
SC-EXC	Standard power supply		V					400/3/50				
SC-EXC	Sound pressure level	(3)	dB(A)	67	67	68	68	68	69	69	70	70

Size		WSAN-XEE		352	402	432	452	502	552	602	702	802
SC	Cooling capacity (EN14511:2018)	(1)	kW	84,4	96,7	105	114	122	140	156	183	202
SC	Total power input(EN14511:2018)	(1)	kW	32,7	36,5	41,3	43,6	48,5	51,3	60,8	66,9	76,5
SC	EER (EN14511:2018)	(1)	-	2,58	2,65	2,55	2,61	2,52	2,73	2,56	2,73	2,64
SC	SEER	(4)	-	3,37	3,50	3,40	3,57	3,52	3,62	3,47	3,66	3,50
SC	$\eta_{s,c}$	(4)	%	131,7	137,1	133,0	140,0	137,7	141,6	135,7	143,3	136,9
SC	Heating capacity (EN14511:2018)	(2)	kW	101	116	127	136	147	165	183	212	234
SC	Total power input (EN14511:2018)	(2)	kW	32,6	36,7	40,4	42,1	45,8	51,1	57,1	65,3	72,6
SC	COP (EN14511:2018)	(2)	-	3,08	3,16	3,14	3,23	3,20	3,24	3,21	3,25	3,23
SC	Refrigeration circuits		Nr					1				
SC	No. of compressors		Nr					2				
SC	Type of compressors		-					SCROLL				
SC	Standard airflow		l/s	12497	12281	12281	12217	12105	18255	18255	24267	24267
SC	Water flow-rate (User Side)		l/s	4,10	4,60	5,10	5,50	5,90	6,70	7,40	8,70	9,70
SC	Standard power supply		V					400/3/50				
SC	Sound pressure level	(3)	dB(A)	67	67	67	67	67	68	68	71	71
Directive ErP (Energy Related Products)												
SCOP - AVERAGE Climate - W35				3,40	3,41	3,48	3,54	3,54	3,48	3,49	3,44	3,40
$\eta_{s,H}$		(4)	%	133,0	133,0	136,0	139,0	139,0	136,0	137,0	135,0	133,0

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B. /6 (°C) W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

SC-EXC Compressors soundproofing (SC)-Excellence
SC Compressors soundproofing (SC)

accessories

1PUS	Standard pump
1PU1SB	Standard pump with emergency pump
2PM	Hydropack load side with 2 pumps
IFWX	Steel mesh strainer on the water side
A300	300-litre storage tank (sizes 352÷602)
A300RPS	300-litre storage tank with primary circuit onboard (sizes 352÷602)
A500	500 l. storage tank (sizes 702÷802)
A500RPS	500-litre storage tank with primary circuit onboard (sizes 702÷802)
ABU	Flush hydraulic connections
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
AMMX	Spring antivibration mounts
PGCCH	Anti-hail protection grilles
PGFC	Finned coil protection grill
PSX	Mains power supply
CONTA2	Energy meter
RCMRX	Remote control via microprocessor control
CMSC8	Serial communication module for BACnet supervisor
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Disposal for inrush current reduction
SFSTR	Disposal for inrush current reduction
MHP	High and low pressure gauges
PM	Phase monitor
MF2	Multi-function phase monitor

WSAT-XEE only:

RE-20	Electrical panel antifreeze protection for min. outdoor temperature down toa -20°C
RE-25	Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
RE-30	Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
RE-35	Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
RE-39	Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
FANQE	Electrical panel ventilation
SDV	Cutoff valve on compressor supply and return

WSAN-XEE only:

OHE	Limit extension kit in heating up to -10°C (W.B.)

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WBAN

82÷302

ELFOEnergy Vulcan Medium

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 21,3 to 80,3 kW

ELFOEnergy Vulcan Medium comprises a series of **high temperature** heat pumps, ideal as a one-stop heating, cooling and hot water solution for centralised systems.

- Ideal for centralised systems such as residential complexes, hotels and collective applications
- Operation with outdoor air temperature down to -18°C
- Hot water production up to 60°C at outdoor temperatures of down to -10°C
- Dual temperature management and domestic hot water production

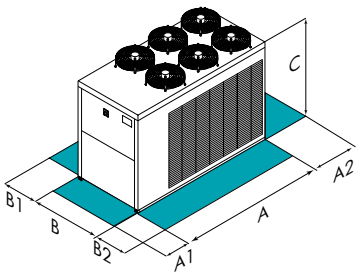
Unit listed on www.eurovent-certification.com

ErP compliant

functions and features

Heat pump | Air cooled | Outdoor installation | R-407C | Hermetic Scroll | ELFOControl³ EVO | Intelliplant

dimensions and clearances



Size	WBAN	82	122	162	202	262	302
A - Length	mm	1928	1928	2328	2328	2932	2932
B - Width	mm	1100	1100	1100	1100	1100	1100
C - Height	mm	1474	1474	1500	1500	1500	1500
A1	mm	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700
Operating weight	kg	420	466	635	670	803	826

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- **B** Water low temperature

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery

OPERATION:

- \- Operating limit extension: not required (Standard)
- **EOL** Operating limit extension

technical data

Size		WBAN		82	122	162	202	262	302
Cooling capacity (EN 14511:2018)	(1)	kW		21,3	32,2	39,7	53,9	65,9	80,3
Total power input (EN 14511:2018)	(1)	kW		7,79	12,5	14,9	21,9	27,6	32,1
EER (EN14511:2018)	(1)	-		2,73	2,58	2,67	2,46	2,39	2,50
SEER	(4)	-		2,68	2,70	2,79	2,69	2,60	2,74
$\eta_{s,c}$	(4)	%		104,2	105,0	108,6	104,6	101,0	106,6
Heating capacity (EN 14511:2018)	(2)	kW		29,1	40,3	51,0	71,1	80,4	99,5
Total power input (EN 14511:2018)	(2)	kW		8,53	12,1	15,5	20,8	24,8	30,8
COP (EN14511:2018)	(2)	-		3,41	3,34	3,28	3,41	3,24	3,23
Refrigeration circuits		Nr		2					
No. of compressors		Nr		2					
Type of compressors		-		SCROLL					
Water flow-rate (User Side)	(1)	l/s		1,00	1,50	1,90	2,60	3,10	3,80
Useful pump discharge head	(1)	kPa		183	183	173	195	184	201
Standard power supply		V		400/3/50+N					
Sound pressure level	(3)	dB(A)		62	63	65	65	66	67
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35		-		A+	A+	A+	A+	A+	A+
ErP Energy Class - AVERAGE Climate - W55				-	A+	-	A+	-	-
SCOP - AVERAGE Climate - W35	(4)			3,24	3,63	3,42	3,70	3,45	3,20
$\eta_{s,H}$	(4)	%		127,0	142,0	134,0	145,0	135,0	125,0
SCOP - AVERAGE Climate - W55	(4)			-	2,95	-	2,99	-	-
$\eta_{s,H}$	(4)	%		-	115,0	-	117,0	-	-

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions:Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **1PUR** Single-pump with reduced available head
- **1PUM** Single-pump with larger available head
- **1PUHE** High efficiency single inverter pump for primary circuit.
- **ECHP** External fans with larger available head "ECOBREEZE"
- **AMRX** Rubber antivibration mounts
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **3DHW** Built-in 3-way valve for domestic hot water on the unit
- **3DHWX** Three-way valve for domestic hot water
- **IS4** Compressor insulation
- **PGFC** Finned coil protection grill
- **PGFCX** Finned coil protection grill
- **PM** Phase monitor
- **PMX** Phase monitor
- **TCDC** Condensate collection pan with electric heater
- **CACSX** Domestic hot water kit control
- **TASRX** Compartment for multifunction keyboard

Accessories whose code ends with "X" are supplied separately

WSAT-XIN WSAN-XIN

18.2÷45.2

ELFOEnergy Magnum

Water chiller
WSAT-XIN: cooling only
WSAN-XIN: reversible heat pump
Air cooled
Outdoor installation
Capacity from 49,6 to 124 kW

DC INVERTER

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

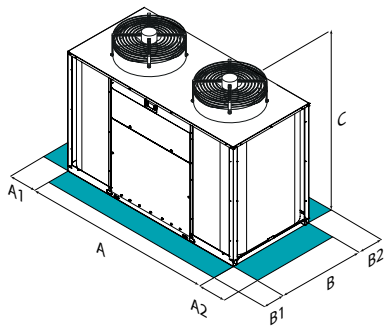
The ELFOEnergy Magnum heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, thanks to the continuous capacity modulation that adapts the capacity supplied to the actual energy demand required by the system.ELFOEnergy Magnum is available in the EXCELLENCE version that offers the highest energy efficiency both during the seasonal cycle and under full load conditions.Benefits of ELFOEnergy Magnum.

- **HIGH UNIT RELIABILITY** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features

Cooling only (WSAT-XIN) · Heat pump (WSAN-XIN)) · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · AxiTop · Vary Flow · Flull Inverte DC · Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WSAT-XIN		35.2	40.2	45.2
A - Length		mm	3600	3600	3600
B - Width		mm	1100	1100	1100
C - Height		mm	1890	1890	1890
A1		mm	800	800	800
A2		mm	800	800	800
B1		mm	800	800	800
B2		mm	800	800	800
Operating weight		kg	813	860	923

Size	WSAN-XIN		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length		mm	2400	2400	2400	2400	3600	3600	3600
B - Width		mm	1100	1100	1100	1100	1100	1100	1100
C - Height		mm	1540	1540	1790	1790	1890	1890	1890
A1		mm	800	800	800	800	800	800	800
A2		mm	800	800	800	800	800	800	800
B1		mm	800	800	800	800	800	800	800
B2		mm	800	800	800	800	800	800	800
Operating weight		kg	605	620	670	695	858	897	937

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

technical data

Size	WSAT-XIN		35.2	40.2	45.2
Cooling capacity (EN14511:2018)	(1)	kW	99,1	112,0	124,0
Total power input (EN14511:2018)	(1)	kW	31,8	36,1	40,1
EER (EN 14511:2018)	(1)	-	3,12	3,11	3,10
SEER	(4)	-	4,10	4,10	4,36
$\eta_{s,c}$	(4)	%	161,2	161,0	171,3
Refrigeration circuits		Nr		2	
No. of compressors		Nr		2	
Type of compressors		-		ON/OFF + INVERTER SCROLL	
Supply airflow		l/s	13333	14167	14167
Water flow-rate (User Side)		l/s	4,70	5,40	5,90
Standard power supply		V		400/3/50+N	
Sound pressure level	(3)	dB(A)	68	68	69

Size	WSAN-XIN		18.2	20.2	25.2	30.2	35.2	40.2	45.2
Cooling capacity (EN14511:2018)	(1)	kW	49,6	59,3	69,5	82,2	92,5	106,0	120,0
Total power input (EN14511:2018)	(1)	kW	16,9	20,6	23,6	28,8	33,6	38,8	46,0
EER (EN 14511:2018)	(1)	-	2,93	2,88	2,94	2,85	2,75	2,72	2,60
SEER	(4)	-	3,34	3,43	3,47	3,63	3,76	3,73	3,82
$\eta_{s,c}$	(5)	%	130,5	134,1	135,6	142,4	147,6	146,2	149,9
Heating capacity (EN14511:2018)	(2)	kW	56,0	68,4	78,1	93,0	106	123	140
Total power input (EN14511:2018)	(2)	kW	17,5	21,3	24,4	29,0	33,1	38,2	43,6
COP (EN 14511:2018)	(2)	-	3,20	3,21	3,20	3,21	3,21	3,21	3,20
Refrigeration circuits		Nr				2			
No. of compressors		Nr				2			
Type of compressors		-				INVERTER + ON/OFF SCROLL			
Supply airflow		l/s	10556	10556	13056	13056	13333	14167	14167
Water flow-rate (User Side)		l/s	2,37	2,83	3,32	3,92	4,42	5,04	5,71
Standard power supply		V				400/3/50+N			
Sound pressure level	(3)	dB(A)	65	65	66	66	68	68	69
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	-	-	-
SCOP - AVERAGE Climate - W35	(4)		3,55	3,59	3,45	3,61	3,68	3,65	3,81
$\eta_{s,H}$	(4)	%	139,0	141,0	135,0	141,0	144,0	143,0	149,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions:Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **HYG1** Hydronic assembly with 1 ON/OFF pump
- **HYG2** Hydronic assembly with 2 ON/OFF pumps
- **VARYP** VARYFLOW + (2 inverter pumps)
- **HYGU1V** User side hydronic assembly with 1 inverter pump
- **ACC** Storage tank (sizes 35.2÷45.2)
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC8** Serial communication module for BACnet supervisor
- **CMSC9** Serial communication module for Modbus supervisor
- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSLWX** LonWorks serial communication module
- **BACX** BACnet serial communication module
- **HEDIF** Diffuser for high efficiency axial fan
- **MF2** Multi-function phase monitor
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **RCTX** Remote control
- **PGFC** Finned coil protection grill
- **PGFCX** Finned coil protection grill
- **AVIBX** Anti-vibration mount support
- **IFWX** Steel mesh strainer on the water side
- **PFCP** Power factor correction capacitors (cosfi > 0.9)

WSAN-XIN only:

- **VACS** DHW switching valve: required

Accessories whose code ends with "X" are supplied separately

WSAT-XEM WSAN-XEM

50.4÷120.4

ELFOEnergy Magnum

Water chiller
WSAT-XEM: cooling only
WSAN-XEM: reversible heat pump
Air cooled
Outdoor installation
Capacity from 139 to 354 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

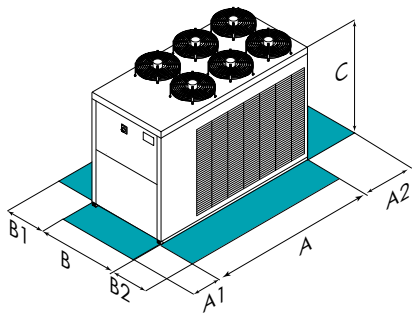
The **ELFOEnergy Magnum** heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the modular scroll technology** that adapts the capacity supplied to the actual energy demand required by the system.

- **DUAL ENERGY VERSION** The standard EXCELLENCE version with a class A Eurovent rating offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version also provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.
- **HIGH UNIT RELIABILITY,** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features

Cooling only (WSAT-XEM) | Heat pump (WSAN-XEM) | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | AxiTop | Vary Flow | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence
SC-PRM Compressors soundproofing (SC)-Premium

Size	WSAT-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
SC-EXC	A - Length	mm	4400	4400	4400	4400	4400	4400	4400	5200	5200	5200
SC-EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250	2250
SC-EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300	2300
SC-EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	750	750	750	750	750	750	750	750	750	750
SC-EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
SC-EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
SC-EXC	Operating weight	kg	1466	1500	1548	1630	2317	2403	2527	2924	2991	3126

Size	WSAT-XEM		70.4	80.4	90.4	100.4	110.4	120.4
SC-PRM	A - Length	mm	3800	3800	4400	4400	4400	5200
SC-PRM	B - Width	mm	2250	2250	2250	2250	2250	2250
SC-PRM	C - Height	mm	2300	2300	2300	2300	2300	2300
SC-PRM	A1	mm	1500	1500	1500	1500	1500	1500
SC-PRM	A2	mm	750	750	750	750	750	750
SC-PRM	B1	mm	1500	1500	1500	1500	1500	1500
SC-PRM	B2	mm	1500	1500	1500	1500	1500	1500
SC-PRM	Operating weight	kg	2135	2244	2328	2610	2698	3006

Size	WSAN-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
EXC	A - Length	mm	4400	4400	4400	4400	4400	4400	4400	5200	5200	5200
EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250	2250
EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300	2300
EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500	1500
EXC	A2	mm	750	750	750	750	750	750	750	750	750	750
EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
EXC	Operating weight	kg	1590	1604	1673	1831	2420	2540	2681	3114	3194	3338

versions and configurations

VERSION (WSAT-XEM ONLY):

EXC Excellence (Standard)

PRM Premium (sizes 70.4÷120.4)

ENERGY RECOVERY:

- Energy recovery: not required (Standard)

D Partial energy recovery

R Total energy recovery (WSAT-XEM only)

ACOUSTIC CONFIGURATION (WSAT-XEM ONLY):

SC Acoustic configuration with compressor soundproofing (Standard)

EN Super-silenced acoustic configuration

technical data

Size		WSAT-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	143	157	170	182	197	223	260	287	317	354
SC-EXC	Total power input(EN14511:2018)	(1)	kW	45,8	50,2	54,5	58,4	63,0	71,5	83,7	91,6	102	114
SC-EXC	EER (EN14511:2018)	(1)	-	3,12	3,13	3,12	3,11	3,12	3,12	3,10	3,13	3,10	3,10
SC-EXC	SEER	(4)	-	4,23	4,42	4,51	4,51	4,41	4,52	4,52	4,33	4,26	4,40
SC-EXC	$\eta_{s,c}$	(4)	%	166,4	173,9	177,3	177,3	173,5	177,7	177,7	170,0	167,4	172,9
SC-EXC	Refrigeration circuits		Nr	2									
SC-EXC	No. of compressors		Nr	4									
SC-EXC	Type of compressors		-	SCROLL									
SC-EXC	Standard airflow		l/s	20722	19917	19900	19472	23856	22947	22944	33833	33611	33833
SC-EXC	Water flow-rate (User Side)		l/s	6,80	7,50	8,10	8,70	9,40	10,7	12,4	13,7	15,1	16,9
SC-EXC	Standard power supply		V	400/3/50+N				400/3/50					
SC-EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72

Size		WSAT-XEM		70.4	80.4	90.4	100.4	110.4	120.4
SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW	183	207	242	261	288	330
SC-PRM	Total power input (EN14511:2018)	(1)	kW	66,9	76,0	89,3	96,4	105	122
SC-PRM	EER (EN14511:2018)	(1)	-	2,74	2,73	2,71	2,71	2,73	2,71
SC-PRM	SEER	(4)	-	4,10	4,13	4,32	4,17	4,19	4,10
SC-PRM	$\eta_{s,c}$	(4)	%	161,1	162,3	169,6	163,8	164,7	160,9
SC-PRM	Refrigeration circuits		Nr	2					
SC-PRM	No. of compressors		Nr	4					
SC-PRM	Type of compressors		-	SCROLL					
SC-PRM	Standard airflow		l/s	23800	23550	24450	24450	23900	34450
SC-PRM	Water flow-rate (User Side)		l/s	8,70	9,90	11,5	12,4	13,7	15,8
SC-PRM	Standard power supply		V	400/3/50					
SC-PRM	Sound pressure level	(3)	dB(A)	67	67	68	68	68	71

Size		WSAN-XEM		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
EXC	Cooling capacity (EN14511:2018)	(1)	kW	139	148	160	170	184	208	235	273	296	321
EXC	Total power input(EN14511:2018)	(1)	kW	48,7	53,6	58,4	63,7	67,6	77,0	92,7	98,1	110	126
EXC	EER (EN14511:2018)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
EXC	SEER	(4)	-										
EXC	$\eta_{s,h}$	(4)	%										
EXC	Heating capacity (EN14511:2018)	(2)	kW	155	167	183	194	210	239	274	313	340	378
EXC	Total power input (EN14511:2018)	(2)	kW	47,9	52,3	56,5	60,1	65,3	74,3	85,1	97,5	106	118
EXC	COP (EN14511:2018)	(2)	-	3,24	3,20	3,24	3,23	3,22	3,22	3,22	3,21	3,21	3,20
EXC	Refrigeration circuits		Nr	2									
EXC	No. of compressors		Nr	4									
EXC	Type of compressors		-	SCROLL									
EXC	Standard airflow		l/s	20300	20300	20000	20000	25000	24200	24200	35000	35000	35000
EXC	Water flow-rate (User Side)		l/s	6,70	7,10	7,70	8,10	8,80	10,0	11,2	13,1	14,2	15,5
EXC	Standard power supply		V	400/3/50+N				400/3/50					
EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72
Directive ErP (Energy Related Products)													
SCOP - AVERAGE Climate - W35		(4)	-	3,70	3,66	3,72	3,72	3,64	3,64	3,76	3,25	3,70	3,80
$\eta_{s,H}$		(4)	%	145,0	143,0	146,0	146,0	143,0	143,0	147,0	127,0	145,0	149,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

HYG1 Hydronic assembly with 1 ON/OFF pump

VARYP VARYFLOW + (2 inverter pumps)

HYG2 Hydronic assembly with 2 ON/OFF pumps

ACC Storage tank

CCCA Copper / aluminium condenser coil with acrylic lining

CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment

HEDIF Diffuser for high efficiency axial fan (sizes 70.4÷120.4)

CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (sizes 70.4÷120.4)

SFSTR Disposal for inrush current reduction

MF2 Multi-function phase monitor

CMSC10 Serial communication module for LonWorks supervisor

CMSLWX LonWorks serial communication module

CMSC8 Serial communication module for BACnet supervisor

BACX BACnet serial communication module

CMSC9 Serial communication module for Modbus supervisor

CMMBX Serial communication module to supervisor (Modbus)

PFCP Power factor correction capacitors (cosfi > 0.9)

PGFC Finned coil protection grilles

PGFCX Finned coil protection grilles

MHP High and low pressure gauges

MHPX High and low pressure gauges

IFWX Steel mesh strainer on the water side

RCTX Remote control

AVIBX Anti-vibration mount support

WSAN-XEM only:

VACSUX User side DHW switching valve

WSAT-XEM only:

CREFO Device for fan consumption reduction of the external section, on/off type (sizes 70.4÷120.4)

SDV Cutoff valve on compressor supply and return

RPRPDI Refrigerant leak detector with pump down function in the casing

Accessories whose code ends with "X" are supplied separately

WSAN-XIN MF

18.2÷45.2

ELFOEnergy Magnum MF

Multifunction reversible heat pump
Air cooled
Outdoor installation
Capacity from 49,6 to 120 kW

Unit listed on www.eurovent-certification.com

ErP compliant

DC INVERTER

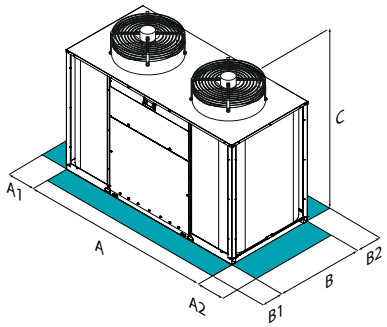
The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently.**
Designed for outdoor installation, they ensure extremely high efficiency levels during the entire operating cycle thanks to the combination of **continuous capacity modulation,** which adapts the capacity supplied to the actual energy demand required by the system, and **energy recovery,** which recovers up to 100% of the capacity supplied, further increasing efficiency.

- **HIGH UNIT RELIABILITY** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features

Heat pump · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · Full Inverter DC · AxiTop · Vary Flow · Intelliplant

dimensions and clearances



Size	WSAN-XIN MF		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length		mm	2400	2400	2400	2400	3600	3600	3600
B - Width		mm	1100	1100	1100	1100	1100	1100	1100
C - Height		mm	1540	1540	1790	1790	1890	1890	1890
A1		mm	800	800	800	800	800	800	800
A2		mm	800	800	800	800	800	800	800
B1		mm	800	800	800	800	800	800	800
B2		mm	800	800	800	800	800	800	800
Operating weight		kg	650	660	720	755	934	977	1093

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

ENERGY RECOVERY:

R Total energy recovery (Standard)

CONFIGURATION:

4T Configuration for 4-pipe system (Standard)

2T Configuration for 2-pipe system

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

technical data

Size WSAN-XIN MF			18.2	20.2	25.2	30.2	35.2	40.2	45.2
Cooling 100% - Heating 0%									
Cooling capacity (EN14511:2018)	(1)	kW	49,6	59,3	69,5	82,2	92,5	106	120
Total power input (EN14511:2018)	(1)	kW	16,9	20,6	23,7	28,7	33,7	39,0	46,2
EER (EN14511:2018)	(1)	-	2,93	2,88	2,93	2,86	2,75	2,72	2,60
SEER	(6)	-	3,34	3,43	3,47	3,63	3,76	3,73	3,82
$\eta_{S,H}$	(6)	%	130,5	134,1	135,6	142,4	147,6	146,2	149,9
Cooling 0% - Heating 100%									
Heating capacity (EN14511:2018)	(2)	kW	57,1	69,8	79,7	94,9	109	125	143
Total power input (EN14511:2018)	(2)	kW	17,2	20,9	24,0	28,6	32,7	37,5	42,9
COP (EN14511:2018)	(2)	-	3,32	3,34	3,32	3,32	3,33	3,33	3,33
Cooling 100% - Heating 100%									
Cooling capacity (EN14511:2018)	(3)	kW	49,8	59,7	69,6	82,8	95,8	109	128
Heating capacity (EN14511:2018)	(3)	kW	64,9	78,0	90,8	107	125	141	169
Total power input (EN14511:2018)	(3)	kW	15,3	18,6	21,5	25,4	29,6	33,7	41,1
Overall efficiency (EN14511:2018)	(4)	-	7,51	7,41	7,46	7,48	7,47	7,42	7,22
Refrigeration circuits		Nr	2						
No. of compressors		Nr	2						
Type of compressors		-	INVERTER + ON/OFF SCROLL						
Standard power supply		V	400/3/50+N						
Sound pressure level	(5)	dB(A)	65	65	66	66	68	68	69
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	-	-	-
SCOP - AVERAGE Climate - W35	(6)		3,69	3,74	3,59	3,75	3,83	3,80	3,96
$\eta_{S,H}$	(6)	%	145,0	147,0	141,0	147,0	150,0	149,0	155,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7°C, Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: Hot side water temperature = 40/45°C, Temperatura aria entrante allo scambiatore esterno = 7°C D.B./6°C W.B

(3) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7 °C, Hot side water temperature = 40/45°C

(4) Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)

(5) Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: cold side water temeprature = 12/7 °C; outdoor air temperature =35°C

(6) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
HYG1	Hydronic assembly with 1 ON/OFF pump
HYG2	Hydronic assembly with 2 ON/OFF pumps
VARYP	VARYFLOW + (2 inverter pumps)
HYGR1V	Recovery side hydronic assembly with 1 inverter pump
HYGU1V	User side hydronic assembly with 1 inverter pump
ACC	Storage tank (sizes 35.2÷45.2)
VACSR	Total recovery side DHW switching valve
HEDIF	Diffuser for high efficiency axial fan
CMSC10	Serial communication module for LonWorks supervisor
CMSC8	Serial communication module for BACnet supervisor
CMSC9	Serial communication module for Modbus supervisor
CMMBX	Serial communication module to supervisor (Modbus)
CMSLWX	LonWorks serial communication module
BACX	BACnet serial communication module
MF2	Multi-function phase monitor
SFSTR4N	Disposal for inrush current reduction, for unit 400/3/50+N
RCTX	Remote control
MHP	High and low pressure gauges
MHPX	High and low pressure gauges
PGFC	Finned coil protection grilles
PGFCX	Finned coil protection grilles
AVIBX	Anti-vibration mount support
IFWX	Steel mesh strainer on the water side
PFCP	Power factor correction capacitors (cosfi > 0.9)

Accessories whose code ends with "X" are supplied separately

WSAN-XEM MF

50.4÷120.4

ELFOEnergy Magnum MF

Multifunction reversible heat pump
Air cooled
Outdoor installation
Capacity from 139 to 324 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

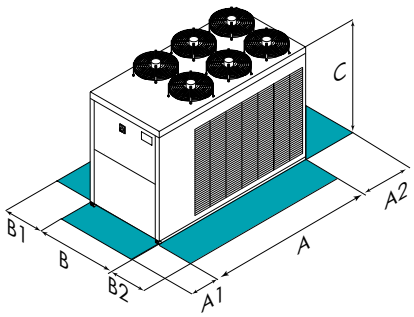
The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently.**
Designed for outdoor installation, they ensure extremely high efficiency levels during the entire operating cycle **thanks to energy recovery**, which recovers up to 100% of the capacity supplied, further increasing efficiency.
Benefits of ELFOEnergy Magnum Multifunction:

- **HIGH UNIT RELIABILITY,** thans to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | AxiTop | Vary Flow | Intelliplant

dimensions and clearances



Size WSAN-XEM MF		50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
A - Length	mm	4450	4450	4450	4450	4450	4450	4450	5250	5250	5250
B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250	2250
C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300	2300
A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500	1500
A2	mm	750	750	750	750	750	750	750	750	750	750
B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500	1500
Operating weight	kg	1803	1825	1908	2073	2630	2750	2908	3467	3553	3694

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

ENERGY RECOVERY:

R Total energy recovery (Standard)

CONFIGURATION

4T Configuration for 4-pipe system (Standard)

2T Configuration for 2-pipe system

technical data

Size WSAN-XEM MF			50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
Cooling 100% - Heating 0%												
Cooling capacity (EN14511:2018)	(1)	kW	139	148	160	170	184	208	235	273	296	321
Total power input (EN14511:2018)	(1)	kW	48,8	53,6	58,6	63,9	67,7	77,0	92,5	97,9	110	126
EER (EN14511:2018)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
SEER	(6)	-	3,99	4,00	4,04	4,07	3,96	4,11	4,10	3,95	3,91	3,85
$\eta_{S,H}$	(6)	%	156,5	157,0	158,8	159,7	155,2	161,2	161,0	155,1	153,2	151,0
Cooling 0% - Heating 100%												
Heating capacity (EN14511:2018)	(2)	kW	157	170	186	196	213	243	278	321	346	387
Total power input (EN14511:2018)	(2)	kW	47,1	51,5	55,6	59,1	64,3	73,1	83,7	95,9	104	116
COP (EN14511:2018)	(2)	-	3,33	3,30	3,35	3,32	3,31	3,32	3,32	3,35	3,33	3,34
Cooling 100% - Heating 100%												
Cooling capacity (EN14511:2018)	(3)	kW	140	151	162	172	187	212	239	278	300	328
Heating capacity (EN14511:2018)	(3)	kW	184	198	216	230	249	284	326	371	401	447
Total power input (EN14511:2018)	(3)	kW	43,3	47,5	51,4	56,1	58,5	67,6	81,4	85,7	94,8	109
Overall efficiency (EN14511:2018)	(4)	-	7,48	7,35	7,35	7,18	7,45	7,33	6,94	7,56	7,39	7,11
Refrigeration circuits		Nr	2									
No. of compressors		Nr	4									
Type of compressors		-	SCROLL									
Alimentazione standard		-	400/3/50+N				400/3/50					
Standard power supply	(5)	dB(A)	69	69	69	69	68	68	68	72	72	72
Directive ErP (Energy Related Products)												
SCOP - AVERAGE Climate - W35	(6)	-	3,85	3,81	3,86	3,87	3,78	3,79	3,91	3,36	3,85	3,95
$\eta_{S,H}$	(6)	%	151,0	149,0	151,0	152,0	148,0	149,0	153,0	131,0	151,0	155,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7°C, Entering external exchanger air temperature = 35°C
(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: Hot side water temperature = 40/45°C, Temperatura aria entrante allo scambiatore esterno = 7°C D.B./6°C W.B
(3) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7 °C, Hot side water temperature = 40/45°C
(4) Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)
(5) Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: Cold side water temperature = 12/7 °C; outdoor air temperature = 35°C
(6) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

HYG1 Hydronic assembly unit with 1 ON/OFF pump
HYG2 Hydronic assembly unit with 2 ON/OFF pumps
VARYP VARYFLOW + (2 inverter pumps)
HYGR1V Recovery side hydronic unit with 1 inverter pump
ACC Storage tank
CCCA Copper / aluminium condenser coil with acrylic lining
CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment
HEDIF Diffuser for high efficiency axial fan (sizes 70.4÷120.4)
CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (sizes 70.4÷120.4)
SFSTR Disposal for inrush current reduction
MF2 Multi-function phase monitor
CMSC10 Serial communication module for LonWorks supervisor
CMSLWX LonWorks serial communication module
CMSC8 Serial communication module for BACnet supervisor
BACX BACnet serial communication module
CMSC9 Serial communication module for Modbus supervisor
CMMBX Serial communication module to supervisor (Modbus)
PFCP Power factor correction capacitors (cosfi > 0.9)
PGFC Finned coil protection grill
PGFCX Finned coil protection grill
MHP High and low pressure gauges
MHPX High and low pressure gauges
VACSRX Total recovery side DHW switching valve
IFWX Steel mesh strainer on the water side
RCTX Remote control
AVIBX Anti-vibration mount support

Accessories whose code ends with "X" are supplied separately

WSAN-XEM HW

35.4÷60.4

ELFOEnergy Magnum HW

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 85,8 to 150 kW

Unit listed on www.eurovent-certification.com

ErP compliant

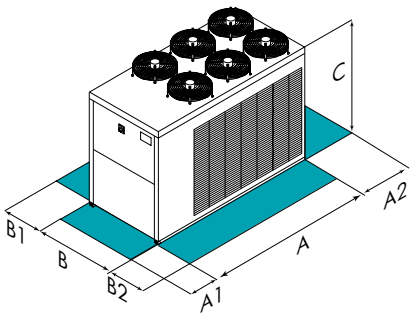
ELFOEnergy Magnum HW is a series of high temperature heat pumps, ideal for heating, cooling and hot water solution for centralised systems.
Benefits of ELFOEnergy Magnum HW:

- **EXTENDED OPERATING RANGE:** operation with outdoor air temperature down to -20°C and hot water production at 55°C. Hot water production up to 65°C at outdoor temperatures of down to -13°C.
- **HIGH UNIT RELIABILITY,** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | AxiTop | Vary Flow | Intelliplant

dimensions and clearances



Size	WSAN-XEM HW		35.4	40.4	45.4	50.4	55.4	60.4
A - Length		mm	3400	3400	3400	3400	4400	4400
B - Width		mm	1812	1812	1812	1812	1812	1812
C - Height		mm	1800	1800	1800	1800	1800	1800
A1		mm	1300	1300	1300	1300	1300	1300
A2		mm	750	750	750	750	750	750
B1		mm	1100	1100	1100	1100	1100	1100
B2		mm	1100	1100	1100	1100	1100	1100
Operating weight		kg	1285	1418	1441	1444	1735	1739

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery

technical data

Size WSAN-XEM HW			35.4	40.4	45.4	50.4	55.4	60.4
Cooling capacity (EN14511:2018)	(1)	kW	85,8	98,3	110	118	131	150
Total power input (EN14511:2018)	(1)	kW	31,5	35,4	37,5	41,7	48,4	54,8
EER (EN 14511:2018)	(1)	-	2,73	2,78	2,93	2,83	2,71	2,73
SEER	(4)	-	2,93	3,35	3,50	3,31	3,28	3,09
$\eta_{S,H}$	(4)	%	114,4	131,2	137,1	129,2	128,0	120,5
Heating capacity (EN14511:2018)	(2)	kW	109	123	134	144	165	185
Total power input (EN14511:2018)	(2)	kW	31,8	34,9	37,9	41,6	48,2	54,5
COP (EN 14511:2018)	(2)	-	3,43	3,52	3,53	3,45	3,42	3,39
Refrigeration circuits		Nr	2					
No. of compressors		Nr	4					
Type of compressors		-	SCROLL					
Standard airflow		l/s	16000	15567	15567	15567	20733	20733
Water flow-rate (User Side)		l/s	4,10	4,70	5,30	5,70	6,30	7,20
Standard power supply		V	400/3/50+N					
Sound pressure level	(3)	dB(A)	67	67	67	67	69	69
Directive ErP (Energy Related Products)								
SCOP - AVERAGE Climate - W35	(4)	-	3,52	3,95	3,90	3,88	3,54	3,64
$\eta_{S,H}$	(4)	%	138,0	155,0	153,0	152,0	139,0	143,0
SCOP - AVERAGE Climate - W55	(4)	-	3,03	3,19	3,15	3,22	3,12	3,04
$\eta_{S,H}$	(4)	%	118,0	125,0	123,0	126,0	122,0	119,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B

(3) The sound levels refer to the unit at full load, in the rated test conditions. The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field. Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature = 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

VARYP	VARYFLOW + (2 inverter pumps)
HYG1	Hydronic assembly with 1 ON/OFF pump
HYG2	Hydronic assembly with 2 ON/OFF pumps
VACSUX	User side DHW switching valve
ACC	Storage tank
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
SFSTR	Disposal for inrush current reduction
MF2	Multi-function phase monitor
CMSC10	Serial communication module for LonWorks supervisor
CMSLWX	LonWorks serial communication module
CMSC8	Serial communication module for BACnet supervisor
BACX	BACnet serial communication module
CMSC9	Serial communication module for Modbus supervisor
CMMBX	Serial communication module for supervisor (Modbus)
PFCP	Power factor correction capacitors (cosfi > 0.9)
PGFC	Finned coil protection grill
PGFCX	Finned coil protection grill
MHP	High and low pressure gauges
MHPX	High and low pressure gauges
IFWX	Steel mesh strainer on the water side
RCTX	Remote control
AVIBX	Anti-vibration mount support

Accessories whose code ends with "X" are supplied separately

WSAT-YSC4 WSAN-YSC4

80.3÷240.6

NEW PRODUCT

SPINchiller[4]

Water chiller
WSAT-YSC4: cooling only
WSAN-YSC4: reversible heat pump
Air cooled
Outdoor installation
Capacity from 216 to 675 kW

The **SPINchiller[4]** liquid chillers and heat pumps are high efficiency packaged units with ecological refrigerant R32 for medium and big-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the modular scroll technology** that adapts the capacity supplied to the actual energy demand required by the system.

- **DUAL ENERGY VERSION:** the standard EXCELLENCE version with a class A Eurovent rating offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version also provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.
- **HIGH UNIT RELIABILITY,** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

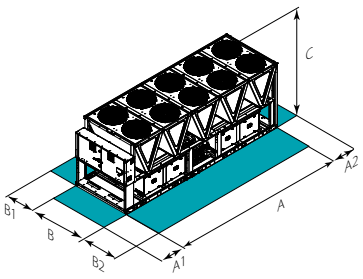
EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

functions and features

Cooling only (WSAT-YSC4)
Heat pump (WSAN-YSC4)
Air cooled
Outdoor installation
R-32
Hermetic Scroll
Electronic expansion valve
Ecobreeze
Hydropack
Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

SC-EXC Compressors soundproofing (SC)-Excellence
SC-PRM Compressors soundproofing (SC)-Premium

* PRELIMINARY DATA

Size		WSAT-YSC4	80.3	100.4	115.4	140.4	155.5	175.5	190.5	210.6	225.6	240.6
SC-EXC	A - Length	mm	2925	2925	4175	4175	5417	5417	5417	6680	6680	6680
SC-EXC	B - Width	mm	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228
SC-EXC	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535
SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700
SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	B2	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
SC-EXC	Operating weight	kg	1879	1898	2345	2494	2979	3152	3314	3396	3943	4100

Size		WSAT-YSC4	90.3	110.4	130.4	145.4	170.5	185.5	210.6	225.6	240.6
SC-PRM	A - Length	mm	2925	2925	2925	4175	4175	4175	5417	5417	5417
SC-PRM	B - Width	mm	2228	2228	2228	2228	2228	2228	2228	2228	2228
SC-PRM	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535
SC-PRM	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-PRM	A2	mm	700	700	700	700	700	700	700	700	700
SC-PRM	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	B2	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250
SC-PRM	Operating weight	kg	1893	2000	2116	2576	2763	2938	3176	3563	3684

Size		WSAN-YSC4	80.3*	90.4*	100.4*	110.4*	120.4*	130.4*	145.4*	160.4*	185.5*	210.6*	225.6*	240.6*
SC-EXC	A - Length	mm	2950	3925	3925	3925	3925	4900	4900	4900	5817	5817	6850	6850
SC-EXC	B - Width	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
SC-EXC	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535
SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700
SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200

Size		WSAN-YSC4	90.3*	100.3*	110.4*	120.4*	130.4*	145.4*	160.4*	185.5*	210.6*	225.6*	240.6*
SC-PRM	A - Length	mm	2950	2950	2950	2950	3925	3925	3925	4900	4900	5817	5817
SC-PRM	B - Width	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
SC-PRM	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535
SC-PRM	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-PRM	A2	mm	700	700	700	700	700	700	700	700	700	700	700
SC-PRM	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200

versions and configurations

VERSION:

EXC Excellence (Standard)

PRM Premium

ENERGY RECOVERY:

- Energy recovery: not required (Standard)

D Partial energy recovery

R Total energy recovery (ONLY WSAT-YSC4)

ACOUSTIC CONFIGURATION:

ST Standard acoustic configuration (Standard)

SC Acoustic configuration with compressor soundproofing (Standard)

EN Supersilenced acoustic configuration

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

EVAPORATOR:

EVPHE Plate heat exchanger (Standard)

EVFTP Shell and tube evaporator

technical data

Size			WSAT-YSC4		80.3	100.4	115.4	130.4	155.5	170.5	185.5	210.6	225.6	240.6
ST/SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW		222	267	314	364	423	472	520	573	624	675
ST/SC-EXC	Total power input (EN14511:2018)	(1)	kW		69,4	85,5	99,8	115	135	149	167	184	200	218
ST/SC-EXC	EER (EN14511:2018)	(1)	-		3,20	3,12	3,15	3,17	3,15	3,16	3,11	3,12	3,12	3,10
ST/SC-EXC	SEER	(4)	-		4,70	4,67	4,78	4,75	4,92	5,00	4,96	4,94	4,96	4,90
ST/SC-EXC	$\eta_{s,c}$	(4)	%		185,2	183,8	188,3	187,1	193,6	197,0	195,5	194,6	195,4	193,1
ST/SC-EXC	Refrigeration circuits		Nr						2					
ST/SC-EXC	No. of compressors		Nr		3		4			5			6	
ST/SC-EXC	Type of compressors		-						SCROLL					
ST/SC-EXC	Standard power supply		V						400/3~/50					
ST-EXC	Sound pressure level	(3)	dB(A)		71	72	72	73	74	74	75	75	75	76
SC-EXC	Sound pressure level	(3)	dB(A)		68	69	69	70	70	71	71	71	71	72
EN-EXC	Sound pressure level	(3)	dB(A)		65	65	66	66	66	67	68	67	67	68

Size			WSAT-YSC4		90.3	110.4	130.4	145.4	170.5	185.5	210.6	225.6	240.6
ST/SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW		232	291	333	384	443	483	537	590	644
ST/SC-PRM	Total power input (EN14511:2018)	(1)	kW		84,5	102	124	139	156	179	199	209	233
ST/SC-PRM	EER (EN14511:2018)	(1)	-		2,74	2,85	2,70	2,77	2,84	2,70	2,70	2,82	2,76
ST/SC-PRM	SEER	(4)	-		4,38	4,48	4,46	4,47	4,65	4,64	4,61	4,69	4,62
ST/SC-PRM	$\eta_{s,c}$	(4)	%		172,3	176,1	175,4	175,8	183,0	182,5	181,2	184,7	181,9
ST/SC-PRM	Refrigeration circuits		Nr						2				
ST/SC-PRM	No. of compressors		Nr		3		4			5		6	
ST/SC-PRM	Type of compressors		-						SCROLL				
ST/SC-PRM	Standard power supply		V						400/3~/50				
ST-PRM	Sound pressure level	(3)	dB(A)		71	72	73	73	74	74	75	76	76
SC-PRM	Sound pressure level	(3)	dB(A)		68	69	70	69	70	70	71	72	72
EN-PRM	Sound pressure level	(3)	dB(A)		65	67	67	67	67	68	69	69	69

Size			WSAN-YSC4		80.3*	90.4*	100.4*	110.4*	120.4*	130.4*	145.4*	160.4*	185.5*	210.6*	225.6*	240.6*
ST/SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW		216	242	263	291	321	354	389	431	501	553	607	654
ST/SC-EXC	Total power input (EN14511:2018)	(1)	kW		72,7	77,3	84,6	94,8	106	114	127	144	165	187	198	219
ST/SC-EXC	EER (EN14511:2018)	(1)	-		2,97	3,13	3,11	3,07	3,04	3,10	3,06	3,00	3,04	2,95	3,06	2,99
ST/SC-EXC	SEER	(4)	-		4,45	4,79	4,74	4,81	4,84	4,86	4,78	4,72	4,88	4,84	4,89	4,86
ST/SC-EXC	$\eta_{s,c}$	(4)	%		175,0	188,6	186,6	189,4	190,6	191,4	188,2	185,8	192,2	190,6	192,6	191,4
ST/SC-EXC	Heating capacity (EN14511:2018)	(2)	kW		220	250	275	300	330	365	405	440	515	570	625	670
ST/SC-EXC	Total power input (EN14511:2018)	(2)	kW		69,2	79,4	85,4	93,2	102	115	123	134	157	175	195	209
ST/SC-EXC	COP (EN14511:2018)	(2)	-		3,18	3,15	3,22	3,22	3,24	3,18	3,29	3,28	3,28	3,25	3,20	3,20
ST/SC-EXC	Refrigeration circuits		Nr							2						
ST/SC-EXC	No. of compressors		Nr		3				4				5		6	
ST/SC-EXC	Type of compressors		-							SCROLL						
ST/SC-EXC	Standard power supply		V							400/3/50						
SC-EXC	Sound pressure level	(3)	dB(A)		68	70	70	70	70	71	71	71	71	71	72	72
EN-EXC	Sound pressure level	(3)	dB(A)		65	67	67	67	67	68	68	68	68	68	69	69
Directive ErP (Energy Related Products)																
SCOP - AVERAGE Climate - W35		(4)	-		3,73	3,88	3,92	4,10	4,08	4,05	3,98	4,07	-	-	-	-
$\eta_{s,H}$		(4)	%		146,0	152,0	154,0	161,0	160,0	159,0	156,0	160,0	-	-	-	-

Size			WSAN-YSC4		90.3*	100.3*	110.4*	120.4*	130.4*	145.4*	160.4*	185.5*	210.6*	225.6*	240.6*
ST/SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW		231	254	277	301	333	367	403	479	530	583	630
ST/SC-PRM	Total power input (EN14511:2018)	(1)	kW		82,5	94,1	103	116	119	136	154	171	200	207	227
ST/SC-PRM	EER (EN14511:2018)	(1)	-		2,80	2,70	2,68	2,60	2,80	2,69	2,61	2,80	2,65	2,81	2,78
ST/SC-PRM	SEER	(4)	-		4,26	4,20	4,35	4,33	4,55	4,57	4,28	4,64	4,62	4,66	4,64
ST/SC-PRM	$\eta_{s,c}$	(4)	%		167,4	165,0	171,0	170,2	179,0	179,8	168,2	182,6	181,8	183,4	182,6
ST/SC-PRM	Heating capacity (EN14511:2018)	(2)	kW		230	255	280	300	335	375	415	485	540	590	640
ST/SC-PRM	Total power input (EN14511:2018)	(2)	kW		74,9	83,5	91,8	98,0	110	123	133	153	173	188	203
ST/SC-PRM	COP (EN14511:2018)	(2)	-		3,07	3,06	3,05	3,06	3,05	3,06	3,13	3,17	3,12	3,13	3,15
ST/SC-PRM	Refrigeration circuits		Nr							2					
ST/SC-PRM	No. of compressors		Nr			3			4			5		6	
ST/SC-PRM	Type of compressors		-							SCROLL					
ST/SC-PRM	Standard power supply		V							400/3/50					
SC-PRM	Sound pressure level	(3)	dB(A)		69	70	70	70	70	70	70	71	71	72	72
EN-PRM	Sound pressure level	(3)	dB(A)		66	67	67	67	67	67	67	68	68	69	69
Directive ErP (Energy Related Products)															
SCOP - AVERAGE Climate - W35		(4)	-		3,47	3,64	3,83	3,87	3,78	3,64	3,82	3,91	-	-	-
$\eta_{s,H}$		(4)	%		136,0	143,0	150,0	152,0	148,0	143,0	150,0	153,0	-	-	-

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering external exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45 °C. Entering external exchanger air temperature = 7°C D.B./6°C W.B.

(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

* PRELIMINARY DATA

accessories

1PM	Hydropack with 1 pump
1PMV	Hydropack user side with nr.1 inverter pump
1PMH	Hydropack with nr.1 high static pressure pump
1PMVH	Hydropack user side with nr.1 high static pressure inverter pump
2PM	Hydropack user side with 2 pumps
2PMV	Hydropack user side with no.2 of inverter pumps
2PMH	Hydropack user side with nr.2 high static pressure pump
2PMVH	Hydropack user side with nr.2 high static pressure inverter pump
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
ACC	Storage tank
AMMX	Spring antivibration mounts
CONTA2	Energy meter
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC1	Set-point compensation with 4-20 mA signal
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Power factor correction capacitors (cosfi > 0.9)
SFSTR	Disposal for inrush current reduction
RE-25	Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
MHP	High and low pressure gauges
SDV	Cutoff valve on compressor supply and return
AMMSX	Spring antivibration mounts
RPRI	Refrigerant leak detector in the casing
PPBM	Microchannel coils protection panels
PGCC	Finned coil protection grilles and compressor compartment
DML4-20	Demand limit with 4-20 mA signal
DML0-10	Demand limit with 0-10 V signal
Only WSAT-YSC4:	
CCME	E-coated microchannel coil
Only WSAN-YSC4:	
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
PGCCH	Anti-hail protection grilles

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WSAT-XSC3

260.6÷480.8

SPINchiller^3

Water chiller
WSAT-XSC3: cooling only
Air cooled
Outdoor installation
Capacity from 734 to 1350 kW

The **SPINchiller^3** heat pumps and liquid chillers are high efficiency packaged units for medium and big-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the modular scroll technology** that adapts the capacity supplied to the actual energy demand required by the system.

- **EXCELLENCE ENERGY VERSION:** the standard EXCELLENCE version with a class A Eurovent rating offers the highest energy efficiency both during the seasonal cycle and under full load conditions.
- **HIGH UNIT RELIABILITY,** thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

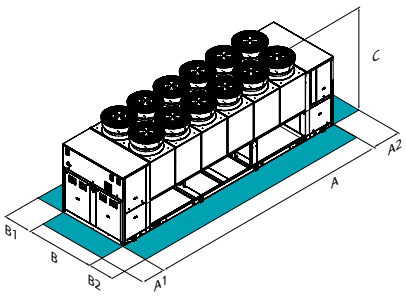
EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

functions and features

Cooling only
Air cooled
Outdoor installation
R-410A
Hermetic Scroll
HydroPack
AxiTop
Electronic expansion valve
Intelliplant

dimensions and clearances



Size	WSAT-XSC3		260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8
SC-EXC	A - Length	mm	7948	7948	9900	9900	9900	9900	11989	11989	11989
SC-EXC	B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243
SC-EXC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-EXC	Operating weight	kg	5837	5963	6692	6881	7138	7375	8768	9076	9352

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **EXC** Excellence (Standard)

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery
- **R** Total energy recovery

ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Extremely low noise acoustic configuration

TYPE FAN EXTERNAL SECTION:

- **AXIX** High efficiency diffuser for axial fan - AxiTop (Standard)
- **NAXI** High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size			WSAT-XSC3	260.6	280.6	300.6	320.6	340.6	360.6	400.8	440.8	480.8
SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	734	791	852	905	961	1016	1143	1242	1350
SC-EXC	Total power input (EN14511:2018)	(1)	kW	236	253	274	292	309	328	362	400	435
SC-EXC	EER (EN14511:2018)	(1)	-	3,11	3,12	3,11	3,10	3,10	3,10	3,16	3,10	3,10
SC-EXC	SEER	(4)	-	4,61	4,59	4,60	4,65	4,62	4,56	4,66	4,62	4,56
SC-EXC	$\eta_{s,c}$	(4)	%	181,5	180,8	181,0	183,0	181,9	179,2	183,3	182,0	179,4
SC-EXC	Refrigeration circuits		Nr	2							4	
SC-EXC	No. of compressors		Nr	6							8	
SC-EXC	Type of compressors		-	SCROLL								
SC-EXC	Standard power supply		l/s	73120	72035	97494	96046	95118	94191	116663	115405	114147
SC-EXC	Water flow-rate (User side)		l/s	35,0	37,8	40,7	43,3	45,9	48,5	54,6	59,4	64,5
SC-EXC	Standard power supply		V									
SC-EXC	Sound pressure level	(3)	dB(A)	73	73	75	75	75	76	75	75	76

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. Entering external exchanger air temperature = 7°C D.B./6°C W.B

(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type
4PM	Hydropack user side with 4 pumps
6PM	Hydropack user side with 6 pumps
6PMV	Hydropack user side with 6 inverter pumps
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
AMMX	Spring antivibration mounts
PGFC	Finned coil protection grill
PGCCH	Anti-hail protection grilles
CONTA2	Energy meter
RPRPDI	Refrigerant leak detector with pump down function in the casing
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Power factor correction capacitors (cosfi > 0.9)
SFSTR	Disposal for inrush current reduction
RE-20	Electrical panel antifreeze protection for min. outdoor temperature down to -20°C
RE-25	Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
RE-30	Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
RE-35	Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
RE-39	Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
MHP	High and low pressure gauges
SDV	Cutoff valve on compressor supply and return
A900	900 l. storage tank
A1800	1800 l. storage tank
MF2	Multi-function phase monitor
PSPS	Set up for single power supply
CREFO	Device for fan consumption reduction of the external section, on/off type
REGBT	Device for the condensing coil partialization

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WSAN-XSC3 MF

90.4÷160.4

SPINchiller³ MF

Multifunction reversible heat pump
Air cooled
Outdoor installation
Capacity from 259 to 434 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

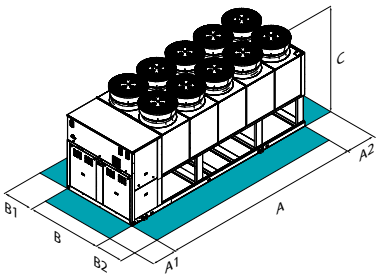
SPINCHILLER³ MULTIFUNCTION is the high efficiency packaged unit for centralized systems able to produce heating and cooling energy both simultaneously and independently.

- **VERSATILE AND EFFICIENT:** thanks to the total energy recovery reversible heat pump technology, the unit meets practically every chilled water, hot water and domestic hot water system requirement automatically and with high energy efficiency in all load conditions.
- **MODULAR SCROLL TECHNOLOGY:** designed for outdoor installation, SPINchiller³ MF employs modular Scroll technology with several compressors on the same refrigeration circuit. It stands out for the very high SEER efficiency during the seasonal operation cycle.
- **INDUSTRIALISED SYSTEM:** packaged unit can reduce the initial system costs even by 40% compared to a traditional solution with separated production, for example using chillers or boilers. Most of the routine system activities are in fact realized by Clivet inside the unit.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | HydroPack | AxiTop | Electronic expansion valve | Intelliplant

dimensions and clearances



Size WSAN-XSC3 MF		90.4	100.4	110.4	120.4	140.4	160.4
A - Length	mm	4149	4149	4149	4149	5518	5518
B - Width	mm	2243	2243	2243	2243	2243	2243
C - Height	mm	2668	2668	2668	2668	2668	2668
A1	mm	1500	1500	1500	1500	1500	1500
A2	mm	700	700	700	700	700	700
B1	mm	1200	1200	1200	1200	1200	1200
B2	mm	1200	1200	1200	1200	1200	1200
Operating weight	kg	3119	3185	3259	3362	3932	4006

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VERSION:

EXC Excellence (Standard)

CONFIGURATION:

4T Configuration for 4-pipe system (Standard)

2T Configuration for 2-pipe system

ENERGY RECOVERY:

R Total energy recovery (Standard)

ACOUSTIC CONFIGURATION:

SC Acoustic configuration with compressor soundproofing (Standard)

EN Extremely low noise acoustic configuration

TYPE FAN EXTERNAL SECTION:

AXIX High efficiency diffuser for axial fan - AxiTop (Standard)

NAXI High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size WSAN-XSC3 MF			90.4	100.4	110.4	120.4	140.4	160.4
Cooling 100% - Heating 0%								
Cooling capacity (EN14511:2018)	(1)	kW	259	275	298	340	385	434
Total power input (EN14511:2018)	(1)	kW	87,9	95,2	104	118	135	150
EER (EN14511:2018)	(1)	-	2,95	2,89	2,86	2,88	2,84	2,90
SEER	(6)	-	4,16	4,14	4,13	4,16	4,16	4,13
$\eta_{s,c}$	(6)	%	163,4	162,7	162,1	163,4	163,5	162,3
Cooling 0% - Heating 100%								
Heating capacity (EN14511:2018)	(2)	kW	295	326	355	395	445	492
Total power input (EN14511:2018)	(2)	kW	81,9	89,5	97,0	106	121	133
COP (EN14511:2018)	(2)	-	3,60	3,64	3,66	3,72	3,69	3,70
Cooling 100% - Heating 100%								
Cooling capacity (EN14511:2018)	(3)	kW	255	275	305	344	397	442
Heating capacity (EN14511:2018)	(3)	kW	331	357	396	447	513	573
Total power input (EN14511:2018)	(3)	kW	76,6	82,6	91,2	103	117	132
Overall efficiency (EN14511:2018)	(4)	-	7,65	7,64	7,69	7,66	7,76	7,68
Refrigeration circuits		Nr	2					
No. of compressors		Nr	4					
Type of compressors		-	SCROLL					
Standard power supply		V	400/3~/50					
SC-EXC Sound pressure level	(5)	dB(A)	72	72	72	72	72	73
EN-EXC Sound pressure level	(5)	dB(A)	66	66	66	66	66	67
Directive ErP (Energy Related Products)								
SCOP - AVERAGE Climate - W35	(6)	-	4,08	4,10	4,12	3,95	4,16	3,94
$\eta_{s,H}$	(6)	%	160,0	161,0	162,0	155,0	163,0	155,0

(1) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7°C, Entering external exchanger air temperature = 35°C

(2) Data compliant to Standard EN 14511:2018 referred to the following conditions: Hot side water temperature = 40/45°C, Temperatura aria entrante allo scambiatore esterno = 7°C D.B./6°C W.B

(3) Data compliant to Standard EN 14511:2018 referred to the following conditions: Cold side water temperature = 12/7 °C, Hot side water temperature = 40/45°C

(4) Overall efficiency = (Heating capacity + Heating capacity) / (Total power input)

(5) Sound levels refer to units with full load under nominal test conditions. The sound pressure level refers to a distance of 1 meter from the outer surface of the unit operating in open field. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data refer to the following conditions: Cold side water temperature = 12/7 °C; outdoor air temperature = 35°C

(6) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type
2PM	Hydropack load side with 2 pumps (sizes 90.4÷240.4, 360.8÷400.8)
3PM	Hydropack load side with 3 pumps (sizes 90.4÷240.4, 360.8÷400.8)
2PMV	Hydropack user side with no.2 of inverter pumps (sizes 90.4÷120.4)
3PMV	Hydropack user side with no.3 of inverter pumps (sizes 90.4÷240.4, 360.8÷400.8)
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
HYGR2V	Recovery side hydronic unit with 2 inverter pumps
HYGR3V	Hydronic assembly recovery side with no.3 of inverter pumps
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
A550	550 l. storage tank
A700	700 l. storage tank
A900	900 l. storage tank
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
AMMX	Spring antivibration mounts
PGFC	Finned coil protection grill
PGCCH	Anti-hail protection grilles
CONTA2	Energy meter
RPRPDI	Refrigerant leak detector with pump down function in the casing
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Power factor correction capacitors (cosfi > 0.9)
SFSTR	Disposal for inrush current reduction
MHP	High and low pressure gauges
SDV	Cutoff valve on compressor supply and return
OHE	Limit extension kit in heating up to -10°C (W.B.)
PSPS	Set up for single power supply

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WSAT-XSC3 FC

90.4÷360.6

SPINchiller³ FC

Water chiller with FREE-COOLING
Air cooled
Outdoor installation
Capacity from 299 to 1114 kW

ErP compliant

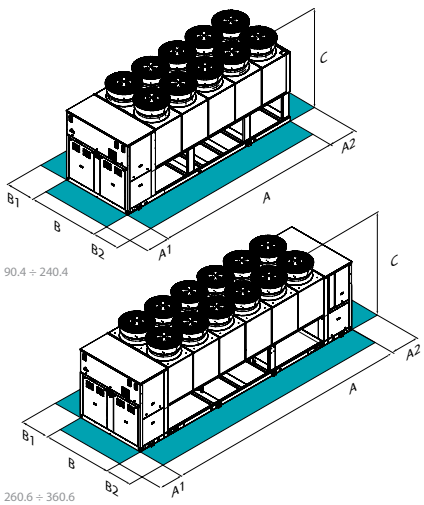
The **SPINchiller³ FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **SIGNIFICANT ENERGY SAVINGS**: when the fresh air temperature is lower than the return water temperature of the system, the FREE-COOLING system recovers coolness from the external setting and reduces compressor operations until they are completely stilled. In this way the requested cooling capacity is supplied at no cost.
- **EVEN IN GLYCOL FREE VERSION:** does not require the addition of an antifreeze substance in the hydraulic circuit used. Therefore, it is particularly suitable for large-sized systems and wherever laws and regulations limit the use of antifreeze substances inside buildings.

functions and features

Cooling only | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | FREE-COOLING | HydroPack | AxiTop | Electronic expansion valve | Intelliplant

dimensions and clearances



90.4 ÷ 240.4

260.6 ÷ 360.6

Size WSAT-XSC3 FC		90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	4543	4543	4543	4543	5518	5518	5518	6454	6454	6454
B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
A2	mm	700	700	700	700	700	700	700	700	700	700
B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	3940	3994	4037	4105	4593	4645	4899	5758	5851	5899

Size WSAT-XSC3 FC		260.6	280.6	300.6	320.6	340.6	360.6
A - Length	mm	8648	8648	10598	10598	10598	10598
B - Width	mm	2243	2243	2243	2243	2243	2243
C - Height	mm	2668	2668	2668	2668	2668	2668
A1	mm	1500	1500	1500	1500	1500	1500
A2	mm	1500	1500	1500	1500	1500	1500
B1	mm	1200	1200	1200	1200	1200	1200
B2	mm	1200	1200	1200	1200	1200	1200
Operating weight	kg	7184	7274	8632	8714	8817	8920

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

EXC Excellence (Standard)

ACOUSTIC CONFIGURATION:

SC Acoustic configuration with compressor soundproofing (Standard)
EN Extremely low noise acoustic configuration

FREE-COOLING:

FCD Direct FREE-COOLING (Standard)
FCI No-glycol FREE-COOLING

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

CREFP Device for fan consumption reduction of the external section at variable speed (phase-cutting) (standard in the SC acoustic config.)
CREFB Device for fan consumption reduction of the external section, ECOBREEZE type (standard in the EN acoustic config.)

TYPE FAN EXTERNAL SECTION:

AXIX High efficiency diffuser for axial fan - AxiTop (Standard)
NAXI High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size	WSAT-XSC3 FC			90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.6	280.6	300.6	320.6	340.6	360.6
Free-Cooling Off																			
SC-EXC	Cooling capacity	(1)	kW	299	325	361	397	452	509	566	632	664	718	799	845	955	1008	1059	1114
SC-EXC	Total power input	(1)	kW	79,5	86,8	96,6	110	123	139	164	174	193	214	235	255	265	286	308	330
SC-EXC	EER at full load	(1)	-	3,76	3,75	3,74	3,62	3,68	3,65	3,46	3,64	3,45	3,36	3,40	3,31	3,61	3,53	3,44	3,38
SC-EXC	SEER	(4)	-	4,64	4,65	4,62	4,56	4,66	4,65	4,59	4,64	4,62	4,56	4,61	4,59	4,60	4,65	4,62	4,56
SC-EXC	$\eta_{s,c}$	(4)	%	182,7	183,0	182,0	179,3	183,5	182,9	180,4	182,6	182,0	179,4	181,5	180,8	181,0	183,0	181,9	179,2
Free-Cooling diretto on																			
SC-EXC	Cooling capacity	(2)	kW	278	284	294	304	425	439	448	570	574	582	734	740	885	894	913	939
SC-EXC	Total power input	(2)	kW	9,8	9,9	9,9	10,1	13,0	13,3	13,5	16,5	16,6	16,7	20,2	20,2	26,6	26,6	26,6	26,6
SC-EXC	EER at full load	(2)	-	28,43	28,83	29,85	30,16	32,77	33,08	33,31	34,63	34,62	34,85	36,34	36,63	33,27	33,61	34,32	35,30
SC-EXC	Refrigeration circuits		Nr	2															
SC-EXC	No. of compressors		Nr	4										6					
SC-EXC	Type of compressors		-	SCROLL															
SC-EXC	Standard power supply		V	400/3~/50															
SC-EXC	Sound pressure level	(3)	dB(A)	71	72	72	72	72	73	74	74	74	74	73	73	74	74	74	75
EN-EXC	Sound pressure level	(3)	dB(A)	66	66	66	67	67	68	70	70	70	71	68	68	69	70	70	70

(1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C
(2) Free-Cooling only data (compressors OFF) referred to the following conditions: internal exchanger water temperature = 15 / 10°C; entering external exchanger air temperature = 2°C D.B./1°C W.B.; glycol 30%
(3) The sound levels refer to standard unit with Axitop (no accessories) at full load, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measures are according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification, which provides for a tolerance of 3 dB(A) on the sound power level, which is the only acoustic data to be considered binding. If unit is set without Axitop, the sound power level presents an increase up to 3 dB(A). Data referred to the following conditions: Internal exchanger water = 12/7°C; Outdoor air temperature =,35°C
(4) Data calculated according to the EN 14825:2018 Regulation

SC-EXC Compressors soundproofing (SC)-Excellence

accessories

2PM	Hydropack user side with 2 pumps
3PM	Hydropack user side with 3 pumps
4PM	Hydropack user side with 4 pumps
6PM	Hydropack user side with 6 pumps
2PMV	Hydropack user side with no.2 of inverter pumps
3PMV	Hydropack user side with no.3 of inverter pumps
6PMV	Hydropack user side with no.6 of inverter pumps
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
AMMX	Spring antivibration mounts
PGFC	Finned coil protection grill
PGCCH	Anti-hail protection grilles
CONTA2	Energy meter
RPRPDI	Refrigerant leak detector with pump down function in the casing
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Power factor correction capacitors (cosfi > 0.9)
SFSTR	Disposal for inrush current reduction
MHP	High and low pressure gauges
SDV	Cutoff valve on compressor supply and return
WOGLY	Unit supplied without glycol solution (FCI only)
A550	550 l. storage tank (FCD only)
A700	700 l. storage tank (FCD only)
A900	900 l. storage tank (FCD only)
PSPS	Set up for single power supply

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

MSRT-XSC3 + CEV-XT
MSRN-XSC3 + CEV-XN

90.4÷240.4
90.4÷160.4

ErP
ErP compliant

Remotex

Water chiller in two sections
MSRT-XSC3 + CEV-XT: cooling only
MSRN-XSC3 + CEV-XN: reversible heat pump
Air-cooled condenser
Internal installation
Capacity from 240 to 683 kW

Remotex is the new-concept liquid cooler in two sections, which expands the possibilities for application of traditional monobloc products

- **MORE PROTECTED AND RELIABLE:** double refrigeration circuit on all models. All major system components are inside the unit, fully protected from external agents. No external water pipes: in cold climates winter draining of the system is no longer necessary to protect it from frost.
- **MORE FLEXIBLE, SPACE SAVING:** each internal section has more combinations with the external section, all standardised and specifically optimised: it consistently offers the best choice for the specific constraints of each project. Remotex is scalable: further simplification in design and implementation of technical rooms, or in change of use destination.
- **MORE EFFICIENT:** Multiscroll Technology by Clivet: seasonal efficiency for a 30% saving over traditional solutions .

functions and features

Cooling only (MSRT-XSC3) | Heat pump (MSRN-XSC3) | Air cooled | Indoor installation (MSRT-XSC3 / MSRN-XSC3) | Outdoor installation (CEV-XT / CEV-XN) | R-410A | Hermetic Scroll | HydroPack | Electronic expansion valve | Axitop | Intelliplant

accessories

D	Partial energy recovery
B	Water low temperature
CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type
2PM	Hydropack user side with 2 pumps
3PM	Hydropack user side with 3 pumps
2PMV	Hydropack user side with no.2 of inverter pumps
3PMV	Hydropack user side with no.3 of inverter pumps
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
AMRX	Rubber antivibration mounts
CONTA2	Energy meter
RPRPDI	Refrigerant leak detector with pump down function in the casing
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
ECS	ECOSHARE function for the automatic management of a group of units
PFCP	Power factor correction capacitors (cosfi > 0.9)
SFSTR	Disposal for inrush current reduction
RE-20	Electrical panel antifreeze protection for min. outdoor temperature down to -20°C
RE-25	Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
RE-30	Electrical panel antifreeze protection for min. outdoor temperature down to -30°C
RE-35	Electrical panel antifreeze protection for min. outdoor temperature down to -35°C
RE-39	Electrical panel antifreeze protection for min. outdoor temperature down to -39°C
MHP	High and low pressure gauges
SDV	Cutoff valve on compressor supply and return
PTCO	Set up for shipping via container

Accessories whose code ends with "X" are supplied separately

Compact control unit

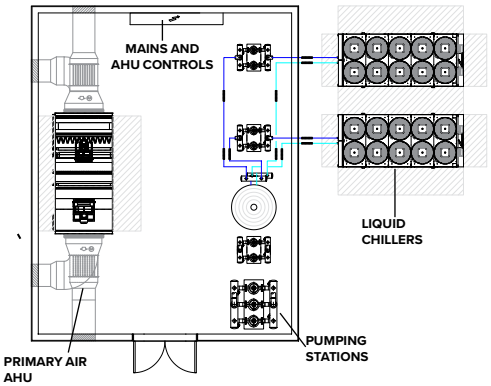
The Remotex internal section contains all functionalities and components necessary for correct operation, already optimised and tested by Clivet for maximum efficiency and reliable results. The Hydropack pumping units are also available inside the section, ready for use.

Scalable

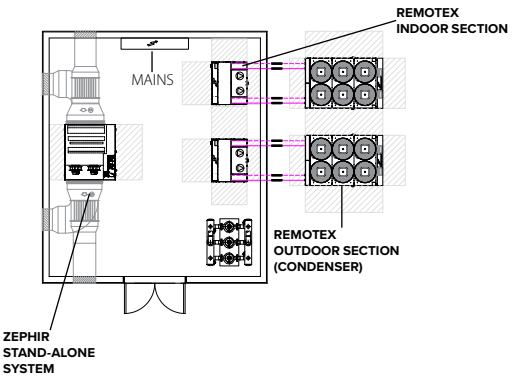
The simple addition of further sections adjusts the capacity produced for the actual needs of the building. Always adding less space than traditional solutions. In this way, the investment is also diluted over time.

A unique system

TRADITIONAL DESIGN



COMPACT AND QUIETER DESIGN WITH REMOTEX



Remotex is perfect in combination with ZEPHIR, the innovative autonomous primary air system for thermodynamic energy recovery: smaller technical rooms, maximum simplification and rapidity of plant construction, even more space and silent operation outside.

technical data

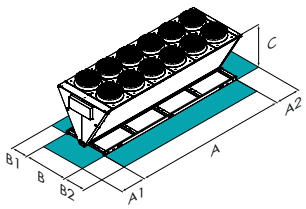
Size	MSRT-XSC3			90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
-	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2
-	No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4
-	Type of compressors		-	SCROLL									
-	Standard power supply		V	400/3~/50									
Excellence - Soundproofing (Standard)													
SC-EXC	Cooling capacity	(1)	kW	259	278	309	346	399	441	503	561	615	683
SC-EXC	Total power input	(1)	kW	80,4	91,2	99,0	110	123	141	161	174	193	210
SC-EXC	EER	(1)	-	3,23	3,05	3,13	3,13	3,26	3,12	3,13	3,23	3,19	3,25
SC-EXC	SEER	(3)	-	4,73	4,57	4,68	4,68	4,81	4,55	4,62	4,68	4,67	4,73
SC-EXC	$\eta_{s,c}$	(3)	%	186,0	179,9	184,2	184,3	189,3	179,0	181,9	184,2	183,9	186,0
SC-EXC	**Size**		**CEV-XT**	**90.0**	**105.0**	**115.0**	**120.0**	**145.0**	**160.0**	**180.0**	**200.0**	**210.0**	**230.0**
SC-EXC	No. fans		Nr	4	6	6	6	6	8	8	10	10	10
SC-EXC	Standard airflow		l/s	23553	36583	36143	35507	34218	47084	46331	58684	57754	56458
SC-EXC	Sound pressure level	(2)	dB(A)	50	52	52	52	52	53	53	53	53	53
Excellence - Supersilenced													
EN-EXC	Cooling capacity	(1)	kW	261	281	306	352	399	435	505	550	613	681
EN-EXC	Total power input	(1)	kW	79,9	87,3	98,2	107	122	141	159	174	192	207
EN-EXC	EER	(1)	-	3,27	3,22	3,12	3,28	3,28	3,09	3,18	3,15	3,19	3,29
EN-EXC	SEER	(3)	-	4,75	4,80	4,72	4,82	4,81	4,59	4,81	4,79	4,71	4,82
EN-EXC	$\eta_{s,c}$	(3)	%	186,8	189,1	185,9	189,9	189,4	180,5	189,5	188,7	185,4	189,9
EN-EXC	**Size**		**CEV-XT**	**115.0**	**120.0**	**130.0**	**150.0**	**160.0**	**190.0**	**200.0**	**230.0**	**240.0**	**280.0**
EN-EXC	No. fans		Nr	6	6	6	8	8	10	10	10	12	12
EN-EXC	Standard airflow		l/s	28959	28247	27792	38367	37417	47772	46598	44348	55756	53050
EN-EXC	Sound pressure level	(2)	dB(A)	46	46	46	48	48	48	48	48	49	49

(1) Data refer to the following conditions: internal water exchanger temperature = 12/7 °C; outdoor air temperature = 35°C
(2) Sound levels refer to the external section, under nominal test conditions. The sound pressure is measured at 10 m from the external surface of the unit in open field conditions.
(3) Data calculated according to the EN 14825:2016 Regulation

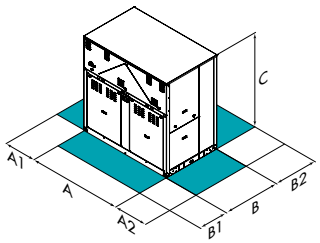
The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

SC-EXC Compressor soundproofing (SC)-Excellence
EN-EXC Supersilenced (EN)-Excellence

dimensions and clearances



CEV-XT
(OUTDOOR SECTION)



MSRT-XSC3
(INDOOR SECTION)

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	MSRT-XSC3		90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length		mm	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
B - Width		mm	1150	1150	1150	1150	1150	1150	1150	1150	1150	1150
C - Height		mm	2210	2210	2210	2210	2210	2210	2210	2210	2210	2210
A1		mm	700	700	700	700	700	700	700	700	700	700
A2		mm	700	700	700	700	700	700	700	700	700	700
B1		mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2		mm	500	500	500	500	500	500	500	500	500	500
Operating weight		kg	1447	1611	1668	1722	1773	1818	2034	2092	2228	2357

Size	CEV-XT		90.0	105.0	115.0	120.0	130.0	145.0
A - Length		mm	2750	3700	3700	3700	3700	3700
B - Width		mm	2230	2230	2230	2230	2230	2230
C - Height		mm	2400	2400	2400	2400	2400	2400
A1		mm	1100	1100	1100	1100	1100	1100
A2		mm	700	700	700	700	700	700
B1		mm	1500	1500	1500	1500	1500	1500
B2		mm	1500	1500	1500	1500	1500	1500
Operating weight		kg	684	836	904	922	938	1018

Size	CEV-XT		150.0	160.0	180.0	190.0	200.0	210.0	230.0	240.0	280.0
A - Length		mm	4700	4700	4700	5670	5670	5670	5670	6650	6650
B - Width		mm	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height		mm	2400	2400	2400	2400	2400	2400	2400	2400	2400
A1		mm	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2		mm	700	700	700	700	700	700	700	700	700
B1		mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
B2		mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
Operating weight		kg	1238	1198	1356	1634	1664	1690	1820	1758	1944

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

technical data

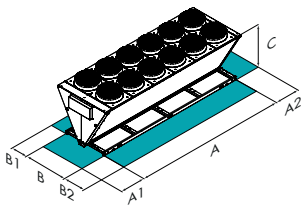
Size	MSRN-XSC3			90.4	100.4	110.4	120.4	140.4	160.4
-	Refrigeration circuits		Nr	2	2	2	2	2	2
-	No. of compressors		Nr	4	4	4	4	4	4
-	Type of compressors		-	SCROLL					
-	Standard power supply		V	400/3~/50					
Excellence - Soundproofing (Standard)									
SC-EXC	Cooling capacity	(1)	kW	240	260	285	320	366	407
SC-EXC	Total power input	(1)	kW	87,0	95,5	105	117	135	151
SC-EXC	EER	(1)	-	2,76	2,73	2,71	2,73	2,71	2,70
SC-EXC	SEER	(3)	-	4,13	4,07	4,03	4,00	4,11	4,10
SC-EXC	$\eta_{s,c}$	(3)	%	162,3	160,0	158,1	157,0	161,3	161,0
SC-EXC	Heating capacity	(4)	kW	280	310	337	371	419	473
SC-EXC	Total power input	(4)	kW	88,6	97,1	105	115	131	145
SC-EXC	COP	(4)	-	3,16	3,19	3,21	3,23	3,20	3,26
SC-EXC	**Size**		**CEV-XN**	**105.0**	**105.0**	**115.0**	**130.0**	**160.0**	**170.0**
SC-EXC	No. fans		Nr	6	6	6	6	8	8
SC-EXC	Standard airflow		l/s	36779	36779	36143	35703	48075	47272
SC-EXC	Sound pressure level	(2)	dB(A)	52	52	52	52	53	53
SC-EXC	**Directive ErP (Energy Related Products)**								
SC-EXC	SCOP - AVERAGE Climate - W35	(3)		3,80	3,81	3,83	3,69	3,89	3,72
SC-EXC	$\eta_{s,c}$	(3)	%	149,0	149,0	150,0	145,0	153,0	146,0
Excellence - Supersilenced									
EN-EXC	Cooling capacity	(1)	kW	240	259	280	320	362	411
EN-EXC	Total power input	(1)	kW	86,1	93,8	104	115	132	146
EN-EXC	EER	(1)	-	2,79	2,76	2,70	2,78	2,74	2,81
EN-EXC	SEER	(3)	-	4,18	4,16	4,04	4,17	4,14	4,20
EN-EXC	$\eta_{s,c}$	(3)	%	164,2	163,5	158,5	163,6	162,7	164,9
EN-EXC	Heating capacity	(4)	kW	280	310	336	377	425	466
EN-EXC	Total power input	(4)	kW	88,1	96,4	104	114	130	143
EN-EXC	COP	(4)	-	3,18	3,22	3,22	3,30	3,28	3,26
EN-EXC	**Size**		**CEV-XN**	**150.0**	**150.0**	**160.0**	**180.0**	**185.0**	**190.0**
EN-EXC	No. fans		Nr	8	8	8	8	10	10
EN-EXC	Standard airflow		l/s	40357	40357	38374	36663	47773	52594
EN-EXC	Sound pressure level	(2)	dB(A)	48	48	48	48	48	48
EN-EXC	**Directive ErP (Energy Related Products)**								
EN-EXC	SCOP - AVERAGE Climate - W35	(3)	-	3,85	3,82	3,84	3,79	3,92	3,75
EN-EXC	$\eta_{s,c}$	(3)	%	151,0	150,0	151,0	149,0	154,0	147,0

(1) Data refer to the following conditions: internal water exchanger temperature = 12/7 °C; outdoor air temperature = 35°C
(2) Sound levels refer to the external section, under nominal test conditions. The sound pressure is measured at 10 m from the external surface of the unit in open field conditions.
(3) Data calculated according to the EN 14825:2018 Regulation
(4) Data referred to the following conditions:Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.

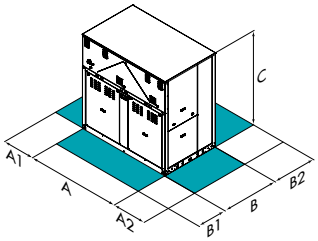
The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

dimensions and clearances



CEV-XN
(OUTDOOR SECTION)



MSRN-XSC3
(INDOOR SECTION)

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	MSRN-XSC3		90.4	100.4	110.4	120.4	140.4	160.4
A - Length		mm	2350	2350	2350	2350	2350	2350
B - Width		mm	1150	1150	1150	1150	1150	1150
C - Height		mm	2210	2210	2210	2210	2210	2210
A1		mm	700	700	700	700	700	700
A2		mm	700	700	700	700	700	700
B1		mm	1200	1200	1200	1200	1200	1200
B2		mm	500	500	500	500	500	500
Operating weight		kg	1657	1807	1870	1914	1980	2068

Size	CEV-XN		105.0	115.0	130.0	150.0	160.0	170.0	180.0	185.0	190.0
A - Length		mm	3770	3770	3770	4750	4750	4750	4750	5720	5720
B - Width		mm	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height		mm	2420	2420	2420	2420	2420	2420	2420	2420	2420
A1		mm	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2		mm	700	700	700	700	700	700	700	700	700
B1		mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
B2		mm	1500	1500	1500	1500	1500	1500	1500	1500	1500
Operating weight		kg	1082	1100	1174	1282	1386	1408	1532	1676	1706

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

HYDRONIC

NEW PRODUCT

SCREWLine^4-i

Water chiller
Air cooled
Outdoor installation
Capacity from 204 to 1055 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com — Unit listed on www.eurovent-certification.com

ErP — ErP compliant

Screw INVERTER

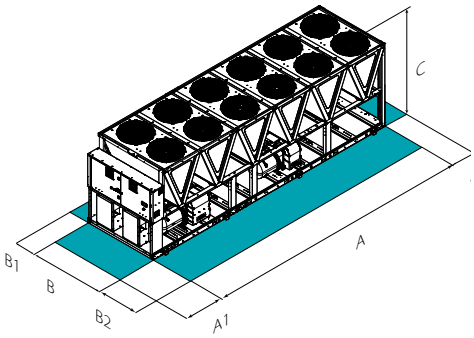
The SCREWLine^4-i liquid chillers are equipped with variable-speed screw compressors driven by an **INVERTER and filled with HFO R-1234ze refrigerant.**

- **REFRIGERANT HFO WITH REDUCED ENVIRONMENTAL IMPACT:** Clivet's constant search for solutions for sustainable comfort and environmental well-being has led to the development of the WDAT-iZ4 range of chillers with the R-1234ze refrigerant, which stands out for its nearly zero environmental impact (GWP < 1).
- **INVERTER SCREW TECHNOLOGY**: each refrigeration circuit adopts one compact screw compressor with integrated inverter, for maximum reliability and durability. The WDAT-iZ4 stands out for its very high seasonal efficiency, SEER reaching values of 5,42 while guaranteeing considerable energy saving compared to both fixed-speed screw compressors and inverter-driven screw compressors. In addition, it is extremely silent at low loads.
- **ECODESIGN DIRECTIVE 2021 COMPLIANT**: the WDAT-iZ4 series meets and exceeds the most stringent energy efficiency requirements imposed by the Ecodesign Directive from 2021, placing it at the top of the market, thanks to the technical solutions adopted: electronic expansion valves, shell and tube evaporator, high efficiency variable speed axial fans and aluminium microchannel condensing coils.

functions and features

Cooling only | Air cooled | Outdoor installation | R-1234ze | Semi-hermetic Twin-screw | Screw Inverter | Electronic expansion valve | ECOBREEZE | HydroPack | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WDAT-iZ4		120.1	160.1	200.1	240.1	290.1	250.2	280.2	320.2	360.2	400.2	440.2	480.2	540.2	580.2
ST/SC-EXC	A - Length	mm	2925	2925	4175	4175	5425	5425	5425	5425	6675	6675	7925	9175	10425	
ST/SC-EXC	B - Width	mm	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	
ST/SC-EXC	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	
ST/SC-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	
ST/SC-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	
ST/SC-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	
ST/SC-EXC	B2	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	
ST-EXC	Operating weight	kg	2623	2761	3820	3831	4147	4598	4604	4610	5956	5962	6432	6835	7279	8540
SC/EN-EXC	Operating weight	kg	2794	2933	4040	4051	4368	4938	4944	4949	6347	6352	6823	7274	7718	8982

The above mentioned data are referred to standard units for the constructive configurations indicated.

ST-EXC Standard acoustic configuration (ST)-Excellence
SC-EXC Compressor soundproofing (SC)-Excellence
EN-EXC Supersilenced acoustic configuration (EN) - Excellence

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **EXC** Excellence (Standard)

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **SC** Acoustic configuration with compressor soundproofing
- **EN** Supersilenced acoustic configuration

technical data

Size		WDAT-iZ4		120.1	160.1	200.1	240.1	290.1	250.2	280.2	320.2	360.2	400.2	440.2	480.2	540.2	580.2
ST/SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	204	256	360	420	510	422	482	540	630	710	790	880	965	1055
ST/SC-EXC	Total power input (EN14511:2018)	(1)	kW	64,7	85,4	115	142	167	134	156	180	212	241	263	301	322	348
ST/SC-EXC	EER (EN14511:2018)	(1)	-	3,16	3,00	3,12	2,95	3,05	3,15	3,10	3,00	2,97	2,94	3,00	2,92	3,00	3,03
ST/SC-EXC	SEER	(4)	-	5,15	5,13	5,17	5,14	5,20	5,42	5,38	5,36	5,42	5,37	5,39	5,37	5,33	5,35
ST/SC-EXC	$\eta_{s,c}$	(4)	%	202,9	202,3	203,6	202,8	205,1	214,0	212,1	211,4	214,0	211,6	212,5	211,9	210,3	210,9
ST/SC-EXC	Refrigeration circuits		Nr	1					2								
ST/SC-EXC	No. of compressors		Nr	1					2								
ST/SC-EXC	Type of compressors	(2)	-	ISW													
ST/SC-EXC	Standard power supply		V	400/3/50													
ST-EXC	Sound pressure level	(3)	dB(A)	77	78	77	77	78	78	80	81	80	81	81	81	81	82
SC-EXC	Sound pressure level	(3)	dB(A)	74	74	74	74	75	75	76	78	77	78	78	78	78	79
EN-EXC	Sound pressure level	(3)	dB(A)	69	71	70	70	71	72	72	73	72	75	75	74	74	74

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
(2) ISW = screw compressor with integrated inverter
(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature = 35°C
(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **1PM** Hydropack with 1 pump
- **1PMV** Hydropack user side with nr.1 inverter pump
- **1PMH** Hydropack with nr.1 high static pressure pump
- **1PMVH** Hydropack user side with nr.1 high static pressure inverter pump
- **2PM** Hydropack user side with 2 pumps
- **2PMV** Hydropack user side with no.2 of inverter pumps
- **2PMH** Hydropack user side with nr.2 high static pressure pump
- **2PMVH** Hydropack user side with nr.2 high static pressure inverter pump
- **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- **IFWX** Steel mesh strainer on the water side
- **CSVX** Couple of manually operated shut-off valves
- **AMMX** Spring antivibration mounts
- **AMMSX** Spring anti-seismic antivibration mounts
- **CONTA2** Energy meter
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **RPRI** Refrigerant leak detector in the casing
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **PPBM** Microchannel coils protection panels
- **CCME** E-coated microchannel coil
- **MHP** High and low pressure gauges
- **RE-25** Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
- **ECS** ECOSHARE function for the automatic management of a group of units
- **FC2** EMC filtering for residential-industrial environment EN 61800-3 cat C2)
- **PGCC** Finned coil protection grilles and compressor compartment
- **RDVS** Switching valve with double safety valves
- **REGBT** Device for the partialisation of condensing coils

Accessories whose code ends with "X" are supplied separately

WDAT-iK4

120.1÷580.2

NEW PRODUCT

SCREWLine^4-i

Water chiller
Air cooled
Outdoor installation
Capacity from 281 to 1423 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

Screw INVERTER

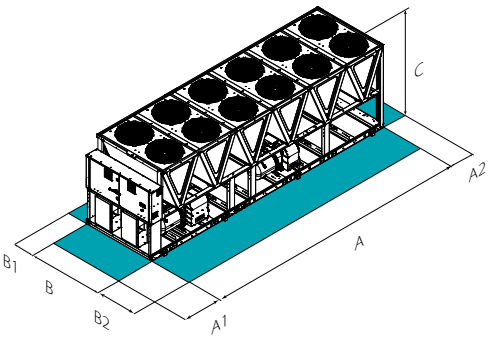
The SCREWLine^4-i liquid chillers are equipped with variable-speed screw compressors driven by an **INVERTER and filled with R-513A refrigerant.**

- **REFRIGERANT HFO WITH REDUCED ENVIRONMENTAL IMPACT:** Clivet's constant search for solutions for sustainable comfort and environmental well-being has led to the development of the WDAT-iK4 range of chillers with the R-513A refrigerant, which stands out for its low environmental impact (GWP = 631).
- **INVERTER SCREW TECHNOLOGY**: each refrigeration circuit adopts one compact screw compressor with integrated inverter, for maximum reliability and durability. The WDAT-iK4 stands out for its very high seasonal efficiency, SEER reaching values of 5,33 while guaranteeing considerable energy saving compared to both fixed-speed screw compressors and inverter-driven screw compressors. In addition, it is extremely silent at low loads.
- **ECODESIGN DIRECTIVE 2021 COMPLIANT**: the WDAT-iK4 series meets and exceeds the most stringent energy efficiency requirements imposed by the Ecodesign Directive from 2021, placing it at the top of the market, thanks to the technical solutions adopted: electronic expansion valves, shell and tube evaporator, high efficiency variable speed axial fans and aluminium microchannel condensing coils.

functions and features

Cooling only | Air cooled | Outdoor installation | R-1234ze | Semi-hermetic Twin-screw | Screw Inverter | Electronic expansion valve | ECOBREEZE | HydroPack | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WDAT-iK4		120.1	160.1	200.1	240.1	250.2	280.2	320.2	340.2	360.2	400.2	440.2	480.2	540.2	580.2
ST-EXC	A - Length	mm	4175	4175	5425	6675	7925	7925	7925	9175	10425	10425	10425	12923	12923	12923
ST-EXC	B - Width	mm	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228
ST-EXC	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535
ST-EXC	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
ST-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
ST-EXC	B2	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
ST-EXC	Operating weight	kg	3004	3159	4162	4595	5454	5896	5912	6683	7766	7785	7793	9335	9350	9350
SC/EN-PRM	Operating weight	kg	3209	3364	4417	4850	5864	6306	6322	7143	8226	8245	8253	9845	9860	9860

Size	WDAT-iK4		120.1	160.1	200.1	240.1	250.2	280.2	320.2	340.2	360.2	400.2	440.2	480.2	540.2	580.2
ST-PRM	A - Length	mm	2925	2925	4175	5425	5424	5424	5424	6675	7924	7924	7924	10425	10425	10425
ST-PRM	B - Width	mm	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228	2228
ST-PRM	C - Height	mm	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535	2535
ST-PRM	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
ST-PRM	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST-PRM	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
ST-PRM	B2	mm	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250	2250
ST-PRM	Operating weight	kg	2637	2757	3872	4164	4738	4744	5196	6107	6447	6456	7189	8287	8300	8314
SC/EN-PRM	Operating weight	kg	2842	2962	4077	4419	5149	5154	5605	6562	6906	6915	7649	8797	8810	8824

The above mentioned data are referred to standard units for the constructive configurations indicated.

versions and configurations

LOW TEMPERATURE:

- `-` Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **EXC** Excellence (Standard)
- **PRM** Premium

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (Standard)

ENERGY RECOVERY:

- `-` Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **SC** Acoustic configuration with compressor soundproofing
- **EN** Supersilenced acoustic configuration

technical data

Size		WDAT-iK4		120.1	160.1	200.1	240.1	250.2	280.2	320.2	340.2	360.2	400.2	440.2	480.2	540.2	580.2
ST/SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	294	374	506	602	593	670	741	811	900	992	1089	1204	1325	1423
ST/SC-EXC	Total power input (EN14511:2018)	(1)	kW	93,9	120	163	194	181	210	238	253	284	318	364	387	441	485
ST/SC-EXC	EER (EN14511:2018)	(1)	-	3,13	3,11	3,10	3,10	3,27	3,19	3,12	3,21	3,17	3,11	2,99	3,11	3,01	2,93
ST/SC-EXC	SEER	(4)	-	5,13	5,12	5,11	5,12	5,36	5,38	5,37	5,39	5,34	5,31	5,35	5,34	5,30	5,31
ST/SC-EXC	$\eta_{s,c}$	(4)	%	202,3	202,0	201,3	201,7	211,3	212,2	211,9	212,6	210,5	209,6	211,0	210,6	209,0	209,5
ST/SC-EXC	Refrigeration circuits		Nr	1				2									
ST/SC-EXC	No. of compressors		Nr	1				2									
ST/SC-EXC	Type of compressors	(2)	-	ISW													
ST/SC-EXC	Standard power supply		V	400/3/50													
ST-EXC	Sound pressure level	(3)	dB(A)	77	77	77	77	79	80	80	80	80	80	81	80	81	81
SC-EXC	Sound pressure level	(3)	dB(A)	73	74	73	74	76	77	77	76	78	78	78	78	78	78
EN-EXC	Sound pressure level	(3)	dB(A)	69	70	69	70	72	73	73	72	74	74	74	74	74	74

Size		WDAT-iK4		120.1	160.1	200.1	240.1	250.2	280.2	320.2	340.2	360.2	400.2	440.2	480.2	540.2	580.2
ST/SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW	281	340	473	577	550	615	681	754	837	911	1007	1120	1240	1338
ST/SC-PRM	Total power input (EN14511:2018)	(1)	kW	97,1	131	173	201	194	225	261	271	297	328	378	400	447	496
ST/SC-PRM	EER (EN14511:2018)	(1)	-	2,89	2,61	2,73	2,87	2,83	2,74	2,61	2,78	2,82	2,78	2,66	2,80	2,78	2,70
ST/SC-PRM	SEER	(4)	-	4,96	4,84	4,80	4,89	4,95	4,92	4,87	4,99	4,88	4,91	4,90	4,97	4,97	4,97
ST/SC-PRM	$\eta_{s,c}$	(4)	%	195,4	190,7	189,1	192,5	194,9	193,8	191,7	196,4	192,1	193,5	192,8	195,8	195,8	195,8
ST/SC-PRM	Refrigeration circuits		Nr	1				2									
ST/SC-PRM	No. of compressors		Nr	1				2									
ST/SC-PRM	Type of compressors	(2)	-	ISW													
ST/SC-PRM	Standard power supply		V	400/3/50													
ST-PRM	Sound pressure level	(3)	dB(A)	78	78	77	77	79	81	80	81	81	81	81	81	82	82
SC-PRM	Sound pressure level	(3)	dB(A)	74	75	74	74	76	76	77	77	76	78	78	78	78	79
EN-PRM	Sound pressure level	(3)	dB(A)	70	71	70	70	72	72	73	73	72	74	74	74	74	75

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
(2) ISW = screw compressor with integrated inverter
(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature = 35°C
(4) Data calculated according to the EN 14825:2018 Regulation

ST-EXC Acoustic standard configuratio (ST)-Excellence
SC-EXC Compressors soundproofing (SC)-Excellence
EN-EXC Supersilenced acoustic configuration (EN) - Excellence
ST-PRM Acoustic standard configuration (ST)-Premium
SC-PRM Compressors soundproofing (SC)-Premium
EN-RPM Supersilenced acoustic configuration (EN) - Premium

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **1PM** Hydropack with 1 pump
- **1PMV** Hydropack user side with nr.1 inverter pump
- **1PMH** Hydropack with nr.1 high static pressure pump
- **1PMVH** Hydropack user side with nr.1 high static pressure inverter pump
- **2PM** Hydropack user side with 2 pumps
- **2PMV** Hydropack user side with no.2 of inverter pumps
- **2PMH** Hydropack user side with nr.2 high static pressure pump
- **2PMVH** Hydropack user side with nr.2 high static pressure inverter pump
- **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- **IFWX** Steel mesh strainer on the water side
- **CSVX** Couple of manually operated shut-off valves
- **AMMX** Spring antivibration mounts
- **AMMSX** Spring anti-seismic antivibration mounts
- **CONTA2** Energy meter
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **RPRI** Refrigerant leak detector in the casing
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **PPBM** Microchannel coils protection panels
- **CCME** E-coated microchannel coil
- **MHP** High and low pressure gauges
- **RE-25** Electrical panel antifreeze protection for min. outdoor temperature down to -25°C
- **ECS** ECOSHARE function for the automatic management of a group of units
- **FC2** EMC filtering for residential-industrial environment EN 61800-3 cat C2)
- **PGCC** Finned coil protection grilles and compressor compartment
- **RDVS** Switching valve with double safety valves
- **REGBT** Device for the partialisation of condensing coils

Accessories whose code ends with "X" are supplied separately

WDAT-iL3

250.2÷580.2

SCREWLine^3-i

Water chiller
Air cooled
Outdoor installation
Capacity from 556 to 1282 kW

The SCREWLine^3-i liquid chillers are equipped with variable-speed screw compressors driven by an INVERTER and filled with R-134a refrigerant.

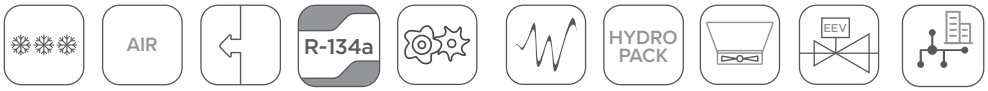
- **TWO INDEPENDENT CIRCUITS:** both refrigeration circuits adopt compact screw compressors with integrated inverter, for maximum reliability and durability. The WDAT-iL3 series features top-ranking seasonal efficienc. In addition, it is extremely silent at low loads.
- **EFFICIENT AND RELIABLE TECHNOLOGY**: SCREWLine^3-i comes with electronic expansion valves, shell and tube evaporator and high-efficiency axial fans.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

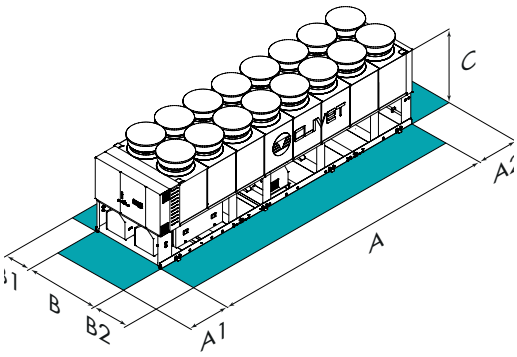
Screw INVERTER

functions and features



Cooling only | Air cooled | Outdoor installation | R-134a | Semi-hermetic Twin-screw | Screw Inverter | HydroPack | AxiTop | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WDAT-iL3		250.2	280.2	320.2	360.2	400.2	420.2	440.2	480.2	540.2	580.2
SC-PRM	A - Length	mm	4788	5760	6738	7714	8691	8691	8691	10640	10640	10640
SC-PRM	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-PRM	C - Height	mm	2484	2484	2484	2484	2484	2484	2484	2484	2484	2484
SC-PRM	A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
SC-PRM	A2	mm	700	700	700	700	700	700	700	700	700	700
SC-PRM	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-PRM	Operating weight	mm	5058	5658	6339	7303	7738	8251	8698	9610	9610	9610

The above mentioned data are referred to standard units for the constructive configurations indicated.

SC-PRM Compressors insulation (SC)-Premium

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

PRM Premium (Standard)

ACOUSTIC CONFIGURATION:

SC Acoustic configuration with compressor soundproofing (Standard)

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- **D** Partial energy recovery

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

CREFP Device for fan consumption reduction of the external section at variable speed (phase-cutting) (Standard)
CREFB Device for fan consumption reduction of the external section, ECOBREEZE type

TYPE FAN EXTERNAL SECTION:

NAXI High efficiency diffuser for axial fan - AxiTop: not required
AXIX High efficiency diffuser for axial fan - AxiTop (Standard)

technical data

Size		WDAT-iL3		250.2	280.2	320.2	360.2	400.2	420.2	440.2	480.2	540.2	580.2
SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW	556	616	712	802	902	954	997	1077	1169	1282
SC-PRM	Total power input (EN14511:2018)	(1)	kW	199	225	251	282	311	353	357	398	421	463
SC-PRM	EER (EN14511:2018)	(1)	-	2,80	2,74	2,84	2,84	2,90	2,71	2,79	2,71	2,78	2,77
SC-PRM	SEER	(4)	-	4,63	4,57	4,59	4,61	4,68	4,68	4,67	4,72	4,77	4,79
SC-PRM	$\eta_{s,c}$	(4)	%	182,2	180,0	180,6	181,3	184,0	184,3	183,6	185,7	187,9	188,8
SC-PRM	Refrigeration circuits		Nr	2									
SC-PRM	No. of compressors		Nr	2									
SC-PRM	Type of compressors	(2)	-	ISW									
SC-PRM	Standard power supply		V	400/3/50									
SC-PRM	Sound pressure level	(3)	dB(A)	80	80	80	81	81	81	81	82	82	82

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
(2) ISW = screw compressor with integrated inverter
(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature 35°C
(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

SC-PRM Compressors insulation (SC)-Premium

accessories

2PM	Hydropack user side with 2 pumps
2PMV	Hydropack user side with no.2 of inverter pumps
IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
IFWX	Steel mesh strainer on the water side
CSVX	Couple of manually operated shut-off valves
CCCA	Copper / aluminium condenser coil with acrylic lining
CCCA1	Condenser coil with Aluminium Energy Guard DCC treatment
REGBT	Device for the condensing coil partialization
AMMX	Spring antivibration mounts
AMMSX	Spring anti-seismic antivibration mounts
PGCC	Finned coil protection grilles and compressor compartment
PGCCH	Anti-hail protection grilles
TPS	Frame protective treatment
CONTA2	Energy meter
RCMRX	Remote control via microprocessor control
PSX	Mains power supply
CMSC9	Serial communication module for Modbus supervisor
CMSC10	Serial communication module for LonWorks supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
RPRI	Refrigerant leak detector in the casing
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe

Accessories whose code ends with "X" are supplied separately

WDAT-SL3 FC

200.2÷580.2

It can only be sold in an industrial environment

SCREWLine³ FC

Water chiller with FREE-COOLING
Air cooled
Outdoor installation
Capacity from 520 to 1523 kW

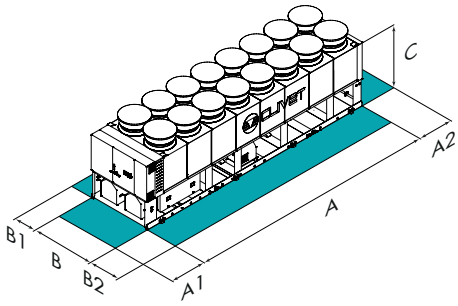
The **SCREWLine³ FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **SIGNIFICANT ENERGY SAVINGS:** when the fresh air temperature is lower than the return water temperature of the system, the FREE-COOLING system recovers coolness from the external setting and reduces compressor operations until they are completely stilled. In this way the requested cooling capacity is supplied at no cost.
- **EVEN IN GLYCOL FREE VERSION:** does not require the addition of an antifreeze substance in the hydraulic circuit used. Therefore, it is particularly suitable for large-sized systems and wherever laws and regulations limit the use of antifreeze substances inside buildings.

functions and features

Cooling only | Air cooled | Outdoor installation | R-134a | Semi-hermetic Twin-screw | FREE-COOLING | HydroPack | AxiTop | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WDAT-SL3 FC		200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
SC-FCD-EXC	A - Length	mm	5316	5316	6468	6468	6468	7265	7265	8241	8241	9217	9217	11166	11166	11166
SC-FCD-EXC	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-FCD-EXC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-FCD-EXC	A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
SC-FCD-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
SC-FCD-EXC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-FCD-EXC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC-FCD-EXC	Operating weight	kg	6102	6134	7214	7255	7344	8112	8163	9213	9710	11012	11074	12035	12169	12245

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

SC-FCD-EXCCompressors soundproofing (SC)-Direct FREE-COOLING-Excellence

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

VERSION:

- **EXC** Excellence (Standard)

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery

ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Extremely low noise acoustic configuration (sizes 200.2÷500.2)

FREE-COOLING:

- **FCD** Direct FREE-COOLING (Standard)
- **FCI** Indirect FREE-COOLING

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

- **CREFP** Device for fan consumption reduction of the external section at variable speed (phase-cutting) (standard in the SC acoustic config.)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type (standard in the EN acoustic config.)

TYPE FAN EXTERNAL SECTION:

- **AXIX** High efficiency diffuser for axial fan - AxiTop (Standard)
- **NAXI** High efficiency diffuser for axial fan - AxiTop: not required

technical data

Size	WDAT-SL3 FC			200.2	210.2	220.2	240.2	260.2	280.2	320.2	340.2	360.2	400.2	440.2	500.2	540.2	580.2
Free-cooling off																	
SC-EXC	Cooling capacity	(1)	kW	520	557	579	624	685	746	825	900	961	1049	1164	1311	1409	1523
SC-EXC	Total power input	(1)	kW	144	155	163	175	194	211	236	248	270	297	338	369	406	441
SC-EXC	EER at full load	(1)	-	3,61	3,59	3,55	3,56	3,53	3,53	3,50	3,62	3,56	3,53	3,44	3,55	3,47	3,45
SC-EXC	SEPR - FCD	(5)	-	6,09	6,16	6,16	6,24	6,20	6,10	6,11	6,00	6,00	6,07	6,12	6,16	6,12	6,26
SC-EXC	SEPR - FCI	(5)	-	5,76	5,84	5,90	5,86	6,02	5,84	6,00	5,93	5,81	6,05	5,90	5,87	5,83	5,96
Direct Free-cooling on																	
SC-EXC	Cooling capacity	(2)	kW	403	411	519	527	536	649	663	684	695	814	835	1066	1080	1093
SC-EXC	Total power input	(2)	kW	13,0	13,0	16,0	16,0	16,0	19,0	20,0	22,0	23,0	25,0	26,0	31,0	32,0	32,0
SC-EXC	EER at full load	(2)	-	31,1	31,4	32,6	32,8	33,0	33,8	33,8	30,5	30,5	32,0	32,2	34,0	34,1	33,8
SC-EXC	Refrigeration circuits		Nr	2													
SC-EXC	No. of compressors		Nr	2													
SC-EXC	Type of compressors	(3)	-	DSW													
SC-EXC	Standard power supply		V	400/3~/50													
SC-EXC	Sound pressure level	(4)	dB(A)	77	77	77	77	77	77	77	78	79	80	82	82	83	83
EN-EXC	Sound pressure level	(4)	dB(A)	73	73	73	73	73	72	73	74	74	76	78	78	-	-

(1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C
(2) Free-Cooling only data (compressors OFF) referred to the following conditions: internal exchanger water temperature = 15 / 10°C; entering external exchanger air temperature = 2°C D.B./1°C W.B.; glycol 30%
(3) DSW = twin-screw compressor
(4) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Entering external exchanger air temperature = 35°C
(5) Data calculated according to the EN 14825:2018 Regulation

SC-EXC Compressors soundproofing (SC)-Excellence
EN-EXC Super-silenced (EN)-Excellence

accessories

- **2PM** Hydropack load side with 2 pumps
- **3PM** Hydropack load side with 3 pumps
- **CSVX** Couple of manually operated shut-off valves
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **AMMX** Spring antivibration mounts
- **PGCC** Finned coil protection grilles and compressor compartment
- **PGCCH** Anti-hail protection grilles
- **CONTA2** Energy meter
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **SPC1** Set point compensation with 4-20 mA signal
- **ECS** ECOSHARE function for the automatic management of a group of units
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **SFSTR2** Progressive compressor start-up device
- **CBS** Overload circuit breakers
- **WOGLY** Unit supplied without glycol solution (FCI only)

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WSN-XEE

122÷402

ELFOEnergy Duct Medium

Reversible heat pum
Air cooled
Indoor installation
Capacity from 34 to 99 kW

ELFOEnergy Duct Medium heat pumps are indoor units with ducted condensation.

- **Versatility**: different combinations of inlet and outlet plug fans enable to connect easily the unit to the air ducts and to have high available head;
- **High energy efficiency**: ELFOEnergy Duct Medium besides being in Eurovent efficiency class A at full load grants high seasonal power efficiency thanks to the innovative cooling circuit optimized for partial;
- **Easy installation**: the units are very compact and are supplied on request with high efficiency pumps on board; therefore the available space for other purposes is increased and the installations costs are reduced.

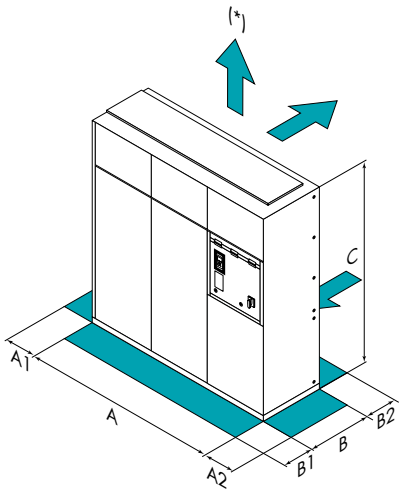
EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

functions and features

Heat pump | Air cooled | Indoor installation | R-410A | Hermetic Scroll | Electronically commutated Plug Fan | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.
(*) Optional

Size	WSN-XEE	122	162	182	222	262	302	352	402
A - Length	mm	1450	1450	1874	1874	2650	2650	2650	2650
B - Width	mm	780	780	780	780	780	780	780	780
C - Height	mm	1996	1996	1996	1996	1996	1996	1996	1996
A1	mm	100	100	100	100	100	100	100	100
A2	mm	500	500	500	500	500	500	500	500
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1300	1300	1300	1300	1300	1300	1300	1300
Operating weight	kg	501	555	620	626	732	770	874	904

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

LOW TEMPERATURE:

- \- Low temperature: not required (Standard)
- B Water low temperature

ENERGY RECOVERY:

- \- Energy recovery: not required (Standard)
- D Partial energy recovery

CONFIGURATION:

- EV Vertical air expulsion (Standard)
- EO Horizontal exhaust air

technical data

Size	WSN-XEE		122	162	182	222	262	302	352	402
Cooling capacity (EN14511:2018)	(1)	kW	33,9	41,0	47,6	54,5	64,5	75,0	86,3	98,9
Total power input (EN14511:2018)	(1)	kW	15,9	17,7	20,5	24,9	27,5	31,5	37,4	41,6
EER (EN 14511:2018)	(1)	-	2,13	2,32	2,32	2,19	2,35	2,38	2,31	2,38
SEER	(5)	-	2,63	3,10	3,17	3,08	3,36	3,31	3,32	3,40
$\eta_{s,c}$	(5)	%	102,3	121,1	124,0	120,0	131,5	129,5	129,9	133,0
Heating capacity (EN14511:2018)	(3)	kW	41,0	48,3	59,0	68,0	80,0	92,4	103	112
Total power input (EN14511:2018)	(3)	kW	13,3	15,5	18,7	21,4	25,1	28,7	32,6	36,8
COP (EN 14511:2018)	(3)	-	3,09	3,12	3,16	3,17	3,19	3,22	3,17	3,05
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors		-	SCROLL							
Standard airflow		l/s	4444	4444	5000	5000	6667	7500	7500	7500
Max external static pressure		Pa	510	510	390	390	570	390	390	390
Water flow-rate (User Side)		l/s	1,62	1,96	2,28	2,61	3,08	3,57	4,12	4,72
Standard power supply		V	400/3~/50							
Sound power in the duct	(4)	dB(A)	84	84	87	87	84	87	87	87
Sound pressure level	(2)	dB(A)	61	61	62	62	63	63	67	68
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A++	A+	A+	-	-
SCOP - AVERAGE Climate - W35	(5)	-	3,25	3,31	3,51	3,94	3,75	3,36	3,50	3,80
$\eta_{s,H}$	(5)	%	127,0	129,0	137,0	155,0	147,0	131,0	137,0	149,0

(1) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger air temperature = 35°C

(2) Sound levels refer to standard units (no accessories) at full load. The sound pressure is measured at 1 m from the external surface of the ducted unit operating in an open field. (standard UNI EN ISO 9614-2); Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Outdoor air temperature = 35°C; Static available pressure 120 Pa; Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations.

(3) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions:Internal exchanger water temperature = 40/45°C, entering external exchanger air temperature = 7°C D.B. / 6°C W.B.

(4) Sound power measured in accordance with UNI EN ISO 9614 and Eurovent 8/1 standards for ducted unit with available pressure equal to 120 Pa.

(5) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **1PUB** Low static pressure single pump
- **1PUA** High static pressure single pump
- **1PUHE** High efficiency single inverter pump for primary circuit.
- **IFWX** Steel mesh strainer on the water side
- **ABU** Flush hydraulic connections
- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **AMRX** Rubber antivibration mounts
- **PGFC** Finned coil protection grill
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **PFCC** Power factor correction capacitors (cosfi > 0.95)
- **SFSTR** Disposal for inrush current reduction
- **FANQE** Electrical panel ventilation
- **MHP** High and low pressure gauges
- **SDV** Cutoff valve on compressor supply and return
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **CSVX** Couple of manually operated shut-off valves
- **MF2** Multi-function phase monitor
- **CONTA2** Energy meter
- **ECS** ECOSHARE function for the automatic management of a group of units
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **STSOL** Additional lifting brackets
- **OHE** Limit extension kit in heating up to -10°C (W.B.)
- **VACSUX** User side DHW switching valve

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WSHN-EE

17÷121

ELFOEnergy Ground

Reversible heat pump
Water cooled
Indoor installation
Capacity from 6 to 33 kW

Unit listed on www.eurovent-certification.com

ErP compliant

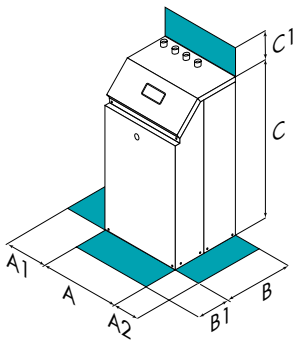
Geothermal energy from the ground or ground water can provide heating and cooling at considerably less expense. **ELFOEnergy Ground** unit is specially designed for use in closed or open circuit geothermal systems, while preserving all the benefits of air-cooled units, such as **efficiency, automatic adaptation, and silent operation**.

- Suitable for systems with terminal units, radiant panels or radiators
- Heating and cooling, using the heat from the ground (geothermal) or water
- Flexible operation: water to water or glycol water to water

functions and features

Heat pump | Water cooled | Indoor installation | R-410A | Hermetic Scroll | ELFOControl[3] | Vary Flow

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
A - Length	mm	402	402	402	402	402	573	573	573	573	573	573
B - Width	mm	602	602	602	602	602	604	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600	600
B2	mm	300	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	81	83	86	90	98	115	129	147	163	164	170

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature
- **BS** Water low temperature source side

VOLTAGE:

- **400TN** Supply voltage 400/3/50+N
- **230M** Supply voltage 230/1/50 (sizes 17÷51)

HYDRONIC ASSEMBLY SOURCE SIDE:

- **-** Hydronic assembly source side: not required (Standard)
- **HYGS** Hydronic assembly source side (sizes 17÷91)

technical data

Size	WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
Unit for radiant panels													
W10/W35													
Heating capacity		kW	6,95	7,49	9,50	12,0	16,0	19,5	24,7	26,7	30,8	36,2	41,2
Total power input		kW	1,35	1,47	1,83	2,34	3,10	3,83	4,81	5,21	6,04	7,09	8,01
COP (EN 14511:2018)		-	5,15	5,10	5,19	5,11	5,16	5,10	5,13	5,12	5,10	5,11	5,14
W35/W18													
Cooling capacity		kW	8,37	9,05	10,8	14,0	17,8	22,1	27,1	29,8	33,8	38,1	42,8
Total power input		kW	1,51	1,70	2,01	2,49	3,32	4,30	5,28	5,65	6,46	7,46	8,39
EER (EN 14511:2018)		-	5,52	5,32	5,37	5,64	5,35	5,14	5,13	5,27	5,22	5,11	5,10
Terminal units													
W10/W45													
Heating capacity		kW	6,68	7,27	8,83	11,5	15,6	18,9	23,6	25,1	29,3	34,2	38,7
Total power input		kW	1,59	1,73	2,43	3,01	3,96	4,82	5,94	6,62	7,46	8,85	9,76
COP (EN 14511:2018)		-	4,19	4,19	3,63	3,81	3,94	3,92	3,97	3,79	3,93	3,87	3,97
W35/W7													
Cooling capacity		kW	6,23	6,57	8,05	10,8	13,2	16,3	20,7	22,3	25,8	29,5	33,1
Total power input		kW	1,54	1,67	2,04	2,47	3,37	4,21	5,09	5,23	6,25	7,39	8,15
EER (EN 14511:2018)		-	4,04	3,93	3,95	4,39	3,93	3,87	4,07	4,27	4,13	4,00	4,06
SEER	(2)	-	2,35	2,41	2,69	3,01	3,16	3,17	3,55	3,70	3,69	3,66	3,50
$\eta_{s,c}$	(2)	%	85,9	88,3	99,6	112,4	118,3	118,9	134,0	140,1	139,8	138,5	132,0
Radiators													
W10/W55													
Heating capacity		kW	6,36	7,07	8,57	10,9	14,8	17,4	22,3	23,6	27,9	31,9	36,7
Total power input		kW	2,06	2,15	3,23	3,82	5,03	6,11	7,47	8,35	9,05	11,0	11,8
COP (EN 14511:2018)		-	3,09	3,29	2,66	2,85	2,94	2,85	2,99	2,83	3,08	2,91	3,11
Water flow-rate (User Side)	(1)	l/s	0,29	0,31	0,38	0,51	0,63	0,77	0,96	1,06	1,22	1,39	1,56
Useful pump discharge head	(1)	kPa	58	58	56	47	39	62	54	50	44	155	132
Water flow rate (Source Side)	(1)	l/s	0,35	0,38	0,46	0,61	0,78	0,95	1,18	1,28	1,50	1,71	1,91
Standard power supply		V		230/1/50					400/3/50+N				
Sound pressure level (1 m)		dB(A)	43	43	44	44	45	46	49	50	51	52	53
Directive ErP (Energy Related Products)													
ErP Energy Class - AVERAGE Climate - W35		-	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++	A+++
ErP Energy Class - AVERAGE Climate - W55		-	A+++	A+++	A++	A++	A+++	A+++	A+++	A++	A+++	A++	A+++
SCOP - AVERAGE Climate - W35	(2)	-	5,66	5,77	6,01	6,04	5,93	5,92	5,86	5,80	5,45	6,28	6,09
$\eta_{s,H}$	(2)	%	223,0	228,0	237,0	239,0	234,0	234,0	231,0	229,0	215,0	248,0	241,0
SCOP - AVERAGE Climate - W55	(2)	-	4,14	4,15	3,79	3,93	4,04	3,94	4,05	3,88	4,12	3,92	4,06
$\eta_{s,H}$	(2)	%	158,0	158,0	144,0	149,0	154,0	150,0	154,0	147,0	157,0	149,0	154,0

(1) Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C

Performances according to EN 14511:2018

W10/W35 water at the user side heat exchanger 30/35°C; inlet water at the source side heat exchanger 10°C
W10/W45 water at the user side heat exchanger 40/45°C; inlet water at the source side heat exchanger 10°C
W10/W55 water at the user side heat exchanger 45/55°C; inlet water at the source side heat exchanger 10°C
W35/W18 water at the user side heat exchanger 23/18°C; inlet water at the source side heat exchanger 30/35°C
W35/W7 water at the user side heat exchanger 12/7°C; inlet water at the source side heat exchanger 30/35°C

(2) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

- **3WV** Three-way valve
- **IVMSX** Modulating valve source side
- **IVWX** Water side motorized valve
- **AMRX** Rubber antivibration mounts
- **CMMBX** Serial communication module to supervisor (Modbus)
- **PBLC1X** Service keypad (cable from 1,5 metres)
- **PMX** Phase monitor
- **SCP3X** Set point compensation according to the outside enthalpy
- **SPCX** Set-point compensation with outdoor air temperature probe
- **SFSTR4N** Disposal for inrush current reduction, for unit 400/3/50+N
- **KDT3VX** Double temperature control kit, set point compensation with 4-20mA, 3 ways valve control
- **kDT3V** Double temperature control kit, set point compensation with 4-20mA, 3 ways valve control
- **3DHWX** Three-way valve for domestic hot water
- **SFSTR1** Disposal for inrush current reduction, for unit 230/1/50 (sizes 17÷51)
- **KTFL1X** 1" water side hose kit (sizes 17÷71)
- **KTFL2X** 1 1/4" water side hose kit
- **CACSX** Domestic hot water kit control
- **ACS300X** 300-litre domestic hot water storage tank (sizes 17÷41)
- **ACS500X** 500-litre domestic hot water storage tank (sizes 17÷81)
- **ACS5SX** 500-litre domestic hot water storage tank with solar coil (sizes 17÷81)
- **ACS3SX** 300-litre domestic hot water storage tank with solar coil (sizes 17÷41)
- **KVMSP1X** Kit for management of radiant panels with connections of 1"(sizes 17÷51)
- **KVMSP2X** Kit for management of radiant panels with connections of 1 1/4"
- **KSAX** 100-litre circuit breaker
- **KVICX** Boiler control kit (sizes 17÷81)
- **KITERAX** Electronic wall-mounting room thermostat

Accessories whose code ends with "X" are supplied separately

WSH-XEE2 WSHN-XEE2

12.2÷120.2

ELFOEnergy Ground Medium²

Water chiller
WSH-XEE2: cooling only
WSHN-XEE2: reversible heat pump
Water cooled
Indoor installation
Capacity from 34,4 to 356 kW

Unit listed on www.eurovent-certification.com

ErP compliant

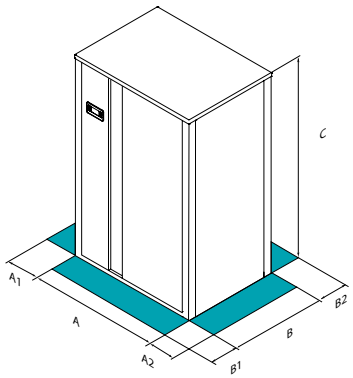
ELFOEnergy Ground Medium² are water cooled water chillers and heat pumps for indoor installation, ideal for multi-family and commercial buildings.
The main features are:

- **HIGH SEASONALEFFICIENCY:** the combination of different size compressors allows to gain more control steps, to provide the energy actually required by the system, to reduce the consumption and to achieve the high seasonal efficiency.
- **PREASSEMBLED UNIT:** all major components are provided on the unit, ensuring maximum reliability and ease of installation.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine up to 7 units in confined spaces, realizing a high power system.

functions and features

Cooling only (WSH-XEE2) | Heat pump (WSHN-XEE2) | Water cooled | Indoor installation | R-410A | Hermetic Scroll | Vary Flow | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size WSH-XEE2		12.2	16.2	19.2	22.2	27.2	35.2	40.2	45.2	55.2	60.2	70.2	80.2	110.2	120.2
A - Length	mm	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	885	885	885	885	885	885	1035	1035	1038	1038
C - Height	mm	1483	1483	1483	1483	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
A1	mm	100	100	100	100	150	150	150	150	150	150	150	150	150	150
A2	mm	100	100	100	100	150	150	150	150	150	150	150	150	150	150
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	212	276	295	308	421	510	557	572	700	733	771	809	1085	1205

Size WSHN-XEE2		12.2	16.2	19.2	22.2	27.2	35.2	40.2	45.2	55.2	60.2	70.2	80.2	110.2	120.2
A - Length	mm	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	885	885	885	885	885	885	1035	1035	1038	1038
C - Height	mm	1483	1483	1483	1483	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
A1	mm	100	100	100	100	150	150	150	150	150	150	150	150	150	150
A2	mm	100	100	100	100	150	150	150	150	150	150	150	150	150	150
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	223	290	309	322	441	519	580	581	728	743	808	820	1119	1265

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VERSION:

- **GW** Groundwater version (Standard)
- **GEO** Version for Geothermal application

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery

OPERATION (WSH-XEE2 ONLY):

- **OCO** Cooling-only operation (Standard)
- **OHO** Heating-only operation
- **OHI** Operation with water circuit change-over

technical data

Size	WSH-XEE2			12.2	16.2	19.2	22.2	27.2	35.2	40.2	45.2	55.2	60.2	70.2	80.2	100.2	120.2
Cooling capacity (EN14511:2018)	(1)	kW		35,4	49,6	59,1	68,4	83,8	109	123	147	172	197	221	249	305	356
Total power input (EN14511:2018)	(1)	kW		7,63	10,8	12,5	15,6	17,5	23,5	26,6	31,5	37,7	42,7	48,2	54,7	68,4	82,4
EER (EN 14511:2018)	(1)	-		4,64	4,61	4,72	4,39	4,80	4,62	4,63	4,65	4,58	4,60	4,59	4,55	4,46	4,32
SEER	(4)	-		5,36	5,25	5,30	5,24	5,59	5,77	5,87	5,72	5,38	5,38	5,51	5,30	5,46	5,39
$\eta_{S,C}$	(4)	%		206,4	202,1	203,9	201,6	215,7	222,6	226,8	220,9	207,3	207,1	212,4	203,8	210,4	207,5
Heating capacity (EN14511:2018)	(2)	kW		41,4	57,8	68,6	81,0	96,7	126	143	169	200	227	257	290	355	420
Total power input (EN14511:2018)	(2)	kW		9,79	13,5	15,7	19,2	21,8	28,9	32,8	38,7	46,5	52,4	59,2	66,7	83,4	101
COP (EN 14511:2018)	(2)	-		4,23	4,29	4,37	4,23	4,43	4,35	4,35	4,37	4,30	4,33	4,34	4,34	4,25	4,16
Refrigeration circuits		Nr		1													
No. of compressors		Nr		2													
Type of compressors		-		SCROLL													
Standard power supply		V		400/3/50													
Sound pressure level		dB(A)		44	49	49	49	49	58	58	58	60	61	63	63	64	65

Size	WSHN-XEE2			12.2	16.2	19.2	22.2	27.2	35.2	40.2	45.2	55.2	60.2	70.2	80.2	100.2	120.2
Cooling capacity (EN14511:2018)	(1)	kW		34,4	48,4	57,7	67,6	82,0	102	120	138	168	187	217	240	292	347
Total power input (EN14511:2018)	(1)	kW		7,50	10,6	12,5	15,4	17,5	23,6	26,8	31,7	37,7	42,6	48,2	54,5	67,8	81,7
EER (EN 14511:2018)	(1)	-		4,58	4,56	4,62	4,38	4,68	4,32	4,47	4,37	4,46	4,38	4,50	4,40	4,31	4,25
SEER	(4)	-		5,38	4,78	5,01	4,97	5,30	5,18	5,36	5,37	5,16	5,05	5,25	4,97	5,08	4,95
$\eta_{S,H}$	(4)	%		207,1	183,0	192,6	191,0	204,2	199,3	206,5	206,9	198,3	194,0	201,9	190,9	195,1	190,1
Heating capacity (EN14511:2018)	(2)	kW		40,4	56,8	67,0	79,5	93,8	119	139	163	195	218	252	280	343	408
Total power input (EN14511:2018)	(2)	kW		9,65	13,4	15,7	19,1	21,4	28,3	32,3	38,4	45,7	51,9	58,0	65,5	82,5	100
COP (EN 14511:2018)	(2)	-		4,19	4,25	4,27	4,15	4,38	4,21	4,30	4,24	4,27	4,20	4,34	4,27	4,16	4,07
Refrigeration circuits		Nr		1													
No. of compressors		Nr		2													
Type of compressors		-		SCROLL													
Standard power supply		V		400/3/50													
Sound pressure level	(3)	dB(A)		44	49	49	49	49	58	58	58	60	61	63	63	64	65
Directive ErP (Energy Related Products)																	
ErP Energy Class - AVERAGE Climate - W35		-		A+++	A+++	-						-					
ErP Energy Class - AVERAGE Climate - W55		-		A+++	A+++	A+++						-					
SCOP - AVERAGE Climate - W35	(4)	-		5,69	5,45	5,47	4,85	5,97	5,67	5,84	5,68	5,68	5,55	5,63	5,45	5,76	5,61
$\eta_{S,H}$	(4)	%		225,0	215,0	216,0	191,0	231,0	219,0	226,0	219,0	219,0	214,0	217,0	210,0	222,0	216,0
SCOP - AVERAGE Climate - W55	(4)			4,51	4,35	4,36	4,40	4,83	4,60	4,69	4,67	4,64	4,61	4,69	4,65	4,67	4,52
$\eta_{S,H}$	(4)	%		172,0	166,0	166,0	168,0	185,0	176,0	180,0	179,0	178,0	176,0	180,0	178,0	179,0	173,0

(1) Data calculated according to EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7 °C. External exchanger water = 30/35°C

(2) Data calculated according to EN 14511:2018 referred to the following conditions Water to internal exchanger = 40/45°C; Water temperature to external exchanger = 10/7 °C; Performance data calculated in accordance with EN14511:2018;

(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Internal exchanger water = 30/35°C.

(4) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **SDV** Cutoff valve on compressor supply and return (sizes 12.2÷80.2)
- **MOBMAG** Larger units
- **MF2** Multi-function phase monitor
- **RCTX** Remote control
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC8** Serial communication module for BACnet supervisor
- **CMSC9** Serial communication module for Modbus supervisor
- **CMMBX** Serial communication module to supervisor (Modbus)
- **CMSLWX** Serial communication module for LonWorks
- **BACX** Serial communication module for BACnet supervisor
- **SPCX** Set-point compensation with outdoor air temperature probe
- **IFWX** Steel mesh strainer on the water side
- **SFSTR** Disposal for inrush current reduction (sizes 12.2÷80.2)
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **AVIBX** Anti-vibration mount support

WSH-XEE2 only:

- **VS2MC** Cooling side 2-way modulating valve (sizes 12.2÷80.2)
- **VS2MCX** Cooling side 2-way modulating valve
- **VS3MC** Cooling side 3-way modulating valve (sizes 12.2÷80.2)
- **VS3MCX** Cooling side 3-way modulating valve
- **VARYC** VARYFLOW + (cooling side 2 inverter pumps)
- **VS2MH** Heating side 2-way modulating valve (sizes 12.2÷80.2)
- **VS2MHX** Heating side 2-way modulating valve
- **VS3MH** Heating side 3-way modulating valve (sizes 12.2÷80.2)
- **VS3MHX** Heating side 3-way modulating valve
- **VARYH** VARYFLOW + (heating side 2 inverter pumps)
- **VACSHX** Heating side DHW switching valve

WSHN-XEE2 only:

- **VACSUX** User side DHW switching valve
- **VARYU** VARYFLOW + (user side 2 inverter pumps)
- **HYGU1** User side hydronic assembly with 1 ON/OFF pump
- **HYGU2** User side hydronic assembly with 2 ON/OFF pumps
- **VS2M** Source side 2-way modulating valve (sizes 12.2÷80.2)
- **VS2MX** Source side 2-way modulating valve
- **VS3M** Source side 3-way modulating valve (sizes 12.2÷80.2)
- **VS3MX** Source side 3-way modulating valve
- **VARYS** VARYFLOW + (source side 2 inverter pumps)

Accessories whose code ends with "X" are supplied separately

WSH-XEE2 HW

19.2÷80.2

ELFOEnergy Ground Medium² HW

Water chiller
WSH-XEE2 HW: heating only
Water cooled
Indoor installation
Capacity from 75 to 282 kW

NEW PRODUCT
Available from the second half of 2021

ELFOEnergy Magnum² HW is a series of high temperature heat pumps, ideal for heating for centralised systems.
Benefits of ELFOEnergy Magnum² HW:

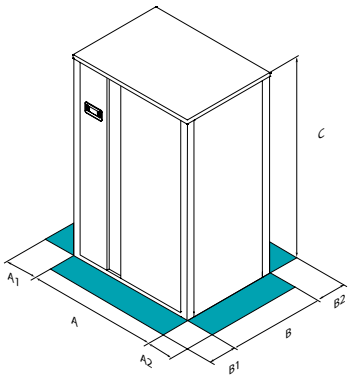
- **HIGH TEMPERATURE PRODUCED WATER:** production of hot water up to +78°C.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.

ErP
ErP compliant

functions and features

Heating only | Water cooled | Indoor installation | R-134a | Hermetic Scroll | Vary Flow | Intelliplant

dimensions and clearances



Size WSH-XEE2 HW		19.2	22.2	27.2	35.2	40.2	45.2	60.2	80.2
A - Length	mm	837	837	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	885	885	885	885	885	1035
C - Height	mm	1483	1483	1910	1910	1910	1910	1910	1910
A1	mm	100	100	150	150	150	150	150	150
A2	mm	100	100	150	150	150	150	150	150
B1	mm	500	500	500	500	500	500	500	500
B2	mm	300	300	350	350	350	350	350	350
Operating weight	kg	295	308	421	510	557	572	733	809

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

PRELIMINARY DATA

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

OPERATION:

OHO Heating-only operation

technical data

Size	WSH-XEE2 HW			19.2	22.2	27.2	35.2	40.2	45.2	60.2	80.2
Heating capacity (EN14511:2018)	(1)	kW		75,2	83,8	95,6	120	141	183	225	282
Total power input (EN14511:2018)	(1)	kW		16,8	18,1	21,4	28,6	34,7	44,3	55,1	67,3
COP	(1)	-		4,47	4,64	4,48	4,21	4,07	4,13	4,08	4,20
Refrigeration circuits		Nr		1							
No. of compressors		Nr		2							
Type of compressors		-		SCROLL							
Refrigerant		-		R-134a							
Standard power supply		V		400/3/50							
Sound pressure level	(2)	dB(A)		49	49	49	58	58	58	61	63

(1) Data referred to the following conditions: water temperature source side = 45/40°C; water temperature user side = 70/78°C.

(2) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Data referred to the following conditions: Water temperature source side = 45/40°C; Water temperature user side = 70/78°C.

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

PRELIMINARY DATA

accessories

SDV Cutoff valve on compressor supply and return
MF2 Multi-function phase monitor
RCTX Remote control
CMSC10 Serial communication module for LonWorks supervisor
CMSC8 Serial communication module for BACnet supervisor
CMSC9 Serial communication module for Modbus supervisor
CMMBX Serial communication module to supervisor (Modbus)
CMSLWX Serial communication module for LonWorks
BACX Serial communication module for BACnet supervisor
SPCX Set-point compensation with outdoor air temperature probe
IFWX Steel mesh strainer on the water side
SFSTR Disposal for inrush current reduction
PFCP Power factor correction capacitors (cosfi > 0.9)
AVIBX Anti-vibration mount support

Accessories whose code ends with "X" are supplied separately

WSHN-XEE2 MF

12.2÷80.2

ELFOEnergy Ground Medium² MF

Multifunction reversible heat pump
Water cooled
Indoor installation
Capacity from 34,3 to 241 kW

Unit listed on www.eurovent-certification.com

ErP compliant

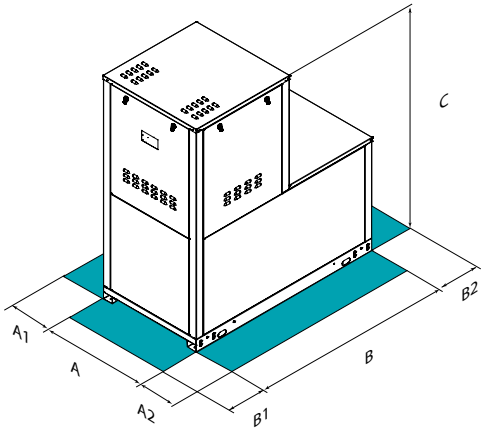
The **ELFOEnergy Ground Medium² Multifunction** heat pumps are water-condensed units for indoor installation ideal for multi-family and commercial buildings. **They can generate thermal and cooling energy simultaneously and independently**.
The main features are:

- **HIGH SEASONAL EFFICIENCY**: guaranteed by the combination of several control steps, which adapt the capacity supplied to the actual energy demand required by the system, and energy recovery, which recovers up to 100% of the capacity supplied, further increasing efficiency.
- **PRE-ASSEMBLED SYSTEM**: all the main components of the system are supplied on the unit, ensuring maximum reliability and ease of installation.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: the compact construction allows to combine up to 7 units in confined spaces, realizing a high power system.

functions and features

Heat pump | Water cooled | Indoor installation | R-410A | Hermetic Scroll | Vary Flow | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size WSHN-XEE2 MF		12.2	16.2	19.2	22.2	27.2
A - Length	mm	900	900	900	900	900
B - Width	mm	1700	1700	1700	1700	1700
C - Height	mm	1870	1870	1870	1870	1870
A1	mm	100	100	100	100	100
A2	mm	100	100	100	100	100
B1	mm	700	700	700	700	700
B2	mm	700	700	700	700	700
Operating weight	kg	403	471	491	497	550

Size WSHN-XEE2 MF		35.2	40.2	45.2	55.2	60.2	70.2	80.2
A - Length	mm	1100	1100	1100	1100	1100	1100	1100
B - Width	mm	1700	1700	1700	1700	1700	1700	1700
C - Height	mm	1870	1870	1870	1870	1870	1870	1870
A1	mm	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100
B1	mm	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700
Operating weight	kg	656	721	754	924	941	1045	1056

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.
For further information contact our Technical Department

versions and configurations

VERSION:

- **GW** Groundwater version (Standard)
- **GEO** Version for Geothermal application

ENERGY RECOVERY:

- **R** Total energy recovery (Standard)

CONFIGURATION:

- **4T** Configuration for 4-pipe system (Standard)
- **2T** Configuration for 2-pipe system

technical data

Size WSHN-XEE2 MF			12.2	16.2	19.2	22.2	27.2
Cooling 100% - Heating 0%							
Cooling capacity (EN14511:2018)	(1)	kW	34,3	48,0	57,2	66,2	81,0
Total power input (EN14511:2018)	(1)	kW	7,69	10,9	12,7	15,7	17,8
EER at full load (EN14511:2018)	(1)	-	4,46	4,42	4,51	4,20	4,56
SEER	(6)		5,30	4,85	4,84	4,85	5,05
$\eta_{s,c}$	(6)	%	204,0	186,2	185,7	186,0	194,1
Cooling 0% - Heating 100%							
Heating capacity (EN14511:2018)	(2)	kW	40,4	56,8	67,2	79,8	94,0
Total power input (EN14511:2018)	(2)	kW	9,42	13,2	15,6	19,0	21,1
COP at full load (EN14511:2018)	(2)	-	4,29	4,32	4,31	4,20	4,46
Cooling 100% - Heating 100%							
Cooling capacity (EN14511:2018)	(3)		31,2	43,7	52,0	60,9	73,6
Heating capacity (EN14511:2018)	(3)		40,5	56,6	67,1	79,4	94,7
Total power input (EN14511:2018)	(3)		9,36	12,9	15,1	18,4	21,1
Overall efficiency (EN14511:2018)	(4)		7,65	7,77	7,87	7,61	7,96
Refrigeration circuits		Nr			1		
No. of compressors		Nr			2		
Type of compressors		-			SCROLL		
Standard power supply		V			400/3/50		
Sound pressure level	(5)	dB(A)	44	49	49	49	49
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35			A+++	A+++	-	-	-
ErP Energy Class - AVERAGE Climate - W55			A+++	A+++	A+++	-	-
SCOP - AVERAGE Climate - W35	(6)		5,69	5,45	5,47	4,85	5,97
$\eta_{s,H}$	(6)	%	225,0	215,0	216,0	191,0	231,0
SCOP - AVERAGE Climate - W55	(6)		4,56	4,42	4,42	4,46	4,89
$\eta_{s,H}$	(6)	%	174,0	169,0	169,0	170,0	188,0

Size WSHN-XEE2 MF			35.2	40.2	45.2	55.2	60.2	70.2	80.2
Cooling 100% - Heating 0%									
Cooling capacity (EN14511:2018)	(1)	kW	105	119	142	166	190	214	241
Total power input (EN14511:2018)	(1)	kW	23,7	26,9	31,8	38,2	43,1	48,8	55,3
EER at full load (EN14511:2018)	(1)	-	4,42	4,43	4,45	4,36	4,40	4,38	4,35
SEER	(6)		5,17	5,31	5,29	4,93	4,92	5,00	4,82
$\eta_{s,c}$	(6)	%	203,7	209,2	208,4	194,2	193,7	197,2	189,7
Cooling 0% - Heating 100%									
Heating capacity (EN14511:2018)	(2)	kW	120	139	163	196	219	253	280
Total power input (EN14511:2018)	(2)	kW	28,2	32,0	38,2	45,3	51,5	57,6	65,0
COP at full load (EN14511:2018)	(2)	-	4,25	4,34	4,28	4,31	4,25	4,39	4,31
Cooling 100% - Heating 100%									
Cooling capacity (EN14511:2018)	(3)	kW	95,0	108	128	151	174	194	219
Heating capacity (EN14511:2018)	(3)	kW	123	140	165	196	225	252	284
Total power input (EN14511:2018)	(3)	kW	28,2	32,0	37,9	45,3	50,8	57,6	65,1
Overall efficiency (EN14511:2018)	(4)	-	7,73	7,73	7,74	7,65	7,85	7,76	7,71
Refrigeration circuits		Nr				1			
No. of compressors		Nr				2			
Type of compressors		-				SCROLL			
Standard power supply		V				400/3/50			
Sound pressure level	(5)	dB(A)	58	58	58	60	61	63	63
Directive ErP (Energy Related Products)									
SCOP - AVERAGE Climate - W35	(6)		5,67	5,84	5,68	5,68	5,55	5,63	5,45
$\eta_{s,H}$	(6)	%	219,0	226,0	219,0	219,0	214,0	217,0	210,0
SCOP - AVERAGE Climate - W55	(6)		4,60	4,69	4,67	4,64	4,61	4,69	4,65
$\eta_{s,H}$	(6)	%	176,0	180,0	179,0	178,0	176,0	180,0	178,0

(1) Data calculated in compliance with Standard EN 14511:2018referred to the following conditions: Cold side water temperature = 12/7°C; Source side water temperature 30/35°C

(2) Data calculated in compliance with Standard EN 14511:2018referred to the following conditions: Hot side water temperature = 40/45°C, Source side water temperature = 10/7°C

(3) Data calculated in compliance with Standard EN 14511:2018referred to the following conditions: Cold side water temperature = 12/7 °C, Hot side water temperature= 40/45°C

(4) Overall efficiency = (Cooling capacity + Heating capacity) / (Total power input)

(5) Sound levels refer to units with full load under nominal test conditions. The sound pressure is measured at 1 m from the external surface of the unit in open field conditions.

(6) Data calculated according to the EN 14825:2018 Regulation

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rate heat output ≤70 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions).

accessories

VARYU	VARYFLOW + (user side 2 inverter pumps)
VS2M	Source side 2-way modulating valve
VS2MX	Source side 2-way modulating valve
VS3M	Source side 3-way modulating valve
VS3MX	Source side 3-way modulating valve
VARYS	VARYFLOW + (source side 2 inverter pumps)
VARYR	VARYFLOW + (recovery side 2 inverter pumps)
VACSRX	Total recovery side DHW switching valve
SDV	Cutoff valve on compressor supply and return
MF2	Multi-function phase monitor
CMSC10	Serial communication module for LonWorks supervisor
CMSC8	Serial communication module for BACnet supervisor
CMSC9	Serial communication module for Modbus supervisor
SPCX	Set-point compensation with outdoor air temperature probe
IFWX	Steel mesh strainer on the water side
SFSTR	Disposal for inrush current reduction
PFCP	Power factor correction capacitors (cosfi > 0.9)
AVIBX	Anti-vibration mount support
RCTX	Remote control
BACX	BACnet serial communication module
CMMBX	Serial communication module to supervisor (Modbus)
CMSLWX	LonWorks serial communication module

Accessories whose code ends with "X" are supplied separately

WSH-XSC3 WSHN-XSC3

70.4÷120.4

SPINchiller³

Water chiller
WSH-XSC3: cooling only
WSHN-XSC3: reversible heat pump
Water cooled
Indoor installation
Capacity from 211 to 395 kW

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

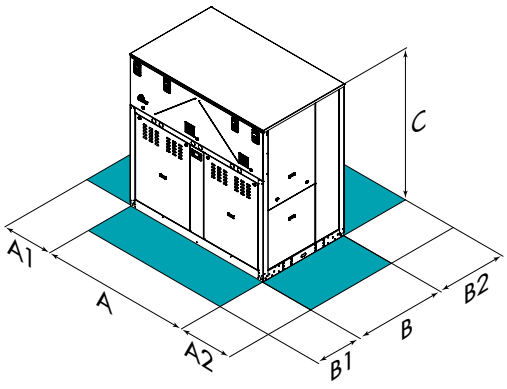
SPINchiller³ are water cooled water chillers and heat pumps for indoor installation, ideal for multi-family and commercial buildings.
The main features are:

- **HIGH SEASONALEFFICIENCY**: the combination of different size compressors allows to gain more control steps, to provide the energy actually required by the system, to reduce the consumption and to achieve the high seasonal efficiency.
- **PREASSEMBLED UNIT**: the extensive range of options available with SPINchiller³, including the pumping units mounted on the product – even inverter-driven – make the product suitable for installation in any system.
- **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** the compact construction allows to combine up to 7 units in confined spaces, realizing a high power system.

functions and features

Cooling only (WSH-XSC3) | Heat pump (WSHN-XSC3) | Water cooled | Indoor installation | R-410A | Hermetic Scroll | HydroPack | Vary Flow | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size WSH-XSC3		70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4
A - Length	mm	2234	2234	2234	2234	2234	2234	2234	2234
B - Width	mm	1132	1132	1132	1132	1132	1132	1132	1460
C - Height	mm	2210	2210	2210	2210	2210	2210	2210	2210
A1	mm	500	500	500	500	500	500	500	500
A2	mm	500	500	500	500	500	500	500	500
B1	mm	800	800	800	800	800	800	800	800
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000
EN Operating weight	kg	1246	1268	1336	1356	1419	1692	1751	1935

Size WSHN-XSC3		70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4
A - Length	mm	2234	2234	2234	2234	2234	2234	2234	2234
B - Width	mm	1134	1134	1134	1134	1134	1134	1134	1460
C - Height	mm	2210	2210	2210	2210	2210	2210	2210	2210
A1	mm	500	500	500	500	500	500	500	500
A2	mm	500	500	500	500	500	500	500	500
B1	mm	800	800	800	800	800	800	800	800
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000
EN Operating weight	kg	1242	1264	1322	1343	1406	1583	1651	1924

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.
EN Super-silenced (EN)

versions and configurations

ACOUSTIC CONFIGURATION:

- **EN** Super-silenced acoustic configuration (Standard)
- **BN** Basic acoustic configuration

LOW TEMPERATURE (WSH-XSC3 ONLY):

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

OPERATION (WSH-XSC3 ONLY):

- **OCO** Cooling-only operation (Standard)
- **OHO** Heating-only operation
- **OHI** Operation with water circuit change-over

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery

technical data

Size	WSH-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4
Cooling capacity (EN14511:2018)	(1)	kW		217	231	248	268	292	319	350	395
Total power input (EN14511:2018)	(1)	kW		46,5	50,3	53,2	58,4	61,8	68,1	75,5	83,6
EER (EN 14511:2018)	(1)	-		4,67	4,59	4,65	4,59	4,72	4,68	4,64	4,72
SEER	(4)	-		6,16	6,24	6,18	6,06	6,01	5,73	5,65	5,91
$\eta_{S,C}$	(4)	%		238,6	241,7	239,1	234,3	232,4	221,3	217,9	228,2
Heating capacity (EN14511:2018)	(2)	kW		249	266	285	309	333	366	401	453
Total power input (EN14511:2018)	(2)	kW		56,8	61,5	64,2	71,5	76,3	83,5	92,6	103
COP (EN 14511:2018)	(2)	-		4,39	4,32	4,44	4,32	4,36	4,38	4,33	4,41
Refrigeration circuits		Nr					2				
No. of compressors		Nr					4				
Type of compressors		-					SCROLL				
Water flow-rate (User Side)		l/s		10,4	11,1	11,9	12,8	14,0	15,3	16,8	18,9
Water flow rate (Source Side)		l/s		12,6	13,4	14,3	15,6	16,9	18,5	20,3	22,8
Standard power supply		V					400/3/50				
EN Sound pressure level	(3)	dB(A)		63	64	65	65	65	66	68	68

Size	WSHN-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4
Cooling capacity (EN14511:2018)	(1)	kW		211	225	242	261	283	313	341	389
Total power input (EN14511:2018)	(1)	kW		48,5	52,6	55,4	60,9	65,6	70,7	78,1	87,3
EER (EN 14511:2018)	(1)	-		4,36	4,28	4,36	4,29	4,32	4,42	4,37	4,46
SEER	(4)	-		5,95	5,89	5,84	5,90	5,92	5,65	5,40	5,92
$\eta_{S,C}$	(4)	%		229,9	227,8	225,7	228,0	228,8	217,9	207,9	228,6
Heating capacity (EN14511:2018)	(2)	kW		244	260	279	302	327	358	393	446
Total power input (EN14511:2018)	(2)	kW		59,0	64,0	67,6	74,3	80,3	86,5	94,9	107
COP (EN 14511:2018)	(2)	-		4,13	4,06	4,13	4,06	4,08	4,14	4,15	4,18
Refrigeration circuits		Nr					2				
No. of compressors		Nr					4				
Type of compressors		-					SCROLL				
Water flow-rate (User Side)		l/s		10,1	10,8	11,6	12,5	13,6	15,0	16,4	18,7
Water flow rate (Source Side)		l/s		12,4	13,2	14,2	15,4	16,6	18,3	20,0	22,7
Standard power supply		V					400/3/50				
EN Sound pressure level	(3)	dB(A)		63	64	65	65	65	66	68	68
Directive ErP (Energy Related Products)											
SCOP - AVERAGE Climate - W35	(4)	-		6,09	6,09	6,13	6,05	5,89	6,22	6,07	-
$\eta_{S,H}$	(4)	%		241,0	241,0	242,0	239,0	233,0	246,0	240,0	-
SCOP - AVERAGE Climate - W55	(4)	-		4,72	4,67	4,72	4,67	4,41	4,77	4,70	-
$\eta_{S,H}$	(4)	%		181,0	179,0	181,0	179,0	168,0	183,0	180,0	-

(1) Performance data calculated in accordance with EN 14511:2018referred to the following conditions: Internal exchanger water = 12/7°C. External exchanger water = 30/35°C.

(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature = 10/7°C

(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: internal exchanger water = 12/7 °C. external exchanger water = 30/35 °C

(4) Data calculated according to the EN 14825:2018 Regulation)

EN Super-silenced (EN)

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

AP	Rear water fittings
SDV	Cutoff valve on compressor supply and return
MHP	High and low pressure gauges
MF2	Multi-function phase monitor
SFSTR	Disposal for inrush current reduction
RCMRX	Remote control via microprocessor control
ACIE	Antifreeze heater for internal exchanger protection
EHCS	Source side antifreeze electric heaters
CMSC10	Serial communication module for LonWorks supervisor
CMSC9	Serial communication module for Modbus supervisor
CMSC8	Serial communication module for BACnet supervisor
SCP4	Set-point compensation with 0-10 V signal
SPC2	Set-point compensation with outdoor air temperature probe
CSVX	Couple of manually operated shut-off valves
IFWX	Steel mesh strainer on the water side
PFCP	Power factor correction capacitors (cosfi > 0.9)
AVIBX	Anti-vibration mount support
CONTA2	Energy meter
RPRPDI	Refrigerant leak detector with pump down function in the casing
ECS	ECOSHARE function for the automatic management of a group of units
PSX	Mains power supply

WSH-XSC3 only:

HYGC1	Cooling side hydronic assembly with 1 ON/OFF pump
HYGC2	Cooling side hydronic assembly with 2 ON/OFF pumps
VS2MC	Cooling side 2-way modulating valve
VS2MCX	Cooling side 2-way modulating valve
VS3MCX	Cooling side 3-way modulating valve
VARYC	VARYFLOW + (cooling side 2 inverter pumps)
2PMC	Hydropack cooling side with 2 pumps
V2MCP	Cooling side 2-way modulating valve for high DP
V2MCPX	Cooling side 2-way modulating valve for high DP
HYGH1	Heating side hydronic assembly with 1 ON/OFF pump
HYGH2	Heating side hydronic assembly with 2 ON/OFF pumps
VARYH	VARYFLOW + (heating side 2 inverter pumps)
VS2MH	Heating side 2-way modulating valve
VS2MHX	Heating side 2-way modulating valve
VS3MHX	Heating side 3-way modulating valve
2PMH	Hydropack heating side with 2 pumps
V2MHP	Heating side 2-way modulating valve for high DP
V2MHPX	Heating side 2-way modulating valve for high DP
IVFDTC	Inverter driven variable flow-rate cooling side control depending on the temperature differential
IVFDTH	Inverter driven variable flow-rate heating side control depending on the temperature differential

WSHN-XSC3 only:

IVFDT	Inverter driven variable flow-rate user side control depending on the temperature differential
HYGU1	User side hydronic assembly with 1 ON/OFF pump
HYGU2	User side hydronic assembly with 2 ON/OFF pumps
VARYU	VARYFLOW + (user side 2 inverter pumps)
HYP2U	Hydropack user side with 2 pumps
HYGS1	Source side hydronic assembly with 1 ON/OFF pump
HYGS2	Source side hydronic assembly with 2 ON/OFF pumps
VARYS	VARYFLOW + (source side 2 inverter pumps)
VS2M	Source side 2-way modulating valve
VS2MX	Source side 2-way modulating valve
VS3MX	Source side 3-way modulating valve
HYP2S	Hydropack source side with 2 pumps
V2MSP	Source side 2-way modulating valve for high DP
V2MSPX	Source side 2-way modulating valve for high DP

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

WDH-iK4

120.1÷540.2

NEW PRODUCT

SCREWLine^4-i

Water chiller
Water cooled
Indoor installation
Capacity from 340 to 1520 kW

Unit listed on www.eurovent-certification.com

ErP compliant

Screw INVERTER

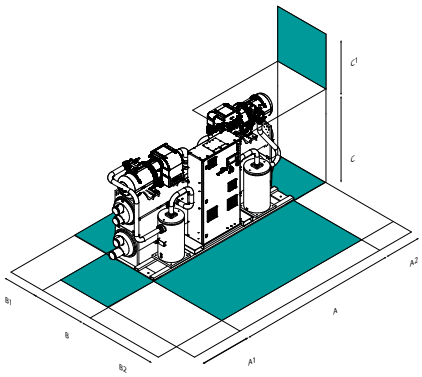
The **WDH-iK4** units are high-efficiency chillers with R-513A refrigerant ideal for medium - high powered commercial and industrial buildings. Designed for indoor installation, they guarantee maximum energy efficiency throughout the entire operating cycle

- **REFRIGERANT HFO WITH REDUCED ENVIRONMENTAL IMPACT:** Clivet's constant search for solutions for sustainable comfort and environmental well-being has led to the development of the WDH-iK4 range of chillers with the R-513A refrigerant, which stands out for its low environmental impact (GWP = 631).
- **ADVANCED TECHNOLOGY:** the **WDH-iK4** series is based on a combination of technologies, designed to reduce energy consumption, limit the refrigerant charge, ensure reliable and silent operation: Screw compressor with integrated inverter , Spray shell & tube evaporator, Oil recovery system.
- **EXTREMELY HIGH ENERGY EFFICIENCY:** the use of the inverter technology allows to adapt the rotation speed of the compressor to the real request of the system. The minimum reachable modulation is equal to 12% of the total capacity, that means a very high seasonal efficiency, SEER up to 8.60.

functions and features

Cooling only · Water cooled · Indoor installation · R-513A · Semi-hermetic Twin-screw · Screw Inverter · Reversible water circuit · Electronic expansion valve · Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	WDH-iK4	120.1	160.1	200.1	220.1	240.1	270.1	290.1	250.2	280.2	320.2	360.2	400.2	480.2	540.2
A - Length	mm	2639	2639	2902	2902	3527	3527	4187	4083	4083	4233	4384	4651	4651	4651
B - Width	mm	1195	1195	1400	1400	1400	1400	1450	1195	1195	1195	1450	1495	1495	1495
C - Height	mm	2103	2103	2293	2293	2293	2293	2375	2194	2194	2214	2375	2498	2498	2498
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
B2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
C1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	3241	3328	4217	4207	4849	4884	5013	5484	5694	6475	7241	9225	9177	9225

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

VERSION

- **EXC** Excellence (Standard)

OPERATION:

- **OCO** Cooling-only operation (Standard)
- **OHI** Operation with water circuit change-over
- **OHO** Heating-only operation

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **EN** Extremely low noise acoustic configuration

HIGH WATER TEMPERATURE VERSION:

- **HWT** High water temperature

technical data

Size	WDH-IK4			120.1	160.1	200.1	220.1	240.1	270.1	290.1	250.2	280.2	320.2	360.2	400.2	480.2	540.2
Cooling capacity (EN14511:2018)	(1)	kW		340	415	520	610	690	760	830	705	800	900	1065	1280	1385	1520
Total power input (EN14511:2018)	(1)	kW		66,3	80,1	101	118	138	150	165	138	155	177	208	249	270	300
EER (EN 14511:2018)	(1)	-		5,13	5,18	5,13	5,15	5,01	5,06	5,02	5,11	5,15	5,10	5,12	5,14	5,12	5,07
SEER	(5)	-		8,41	8,46	8,53	8,57	8,55	8,60	8,57	8,59	8,38	8,47	8,56	8,38	8,51	8,58
$\eta_{s,c}$	(5)	%		328,4	330,5	333,0	334,7	333,9	336,0	334,7	335,6	327,2	330,9	334,3	327,2	332,2	335,1
Heating capacity (EN14511:2018)	(2)	kW		411	514	624	732	835	927	1024	820	924	1037	1221	1534	1667	1844
Total power input (EN14511:2018)	(2)	kW		88,9	110	132	156	183	202	226	180	198	219	264	338	360	405
COP (EN14511:2018)	(2)	-		4,63	4,70	4,75	4,71	4,56	4,58	4,54	4,56	4,68	4,74	4,62	4,54	4,64	4,56
Refrigeration circuits		Nr					1							2			
No. of compressors		Nr					1							2			
Type of compressors	(4)	-								ISW							
Refrigerant		-								R-513A							
Water flow-rate (User Side)		l/s		16,3	19,9	24,8	29,2	33,0	36,3	39,7	33,7	38,3	43,0	50,9	61,2	66,2	72,7
Water flow rate (Source Side)		l/s		19,4	23,6	29,5	34,7	39,4	43,3	47,4	40,1	45,5	51,2	60,6	72,7	78,8	86,7
Standard power supply		V								400/3/50							
ST Sound pressure level	(3)	dB(A)		75	77	78	78	78	79	79	81	82	82	83	83	83	84
EN Sound pressure level	(3)	dB(A)		72	74	75	75	75	76	76	78	79	79	80	80	80	81

(1) Performance data calculated in accordance with EN 14511:2018referred to the following conditions: Internal exchanger water = 12/7°C. External exchanger water = 30/35°C.
(2) Data calculated in compliance with Standard EN 14511:2018 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature = 10/7°C
(3) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: internal exchanger water = 12/7 °C. external exchanger water = 30/35 °C
(4) ISW = screw compressor with integrated inverter
(5) Data calculated according to the EN 14825:2018 Regulation)

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 811/2013 (rated heat output ≤70 kW at specified reference conditions), the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤400 kW at specified reference conditions) and the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **AMRX** Rubber antivibration mounts
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CONTA2** Energy meter
- **CMSC9** Serial communication module to Modbus supervisor
- **CMSC10** Serial communication module to LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with signal 0-10 V
- **SPC1** Set point compensation with 4-20 mA signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **ECS** ECOSHARE function for the automatic management of a group of units
- **IVMSX** Modulating valve source side
- **MHP** High and low pressure gauges
- **SDV** Cutoff valve on compressor supply and return
- **CO3P** 3-step condenser
- **AACT** Opposing evaporator water connections
- **AAR** DX evaporator water connections
- **CDR** DX condenser water connections
- **CDCT** Opposing condenser water connections
- **EV3P** 3-step evaporator
- **ISS** Condenser insulation
- **IM** 20 mm thickness insulation for increased evaporator
- **EHCS** Source side antifreeze electric heaters
- **EHWP** User side water piping antifreeze electric heaters
- **IFWX** Steel mesh strainer on the water side
- **RPR** Refrigerant drops detector
- **FC2** EMC filtering for residential-industrial environment EN 61800-3 cat C2)
- **AMMSX** Anti-seismic spring antivibration mounts
- **AMMX** Anti-vibration mount support

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

HYDRONIC

NEW PRODUCT

Centrifugal Chiller HFO

Water chiller
Water cooled
Indoor installation
Capacity from 808 to 1599 kW

INVERTER

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

ErP
ErP compliant

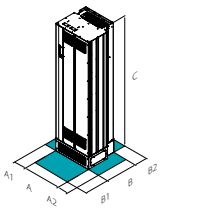
Centrifugal units **WCH-iZ** are high-efficiency chillers with HFO R-1234ze refrigerant ideal for high-powered commercial and industrial buildings. Designed for indoor installation, they guarantee maximum energy efficiency throughout the entire operating cycle.

- **REFRIGERANT HFO WITH REDUCED ENVIRONMENTAL IMPACT:** Clivet's constant search for solutions for sustainable comfort and environmental well-being has led to the development of the WDAT-iZ range of chillers with the R-1234ze refrigerant, which stands out for its nearly zero environmental impact (GWP < 1).
- **ADVANCED TECHNOLOGY:** the centrifugal WCH-iZ is based on a combination of technologies, designed to reduce energy consumption, limit the refrigerant charge, ensure reliable and silent operation. Direct drive compressor with opposed impellers, falling film evaporator, economizer, recovery oil circuit.
- **EXTREMELY HIGH ENERGY EFFICIENCY:** the use of the inverter technology allows to adapt the rotation speed of the compressor to the real request of the system. The minimum reacheable modulation is equal to 15% of the total capacity, that means a very high seasonal efficiency, SEER up to 9.64.

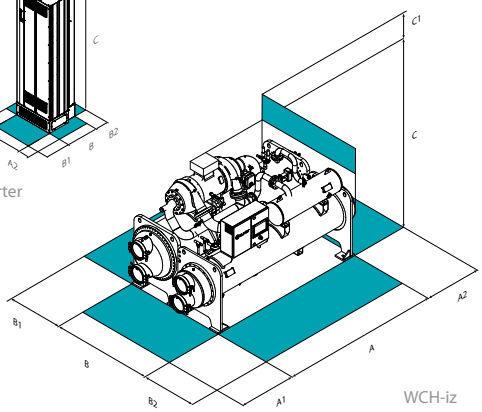
functions and features

Cooling only | Water cooled | Indoor installation | R-1234ze | Centrifugal | Inverter | Electronic expansion valve | Intelliplant

dimensions and clearances



Inverter



WCH-iz

Size	WCH-iZ	230	270	300	350	380	420	450
Unit dimensions								
A - Length	mm	3820	3870	3770	3770	3770	3810	3810
B - Width	mm	1760	1760	1940	1940	1970	1970	1970
C - Height	mm	2128	2128	2170	2170	2170	2170	2170
A1	mm	1200	1200	1200	1200	1200	1200	1200
A2	mm	1200	1200	1200	1200	1200	1200	1200
B1	mm	1000	1000	1000	1000	1000	1000	1000
B2	mm	1200	1200	1200	1200	1200	1200	1200
C1	mm	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	5700	5785	6269	6469	7546	7546	7648

Size	WCH-iZ	230	270	300	350	380	420	450
Dimensionali inverter								
A - Length	mm	420	420	420	420	420	420	602
B - Width	mm	378	378	378	378	378	378	514
C - Height	mm	1100	1100	1100	1100	1100	1100	2043
B1	mm	600	600	600	600	600	600	800
C1	mm	225	225	225	225	225	225	225
Operating weight	kg	125	125	125	125	125	125	300

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

HOT GAS BY PASS:

- - Hot gas by pass: not required (Standard)
- **B** Hot gas by pass

technical data

Size		WCH-iZ	230	270	300	350	380	420	450
Cooling									
Cooling capacity (EN14511:2018)	(1)	kW	808	949	1069	1229	1353	1476	1599
Compressor power input (EN14511:2018)	(1)	kW	144	169	184	211	226	249	272
EER (EN14511:2018)	(1)	-	5,61	5,61	5,81	5,82	5,99	5,93	5,88
SEER	(4)	-	8,00	8,49	8,49	8,90	9,30	9,48	9,64
$\eta_{s,c}$	(4)	%	312,0	331,8	331,6	347,9	364,0	371,3	377,6
Refrigeration circuits		Nr				1			
No. of compressors		Nr				1			
Type of compressors	(3)	-				CFGi			
Refrigerant		-				R1234ze			
Water flow (User side)		l/s	38,6	45,3	51,0	58,6	64,6	70,4	76,3
Water flow (Source side)		-	45,3	53,1	59,6	68,4	75,1	81,9	88,9
Standard power supply		V				400/3/50			
Sound pressure level	(2)	dB(A)	79	82	79	79	82	80	81

(1) Data calculated according to EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7 °C. External exchanger water = 30/35°C

(2) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Internal exchanger water = 30/35°C.

(3) CFGi = Inverter driven centrifugal compressor

(4) Data calculated according to EN 14825:2018

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

EV2R	Two-stage evaporator and right connections
EV10P	One-stage evaporator and opposing connections
EV30P	Three-stage evaporator and opposing connection
EV16	Evaporator water pressure 16 bar
IS40	Insulation for evaporator with thickness of 40mm
CO2R	Two-stage condenser and right connections
CO10P	One-stage condenser and opposing connections
CO30P	Three-stage condenser and opposing connection
CO16	Condenser water pressure 16 bar
AMMX	Anti-vibration mount supports
AMRX	Rubber antivibration mounts
AMMSX	Anti-seismic spring antivibration mounts
2VBYX	ON/OFF motorized by-pass valve
CSIC	Shielded connection cables between inverter and compressor: metres 4.5 length
RPR	Refrigerant leak detector in the casing
QS6X	Electrical panel with main switch
CCSQX	Connection cables from electrical panel with main switch (QS6X) to inverter and unit electrical panel

Accessories whose code ends with "X" are supplied separately

Centrifugal Chiller

Water chiller
Water cooled
Indoor installation
Capacity from 876 to 1927 kW

INVERTER

Unit listed on www.eurovent-certification.com

ErP compliant

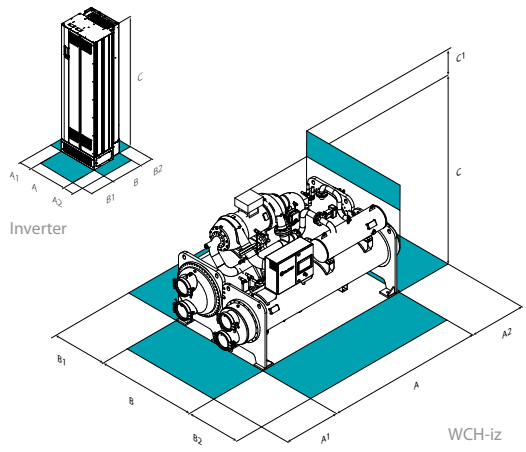
Centrifugal units **WCH-i** are high-efficiency chillers ideal for high-powered commercial and industrial buildings. Designed for indoor installation, they guarantee maximum energy efficiency throughout the entire operating cycle.

- **ADVANCED TECHNOLOGY:** the centrifugal WCH-i is based on a combination of technologies, designed to reduce energy consumption, limit the refrigerant charge, ensure reliable and silent operation. Direct drive compressor with opposed impellers, falling film evaporator, economizer, recovery oil circuit.
- **EXTREMELY HIGH ENERGY EFFICIENCY:** the use of the inverter technology allows to adapt the rotation speed of the compressor to the real request of the system. The minimum reacheable modulation is equal to 15% of the total capacity, that means a very high seasonal efficiency, SEER up to 9.06.

functions and features

Cooling only | Water cooled | Indoor installation | R-134a | Centrifugal | Inverter | Electronic expansion valve

dimensions and clearances



Size	WCH-i	250	300	350	400	450	500	550
Unit dimensions								
A - Length	mm	3820	3870	3870	3770	3810	3810	3770
B - Width	mm	1760	1760	1760	1970	1970	1970	1970
C - Height	mm	2128	2128	2128	2170	2170	2170	2170
A1	mm	1200	1200	1200	1200	1200	1200	1200
A2	mm	1200	1200	1200	1200	1200	1200	1200
B1	mm	1000	1000	1000	1000	1000	1000	1000
B2	mm	1200	1200	1200	1200	1200	1200	1200
C1	mm	1200	1200	1200	1200	1200	1200	1200
Operating weight	kg	5780	5852	6020	7264	7688	7940	8364

Size	WCH-i	250	300	350	400	450	500	550
Inverter dimensions								
A - Length	mm	420	420	420	420	420	602	602
B - Width	mm	378	378	378	378	378	514	514
C - Height	mm	1100	1100	1100	1100	1100	2043	2043
B1	mm	600	600	600	600	600	800	800
C1	mm	225	225	225	225	225	225	225
Operating weight	kg	125	125	125	125	125	300	300

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

HOT GAS BY PASS:

- **-** Hot gas by pass: not required (Standard)
- **B** Hot gas by pass

technical data

Size		WCH-i	250	300	350	400	450	500	550
Cooling									
Cooling capacity (EN14511:2018)	(1)	kW	876	1051	1227	1402	1577	1752	1927
Compressor power input (EN14511:2018)	(1)	kW	157	183	213	234	257	288	322
EER (EN14511:2018)	(1)	-	5,56	5,75	5,76	6,00	6,13	6,09	5,99
SEER	(4)	-	7,66	7,99	8,36	8,82	8,97	9,01	9,06
$\eta_{s,c}$	(4)	%	298,2	311,7	326,5	344,6	350,6	352,4	354,3
Refrigeration circuits		Nr				1			
No. of compressors		Nr				1			
Type of compressors	(3)	-				CFGi			
Refrigerant		-				R-134a			
Water flow (User side)		l/s	42,0	50,4	58,8	67,2	75,6	84,0	92,4
Water flow (Source side)		-	49,2	58,8	68,5	77,9	87,3	97,1	107
Standard power supply		V				400/3/50			
Sound pressure level	(2)	dB(A)	80	80	80	80	80	80	81

(1) Data calculated according to EN 14511:2018 referred to the following conditions: Internal exchanger water = 12/7 °C. External exchanger water = 30/35°C
(2) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water temperature = 12/7°C; Internal exchanger water = 30/35°C.
(3) CFGi = Inverter driven centrifugal compressor
(4) Data calculated according to EN 14825:2018

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

accessories

- **EV2R** Two-stage evaporator and right connections
- **EV10P** One-stage evaporator and opposing connections
- **EV30P** Three-stage evaporator and opposing connection
- **EV16** Evaporator water pressure 16 bar
- **IS40** Insulation for evaporator with thickness of 40mm
- **CO2R** Two-stage condenser and right connections
- **CO10P** One-stage condenser and opposing connections
- **CO30P** Three-stage condenser and opposing connection
- **CO16** Condenser water pressure 16 bar
- **AMMX** Anti-vibration mount supports
- **AMRX** Rubber antivibration mounts
- **AMMSX** Anti-seismic spring antivibration mounts
- **2VBYX** ON/OFF motorized by-pass valve
- **CSIC** Shielded connection cables between inverter and compressor: metres 4.5 length
- **QS6X** Electrical panel with main switch
- **CCSQX** Connection cables from electrical panel with main switch (QS6X) to inverter and unit electrical panel

Accessories whose code ends with "X" are supplied separately

MSE-XSC3

90.4÷160.4

SPINchiller^3

Water chiller
Condenserless
Indoor installation
Capacity from 265 to 445 kW

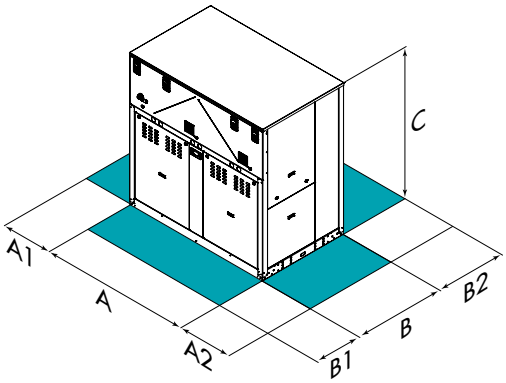
The liquid chillers in the **MSE-XSC3** range are units for indoor installation and are ideal in combination with the remote condensers. They are particularly suited in civil and industrial sector systems in the following applications:

- **EXTREMELY LOW NOISE EMISSION:** separated from the chiller, the outdoor exchange section can be selected and sized as required to reduce noise emission.
- **PARTICULARLY SEVERE CLIMATES**: the two section solution makes it possible to avoid having an outdoor water system and therefore having to perform the winter emptying needed to protect it against freezing. With MSE-XSC3, the pipes between the two sections contain a refrigerant fluid and not water.

functions and features

Cooling only | Remote condenser | Indoor installation | R-410A | Hermetic Scroll | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	MSE-XSC3	90.4	100.4	110.4	120.4	140.4	160.4
A - Length	mm	2350	2350	2350	2350	2350	2350
B - Width	mm	1150	1150	1150	1150	1150	1150
C - Height	mm	2210	2210	2210	2210	2210	2210
A1	mm	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700
B1	mm	1200	1200	1200	1200	1200	1200
B2	mm	500	500	500	500	500	500
Operating weight	kg	1447	1611	1668	1722	1773	1818

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

ENERGY RECOVERY:

- **-** Energy recovery: not required (Standard)
- **D** Partial energy recovery

technical data

Size	MSE-XSC3		90.4	100.4	110.4	120.4	140.4	160.4
Cooling capacity	(1)	kW	265	289	313	349	406	445
Compressor power input	(1)	kW	75,1	82,0	90,1	101	114	128
Total power input	(1)	kW	75,6	82,5	90,6	102	115	128
EER	(2)	-	3,53	3,52	3,47	3,44	3,55	3,48
Refrigeration circuits		Nr	2					
No. of compressors		Nr	4					
Type of compressors	(3)	-	SCROLL					
Standard power supply		V	400/3/50					
Sound pressure level	(4)	dB(A)	64	64	65	66	68	68

The units are shipped with a sealed charge of nitrogen. (sizes 220.2-580.2)

(1) Data referred to the following conditions: Internal exchanger water temeprature = 12/7°C; Condensing temperature = 50°C

(2) EER referred only to compressors

(3) SCROLL = scroll compressor

(4) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Condensing temperature = 50°C

accessories

- **AMRX** Rubber antivibration mounts
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CONTA2** Energy meter
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with 0-10 V signal
- **ECS** ECOSHARE function for the automatic management of a group of units
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **SFSTR** Progressive compressor start-up device
- **CVSX** Couple of manually operated shut-off valves
- **IFWX** Steel mesh strainer on the water side
- **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- **MHP** High and low pressure gauges
- **SDV** Cutoff valve on compressor supply and return
- **RPR** Refrigerant drops detector
- **2PM** Hydropack user side with 2 pumps
- **2PMV** Hydropack user side with no.2 of inverter pumps

Accessories whose code ends with "X" are supplied separately

MDE-SL3

120.1÷580.2

SCREWLine^3

Water chiller
Condenserless
Indoor installation
Capacity from 300 to 1427 kW

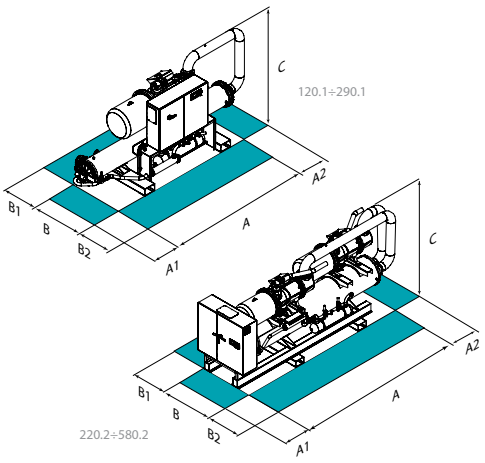
The liquid chillers in the **MDE-SL3** range are units for indoor installation and are ideal in combination with the remote condenser. They are particularly suited in civil and industrial sector systems in the following applications:

- **EXTREMELY LOW NOISE EMISSION:** separated from the chiller, the outdoor exchange section can be selected and sized as required to reduce noise emission.
- **PARTICULARLY SEVERE CLIMATES**: the two section solution makes it possible to avoid having an outdoor water system and therefore having to perform the winter emptying needed to protect it against freezing. With MDE-SL3, the pipes between the two sections contain a refrigerant fluid and not water.

functions and features

Cooling only | Remote condenser | Indoor installation | R-134a | Semi-hermetic Twin-screw | Electronic expansion valve | Intelliplant

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size MDE-SL3		120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
A - Length	mm	4210	4210	4210	4189	4189	4189	4189	4324	4324
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1558	1558	1558	1642	1642	1642	1642	1657	1657
EN-EXC C - Height	mm	1573	1573	1573	1750	1750	1750	1750	1750	1750
A1	mm	700	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700	700
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1160	1160	1160	1160	1160	1160	1160	1160	1160
ST-EXC Operating weight	kg	2073	2152	2229	2821	2832	2843	2895	2981	3012
EN-EXC Operating weight	kg	2237	2345	2422	3044	3055	3066	3118	3204	3235

Size MDE-SL3		220.2	240.2	260.2	280.2	300.2	320.2	340.2	360.2	400.2	440.2	470.2	500.2	540.2	580.2
A - Length	mm	4638	4638	4638	4638	4638	4638	4992	4992	5006	5006	5006	5077	5077	5077
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1790	1790	1790	1790	1790	1790	1995	1995	2010	2010	2010	2145	2145	2145
EN-EXC C - Height	mm	1900	1900	1900	1900	1900	1900	2121	2121	2121	2121	2121	2239	2239	2239
A1	mm	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410	1410
A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST-EXC Operating weight	kg	3390	3422	3497	3587	3681	3745	4448	4675	4763	4784	4832	5680	5817	5876
EN-EXC Operating weight	kg	3830	3862	3966	4013	4107	4171	5010	5267	5388	5445	5493	6318	6455	6514

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

ST-EXC Standard (ST)-Excellence
EN-EXC Super-silenced (EN)-Excellence

versions and configurations

LOW TEMPERATURE:

- **-** Low temperature: not required (Standard)
- **B** Water low temperature

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **EN** Extremely low noise acoustic configuration

DOUBLE SET POINT:

- **-** Double set point: not required (Standard)
- **DSP** Double set point

VERSION:

- **EXC** Excellence (Standard)

UNIT INSTALLATION:

- **II** Indoor installation (Standard)

technical data

Size			MDE-SL3		120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
ST/EN-EXC	Cooling capacity	(1)	kW		300	364	401	466	508	566	620	683	728
ST/EN-EXC	Compressor power input	(1)	kW		69,1	82,4	90,5	105	114	128	140	154	165
ST/EN-EXC	Total power input	(1)	kW		69,6	82,9	91,0	105	114	128	140	154	165
ST/EN-EXC	EER	(2)	-		4,35	4,42	4,43	4,44	4,46	4,42	4,43	4,44	4,42
ST/EN-EXC	Refrigeration circuits		Nr						1				
ST/EN-EXC	No. of compressors		Nr						1				
ST/EN-EXC	Type of compressors	(3)	-						DSW				
ST/EN-EXC	Standard power supply		V						400/3/50				
ST-EXC	Sound pressure level	(4)	dB(A)		71	76	76	79	79	80	81	82	82
EN-EXC	Sound pressure level	(4)	dB(A)		66	70	71	73	73	74	75	76	76

Size			MDE-SL3	220.2	240.2	260.2	280.2	300.2	320.2	340.2	360.2	400.2	440.2	470.2	500.2	540.2	580.2
ST/EN-EXC	Cooling capacity	(1)	kW	550	585	642	720	757	794	848	899	997	1115	1159	1231	1344	1427
ST/EN-EXC	Compressor power input	(1)	kW	128	137	150	164	173	181	195	208	228	255	267	280	307	329
ST/EN-EXC	Total power input	(1)	kW	128	138	151	165	174	182	196	209	228	256	268	281	308	329
ST/EN-EXC	EER	(2)	-	4,30	4,26	4,27	4,38	4,37	4,39	4,34	4,31	4,38	4,37	4,34	4,39	4,38	4,34
ST/EN-EXC	Refrigeration circuits		Nr							2							
ST/EN-EXC	No. of compressors		Nr							2							
ST/EN-EXC	Type of compressors	(3)	-							DSW							
ST/EN-EXC	Standard power supply		V							400/3/50							
ST-EXC	Sound pressure level	(4)	dB(A)	74	74	77	79	79	79	80	82	82	84	84	84	85	85
EN-EXC	Sound pressure level	(4)	dB(A)	69	69	71	73	73	74	74	76	76	78	79	78	79	79

The units are shipped with a sealed charge of nitrogen. (sizes 220.2-580.2)

(1) Data referred to the following conditions: Internal exchanger water = 12/7°C; Condensing temperature = 45°C

(2) EER referred only to compressors

(3) DSW = twin-screw compressor

(4) Sound levels refer to full load units, in test nominal conditions. The sound pressure level refers to 1 m. from the standard unit outer surface operating in open field. Measurements are carried out according to the UNI EN ISO 9614-2 standard, in compliance with the EUROVENT 8/1 certification. Data referred to the following conditions: Internal exchanger water = 12/7°C; Condensing temperature = 45°C

ST-EXC Standard (ST)-Excellence
EN-EXC Extremely low noise(EN)-Excellence

accessories

- **AMRX** Rubber antivibration mounts
- **RCMRX** Remote control via microprocessor control
- **PSX** Mains power supply
- **CONTA2** Energy meter
- **CMSC9** Serial communication module for Modbus supervisor
- **CMSC10** Serial communication module for LonWorks supervisor
- **CMSC11** Serial communication module for BACnet-IP supervisor
- **SCP4** Set-point compensation with 0-10 V signal
- **SPC1** Set point compensation with 4-20 mA signal
- **SPC2** Set-point compensation with outdoor air temperature probe
- **ECS** ECOSHARE function for the automatic management of a group of units
- **PFCP** Power factor correction capacitors (cosfi > 0.9)
- **SFSTR2** Progressive compressor start-up device
- **CBS** Overload circuit breakers

Accessories whose code ends with "X" are supplied separately

Medium attendance applications

	SMARTPack²	CLIVETPack²	
Air flow	3200 ÷ 10500 m³/h (20 ÷ 46 kW)	8500 ÷ 25000 m³/h (50 ÷ 160 kW)	22000 ÷ 60000 m³/h (155 ÷ 376 kW)
ErP compliance	ErP	ErP	ErP
Products	 R-410A	 R-410A	 R-410A
Air source Cooling only			CSRT-XHE2 49.4-110.4
Air source Heat pumps	CKN-XHE2i 7.1-14.2	CSRN-XHE2 15.2-44.4 HSE	CSRN-XHE2 49.4-110.4
Water source Heat pumps		CRH-XHE2 14.2-44.4	CRH-XHE2 49.4-110.4
Electronically controlled ventilation and variable air flow	✓	✓	✓
Free Cooling	✓	✓	✓
Thermodynamic energy recovery	✓	✓	✓
THOR (THermodynamic Overboost Recovery)		✓	✓
Electronic filtration	✓	✓	✓

R-410A Scroll Compressor, Refrigerant R-410A

R-410A Tandem Scroll Compressors, Refrigerant R-410A

Full Inverter DC

High attendance applications

Full fresh air applications

CLIVETPack²	CLIVETPack² FFA
4000 ÷ 20000 m³/h (47 ÷ 174 kW)	3000 ÷ 9000 m³/h (33 ÷ 90 kW)
ErP	ErP
 R-410A	 R-410A
CSNX-XHE2 12.3-44.4	CSRN-XHE2 FFA 12.2-24.4
✓	✓
✓	✓
✓	✓
✓	
✓	✓

PACKAGED System

System components

SERIES	SIZE FROM	TO	NAME	PAGE
Autonomous air-conditioners / Heat pumps - air source - roof top for medium attendance applications				
CKN-XHE2i	7.1	14.2	SMARTPack^2	108
CSRN-XHE2	15.2	44.4	CLIVETPack^2 HSE	110
CSRT-XHE2 / CSRN-XHE2	49.4	110.4	CLIVETPack^2	114
Autonomous air-conditioners / Heat pumps - air source - roof top for high attendance applications				
CSNX-XHE2	12.3	44.4	CLIVETPack^2	118
Autonomous air-conditioners / Heat pumps - air source - roof top for full fresh air applications				
CSRN-XHE2-FFA	12.2	24.4	ClivetPACK^2 FFA	120
Remote management systems				
Clivet Master System				122

CKN-XHE2i

7.1÷14.2

SMARTPack²

Packaged air-conditioning unit
CKN-XHE2i: reversible heat pump
Air cooled
Roof Top
Capacity from 20 to 45 kW

Control keypad standard supplied:
Main functions:
- unit on/off
- unit main information
- daily/weekly programming
- temperature set-point modification
- humidity set-point modification
- manual or automatic summer/winter switching

Unit listed on www.eurovent-certification.com

ErP compliant

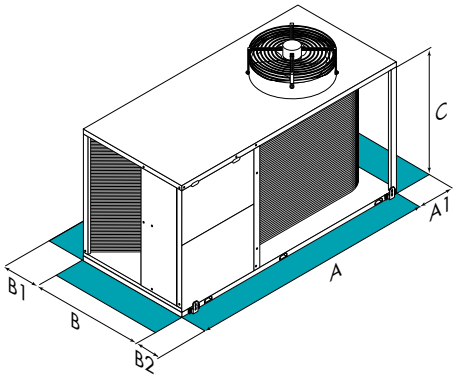
SMARTPack² is the innovative range of FULL INVERTER high efficiency autonomous air conditioners. They allow the air treatment, purification and renewal in small and medium environments such as shops, bars, small restaurants, service stations, showrooms, outlet villages, technical rooms and production areas.
The units use efficient EC plug-fan fans in the air treatment area, axial fans with DC brushless motor with condensation control on the external section.

- **COMPACT DESIGN:** easy to integrate in a range of different architectural contexts
- **LOW RUNNING COSTS:** the very high efficiency at partial loads, the free-cooling, the standard energy recovery on units with exhaust air, make a drastic reduction in energy consumption during the annual operation.
- **VERSATILE USE:** in the range of larger units and the extensive number of available versions and options make this unit extremely flexible and suitable for all situations.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Full Inverter DC | FREE-COOLING | Thermodynamic recovery | Electronically commutated Plug Fan | Electronic expansion valve | Constant Air Volume | Variable Air Volume

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CKN-XHE2i		7.1	10.1	14.2
A - Length		mm	2250	2250	2610
B - Width		mm	1240	1310	1750
C - Height		mm	1210	1510	1660
A1		mm	1000	1000	1000
B1		mm	1000	1000	1000
B2		mm	1000	1000	1000
CAK/CBK	Operating weight	kg	464	576	818
CCK	Operating weight	kg	482	600	853

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAK Full re-circulation (CAK)
CBK Recirculation and renewal air (CBK)
CCK Configuration with double fan section for recirculation, fresh and exhaust air

versions and configurations

CONFIGURATION:

CAK Configuration with single fan section for full recirculation

CBK Configuration with single fan section for recirculation and fresh air

CCK Configuration with double fan section for recirculation, fresh and exhaust air

technical data

Size	CKN-XHE2i		7.1	10.1	14.2
Cooling capacity	(1)	kW	20,6	30,4	45,7
Sensible capacity	(1)	kW	16,5	24,6	35,9
Compressor power input	(1)	kW	5,27	8,28	11,5
Cooling capacity (EN14511:2018)	(9)	kW	19,0	28,4	42,1
EER (EN14511:2018)	(9)	-	3,08	2,88	2,97
Heating capacity	(2)	kW	20,9	29,8	43,8
Compressor power input	(2)	kW	5,08	7,24	9,89
Heating capacity (EN14511:2018)	(10)	kW	20,5	29,1	43,1
COP (EN14511:2018)	(10)	-	3,26	3,25	3,28
No. of compressors		Nr	1	1	2
Type of compressors	(7)	-	ROT	SCROLL	ROT
Sound pressure level	(6)	dB(A)	65	66	68
Refrigeration circuits		Nr	1	1	1
Supply airflow		m^3/h	4000	6000	9000
Type of supply fan	(3)	-		RAD EC BRUSHLEES	
Number of supply fans		Nr	1	1	1
Fan diameter		mm	450	500	560
Max. static pressure supply fan	(4)	Pa	380	680	510
Type of exhaust fan	(5)	-	RAD EC BRUSHLEES	RAD EC BRUSHLEES	RAD EC BRUSHLEES
Number of exhaust fans	(5)	Nr	1	1	1
External section fan		-	AX DC BRUSHLESS	AX DC BRUSHLESS	AX DC BRUSHLESS
Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N
Continuous capacity adjustment			20-100%	20-100%	20-100%
Directive ErP (Energy Related Products)					
SEER - AVERAGE Climate	(8)	-	4,58	4,37	4,48
$\eta_{s,c}$	(8)	%	180,2	171,9	176,2
SCOP - AVERAGE Climate	(8)	-	3,22	3,20	3,27
$\eta_{s,H}$	(8)	%	125,8	125,0	127,8

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance data are referred to operation with 30% of outdoor and exhaust air; (configuration CCK)

(1) Ambient air at 27°C/19°C W.B. Entering external exchanger air temperature 35°C;
(2) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB;
(3) RAD = radial fan
(4) Net outside static pressure to win the outlet and intake onboard pressure drops
(5) Configuration for outdoor air supply with exhaust and extraction; (only with CCK configuration)
(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
(7) SCROLL = scroll compressor
ROT = rotary compressor
(8) Data calculated according to the EN 14825:2018 Regulation
(9) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 27°C D.B./19°CW.B.; outdoor temperature 35°C. EER according to EN 14511-2018.
(10) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 20°C; outdoor temperature 7°CD.B./6°CW.B.. COP according to EN 14511-2018.

accessories

FCE Enthalpy FREE-COOLING
PAQC Air quality probe for CO2 rate check
PAQCV Air quality sensor for CO2 and VOC rate check
SER Outdoor air damper manually set (CBK version)
SERM Outdoor air motorized on/off damper (CBK version)
SERMD Modulating motorized outdoor air damper (CBK version)
PCOS Constant supply airflow
PVAR Variable airflow
GC01 Condensing gas heating module with modulating control 35kW
GC08 Condensing gas heating module with modulating control 44kW
GC09 Condensing gas heating module with modulating control 65kW
GC10 Condensing gas heating module with modulating control 82kW
PGFC Finned coil protection grill
F7 High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES Electronic filters (ISO 16890 ePM1 90%)
PSAF Differential pressure switch for dirty air filters
CHW2 Two-rows hot water coil
3WVM Modulating three-way valve
EH09 4,5 kW electric heaters
EH10 6 kW electric heaters
EH12 9 kW electric heaters
EH15 13.5 kW electric heaters
EH17 18 kW electric heaters
EH20 24 kW electric heaters
CPHG Hot gas re-heating coil
HSE3 3 kg/h electrode boiler steam humidifier
HSE5 5 kg/h electrode boiler steam humidifier
HSE8 Immersed electrodes steam humidifier of 8 kg/h
MOB Serial port RS485 with Modbus protocol
PM Phase monitor
PFCC Power factor correction capacitors (cosfi > 0.95)
AMRX Rubber antivibration mounts
UVC UV-C germicidal lamps

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

CSRN-XHE2

15.2÷44.4

CLIVETPack² HSE

Packaged air-conditioning unit
CSRN-XHE2: reversible heat pump
Air cooled
Roof Top
Capacity from 55 to 148 kW

Unit listed on www.eurovent-certification.com

ErP compliant

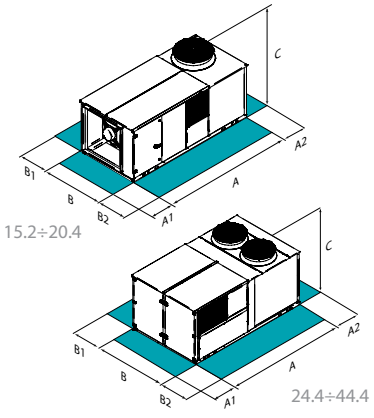
CLIVETPack² HSE are Rooftop designed for the air-conditioning of small and medium surface environments with medium attendance such as supermarkets, shops, offices and small production areas.
The entire range is designed for maximum seasonal efficiency thanks to the double cooling circuit with tandem scroll compressors, electronically controlled fans with brushless motors, large heat exchange surfaces, microprocessor control with dedicated control.

- **VERSATILITY OF USE:** wide range of versions and options make the unit extremely flexible and suitable for the most different project situations
- **LOW RUNNING COSTS:** the very high efficiency at partial loads, the free-cooling, the standard energy recovery on units with exhaust air, make a drastic reduction in energy consumption during the annual operation.
- **EASY TO POSITION AND INSTALL:** the units are exceptionally compact, allow bottom or horizontal supply and return air.

functions and features

Heat pump · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · Ice protection system · FREE-COOLING · THOR (THermodynamic Overboost Recovery) · ECOBREEZE · Electronically commutated Plug Fan · Electronic expansion valve · Constant Air Volume · Variable Air Volume

dimensions and clearances



Size	CSRN-XHE2		15.2	18.2	20.4	25.4	30.4	33.4	40.4	44.4
CAK	A - Length	mm	3400	3400	3725	3725	3725	3725	3725	3725
CAK	B - Width	mm	1620	1620	2290	2290	2290	2290	2290	2290
CAK	C - Height	mm	1610	1610	1610	1610	1610	1910	1910	1910
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	881	901	1426	1461	1471	1531	1563	1568
CAK	Operating weight	kg	881	901	1426	1461	1471	1531	1563	1568
CCK	Operating weight	kg	1015	1036	1634	1669	1679	1788	1820	1825
CCKP	Operating weight	kg	1045	1066	1681	1715	1726	1847	1879	1883

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation
CBK Configuration with single fan section for recirculation and fresh air
CCK Configuration with double fan section for recirculation, fresh and exhaust air
CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

CONFIGURATION:

CAK Configuration with single fan section for full recirculation (Standard)

CBK Configuration with single fan section for recirculation and fresh air

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size		CSRN-XHE2		15.2	18.2	20.4	25.4	30.4	33.4	40.4	44.4
Eurovent									-	-	-
CCKP	Cooling capacity	(1)	kW	55,1	66,0	82,7	95,0	103	119	138	148
CCKP	Sensible capacity	(1)	kW	42,8	51,3	63,4	70,8	73,0	86,3	97,4	104
CCKP	Compressor power input	(1)	kW	12,7	16,6	20,1	21,8	25,2	28,0	35,0	38,8
CCKP	Cooling capacity (EN14511:2018)	(9)	kW	45,6	53,3	68,3	78,7	86,0	103,8	121,3	128,3
CCKP	EER (EN14511:2018)	(9)	-	3,06	2,85	2,82	2,86	2,86	3,17	3,73	2,90
CCKP	Heating capacity	(2)	kW	49,8	63,4	74,4	90,4	98,3	118	145	154
CCKP	Compressor power input	(2)	kW	9,35	11,9	15,2	17,5	20,4	23,4	28,9	32,9
CCKP	Heating capacity (EN14511:2018)	(10)	kW	44,2	56,7	66,7	80,7	87,6	101,5	124,6	132,0
CCKP	COP (EN14511:2018)	(10)	-	3,59	3,59	3,15	3,38	3,20	3,30	3,34	3,15
CCKP	Refrigeration circuits		Nr	1	1	2	2	2	2	2	2
CCKP	No. of compressors		Nr	2	2	4	4	4	4	4	4
CCKP	Type of compressors	(3)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
CCKP	Supply airflow		m^3/h	9000	11500	13500	15000	17000	18500	21000	23000
CCKP	Type of supply fan	(4)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of supply fans		Nr	1	1	2	2	2	2	2	2
CCKP	Fan diameter		mm	630	630	560	560	560	630	630	630
CCKP	Max. static pressure supply fan	(5)	Pa	510	390	510	510	510	510	440	380
CCKP	Type of exhaust fan	(6)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of exhaust fans		Nr	1	1	2	2	2	2	2	2
CCKP	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level		(7)	dB(A)	64	66	67	68	69	70	71	72
Directive ErP (Energy Related Products)											
SEER - AVERAGE Climate		(8)	-	3,98	3,75	3,56	3,65	3,61	3,99	4,25	3,77
$\eta_{s,c}$		(8)	%	156,1	146,8	139,2	143,2	141,4	156,8	166,9	147,7
SCOP - AVERAGE Climate		(8)	-	3,20	3,43	3,26	3,49	3,32	3,50	3,81	3,64
$\eta_{s,H}$		(8)	%	125,0	134,2	127,4	136,6	129,8	137,0	149,4	142,6

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performances are referred to the operating with 30% of exhaust and outdoor air with THOR thermodynamic recovery (CCKP)

(1) Ambient air at 27°C D.B./19°C W.B. Entering external exchanger air temperature 35°C;
(2) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB;
(3) SCROLL = scroll compressor
(4) RAD = radial fan
(5) Net outside static pressure to win the outlet and intake onboard pressure drops
(6) Configuration with double fan section for recirculation, fresh air, exhaust, thermodynamic recovery (CCK) and configuration with double fan section with renewal air and THOR thermodynamic recovery (CCKP)
(7) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
(8) Data calculated according to the EN 14825:2018 Regulation
(9) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 27°C D.B./19°CW.B.; outdoor temperature 35°C. EER according to EN 14511-2018,
(10) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 20°C; outdoor temperature 7°CD.B./6°CW.B.. COP according to EN 14511-2018

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

accessories

REC	Exhaust air thermodynamic energy recovery (CCK version)
THR	Exhaust air THOR thermodynamic energy recovery (CCKP version)
FC	Thermal FREE-COOLING (CCK, CCKP version)
FCE	FREE-COOLING entalpico (CCK, CCKP version)
M3	Downward air supply
M5	Upflow air supply
ML	Sideward air supply (sizes 15.2÷18.2)
R3	Downward air return
SER	Outdoor air damper manually set (CBK version)
SERM	Outdoor air motorized on/off damper (CBK version)
SERMD	Modulating motorized outdoor air damper (optional for CBK, standard for CCK and CCKP)
PVAR	Variable airflow
PCOSM	Constant supply airflow
PAQC	Air quality probe for CO2 rate check
PAQCV	Air quality sensor for CO2 and VOC rate check
CREFB	Device for fan consumption reduction of the external section, ECOBREEZE type
VENH	High static pressure fans
F7	High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES	Electronic filters (ISO 16890 ePM1 90%)
PSAF	Differential pressure switch for dirty air filters
EH12	9 kW electric heaters (sizes 15.2÷18.2)
EH14	12 kW electric heaters (sizes 15.2÷30.4)
EH17	18 kW electric heaters
EH20	24 kW electric heaters (sizes 20.4÷44.4)
EH24	36 kW electric heaters (sizes 33.4÷44.4)
CHW2	Two-rows hot water coil
CHWER	Energy recovery from food refrigeration
3WVM	Modulating 3-way valve
2WVM	Modulating 2-way valve
GC01	Condensing gas heating module with modulating control 35kW (sizes 15.2÷18.2)
GC01X	Condensing gas heating module with modulating control 35kW (sizes 20.4÷30.4)
GC09	Condensing gas heating module with modulating control 65kW (sizes 15.2÷18.2)
GC09X	Condensing gas heating module with modulating control 65kW (sizes 20.4÷44.4)
GC08	Condensing gas heating module with modulating control 44kW (sizes 15.2÷18.2)
GC08X	Condensing gas heating module with modulating control 44kW (sizes 20.4÷30.4)
GC10X	Condensing gas heating module with modulating control 82kW (sizes 20.4÷44.4)
GC12X	Condensing gas heating module with modulating control 130kW (sizes 33.4÷44.4)
GC11X	Condensing gas heating module with modulating control 100kW (sizes 20.4÷44.4)
LTEMP1	Application for low outdoor temperature
CPHG	Hot gas re-heating coil
HSE3	3 kg/h immersed electrodes steam humidifier
HES5	5 kg/h immersed electrodes steam humidifier
HES8	8 kg/h immersed electrodes steam humidifier
HES9	15 kg/h immersed electrodes steam humidifier
MHP	High and low pressure gauges
CMSC9	Serial communication module for Modbus supervisor
CMSC10	Serial communication module for LonWorks supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
CSOND	Temperature and humidity ambient control with built-in probes
DML	Demand Limit
PM	Phase monitor
PFCC	Power factor correction capacitors (cosfi > 0.95)
DESM	Smoke detector
SFSTC	Progressive compressor start-up device
CLMX	Clivet Master System
PCM0	Sandwich panels of the handling zone in M0 fire reaction class
AMRX	Rubber antivibration mounts
AMRMX	Rubber antivibration mounts for unit and gas module (sizes 20.4÷44.4)
RCX	Roof curb
UVC	UV-C germicidal lamps

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

CSRT-XHE2 CSRN-XHE2

49.4÷110.4

CLIVETPack²

Packaged air-conditioning unit
CSRT-XHE2: cooling only
CSRN-XHE2: heat pump
Air cooled
Roof Top
Capacity from 155 to 376 kW

ErP compliant

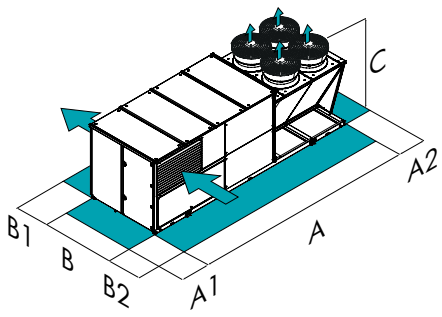
CSRT-XHE2 and CSRN-XHE2 are Rooftop designed for the air-conditioning of surfaces such as supermarkets, commercial areas, manufacturing areas, railway stations and airports.
The entire range is designed for maximum seasonal efficiency, with particular attention to the situations at partial load, thanks to the double cooling circuit with tandem scroll compressors, electronically controlled fans with brushless motors, large heat exchange surfaces, microprocessor control with dedicated control.

- **VERSATILITY OF USE:** wide range of versions and options make the unit extremely flexible and suitable for the most different project situations
- **EASY TO POSITION AND INSTALL:** the units are exceptionally compact, allow bottom or horizontal supply and return air.

functions and features

Cooling only (CSRT-XHE2) · Heat pump (CSRN-XHE2) · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · Ice protection system · FREE-COOLING · THOR (THermodynamic Overboost Recovery) · ECOBREEZE · Electronically commutated Plug Fan · Electronic expansion valve · Constant Air Volume · Variable Air Volume

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CSRT-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK	A - Length	mm	5250	5250	6670	6670	6670	8510	8510	8510
CAK	B - Width	mm	2326	2326	2326	2326	2326	2326	2326	2326
CAK	C - Height	mm	2410	2410	2410	2410	2410	2410	2410	2410
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	2102	2418	2573	2765	3181	3283	3528	4059
CAK	Operating weight	kg	2102	2418	2573	2765	3181	3283	3528	4059
CCKP	Operating weight	kg	2313	2630	2851	3043	3460	3637	3882	4414

Size	CSRN-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK	A - Length	mm	5250	5250	6670	6670	6670	8510	8510	8510
CAK	B - Width	mm	2326	2326	2326	2326	2326	2326	2326	2326
CAK	C - Height	mm	2410	2410	2410	2410	2410	2410	2410	2410
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CBK	Operating weight	kg	2189	2512	2688	2880	3305	3430	3674	4217
CAK	Operating weight	kg	2189	2512	2688	2880	3305	3430	3674	4217
CCK	Operating weight	kg	2304	2628	2839	3031	3457	3622	3867	4411
CCKP	Operating weight	kg	2400	2724	2966	3158	3583	3784	4029	4571

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation
CBK Configuration with single fan section for recirculation and fresh air
CCK Configuration with double fan section for recirculation, fresh and exhaust air
CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

versions and configurations

CONFIGURATION:

CAK Configuration with single fan section for full recirculation (Standard)

CBK Configuration with single fan section for recirculation and fresh air

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

TYPE FAN EXTERNAL SECTION:

AXI High efficiency diffuser for axial fan - AxiTop (Standard)

technical data

Size	CSRT-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CCKP	▸ Cooling capacity	(1)	kW	174	185	220	241	279	334	355	375
CCKP	Sensible capacity	(1)	kW	128	138	160	180	202	244	256	273
CCKP	Compressor power input	(1)	kW	41,5	45,5	50,6	59,6	65,5	76,8	85,7	96,3
CCKP	▸ Cooling capacity (EN14511:2018)	(9)	kW	151,9	161,2	191,2	209,3	239,5	291,0	304,9	325,3
CCKP	EER (EN14511:2018)	(9)	-	3,24	3,12	2,53	2,78	3,11	3,19	3,02	2,88
CCKP	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2
CCKP	No. of compressors		Nr	4	4	4	4	4	4	4	4
CCKP	Type of compressors	(2)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
CCKP	Supply airflow		m^3/h	26000	29000	33000	37000	44000	51000	56000	60000
CCKP	Type of supply fan	(3)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of supply fans		Nr	3	3	4	4	4	6	6	6
CCKP	Fan diameter		mm	560	560	560	560	560	560	560	560
CCKP	Max. static pressure supply fan	(4)	Pa	630	540	660	570	360	620	540	460
CCKP	Type of exhaust fan	(3)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of exhaust fans	(5)	Nr	2	2	2	2	2	2	2	2
CCKP	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level		(6)	dB(A)	72	72	72	73	74	76	77	78
Directive ErP (Energy Related Products)											
SEER - AVERAGE Climate		(8)	-	3,99	3,77	3,95	4,19	4,35	4,84	4,28	4,04
$\eta_{S,C}$		(8)	%	156,6	147,7	155	164,6	170,9	190,4	168	158,7

Size	CSRN-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CCKP	▸ Cooling capacity	(1)	kW	175	186	220	242	280	336	356	376
CCKP	Sensible capacity	(1)	kW	129	139	160	180	202	247	256	274
CCKP	Compressor power input	(1)	kW	41,1	45,1	50,1	59,0	65,1	76,4	85,1	95,3
CCKP	▸ Cooling capacity (EN14511:2018)	(9)	kW	152,5	160,8	192,5	209,6	240,2	291,9	305,9	326,3
CCKP	EER (EN14511:2018)	(9)	-	3,29	3,09	3,24	3,05	3,15	3,22	3,05	2,91
CCKP	▸ Heating capacity	(7)	kW	176	187	218	241	279	330	353	382
CCKP	Compressor power input	(7)	kW	32,8	36,5	40,3	46,3	53,0	62,1	67,3	75,0
CCKP	▸ Heating capacity (EN14511:2018)	(10)	kW	149,8	158,7	185,4	208,9	235,1	285,3	302,8	326,8
CCKP	COP (EN14511:2018)	(10)	-	3,53	3,43	3,43	3,37	3,36	3,41	3,33	3,24
CCKP	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2
CCKP	No. of compressors		Nr	4	4	4	4	4	4	4	4
CCKP	Type of compressors	(2)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
CCKP	Supply airflow		m^3/h	26000	29000	33000	37000	44000	51000	56000	60000
CCKP	Type of supply fan	(3)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of supply fans		Nr	3			4			6	
CCKP	Fan diameter		mm	560	560	560	560	560	560	560	560
CCKP	Max. static pressure supply fan	(4)	Pa	630	540	660	570	360	620	540	460
CCKP	Type of exhaust fan	(5)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of exhaust fans	(5)	Nr	2	2	2	2	2	2	2	2
CCKP	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level		(6)	dB(A)	72	72	72	73	74	76	77	78
Directive ErP (Energy Related Products)											
SEER - AVERAGE Climate		(8)	-	4,56	3,98	4,41	4,29	4,28	4,63	4,12	3,91
$\eta_{S,C}$		(8)	%	179,6	156,2	173,4	168,5	168,3	182,0	162,0	153,3
SCOP - AVERAGE Climate		(8)		3,65	3,42	3,39	3,35	3,38	3,35	3,30	3,40
$\eta_{S,H}$		(8)	%	143,0	133,8	132,6	131,0	132,2	131,0	129,0	133,0

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performances are referred to the operating with 30% of exhaust and outdoor air with THOR thermodynamic recovery (CCKP)

(1) Ambient air at 27°C D.B./19°C W.B. Entering external exchanger air temperature 35°C;
(2) SCROLL = scroll compressor
(3) RAD = radial fan
(4) Net outside static pressure to win the outlet and intake onboard pressure drops
(5) Configuration with double fan section for recirculation, fresh air, exhaust, thermodynamic recovery (CCK) and configuration with double fan section with renewal air and THOR thermodynamic recovery (CCKP)
(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
(7) Ambient air at 20°C D.B. external exchanger entering air 7°C/6°C W.B.
(8) Data calculated according to the EN 14825:2018 Regulation
(9) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 27°C D.B./19°CW.B.; outdoor temperature 35°C. EER according to EN 14511-2018,
(10) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 20°C; outdoor temperature 7°CD.B./6°CW.B.. COP according to EN 14511-2018

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

THR	Exhaust air THOR thermodynamic energy recovery (CCKP version)
REC	Exhaust air thermodynamic energy recovery (CCK version)
FC	Thermal FREE-COOLING (standard for CCK, CCKP version)
FCE	FREE-COOLING entalpico (optional for CCK, CCKP version)
M3	Downward air supply
M5	Upflow air supply
R3	Downward air return
SER	Outdoor air damper manually set (CBK version)
SERM	Outdoor air motorized on/off damper (optional for CBK)
SFCM	Modulating motorized FREE-COOLING damper (standard for CCK, CCKP version)
SFCEM	Modulating motorized FREE-COOLING damper and min. outdoor air motorized on-off dampef (optional for CCK, CCKP version)
PVAR	Variable airflow
PCOSM	Constant supply airflow
PAQC	Air quality probe for CO2 rate check
PAQCV	Air quality sensor for CO2 and VOC rate check
CREFB	Device for fan consumption reduction of the external section, ECOBREEZE typei
VENH	High static pressure fans
F7	High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES	Electronic filters (ISO 16890 ePM1 90%)
PSAF	Differential pressure switch for dirty air filters
EH20	24 kW electric heaters
EH24	36 kW electric heaters
EH28	48 kW electric heaters
CHW2	Two-rows hot water coil
CHWER	Energy recovery from food refrigeration
3WVM	Modulating three-way valve
2WVM	Modulating 2-way valve
GC09X	Condensing gas heating module with modulating control 65kW (sizes 49.4÷54.4)
GC12X	Condensing gas heating module with modulating control 130kW (sizes 49.4÷54.4, 90.4÷110.4)
GC10X	Condensing gas heating module with modulating control 82kW (sizes 49.4÷80.4)
GC13X	Condensing gas heating module with modulating control 164kW (sizes 60.4÷110.4)
GC11X	Condensing gas heating module with modulating control 100kW (sizes 49.4÷80.4)
GC06X	Condensing gas heating module with modulating control 200kW (sizes 60.4÷110.4)
GC07X	Condensing gas heating module with modulating control 300kW (sizes 90.4÷110.4)
LTEMP1	Application for low outdoor temperature
CPHG	Hot gas re-heating coil
HES8	8 kg/h immersed electrodes steam humidifier
HES9	15 kg/h immersed electrodes steam humidifier
MHP	High and low pressure gauges
MOB	Serial port RS485 with Modbus protocol
LON	Serial port RS485 with LonWorks protocol
BACIP	BACnet-IP serial communication module
SIX	Service interface (cable of 1,5 metres)
MF2	Multi-function phase monitor
PFCC	Power factor correction capacitors (cosfi > 0.95)
DESM	Smoke detector
DML	Demand Limiti
CLMX	Clivet Master System
PCM0	Sandwich panels of the handling zone in M0 fire reaction class
AMRX	Rubber antivibration mounts
AMRMX	Rubber antivibration mounts for unit and gas module
RCX	Roof curb
CECA	Copper / aluminium evaporator coil with acrylic lining
CCCA	Copper / aluminium condenser coil with acrylic lining
UVC	UV-C germicidal lamps

CSRT-XHE2 ONLY:

RCAW	Active winter thermodynamic recovery on expelled air

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

CSNX-XHE2

12.3÷44.4

CLIVETPack²

Packaged air-conditioning unit
Reversible heat pump
Air cooled
Roof Top
Capacity from 47 to 174 kW

The **CSNX-XHE2** Rooftop series are units designed or the airconditioning of high attendance areas such as Congress Centers, cinemas, theaters, restaurants, bars, discoteques.
The entire range is designed for maximum seasonal efficiency, with particular attention to the situations at partial load, thanks to the double cooling circuit with tandem scroll compressors, electronically controlled fans with brushless motors, large heat exchange surfaces, microprocessor control with dedicated control.

- **VERSATILITY OF USE:** wide range of versions and options make the unit extremely flexible and suitable for the most different project situations
- **REDUCED MANAGEMENT COSTS:** the high efficiency at partial load, the freecooling, the exhaust air energy recovery, the electrostatic air filters at low pressure drop reduce the consumptions in the annual operation.
- **EASY TO POSITION AND INSTALL:** the units are exceptionally compact, allow bottom or horizontal supply and return air for maximum integration in buildings.

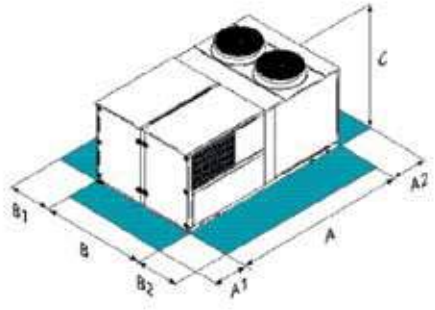
Unit listed on www.eurovent-certification.com

ErP compliant

functions and features

Heat pump · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · Ice protection system · FREE-COOLING · THOR (THermodynamic Overboost Recovery) · ECOBREEZE · Electronically commutated Plug Fan · Electronic expansion valve · Constant Air Volume · Variable Air Volume

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CSNX-XHE2		12.3	15.3	16.4	20.4	24.4	33.4	40.4	44.4
CCKP	A - Length	mm	3040	3040	4050	4050	4050	4650	4650	4650
CCKP	B - Width	mm	2625	2625	2625	2625	2625	2625	2625	2625
CCKP	C - Height	mm	1560	1560	1650	1650	1650	1930	1930	1930
CCKP	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CCKP	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CCKP	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CCKP	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CCKP	Operating weight	kg	1448	1472	1607	1642	1676	1847	1879	1883

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery-Small gas module

versions and configurations

CONFIGURATION:

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size	CSNX-XHE2			12.3	15.3	16.4	20.4	24.4	33.4	40.4	44.4
Eurovent									-	-	-
CCKP	Cooling capacity	(1)	kW	46,3	57,1	75,4	87,6	106,7	134,4	158,3	173,9
CCKP	Sensible capacity	(1)	kW	30,5	39,5	51,4	57,2	71,2	92,7	110,4	119,8
CCKP	Compressor power inputi	(1)	kW	9,2	12,3	15,5	19,4	22,8	28,0	35,2	39,5
CCKP	Cooling capacity (EN14511:2018)	(8)	kW	32,1	41,4	58	70,1	76,8	102,1	126,9	138,0
CCKP	EER (EN14511:2018)	(8)	-	2,58	2,60	3	2,98	2,79	3,14	3,25	3,14
CCKP	Heating capacity	(2)	kW	44,2	54,8	71,5	81,1	99,2	121,1	149,5	165,7
CCKP	Compressor power input	(2)	kW	8,9	10,8	13,7	15,0	17,0	20,6	25,3	29,4
CCKP	Heating capacity (EN14511:2018)	(9)	kW	35,1	43,8	60,0	69,4	84,2	101,7	123,2	135,0
CCKP	COP (EN14511:2018)	(9)	-	2,66	2,67	2,64	2,74	3,01	3,36	3,43	3,47
CCKP	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2
CCKP	N° compressori		Nr	2	2	4	4	4	4	4	4
CCKP	No. of compressors	(3)	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
CCKP	Supply airflow		m^3/h	4500	6500	8000	9000	12000	14000	16000	18000
CCKP	Type of supply fan	(4)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of supply fans		Nr	1	1	1	1	1	2	2	2
CCKP	Fan diameter		mm	500	500	560	560	560	630	630	630
CCKP	Max. static pressure supply fan	(5)	Pa	830	645	585	515	300	610	565	515
CCKP	Type of exhaust fan		-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
CCKP	Number of exhaust fans	(4)	Nr	1	1	1	1	1	2	2	2
CCKP	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
ST	Sound pressure level	(6)	dB(A)	65	66	67	68	69	70	71	72
Directive ErP (Energy Related Products)											
SEER - AVERAGE Climate		(7)	-	3,80	3,74	4,29	4,30	4,21	3,97	4,37	4,47
$\eta_{S,C}$		(7)	%	149,0	146,6	168,7	168,9	165,2	155,8	172,0	175,7
SCOP - AVERAGE Climate		(7)	-	3,22	3,23	3,20	3,27	3,50	3,73	3,84	3,79
$\eta_{S,H}$		(7)	%	125,8	126,2	125,0	127,8	137,0	146,2	150,6	148,6

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance refers to operation with 80% of expelled and outdoor air
(1) Ambient air at 27°C/19°C W.B. Entering external exchanger air temperature 35°C;
(2) Ambient air at 20°C D.B /13,7°C W.B. external exchanger entering air 7°C / 6°C W.B.
(3) SCROLL = scroll compressor
(4) RAD = radial fan
(5) Net outside static pressure to win the outlet and intake onboard pressure drops
(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)
(7) Data calculated according to the EN 14825:2018 Regulation
(8) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 27°C D.B./19°CW.B.; outdoor temperature 35°C. EER according to EN 14511-2018
(9) Capacity in total recirculation according to EN 14511-2018, indoor air temperature 20°C; outdoor temperature 7°CD.B./6°CW.B.. COP according to EN 14511-2018

accessories

THR Exhaust air THOR thermodynamic energy recovery (CCKP version)
FCE Enthalpy FREE-COOLING
M3 Downward air supply
M5 Upflow air supply
R3 Downward air return
PVAR Variable airflow
CREFB Application in spaces with forced air exhaust at variable flow and exhaust section
VENH High static pressure fans
EXFLOWC Application in spaces with forced air exhaust at variable flow and exhaust section
F7 High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES Electronic filters (ISO 16890 ePM1 90%)
PSAF Differential pressure switch for dirty air filters
PAQC Air quality probe for CO2 rate check
PAQCV Air quality sensor for CO2 and VOC rate check
EH10 6 kW electric heaters
EH12 9 kW electric heaters
EH17 18 kW electric heaters
EH15 13,5 kW electric heaters
EH22 27 kW electric heaters
EH24 36 kW electric heaters
CHW2 Two-rows hot water coil
3WVM Modulating three-way valve
2WVM Modulating 2-way valve
GC01X Condensing gas heating module with modulating control 35kW
GC08X Condensing gas heating module with modulating control 44kW
GC09X Condensing gas heating module with modulating control 65kW
GC10X Condensing gas heating module with modulating control 82kW
GC11X Condensing gas heating module with modulating control 100kW
GC12X Condensing gas heating module with modulating control 130kW
LTEMP1 Application for low outdoor temperature
CPHG Hot gas re-heating coil
HSE3 3 kg/h immersed electrodes steam humidifie
HSE5 5 kg/h immersed electrodes steam humidifier
HSE8 8 kg/h immersed electrodes steam humidifier
HSE9 15 kg/h immersed electrodes steam humidifier
MHP High and low pressure gauges
CMSC9 Serial communication module for Modbus supervisor
CMSC10 Serial communication module for LonWorks supervisor
CMSC11 Serial communication module for BACnet-IP supervisor
CTERM Remote keypad for indoor temperature and humidity control
CSOND Temperature and humidity ambient control with built-in probes
DML Demand Limiti
PM Phase monitor
DESM Smoke detector
PFCC Power factor correction capacitors (cosfi > 0.95)
SFSTC Progressive compressor start-up device
CLMX Clivet Master System
PCM0 Sandwich panels of the handling zone in M0 fire reaction class
AMRX Rubber antivibration mounts
AMRMX Rubber antivibration mounts for unit and gas module
RCX Roof curb
AXI High efficiency diffuser for axial fan - AxiTop
PTAAX Remote ambient air temperature sensor
PTUAX Ambient air humidity and temperature remote probe
PVMEV 4-20mA signal for exhaust and supply airflow modulation
UVC UV-C germicidal lamps

Accessories whose code ends with "X" are supplied separately
For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

CSRN-XHE2 FFA

12.2÷24.4

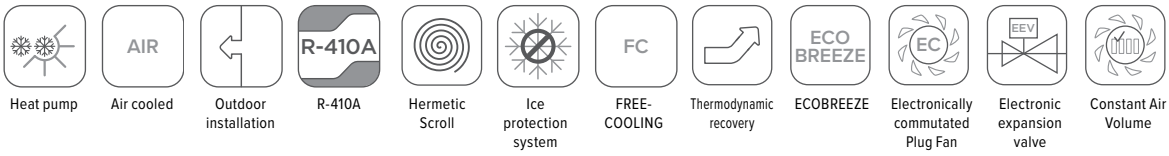
CLIVETPack² FFA

Packaged air-conditioning unit
CSRN-XHE2 FFA: reversible heat pump
Air cooled
Roof Top
Capacity from 33 to 90 kW

The **CLIVETPack2 FFA** (full fresh air) are rooftop units Destined to the air-conditioning of all those environments that need full fresh air-conditioning that feature suction hoods such as kitchens, laboratories, projection rooms, etc.

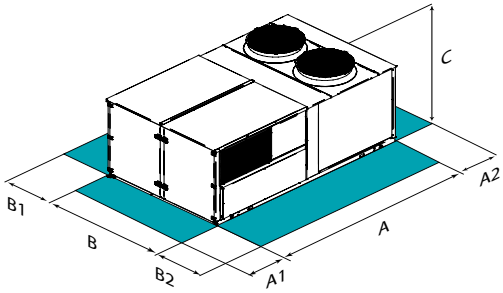
- **VERSATILITY OF USE:** wide range of versions and options make the unit extremely flexible and suitable for the most different project situations
- **REDUCED MANAGEMENT COSTS:** the high efficiency at partial load, the freecooling, the exhaust air energy recovery, the electrostatic air filters at low pressure drop reduce the consumptions in the annual operation.
- **EASY TO POSITION AND INSTALL:** the units are exceptionally compact, allow bottom or horizontal supply and return air.

functions and features



Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic Scroll | Ice protection system | FREE-COOLING | Thermodynamic recovery | ECOBREEZE | Electronically commutated Plug Fan | Electronic expansion valve | Constant Air Volume

dimensions and clearances



CAUTION!!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CSRN-XHE2-FFA		12.2	16.2	20.4	22.4	24.4
CBFFA	A - Length	mm	2090	2090	3110	3110	3110
CBFFA	B - Width	mm	2300	2300	2300	2300	2300
CBFFA	C - Height	mm	1560	1560	1650	1650	1650
CBFFA	A1	mm	1500	1500	1500	1500	1500
CBFFA	A2	mm	1500	1500	1500	1500	1500
CBFFA	B1	mm	1500	1500	1500	1500	1500
CBFFA	B2	mm	1500	1500	1500	1500	1500
CCFFA	Operating weight	kg	1401	1425	1560	1595	1629
CBFFA	Operating weight	kg	1273	1297	1358	1393	1427

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CBFFA Configuration for fresh air supply only
CCFFA Configuration for fresh air supply with extraction and exhaust

versions and configurations

CONFIGURATION:

CBFFA Configuration for fresh air supply only (Standard)

CCFFA Configuration for fresh air supply with extraction and exhaust

technical data

Size	CSRN-XHE2-FFA			12.2	16.2	20.4	22.4	24.4
CBFFA	Cooling capacity	(1)	kW	33,1	49,5	76,1	83,4	90,4
CBFFA	Sensible capacity	(1)	kW	18,8	27,8	38,3	43,3	48,0
CBFFA	Compressor power input	(1)	kW	9,20	12,9	20,0	21,7	23,3
CBFFA	EER	(1)	-	3,60	3,84	3,81	3,84	3,88
CBFFA	Heating capacity	(2)	kW	39,6	50,0	73,2	81,4	89,5
CBFFA	Compressor power input	(2)	kW	9,90	11,9	17,2	18,2	20,7
CBFFA	COP	(2)	-	4,00	4,20	4,26	4,47	4,32
CBFFA	Refrigeration circuits		Nr	2	2	2	2	2
CBFFA	No. of compressors		Nr	2	2	4	4	4
CBFFA	Type of compressors	(3)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
CBFFA	Supply airflow		m^3/h	3400	4500	6000	7000	8000
CBFFA	Type of supply fan	(4)	-	RAD	RAD	RAD	RAD	RAD
CBFFA	Number of supply fans		Nr	1	1	1	1	1
CBFFA	Fan diameter		mm	400	400	560	560	560
CBFFA	Max. static pressure supply fan	(5)	Pa	675	470	775	730	650
CBFFA	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level		(6)	dB(A)	65	66	67	68	69

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

(1) Ambient air at 27°C D.B./19°C W.B. Outdoor air temperature: 35°C D.B./ 24°C W.B; EER referred only to compressors
(2) Ambient temperature 20°C DB. Outside temperature 7°C DB/6°C WB; COP referred only to compressors
(3) SCROLL = scroll compressor
(4) RAD = radial fan
(5) Available nett pressure to overcome the supply
(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa. (standard UNI EN ISO 9614-2)

CBFFA Configuration for fresh air supply only

accessories

RE1 Thermodynamic heat recovery system (CCFFA version)
M3 Downward air supply
M5 Upflow air supply
R3 Downward air return
DAOP Over pressure damper
PCOSM Constant supply airflow
PCOSME Constant airflow in supply and exhaust (CCFFA version)
CREFB Device for fan consumption reduction of the external section, ECOBREEZE type
VENH High static pressure fans
F7 High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES Electronic filters (ISO 16890 ePM1 90%
PSAF Differential pressure switch for dirty air filters
EH17 18 kW electric heaters
EH22 27 kW electric heaters (sizes 20.4÷24.4)
EH12 9 kW electric heaters (sizes 12.2÷16.2)
EH14 12 kW electric heaters (sizes 12.2÷16.2)
CHW2 Two-rows hot water coil
3WVM Modulating three-way valve
2WVM Modulating 2-way valve
GC08X Condensing gas heating module with modulating control 44kW
GC09X Condensing gas heating module with modulating control 65kW
GC10X Condensing gas heating module with modulating control 82kW (sizes 20.4÷24.4)
GC01X Condensing gas heating module with modulating control 35kW (sizes 12.2÷16.2)
LTEMP1 Application for low outdoor temperature
CPHG Hot gas re-heating coil
HSE8 8 kg/h immersed electrodes steam humidifier
HSE9 15 kg/h immersed electrodes steam humidifier (sizes 20.4÷24.4)
HSE5 5 kg/h immersed electrodes steam humidifier (sizes 12.2÷16.2)
MHP High and low pressure gauges
CMSC9 Serial communication module for Modbus supervisor
CMSC10 Serial communication module for LonWorks supervisor
CMSC11 Serial communication module for BACnet-IP supervisor
CTERM Remote keypad for indoor temperature and humidity control
PM Phase monitor
PFCC Power factor correction capacitors (cosfi > 0.95)
SFSTC Progressive compressor start-up device
CLMX Clivet Master System
PCM0 Sandwich panels of the handling zone in M0 fire reaction class
AMRX Rubber antivibration mounts
AMRMX Rubber antivibration mounts for unit and gas module
RCX Roof curb

Accessories whose code ends with "X" are supplied separately
For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Clivet Master System

Control device for Packaged systems

- CENTRALISED MANAGEMENT OF PACKAGED UNITS
- UP TO 6 UNITS
- INTUITIVE INTERFACE FOR THE NON SPECIALISED USER
- ACCESS TO SENSITIVE PARAMETERS IS PASSWORD PROTECTED
- UNIT ROTATION AND OTHER GROUP LOGICS

Our Remote Management System for units

Clivet Master System is the ideal unit remote control system for packaged climate control units. Thanks to a single control units, with built in screen display, it is possible to access in a simple and intuitive manner all information on system and climate control unit status.

Some of its main functions:
auto-detection of units connected
setting all parameters for the system and the individual unit
alarms display and management
timed operation programming
unit rotation even for an individual zone

Clivet Master System is is plugged into a dedicated switchboard and is equipped with devices for 230V single-phase power supply and for serial communication with rooftop units. Each unit must be equipped with a RS485 Modbus serial port.

Serial communication allows remote distances of up to 1000 m.

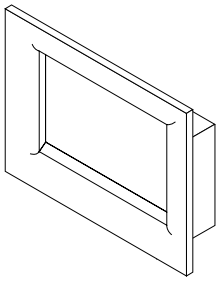
Technical data

Power supply nominal voltage:	230 / 1 / 50
Display:	8" LCD Touch Screen
Degree of protection:	IP65
Connectivity:	1 x RS485 / 1 x front USB for exporting alarms history file

Field of use

Operational temperature:	from 0°C to 50°C
Stocking temperature:	from -20°C to +60°C
Relative humidity:	from 10% to 90% without condensation
Installation:	The display must not be exposed to direct sunlight or sources of heat

Dimensions and weight



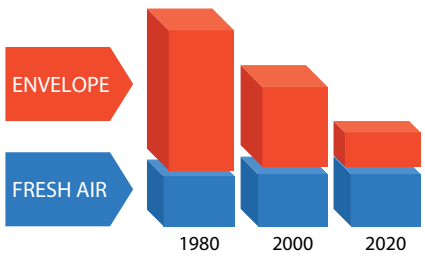
Body dimensions (mm) LxHxD:	222 x 167 x 92
Frame dimensions (mm) LxHxD:	231 x 176 x 98
Weight (kg):	3.5

Commercial

ELFOFresh Large

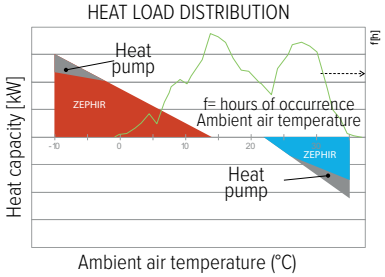
Airflow Capacity (A35))	**1200 ÷ 3300 m³/h** **6 ÷ 16 kW**
Products	
Thermodynamic recovery	✓
Electronic filtering	✓
Free Cooling	✓
Active dehumidification	
EC fans	
Variable airflow	

1. CENTRAL AIR RENEWAL

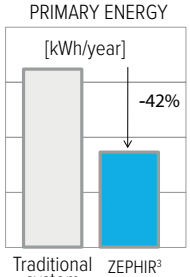


2. HIGH ENERGY EFFICIENCY

HEAT LOAD DISTRIBUTION



PRIMARY ENERGY



ZEPHIR³

1000 ÷ 14000 m³/h
10 ÷ 96 kW

✓

✓

✓

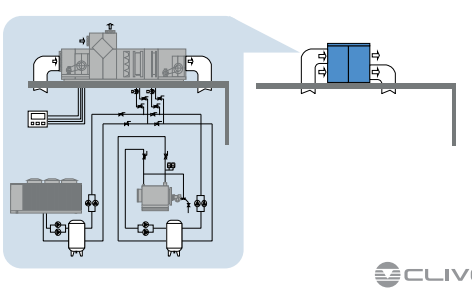
✓

✓

✓

3. 99% PURIFIED AIR

4. SIMPLIFIES THE SYSTEM



PRIMARY AIR System

System components

SERIES	SIZE FROM	TO	NAME	PAGE
Make-up air packaged unit, full fresh air with supply/exhaust section and thermodynamic heat recovery				
CPAN-XHE3	Size 1	Size 6	ZEPHIR^3	128
CPAN-U	17	51	ELFOFresh Large	132

CPAN-XHE3

Size 1 ÷ Size 6

ZEPHIR³

Make-up air unit, full fresh air
With return/exhaust and thermodynamic heat recovery
Reversible heat pump technology
Indoor or outdoor installation
Air flow rate from 278 to 3900 l/s (from 1000 to 14000 m³/h)

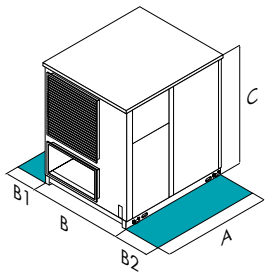
ZEPHIR³ encases the entire primary air system in a single packaged system.

- It extracts stale air and purifies outdoor air through the high efficiency electronic filters (ISO 16890 ePM1 90%), effective against nanoparticles, PM1, bacteria, pollen and virus.
- The **active thermodynamic recovery**, based on the reversible heat pump technology, exploits stale as thermal source. It features high energy efficiency, thanks to the **variable capacity compressors** and the electronically controlled fans with variable flow capability. This way, it also gets rid of the major consumption due to high pressure drops from passive recovery units.
- ZEPHIR³ eliminates components with no useful effect, such as storage tanks, pipes and pumps, also thanks to the **free modulating reheating** with hot gas recovery. Built-in controls allow operation with **constant supply temperature, at maximum available capacity, at high airflow.**

functions and features

Heat pump | Air cooled | Indoor installation | Outdoor instalaltion | R-410A | Hermetic Scroll (Size2 ÷ Size 6) | Hermetic Rotary (gr. Size 1) | FREE-COOLING | Active thermodynamic recovery | Electronically commutated fan | Electronic expansion valve | Full inverter DC | Constant Air Volume | Variable Air Volume

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size CPAN-XHE3		Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
A - Length	mm	1895	1895	2465	2465	2465	2465
B - Width	mm	950	950	1735	1735	2025	2330
C - Height	mm	1025	1625	1810	2260	2260	2260
B1	mm	700	700	700	700	700	700
B2	mm	1200	1200	1200	1200	1200	1200
Operating weight	kg	320	450	1070	1285	1450	1670

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

Size CPAN-XHE3			Size 1	Size 2	Size 3	Size 4	Size 5	Size 6
Operation with constant supply temperature								
Standard airflow								
Nominal air flow		l/s	361	611	1278	2000	2638	3333
Nominal air flow		m^3/h	1300	2200	4600	7200	9500	12000
Max external static pressure (supply)		Pa	630	630	630	600	420	630
Max external static pressure (extraction)		Pa	630	630	630	630	540	630
Cooling								
Total cooling capacity	(1)	kW	10,6	17,5	38,7	58,4	79,0	95,9
Re-heating capacity	(1)	kW	2,74	4,23	11,0	15,2	21,7	23,4
Compressor power input	(1)	kW	2,91	4,92	11,1	15,7	20,4	23,2
EERc	(1)	-	4,59	4,43	4,48	4,67	4,94	5,13
Heating								
Heating capacity	(2)	kW	5,93	10,0	21,0	32,9	43,4	54,9
Compressor power input	(2)	kW	0,71	1,23	2,54	4,22	5,75	8,77
COPc	(2)	-	8,38	7,45	8,28	7,80	7,55	6,26
Operation at the maximum available capacity								
Standard airflow								
Nominal air flow		l/s	361	611	1278	2000	2638	3333
Nominal air flow		m^3/h	1300	2200	4600	7200	9500	12000
Max external static pressure (supply)		Pa	630	630	630	600	420	630
Max external static pressure (extraction)		Pa	630	630	630	630	540	630
Cooling								
Total cooling capacity	(3)	kW	10,6	17,5	38,7	58,4	79,0	95,9
Compressor power input	(3)	kW	3,26	5,52	12,5	17,7	22,9	26,1
Additional available capacity to space	(3)	kW	3,62	5,72	14,2	20,0	28,2	31,5
EERc	(3)	-	3,25	3,18	3,10	3,31	3,45	3,68
Heating								
Heating capacity	(4)	kW	10,5	17,8	37,1	58,2	76,8	96,9
Compressor power input	(4)	kW	2,28	3,77	7,10	11,2	14,4	18,3
Additional available capacity to space	(3)	kW	4,41	7,47	15,6	24,4	32,3	40,7
COPc	(4)	-	4,61	4,72	5,21	5,20	5,33	5,29
Operation with high airflow								
Maximum air flow								
Nominal air flow		l/s	528	972	1944	2556	3194	3889
Nominal air flow		m^3/h	1900	3500	7000	9200	11500	14000
Max external static pressure (supply)		Pa	630	470	630	450	345	630
Max external static pressure (extraction)		Pa	630	630	630	530	400	630
Cooling								
Total cooling capacity	(5)	kW	9,20	18,2	31,9	45,1	62,0	80,6
Compressor power input	(5)	kW	1,56	3,38	4,46	6,97	13,8	17,8
EERc	(5)	-	5,89	5,38	7,15	6,48	4,50	4,51
Heating								
Heating capacity	(6)	kW	6,00	11,1	22,1	29,1	36,3	44,2
Compressor power input	(6)	kW	0,54	1,31	2,48	3,11	3,40	5,44
COPc	(6)	-	11,1	8,46	8,94	9,36	10,7	8,14
Refrigeration circuits		Nr	1	1	2	2	2	2
No. of compressors		Nr	1	1	2	2	3	3
Type of compressors	(7)	-	ROT	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Type of supply fan	(8)	-	RAD	RAD	RAD	RAD	RAD	RAD
Number of supply fans		Nr	1	1	1	1	1	2
Fan diameter		mm	310	355	500	630	630	500
Type of exhaust fan		-	RAD	RAD	RAD	RAD	RAD	RAD
Number of exhaust fans		Nr	1	1	1	1	1	2
Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level	(9)	dB(A)	53	57	61	60	62	69
Minimum air flow		l/s	278	444	917	1444	2083	2639
Minimum air flow		m^3/h	1000	1600	3300	5200	7500	9500
Maximum air flow	(10)	l/s	528	972	1944	2556	3194	3889
Maximum air flow	(10)	m^3/h	1900	3500	7000	9200	11500	14000

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

DB = dry bulb; WB = wet bulb; EERc = Thermodynamic efficiency of the system in cooling; COPc = Thermodynamic efficiency of the system in heating

(1) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg; Supply air temperature: 24°C D.B.

(2) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B; Supply air temperature: 20°C D.B.

(3) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air humidity ratio: 11g/kg

(4) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B; Supply air temperature: 28°C D.B.

(5) Outdoor air temperature: 35°C D.B./ 24°C W.B; Exhaust air temperature: 26°C D.B. Supply air temperature: 22°C D.B.

(6) Outdoor air temperature: 7°C D.B./6.0°C W.B. Exhaust air temperature: 20°C D.B./ 12°C W.B; Supply air temperature: 16°C D.B.

(7) ROT = rotary compressor; SCROLL = scroll compressor

(8) RAD = radial fan

(9) The sound pressure level is referred at a distance of 1 m from the ducted unit surface operating in free field conditions. External static pressure 50 Pa. Please note that when the unit is installed in conditions different from nominal test conditions (e.g. near walls or obstacles in general), the sound levels may undergo substantial variations. Sound levels refer to unit with standard air flow rate

(10) In case of use with high air flow only the maximum flow rate value is possible

versions and configurations

ENERGY RECOVERY

RTA Active thermodynamic recovery (Standard)

VERSON

RECH Hydronic recovery device for extended operating range

EPWRC EXTRAPOWER-C (with additional chilled water heat exchanger)

EPWRH EXTRAPOWER-H (with additional hot water heat exchanger, without electronic filters)

OPERATION:

RCM Refrigeration circuit with capacity modulation (Standard

RE-HEATING COIL:

CPHGM Hot gas re-heating coil with capacity modulation (Standard)

UNIT INSTALLATION:

IO Outdoor installation (Standard)

II Indoor installation

accessories

CCA Copper/aluminium exchanger on exhaust air with acrylic lining

CEA Copper/aluminium exchanger on outdoor air with acryic lining

PVARC Variable air flow on supply and exhaust with CO2 probe

PVARCV Variable air flow on supply and exhaust with CO2+VOC probe

PVARP Variable air flow on supply and exhaust air with supply pressure probe

MHSEX immersed electrodes steam humidifying module

MCHSX Steam-powered humidifying module

MOB Serial port RS485 with Modbus protocol

LON Serial port RS485 with LonWorks protocol

BACIP BACnet-IP serial communication module

VSXSA Modification of the supply humidity ratio setpoint "X_SA" by an external signal: enable/disable via external contact or setpoint changing via Modbus and BACnet-IP protocol

DESM Smoke detector

AMRX Rubber antivibration mounts

AMRUX Rubber antivibration mounts for unit and humidification module

RSSX Remote supply air sensor

PTCO Set up for shipping via container

F7B High efficiency F7 air filter (ISO 16890 ePM1 60%)

Accessories whose code ends with "X" are supplied separately

ELFOFresh Large

Make-up air unit, full fresh air
With return/exhaust and thermodynamic heat recovery
Reversible heat pump
Indoor installation
Air flow rate from 330 to 920 l/s (from 1200 to 3300 m³/h)

HID-P1 room thermostat for remote wall mounting. Main functions:
- manual or automatic summer/winter switching
- temperature setting
- ECO mode (automatic day/night thermoregulation).

ELFOFresh Large units are designed to guarantee ideal air exchange rates in shops and offices.
Their main characteristics include:

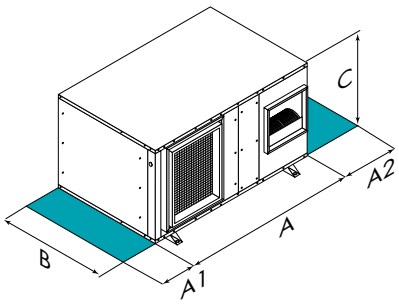
- cooling, heating and humidification of outdoor air with only minimal energy consumption thanks to Free-Cooling and an exclusive Active Thermodynamic Heat Recovery that recovers heat from extracted air and returns it to the incoming fresh air;
- it extracts stale air and purifies outdoor air through the high efficiency electronic filters (ISO 16890 ePM1 90%), effective against nanoparticles, PM1, bacteria, pollen and virus (optional).

PRIMARY AIR

functions and features

Heat pump | Air cooled | Indoor installation | R-410A | Hermetic Scroll (sizes 41÷51) | Hermetic Rotary (sizes 17÷31) | FREE-COOLING | Active thermodynamic recovery

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CPAN-U	17	21	25	31	41	51
A - Length	mm	1503	1503	1503	1503	1503	1503
B - Width	mm	950	950	950	950	950	950
C - Height	mm	442	442	517	517	668	668
A1	mm	900	900	900	900	900	900
A2	mm	700	700	700	700	700	700
Operating weight	kg	135	145	175	185	215	225

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

CONFIGURATION:

VS	Standard Version (Standard)
EPS	Air expulsion to the left

INTEGRATION COIL:

-	Additional coil: not required (Standard)
CH2O	Integration water coil

technical data

Size		CPAN-U		17	21	25	31	41	51
SM	▸ Cooling capacity	(1)	kW	6,20	7,60	8,60	10,9	12,4	15,9
SM	Sensible capacity	(1)	kW	5,00	5,80	7,00	8,60	9,50	12,5
SM	Compressor power input	(1)	kW	1,70	2,10	2,20	2,90	2,80	3,80
SM	EER		-	3,55	3,56	3,93	3,77	4,48	4,14
SM	▸ Heating capacity	(2)	kW	6,80	8,30	9,20	11,9	13,2	16,9
SM	Compressor power input	(2)	kW	1,30	1,70	1,80	2,20	2,00	2,80
SM	COP		-	5,19	4,92	5,22	5,34	6,47	6,06
SM	Refrigeration circuits		Nr	1	1	1	1	1	1
SM	No. of compressors		Nr	1	1	1	1	1	1
SM	Type of compressors	(3)	-	ROT	ROT	ROT	ROT	SCROLL	SCROLL
SM	Supply airflow		l/s	330	390	470	610	690	920
SM	Supply airflow		m³/h	1190	1400	1690	2196	2485	3310
SM	Type of supply fan	(4)	-	CFG	CFG	CFG	CFG	CFG	CFG
SM	Number of supply fans		Nr	1	1	1	1	1	1
SM	Max. static pressure supply fan	(5)	Pa	190	175	300	180	270	340
SM	Exhaust airflow		l/s	300	360	440	550	640	860
SM	Exhaust airflow		m³/h	1200	1295	1585	1980	4095	3300
SM	Number of exhaust fans		Nr	1	1	1	1	1	1
SM	Max. exhaust static pressure		Pa	180	165	290	210	250	360
SM	Standard power supply		V	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level		(6)	dB(A)	53	55	57	59	61	62

Erp (Energy Related Products) European Directive, that includes the Commission delegated Regulation (EU) No 2016/2281 also known as Ecodesign Lot21, does not report this Product category.

(1) Air inlet temperature extract heat exchange coil 27°C D.B. - 19°C W.B. Outdoor air temperature 35°C B.S. - 24°C B.U.
(2) Exhaust coil inlet air temperature 20°C B.S. - 12°C B.U. Outdoor air temperature 7°C DB - 6°C WB
(3) SCROLL = scroll compressor; ROT = rotary compressor
(4) CFG = centrifugal fan
(5) Static pressure available on unit with electronic filters (excluding integration coil)
(6) The sound levels are referred to unit operating at full load in nominal conditions. The sound pressure level is referred at a distance of 1 m. from the ducted unit surface operating in free field conditions.External static pressure 50 Pa.

SM Standard

accessories

FES	Electronic filters (ISO 16890 ePM1 90%)
FEG4	Class G4 air filters on outdoor and exhaust air (ISO 16890 Coarse 60%)
3WVM	Modulating three-way valve
HSE3	3 kg/h immersed electrodes steam humidifier (sizes 17÷21)
HSE5	5 kg/h immersed electrodes steam humidifier (sizes 25÷31)
HSE8	8 kg/h immersed electrodes steam humidifier (sizes 41÷51)
PSAF	Differential pressure switch for dirty air filters
SP1	RS485 remote communication serial port
EHP9	2 kW preheating electric heaters (sizes 17÷21)
EHP7	3 kW preheating electric heaters (sizes 25÷31)
EHP14	4.5 kW preheating electric heaters (sizes 41÷51)
RCMRX	Remote control via microprocessor control
PBLC1X	Service keypad (cable from 1,5 metres)
PBLC2X	Local control portable keypad with cable 20 metres
PM	Phase monitor (sizes 25÷51)

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Low and medium attendance applications

	VERSATEMP EQV-X	VERSATEMP EVH-XS	VERSATEMP EVH-X	VERSATEMP EVH-X SPACE
Capacities (A27/W35)	2,1 ÷ 4,1 kW	2,1 ÷ 2,8 kW	2,3 ÷ 4,2 kW	8 ÷ 31 kW
ErP compliance	ErP	ErP	ErP	ErP
Vertical cased				
Vertical uncased				
Horizontal uncased				
Outdoor installation				
Heating	✓	✓	✓	✓
Cooling	✓	✓	✓	✓
Thermodynamic energy recovery				

Medium and high attendance applications

CLIVETPack²

CRH-XHE2

51 ÷ 392 kW

ErP

WLHP System

System components

SERIES	SIZE FROM	TO	NAME	PAGE
Packaged heat pump - water source - internal vertical installation, with or without casing				
EQV-X	5	21	VERSATEMP	138
Packaged heat pump - water source - internal, horizontal, ductable installation				
EVH-XS	005.1	007.1	VERSATEMP	140
EVH-X	5	17	VERSATEMP	142
EVH-X SPACE	2.1	12.1	VERSATEMP	144
Packaged heat pump - water source - roof top for medium attendance applications				
CRH-XHE2	14.2	110.4	CLIVETPack^2	146

VERSATEMP

Direct expansion high efficiency packaged air conditioner
Reversible heat pump
Water cooled
Vertical indoor installation either cased or uncased
Capacity from 2,1 to 4,1 kW

User interface THTUNE (optional) available:
- built-in
- wall mounted
- wall mounted on a flush mounting box.

Some of the main features are:
- unit on/off
- temperature measurement with built-in probe
- main unit information display
- manual setting of the operating mode (heat/cool) and/or of the setpoint
- hourly and weekly programming of on/off and of the standard/economic set point
- manually, or automatically, managing the fan speed, depending on the distance from the set- point.

ErP compliant

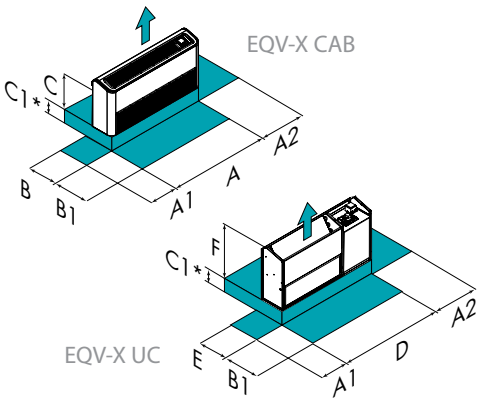
VERSATEMP EQV-X is the high efficiency water source **packaged air conditioner** that automatically either heats or cools the ambient throughout the year, using the **water as source.**
Thanks to the rotary compressor, to the electronic expansion valve, to the plate heat exchanger and to the multispeed centrifugal fan, VERSATEMP EQV-X stands out for its **high efficiency in all the operating conditions** and for its **reliability**.
The installation is also simplified by the **specific hydraulic pipe** works, supplied already installed and tested, which are available for different solutions.
The VERSATEMP EQV-X **design** can be elegantly added to different settings both in its cased and in its uncased version, the latter being available to be integrated in the furnishing.
The **low noise** operation is ensured by the insulation of the compressor compartment, by the accurate balancing of the fans and by the antivibration devices provided for all moving parts.

WLHP

functions and features

Heat pump | Water cooled | Vertical: cased | Vertical: uncased | R-410A | Hermetic Rotary | Electronic expansion valve

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	EQV-X		5	7	9	15	17	21
A - Length		mm	1050	1200	1200	1350	1350	1350
B - Width		mm	240	240	240	240	240	240
C - Height		mm	520	520	520	520	520	520
D - Length		mm	945	1095	1095	1245	1245	1245
E - Width		mm	225	225	225	225	225	225
F - Height		mm	490	490	490	490	490	490
A1		mm	200	200	200	200	200	200
A2		mm	100	100	100	100	100	100
B1		mm	500	500	500	500	500	500
C1		mm	100	100	100	100	100	100
Operating weight		kg	55	61	61	64	64	68

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

(*) Only for units with floor air inlet

versions and configurations

CONFIGURATION:

UC Uncased version (without casing) (Standard)

CAB Configuration with fairing for cased applications

RETURN:

R3 Floor air inlet (Standard)

RF Front air inlet

technical data

Size			EQV-X	5	7	9	15	17	21
Cooling capacity	(1)	kW		2,08	2,39	2,88	3,38	3,75	4,11
Sensible capacity	(1)	kW		1,47	1,69	2,12	2,55	2,64	3,05
Compressor power input	(1)	kW		0,43	0,56	0,61	0,71	0,77	0,84
Total power input	(1)	kW		0,49	0,62	0,67	0,81	0,87	0,96
EER	(1)	-		4,19	3,78	4,20	4,09	4,22	4,20
Heating capacity	(2)	kW		2,54	3,05	3,55	4,29	4,78	5,10
Compressor power input	(2)	kW		0,47	0,63	0,70	0,77	0,92	1,04
Total power input	(2)	kW		0,53	0,69	0,76	0,87	1,02	1,16
COP	(2)	-		4,91	4,49	4,71	5,05	4,72	4,49
No. of compressors	(3)	Nr		1	1	1	1	1	1
Type of compressors		-		ROT	ROT	ROT	ROT	ROT	ROT
Supply airflow	(4)	l/s		106	128	126	208	208	231
Type of supply fan	(5)	-		CFG	CFG	CFG	CFG	CFG	CFG
Water flow rate (Source Side)		l/s		0,12	0,14	0,17	0,19	0,21	0,24
Standard power supply	(6)	V		230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level		dB(A)		41	41	41	45	45	47
Directive Erp (Energy related Products)									
SEER	(7)	-		3,99	4,13	4,08	4,02	3,95	4,22
$\eta_{S,C}$	(7)			151,6	157,2	155,2	152,8	150,0	160,8
SCOP	(7)	-		4,15	3,80	3,85	3,80	4,02	3,84
$\eta_{S,H}$	(7)			158,0	144,0	146,0	144,0	152,8	145,6

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Values read in compliance with EN14511:2018 and including the required system fan motor and water pump capacity for overcoming pressure drops inside the unit. DB = dry bulb; WB = wet bulb

(1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
(2) Ambient air at 20°C D.B./15°C W.B. Water temperature at plate exchanger 20°C input; The water temperature at the exchanger output is read in relation to the flow of water being chilled.
(3) ROT = rotary compressor
(4) CFG = centrifugal fan
(5) Water flow calculated in relation to the performances in cooling
(6) The sound levels are referred to unit operating at a full load in nominal conditions. The sound pressure level is referred at a distance of 1m. from the external unit surface, with fairing, fitted to a wall. Please note that when the unit is installed in conditions other than nominal test conditions /for example near walls or obstacles in general) the sound levels may undergo substantial variation. Measurements are made in accordance to the UNI EN ISO 9614-2, with units installed over two sound reflective surfaces.
(7) Data calculated according to the EN 14825:2018 Regulation

accessories

CONT Electronic room control with display, installed in a visible position on the unit with fairing

CONTX Electronic room control with display, for installation on the uncased unit

CWMX Electronic room control with display, for wall installation

CIWMX Electronic room control with display, for wall installation in built-in box

MIPC Hydraulic pipework arrangement for loop with constant flow rate with manual valves

MIPV Hydraulic pipework arrangement for loop with variable flow rate with 2 way ON-OFF valve

REQV Constant flow retrofit water connections for EQV,VV,VM units

V2MODX 2-way modulating valve for disposable water system

KFVMX Two ways modulating valve fixing kit for disposable water system

DAOJX Air supply duct with flexible connection

GOJX Air supply grille with flexible connection

FCVBX Water balancing valve

PFHCX 200 mm flexible pipes for the connection to the water circuit + drop conduit

PFHC1X 500 mm flexible pipes for the connection to the water circuit + drop conduit

IFWX Steel mesh strainer on the water side

CDPX Condensate drain pump

CDPA Condensate drain pump, built-in

FXVFX Painted plinths for floor fixing

FXVFHX Floor mounted painted feet kit with front grille

FXPFX Zinc-coated plinths for floor fixing on uncased unit

FXPMX Increased zinc-coated plinths for floor fixing on uncased unit

BACKV Painted rear panel for cased version

MOBA RS485 serial port with Modbus protocol, built-in

MOBX Modbus RS485 serial port kit

CMSLWX LonWorks serial communication module

BACX BACnet serial communication module

CSVX Couple of manual shut-off valves

Accessories whose code ends with "X" are supplied separately

VERSATEMP

Direct expansion high efficiency air conditioner
Reversible heat pump
Water cooled
Horizontal indoor installation uncased
Capacity from 2.1 to 2.8 kW

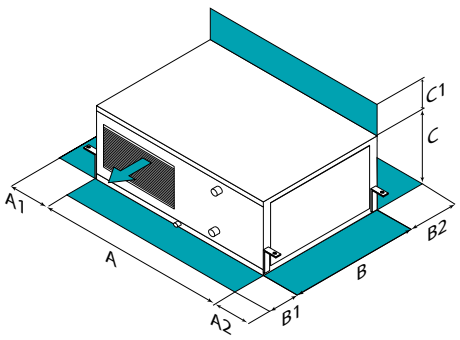
ErP compliant

VERSATEMP EVH-XS is the **high efficiency packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source**.
Its strength is the **reduced height** directly comparable with a horizontal fan coil, ideal for installation in offices, hotel rooms or for applications with stringent architectural constraints.
Thanks to its rotating compressor, its mechanical expansion valve, its plate exchanger and its multi-speed centrifugal fan with brushless EC motor, this unit stands out due to its **high level of efficiency in all operating conditions** and its **great reliability.**
The operating silence is ensured by the particular sound-proofing of the compressor compartment, by the accurate balancing of the fans and by the standard anti-vibration devices for all moving parts.

functions and features

Heat pump | Water cooled | Horizontal: uncased | R-410A | Hermetic Rotary

dimensions and clearances



Size	EVH-XS	005.1	007.1
A - Length	mm	1018	1018
B - Width	mm	594	594
C - Height	mm	254	254
A1	mm	150	150
A2	mm	500	500
B1	mm	300	300
B2	mm	500	500
C1	mm	100	100
Operating weight	kg	59	60

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size	EVH-XS		005.1	007.1
Cooling capacity		kW	2,06	2,84
Sensible capacity		kW	1,75	1,83
Compressor power input		kW	0,48	0,60
Total power input		kW	0,53	0,67
EER		-	4,29	4,73
Heating capacity		kW	2,43	3,37
Compressor power input		kW	0,60	0,82
Total power input		kW	0,65	0,87
COP		-	4,05	4,11
No. of compressors		Nr	1	1
Type of compressors		-	ROT	ROT
Supply airflow		l/s	111	139
Type of supply fan		-	CFG	CFG
Number of supply fans		Nr	1	1
Max. static pressure supply fan		Pa	50	50
Standard power supply		V	230/1/50	230/1/50
Sound pressure level		dB(A)	42	45
Directive Erp (Energy related Products)				
SEER	(1)	-	3,26	4,20
$\eta_{S,C}$	(1)		122,4	160,0
SCOP	(1)	-	3,28	3,31
$\eta_{S,H}$	(1)	-	123,2	124,4

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.
(1) Data calculated according to the EN 14825:2018 Regulation

accessories

CWMX	Electronic room control with display, for wall installation
CIWMX	Electronic room control with display, for wall installation in built-in box
V2MODX	2-way modulating valve for disposable water system
V2ONX	2-way ON-OFF valve for variable flow-rate loop
AMMX	Spring antivibration mounts
FCVBX	Water balancing valve
VIFWX	Steel mesh strainer and hand shut-off valve
PFHCX	200 mm flexible pipes for the connection to the water circuit + drop conduit
PFHC1X	500 mm flexible pipes for the connection to the water circuit + drop conduit
CDPX	Condensate drain pump
MOBA	RS485 serial port with Modbus protocol, built-in
MOBX	Modbus RS485 serial port kit
CMSLWX	LonWorks serial communication module
BACX	BACnet serial communication module
VIMANX	Hand shut-off valve
BPH2OX	Shut-off valve for by-pass (water side)

Accessories whose code ends with "X" are supplied separately

VERSATEMP

Direct expansion high efficiency air conditioner
Reversible heat pump
Water cooled
Horizontal indoor installation uncased
Capacity from 2,3 to 4,2 kW

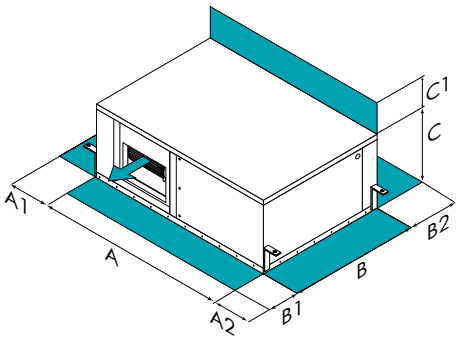
ErP compliant

VERSATEMP EVH-X is the **high efficiency packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source.**
Thanks to its rotating compressor, its electronic expansion valve, its plate exchanger and its multi-speed centrifugal fan, this unit stands out due to its **high level of efficiency in all operating conditions** and its **great reliability.**
The operating silence is ensured by the particular sound-proofing of the compressor compartment, by the accurate balancing of the fans and by the standard anti-vibration devices for all moving parts.

functions and features

Heat pump | Water cooled | Horizontal: uncased | R-410A | Hermetic Rotary | Electronic expansion valve

dimensions and clearances



Size	EVH-X		5	7	9	11	15	17
A - Length		mm	1034	1034	1034	1034	1034	1034
B - Width		mm	513	513	513	513	513	513
C - Height		mm	361	361	361	386	386	386
A1		mm	100	100	100	100	100	100
A2		mm	350	350	350	350	350	350
B1		mm	350	350	350	350	350	350
B2		mm	350	350	350	350	350	350
C1		mm	100	100	100	100	100	100
Operating weight		kg	71	73	74	77	81	82

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

technical data

Size	EVH-X		5	7	9	11	15	17
A27/19 W30								
Cooling capacity	(1)	kW	2,26	2,83	3,16	3,45	3,87	4,16
Sensible cooling capacity		kW	1,91	2,41	2,75	2,93	3,22	3,50
Total power input		kW	0,54	0,66	0,74	0,77	0,85	0,92
EER (EN 14511:2018)		-	4,22	4,27	4,28	4,50	4,54	4,51
A20 W20								
Heating capacity	(2)	kW	2,76	3,38	3,85	4,15	4,50	4,92
Total power input		kW	0,55	0,65	0,77	0,82	0,94	1,06
COP (EN 14511:2018)		-	4,99	5,20	4,97	5,05	4,81	4,66
A20 W15								
Heating capacity	(3)	kW	2,46	2,97	3,33	3,66	3,98	4,42
Total power input		kW	0,55	0,63	0,72	0,80	0,89	1,02
COP (EN 14511:2018)		-	4,42	4,60	4,47	4,59	4,40	4,30
No. of compressors		Nr	1	1	1	1	1	1
Type of compressors	(4)	-	ROT	ROT	ROT	ROT	ROT	ROT
Supply airflow		l/s	148	148	170	190	222	222
Type of supply fan	(5)	-	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans		Nr	1	1	1	1	1	1
Max. static pressure supply fan		Pa	40	40	40	40	40	40
Water flow rate (Source Side)		l/s	0,13	0,16	0,18	0,20	0,22	0,24
Standard power supply		V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level	(7)	dB(A)	33	33	34	34	34	35
Directive Erp (Energy related Products)								
SEER	(8)	-	3,75	4,06	3,90	4,10	4,05	4,18
$\eta_{s,c}$	(8)	-	142,0	154,4	148,0	156,0	154,0	159,2
SCOP	(8)	-	3,41	3,90	3,63	3,77	3,97	4,05
$\eta_{s,H}$	(8)		128,4	148,0	137,2	142,8	150,8	154,0

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Values read in compliance with EN14511:2018 and including the required system fan motor and water pump capacity for overcoming pressure drops inside the unit.
(1) Ambient air 27°C D.B./19°C W.B. Exchanger water temperature 30°C / 35°C
(2) Ambient air 20°C D.B. Exchanger inlet water temperature 20°C. The water temperature at the exchanger output is read in relation to the flow of water being chilled.
(3) Ambient air 20°C D.B. Exchanger inlet water temperature 15°C; The water temperature at the exchanger output is read in relation to the flow of water being chilled.
(4) ROT = rotary compressor
(5) CFG = centrifugal fan
(6) Water flow calculated in relation to the performances in cooling
(7) Sound levels refer to the unit at full load installed on the ceiling, ducted, with minimum, standard and maximum air flow rate of the fan. Available static pressure 40 Pa. In accordance with the UNI-EN ISO 3744 regulation, the average sound pressure level refers to a distance of 1 m from the outer surface of a ducted unit installed on the ceiling. Measurements are made in accordance to the UNI EN ISO 9614-2, with units installed over two sound reflective surfaces.
(8) Data calculated according to the EN 14825:2018 Regulation

accessories

CWMX	Electronic room control with display, for wall installation
CIWMX	Electronic room control with display, for wall installation in built-in box
V2MODX	2-way modulating valve for disposable water system
V2ONX	2-way ON-OFF valve for variable flow-rate loop
TPF	Filter-holder frame with lateral and bottom exhaust
AMMX	Spring antivibration mounts
DAOJX	Air supply duct with flexible connection
DAIX	Return air duct
DAOIX	Air discharge and intake duct
FCVBX	Water balancing valve
VIFWX	Steel mesh strainer and hand shut-off valve
PFHCX	200 mm flexible pipes for the connection to the water circuit + drop conduit
PFHC1X	500 mm flexible pipes for the connection to the water circuit + drop conduit
CDPX	Condensate drain pump
MOBA	RS485 serial port with Modbus protocol, built-in
MOBX	Modbus RS485 serial port kit
CMSLWX	LonWorks serial communication module
BACX	BACnet serial communication module
VIMANX	Hand shut-off valve
BPH2OX	Shut-off valve for by-pass (water side)

Accessories whose code ends with "X" are supplied separately

EVH-X SPACE

2.1÷12.1

VERSATEMP

Packaged air-conditioning unit
Reversible heat pump
Water cooled
Horizontal indoor installation
Ductable
Capacity from 4,8 to 30,8 kW

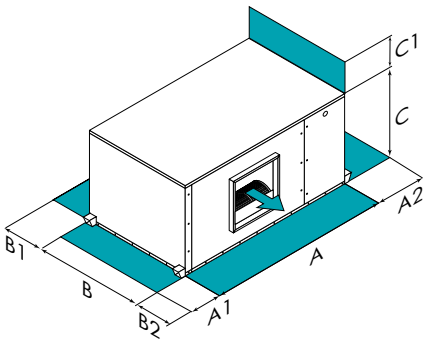
ErP compliant

VERSATEMP EVH-X SPACE is the **high efficiency packaged air-conditioner** that automatically heats or cools rooms throughout the whole year, using **water as source.**
This unit stands out due to its **high level of efficiency in all operating conditions** and its **great reliability.**
The unit for horizontal installation can be ducted with air delivery in line or at 90° with respect to the recovery to best adapt to the architectural constraints of the application served

functions and features

Heat pump | Water cooled | Horizontal: uncased | R-410A | Hermetic Rotary (size 2.1-5.1) | Hermetic Scroll (size 7.1-12.1)

dimensions and clearances



Size EVH-X SPACE		2.1	3.1	5.1	7.1	10.1	12.1
A - Length	mm	962	962	1167	1167	1467	1467
B - Width	mm	692	692	802	802	927	927
C - Height	mm	490	490	590	590	705	705
A1	mm	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800
C1	mm	10	10	10	10	10	10
Operating weight	kg	98	103	138	151	200	225

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

APPLICATION:

W Water Loop Heat Pump application (Standard)

PW Once-through water application

technical data

Size EVH-X SPACE			2.1	3.1	5.1	7.1	10.1	12.1
Cooling capacity	(1)	kW	4,81	8,46	11,2	17,9	25,9	30,8
Sensible capacity	(1)	kW	3,74	6,44	8,84	13,9	20,0	22,4
Compressor power input	(1)	kW	0,96	1,61	2,27	3,07	4,74	5,36
EER	(1)	-	3,59	4,05	3,58	4,17	4,24	3,97
Heating capacity	(2)	kW	7,06	9,83	13,5	22,1	32,3	36,4
Compressor power input	(2)	kW	1,46	1,99	2,56	4,02	6,04	6,23
COP	(2)	-	4,01	4,10	3,97	4,17	4,42	4,23
Refrigeration circuits		Nr	1	1	1	1	1	1
No. of compressors		Nr	1	1	1	1	1	1
Type of compressors		-	ROT	ROT	ROT	SCROLL	SCROLL	SCROLL
Supply airflow		l/s	278	416	778	1056	1351	1657
Type of supply fan	(3)	-	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans		Nr	1	1	1	1	1	1
Max. static pressure supply fan	(4)	Pa	250	270	290	310	220	410
Water flow rate (Source Side)		l/s	0,27	0,47	0,64	1,00	1,47	1,72
Standard power supply		V	230/1/50	230/1/50	230/1/50	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level	(5)	dB(A)	37	42	44	49	47	50
Directive Erp (Energy related Products)								
SEER	(6)		3,28	3,93	3,57	4,23	4,47	3,97
$\eta_{S,C}$	(6)		123,1	149,1	134,9	161,3	170,8	150,9
SCOP	(6)		3,81	3,82	3,81	3,91	4,08	4,01
$\eta_{S,H}$	(6)		144,4	144,8	144,4	148,4	155,2	152,4

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Ambient air 26°C DB / 19.5°C WB; Exchanger inlet water 30°C; Exchanger water outlet 35°C
(2) Ambient temperature 20°C; Exchanger water outlet 10°C
(3) ROT = rotary compressor / CFG = centrifugal fan
(4) Max available static pressure with standard electrofan at min speed and nominal air flow; According to the variability of the voltage also the value of capacity and head pressure
(5) Sound levels refer to units with full load under nominal test conditions. The sound pressure is measured at 1 m from the external surface of the unit in open field conditions.
(6) Data calculated according to the EN 14825:2018 Regulation

accessories

APFLX Filter holder with access from the lower side
CDPX Condensate drain pump
VIFWX Steel mesh strainer and hand shut-off valve
FCVBX Water balancing valve
V20NX 2-way ON-OFF valve for variable flow-rate loop
BPH20X Shut-off valve for by-pass (water side)
V2MANX Two-way manually actuated valves for constant water flow loop
V2MODX 2-way modulating valve for disposable water system
FLOX Water control flow switch

MOBX Modbus RS485 serial port kit
CSMSLWX LonWorks serial communication module
BACX BACnet serial communication module
CWMX Electronic room control with display, for wall installation
CIWMX Electronic room control with display, for wall installation
AMMX spring antivibration mounts
PCFMO Panels with M0 reaction to fire class

Accessories whose code ends with "X" are supplied separately

CRH-XHE2

14.2÷110.4

CLIVETPack²

Packaged air-conditioning unit
Heat pump
Water cooled
Roof Top
Capacity from 51 to 392 kW

Unit listed on www.eurovent-certification.com

ErP compliant

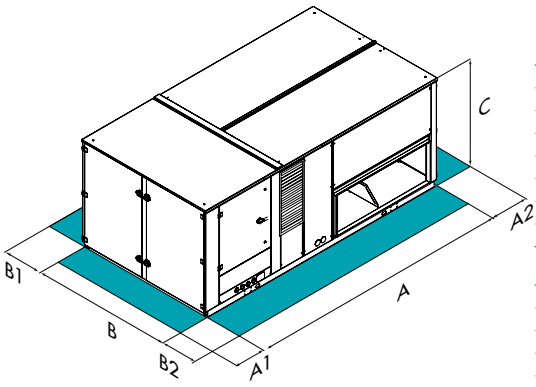
The **CRH-XHE2** packaged air-conditioning units are installed outside the spaces being served. They come in various capacities and with a vast range of accessories. They are intended for the air-conditioning of large rooms or areas and are applied in **closed or open loop water systems.**
Designed to reduce work on site to a minimum, these units have been created for continuous operation with maximum energy saving through an extremely intelligent, advanced management of energy, supplying it only when and where needed.
The high efficiency of the innovative refrigeration circuit, optimized for functioning at partial loads, the free-cooling and the energy recovery of expelled air available as an option on the whole range, allow to reduce energy consumption and therefore the management costs and the emission of carbon dioxide.

WLHP

functions and features

Heat pump · Water cooled · Outdoor installation · R-410A · Hermetic Scroll · FREE-COOLING · THOR (THermodynamic Overboost Recovery) · Electronically commutated Plug Fan · Electronic expansion valve · Constant Air Volume · Variable Air Volume

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CRH-XHE2		14.2	16.4	20.4	25.4	30.4	33.4	40.4	44.4
CAK	A - Length	mm	3560	3560	4155	4155	4155	4155	4155	4155
CAK	B - Width	mm	2295	2295	2300	2300	2300	2300	2300	2300
CAK	C - Height	mm	1405	1405	1405	1405	1405	1705	1705	1705
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	Operating weight	kg	1396	1456	1530	1549	1559	1602	1636	1641

Size	CRH-XHE2		49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
CAK	A - Length	mm	3910	3910	4900	4900	4900	5520	5520	5520
CAK	B - Width	mm	2296	2296	2296	2296	2296	2296	2296	2296
CAK	C - Height	mm	2250	2250	2250	2250	2250	2250	2250	2250
CAK	A1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B1	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	B2	mm	1500	1500	1500	1500	1500	1500	1500	1500
CAK	Operating weight	kg	2080	2397	2613	2672	3074	3245	3461	3987

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

CAK Configuration with single fan section for full recirculation

versions and configurations

CONFIGURATION:

CAK Configuration with single fan section for full recirculation (Standard)

CBK Configuration with single fan section for recirculation and fresh air

CCK Configuration with double fan section for recirculation, fresh and exhaust air

CCKP Configuration with double fan section with fresh air and THOR thermodynamic recovery

technical data

Size	CRH-XHE2			14.2	16.4	20.4	25.4	30.4	33.4	40.4	44.4
Eurovent								-	-	-	-
Cooling capacity (EN14511:2018)	(1)	kW		50,6	65,6	82,1	92,2	102,7	120,6	152,5	162,1
Sensible capacity	(1)	kW		38,5	48,9	62,9	69,8	77,4	88,9	106	114
Compressor power input	(1)	kW		9,10	13,0	15,4	17,4	19,1	21,2	26,6	28,8
EER (EN14511:2018)	(1)	-		5,06	4,57	4,94	4,89	4,88	5,45	5,66	5,31
Heating capacity (EN14511:2018)	(2)	kW		56,6	77,4	91	104	93,5	109	136,5	150,9
Compressor power input	(2)	kW		9,90	15,5	18,2	20,4	23,8	27,7	30,1	33,3
COP (EN14511:2018)	(2)	-		4,71	4,19	4,24	4,33	3,74	3,86	4,5	4,35
Refrigeration circuits		Nr		2	2	2	2	2	2	2	2
No. of compressors		Nr		2	4	4	4	4	4	4	4
Type of compressors	(3)	-					Scroll				
Supply airflow		m^3/h		9000	11500	13500	15000	17000	18500	21000	23000
Type of supply fan	(4)	-					RAD				
Number of supply fans		Nr		1	1	2	2	2	2	2	2
Max. static pressure supply fan	(5)	Pa		510	390	510	510	510	510	440	380
Water flow rate (Source Side)	(6)	l/s		2,87	3,80	4,69	5,28	5,88	6,79	8,53	9,16
Standard power supply		V					400/3/50				
Directive Erp (Energy related Products)											
SEER - AVERAGE Climate	(7)	-		5,12	5,22	5,51	5,46	5,35	6,15	6,99	6,58
$\eta_{s,c}$	(7)			196,8	200,7	212,4	210,2	206,1	238,1	271,6	255,3
SCOP - AVERAGE Climate	(7)	-		3,99	4,26	4,03	4,59	4,32	4,66	5,38	4,79
$\eta_{s,H}$	(7)	-		151,6	162,4	153,2	175,6	164,8	178,4	207,2	183,6

Size	CRH-XHE2			49.4	54.4	60.4	70.4	80.4	90.4	100.4	110.4
Cooling capacity (EN14511:2018)	(1)	kW		173,2	183,6	213,5	252,4	278,8	334,5	361,1	387,2
Sensible capacity	(1)	kW		124	134	143	163	186	239	258	277
Compressor power input	(1)	kW		30,8	33,1	39,9	45,4	52,4	61,7	66,3	72,1
EER (EN14511:2018)	(1)	-		5,18	4,89	4,94	5,1	4,78	4,96	4,87	4,9
Heating capacity (EN14511:2018)	(2)	kW		165,5	179,3	198,3	235,9	264,7	316,8	346,2	378,3
Compressor power input	(2)	kW		38,0	41,0	48,1	53,2	60,5	66,8	75,0	82,6
COP (EN14511:2018)	(2)	-		4,13	4,00	3,92	4,48	4,03	4,38	4,31	4,22
Refrigeration circuits		Nr		2	2	2	2	2	2	2	2
No. of compressors		Nr		4	4	4	4	4	4	4	4
Type of compressors	(3)	-					Scroll				
Supply airflow		m^3/h		26000	29000	33000	37000	44000	51000	56000	60000
Type of supply fan	(4)	-					RAD				
Number of supply fans		Nr		3	3	4	4	4	6	6	6
Max. static pressure supply fan	(5)	Pa		630	540	660	570	360	620	540	460
Water flow rate (Source Side)	(6)	l/s		9,40	10,0	11,70	13,80	15,40	18,40	19,80	21,30
Standard power supply		V					400/3/50				
Directive Erp (Energy related Products)											
SEER - AVERAGE Climate	(7)	-		6,29	5,07	5,61	6,07	5,47	5,80	5,17	5,31
$\eta_{s,c}$	(7)			243,7	195,0	216,6	234,9	210,7	224,0	198,9	204,5
SCOP - AVERAGE Climate	(7)	-		4,92	4,52	4,04	4,73	4,31	4,54	4,55	4,60
$\eta_{s,H}$	(7)	-		188,8	172,8	153,6	181,2	164,4	173,6	174,0	176,0

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Performance refers to operation at full re-circulation (CAK config.)
(1) Data referred to the following conditions: Ambient air at 27°C/19°C W.B. Water to internal exchanger 30/35°C;
(2) Data referred to the following conditions: Ambient temperature 20°C DB; Exchanger water outlet 10°C;
(3) SCROLL = scroll compressor
(4) RAD = radial fan
(5) Net outside static pressure to win the outlet and intake onboard pressure drops
(6) Nominal water capacity determined in function of the cooling power
(7) Data calculated according to the EN 14825:2018 Regulation

accessories

THR	Exhaust air THOR thermodynamic energy recovery (CCKP version)
FC	Thermal FREE-COOLING
FCE	Enthalpy FREE-COOLING
M3	Downflow supply
M5	Upward supply air
R3	Floor air inlet
SER	Outdoor air damper manually set
SERM	Outdoor air motorized on/off damper
SERMD	Modulating motorized outdoor air damper
PVAR	Variable airflow
PCOSM	Constant supply airflow
PAQC	Air quality probe for CO2 rate check
PAQCV	Air quality sensor for CO2 and VOC rate check
VENH	High static pressure fans
F7	High efficiency F7 air filter (ISO 16890 ePM1 55%)
FES	Electronic filters (ISO 16890 ePM1 90%)
PSAF	Differential pressure switch for dirty air filters
EH12	9 kW electric heaters
EH14	12 kW electric heaters
EH17	18 kW electric heaters
EH20	24 kW electric heaters
EH24	36 kW electric heaters
EH28	48 kW electric heaters
ACPC	Hydraulic pipework arrangement for loop with constant flow-rate
ACPV	Hydraulic pipework arrangement for loop with variable flow-rate
ACPM	Hydraulic pipework arrangement for system with disposable water
ACIS	Antifreeze heater protection on the water side exchanger
IFWX	Steel mesh strainer on the water side
CHW2	Two-rows hot water coil
CHWER	Energy recovery from food refrigeration
3WVM	Modulating three-way valve
2WVM	Modulating 2-way valve
LTEMP1	Application for low outdoor temperature
CPHG	Hot gas re-heating coil
HSE3	3 kg/h immersed electrodes steam humidifier (sizes 15.1÷30.2)
HSE5	5 kg/h immersed electrodes steam humidifier (sizes 15.1÷30.2)
HSE8	8 kg/h immersed electrodes steam humidifier
HSE9	15 kg/h immersed electrodes steam humidifier
MHP	High and low pressure gauges
CMSC9	Serial communication module for Modbus supervisor
CMSC10	Serial communication module for LonWorks supervisor
CMSC11	Serial communication module for BACnet-IP supervisor
PM	Phase monitor
PFCC	Power factor correction capacitors (cosfi > 0.95)
DML	Demand Limit
DESM	Smoke detector
SFSTC	Progressive compressor start-up device
CLMX	Clivet Master System
PCM0	Sandwich panels of the handling zone in M0 fire reaction class
AMRX	Rubber antivibration mounts
RCX	Roof curb
UVC	UV-C germicidal lamps

Accessories whose code ends with "X" are supplied separately

Commercial

	AURA	ELFOSpace	ELFODuct MP ELFODuct HP	ELFOSpace BOX3	MOOD	ELFOSpace WALL3
Capacities (A27/W7)	1,5 ÷ 8,2 kW	1,5 ÷ 11 kW	6 ÷ 25 kW	3 ÷ 11 kW	2,7 ÷ 4,9 kW	2 ÷ 4,5 kW
ErP compliance (heat pumps only)	ErP	ErP	ErP	ErP	ErP	ErP
Vertical cased						
Horizontal cased						
Vertical uncased						
Horizontal uncased						
2 pipes	✓	✓	✓	✓	✓	✓
4 pipes	✓	✓	✓	✓		
DC Motor	✓	✓	✓	✓	✓	✓
High head		✓				
RS485 Connection	✓	✓	✓	✓	✓	✓

Commercial and Industrial

	SAHU	AQX	AQH
Airflow	420 ÷ 4200 l/s	350 ÷ 44400 l/s	350 ÷ 44400 l/s
	ErP	ErP	ErP
Product			
Sizes	8	32, 50 mm pitch	32, 50 mm pitch
Frame / Panels	Thermal cut / Double wall 40 mm thick	Thermal cut / 7 double-wall materials 50 mm	Thermal cut / 7 double-wall materials 60 mm
Fans / Motors	Centrifugal units with belt drive and pulley, and EC fan plug	Centrifugal and Plug fan / Asynchro-nous, Inverter, EC electronic control	Centrifugal and Plug fan / Asynchro-nous, Inverter, EC electronic control
Exchangers	Water / Direct expansion	Water / High pressure hot water / Steam / Direct expansion	Water / High pressure hot water / Steam / Direct expansion
Heat recovery		Crossover flows / Rotary / Run-Around	Crossover flows / Rotary / Run-Around
Versions	Horizontal / Vertical	Sanitizable / Adjusted	Sanitizable / Adjusted

TERMINAL Units and AHU

System components

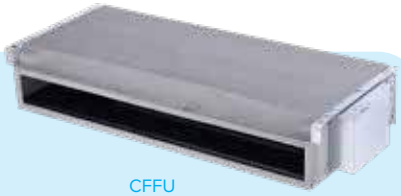
SERIES	SIZE FROM	TO	NAME		PAGE
Water terminal units					
CFF	1	12	AURA	New	154
CFFA	1	12	AURA	New	158
ELFOSPACE	003.0	051.0	ELFOSpace		162
CFK	007.0	041.0	ELFOSpace BOX3		166
CFW-2	1	5	MOOD	New	170
CFW	007.0	021.0	ELFOSpace WALL3		172
ELFODuct MP	15	71	ELFODuct		174
ELFODuct HP	015.0	071.0	ELFODuct		178
Air handling units					
SAHU	1	8	SAHU		182
AQX	1	32	-		186
CLA	1	32	-		188

AURA

Water terminal unit
DC fan
Cased and uncased, vertical and horizontal indoor installation.
Capacity from 1,5 to 8,2 kW

NEW PRODUCT

4-pipe and front air inlet version
available within the first quarter of 2021



CFFU
uncased

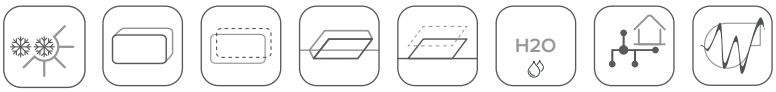
CFFC
cased

ErP
compliant

AURA are the cased and uncased water terminal for installation in the commercial sector with DC motor which allows an energy saving of up to 70% compared to traditional solutions.

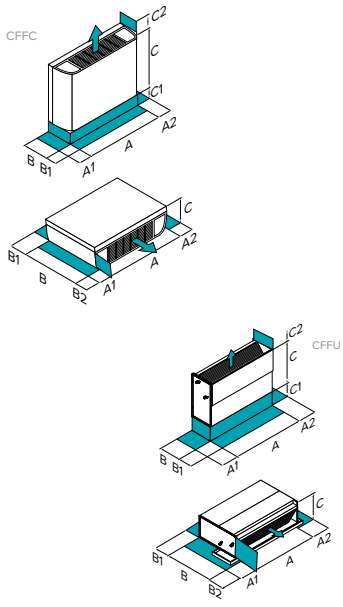
- Versions for 2 and 4-pipe.
- It can be installed vertically or horizontally.
- Available with downward or front air inlet.
- Designed for connection to the ELFOControl[3] EVO or general supervisors.
- Low noise operation and easy to clean.
- Standard water fittings to the left, moveable to the right on site.
- Compact and thin, with an elegant design and suitable for any environment.

functions and features



Cool & heat | Vertical: cased | Vertical: uncased | Horizontal: cased | Horizontal: uncased | Water | ELFOControl[3] EVO | DC Motor

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size			CFF	1	2	3	4	5	6	7	8	9	10	11	12
CFFC (cased)	DIMENSIONS	A - Length	mm	790	790	1010	1010	1240	1240	1240	1360	1360	1360	1360	1360
		B - Width	mm	200	200	200	200	200	200	200	200	200	200	200	200
		C - Height	mm	495	495	495	495	495	495	495	495	495	495	591	591
	CLEARANCES	A1	mm	150	150	150	150	150	150	150	150	150	150	150	150
		A2	mm	150	150	150	150	150	150	150	150	150	150	150	150
		C2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
		C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
	WEIGHT	CFFC CC2 R3	kg	23,5	24	27,5	28	25,5	26,5	25,5	26,5	28,5	39,5	32,5	34,5
		CFFC CC4 R3	kg	19	-	22,5	-	27	-	27	-	30	-	35	-
CFFU (uncased)	DIMENSIONS	A - Length	mm	790	790	1010	1010	1240	1240	1240	1360	1360	1360	1360	1360
		B - Width	mm	200	200	200	200	200	200	200	200	200	200	200	200
		C - Height	mm	495	495	495	495	495	495	495	495	495	495	591	591
	CLEARANCES	A1	mm	150	150	150	150	150	150	150	150	150	150	150	150
		A2	mm	150	150	150	150	150	150	150	150	150	150	150	150
		B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
		B2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	WEIGHT	CFFU CC2 R3	kg	11,8	12,1	13,9	14,8	17,3	18,2	17,3	18,2	19,6	20,8	23,1	24,3
		CFFU CC4 R3	kg	12,6	-	15,3	-	18,7	-	18,7	-	21,3	-	24,8	-

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VERSION:

CFFC Cased version for vertical and horizontal installation

CFFU Uncased version for vertical and horizontal installation

TYPE OF FANS:

VEC DC high efficiency fan (Standard)

INTAKE:

R3 Downward air return (Standard)

RF Front air inlet

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system

The following models are available on order only, please contact the sales network:
- 2-pipe, front air inlet, cased
- 4-pipe, downward air return, cased and uncased
- 4-pipe, front air inlet, cased

ELECTRONICS VERSION:

CTMP1 Electronics with serial port RS485 Modbus, external control input 0/10V, 3-speed input

technical data

Size		CFF	1	2	3	4	5	6	7	8	9	10	11	12
2-pipe														
High speed														
Airflow		m³/h	255	255	400	425	595	595	790	800	1190	1190	1360	1300
Cooling capacity	(1)	kW	1,5	1,95	2,35	2,85	3,5	3,9	4,3	4,85	5,6	6,35	7,35	8,25
Sensible capacity	(1)	kW	1,14	1,42	1,79	2,06	2,65	2,9	3,25	3,63	4,62	4,98	5,87	6,12
Water flow-rate	(1)	l/h	260	330	400	490	600	670	740	830	960	1090	1270	1430
Water pressure drop	(1)	kPa	13,9	27,2	13,3	26	34,1	37,4	54,2	54,3	50,7	32,8	44,1	71,4
Heating capacity	(2)	kW	1,57	2,05	2,6	2,95	3,8	4	4,7	5,25	6	7,05	8,05	8,7
Water flow-rate	(2)	l/h	270	340	450	510	610	700	750	910	1040	1220	1390	1510
Water pressure drop	(2)	kPa	15,1	25,3	14,3	24,4	35,1	36,5	54,3	53,4	55,5	37,6	46,9	62,6
Total power input		W	15	20	17	20	26	29	50	52	96	92	113	102
Medium speed														
Airflow		m³/h	170	210	315	300	470	450	580	600	855	875	1015	980
Cooling capacity	(1)	kW	1,06	1,66	1,94	2,13	2,89	3,2	3,48	3,92	4,47	5,19	6,12	6,65
Sensible capacity	(1)	kW	0,77	1,19	1,44	1,51	2,14	2,35	2,56	2,85	3,6	3,98	4,74	4,82
Water flow-rate	(1)	l/h	180	280	340	370	500	550	600	670	770	900	1050	1140
Water pressure drop	(1)	kPa	8,21	20,88	9,98	15,06	24,63	25,91	36,22	36,81	33,38	21,75	33,7	46,17
Heating capacity	(2)	kW	1,07	1,75	2,11	2,15	3,1	3,22	3,7	4,09	4,77	5,61	6,46	6,81
Water flow-rate	(2)	l/h	190	280	370	370	480	560	600	710	830	980	1120	1180
Water pressure drop	(2)	kPa	7,63	19,65	10,33	13,65	24,41	25,34	36,87	36,54	37,66	25,47	31,9	41,06
Total power input		W	9	14	12	11	17	17	25	28	44	46	53	49
Low speed														
Airflow		m³/h	150	150	190	190	340	310	410	420	505	530	685	680
Cooling capacity	(1)	kW	0,92	1,21	1,19	1,41	2,22	2,43	2,71	2,93	3,14	3,62	4,57	4,84
Sensible capacity	(1)	kW	0,66	0,85	0,86	0,96	1,57	1,72	1,91	2,08	2,43	2,68	3,45	3,42
Water flow-rate	(1)	l/h	160	210	210	240	380	420	470	510	540	630	790	830
Water pressure drop	(1)	kPa	6,16	12,2	4,59	7,41	15,39	15,37	22,78	21,77	17,73	11,43	19,41	25,39
Heating capacity	(2)	kW	0,92	1,25	1,34	1,42	2,35	2,5	2,81	3,04	3,36	3,83	4,71	4,85
Water flow-rate	(2)	l/h	160	200	230	240	380	420	450	530	590	670	820	830
Water pressure drop	(2)	kPa	5,84	10,25	4,5	6,64	14,82	14,22	22,32	20,47	19,27	12,5	18,16	21,68
Total power input		W	8	9	7	8	10	11	14	15	17	19	22	22
Standard power supply		V	220-240/1/50											
Type of supply fan	(3)	-	CFG											
No. of supply fans		-	1	1	2	2	2	2	2	2	3	3	3	3
H Sound pressure level	(4)	dB(A)	34	39	29	32	38	40	46	45	50	50	51	50
M Sound pressure level	(4)	dB(A)	24	33	24	23	32	34	38	39	42	43	44	43
L Sound pressure level	(4)	dB(A)	21	25	18	19	23	30	30	30	31	31	33	33
H Sound power level	(4)	dB(A)	47	52	43	46	52	52	59	59	64	62	63	63
M Sound power level	(4)	dB(A)	36	46	37	37	44	45	51	51	56	56	58	57
L Sound power level	(4)	dB(A)	34	38	29	29	36	36	43	43	45	46	49	47

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)
(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C
(3) CFG = centrifugal fan
(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

technical data

Size		CFF		1	3	5	7	9	11
4-pipe									
High speed									
Airflow			m³/h	255	425	595	800	1190	1300
Cooling capacity		(1)	kW	1,70	2,70	3,80	4,60	6,05	7,65
Sensible capacity		(1)	kW	1,30	1,90	2,80	3,50	4,80	5,90
Water flow-rate		(1)	l/h	290	460	650	790	1040	1310
Water pressure drop		(1)	kPa	18,16	16,97	39,17	56,18	53,66	48,07
Heating capacity		(2)	kW	1,40	2,30	2,88	3,35	4,60	7,50
Water flow-rate		(2)	l/h	120	200	250	290	390	640
Water pressure drop		(2)	kPa	10,74	28,16	55,37	69,57	132,32	71,63
Rated power input			W	20	20	29	52	92	102
Medium speed									
Airflow			m³/h	206	280	461	595	887	969
Cooling capacity		(1)	kW	1,44	1,94	3,18	3,75	5,00	6,19
Sensible capacity		(1)	kW	1,07	1,30	2,30	2,75	3,88	4,60
Water flow-rate		(1)	l/h	250	330	550	640	860	1060
Water pressure drop		(1)	kPa	13,74	9,73	28,35	39,04	36,96	32,56
Heating capacity		(2)	kW	1,23	1,78	2,49	2,88	6,95	6,44
Water flow-rate		(2)	l/h	110	150	210	250	340	550
Water pressure drop		(2)	kPa	8,50	18,45	43,00	54,65	104,19	56,17
Rated power input			W	14	11	17	28	46	22
Low speed									
Airflow			m³/h	134	158	324	417	564	661
Cooling capacity		(1)	kW	0,95	1,10	2,32	2,83	3,43	4,54
Sensible capacity		(1)	kW	0,64	0,70	1,61	2,01	2,53	3,30
Water flow-rate		(1)	l/h	160	190	400	490	590	780
Water pressure drop		(1)	kPa	7,50	3,51	16,91	23,84	19,07	18,32
Heating capacity		(2)	kW	0,95	1,22	2,00	2,36	3,02	5,22
Water flow-rate		(2)	l/h	80	100	170	200	260	450
Water pressure drop		(2)	kPa	5,49	10,08	29,20	38,21	63,73	37,44
Rated power input			W	9	8	11	15	19	22
Standard power supply			V	220-240/1/50					
Type of supply fan		(3)	-	CFG DC					
No. of supply fans			-	1		2		3	
H	Sound pressure level	(4)	dB(A)	39	32	40	45	50	50
M	Sound pressure level	(4)	dB(A)	33	23	34	39	43	43
L	Sound pressure level	(4)	dB(A)	25	19	30	30	31	33
H	Sound power level	(4)	dB(A)	52	46	52	50	62	63
M	Sound power level	(4)	dB(A)	46	37	45	51	56	57
L	Sound power level	(4)	dB(A)	38	29	36	43	46	47

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)
(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C
(3) CFG = DC centrifugal fan
(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

3V2X Three-way valve kit for 2-pipe type "on/off" system
3V4X Three-way valve kit for 4-pipe type "on/off" system
BRVHX Auxiliary condensate collection tray ausiliaria for vertical/horizontal installation
KDPX Plinth kit
CDPX Condensate drain pump
KJR-90DX KJR-90D electronic room control for wall installation
KJR-150AX Indoor units group controller
CCM30-BX Centralized controller with case
CCM08X BACNET gateway
LONGW64X LONWORKS gateway
HMIFDCX KJRP-75A electronic wired control for on-board or wall-mounted assembly (for DC versions)
EXTENX KJRP-75 wired control connection cable extension (2m)
CCM15X Data converter
CCM180X Central controller for wall mounting weekly timer 6.2''
CCM270X Central controller for wall mounting weekly timer 10.1'

Accessories whose code ends with "X" are separately supplied.

NEW PRODUCT

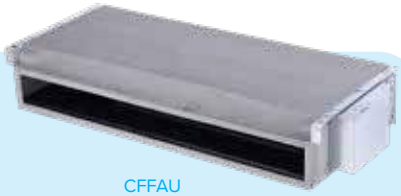
4-pipe and front air inlet version
available within the first quarter of 2021

AURA

Water terminal unit

Cased and uncased, vertical and horizontal indoor installation.

Capacity from 1,6 to 8,2 kW



CFFAU
uncased

CFFAC
cased

ErP
compliant

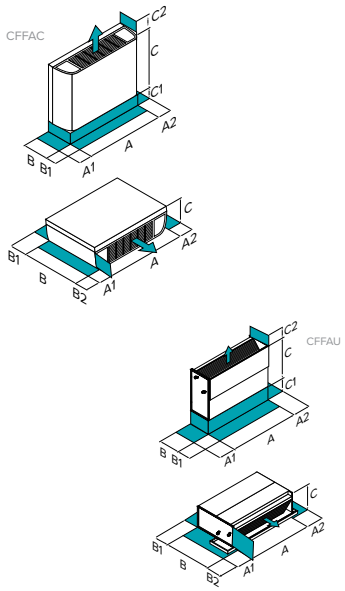
AURA are the cased and uncased water terminal for installation in the commercial sector.

- Versions for 2 and 4-pipe systems.
- It can be installed vertically or horizontally.
- Available with downward or front air inlet.
- Low noise operation and easy to clean.
- Standard water fittings to the left, moveable to the right on the field.

functions and features

Cool & heat | Vertical: cased | Vertical: uncased | Horizontal: cased | Horizontal: uncased | Water | ELFOControl[3] EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size			CFFA	1	2	3	4	5	6	7	8	9	10	11	12
CFFAC (cased)	DIMENSIONS	A - Length	mm	790	790	1010	1010	1240	1240	1240	1360	1360	1360	1360	1360
		B - Width	mm	200	200	200	200	200	200	200	200	200	200	200	200
		C - Height	mm	495	495	495	495	495	495	495	495	495	495	591	591
	CLEARANCES	A1	mm	150	150	150	150	150	150	150	150	150	150	150	150
		A2	mm	150	150	150	150	150	150	150	150	150	150	150	150
		C2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
		C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
	WEIGHT	CFFAC CC2 R3	kg	16,3	16,7	20	20,8	24	25,4	25,5	26,3	27,3	28,5	31,7	34
		CFFAC CC4 R3	kg	17,2	-	21,3	-	25,9	-	26,8	-	29	-	34,5	-
CFFAU (uncased)	DIMENSIONS	A - Length	mm	790	790	1010	1010	1240	1240	1240	1360	1360	1360	1360	1360
		B - Width	mm	200	200	200	200	200	200	200	200	200	200	200	200
		C - Height	mm	495	495	495	495	495	495	495	495	495	495	591	591
	CLEARANCES	A1	mm	150	150	150	150	150	150	150	150	150	150	150	150
		A2	mm	150	150	150	150	150	150	150	150	150	150	150	150
		B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
		B2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	WEIGHT	CFFAU CC2 R3	kg	11,6	12	13,9	14,8	17,3	18,2	17,9	18,8	20,5	21,7	24	25,2
		CFFAU CC4 R3	kg	12,5	-	15,3	-	18,7	-	19,3	-	22,2	-	25,7	-

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

VERSION:

CFFAC Cased version for vertical and horizontal installation

CFFAU Uncased version for vertical and horizontal installation

INTAKE:

R3 Downward air return (Standard)

RF Front air inlet

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system

The following models are available on order only, please contact the sales network:

- *4-pipe, front air inlet, cased*
- *4-pipe, downward air return, cased*

ELECTRONICS VERSION:

TRB Terminal block for the motor connection

technical data

Size		CFFA		1	2	3	4	5	6	7	8	9	10	11	12
2-pipe															
High speed															
Airflow			m³/h	255	255	400	425	595	595	790	800	1190	1150	1300	1300
Cooling capacity		(1)	kW	1,65	2,25	2,65	3,05	3,85	4,2	4,65	5,35	6	6,75	7,35	8,25
Sensible capacity		(1)	kW	1,25	1,65	2,05	2,23	2,91	3,05	3,58	3,96	4,83	5,09	5,63	6,08
Water flow-rate		(1)	l/h	283	386	454	523	660	720	797	917	1029	1157	1260	1414
Water pressure drop		(1)	kPa	15,75	33,19	18,03	26,71	38,23	41,15	56,85	61,48	53,79	40,26	45,43	64,72
Heating capacity		(2)	kW	1,85	2,35	3,05	3,15	4,1	4,3	5,2	5,7	6,15	7,15	8,2	8,5
Water flow-rate		(2)	l/h	317	403	523	540	705	740	894	977	1054	1226	1406	1457
Water pressure drop		(2)	kPa	15,13	33,19	17,56	23,31	35,52	37,2	56,68	60,89	57,85	42,16	44,6	61,96
Total power input			W	35	40	47	47	51	51	91	91	123	110	123	118
Medium speed															
Airflow			m³/h	165	192	273	284	447	450	560	574	855	885	1088	1132
Cooling capacity		(1)	kW	1,22	1,85	2,02	2,26	3,19	3,38	3,8	4,25	5,03	5,8	6,51	7,52
Sensible capacity		(1)	kW	0,88	1,35	1,5	1,61	2,36	2,43	2,85	3,08	3,99	4,36	4,92	5,53
Water flow-rate		(1)	l/h	209	317	346	387	546	580	652	729	862	995	1116	1289
Water pressure drop		(1)	kPa	9,33	22,37	11,18	15,66	27,11	27,07	40,02	41,44	36,96	29,2	37,06	55,03
Heating capacity		(2)	kW	1,29	1,87	2,24	2,28	3,3	3,43	3,95	4,36	5,1	5,81	7,09	7,6
Water flow-rate		(2)	l/h	222	320	384	392	568	590	679	747	877	996	1216	1302
Water pressure drop		(2)	kPa	8,22	22,37	10,28	12,57	24,83	24,5	37,31	37,73	38,53	28,68	34,09	47,46
Total power input			W	17	24	26	26	32	32	54	54	98	89	109	104
Low speed															
Airflow			m³/h	142	139	180	184	319	319	392	404	555	591	782	836
Cooling capacity		(1)	kW	1,09	1,4	1,4	1,58	2,46	2,48	2,92	3,31	3,71	4,24	5,15	5,87
Sensible capacity		(1)	kW	0,78	1	1,02	1,08	1,77	1,73	2,09	2,34	2,85	3,12	3,83	4,21
Water flow-rate		(1)	l/h	186	241	240	272	422	425	500	567	636	727	884	1007
Water pressure drop		(1)	kPa	7,37	4,64	5,48	8,42	16,96	15,71	25,31	26,62	21,16	16,15	23,29	34,88
Heating capacity		(2)	kW	1,13	1,42	1,52	1,6	2,48	2,52	3	3,31	3,8	4,3	5,46	5,9
Water flow-rate		(2)	l/h	194	244	260	275	427	433	516	569	654	740	937	1015
Water pressure drop		(2)	kPa	6,64	4,64	5,43	6,11	14,91	13,75	23,25	21,79	21,1	14,66	19,98	28,84
Total power input			W	14	15	14	14	19	19	34	35	68	64	83	82
Standard power supply			V	220-240/1/50											
Type of supply fan		(3)	-	CFG											
No. of supply fans			-	1	1	2	2	2	2	2	2	3	3	3	3
H	Sound pressure level	(4)	dB(A)	35	42	34	34	39	40	48	47	50	50	51	50
M	Sound pressure level	(4)	dB(A)	24	35	24	25	32	35	39	40	43	44	46	45
L	Sound pressure level	(4)	dB(A)	21	27	18	19	23	31	31	31	33	33	36	37
H	Sound power level	(4)	dB(A)	47	53	46	47	52	52	59	59	64	62	63	63
M	Sound power level	(4)	dB(A)	35	47	37	38	44	45	51	51	56	56	58	58
L	Sound power level	(4)	dB(A)	34	39	31	32	36	37	43	43	45	46	50	50

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) CFG = centrifugal fan

(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

technical data

Size		CFFA		1	3	5	7	9	11
4-pipe									
High speed									
Airflow			m³/h	255	425	595	800	1150	1300
Cooling capacity		(1)	kW	1,95	2,89	4,09	5,05	6,40	7,65
Sensible capacity		(1)	kW	1,50	2,05	2,94	3,80	4,90	5,85
Water flow-rate		(1)	l/h	330	500	700	870	1100	1310
Water pressure drop		(1)	kPa	27,47	21,38	47,70	71,09	63,05	50,47
Heating capacity		(2)	kW	0,99	1,38	1,73	2,02	2,59	4,40
Water flow-rate		(2)	l/h	170	240	300	350	440	760
Water pressure drop		(2)	kPa	13,28	35,78	69,44	91,92	159,32	100,73
Rated power input			W	40	47	51	91	110	118
Medium speed									
Airflow			m³/h	192	284	430	574	885	1132
Cooling capacity		(1)	kW	1,60	2,05	3,35	4,05	5,59	7,00
Sensible capacity		(1)	kW	1,20	1,39	2,38	2,95	4,25	5,28
Water flow-rate		(1)	l/h	280	350	570	690	960	1200
Water pressure drop		(1)	kPa	19,63	11,95	33,04	47,81	48,47	43,72
Heating capacity		(2)	kW	0,90	1,28	1,49	1,71	2,30	4,06
Water flow-rate		(2)	l/h	160	220	260	300	400	700
Water pressure drop		(2)	kPa	11,30	31,27	53,45	68,51	130,72	88,06
Rated power input			W	24	26	32	54	89	104
Low speed									
Airflow			m³/h	139	184	319	404	591	836
Cooling capacity		(1)	kW	1,15	1,25	2,35	3,20	4,00	5,50
Sensible capacity		(1)	kW	0,78	0,84	1,60	2,25	2,95	4,05
Water flow-rate		(1)	l/h	200	210	400	550	690	940
Water pressure drop		(1)	kPa	12,54	4,99	18,22	31,95	27,23	28,23
Heating capacity		(2)	kW	0,75	0,93	1,49	1,53	1,88	3,39
Water flow-rate		(2)	l/h	130	160	260	260	320	590
Water pressure drop		(2)	kPa	8,20	18,00	53,69	56,05	91,60	64,05
Rated power input			W	15	14	19	35	64	82
Standard power supply			V	220-240/1/50					
Type of supply fan		(3)	-	CFG					
No. of supply fans			-	1		2		3	
H	Sound pressure level	(4)	dB(A)	42	34	40	47	50	50
M	Sound pressure level	(4)	dB(A)	47	38	45	51	56	58
L	Sound pressure level	(4)	dB(A)	39	32	37	43	46	50
H	Sound power level	(4)	dB(A)	53	47	52	59	62	63
M	Sound power level	(4)	dB(A)	35	25	33	40	44	45
L	Sound power level	(4)	dB(A)	27	19	24	31	33	37

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)
(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.
(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C
(3) CFG = centrifugal fan
(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

3V2X Three-way valve kit for 2-pipe type "on/off" system
3V4X Three-way valve kit for 4-pipe type "on/off" system
BRVHX Auxiliary condensate collection tray ausiliaria for vertical/horizontal installation
KDPX Plinth kit
CDPX Condensate drain pump
BOXX Wall installation box KJRP-86A
HMIFACX KJRP-86A electronic wired control for on-board or wall mounting (for AC version)

Accessories whose code ends with "X" are separately supplied.

ELFOSpace

Water terminal unit

Cased and uncased, vertical and horizontal indoor installation

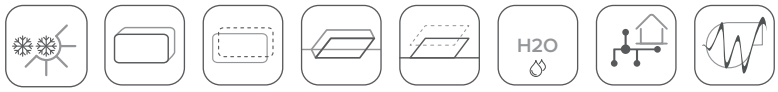
Capacity from 1,5 to 10,7 kW

ErP
ErP compliant

ELFOSpace OUT and IN are the cased and uncased water terminal for installation in the commercial sector.

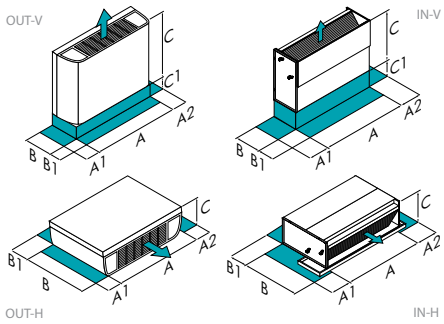
- Versions for 2 and 4-pipe systems.
- Available with DC Brushless ventilating unit (sizes 003.0÷031.0).
- The available controls are simple and user-friendly, satisfying the most varied of requirements.
- Designed for connection to the ELFOControl[3] EVO or general supervisors.
- Low noise operation and easy to clean.
- Twelve sizes available with an almost countless number of accessories for resolving any service application.

functions and features



Cool & heat | Vertical: cased | Vertical: uncased | Horizontal: cased | Horizontal: uncased | Water | ELFOControl[3] EVO | DC Motor

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	ELFOSPACE		003.0	005.0	007.0	009.0	011.0	015.0	017.0	021.0	025.0	031.0	041.0	051.0
OUTV	A - Length	mm	670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTV	B - Width	mm	220	220	220	220	220	220	220	220	220	220	220	220
OUTV	C - Height	mm	470	470	470	470	470	470	470	470	470	470	470	470
OUTV	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTV	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTV	B1	mm	250	250	250	250	250	250	250	250	250	250	250	250
OUTV	C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
INV	A - Length	mm	450	450	650	650	850	850	1050	1050	1250	1250	1450	1450
INV	B - Width	mm	215	215	215	215	215	215	215	215	215	215	215	215
INV	C - Height	mm	450	450	450	450	450	450	450	450	450	450	450	450
INV	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
INV	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
INV	B1	mm	250	250	250	250	250	250	250	250	250	250	250	250
INV	C1	mm	90	90	90	90	90	90	90	90	90	90	90	90
OUTH	A - Length	mm	670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTH	B - Width	mm	470	470	470	470	470	470	470	470	470	470	470	470
OUTH	C - Height	mm	220	220	220	220	220	220	220	220	220	220	220	220
OUTH	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTH	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
OUTH	B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
INH	A - Length	mm	545	545	745	745	945	945	1145	1145	1345	1345	1545	1545
INH	B - Width	mm	450	450	450	450	450	450	450	450	450	450	450	450
INH	C - Height	mm	215	215	215	215	215	215	215	215	215	215	215	215
INH	A1	mm	200	200	200	200	200	200	200	200	200	200	200	200
INH	A2	mm	200	200	200	200	200	200	200	200	200	200	200	200
INH	B1	mm	90	90	90	90	90	90	90	90	90	90	90	90
CC2-INV	Operating weight	kg	11	11	14	14	20	20	23	24	27	28	31	34
CC2-INH	Operating weight	kg	11	12	14	15	20	21	23	25	27	29	31	35
CC4-INV	Operating weight	kg	12	12	14	15	21	22	24	26	28	30	32	36
CC4-INH	Operating weight	kg	12	12	15	16	21	22	24	26	28	30	32	36
CC2-OUTV	Operating weight	kg	14	14	16	17	22	24	26	28	30	32	34	38
CC2-OUTH	Operating weight	kg	15	15	18	19	24	26	28	30	33	34	37	41
CC4-OUTH	Operating weight	kg	16	16	19	20	26	27	30	31	34	36	39	42
CC4-OUTV	Operating weight	kg	14	15	17	18	24	25	27	29	31	33	35	39

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

OUTV Vertical cased version
INV Vertical uncased version
OUTH Horizontal cased version
INH Horizontal uncased version
CC2-INV 2 pipes-Vertical uncased version
CC2-INH 2 pipes-Horizontal uncased version
CC4-INV 4-pipe-Vertical uncased version
CC4-INH 4-pipe-Horizontal uncased version
CC2-OUTV 2 pipes-Vertical cased version
CC2-OUTH 2 pipes-Horizontal cased version
CC4-OUTH 4-pipe-Horizontal cased version
CC4-OUTV 4-pipe-Vertical cased version

versions and configurations

VERSION:

INV Vertical uncased version (Standard)

OUTV Vertical cased version

OUTH Horizontal cased version

INH Horizontal uncased version

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system

WATER FITTINGS:

SX Water fittings to the left (Standard)

DX Water fittings to the right

technical data

Size	ELFOSPACE			003.0	005.0	007.0	009.0	011.0	015.0	017.0	021.0	025.0	031.0	041.0	051.0
2-pipes															
High speed															
Airflow			m³/h	370	400	500	550	670	720	1.000	1.050	1.280	1.310	1.910	1.940
Cooling capacity	(1)		kW	1,50	2,00	2,53	3,02	3,75	4,25	5,52	6,42	7,53	9,02	9,60	10,70
Sensible capacity	(1)		kW	1,29	1,62	2,07	2,31	2,87	3,23	4,33	4,80	5,67	6,62	7,64	8,36
Water flow-rate	(1)		l/h	258	344	435	519	645	731	949	1.104	1.295	1.551	1.651	1.710
Water pressure drop	(1)		kPa	13,10	16,30	18,50	20,80	22,60	24,10	24,50	27,10	28,80	29,20	31,00	33,40
Heating capacity	(2)		kW	1,87	2,46	2,99	3,36	4,08	4,72	6,00	6,65	7,75	9,05	10,55	11,60
Water flow-rate	(2)		l/h	322	422	514	577	702	812	1.032	1.144	1.333	1.557	1.815	1.995
Water pressure drop	(2)		kPa	17,70	21,40	22,40	22,30	23,30	25,90	25,20	25,30	26,50	25,60	32,50	34,10
Total power input			W	49	49	66	66	71	71	130	130	146	146	224	224
Medium speed															
Airflow			m³/h	285	310	400	440	590	635	890	935	1.140	1.160	1.640	1.660
Cooling capacity	(1)		kW	1,28	1,71	2,20	2,63	3,47	3,93	5,14	5,97	7,01	8,37	8,73	9,72
Sensible capacity	(1)		kW	1,07	1,35	1,76	1,97	2,62	2,95	3,98	4,42	5,22	6,07	6,85	7,48
Water flow-rate	(1)		l/h	219	294	379	452	596	676	883	1.028	1.205	1.439	1.502	1.672
Water pressure drop	(1)		kPa	9,50	11,90	14,00	15,80	19,30	20,70	21,20	23,50	25,00	25,10	25,70	27,60
Heating capacity	(2)		kW	1,57	2,08	2,58	2,90	3,75	4,35	5,56	6,16	7,18	8,35	9,54	10,47
Water flow-rate	(2)		l/h	271	357	444	498	645	747	956	1.060	1.235	1.437	1.641	1.800
Water pressure drop	(2)		kPa	12,60	15,30	16,70	16,60	19,70	21,90	21,60	21,70	22,80	21,80	26,60	27,70
Total power input			W	34	34	53	53	56	56	105	105	123	123	200	200
Low speed															
Airflow			m³/h	225	245	305	335	460	500	650	680	870	890	1.490	1.515
Cooling capacity	(1)		kW	1,10	1,48	1,86	2,22	2,97	3,39	4,23	4,90	5,93	7,10	8,23	9,19
Sensible capacity	(1)		kW	0,90	1,14	1,45	1,62	2,19	2,49	3,18	3,52	4,30	5,02	6,40	7,00
Water flow-rate	(1)		l/h	190	254	320	382	511	583	727	843	1.019	1.221	1.416	1.580
Water pressure drop	(1)		kPa	7,10	8,90	10,00	11,20	14,20	15,40	14,40	15,80	17,90	18,10	22,80	24,60
Heating capacity	(2)		kW	1,35	1,78	2,16	2,42	3,18	3,71	4,52	4,99	6,01	7,02	8,96	9,86
Water flow-rate	(2)		l/h	232	306	371	416	548	638	777	859	1.034	1.207	1.541	1.695
Water pressure drop	(2)		kPa	9,20	11,20	11,70	11,60	14,20	16,00	14,30	14,20	15,90	15,40	23,50	24,60
Total power input			W	24	24	36	36	38	38	71	71	88	88	175	175
4-pipes															
High speed															
Airflow			m³/h	350	380	480	520	640	680	960	1.000	1.230	1.260	1.850	1.880
Cooling capacity	(1)		kW	1,45	1,94	2,47	2,92	3,65	4,11	5,39	6,23	7,35	8,81	9,42	10,51
Sensible capacity	(1)		kW	1,24	1,57	2,02	2,22	2,78	3,11	4,21	4,64	5,52	6,44	7,47	8,18
Water flow-rate	(1)		l/h	249	334	425	502	628	707	927	1.072	1.264	1.515	1.620	1.808
Water pressure drop	(1)		kPa	12,30	15,40	17,60	19,50	21,40	22,50	23,40	25,50	27,40	27,90	29,80	32,20
Heating capacity	(3)		kW	1,67	1,76	2,83	2,98	3,89	4,04	5,59	5,74	7,10	7,21	9,86	9,96
Water flow-rate	(3)		l/h	144	151	243	256	335	348	481	494	611	620	848	856
Water pressure drop	(3)		kPa	5,90	6,50	9,40	10,50	17,20	18,60	33,30	35,10	30,60	31,50	39,20	40,00
Total power input			W	49	49	66	66	71	71	130	130	146	146	224	224
Medium speed															
Airflow			m³/h	270	295	385	415	560	590	850	880	1.100	1.260	1.850	1.880
Cooling capacity	(1)		kW	1,24	1,66	2,15	2,54	3,36	3,76	5,00	5,76	6,86	8,24	8,64	9,64
Sensible capacity	(1)		kW	1,03	1,31	1,73	1,89	2,53	2,81	3,86	4,23	5,10	5,96	6,76	7,40
Water flow-rate	(1)		l/h	212	285	371	437	578	647	860	990	1.180	1.416	1.487	1.658
Water pressure drop	(1)		kPa	8,90	11,30	13,40	14,70	18,20	18,90	20,10	21,80	23,90	24,40	25,10	27,00
Heating capacity	(3)		kW	1,41	1,49	2,44	2,57	3,57	3,68	5,16	5,28	6,60	6,71	9,00	9,08
Water flow-rate	(3)		l/h	121	128	210	221	307	317	444	454	567	577	774	781
Water pressure drop	(3)		kPa	4,20	4,70	7,10	7,80	14,50	15,40	28,40	29,70	26,40	27,30	32,60	33,20
Total power input			W	34	34	53	53	56	56	105	105	123	123	200	200
Low speed															
Airflow			m3/h	210	230	295	320	445	475	630	660	850	865	1.470	1.485
Cooling capacity	(1)		kW	1,06	1,42	1,83	2,16	2,91	3,29	4,15	4,82	5,85	6,98	8,17	9,08
Sensible capacity	(1)		kW	0,86	1,10	1,43	1,57	2,14	2,41	3,11	3,45	4,24	4,92	6,34	6,91
Water flow-rate	(1)		l/h	182	244	314	372	501	566	714	828	1.005	1.200	1.405	1.562
Water pressure drop	(1)		kPa	6,50	8,30	9,60	10,70	13,70	14,40	13,90	15,30	17,30	17,50	22,40	24,00
Heating capacity	(3)		kW	1,19	1,26	2,05	2,16	3,06	3,19	4,24	4,37	5,57	5,63	8,47	8,52
Water flow-rate	(3)		l/h	103	109	176	186	264	275	364	376	479	484	729	733
Water pressure drop	(3)		kPa	3,00	3,40	5,00	5,50	10,70	11,60	19,10	20,30	18,80	19,20	29,00	29,30
Total power input			W	24	24	36	36	38	38	71	71	88	88	175	175
Standard power supply			V	220-240/1/50											
Type of supply fan	(4)		-	CFG											
No. of supply fans			-	1	1	1	1	2	2	2	2	2	2	3	3
H Sound pressure level	(5)		dB(A)	44	44	50	51	43	43	49	51	54	55	57	57
M Sound pressure level	(5)		dB(A)	37	37	44	45	39	40	47	47	52	52	54	54
L Sound pressure level	(5)		dB(A)	30	31	36	37	32	33	40	41	45	46	51	52
H Sound power level	(5)		dB(A)	55	55	61	62	54	54	60	62	65	66	68	68
M Sound power level	(5)		dB(A)	48	48	55	56	50	51	58	58	63	63	65	65
L Sound power level	(5)		dB(A)	41	42	47	48	43	44	51	52	56	57	62	63

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.
Airflow with free outlet (0 Pa static pressure)

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

MR	90° air outlet
R3	Downward air return
RF	Front air return
RP	Rear intake
RPFO	Rear intake with oblique downward filter extraction
RPFB	Rear intake with vertical downward filter extraction
RPFA	Rear intake with vertical upward filter extraction
VEC	High efficiency EC fan (sizes 003.0÷031.0)
CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port
CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)
TR	Terminal block for motor connection
TRM	Terminal block with minimum water temperature clickson
HIDF1	Control on the unit: off + 3 speed switch
HIDF2	Built-in control: BULB thermostat (3 speed.+off+E/I+Temp.selection)
HIDF4	Control on the unit: BULB thermostat(3speed+off+E/I+temp.select.)+ min. temperature thermostat
HIDF6	Control mounted on unit's side: multi-function electronic room thermostat
HIDF7	Built-in control: electronic thermostat with display
HIDF8	Control built-in installed: electronic thermostat with display for 0-10Vdc fan (sizes 003.0÷031.0)
TRP	Terminal block with closing cover IP40
TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson
HIDE2X	Remote control with E/I +3V +on/off for wall installation
HIDE3X	Plurifunctional remote control for wall installation
HIDE4X	Plurifunctional remote control for 0-10V valves
HIDT2X	HID-T2 electronic room control
HIDT3X	HID-T3 electronic room control
HIDTI8X	HIDTI8X electronic room control for wall installation
TMX	Hot water min. temperature thermostat
PTABX	Remote probe for room air temperature for electromechanical thermostats
DCPX	Control device for more units with a single room control.
RE	Electric heaters
KBI2	2-pipe water balancing kit = ball valve+water balancing kit
KBI2X	2-pipe water balancing kit = ball valve+water balancing kit
KBI4	4-pipe water balancing kit = 2 ball valves+2 water balancing ki
KBI4X	4-pipe water balancing kit = 2 ball valves+2 water balancing kit
2V2	ON/OFF 2 way valve kit for 2-pipe system
2V2X	ON/OFF 2 way valve kit for 2-pipe system
2V4	ON/OFF 2 way valve kit for 4-pipe system
2V4X	ON/OFF 2 way valve kit for 4-pipe system
3V2	Three-way valve kit for 2-pipe type "on/off" system
3V2X	Three-way valve kit for 2-pipe type "on/off" system
3V4	Three-way valve kit for 4-pipe system type "on/off"
3V4X	Three-way valve kit for 4-pipe system type "on/off"
10V2	0-10V 3-way valve kit for 2-pipe system
10V2X	0-10V 3-way valve kit for 2-pipe system
10V4	0-10V 3 way valve kit for 4-pipe system
10V4X	0-10V 3 way valve kit for 4-pipe system
KR90X	90° pipe-fitting kit
BRV	Auxiliary condensate collection pan (vertical installation)
BRVX	Auxiliary condensate collection pan (vertical installation)
BROP	Auxiliary condensate collection pan (horizontal installation)
BROPX	Auxiliary condensate collection pan (horizontal installation)
CDP	Condensate drain pump
CDPX	Condensate drain pump
SERX	Manual outside air damper for Vertical and horizontal installation
SERMX	Outdoor air motorized on/off damper
PI90X	Support feet for built-in vertical units h=90mm
PI155X	Support plinth for concealed vertical units h=155mm
FTZX	Galvanized steel plate falseframe
PNAX	Pre-painted panel with supply and return grilles
PPVX	Rear cover panel for OUT-V without support feet
PPV90X	Rear cover panel for OUT-V with support feet h=90mm
PPV155X	Rear cover panel for OUT-V with support feet h=155mm
PRAX	Air intake straight plenum
PRCAX	Air intake plenum with circular fittings and air filter
PR90AX	90° air intake plenum
PRMX	Air discharge plenum
PR90MX	90° air outlet plenum
PRCMX	Air outlet plenum with circular fittings+internal termal and acoustic insulation
PRCTX	Terminal plenum with circular connections
PRTX	0-100 mm telescopic extension
DAOJX	Air supply duct with flexible connection
GAAX	Air intake duct with flexible joint
GRMX	Air outlet grille without air filter
AGRMX	Air outlet grille in aluminium without filter
GRAX	Return grille with filter
AGRAX	Air intake grille with air filter

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

ELFOSpace BOX3

Water terminal unit
Cassette-type indoor installation
Capacity from 2,98 to 11,19 kW

ErP compliant

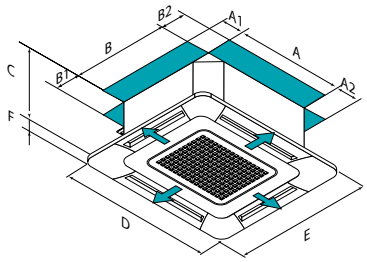
The **ELFOSpace BOX3** terminal unit has been designed for installation in suspended ceilings without requiring any extra part for operation.
The ELFOSpace BOX3 is therefore suited for use in environments such as shops, restaurants, hotels and gyms, where the excellent outflowing air control makes them ideal air-conditioning units:

- versions for 2 and 4-pipe systems;
- available with standard DC Brushless motor;
- suited for installation in standard suspended ceilings with 600 x 600 mm module;
- high standards of efficiency and quiet operation for unit with 800 X 800 mm module;
- standard version with infrared electronics;
- the unit comes with a condensate drain pump built-in.

functions and features

Cool & heat | Cassette type | Water | DC Motor | ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size		CFK	007.0	011.0	015.0	021.0	031.0	041.0
CC2	A - Length	mm	575	575	575	840	840	840
CC2	B - Width	mm	575	575	575	840	840	840
CC2	C - Height	mm	261	261	261	230	300	300
CC2	D - Length	mm	647	647	647	950	950	950
CC2	E - Width	mm	647	647	647	950	950	950
CC2	F - Height	mm	50	50	50	45	45	45
CC2	A1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	A2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	B1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	B2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC2	Operating weight	kg	16,5+2,5	16,5+2,5	16,5+2,5	23+6	27+6	27+6
CC4	A - Length	mm	575	575	575	840	840	840
CC4	B - Width	mm	575	575	575	840	840	840
CC4	C - Height	mm	261	261	261	300	300	300
CC4	D - Length	mm	647	647	647	950	950	950
CC4	E - Width	mm	647	647	647	950	950	950
CC4	F - Height	mm	50	50	50	45	45	45
CC4	A1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	A2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	B1	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	B2	mm	>1000	>1000	>1000	>1000	>1000	>1000
CC4	Operating weight	kg	16,7+2,5	16,7+2,5	16,7+2,5	27,5+6	30+6	30+6

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
CC2 2 pipes
CC4 4-pipe

versions and configurations

PLASTIC FRAME FOR AIR SUPPLY AND RETURN:

360PX Plastic frame for air supply and return (Standard)

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system

STANDARD CONFIGURATION:

IRPCB Electronics with infrared remote control (Standard)

R05 R05 infrared remote control (Standard)

VEC High efficiency EC fan (Standard)

XYE XYE communication port (Standard)

technical data

Size		CFK	007.0	011.0	015.0	021.0	031.0	041.0
2 pipe								
High speed								
Airflow		m³/h	535	610	781	1175	1581	1871
Cooling capacity	(1)	kW	2,98	3,96	4,20	5,93	7,87	11,19
Sensible capacity	(1)	kW	2,49	3,20	3,45	5,00	6,68	9,04
Water flow-rate	(1)	l/h	530	700	750	1050	1440	1960
Water pressure drop	(1)	kPa	10,00	11,48	12,32	19,20	22,30	36,60
Heating capacity	(2)	kW	2,61	4,08	4,95	6,06	9,16	10,07
Water flow-rate	(2)	l/h	640	830	870	1300	1730	2350
Water pressure drop	(2)	kPa	12,10	9,20	9,40	25,90	28,80	49,20
Total power input		W	15	28	43	41	85	126
Medium speed								
Airflow		m³/h	429	477	611	987	1371	1415
Cooling capacity	(1)	kW	2,53	3,26	3,48	5,30	7,12	8,82
Sensible capacity	(1)	kW	2,08	2,57	2,74	4,34	5,95	7,03
Water flow-rate	(1)	l/h	450	580	610	920	1280	1530
Water pressure drop	(1)	kPa	7,00	8,20	8,62	15,40	18,10	22,70
Heating capacity	(2)	kW	2,31	3,34	3,99	5,72	8,54	9,37
Water flow-rate	(2)	l/h	540	670	700	1140	1570	1860
Water pressure drop	(2)	kPa	8,50	8,60	8,23	20,10	24,00	31,20
Total power input		W	9	15	28	27	59	58
Low speed								
Airflow		m³/h	322	381	494	768	1236	1198
Cooling capacity	(1)	kW	2,00	2,76	3,01	4,40	6,67	7,48
Sensible capacity	(1)	kW	1,59	2,10	2,31	3,52	5,50	5,97
Water flow-rate	(1)	l/h	350	510	540	770	1220	1280
Water pressure drop	(1)	kPa	5,00	6,54	7,40	11,00	16,30	16,40
Heating capacity	(2)	kW	2,24	2,73	3,26	5,32	7,90	8,68
Water flow-rate	(2)	l/h	420	560	580	1130	1460	1590
Water pressure drop	(2)	kPa	5,30	6,00	6,10	19,90	20,70	23,30
Total power input		W	5	19	21	17	45	39
4 pipe								
High speed								
Airflow		m³/h	493	669	673	1.184	1.642	1.708
Cooling capacity	(1)	kW	2,16	2,78	2,77	4,96	7,98	8,04
Sensible capacity	(1)	kW	1,86	2,4	2,33	4,15	6,68	6,58
Water flow-rate	(1)	l/h	420	530	560	900	1.420	1.430
Water pressure drop	(1)	kPa	17,40	13,15	16,80	14,80	33,90	33,00
Heating capacity	(3)	kW	3,13	3,71	3,94	6,15	9,75	9,93
Water flow-rate	(3)	l/h	320	370	420	580	890	900
Water pressure drop	(3)	kPa	23,50	24,10	26,80	25,30	42,40	48,70
Total power input		W	24	38	42	62	121	139
Medium speed								
Airflow		m³/h	395	523	526	997	1.421	1.297
Cooling capacity	(1)	kW	1,86	2,38	2,38	4,38	7,25	6,62
Sensible capacity	(1)	kW	1,58	2,00	1,97	3,71	5,99	5,51
Water flow-rate	(1)	l/h	370	460	490	800	1.290	1.190
Water pressure drop	(1)	kPa	13,50	9,40	13,10	11,50	30,00	22,60
Heating capacity	(3)	kW	2,63	3,14	3,30	5,43	8,96	8,33
Water flow-rate	(3)	l/h	280	320	360	520	820	760
Water pressure drop	(3)	kPa	17,10	17,90	19,20	20,50	36,60	32,50
Total power input		W	18	35	27	44	83	70
Low speed								
Airflow		m³/h	295	415	425	783	1.285	1.096
Cooling capacity	(1)	kW	1,49	2,05	2,07	3,64	6,70	5,84
Sensible capacity	(1)	kW	1,24	1,67	1,70	3,05	5,50	4,81
Water flow-rate	(1)	l/h	300	400	430	670	1.200	1.050
Water pressure drop	(1)	kPa	9,30	7,00	10,30	8,10	24,00	17,70
Heating capacity	(3)	kW	2,08	2,65	2,83	4,61	8,42	7,51
Water flow-rate	(3)	l/h	230	280	320	450	770	690
Water pressure drop	(3)	kPa	11,30	13,10	14,50	14,50	32,60	27,00
Total power input		W	14	30	20	30	66	49
Standard power supply		V	220-240/1/50					
Type of supply fan	(4)	-	RAD DC					
No. of supply fans		-	1					
H Sound pressure level	(5)	dB(A)	39	42	43	43	48	49
M Sound pressure level	(5)	dB(A)	33	36	38	39	44	43
L Sound pressure level	(5)	dB(A)	27	30	32	33	41	39
H Sound power level	(5)	dB(A)	51	54	55	55	60	61
M Sound power level	(5)	dB(A)	45	48	50	51	56	55
L Sound power level	(5)	dB(A)	39	42	44	45	53	51

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) RAD DC = DC Brushless radial fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

3V2X Three-way valve kit for 2-pipe "on/off" system
3V4X Three-way valve kit for 4-pipe "on/off" system
KJR90X KJR90 electronic room control for wall installation
KJR150X Indoor units group controller
CCM30BX Centralized controller with case
CCM08X Bacnet gateway
LONGWX Lonworks gateway
CCM18UX Modbus gateway up to 16 indoor units
CCM18X Modbus gateway up to 64 indoor units
DTX Auxiliary condensate collection tray
0-10VX Module for DC fan management with external 0-10V control

Accessories whose code ends with "X" are supplied separately
For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

NEW PRODUCT

Available within the first quarter of 2021

MOOD

Water terminal unit

Indoor installation, wall-mounted, cased

Capacity from 2,7 to 4,87 kW

MOOD is the new wall-mounted water terminal with a new design and advanced control functions.
In addition to these features:

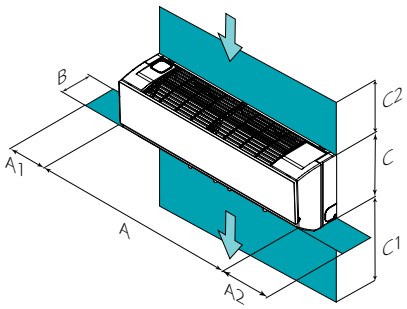
- available with standard DC Brushless motor;
- new design;
- standard version with infrared electronics;
- Modbus port available as standard;
- 0-10V input for ventilation speed control;
- the unit is supplied with 3-way valve built-in.

ErP compliant

functions and features

Cool & heat | Vertical: cased | Water | DC Motor | ELFOControl³ EVO

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CFW-2	1	2	3	4	5
A - Length	mm	916	916	916	1074	1074
B - Width	mm	233	233	233	237	237
C - Width	mm	290	290	290	317	317
A1	mm	300	300	300	300	300
A2	mm	300	300	300	300	300
C1	mm	2000÷3000	2000÷3000	2000÷3000	2000÷3000	2000÷3000
C2	mm	300	300	300	300	300
Operating weight	kg	12,7	12,7	12,7	14,9	14,9

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

STANDARD CONFIGURATION:

IRPCB Electronics with infrared remote control (Standard)

R05 R05 infrared remote control (Standard)

VEC High efficiency EC fan (Standard)

3V2 Three-way valve kit for 2-pipe "on/off" system (Standard)

CRCC Boiler/pump potential free contats

technical data

Size		CFW-2	1	2	3	4	5
2 pipe							
High speed							
Airflow		m³/h	492	585	825	862	979
Cooling capacity	(1)	kW	2,70	2,91	3,81	4,47	4,87
Sensible capacity	(1)	kW	2,15	2,33	3,18	3,67	4,11
Water flow-rate	(1)	l/h	480	510	670	770	850
Water pressure drop	(1)	kPa	32	37	57	41	51
Heating capacity	(2)	kW	2,94	3,23	4,3	4,84	5,26
Water flow-rate	(2)	l/h	480	510	670	770	850
Water pressure drop	(2)	kPa	32,70	34,10	51,90	36,80	47,12
Total power input		W	12	14	31	23	33
Medium speed							
Airflow		m³/h	454	485	689	741	849
Cooling capacity	(1)	kW	2,59	2,54	3,30	3,98	4,26
Sensible capacity	(1)	kW	2,03	2	2,71	3,21	3,56
Water flow-rate	(1)	l/h	460	450	570	680	720
Water pressure drop	(1)	kPa	29	30	41	34	40
Heating capacity	(2)	kW	2,8	2,77	3,65	4,23	4,68
Water flow-rate	(2)	l/h	460	450	570	680	720
Water pressure drop	(2)	kPa	34,90	31,50	47,50	33,80	42,80
Total power input		W	10	10	20	16	23
Low speed							
Airflow		m³/h	400	413	590	634	717
Cooling capacity	(1)	kW	2,39	2,19	2,88	3,48	3,79
Sensible capacity	(1)	kW	1,85	1,71	2,31	2,77	3,1
Water flow-rate	(1)	l/h	420	380	510	610	650
Water pressure drop	(1)	kPa	25	23	33	27	34
Heating capacity	(2)	kW	2,58	2,42	3,09	3,62	3,96
Water flow-rate	(2)	l/h	420	380	510	610	650
Water pressure drop	(2)	kPa	30,20	25,10	35,70	26,30	33,00
Total power input		W	8	8	14	12	16
Standard power supply		V	220-240/1/50				
Type of supply fan	(3)	-	TGZ DC				
No. of supply fan		-	1				
H Sound pressure level	(4)	dB(A)	32	32	45	38	44
M Sound pressure level	(4)	dB(A)	30	27	39	34	40
L Sound pressure level	(4)	dB(A)	27	23	35	30	35
H Sound power level	(4)	dB(A)	44	44	57	50	56
M Sound power level	(4)	dB(A)	42	39	51	46	52
L Sound power level	(4)	dB(A)	39	35	47	42	47

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) TGZ DC = DC Brushless tangential fan

(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

KJR90X Wall electronic room control

KJR150X Indoor units group controller

CCM30BX Centralized controller with case

CCM08X Bacnet gateway

LONGWX Lonworks gateway

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

ELFOSpace WALL3

Water terminal unit
Indoor installation, wall-mounted, cased
Capacity from 2,20 to 4,45 kW

ErP compliant

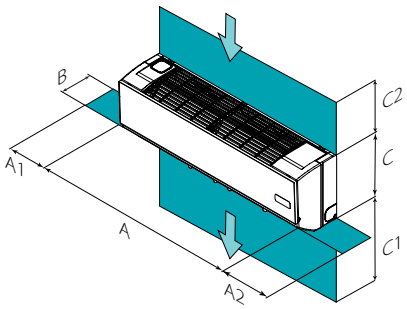
ELFOSpace WALL3 is a range of cased water terminals that are cleverly designed to be placed in the space above doors or at mid-height on walls, and are particularly suitable, thanks to the accurate design, to residential and hotel installations.
In addition to these features:

- available with standard DC Brushless motor;
- new design;
- standard version with infrared electronics;
- high efficiency and quiet operation;
- air flow direction control;
- the unit is supplied with 3-way valve built-in.

functions and features

Cool & heat | Vertical: cased | Water | DC Motor

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	CFW	007.0	009.0	011.0	017.0	021.0
A - Length	mm	916	916	916	1074	1074
B - Width	mm	218	218	218	221	221
C - Width	mm	290	290	290	317	317
A1	mm	300	300	300	300	300
A2	mm	300	300	300	300	300
C1	mm	2000÷3000	2000÷3000	2000÷3000	2000÷3000	2000÷3000
C2	mm	300	300	300	300	300
Operating weight	kg	12	12	12	14,7	14,7

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

versions and configurations

STANDARD CONFIGURATION:

IRPCB Electronics with infrared remote control (Standard)

R05 R05 infrared remote control (Standard)

VEC High efficiency EC fan (Standard)

3V2 Three-way valve kit for 2-pipe "on/off" system (Standard)

CRCC Boiler/pump potential free contats

technical data

Size		CFW	007.0	009.0	011.0	017.0	021.0
2 pipe							
High speed							
Airflow		m³/h	425	510	680	850	1.020
▸ Cooling capacity	(1)	kW	2,20	2,64	3,08	4,07	4,45
Sensible capacity	(1)	kW	1,63	1,97	2,33	3,05	3,36
Water flow-rate	(1)	l/h	380	450	530	700	770
Water pressure drop	(1)	kPa	23,10	33,60	42,00	34,90	36,30
▸ Heating capacity	(2)	kW	2,57	3,15	3,71	4,85	5,38
Water flow-rate	(2)	l/h	450	550	640	840	930
Water pressure drop	(2)	kPa	29,95	44,14	57,16	41,73	47,32
Total power input		W	11	20	24	28	38
Medium speed							
Airflow		m³/h	410	427	550	692	820
▸ Cooling capacity	(1)	kW	2,14	2,34	2,71	3,57	3,91
Sensible capacity	(1)	kW	1,59	1,74	2,03	2,65	2,93
Water flow-rate	(1)	l/h	370	400	470	610	670
Water pressure drop	(1)	kPa	22,11	27,40	33,79	27,85	29,09
▸ Heating capacity	(2)	kW	2,51	2,78	3,24	4,23	4,69
Water flow-rate	(2)	l/h	430	480	560	730	810
Water pressure drop	(2)	kPa	28,65	35,63	45,16	32,90	37,26
Total power input		W	9	16	20	24	32
Low speed							
Airflow		m³/h	320	349	504	586	670
▸ Cooling capacity	(1)	kW	1,78	2,02	2,56	3,18	3,43
Sensible capacity	(1)	kW	1,31	1,49	1,91	2,35	2,55
Water flow-rate	(1)	l/h	310	350	440	550	590
Water pressure drop	(1)	kPa	16,19	21,37	30,70	22,86	23,22
▸ Heating capacity	(2)	kW	2,08	2,40	3,05	3,76	4,10
Water flow-rate	(2)	l/h	360	420	530	650	710
Water pressure drop	(2)	kPa	20,81	27,58	40,80	26,85	29,43
Total power input		W	8	9	17	18	27
Standard power supply		V	220-240/1/50				
Type of supply fan	(3)	-	TGZ DC				
No. of supply fan		-	1	1	1	1	1
H Sound pressure level	(4)	dB(A)	30	32	36	38	40
M Sound pressure level	(4)	dB(A)	26	28	32	34	36
L Sound pressure level	(4)	dB(A)	23	25	29	30	31
H Sound power level	(4)	dB(A)	41	44	47	49	51
M Sound power level	(4)	dB(A)	37	39	43	45	47
L Sound power level	(4)	dB(A)	34	36	40	41	42

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) TGZ DC = DC Brushless tangential fan

(4) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

KJR90X Wall electronic room control

KJR150X Indoor units group controller

CCM30BX Centralized controller with case

CCM08X Bacnet gateway

LONGWX Lonworks gateway

CCM18UX Modbus gateway up to 16 indoor units

CCM18X Modbus gateway up to 64 indoor units

0-10VX Module for DC fan management with external 0-10V control

Accessories whose code ends with "X" are supplied separately

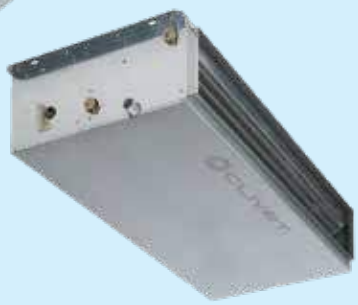
For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

ELFODUCT MP

ELFODuct

Water terminal unit
Uncased horizontal and vertical indoor installation
Ductable
Capacity from 6 to 20,2 kW

ELFODuct MP INV



ELFODuct MP INH

ErP compliant

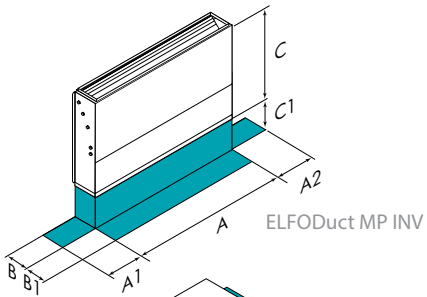
The **ELFODuct MP** are the new generation air-treatment water terminal units ideal for installations where ducted air distribution is necessary. The units are designed for installation in suspended ceilings or lining walls and are characterized by their compactness and extremely low noise levels.
The advantages of the new series are:

- version for 2 and 4-pipe systems;
- version for horizontal installations in suspended ceilings and version for vertical installations in lining walls;
- high energy efficiency thanks to the configuration with fan deck with DC Brushless motor;
- available head up to **120 Pa**;
- very low sound levels;
- internal exchanger with large exchange surface, easily reversed water connections even on construction site;
- complete accessories range for the full installation;
- complete range of electromechanical and electronic thermostats and serial port RS485 with MODBUS protocol.

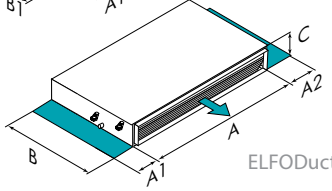
functions and features

Cool & heat | Vertical: uncased | Horizontal: uncased | Water | ELFOControl³ EVO | DC Motor

dimensions and clearances



ELFODuct MP INV



ELFODuct MP INH

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	ELFODUCT MP		15	21	25	31	41	51	61	71
CC2-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INV	B - Width	mm	580	580	580	580	580	580	580	580
CC2-INV	C - Height	mm	250	250	250	250	250	250	250	250
CC2-INV	A1	mm	400	400	400	400	400	400	400	400
CC2-INV	A2	mm	200	200	200	200	200	200	200	200
CC2-INV	B1	mm	250	250	250	250	250	250	250	250
CC2-INV	C1	mm	100	100	100	100	100	100	100	100
CC2-INV	Operating weight	kg	34	35	37	48	50	53	65	68
CC2-INH	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INH	B - Width	mm	555	555	555	555	555	555	555	555
CC2-INH	C - Height	mm	250	250	250	250	250	250	250	250
CC2-INH	A1	mm	400	400	400	400	400	400	400	400
CC2-INH	A2	mm	200	200	200	200	200	200	200	200
CC2-INH	Operating weight	kg	34	35	37	48	50	53	65	68
CC4-INV	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INV	B - Width	mm	580	580	-	580	580	580	580	-
CC4-INV	C - Height	mm	250	250	-	250	250	250	250	-
CC4-INV	A1	mm	400	400	-	400	400	400	400	-
CC4-INV	A2	mm	200	200	-	200	200	200	200	-
CC4-INV	B1	mm	250	250	-	250	250	250	250	-
CC4-INV	C1	mm	100	100	-	100	100	100	100	-
CC4-INV	Operating weight	kg	36	37	-	51	53	67	69	-
CC4-INH	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INH	B - Width	mm	555	555	-	555	555	555	555	-
CC4-INH	C - Height	mm	250	250	-	250	250	250	250	-
CC4-INH	A1	mm	400	400	-	400	400	400	400	-
CC4-INH	A2	mm	200	200	-	200	200	200	200	-
CC4-INH	Operating weight	kg	36	37	-	51	53	67	69	-

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.
CC2-INV 2 pipes-Vertical uncased version
CC2-INH 2 pipes-Horizontal uncased version
CC4-INV 4-pipe-Vertical uncased version
CC4-INH 4-pipe-Horizontal uncased version

versions and configurations

VERSION:

INH Horizontal uncased version (Standard)

INV Vertical uncased version

WATER FITTINGS:

DX Water fittings to the right (Standard)

SX Water fittings to the left

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system (sizes 15÷21, 31÷61)

RETURN:

RP Rear intake (Standard)

R3 Downward air return

RF Front air inlet

technical data

Size	ELFODUCT MP			15	21	25	31	41	51	61	71
2 pipe											
High speed											
Airflow			m³/h	1.100	1.200	1.150	2.100	2.300	2.200	3.100	2.950
Cooling capacity		(1)	kW	6,01	7,48	8,59	10,30	12,90	15,00	17,20	20,20
Sensible capacity		(1)	kW	4,57	5,56	6,16	8,10	9,95	11,10	13,30	14,90
Water flow-rate		(1)	l/h	1.034	1.287	1.477	1.772	2.219	2.580	2.958	3.474
Water pressure drop		(1)	kPa	28,70	37,80	32,40	21,00	33,10	25,10	23,10	22,00
Heating capacity		(2)	kW	6,55	7,90	8,30	11,70	14,40	15,20	19,40	20,40
Water flow-rate		(2)	l/h	1.127	1.359	1.428	2.012	2.477	2.614	3.337	3.509
Water pressure drop		(2)	kPa	29,60	36,70	26,30	23,60	35,80	22,30	25,50	19,50
Total power input			W	179	179	179	330	330	330	409	409
Medium speed											
Airflow			m³/h	913	1.008	978	1.953	2.139	2.068	2.821	2.714
Cooling capacity		(1)	kW	5,35	6,71	7,77	9,85	12,33	14,44	16,22	19,18
Sensible capacity		(1)	kW	4,00	4,91	5,49	7,69	9,45	10,62	12,43	14,04
Water flow-rate		(1)	l/h	921	1.155	1.336	1.694	2.121	2.483	2.790	3.299
Water pressure drop		(1)	kPa	22,80	30,50	26,50	19,20	30,20	23,20	20,50	19,90
Heating capacity		(2)	kW	5,79	7,04	7,46	11,15	13,73	14,59	18,23	19,31
Water flow-rate		(2)	l/h	996	1.211	1.283	1.918	2.361	2.510	3.136	3.321
Water pressure drop		(2)	kPa	23,20	29,10	21,20	21,40	32,50	20,60	22,50	17,50
Total power input			W	138	138	138	290	290	290	340	340
Low speed											
Airflow			m³/h	715	792	782	1.617	1.771	1.760	2.170	2.154
Cooling capacity		(1)	kW	4,60	5,78	6,76	8,76	10,97	13,06	13,79	16,62
Sensible capacity		(1)	kW	3,36	4,13	4,67	6,72	8,25	9,46	10,30	11,90
Water flow-rate		(1)	l/h	791	994	1.163	1.507	1.887	2.247	2.371	2.859
Water pressure drop		(1)	kPa	16,80	22,60	20,10	15,20	23,90	19,00	14,80	14,90
Heating capacity		(2)	kW	4,93	6,01	6,44	9,85	12,12	13,12	15,34	16,58
Water flow-rate		(2)	l/h	848	1.033	1.107	1.694	2.085	2.257	2.638	2.852
Water pressure drop		(2)	kPa	16,80	21,20	15,80	16,70	25,30	16,60	15,90	12,90
Total power input			W	128	128	128	283	283	283	305	305
Number of supply fans			-	1	1	1	2	2	2	3	3
4 pipe											
High speed											
Airflow			m³/h	1.050	1.140	-	2.000	2.170	2.670	2.930	-
Cooling capacity		(1)	kW	5,83	7,22	-	9,96	12,40	13,20	16,60	-
Sensible capacity		(1)	kW	4,42	5,35	-	7,83	9,53	10,40	12,80	-
Water flow-rate		(1)	l/h	1.003	1.242	-	1.713	2.133	2.270	2.855	-
Water pressure drop		(1)	kPa	27,00	35,30	-	19,60	30,60	13,20	21,40	-
Heating capacity		(3)	kW	5,88	6,20	-	10,31	10,84	13,78	14,58	-
Water flow-rate		(3)	l/h	505	533	-	887	933	1.185	1.254	-
Water pressure drop		(3)	kPa	30,70	33,60	-	27,90	30,40	25,90	28,40	-
Total power input			W	175	175	-	330	330	409	409	-
Medium speed											
Airflow			m³/h	893	980	-	1.880	2.040	2.456	2.725	-
Cooling capacity		(1)	kW	5,27	6,57	-	9,59	11,93	12,53	15,87	-
Sensible capacity		(1)	kW	3,94	4,80	-	7,49	9,12	9,80	12,15	-
Water flow-rate		(1)	l/h	907	1.131	-	1.649	2.053	2.156	2.730	-
Water pressure drop		(1)	kPa	22,10	29,20	-	18,20	28,30	11,90	19,60	-
Heating capacity		(3)	kW	5,28	5,61	-	9,90	10,41	13,04	13,90	-
Water flow-rate		(3)	l/h	454	482	-	851	895	1.121	1.195	-
Water pressure drop		(3)	kPa	24,80	27,50	-	25,70	28,00	23,20	25,80	-
Total power input			W	138	138	-	290	290	340	340	-
Low speed											
Airflow			m³/h	704	775	-	1.600	1.758	1.922	2.168	-
Cooling capacity		(1)	kW	4,55	5,68	-	8,67	10,88	10,77	13,77	-
Sensible capacity		(1)	kW	3,32	4,06	-	6,67	8,20	8,22	10,32	-
Water flow-rate		(1)	l/h	783	978	-	1.492	1.872	1.852	2.369	-
Water pressure drop		(1)	kPa	16,50	21,90	-	14,90	23,50	8,80	14,80	-
Heating capacity		(3)	kW	4,52	4,80	-	8,90	9,44	11,09	11,95	-
Water flow-rate		(3)	l/h	388	413	-	765	812	954	1.028	-
Water pressure drop		(3)	kPa	18,10	20,20	-	20,80	23,00	16,80	19,10	-
Total power input			W	128	128	-	283	283	305	305	-
Number of supply fans			-	1	1	-	2	2	3	3	-
Standard power supply			V	220-240/1/50							
Standard power supply		(4)	-	CFG							
H	Sound pressure level	(5)	dB(A)	58	59	59	62	63	63	62	62
M	Sound pressure level	(5)	dB(A)	53	54	54	60	61	61	59	59
L	Sound pressure level	(5)	dB(A)	47	48	48	54	55	55	52	52
H	Sound power level	(5)	dB(A)	69	70	70	73	74	74	73	73
M	Sound power level	(5)	dB(A)	64	65	65	71	72	72	70	70
L	Sound power level	(5)	dB(A)	58	59	59	65	66	66	63	63

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

VEC	High efficiency EC fan
TRM	Terminal block with minimum water temperature clickson
TRP	Terminal block with closing cover IP40
TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson
CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port
CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)
2V2	ON/OFF 2-way valve kit for 2-pipe system
2V2X	ON/OFF 2-way valve kit for 2-pipe system
2V4	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
2V4X	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
3V2	3-way valve kit for 2-pipe type "on/off" system
3V2X	3-way valve kit for 2-pipe type "on/off" system
3V4	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)
3V4X	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)
10V4	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
10V4X	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
10V2	0-10V 3-way valve kit for 2-pipe system
10V2X	0-10V 3-way valve kit for 2-pipe system
KIB22X	Water and balancing kit for 2-way valve and 2-pipe installation
KIB24X	Water and balancing kit for 2-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)
KIB32X	Water and balancing kit for 3-way valve and 2-pipe installation
KIB34X	Water and balancing kit for 3-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)
BRO	Auxiliary drain pan in galvanized steel with thermal insulation
BROX	Auxiliary drain pan in galvanized steel with thermal insulation
BRV	Auxiliary condensate collection pan (vertical installation)
BRVX	Auxiliary condensate collection pan (vertical installation)
CDP	Condensate drain pump
CDPX	Condensate drain pump
FAPS	EU3 flat air filter (Eurovent 4/5) not ductable
FAPSX	EU3 flat air filter (Eurovent 4/5) not ductable
SFCF	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
SFCFX	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
SFHEX	Air filter section (ductable) with EU5 air filter (Eurovent 4/5)
HIDE2X	Remote control with E/I +3V +on/off for wall installation
HIDE3X	Plurifunctional remote control for wall installation
HIDE4X	Plurifunctional room control for 0-10V valves
HIDT2X	HID-T2 electronic room control
HIDT3X	HID-T3 electronic room control
HIDTI8X	HIDTI8X electronic room control for wall installation
PTABX	Remote probe for room air temperature for electromechanical thermostats.
DCPX	Control device for more units with a single room control.
EH230X	Heating section with electrical haters 230V with safety thermostat
EH400X	Heating section with electrical haters 400V with safety thermostat
RE700	0.7 kW integrated electric heater with safety thermostat and power electric panel
RE1000	1.0 kW integrated electric heater with safety thermostat and power electric panel
RE1500	1.5 kW integrated electric heater with safety thermostat and power electric panel
RE2000	2.0 kW integrated electric heater with safety thermostat and power electric panel
MCRX	Mixing and recirculating chamber
PR90AX	90° air intake plenum
PCCRIX	Air intake plenum with flexible joint
PGFRIX	Air intake plenum with flexible joint
PMAX	Straight section for both air intake / supply outlets
P90MAX	90° section for air supply outlet
PCCMAX	Section with spigots "Ø" with variable diameter and internal insulation for air supply outlet
PGFMAX	Anti-vibration section for supply outlet
SILMAX	Labyrinth noise level attenuator section for both air intake / supply outlets
CUFMX	Air outlet casing with bird-proof grill
CUFAX	Air intake casing with bird-proof grill and EU3 air filter (Eurovent 4/5)
S230X	ON/OFF 230v servomotr for mixing and recirculation chamber
GMX	Outlet grille
GRAX	Return grille with filter
TMX	Hot water min. temperature thermostat

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

ELFODuct

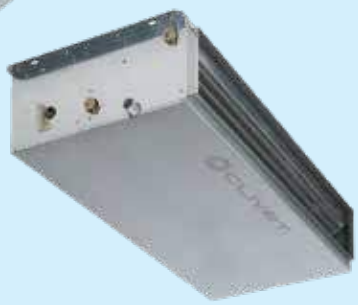
Water terminal unit

Uncased horizontal and vertical indoor installation

Ductable

Capacity from 6,8 to 25,5 kW

ELFODuct HP INV



ELFODuct HP INH

ErP compliant

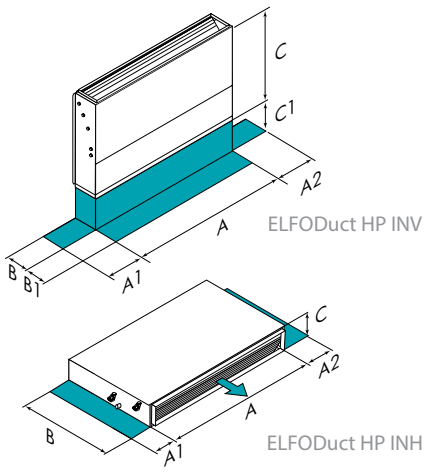
The **ELFODuct HP** are the new generation air-treatment water terminal units ideal for installations where ducted air distribution is necessary. The units are designed for installation in suspended ceilings or lining walls and are characterized by their compactness and extremely low noise levels.
The advantages of the new series are:

- version for 2 and 4-pipe systems;
- version for horizontal installations in suspended ceilings and version for vertical installations in lining walls;
- high energy efficiency thanks to the configuration with fan deck with DC Brushless motor;
- available head up to **150 Pa**;
- very low sound levels;
- internal exchanger with large exchange surface, easily reversed water connections even on construction site;
- complete accessories range for the full installation;
- complete range of electromechanical and electronic thermostats and serial port RS485 with MODBUS protocol.

functions and features

Cool & heat | Vertical: uncased | Horizontal: uncased | Water | ELFOControl³ EVO | DC Motor

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	ELFODUCT HP		015.0	021.0	025.0	031.0	041.0	051.0	061.0	071.0
CC2-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INV	B - Width	mm	275	275	275	275	275	275	275	275
CC2-INV	C - Height	mm	650	650	650	650	650	650	650	650
CC2-INV	A1	mm	400	400	400	400	400	400	400	400
CC2-INV	A2	mm	200	200	200	200	200	200	200	200
CC2-INV	B1	mm	250	250	250	250	250	250	250	250
CC2-INV	C1	mm	100	100	100	100	100	100	100	100
CC2-INV	Operating weight	kg	37	38	40	52	54	57	70	73
CC2-INH	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INH	B - Width	mm	625	625	625	625	625	625	625	625
CC2-INH	C - Height	mm	275	275	275	275	275	275	275	275
CC2-INH	A1	mm	400	400	400	400	400	400	400	400
CC2-INH	A2	mm	200	200	200	200	200	200	200	200
CC2-INH	Operating weight	kg	37	38	40	52	54	57	70	73
CC4-INV	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INV	B - Width	mm	275	275	-	275	275	275	275	-
CC4-INV	C - Height	mm	650	650	-	650	650	650	650	-
CC4-INV	A1	mm	400	400	-	400	400	400	400	-
CC4-INV	A2	mm	200	200	-	200	200	200	200	-
CC4-INV	B1	mm	250	250	-	250	250	250	250	-
CC4-INV	C1	mm	100	100	-	100	100	100	100	-
CC4-INV	Operating weight	kg	40	41	-	56	58	73	75	-
CC4-INH	A - Length	mm	880	880	-	1280	1280	1680	1680	-
CC4-INH	B - Width	mm	625	625	-	625	625	625	625	-
CC4-INH	C - Height	mm	275	275	-	275	275	275	275	-
CC4-INH	A1	mm	400	400	-	400	400	400	400	-
CC4-INH	A2	mm	200	200	-	200	200	200	200	-
CC4-INH	Operating weight	kg	40	41	-	56	58	73	75	-

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.

CC2-INV 2 pipes-Vertical uncased version
CC2-INH 2 pipes-Horizontal uncased version
CC4-INV 4-pipe-Vertical uncased version
CC4-INH 4-pipe-Horizontal uncased version

versions and configurations

VERSION:

INH Horizontal uncased version (Standard)

INV Vertical uncased version

WATER FITTINGS:

DX Water fittings to the right (Standard)

SX Water fittings to the left

COIL CONFIGURATION:

CC2 Coil configuration for 2-pipe system (Standard)

CC4 Coil configuration for 4-pipe system (sizes 15÷21, 31÷61)

RETURN:

RP Rear intake (Standard)

R3 Downward air return

RF Front air inlet

technical data

Size	ELFODUCT HP			015.0	021.0	025.0	031.0	041.0	051.0	061.0	071.0
2 pipe											
High speed											
Airflow		m³/h		1.350	1.500	1.450	2.750	3.000	2.850	4.400	4.200
Cooling capacity	(1)	kW		6,82	8,65	10,10	12,00	15,20	17,80	21,20	25,50
Sensible capacity	(1)	kW		5,30	6,58	7,38	9,78	12,10	13,50	17,20	19,40
Water flow-rate	(1)	l/h		1.173	1.488	1.737	2.064	2.614	3.062	3.646	4.386
Water pressure drop	(1)	kPa		35,80	39,50	38,50	28,10	38,40	30,70	29,80	25,10
Heating capacity	(2)	kW		7,60	9,45	10,00	14,20	17,60	18,60	25,15	26,85
Water flow-rate	(2)	l/h		1.307	1.625	1.720	2.442	3.027	3.199	4.326	4.618
Water pressure drop	(2)	kPa		38,60	40,90	32,80	34,10	44,70	29,10	36,40	24,10
Total power input		W		212	212	212	390	390	390	570	570
Medium speed											
Airflow		m³/h		1.080	1.200	1.175	2.448	2.670	2.537	4.048	3.906
Cooling capacity	(1)	kW		5,94	7,53	8,87	11,17	14,14	16,56	20,13	24,38
Sensible capacity	(1)	kW		4,52	5,61	6,35	9,00	11,13	12,42	16,20	18,42
Water flow-rate	(1)	l/h		1.021	1.296	1.525	1.920	2.432	2.849	3.463	4.193
Water pressure drop	(1)	kPa		27,10	29,90	29,70	24,30	33,20	26,50	26,80	22,90
Heating capacity	(2)	kW		6,56	8,16	8,71	13,15	16,30	17,23	23,81	25,60
Water flow-rate	(2)	l/h		1.128	1.403	1.497	2.262	2.803	2.963	4.095	4.403
Water pressure drop	(2)	kPa		28,70	30,50	24,80	29,30	38,30	24,90	32,60	21,90
Total power input		W		170	170	170	280	280	280	520	520
Low speed											
Airflow		m³/h		783	885	870	1.540	1.680	1.625	3.036	2.982
Cooling capacity	(1)	kW		4,87	6,24	7,36	8,38	10,61	12,57	16,84	20,62
Sensible capacity	(1)	kW		3,59	4,51	5,12	6,46	7,99	9,03	13,19	15,18
Water flow-rate	(1)	l/h		837	1.073	1.266	1.441	1.825	2.161	2.897	3.547
Water pressure drop	(1)	kPa		18,20	20,50	20,40	13,70	18,70	15,30	18,80	16,40
Heating capacity	(2)	kW		5,31	6,68	7,14	9,69	12,01	12,85	19,69	21,43
Water flow-rate	(2)	l/h		913	1.148	1.228	1.667	2.066	2.209	3.387	3.685
Water pressure drop	(2)	kPa		18,80	20,40	16,70	15,90	20,80	13,90	22,30	15,40
Total power input		W		128	128	128	175	175	175	430	430
Number of supply fans		-		1	1	1	2	2	2	3	3
4 pipe											
High speed											
Airflow		m³/h		1.270	1.400	-	2.570	2.800	3.800	4.100	-
Cooling capacity	(1)	kW		6,57	8,28	-	11,50	14,60	16,10	20,30	-
Sensible capacity	(1)	kW		5,07	6,25	-	9,33	11,50	13,30	16,40	-
Water flow-rate	(1)	l/h		1.130	1.424	-	1.978	2.511	2.769	3.492	-
Water pressure drop	(1)	kPa		33,20	36,20	-	25,80	35,40	19,50	27,20	-
Heating capacity	(3)	kW		10,76	11,47	-	19,82	20,98	28,36	29,87	-
Water flow-rate	(3)	l/h		925	986	-	1.705	1.804	2.439	2.569	-
Water pressure drop	(3)	kPa		28,70	31,80	-	26,20	28,80	24,10	26,20	-
Total power input		W		212	212	-	390	390	570	570	-
Medium speed											
Airflow		m³/h		1.041	1.162	-	2.262	2.492	3.534	3.854	-
Cooling capacity	(1)	kW		5,81	7,38	-	10,63	13,58	15,39	19,54	-
Sensible capacity	(1)	kW		4,40	5,47	-	8,52	10,58	12,63	15,69	-
Water flow-rate	(1)	l/h		999	1.269	-	1.827	2.336	2.647	3.360	-
Water pressure drop	(1)	kPa		25,90	28,70	-	22,00	30,60	17,90	25,20	-
Heating capacity	(3)	kW		9,44	10,14	-	18,22	19,43	27,03	28,67	-
Water flow-rate	(3)	l/h		811	872	-	1.567	1.671	2.325	2.466	-
Water pressure drop	(3)	kPa		22,10	24,90	-	22,10	24,70	21,90	24,20	-
Total power input		W		170	170	-	280	280	520	520	-
Low speed											
Airflow		m³/h		775	854	-	1.465	1.624	2.736	2.993	-
Cooling capacity	(1)	kW		4,84	6,09	-	8,12	10,42	13,13	16,70	-
Sensible capacity	(1)	kW		3,56	4,39	-	6,24	7,79	10,51	13,09	-
Water flow-rate	(1)	l/h		832	1.048	-	1.396	1.791	2.259	2.873	-
Water pressure drop	(1)	kPa		18,00	19,60	-	12,80	18,00	13,00	18,40	-
Heating capacity	(3)	kW		7,77	8,28	-	13,69	14,65	22,84	24,27	-
Water flow-rate	(3)	l/h		668	712	-	1.177	1.260	1.964	2.087	-
Water pressure drop	(3)	kPa		15,00	16,60	-	12,50	14,10	15,60	17,30	-
Total power input		W		128	128	-	175	175	430	430	-
Number of supply fans		-		1	1	-	2	2	3	3	-
Standard power supply		V		220-240/1/50							
Number of supply fans	(4)	-		CFG							
H Sound pressure level	(5)	dB(A)		58	59	59	61	65	62	63	63
M Sound pressure level	(5)	dB(A)		52	53	53	57	58	58	62	62
L Sound pressure level	(5)	dB(A)		44	45	45	46	47	47	57	57
H Sound power level	(5)	dB(A)		69	70	70	72	73	73	74	74
M Sound power level	(5)	dB(A)		63	64	64	68	69	69	73	73
L Sound power level	(5)	dB(A)		55	56	56	57	58	58	68	68

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

Airflow with free outlet (0 Pa static pressure)

(1) Entering exchanger water 7°C (temperature differential 5°C) - Ambient air 27°C D.B. / 19°C W.B.

(2) Entering exchanger water 45°C (temperature differential 5°C) - Ambient air 20°C

(3) Entering exchanger water 65°C (temperature differential 10°C) - Ambient air 20°C

(4) CFG = AC centrifugal fan

(5) Sound levels tested in anechoic chamber and referring to units for 2-pipe systems. The sound pressure level refers to 1 m from the external surface of the unit operating in the open field.

accessories

VEC	High efficiency EC fan
TRM	Terminal block with minimum water temperature clickson
TRP	Terminal block with closing cover IP40
TRMP	Terminal block with closing cover IP40 and minimum water temperature clickson
CTSP1	CLIVET TALK TERMINAL SPACE electronics with RS485 Modbus serial port
CPVM	Control additional card of 0-10V valve and EC fan (available only with options: CTSP1)
2V2	ON/OFF 2-way valve kit for 2-pipe system
2V2X	ON/OFF 2-way valve kit for 2-pipe system
2V4	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
2V4X	ON/OFF 2-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
3V2	3-way valve kit for 2-pipe type "on/off" system
3V2X	3-way valve kit for 2-pipe type "on/off" system
3V4	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)
3V4X	3-way valve kit for 4-pipe system type "on/off" (sizes 015.0÷021.0, 031.0÷061.0)
10V4	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
10V4X	0-10V 3-way valve kit for 4-pipe system (sizes 015.0÷021.0, 031.0÷061.0)
10V2	0-10V 3-way valve kit for 2-pipe system
10V2X	0-10V 3-way valve kit for 2-pipe system
KIB22X	Water and balancing kit for 2-way valve and 2-pipe installation
KIB24X	Water and balancing kit for 2-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)
KIB32X	Water and balancing kit for 3-way valve and 2-pipe installation
KIB34X	Water and balancing kit for 3-way valve and 4-pipe installation (sizes 015.0÷021.0, 031.0÷061.0)
BRO	Auxiliary drain pan in galvanized steel with thermal insulation
BROX	Auxiliary drain pan in galvanized steel with thermal insulation
BRV	Auxiliary condensate collection pan (vertical installation)
BRVX	Auxiliary condensate collection pan (vertical installation)
CDP	Condensate drain pump
CDPX	Condensate drain pump
FAPS	EU3 flat air filter (Eurovent 4/5) not ductable
FAPSX	EU3 flat air filter (Eurovent 4/5) not ductable
SFCF	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
SFCFX	Air filter section (ductable) with EU3 flat air filter (Eurovent 4/5)
SFHEX	Air filter section (ductable) with EU5 air filter (Eurovent 4/5)
HIDE2X	Remote control with E/I +3V +on/off for wall installation
HIDE3X	Plurifunctional remote control for wall installation
HIDE4X	Plurifunctional room control for 0-10V valves
HIDT2X	HID-T2 electronic room control
HIDT3X	HID-T3 electronic room control
HIDTI8X	HIDTI8X electronic room control for wall installation
PTABX	Remote probe for room air temperature for electromechanical thermostats.
DCPX	Control device for more units with a single room control.
EH2QX	Heating section with electrical haters 230V with safety thermostat and power electric panel
EH4QX	Heating section with electrical haters 400V with safety thermostat and power electric panel
RE700	0.7 kW integrated electric heater with safety thermostat and power electric panel
RE1000	1.0 kW integrated electric heater with safety thermostat and power electric panel
RE1500	1.5 kW integrated electric heater with safety thermostat and power electric panel
RE2000	2.0 kW integrated electric heater with safety thermostat and power electric panel
MCRX	Mixing and recirculating chamber
PR90AX	90° air intake plenum
PCCRIX	Air intake plenum with flexible joint
PGFRIX	Air intake plenum with flexible joint
PMAX	Straight section for both air intake / supply outlets
P90MAX	90° section for air supply outlet
PCCMAX	Section with spigots "Ø" with variable diameter and internal insulation for air supply outlet
PGFMAX	Anti-vibration section for supply outlet
SILMAX	Labyrinth noise level attenuator section for both air intake / supply outlets
CUFMX	Air outlet casing with bird-proof grill
CUFAX	Air intake casing with bird-proof grill and EU3 air filter (Eurovent 4/5)
S230X	ON/OFF 230v servomotr for mixing and recirculation chamber
GMX	Outlet grille
GRAX	Return grille with filter
TMX	Hot water min. temperature thermostat

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

SAHU

Air-conditioning unit
Uncased horizontal and vertical indoor installation
Ductable
Air flow from 420 to 4200 l/s
(from 1500 to 15000 m³/h)

ErP
ErP compliant

The **SAHU** units are ideal air-treatment terminal units for installations where ducted air distribution is necessary.
They are designed for installation in suspended ceilings and technical rooms are distinguished by their **compactness** and extremely low noise levels.
The main features are:

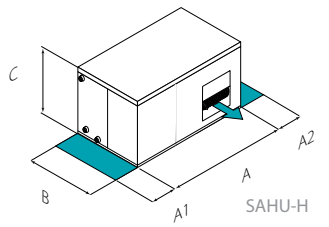
- available in version for **2 and 4-pipe systems** with or without
- on-board cotrol;

  available in direct expansion version for connection to Clivet VRF and mini VRF systems;
- standard with **self-bearing sandwich paneling** thickness 40mm;
- centrifugal fans with belt / pulley transmission and IE2 type with inverter, IE3 engines settable at high pressure for air distribution through ducting;
- settable with EC plug fans (IE4) with high pressure (standard with on-board control);
- 4 or 6 row water coil or 4-row direct expansion coil;
- **wide choice of accessories** (mixing chamber, filters, bases, antivibration mounts, etc);
- **electric heater section** with different power.

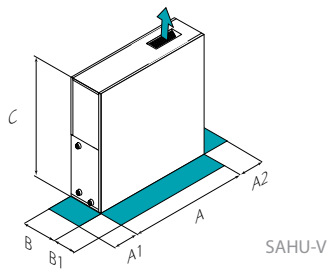
functions and features

Cool & heat | Horizontal: | Vertical | Water

dimensions and clearances



SAHU-H



SAHU-V

Size	SAHU H / SAHU H_EC		1	2	3	4	5	6	7	8
A - Length		mm	780	880	1120	1280	1500	1720	1890	2510
B - Width		mm	1100	1100	1100	1300	1350	1350	1350	1350
C - Height		mm	530	530	530	590	660	750	900	900
A1		mm	500	500	500	500	500	500	500	500
A2		mm	500	500	500	500	500	500	500	500
H C4	Weight	kg	78	85	98	134	167	202	274	330
H C6	Weight	kg	81	88	102	141	176	215	292	353
H E4	Weight	kg	78	84	97	133	165	199	270	326
H_EC C4	Weight	kg	57	63	74	101	132	163	211	268
H_EC C6	Weight	kg	60	66	78	108	141	176	229	291
H_EC E4	Weight	kg	57	62	73	100	130	160	207	264

Size	SAHU V / SAHU V_EC		1	2	3	4	5	6	7	8
A - Length		mm	780	880	1120	1280	1500	1720	1890	2510
B - Width		mm	530	530	530	590	660	750	900	900
C - Height		mm	1100	1100	1100	1300	1350	1570	1870	1950
A1		mm	500	500	500	500	500	500	500	500
A2		mm	500	500	500	500	500	500	500	500
B1		mm	1000	1000	1000	1000	1000	1000	1000	1000
V C4	Weight	kg	84	91	105	142	177	217	318	386
V C6	Weight	kg	87	94	109	149	186	230	336	409
V E4	Weight	kg	84	90	104	141	175	214	314	382
V_EC C4	Weight	kg	63	69	81	109	142	178	255	328
V_EC C6	Weight	kg	66	72	85	116	151	191	273	351
V_EC E4	Weight	kg	63	68	80	108	140	175	251	324

The above mentioned data are referred to standard units for the constructive configurations indicated.
The weight indicated refer to unit without water/gas inside of the coil.

CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

versions and configurations

VOLTAGE:

400T Supply voltage 400/3/50

VERSION:

SAHU H Horizontal air handling unit with centrifugal fan
SAHU V Vertical air handling unit with centrifugal fan
SAHU H EC Horizontal air handling unit with EC plug fan
SAHU V EC Vertical air handling unit with EC plug fan

MAIN COIL:

C4 4-row water coil
C6 6-row water coil
E4 4-row direct expansion coil

WATER FITTINGS:

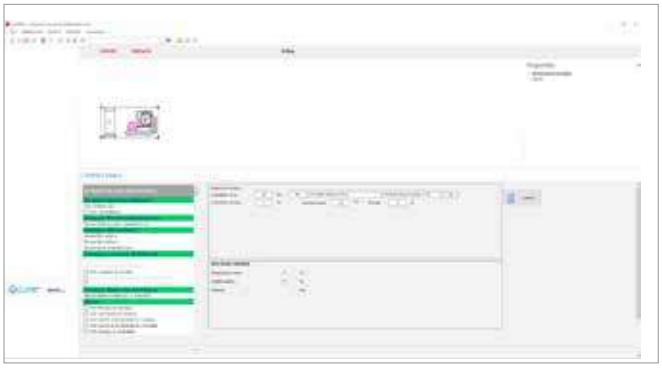
DX Water fittings to the right
SX Water fittings to the left

SECONDARY HOT WATER COIL:

- Hot water coil: not required (Standard)
CH1 1-row hot water secondary coil
CH2 2-row hot water secondary coi

selection software

The CTAPRO air handling units selection software allows to size the units and to have immediately the complete technical offer with executive drawings and technical data sheets.



technical data

Size			SAHU	1	2	3	4	5	6	7	8
Airflow			m³/h	1500	2090	2890	4020	5580	7750	10770	15000
C4	Cooling capacity	(1)	kW	8,46	11,50	15,74	22,67	32,35	42,92	60,47	82,95
C4	Sensible capacity	(1)	kW	6,24	8,53	11,71	16,64	23,42	31,66	44,27	61,14
C4	Water flow	(1)	l/s	0,40	0,50	0,80	1,10	1,50	2,00	2,90	4,00
C6	Cooling capacity	(1)	kW	10,25	13,83	19,39	26,55	37,91	50,27	70,94	99,17
C6	Sensible capacity	(1)	kW	7,33	9,97	13,88	19,19	27,06	36,52	51,17	71,41
C6	Water flow	(1)	l/s	0,50	0,70	0,90	1,30	1,80	2,40	3,40	4,70
E4	Cooling capacity	(2)	kW	7,28	10,10	15,48	22,17	30,94	42,31	59,08	82,29
E4	Sensible capacity	(2)	kW	5,76	7,97	11,60	16,45	22,89	31,43	43,75	60,89
C4	Heating capacity	(3)	kW	9,57	13,11	18,03	24,46	35,61	48,57	67,72	93,84
C4	Water flow	(3)	l/s	0,50	0,60	0,90	1,20	1,70	2,30	3,30	4,50
C6	Heating capacity	(3)	kW	10,88	14,89	20,63	28,72	40,12	54,86	76,51	106,65
C6	Water flow	(3)	l/s	0,50	0,69	1,00	1,39	1,89	2,61	3,70	5,20
Type of supply fan		(4)	-	CFG C&P							
MAX power input (IE2 - BELT & PULLEY)			kW	0,75	1,10	1,10	2,20	3,00	4,00	5,50	7,50
MAX power input (IE3 - BELT & PULLEY)			kW	0,75	1,10	1,10	2,20	3,00	4,00	5,50	7,50
MAX power input (IE4 - EC PLUG FAN)			kW	1,05	1,05	1,05	1,10	1,85	2,90	3,30	5,00
Power supply			V	400/3/50							
Sound power level		(5)	dB(A)	67	74	75	77	78	80	82	89

The Product is compliant with the Erp (Energy Related Products) European Directive. It includes the Commission delegated Regulation (EU) No 2016/2281, also known as Ecodesign Lot21.

(1) HYDRONIC SAHU Cooling: Exchanger inlet water 7°C (temperature differential 5°C) Ambient air 27°C D.B. / 19°C W.B. - ESP = 0 Pa

(2) DIRECT EXPANSION SAHU Cooling: Indoor temperature 27°C D.B. / 19°C W.B. Eveporating temperature 8°C / Condensing temperature 46°C - ESP = 0 Pa - R410A

(3) HYDRONIC SAHU Heating: Exchanger inlet water 45°C (temperature differential 5°C), Ambient air 20°C D.B., 50% U.R., ESP = 0 Pa

(4) CFG C&P = Centrifugal with belt & pulley transmission

(5) Sound levels refer to units with full load under nominal test conditions.

accessories

	FS4	Frame with G4 efficiency filters, thickness 48mm
	FS5	Frame with M5 efficiency filters, thickness 98mm
	FS6	Frame with M6 efficiency filters, thickness 98mm
	FS7	Frame with F7 efficiency filters, thickness 98mm
	FS8	Frame with F8 efficiency filters, thickness 98mm
	FS9	Frame with F9 efficiency filters, thickness 98mm
	FS45	Frame with G4 efficiency filters, thickness 48mm + M5 th. 98mm
	FS46	Frame with G4 efficiency filters, thickness 48mm + M6 th. 98mm
	FS47	Frame with G4 efficiency filters, thickness 48mm + F7 th. 98mm
	FS48	Frame with G4 efficiency filters, thickness 48mm + F8 th. 98mm
	FS49	Frame with G4 efficiency filters, thickness 48mm + F8 th. 98mm
	BAH	Base for horizontal basic unit H=120mm
	BAV	Base for vertical basic unit H=120mm
✓	**BAM**	Base for mixing chamber H=120mm
✓	**MBX**	Mixing chamber with dampers
✓	**AFM**	Antivibration mount for mixing chamber damper
✓	**AFR**	Return antivibration mount for basic unit
✓	**AFS**	Supply antivibration mount for basic unit
✓	**DAR**	Return damper for basic unit
✓	**FLR**	Return flange for basic unit
✓	**FLS**	Supply flange for basic unit
✓	**EC1**	Electric coil version 1
✓	**EC2**	Electric coil version 2
	FTB	Box with terminal block for centrifugal fan wires
	ETB	Box with terminal block for EC plug fan wires
✓	**KT4**	Spare filters - G4 th. 48mm
✓	**KT5**	Spare filters - M5 th. 98mm
✓	**KT6**	Spare filters - M6 th. 98mm
✓	**KT7**	Spare filters - F7 th. 98mm
✓	**KT8**	Spare filters - F8 th. 98mm
✓	**KT9**	Spare filters - F9 th. 98mm

✓ Accessories supplied separately

AQX

Air conditioning unit
For the air treatment
With modular sections
Indoor and outdoor installation
Airflow from 350 to 44400 l/s
(from 1260 to 16000 m³/h)

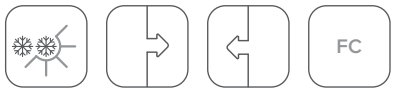
AQX are custom designed air handling units for commercial, industrial, civil, hotels, congress halls, theatres and fitness centres. In addition, AQX can be designed for special applications such as hospitals, high tech laboratories, clean rooms, food industry or pharmaceuticals, where hygiene and cleanliness requirements are stringent.
The series is characterised by:

- two types of structure and panelling, 50 mm and 60 mm, which allow thermal break classes T2/TB3 and T2/TB2 to be achieved;
- 32 standard sizes with continuous air flow coverage at frontal speed of 2.2 to 2.5m/s;
- customisation of the dimensions in height and width with a 50 mm pitch to meet the most stringent architectural constraints.
- sandwich-type double-sheet panels with injected polyurethane or mineral wool thermal and acoustic insulation in between, thermal cut between the sheets, 50 or 60 mm thick, seven different types of sheet available;
- modular structure with smooth internal surfaces to minimise dust accumulation and facilitate cleaning and disinfection;
- for indoor or outdoor installation with protective roof;
- wide range of air filtration solutions from coarse filters, medium filters with rigid or floppy pockets, absolute, electronic, activated carbon, high and very high efficiency filters;
- germicidal and virucidal solutions with UV-C lamps or photocatalytic oxidation modules;
- static, rotary, run-around heat recovery units;
- water, direct expansion, steam, thermal oil, electric heat exchangers; adiabatic humidification systems, self-generated or network steam, water spray, washers;
- internal condensate collection tanks with anti-condensate insulation, with inclination towards the discharge, made of aluminium or stainless steel;
- centrifugal fan sections with belt and pulley drive, plug-fan radial with brushless EC motors, electric fans;
- without control systems or complete with probes, actuators, wiring, electrical panel with control system and unit management logic.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com
Unit listed on www.eurovent-certification.com

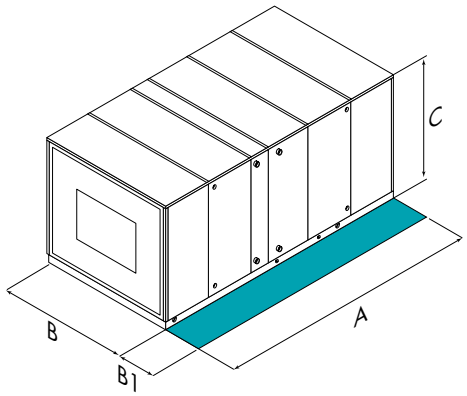
ErP
ErP compliant

functions and features



Heating-Cooling | Indoor inst. | Outdoor inst. | Free-cooling

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	AQX	1	2	3	4	5	6	7	8	9	10	11
A - Length	mm						(*)					
B - Width	mm	770	820	920	870	920	1020	970	1020	1170	1120	1220
C - Height (***)	mm	570	570	620	720	720	720	820	820	820	920	920
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	964	1034	1024	1024	1094	1187	1194	1214	1324	1284	1394
Weight in operating	kg						(**)					

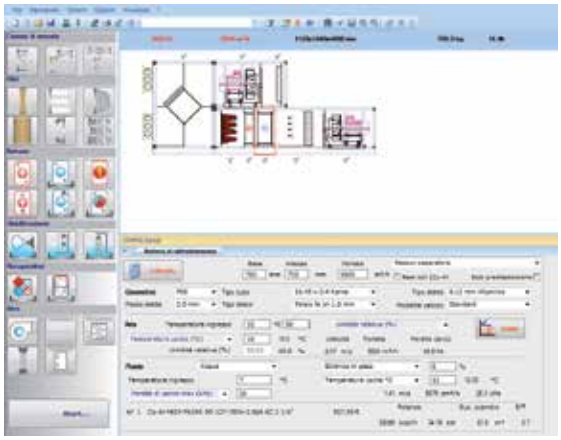
Size	AQX	12	13	14	15	16	17	18	19	20	21	22
A - Length	mm						(*)					
B - Width	mm	1220	1370	1370	1570	1570	1620	1770	1820	2070	2120	2220
C - Height (***)	mm	1070	1070	1170	1170	1320	1420	1420	1520	1520	1670	1770
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	1524	1504	1574	1734	1744	1774	1894	2094	2324	2264	2524
Weight in operating	kg						(**)					

Size	AQX	23	24	25	26	27	28	29	30	31	32
A - Length	mm						(*)				
B - Width	mm	2370	2470	2620	2820	3170	3570	4020	4570	5170	5870
C - Height (***)	mm	1920	2020	2120	2270	2270	2270	2270	2270	2270	2270
B1 - Servicing space											
for inspection	mm	800	800	800	800	800	800	800	800	800	800
coil removal	mm	2524	2594	2744	3074	3444	3874	4364	4924	5564	6304
Weight in operating	kg						(**)				

(*) Length A depends on the specific configuration.
(**) Operating weight depends on the specific configuration.
(***) Height without base. Standard base = 120 mm
Dimensions refer to model with 50 mm structure, add 20 mm to the indicated dimensions to obtain the 60 mm structure.
The above data refer to standard units.

selection software

The air handling units selection software allows to size the units and to have immediately the complete technical offer with executive drawings, technical data sheets and list of main components and materials used.



technical data

SIZE -	AQX	1	2	3	4	5	6	7	8	9	10	11
Air flow	(1) l/s	414	473	544	624	714	816	938	1073	1223	1404	1602

SIZE	AQX	12	13	14	15	16	17	18	19	20	21	22
Air flow	(1) l/s	1838	2111	2412	2760	3159	3630	4156	4752	5445	6245	7156

SIZE	AQX	23	24	25	26	27	28	29	30	31	32
Air flow	(1) l/s	8190	9383	10751	12315	14101	16167	18513	21191	24276	27821

(1) Air passage speed on the heat exchange coils 2.5 m/s

accessories

The air treatment units of the AQX series are available with a vast range of accessories that can be selected directly with the selection software.

A few of the most common accessories are listed below:

- Weatherproof roof and control protection technical compartment;
- Weatherproof covers on the external air inlets and outlets
- Safety device for moving components
- Spotlights and viewing panel for inspection
- Inverters on the fan motors

Other accessories not found in the basic selection can be assessed on request.

CLA

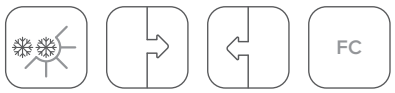
Air conditioning unit
For the air treatment
With modular sections
Indoor and outdoor installation
Airflow from 350 to 44400 l/s

ErP compliant

CLA are custom designed air handling units for commercial, industrial, civil, hotels, congress halls, theatres and fitness centres. In addition, CLA can be designed for special applications such as hospitals, high tech laboratories, clean rooms, food industry or pharmaceuticals, where hygiene and cleanliness requirements are stringent.
The series is characterised by:

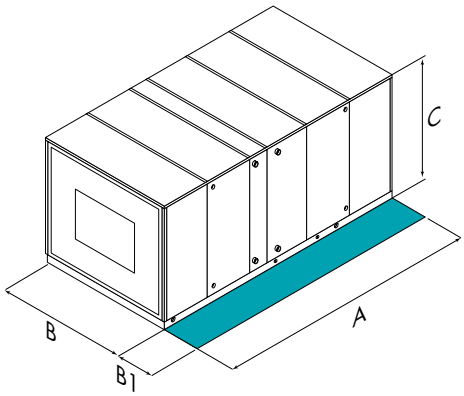
- two types of structure and panelling, 50 mm and 60 mm, which allow thermal break classes T2/TB3 and T2/TB2 to be achieved;
- 32 standard sizes with continuous air flow coverage at frontal speed of 2.2 to 2.5m/s;
- customisation of the dimensions in height and width with a 50 mm pitch to meet the most stringent architectural constraints.
- sandwich-type double-sheet panels with injected polyurethane or mineral wool thermal and acoustic insulation in between, thermal cut between the sheets, 50 or 60 mm thick, seven different types of sheet available;
- modular structure with smooth internal surfaces to minimise dust accumulation and facilitate cleaning and disinfection;
- for indoor or outdoor installation with protective roof;
- wide range of air filtration solutions from coarse filters, medium filters with rigid or floppy pockets, absolute, electronic, activated carbon, high and very high efficiency filters;
- germicidal and virucidal solutions with UV-C lamps or photocatalytic oxidation modules;
- static, rotary, run-around heat recovery units;
- water, direct expansion, steam, thermal oil, electric heat exchangers;
- adiabatic humidification systems, self-generated or network steam, water spray, washers;
- internal condensate collection tanks with anti-condensate insulation, with inclination towards the discharge, made of aluminium or stainless steel;
- centrifugal fan sections with belt and pulley drive, plug-fan radial with brushless EC motors, electric fans;
- without control systems or complete with probes, actuators, wiring, electrical panel with control system and unit management logic.

functions and features



Heating-Cooling | Indoor inst. | Outdoor inst. | Free-cooling

dimensions and clearances



CAUTION!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Sizes	CLA	1	2	3	4	5	6	7	8	9	10	11
A - Length	mm						(*)					
B - Width	mm	770	820	920	870	920	1020	970	1020	1170	1120	1220
C - Height (***)	mm	570	570	620	720	720	720	820	820	820	920	920
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	964	1034	1024	1024	1094	1187	1194	1214	1324	1284	1394
Weight in operating	kg						(**)					

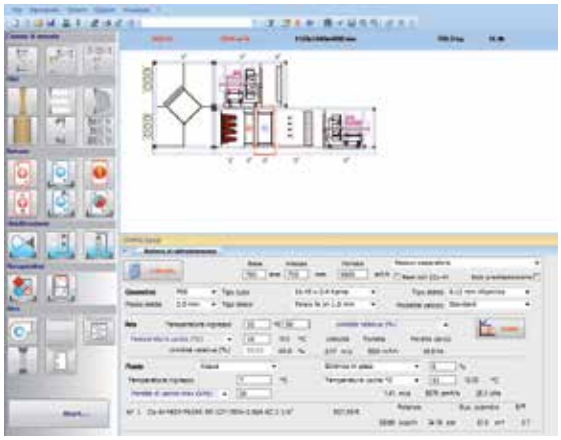
Sizes	CLA	12	13	14	15	16	17	18	19	20	21	22
A - Length	mm						(*)					
B - Width	mm	1220	1370	1370	1570	1570	1620	1770	1820	2070	2120	2220
C - Height (***)	mm	1070	1070	1170	1170	1320	1420	1420	1520	1520	1670	1770
B1 - Servicing space												
for inspection	mm	800	800	800	800	800	800	800	800	800	800	800
coil removal	mm	1524	1504	1574	1734	1744	1774	1894	2094	2324	2264	2524
Weight in operating	kg						(**)					

Sizes	CLA	23	24	25	26	27	28	29	30	31	32
A - Length	mm						(*)				
B - Width	mm	2370	2470	2620	2820	3170	3570	4020	4570	5170	5870
C - Height (***)	mm	1920	2020	2120	2270	2270	2270	2270	2270	2270	2270
B1 - Servicing space											
for inspection	mm	800	800	800	800	800	800	800	800	800	800
coil removal	mm	2524	2594	2744	3074	3444	3874	4364	4924	5564	6304
Weight in operating	kg						(**)				

(*) Length A depends on the specific configuration.
(**) Operating weight depends on the specific configuration.
(***) Height without base. Standard base = 120 mm
Dimensions refer to model with 50 mm structure, add 20 mm to the indicated dimensions to obtain the 60 mm structure.
The above data refer to standard units.

selection software

The air handling units selection software allows to size the units and to have immediately the complete technical offer with executive drawings, technical data sheets and list of main components and materials used.



technical data

SIZE			CLA	1	2	3	4	5	6	7	8	9	10	11
Air flow	(1)	l/s		414	473	544	624	714	816	938	1073	1223	1404	1602

SIZE			CLA	12	13	14	15	16	17	18	19	20	21	22
Air flow	(1)	l/s		1838	2111	2412	2760	3159	3630	4156	4752	5445	6245	7156

SIZE			CLA	23	24	25	26	27	28	29	30	31	32
Air flow	(1)	l/s		8190	9383	10751	12315	14101	16167	18513	21191	24276	27821

(1) Air passage speed on the heat exchange coils 2.5 m/s

accessories

The air treatment units of the AQX series are available with a vast range of accessories that can be selected directly with the selection software.

A few of the most common accessories are listed below:

- Weatherproof roof and control protection technical compartment;
- Weatherproof covers on the external air inlets and outlets
- Safety device for moving components
- Spotlights and viewing panel for inspection
- Inverters on the fan motors

Other accessories not found in the basic selection can be assessed on request.

Small and Medium Commercial

CONDENSING UNITS

	Outdoor unit
Capacities	**26 ÷ 80 kW**
Products	
AIR Air source Cooling only	MSAT-XEE

AUXILIARY System

System components

SERIES	SIZE FROM	TO	NAME	PAGE
Condensing units - air source - axial fans				
MSAT-XEE	8.2	30.2		192

MSAT-XEE

8.2÷30.2

Condensing unit
Cooling only
Air cooled
Outdoor installation
Capacity from 26 to 80 kW

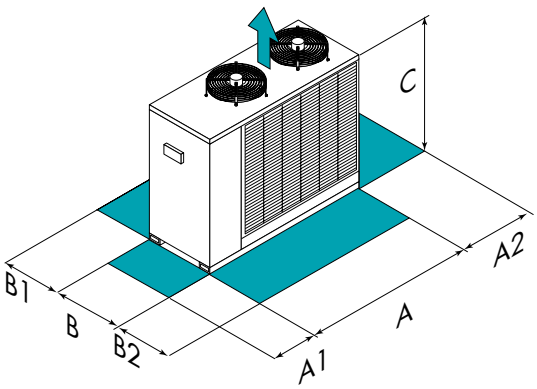
The **MSAT-XEE** air-cooled condensing units have been designed for outdoor installation and for best energy efficiency in relation to reduced size.
They may be combined with terminal units or connected to exchanger coils of air-handling units.
The main features are:

- **HIGH ENERGY EFFICIENCY**: especially during operation at partial loads, thanks to the use of two compressors of different capacity operating on a single cooling circuit.
- **SELF-ADAPTING:** the evolved electronics implemented adapt the operating parameters to the load conditions of the system it is installed in, optimising consumption, noise and the working life of the components.
- **COMPACT SIZE:** the units are designed to reduce overall dimensions to a minimum, a decisive factor to adapt to the features of any building.

functions and features

Cooling only | Air cooled | Outdoor installation | R-410A | Hermetic Scroll

dimensions and clearances



CAUTION!!
For trouble-free operation of the unit it is essential to maintain the safety distances indicated by the green areas.

Size	MSAT-XEE	8.2	10.2	12.2	16.2	18.2	22.2	26.2	30.2
A - Length	mm	1739	1739	1739	1967	1967	1967	2367	2367
B - Width	mm	721	721	721	1143	1143	1143	1141	1141
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	298	303	323	456	469	490	547	561

The above mentioned data are referred to standard units for the constructive configurations indicated.
For all the other configurations, refer to the relative Technical Bulletin.

technical data

Size	MSAT-XEE		8.2	10.2	12.2	16.2	18.2	22.2	26.2	30.2
Cooling capacity	(1)	kW	25,7	31,3	36,0	43,4	51,6	59,1	72,3	80,1
Compressor power input	(1)	kW	8,79	9,95	12,4	14,1	16,2	20,3	22,6	26,6
Total power input	(1)	kW	9,20	10,4	12,9	15,6	17,7	21,8	24,2	28,4
EER	(1)	-	2,78	3,01	2,80	2,78	2,91	2,71	2,99	2,82
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Standard airflow		l/s	2553	2545	2514	4965	4902	4778	7196	6971
Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level	(2)	dB(A)	60	60	60	64	64	65	65	65

(1) Saturated suction temperature (SST) = 5°C; Outdoor air temperature 35°C
(2) The sound levels refer to the unit at full load, in the rated test conditions.
The sound pressure level refers to a distance of 1m from the external surface of the units operating in an open field.

accessories

KCX	Connection set
HGBP	Hot gas by pass
AMRX	Rubber antivibration mounts
PGCEX	Coil protection grilles outdoor air side
PM	Phase monitor
PMX	Phase monitor
RCTX	Remote control
MEN30	Minimum outdoor air temperature down to -30°C
MEN15	Minimum outdoor air temperature down to -15°C

Accessories whose code ends with "X" are supplied separately

For compatibility between the various accessories, please refer to the dedicated Technical Bulletin or our website in the Systems and Products section.

Commercial

	ELFOControl³ EVO	INTELLIPLANT	Clivet Eye
			
Chiller, Heat pump	✓	✓	✓
Multifunction unit		✓	✓
Air renewal unit	✓		✓
Packaged unit and AHU			✓
Number of connectable centralized hydronic units	1	10	1
Number of room connectable units	40		1
System Dashboard	✓	✓	
Energy Management	✓	✓	
Energy dashboard, reports and charts		✓	
System layout		✓	
Event-based diagnostics	✓	✓	✓
Preventive diagnostics		✓	
Compatibility with ELFO Control³ EVO		✓	✓
Compatibility with INTELLIPLANT	✓		✓
Compatibility with Cloud services	✓	✓	

DIGITAL Solutions

System components

SERIES	SIZE FROM	TO	NAME	PAGE
Control systems				
ELFOControl³ EVO	-	-	ELFOControl³ EVO	196
INTELLIPLANT	-	-	INTELLIPLANT	198
Monitoring systems				
Clivet Eye	-	-	Clivet Eye	200

ELFOControl^3 EVO

ELFOControl^3 EVO

Control unit for stand-alone residential systems

- Simultaneous management of up to 12 different climate zones
- Option of setting different temperatures within the same climate zone
- Up to 10 customised time schedules to optimise system operation and efficiency
- Scalable system for possible system expansions and integration of additional appliance control
- Energy management with power consumption data display
- Option for remote monitoring and control of systems from a PC or APP

The whole system at your fingertips

ELFOControl^3 EVO is a centralised supervision and management system for hydronic systems used for cooing, heating, domestic hot water production and air quality control in residential buildings and small businesses.
It enables the centralised management of systems made with compatible Clivet units, intelligently controlling all of the system elements in order to obtain optimal comfort at maximum efficiency.

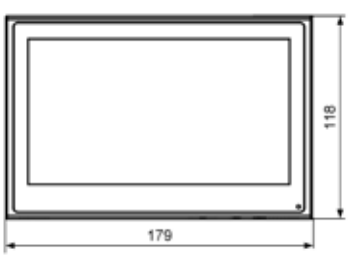
Energy management

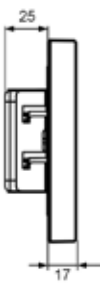
Clivet Eye is the Cloud-based monitoring system for remote management from smartphones, tablets and PCs of air conditioning, heating, air renewal and domestic hot water production units and systems. Available with different types of Licences (Visio) that offer various benefits and services. Each Licence has a minimum one year validity, is renewable and can be linked with one Clivet unit. To connect the unit to the Internet, Clivet will provide a GSM (i-MOBILE) or Ethernet (i-LINK) modem. The i-Mobile modem is supplied with a SIM card that can be used in selected countries (list available in the Clivet Eye Price List).

Remote scheduler

Clivet Eye is Clivet's Cloud-based monitoring system for remote management from smartphones, tablets and PCs.
The connectivity of Clivet Eye, in addition to the various functions, makes it possible to manage time schedules and change operation of the systems remotely without the intervention of on-site personnel.

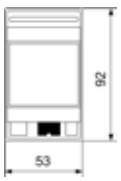
Dimensions





ELFOControl^3 EVO is supplied with:

- ✓ 12Vdc AL12X power supply unit
- ✓ Ethernet/485 converter
- ✓ Cat. 5 UTP Ethernet cable (5m long)



The maximum distance between the Ethernet/485 converter and ELFOControl^3 EVO is 90 metres.

Ideal for all sectors

The system offers the utmost flexibility of use due to a number of climate zones available in both heating and cooling modes, its integration with substitute energy sources, energy consumption management and remote management from a PC or dedicated APP.

Offices

Shops

Restaurants

Remote control and access

A dedicated APP for accessing the ELFOControl³ EVO system remotely, monitoring the operating temperatures and accessing the main system functions from a PC, smartphone or tablet when connected to an Internet network.
Clivet Eye is ideal for all users who want to safely and efficiently manage the comfort of their office or business for the well-being of the people who work there.

IoT

ELFOControl³ EVO

Main operator panel with system control logics.
It manages up to 40 devices, making ELFOControl³ EVO the ideal solution for managing systems in the small- and medium-sized commercial sector, such as offices, restaurants and shops in general.

Room thermostats and sensors

ELFOControl³ EVO provides a series of room thermostats and sensors that accurately measure the temperature and humidity values for each individual zone of the system in order to ensure optimal comfort of the connected rooms

Management of utilities

A series of modules dedicated to the management of pumps and zone valves ensure control of the utilities used for the production and distribution of thermal energy from radiant panels (hot and cold), room radiators and heated towel rails.

INTELLIPLANT

Optimisation system for centralised hydronic systems

INTELLIPLANT is the innovative technological solution designed to optimise the central heating/cooling plant of medium and large capacity systems, ensuring efficiency and reliability in any application, from comfort applications to more complex applications for industrial processes that require continuity of operation under any operating condition.

INTELLIPLANT optimises centralised systems by using the control algorithms of the devices which are involved in the production and distribution of thermal energy, as well as an advanced diagnostics survey engine which makes it possible to determine their state of maintenance.

Control and optimisation

INTELLIPLANT identifies the best activation sequence for units by starting them according to their performance curves, fulfilling the energy requirements of the system with minimum power consumption. INTELLIPLANT also optimises pumping units to ensure the distribution of fluids through the primary and secondary circuits by managing the variable flow-rates while reducing energy consumption.

The benefits from these control strategies are:

- ✓ high system efficiency levels
- ✓ reduction of waste from the over-production of energy
- ✓ better stabilisation of the system with reduced thermal and mechanical stress on the units.

Preventive diagnostics

INTELLIPLANT evolves the concept of maintenance, from conventional scheduled maintenance to “Condition Based Maintenance”, i.e. maintenance tailored to each specific system based on its operating status.

The benefits from this model are:

- ✓ reduction of the amount of interventions and field trips
- ✓ better management of maintenance personnel
- ✓ lower maintenance costs
- ✓ reduction of system downtime due to sudden failures
- ✓ increased system productivity
- ✓ longer service life of thermal energy generation and distribution devices.

Energy under control

Intelliplant has dedicated pages and reports to allow the plant’s energy consumption to be monitored and controlled, with functions to:

- ✓ analyse and normalise the energy consumption of the devices in the plant
- ✓ identify critical issues and eliminate waste
- ✓ increase the level of comfort
- ✓ increase the continuity of system operation
- ✓ promote activities to increase the overall efficiency of the systems.

Functions and features

Clivet's Cloud-based service offers the option of remotely connecting to the INTELLIPLANT system and accessing its functions from any PC, smartphone and tablet with a web browser, without needing to install a dedicated APP.

System dashboard

Unit dashboard

INTELLIPLANT provides the user with a wide range of graphical pages that combine the most significant plant and unit operating parameters to ensure total control of mechanical systems both locally and remotely.

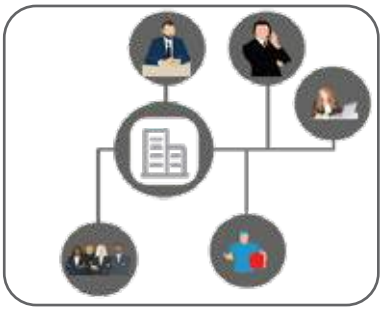
All of the pages can be viewed on a PC or smart device.

The main pages include:

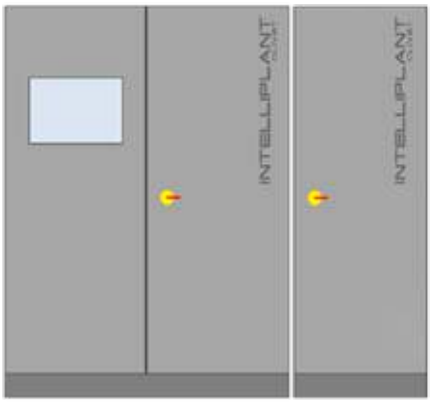
- ✓ System dashboard, with the most significant general system operating data
- ✓ Unit dashboard, with all the operating variables of the individual units
- ✓ Energy dashboard, with system and individual unit efficiency indices
- ✓ Maintenance dashboard, with operating values of system components and their operating status
- ✓ Commissioning page, to facilitate system start-up and calibration operations.

INTELLIPLANT is a solution for all professionals involved in the design, management and operation of technological systems:

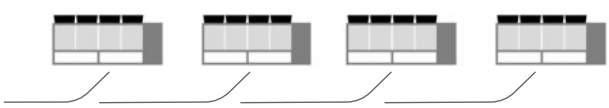
- ✓ HVAC system consultants and designers
- ✓ Building and Facility Managers
- ✓ Energy Managers
- ✓ ESCO
- ✓ Service Managers and maintenance technicians
- ✓ Builders and installers
- ✓ System investors and owners



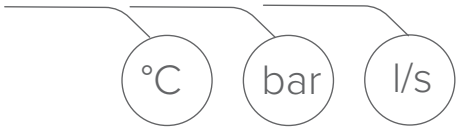
INTELLIPLANT is a flexible, modular and expandable solution to better meet the most stringent structural, application and installation requirements in full compliance with safety standards and regulations.



INTELLIPLANT acquires in-situ all the information needed to keep the entire system running efficiently, such as temperatures, water flow-rates and operating pressures, right down to the most direct operating parameters of each individual heating/cooling unit.



Heating/cooling units, circulation pumps and source devices.



Range sensors for acquiring operating variables.

Clivet Eye

Cloud-based monitoring and remote management system for Clivet units and systems

Clivet Eye is the Cloud-based monitoring system for the remote management of Clivet units and air conditioning, heating, air renewal and hot water production systems for domestic and residential use from a smartphone, tablet and PC and is designed for end users, service centres and system administrators.

All systems at a glance

With Clivet Eye you can monitor and manage all Clivet systems located in the country, even if they are of different types.
The geographical map of Clivet Eye enables all of the systems to be quickly and constantly monitored in real-time, showing their operating conditions simply and intuitively.
Event notifications promptly warn of any system malfunctions.

Who needs Clivet Eye?

Clivet Eye is intended for end users, facility managers, service centres and system managers in general who need to monitor the system remotely.

END USERS

SYSTEM MANAGERS

SERVICE CENTRES

Benefits

- ✓ Easy control of units / systems via the App and Web Dashboard
- ✓ Prompt signalling of malfunctions through e-mail event notifications
- ✓ Programming of operating conditions through time schedules (switch-on, switch-off, changing operating set points)
- ✓ In-depth remote analyses and reset of small alarms reducing the need for on-site intervention
- ✓ Faster and more effective interventions due to prompt signalling of malfunctions via e-mail
- ✓ Analysis of the history of operating conditions

Monitored units

Clivet APPLIED and HOME

Clivet Eye is compatible with Clivet APPLIED and HOME products, with the exception of ELFOEnergy Edge, ELFOEnergy Edge EVO, ELFOEnergy Sheen and ELFOEnergy Sheen EVO for which the function is limited*. Terminal units are NOT compatible.

Clivet SPLIT and VRF

Clivet Eye is NOT compatible with MONO/MULTISplit and VRF Systems.

Check with your Clivet representative whether your systems are compatible with Clivet Eye.

* See the Clivet Eye Price List for more details

Clivet Eye licences

✓ **USER Visio**
Simplified management for the end user

✓ **TECH Visio**
Monitoring by the Technical Service Centre

Clivet Eye is available with different types of Licences (Visio) that offer specific functions to suit various kinds of users.

Each unit is connected to the Cloud service via an Ethernet modem (i-LINK) or a mobile modem (i-MOBILE) supplied with a SIM card that can be used in selected countries of the European Community.

	USER Visio	TECH Visio
i-MOBILE/i-LINK modem	✓	✓
On/Off	✓	✓
Mode and Set Point	✓	✓
Reading parameters	-	✓
Changing parameters	-	✓
Viewing Alarms / Events	✓	✓
Alarms reset	-	✓
Viewing status and graphs	✓	✓
Viewing/Changing parameters	-	✓
Internet connection (i-MOBILE)	✓	✓
Scheduler *	✓	✓

* The Scheduler is only available in the Web Dashboard

How does it work?

All you need to remotely manage your system with Clivet Eye is an Internet connection and a computer / tablet / smartphone.

✓ From a computer: www.cliveteye.com (in-depth management with Web Dashboard)

✓ From a tablet / smartphone: open the Clivet Eye App (simplified management)

INDEX

Clivet, in compliance with Regulation 517/2014, informs that its products contain or function with the use of fluorinated greenhouse gases: R-32 (GWP 675), R-410A (GWP 2087,5), R-134a (GWP 1430) and R-407C (GWP 1773,85), R-513A (GWP 631), R-1234ze (GWP 7).

FOR OVER 30 YEARS WE HAVE BEEN OFFERING SOLUTIONS TO ENSURE SUSTAINABLE COMFORT AND THE WELL-BEING OF PEOPLE AND THE ENVIRONMENT

www.clivet.com

valid from: January 2021
DG20N052GB-01

CLIVET

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MideaGroup
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