



"Konut, Ticari ve Endüstriyel Alanlarda İdeal İklimlendirme"



“Verimli Bir Gelecek İçin Çalışıyoruz”

1965 yılında kurulan ve bugün 50 yılı geride bırakan Form Şirketler Grubu, 2015 yılı itibariyle 200’e yakın çalışanı ile iklimlendirme ve yenilenebilir enerji alanında faaliyet göstermektedir. Form Şirketler Grubu’nun merkez ofisi Maslak İstanbul’da olup, Ankara, Antalya, İzmir, Adana ve Bursa’da bölge müdürlükleri bulunmaktadır.

Form Şirketler Grubu’nun üretim faaliyetleri İzmir Pancar’daki fabrikasında sürdürülmektedir. Munters aktiviteleri, Gebze Organize Sanayi bölgede bulunan fabrika ve merkez satış ofisi ile Türkiye ve yurtdışına hizmet vermektedir. Güneşten elektrik üreten fotovoltaik sistemlerin kurulumunu gerçekleştiren Form Solar Maslak İstanbul merkez binasında hizmet vermektedir. Ayrıca grubun satışını yaptığı ürünlerin satış sonrası servis hizmetleri de yine Maslak İstanbul merkez binasında sürdürülmektedir.

Bugün itibariyle Form Şirketler Grubu 5 firma üzerinden hizmet vermektedir;

- Form İklimlendirme
(Form Endüstri Ürünleri Ticaret A.Ş.)
- Form VRF Sistemleri
(Form VRF Sistemleri Sanayi Ticaret A.Ş.)
- Form Endüstriyel Ürünler
(Form Endüstri Tesisleri Sanayi A.Ş.)
- Form Solar
(Form Yenilenebilir Enerji Sistemleri)
- Form Munters İmalat-Satış
(MuntersForm Endüstri Sistemleri Ticaret A.Ş.)

İSKİD, İSKAV, AMPD, ÇEDBİK, GENSED, TABA gibi Türk dernekleri dışında ASHRAE, IGSHPA gibi yabancı derneklere de üye olan FORM ŞİRKETLER GRUBU, sektörde ve hizmet verdikleri alanlarda sektör etik değerlerine bağlı ciddi, güvenilir ve lider firmalardan biri olmaya devam etmektedir.



Merkezi Klima Sistemleri



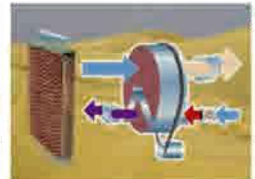
VRF Klima Sistemleri



Endüstriyel Duman Tahliye
ve Evaporatif Soğutma



Fotovoltaik Sistemleri



Nem Alma
ve Evaporatif Soğutma

25 Yıllık Tecrübe ile Geleceğe Hazır



İtalya Belluno'da

50.000 m²

modern üretim tesisi

İtalya ve dünya çapında

700 çalışan

İtalya'da 40 temsilcilik

70

ülkeye ihracat

2013 yılı itibariyle

750.000 kW

kurulu kapasite

120

servis merkezi

Clivet, 25 yıldır iklimlendirme sektöründe yüksek verimli ve çevreye duyarlı ürünler sunmakta; sürdürülebilir konfora yönelik iklimlendirme çözümleri sağlamaktadır. Clivet markasının DNA'sında yıllara meydan okuyan iklimlendirme çözümlerinin her daim yenilikçi teknolojiler kullanarak tasarlanması ve üretilmesi vardır. Bu da Clivet'i her zaman gelecek için hazır bir marka yapmaktadır.

Clivet, konut, ticari ve endüstriyel alanlarda konfor standartlarını yükselten, enerji tasarruflu ve kullanıldığı ortamlarda yaşam kalitesini yükselten ürünler sunmaktadır.

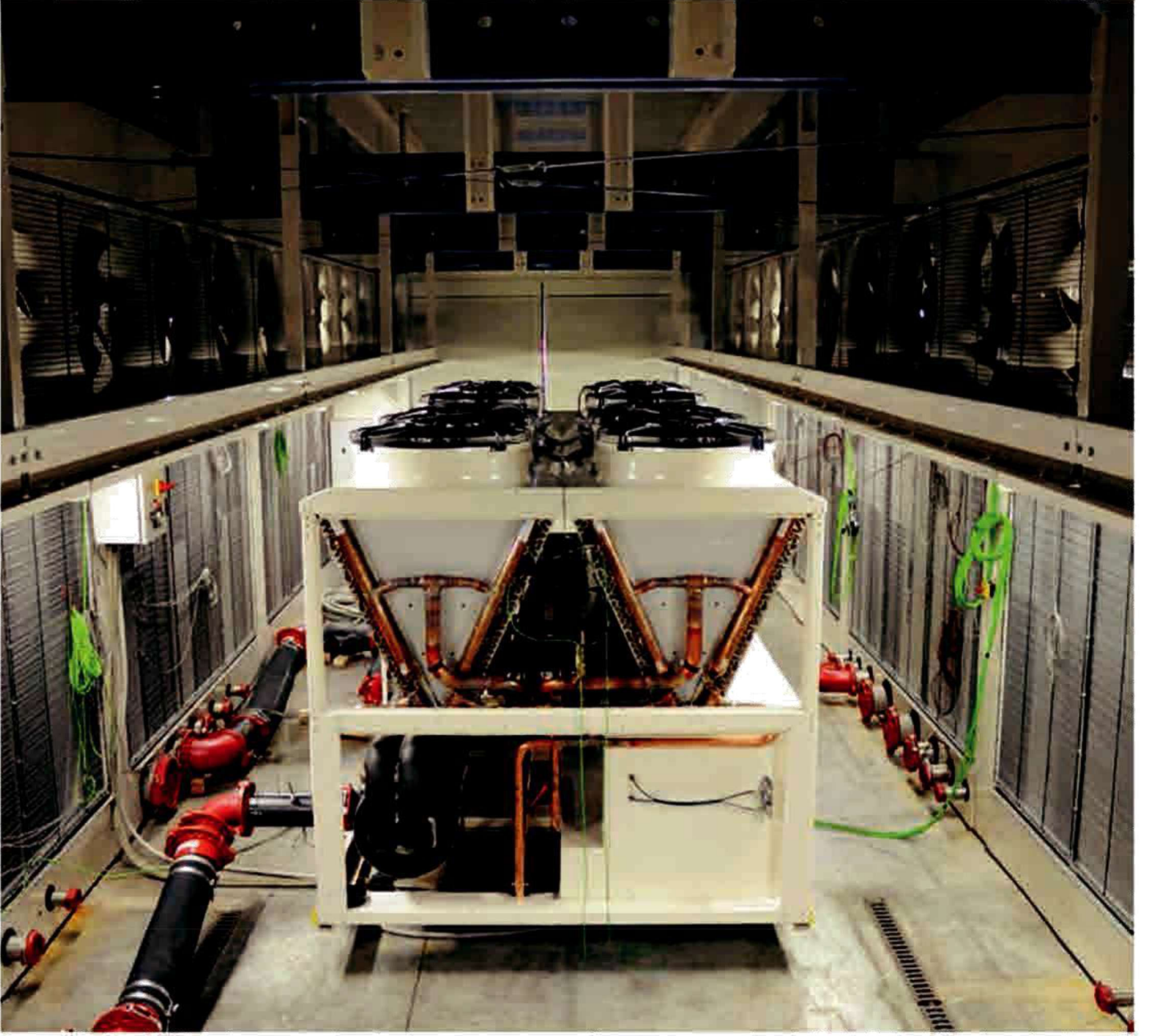


Form, 2010 yılından bu yana Clivet'in Türkiye'deki temsilciliğini yürütmektedir. 25 yıllık bir geçmişe sahip olan Clivet, İtalya'da 50.000 m² alan üzerinde kurulu modern üretim tesisi ile Soğutma Grupları ve yüksek verimli Isı Pompası cihazlarının üretimi konusunda Avrupa'nın önde gelen firmalarından biridir. Clivet, önceliğini yüksek verimli ürünlerin geliştirilmesine vermiş olup, özellikle Soğutma Grupları, Isı Pompaları ve aynı anda hem sıcak hem de soğuk su üreten son derece yenilikçi cihazları dünya pazarına sunmuştur.

Yüksek
Konfor
Şartları

Düşük
Enerji
Tüketimi

Düşük,
İşletme
Maliyeti



Clivet, üstün teknolojiyi mükemmel ürün kalitesi ve performans belgelendirme sistemi ile birleştiriyor.

Clivet 1996 yılından beri ISO 9001 kalite yönetimi standartları çerçevesinde proses kontrolü ve yüksek verimli çalışma organizasyonu ile müşteri memnuniyetini en üst düzeyde tutmayı amaçlamıştır.

Clivet, Avrupa standartlarına uygun olarak üretim tesisinde non-toxic ve çevreye zararsız alaşımları kullanır.

Clivet mekanik ürün ve parçaları için yeni nesil metal sac işleme, pres ve kesim makinelerini kullanmaktadır.

Patentli elektronik kontrol sistemlerini kullanarak yüksek kaliteli ürün standartlarını sunmaktadır.



Clivet ürünleri, tüm AB ülkeleri için gerekli olan güvenlik standartlara uyumludur.

Clivet'in Soğutma Grupları ve Isı Pompaları Eurovent sertifikasına sahiptir.

Bu ürünlere Eurovent'in web sayfası www.eurovent-certification.com adresinden ulaşılabilir. Hava ve su soğutmalı ünitelerde 1500 kW'a kadar tüm kapasite aralıklarında Eurovent sertifikasına sahiptir.



Clivet, uluslararası ISO 9001 standartlarına sahiptir.

Clivet, yeşil binaları destekleyen çalışmalar doğrultusunda GBC (Green Building Council) İtalya üyesidir. USGBC (U.S. Green Building Council) ile işbirliğinde olan bu organizasyon, dünya genelindeki LEED sertifikasyon süreçlerinde tanıtımı yapılmaktadır.



Referanslarımızdan Bazıları

OTEL



Black Sea Hotel Hilton – Batum



D Hotel Maris – Marmaris



Ramada Otel – Trabzon

İŞ MERKEZİ



Ak Plaza – İstanbul



Kar GYO – İstanbul



İçtaş Ofis Binası – İstanbul

HASTANE



Muğla Devlet Hastanesi



Çanakkale Devlet Hastanesi



Esenyurt Medical Park Hastanesi - İstanbul

ENDÜSTRİYEL



Şişecam Fabrikası – Eskişehir



Çaykur Fabrikası – Rize



Mercedes Fabrikası – Aksaray

AVM / DİĞER



Terracity AVM – Antalya



Forum AVM – Diyarbakır



Novada AVM – Tokat



Ramada Otel – Gebze



Holiday Inn Otel – Gebze



Kaya Thermal Otel – İzmir



Ayazağa Ticaret Merkezi – İstanbul



Bayraktar Twin Tower – Ankara



Yıldız Kule – Ankara



Konak Hastanesi – Gebze



Lancet Medical Center – Gürcistan



Refahiye Hastanesi – Erzincan



Ford Otosan Fabrika – Eskişehir



Eti Gıda Fabrikası – Eskişehir



Habom Sabiha Gökçen Havaalanı – İstanbul



Gürpınar Su Ürünleri Hali – İstanbul

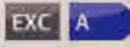
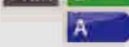


Avclar Nikah Salonu – İstanbul



Konya Stadyumu

HYDRONIC System - Air Source

	Small and Medium Commercial		
			
	ELFOEnergy Extended Inverter ELFOEnergy Duct Inverter/Horus ELFOEnergy Vulcan	ELFOEnergy Medium / Large ² ELFOEnergy Vulcan Medium ELFOEnergy Duct Medium	ELFOEnergy Magnum
Capacity (A35/W7)	5 ÷ 50 kW	25 ÷ 220 kW	50 ÷ 375 kW
ErP compliance (heat pumps only)			
Products	  	  	   
Chillers	WSAT-XIN WDC Inverter EXC  PRM 	WSAT-XEE EXC  PRM 	WSAT-XIN WDC Inverter EXC  WSAT-XEM EXC  PRM 
High Temperature Chillers External Air			WSAT-XEM EXC 
Chillers System in two sections			
Free Cooling Chillers		WSAT-XEE (FC)  	WSAT-XEM FC EXC 
Heat pumps	WSA-XIN WDC Inverter HORUS EXC  PRM  	WSA-XEE  	WSA-XIN WDC Inverter WSAN-XEM EXC  EXC 
High temperature water Heat pumps	WBAN HORUS+  	WBAN 	WSA-XEM HW EXC 
Multi-function Heat pumps			WSA-XIN MF WDC Inverter WSAN-XEM MF EXC  EXC 
Ducted units	WSA-XIN (Chiller) WSN-XIN (Heat pump) WDC Inverter  	WSA-XEE (Chiller) WSN-XEE (Heat pump)  	
	 Inverter Scroll Compressor, Refrigerant R-410A	 Scroll Compressors, Refrigerant R-410A	 Screw Compressors, Refrigerant R-134a

Large Commercial and Industry



SPINchiller³ / SPINchiller² Duct
Multi Scroll Technology

120 ÷ 680 kW

690 ÷ 1350 kW

SCREWLine³

460 ÷ 1530 kW



WSAT-XSC3
SUP A
EXC A
PRM C

WSAT-XSC3
SUP A
EXC A
PRM C

WDAT-SL3
WDAT-IL3
W5 Inverter
EXC A
PRM C

WSAT-XSC3
SUP A
EXC A

WSAT-XSC3
SUP A
EXC A

WDAT-SL3
EXC A

REMOTEX
EXC A
PRM C

REMOTEX
EXC A
PRM C

WSAT-XSC3 FC
EXC A

WSAT-XSC3 FC
EXC A

WDAT-SL3 FC
EXC A

WSAN-XSC3
EXC A

WSAN-XSC3
EXC A

WSAN-XSC3 MF
EXC A

WSA-XSC2
(Chiller)
A



Inverter Screw Compressors, Refrigerant R-134a



Eurovent Efficiency Energy Class

HYDRONIC System - Water Source

Small and Medium Commercial	
	
	ELFOEnergy Ground ELFOEnergy Ground Medium²
Capacities (A35/W7)	6 ÷ 35 kW 30 ÷ 360 kW
ErP compliance (heat pumps only)	ErP ErP
Products	   
Chillers	WSH-EE D WSH-XEE2 B
Heat pumps with inversion on the water circuit	WSH-EE (OHI) D WSH-XEE2 B
Heat pumps with inversion on the refrigeration circuit	WSHN-EE C WSHN-XEE2 B
Multi-function heat pump	WSHN-XEE2 MF B
Evaporating units	ME MSE-XEE2
 Scroll Compressor, Refrigerant R-410A  Tandem Scroll Compressors, Refrigerant R-410A  Screw Compressors, Refrigerant R-134a	

Large Commercial and Industry



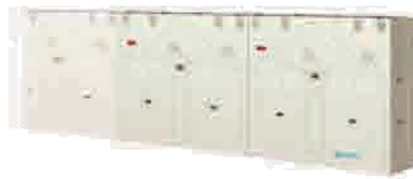
SPINChiller³ Water / SPINSaver³
Multi Scroll Technology

SCREWLine³

200 ÷ 750 kW

750 ÷ 5250 kW

325 ÷ 1610 kW



WSH-XSC3



WSH-XSC3



WDH-SL3 (OCO)



WSH-XSC3



WSH-XSC3



WDH-SL3 (OHI)



WSHN-XSC3



WSHN-XSC3



WSHN-XSC3 MF



WSHN-XSC3 MF



WSHF-XSC



MSE-XSC3

MDE-SL3



Eurovent Efficiency Energy Class

Water chiller

WSAT-XEE: cooling only
WSAN-XEE: reversible heat pump
Air cooled
Outdoor installation
Capacity from 90 to 216 kW



ELFOEnergy Large²

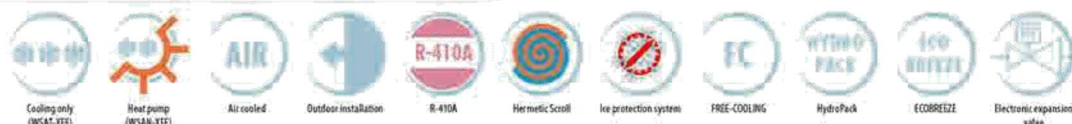
ELFOEnergy Large² water chillers and heat pumps provide the highest seasonal efficiency. They're designed to be installed outdoor and feature uneven scroll compressors mounted in the same circuit, electronic expansion valves and high efficiency plate type evaporators.

ELFOEnergy Large² shows an unmatched seasonal efficiency ESEER and is available in two versions: EXCELLENCE and PREMIUM. The standard version EXCELLENCE offers the highest efficiency both at full and at part load. Also the PREMIUM version offers high efficiency at part load but favours also the compact dimensions being therefore extremely competitive. Thanks to its features, ELFOEnergy Large² offers:

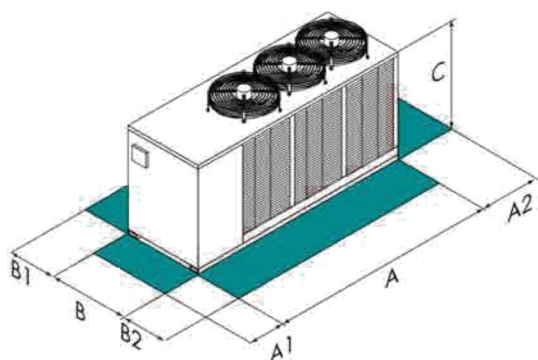
- **self-adaptability in different load conditions**, thanks to the availability of several capacity steps and the adjustment logic developed for maximum efficiency and minimum wear.
- **very high overall reliability**, thanks to the consolidated construction choices and the use of industrially-made products
- **lower sound emissions**, achieved thanks to the optimal sizing of the exchange surfaces and the use of high efficiency fans with "winglets"
- **quick and easy installation** thanks to the quick connections with the main circuit, electrical wiring enablement and complete functional testing before delivery. 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



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	kg	896	933	1024	1207	1234	1256	1302	1497	1544
SC-PRM	Operating weight	kg	778	802	892	924	963	984	1087	1295	1324
Size – WSAN-XEE			352	402	432	452	502	552	602	702	802
A - Length	mm		3075	3075	3075	3075	3075	4025	4025	5025	5025
B - Width	mm		1097	1097	1097	1097	1097	1097	1097	1097	1097
C - Height	mm		1805	1805	1805	1805	1805	1805	1805	1805	1805
A1	mm		1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm		700	700	700	700	700	700	700	700	700
B1	mm		1350	1350	1350	1350	1350	1350	1350	1350	1350
B2	mm		1350	1350	1350	1350	1350	1350	1350	1350	1350
SC	Operating weight	kg	915	975	1059	1101	1126	1326	1341	1549	1564
EN	Operating weight	kg	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-PRM Compressors soundproofing (SC)-Premium
SC Compressors soundproofing (SC)
EN Super-silenced (EN)

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

DOUBLE SET POINT:

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

VERSION WSAT XEE ONLY :

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

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 (EN14511:2013)	(1) kW	95,6	109	120	129	140	152	174	195	216
SC-EXC	Total power input (EN14511:2013)	(1) kW	30,6	34,8	38,8	40,9	45,0	49,0	55,8	62,3	69,6
SC-EXC	EER (EN 14511:2013)	(1) -	3,12	3,13	3,10	3,15	3,12	3,10	3,12	3,13	3,11
SC-EXC	ESEER	(1) -	4,22	4,30	4,22	4,21	4,24	4,26	4,16	4,32	4,10
SC-PRM	Cooling capacity (EN14511:2013)	(1) kW	89,7	101	111	119	130	143	159	185	203
SC-PRM	Total power input (EN14511:2013)	(1) kW	32,6	37,7	42,0	44,2	48,0	53,2	61,0	66,9	75,9
SC-PRM	EER (EN 14511:2013)	(1) -	2,75	2,67	2,64	2,70	2,71	2,69	2,61	2,76	2,67
SC-PRM	ESEER	(1) -	3,91	3,95	3,90	4,03	4,02	3,99	3,90	3,99	3,79
SC-EXC	Sound pressure level	(2) dB(A)	67	67	68	68	68	69	69	70	70
SC-PRM	Sound pressure level	(2) dB(A)	67	67	67	67	68	68	68	69	69
Refrigeration circuits		Nr	1	1	1	1	1	1	1	1	1
No. of compressors		Nr	2	2	2	2	2	2	2	2	2
Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
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	400/3/50
Size – WSAN-XEE			352	402	432	452	502	552	602	702	802
SC	Cooling capacity (EN14511:2013)	(1) kW	84,4	96,7	105	114	122	140	156	183	202
SC	Total power input (EN14511:2013)	(1) kW	32,7	36,5	41,3	43,6	48,5	51,3	60,8	66,9	76,5
SC	EER (EN 14511:2013)	(1) -	2,58	2,65	2,55	2,61	2,52	2,73	2,56	2,73	2,64
SC	ESEER	(1) -	3,43	3,56	3,54	3,54	3,56	3,49	3,40	3,35	3,31
SC	Heating capacity (EN14511:2013)	(3) kW	100	116	127	136	147	165	183	212	234
SC	Total power input (EN14511:2013)	(3) kW	32,6	36,7	40,4	42,1	45,8	51,0	57,1	65,3	72,6
SC	COP (EN 14511:2013)	(3) -	3,08	3,16	3,14	3,23	3,20	3,24	3,21	3,25	3,23
SC	Refrigeration circuits	Nr	1	1	1	1	1	1	1	1	1
SC	No. of compressors	Nr	2	2	2	2	2	2	2	2	2
SC	Type of compressors	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
SC	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	400/3/50
SC	Sound pressure level	(2) dB(A)	67	67	67	67	67	68	68	71	71
EN	Sound pressure level	(2) dB(A)	62	63	64	64	64	65	65	66	66

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 12/7°C; Entering eExternal exchanger 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. 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
- (3) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water temperature = 40/45°C. External exchanger air temperature 7 D.B. /6 (°C) W.B.
- SC-EXC Compressors soundproofing (SC)-Excellence
 SC-PRM Compressors soundproofing (SC)-Premium
 SC Compressors soundproofing (SC)
 EN Super-silenced (EN)

accessories

- 1PUS** Standard pump
- 1PU1SB** Standard pump with emergency pump
- 2PM** Hydropack 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 Energy Guard DCC Aluminum
- 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 to BACnet supervisor
- CMSC10** Serial communication module to LonWorks supervisor
- CMSC9** Serial communication module to Modbus supervisor
- SCP4** Set-point compensation with signal 0-10 V
- 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
- WSAT-XEE only:**
 - MF2** Multi-function phase monitor
 - 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
 - FANQ**
 - E** Electrical panel ventilation
 - SDV** Cutoff valve on compressor supply and return
- WSAN-XEE only:**
 - PM** Phase monitor
 - OHE** Limit extension kit in heating up to -10°C (W.B.)

Water chiller

WSAT-XIN: cooling only

WSAN-XIN: reversible heat pump

Air cooled

Outdoor installation

Capacity from 4 to 53 kW

DC Inverter



Unit listed on
www.eurovent-certification.com



ErP compliant
(WSAN-XIN)

functions and features



Cooling only
(WSAT-XIN)



Heat pump
(WSAN-XIN)



Air cooled



Outdoor installation



R-410A



Hermetic Scroll



Hermetic Rotary

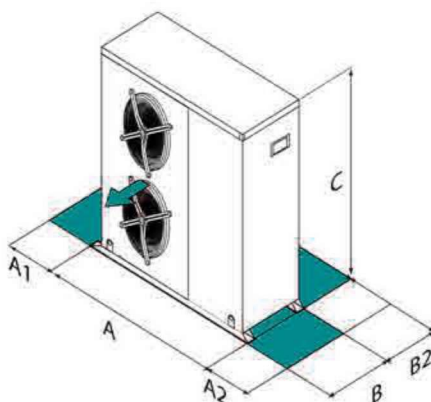


ELFOControl



Full Inverter DC

dimensions and clearances



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

ELFOEnergy Extended 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.
- **ADVANCED TECHNOLOGY:** Clivet's continuous improving has allowed to realize ELFOEnergy Extended Inverter with special design features: 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, water kit to simplify the hydronic circuit and make it easier to maintain. The unit can be equipped with a DC Inverter circulator (optional), providing further energy savings through the modulation of water flow depending on the building thermal load and pressure drop.
- **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.

Size - WSAT-XIN		21	31	41	51	71	81	91	101	121	131	141	151	161	171
EXC	A - Length	mm	942	942	942	1087	1087	1731	1731	1731	1731	1341	1341	1341	1341
EXC	B - Width	mm	433	433	433	445	445	724	724	724	724	1159	1159	1159	1146
EXC	C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1520	1520	1520	1770
EXC	A1	mm	400	400	400	400	400	400	400	400	1000	1000	1000	1000	1000
EXC	A2	mm	600	600	600	600	600	600	600	600	1000	1000	1000	1000	1000
EXC	B2	mm	400	400	400	400	400	400	400	400	1000	1000	1000	1000	1000
EXC	Operating weight	kg	112	116	124	170	175	230	230	230	300	290	300	320	390

Size - WSAT-XIN		21	31	41	51	71	81	91	101	121	131	141
PRM	A - Length	mm	942	942	942	1087	1087	1731	1731	1731	1731	1731
PRM	B - Width	mm	433	433	433	445	445	724	724	724	724	724
PRM	C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1517
PRM	A1	mm	400	400	400	400	400	400	400	400	400	400
PRM	A2	mm	600	600	600	600	600	600	600	600	600	600
PRM	B2	mm	400	400	400	400	400	400	400	400	400	400
PRM	Operating weight	kg	112	116	124	170	175	230	230	230	300	300

Size - WSAN-XIN		21	31	41	51	71	81	91	101	121	131	141	151	161	171
EXC	A - Length	mm	942	942	942	1087	1087	1731	1731	1731	1341	1341	1341	1341	1341
EXC	B - Width	mm	433	433	433	445	445	724	724	724	1159	1159	1159	1146	1146
EXC	C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1520	1520	1520	1770
EXC	A1	mm	400	400	400	400	400	400	400	400	1000	1000	1000	1000	1000
EXC	A2	mm	600	600	600	600	600	600	600	600	1000	1000	1000	1000	1000
EXC	B2	mm	400	400	400	400	400	400	400	400	1000	1000	1000	1000	1000
EXC	Operating weight	kg	112	116	124	170	175	240	240	240	310	300	310	330	400

Size - WSAN-XIN		21	31	41	51	71	81	91	101	121	131	141
PRM	A - Length	mm	942	942	942	1087	1087	1731	1731	1731	1731	1731
PRM	B - Width	mm	433	433	433	445	445	724	724	724	724	724
PRM	C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1517
PRM	A1	mm	400	400	400	400	400	400	400	400	400	400
PRM	A2	mm	600	600	600	600	600	600	600	600	600	600
PRM	B2	mm	400	400	400	400	400	400	400	400	400	400
PRM	Operating weight	kg	112	116	124	170	175	240	240	240	310	310

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.

PRM Premium

EXC

Excellence

versions and configurations

VERSION:

- **PRM** Premium (sizes 21÷141 only, Standard)
- **EXC** Excellence

VOLTAGE:

- **400TN** Supply voltage 400/3/50+N (sizes 51÷171 only, Standard)
- **230M** Supply voltage 230/1/50 (sizes 21÷71)

technical data

Size – WSAT-XIN				21	31	41	51	71	81	91	101	121	131	141	151	161	171
EXC	Cooling capacity (EN14511:2013)	(1)	kW	4,40	5,65	8,00	10,2	13,1	15,5	17,4	19,6	25,3	26,8	32,4	36,4	43,2	48,1
EXC	Total power input (EN14511:2013)	(1)	kW	1,58	2,04	2,91	3,78	5,12	5,18	6,26	7,83	8,69	8,56	10,2	12,2	14,4	16,4
EXC	EER (EN 14511:2013)	(1)	-	2,79	2,77	2,75	2,69	2,55	2,99	2,78	2,50	2,91	3,13	3,18	2,99	3,00	2,93
EXC	ESEER	(1)	-	4,42	4,09	4,43	4,28	4,76	5,18	5,13	4,90	5,39	4,18	4,27	3,88	3,80	3,75
EXC	Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
EXC	No. of compressors	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
EXC	Type of compressors	-		ROTARY INVERTER				SCROLL INVERTER									
EXC	Standard airflow	l/s		653	1028	1028	2081	1996	2222	2306	2444	2778	4694	4694	5139	5649	5833
EXC	Water flow-rate (User Side)	l/s		0,21	0,27	0,38	0,49	0,63	0,74	0,83	0,94	1,21	1,28	1,55	1,74	2,06	2,30
EXC	Useful pump discharge head	kPa		57	53	43	45	45	64	62	58	72	124	122	112	98	83
EXC	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	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
EXC	Sound pressure level	(3)	dB(A)	49	49	49	53	54	56	56	57	55	63	69	70	73	73

Size – WSAT-XIN				21	31	41	51	71	81	91	101	121	131	141	151	161	171
PRM	Cooling capacity (EN14511:2013)	(1)	kW	4,39	5,64	8,01	10,1	13,1	15,5	17,5	19,6	25,3	27,8	30,6			
PRM	Total power input (EN14511:2013)	(1)	kW	1,65	2,11	2,99	3,88	5,22	5,53	6,53	8,03	9,57	10,8	12,8			
PRM	EER (EN 14511:2013)	(1)	-	2,66	2,68	2,68	2,61	2,50	2,81	2,68	2,44	2,64	2,58	2,38			
PRM	ESEER	(1)	-	3,83	3,70	3,88	4,08	4,12	4,33	4,39	4,50	4,23	4,36	4,39			
PRM	Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PRM	No. of compressors	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PRM	Type of compressors	-		ROTARY INVERTER				SCROLL INVERTER									
PRM	Standard airflow	l/s		653	1028	1028	2081	1996	2167	2389	2444	3333	3889	4167			
PRM	Water flow-rate (User Side)	l/s		0,21	0,27	0,38	0,48	0,63	0,74	0,84	0,94	1,21	1,33	1,46			
PRM	Useful pump discharge head	kPa		64	61	61	55	66	77	73	69	70	65	58			
PRM	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	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
PRM	Sound pressure level	(3)	dB(A)	49	49	49	53	54	56	56	57	55	56	57			

Size – WSAN-XIN				21	31	41	51	71	81	91	101	121	131	141	151	161	171
EXC	Cooling capacity (EN14511:2013)	(1)	kW	3,88	5,24	6,10	8,84	11,7	15,4	16,8	19,4	24,1	28,2	32,5	38,2	43,6	49,2
EXC	Total power input (EN14511:2013)	(1)	kW	1,50	2,05	2,34	3,44	4,55	5,52	6,06	8,15	9,41	10,3	12,2	14,4	16,2	19,1
EXC	EER (EN 14511:2013)	(1)	-	2,58	2,55	2,61	2,57	2,79	2,77	2,38	2,56	2,74	2,67	2,66	2,69	2,58	
EXC	ESEER	(1)	-	4,41	4,07	3,86	4,17	4,81	5,01	5,14	4,70	5,13	4,14	4,00	3,69	3,66	3,55
EXC	Heating capacity (EN14511:2013)	(2)	kW	5,19	6,54	8,25	11,5	13,8	16,2	18,6	20,5	25,8	27,2	31,9	36,7	43,0	49,3
EXC	Total power input (EN14511:2013)	(2)	kW	1,60	2,02	2,57	3,61	4,33	5,05	5,92	7,00	8,04	8,58	9,88	11,5	13,6	15,7
EXC	COP (EN 14511:2013)	(2)	-	3,24	3,23	3,21	3,19	3,19	3,21	3,14	2,93	3,21	3,17	3,23	3,20	3,17	3,14
EXC	Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
EXC	No. of compressors	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
EXC	Type of compressors	-		ROTARY INVERTER				SCROLL INVERTER									
EXC	Standard airflow	l/s		653	1028	1028	2056	1996	2222	2306	2444	2778	4694	4694	5648	6672	6861
EXC	Water flow-rate (User Side)	l/s		0,19	0,25	0,29	0,42	0,56	0,74	0,80	0,93	1,15	1,35	1,55	1,83	2,08	2,35
EXC	Useful pump discharge head	kPa		59	55	52	50	50	64	62	58	74	118	122	107	97	79
EXC	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	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
EXC	Sound pressure level	(3)	dB(A)	49	49	49	53	54	56	56	57	55	63	69	70	73	73
Directive ErP (Energy Related Products)																	
EXC	ErP Energy Class - AVERAGE Climate - W35			A+	A+	A+	A+	A+	A+	A+	A+	A+	A	A	A	A	A
EXC	ErP Energy Class - AVERAGE Climate - W55			A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	-	-	-	-

Size – WSAN-XIN				21	31	41	51	71	81	91	101	121	131	141	151	161	171
PRM	Cooling capacity (EN14511:2013)	(1)	kW	3,88	5,24	6,11	8,84	11,7	15,5	16,8	19,5	24,0	26,6	29,1			
PRM	Total power input (EN14511:2013)	(1)	kW	1,52	2,04	2,32	3,35	4,45	5,92	6,36	8,37	10,3	11,5	13,3			
PRM	EER (EN 14511:2013)	(1)	-	2,55	2,57	2,63	2,64	2,63	2,62	2,64	2,33	2,33	2,32	2,18			
PRM	ESEER	(1)	-	3,82	3,71	3,47	4,06	4,43	4,17	4,36	4,30	3,84	4,03	4,23			
PRM	Heating capacity (EN14511:2013)	(2)	kW	5,19	6,54	8,25	11,5	13,8	16,2	18,5	20,4	25,8	28,2	31,5			
PRM	Total power input (EN14511:2013)	(2)	kW	1,66	2,08	2,65	3,65	4,42	5,44	6,23	7,16	8,93	9,79	11,4			
PRM	COP (EN 14511:2013)	(2)	-	3,12	3,14	3,11	3,15	3,12	2,98	2,97	2,85	2,89	2,88	2,77			
PRM	Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PRM	No. of compressors	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PRM	Type of compressors	-		ROTARY INVERTER				SCROLL INVERTER									
PRM	Standard airflow	l/s		653	1028	1028	2056	1996	2222	2306	2444	2778	3056	3172			
PRM	Water flow-rate (User Side)	l/s		0,19	0,25	0,29	0,42	0,56	0,74	0,80	0,93	1,15	1,27	1,39			
PRM	Useful pump discharge head	kPa		66	62	73	63	72	77	75	70	73	68	62			
PRM	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	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
PRM	Sound pressure level	(3)	dB(A)	49	49	49	53	54	56	56	57	55	56	57			
Directive ErP (Energy Related Products)																	
PRM	ErP Energy Class - AVERAGE Climate - W35			A+	A+	A+	A+	A+	A+	A+	A+	A+	A	A+	A+	A+	A+
PRM	ErP Energy Class - AVERAGE Climate - W55			A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+	A+

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 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 14511:2013 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

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions).

PRM Premium
EXC Excellence

Water chiller

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



ELFOEnergy Magnum

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 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.

► **ADVANCED TECHNOLOGY:** The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the temperature, and prevents blocks due to overloads in the event of critical conditions.

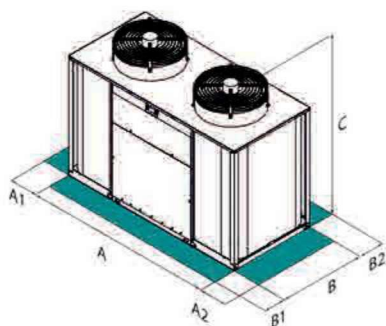
► **MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE:** The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.



functions and features



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		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	1160	1160	1160	1160	1160	1160	1160
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	585	595	634	676	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	1160	1160	1160	1160	1160	1160	1160
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

technical data

Size - WSAT-XIN			18.2	20.2	25.2	30.2	35.2	40.2	45.2
■ Cooling capacity (EN14511:2013)	(1)	kW	50,1	62,7	74,3	86,3	99,1	112	124
Total power input (EN14511:2013)	(1)	kW	16,1	20,2	23,9	27,6	31,8	36,1	40,1
EER (EN 14511:2013)	(1)	-	3,12	3,10	3,11	3,13	3,12	3,11	3,10
ESEER	(1)	-	4,18	4,05	4,03	4,04	4,19	4,03	4,07
Refrigeration circuits		Nr	2	2	2	2	2	2	2
No. of compressors		Nr	2	2	2	2	2	2	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	2,40	3,00	3,50	4,10	4,70	5,40	5,90
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
Sound pressure level	(3)	dB(A)	65	65	66	66	68	68	69
Size - WSAN-XIN			18.2	20.2	25.2	30.2	35.2	40.2	45.2
■ Cooling capacity (EN14511:2013)	(1)	kW	49,6	59,3	69,5	82,2	92,5	106	120
Total power input (EN14511:2013)	(1)	kW	16,9	20,6	23,6	28,8	33,6	38,8	46,0
EER (EN 14511:2013)	(1)	-	2,93	2,88	2,94	2,85	2,75	2,72	2,60
ESEER	(1)	-	3,96	3,81	3,79	3,82	3,77	3,86	3,96
■ Heating capacity (EN14511:2013)	(2)	kW	56,0	68,4	78,1	93,0	106	123	140
Total power input (EN14511:2013)	(2)	kW	17,5	21,3	24,4	29,0	33,1	38,2	43,6
COP (EN 14511:2013)	(2)	-	3,20	3,21	3,20	3,21	3,21	3,21	3,20
Refrigeration circuits		Nr	2	2	2	2	2	2	2
No. of compressors		Nr	2	2	2	2	2	2	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	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	(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+	-	-	-

Notes

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

- (1) Data compliant to Standard EN 14511:2013 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 UNI-EN14511:2013 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

accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **HYG1** Hydronic assembly unit with 1 ON/OFF pump
- **HYG2** Hydronic assembly unit with 2 ON/OFF pumps
- **VARYP** VARYFLOW + (2 inverter pumps)
- **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 (cosφ > 0.9)

WSAN-XIN only:

- **VACS** DHW switching valve: required

Key to symbols:

- Accessories separately supplied

Multifunction reversible heat pump

Air cooled

Outdoor installation

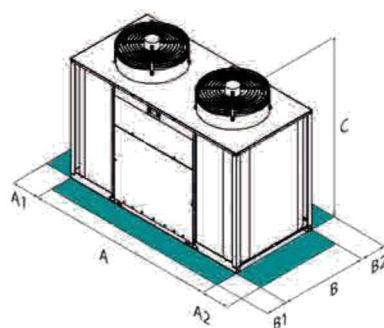
Capacity from 49,8 to 120 kW



functions and features



dimensions and clearances



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

ELFOEnergy Magnum MF

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.

ELFOEnergy Magnum Multifunction 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 Multifunction:

- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the pressure or temperature, and prevents blocks due to overloads in the event of critical conditions.
- **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.

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	1160	1160	1160	1160	1160	1160	1160
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.

* PRELIMINARY DATA

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 - WSA-N-XIN MF			18.2	20.2	25.2	30.2	35.2*	40.2*	45.2*
COOLING 0% - HEATING 100%									
Heating capacity	(1)	kW	56,8	68,5	79,4	94,5	108	125	142
Compressor power input	(1)		14,7	18,3	20,8	25,3	29	33,3	38,5
Total power input	(1)	kW	16,8	20,5	23,6	28	32	36,7	41,9
COP at full load	(1)	-	3,39	3,35	3,37	3,38	3,38	3,42	3,38
COOLING 100% - HEATING 0%									
Cooling capacity	(2)	kW	49,8	59,6	69,7	82,5	93,2	107	120
Compressor power input	(2)		14,5	18,1	20,5	25,6	30,2	34,8	42,2
Total power input	(2)	kW	16,7	20,3	23,4	28,5	33,2	38,2	45,6
EER at full load	(2)	-	2,98	2,94	2,98	2,9	2,81	2,8	2,63
COOLING 100% - HEATING 100%									
Cooling capacity	(3)	kW	49,9	59,8	69,7	82,9	94,9	110	127
Heating capacity	(3)	kW	64,7	77,7	90,4	107	124	143	164
Total power input	(3)	kW	14,8	17,9	20,7	24,5	28,6	33,3	37,6
Overall efficiency	(4)	-	7,73	7,69	7,72	7,76	7,63	7,59	7,73
Refrigeration circuits	Nr		2	2	2	2	2	2	2
No. of compressors	Nr		2	2	2	2	2	2	2
Type of compressors	-		INVERTER + ON/OFF SCROLL						
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
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+	-	-	-

Notes

- (1) Data refer to the following conditions: internal water exchanger = 40/45°C; outdoor air temperature 7°C D.B. / 6°C W.B.
- (2) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- (3) Data referred to the following conditions: - Internal exchanger water (evaporator) = 12/7°C - external exchanger water (condenser) = 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: internal water exchanger = 12/7 °C; outdoor air temperature 35°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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

* PRELIMINARY DATA

accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Aluminium Energy Guard DCC treatment
- **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
- **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 grill
- **PGFCX** Finned coil protection grill
- **AVIBX** Anti-vibration mount support
- **IFWX** Steel mesh strainer on the water side
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **ACC** Storage tank (sizes 35.2÷45.2)

Key to symbols:

- Accessories separately supplied

Water chiller

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



Unit listed on
www.eurovent-certification.com



ErP compliant
(WSAN-XEM)

ELFOEnergy Magnum

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.

ELFOEnergy Magnum is available in the two EXCELLENCE and PREMIUM versions. The EXCELLENCE version offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.

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.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the temperature, and prevents blocks due to overloads in the event of critical conditions.
- **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

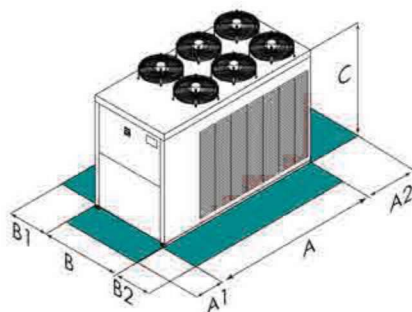


AxTop



VaryFlow

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-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	5200	5200	5200
EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250
EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300
EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500
EXC	A2	mm	750	750	750	750	750	750	750	750	750
EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	Operating weight	kg	1511	1524	1589	1739	2278	2392	2573	2882	3214

Size - WSAT-XEM		70.4"	80.4"	90.4"	100.4"	110.4"	120.4"
PRM	A - Length	mm	3800	3800	4400	4400	5200
PRM	B - Width	mm	2250	2250	2250	2250	2250
PRM	C - Height	mm	2300	2300	2300	2300	2300
PRM	A1	mm	1500	1500	1500	1500	1500
PRM	A2	mm	750	750	750	750	750
PRM	B1	mm	1500	1500	1500	1500	1500
PRM	B2	mm	1500	1500	1500	1500	1500
PRM	Operating weight	kg	2135	2244	2465	2649	2757

Size - WSAT-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	5200	5200	5200
EXC	B - Width	mm	1812	1812	1812	1812	2250	2250	2250	2250	2250
EXC	C - Height	mm	1800	1800	1800	1800	2300	2300	2300	2300	2300
EXC	A1	mm	1300	1300	1300	1300	1500	1500	1500	1500	1500
EXC	A2	mm	750	750	750	750	750	750	750	750	750
EXC	B1	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	B2	mm	1100	1100	1100	1100	1500	1500	1500	1500	1500
EXC	Operating weight	kg	1590	1604	1673	1831	2420	2540	2681	3114	3338

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

versions and configurations

ENERGY RECOVERY:

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

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*
EXC	Cooling capacity (EN14511:2013)	(1)	kW	143	157	170	182	197	223	259	287	317	354
EXC	Total power input(EN14511:2013)	(1)	kW	45,8	50,3	54,8	58,5	63,0	71,5	83,6	91,7	101	114
EXC	EER (EN14511:2013)	(1)	-	3,11	3,12	3,11	3,11	3,12	3,12	3,10	3,13	3,13	3,10
EXC	ESEER	(1)	-	4,25	4,28	4,26	4,28	4,24	4,26	4,28	4,32	4,32	4,20
EXC	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2
EXC	No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4
EXC	Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
EXC	Standard airflow		l/s	20700	19900	19900	19500	23850	22950	22950	33850	33600	33280
EXC	Water flow-rate (User Side)		l/s	6,8	7,5	8,1	8,7	9,4	10,7	12,4	13,7	15,1	16,9
EXC	Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
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
PRM	Cooling capacity (EN14511:2013)	(1)	kW	183	207	242	261	288	330
PRM	Total power input (EN14511:2013)	(1)	kW	66,9	76,0	89,3	96,4	105	122
PRM	EER (EN14511:2013)	(1)	-	2,74	2,73	2,71	2,71	2,73	2,71
PRM	ESEER	(1)	-	4,02	4,06	4,14	4,18	4,19	4,04
PRM	Refrigeration circuits		Nr	2	2	2	2	2	2
PRM	No. of compressors		Nr	4	4	4	4	4	4
PRM	Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
PRM	Standard airflow		l/s	23800	23550	24450	24450	23900	34450
PRM	Water flow-rate (User Side)		l/s	8,7	9,9	11,6	12,5	13,7	15,8
PRM	Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PRM	Sound pressure level	(3)	dB(A)	68	68	68	72	72	72

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 (EN14511:2013)	(1)	kW	139	148	160	170	184	208	235	273	296	321
EXC	Total power input(EN14511:2013)	(1)	kW	48,7	53,6	58,4	63,7	67,6	77,0	92,7	98,1	110	126
EXC	EER (EN14511:2013)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
EXC	ESEER	(1)	-	4,10	4,06	4,12	4,14	3,99	4,18	4,09	3,95	3,95	4,00
EXC	Heating capacity (EN14511:2013)	(2)	kW	155	167	183	194	210	239	274	313	340	378
EXC	Total power input (EN14511:2013)	(2)	kW	47,9	52,3	56,5	60,1	65,3	74,3	85,1	97,5	106	118
EXC	COP (EN14511:2013)	(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	2	2	2	2	2	2	2	2	2
EXC	No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4
EXC	Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
EXC	Standard airflow		l/s	20300	20300	20000	20000	25000	24200	24200	35000	35000	35000
EXC	Water flow-rate (User Side)		l/s	6,6	7,1	7,6	8,1	8,8	9,9	11,2	13,1	14,1	15,4
EXC	Standard power supply		V	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72

Notes

- (1) Data compliant to Standard EN 14511:2013 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 14511:2013 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

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

* PRELIMINARY DATA

Elfo Energy Magnum FC (FreeCooling)

technical data

Size - WSAT-XEM FC				50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
FREE-COOLING OFF													
Cooling capacity	(1)	kW		162	173	186	198	214	243	273	319	345	375
Total power input	(1)	kW		46,8	50,4	54,1	57,8	62,2	70,7	79,8	92,8	100	109
EER at full load	(1)	-		3,46	3,43	3,45	3,42	3,45	3,43	3,42	3,43	3,45	3,42
FREE-COOLING													
Cooling capacity	(2)	kW		132	145	153	166	186	204	215	276	280	287
Total power input	(2)	kW		4,80	4,80	4,80	4,80	6,40	6,40	6,40	9,60	9,60	9,60
EER at full load	(2)	-		27,4	30,3	31,9	34,6	29,0	31,8	33,6	28,8	29,2	29,9
Refrigeration circuits		Nr		2	2	2	2	2	2	2	2	2	2
No. of compressors		Nr		2	2	2	4	4	4	4	4	4	4
Type of compressors		-		ON/OFF SCROLL									
Standard power supply		V		400/3/50+N									

Notes

- (1) Data referred to the following conditions: internal exchanger water = 15/10 °C; glycol 30%; entering external exchanger air temperature 30°C
- (2) Internal exchanger water temperature = 15 / 10°C; External exchanger entering air temperature = 2°C D.B. / 1°C W.B.; Glycol 30%

PRELIMINARY DATA

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



ELFOEnergy Magnum HW

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:

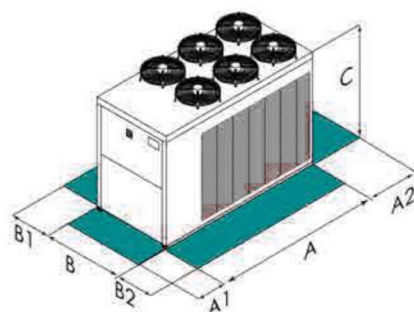
- **HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.
- **EXTENDED OPERATING RANGE**: Operation with outdoor air temperature down to -20°C and hot water production at 55°C. Hot water production up to 65°C at outdoor temperatures of down to -13°C.
- **ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the pressure or temperature, and prevents blocks due to overloads in the event of critical conditions.
- **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



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 (EN14511:2013)	(1)	kW	85,8	98,3	110	118	131	150
Total power input (EN14511:2013)	(1)	kW	31,5	35,4	37,5	41,7	48,4	54,8
EER (EN 14511:2013)	(1)	-	2,73	2,78	2,93	2,83	2,71	2,73
ESEER	(1)	-	3,63	3,73	4,05	3,67	3,52	3,38
• Heating capacity (EN14511:2013)	(2)	kW	109	123	134	144	165	185
Total power input (EN14511:2013)	(2)	kW	31,8	34,9	37,9	41,6	48,2	54,5
COP (EN 14511:2013)	(2)	-	3,43	3,52	3,53	3,45	3,42	3,39
Refrigeration circuits	Nr		2	2	2	2	2	2
No. of compressors	Nr		4	4	4	4	4	4
Type of compressors	-		Scroll	Scroll	Scroll	Scroll	Scroll	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	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level	(3)	dB(A)	67	67	67	67	69	69

Notes

- (1) Data compliant to Standard EN 14511:2013 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 14511:2013 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

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) 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 unit with 1 ON/OFF pump
- **HYG2** Hydronic assembly unit 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 to supervisor (Modbus)
- **PFCP** Power factor correction capacitors (cosφ > 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

Key to symbols:

- Accessories separately supplied

Water chiller

WSAT-XSC3: cooling only

WSAN-XSC3: reversible heat pump

Air cooled

Outdoor installation

Capacity from 243 to 1350 kW



SPINchiller³

The SPINchiller³ heat pumps and liquid chillers ensure maximum energy efficiency over the entire operation cycle.

- **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller³ employs modular Scroll technology with several compressors on the same refrigeration circuit, electronic expansion valves and plate evaporators with highly efficient heat exchange. It stands out for the very high ESEER efficiency during the seasonal operation cycle.
- **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.
- **FOR ALL SYSTEM APPLICATIONS** - SPINchiller³ is available in four distinct series: Liquid chiller, Liquid chiller with direct free-cooling or glycol-free, Reversible heat pump, Multifunction heat pump to simultaneously generate chilled water, hot water and domestic water. All models have a dual refrigeration circuit.
- **SILENT** - The low sound emissions are the result of the optimal size of the exchange surfaces, the use of high efficiency fans fitted with wing profiles with "winglets" and the innovative AxioTop diffusers with kinetic energy recovery.
- **INDUSTRIALISED SYSTEM** - The units can be installed easily and quickly thanks to the quick connections towards the user circuit, to the fact that they are already set up for electrical connections and thanks to the full operating test before shipping. They can also be provided with pumping units already installed, thereby integrating all the main components of the system in a single solution.



Unit listed on
www.eurovent-certification.com



ErP compliant
(WSAN-XSC3)

functions and features



Cooling only
(WSAT-XSC3)



Heat pump
(WSAN-XSC3)



Air cooled



Outdoor installation



R-410A



Hermetic Scroll



HydroPack

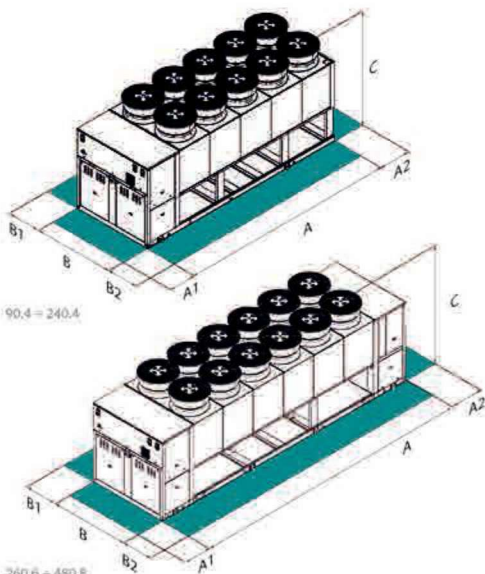


AxioTop



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 - WSAT-XSC3	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	400.8	440.8	480.8
SC-EXC A - Length	mm	4149	4149	4149	4149	5124	5124	5124	5124	5994	5994	5994	5994	7948	7948	7948	7948	7948	7948
SC-EXC B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
SC-EXC C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-EXC A1	mm	1500	1500	1500	1500	1500	1500	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	700	700	700	700	700	700
SC-EXC B1	mm	1200	1200	1200	1200	1200	1200	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	1200	1200	1200	1200	1200	1200
SC-EXC Operating weight	kg	2704	2836	2869	2979	3428	3528	3899	4384	4538	4676	5837	5963	6692	6881	7138	7375	8768	9076

Size - WSAT-XSC3	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	400.8	440.8	480.8
SC-PRM A - Length	mm	4149	4149	4149	5124	5124	5994	5994	5994	5994	7948	7948	7948	7948	7948	7948
SC-PRM B - Width	mm	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243	2243
SC-PRM C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-PRM A1	mm	1500	1500	1500	1500	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	700	700	700	700
SC-PRM B1	mm	1200	1200	1200	1200	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	1200	1200	1200	1200
SC-PRM Operating weight	kg	2839	2984	3070	3609	3754	4296	4510	5413	5527	5982	6119	6338	6537	7508	8592

Size - WSAN-XSC3	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	400.8	440.8	480.8
SC-EXC A - Length	mm	4151	4151	4151	5126	5126	5995	5995	5995	5995	7948	7948	7948	7948	7948	7948	7948	7948	7948
SC-EXC B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-EXC C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC-EXC A1	mm	1500	1500	1500	1500	1500	1500	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	700	700	700	700	700	700
SC-EXC B1	mm	1200	1200	1200	1200	1200	1200	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	1200	1200	1200	1200	1200	1200
SC-EXC Operating weight	kg	3079	3118	3165	3326	3736	3830	4627	4680	4838	4956	7062	7472	7566	7660	8457	9254	9360	9912

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

versions and configurations

LOW TEMPERATURE:

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

VERSION:

- EXC Excellence (Standard)
- PRM Premium (WSAT-XSC3 only) (sizes 120.4÷480.8)

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- D Partial energy recovery
- R Total energy recovery (WSAT-XSC3 only)

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			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	400.8	440.8	480.8	
SC-EXC	Cooling capacity (EN14511:2013)	(1)	kW	267	290	316	353	405	459	513	572	621	675	734	791	852	905	961	1016	1143	1242	1350
SC-EXC	Total power input (EN14511:2013)	(1)	kW	85,8	92,9	102	114	130	145	165	181	200	218	236	253	274	291	309	328	362	400	435
SC-EXC	EER (EN14511:2013)	(1)	-	3,11	3,12	3,10	3,10	3,11	3,16	3,10	3,16	3,10	3,10	3,11	3,13	3,12	3,11	3,10	3,10	3,16	3,10	3,10
SC-EXC	ESEER	(1)	-	4,31	4,37	4,35	4,35	4,40	4,54	4,51	4,40	4,38	4,44	4,51	4,54	4,52	4,51	4,50	4,50	4,47	4,46	4,52
SC-EXC	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4
SC-EXC	No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4	6	6	6	6	6	6	8	8	8
SC-EXC	Type of compressors		-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
SC-EXC	Standard power supply		l/s	36628	36204	36187	34999	48272	46666	45657	58332	57703	57073	73120	72035	97494	96046	95118	94191	116663	115405	114147
SC-EXC	Water flow-rate (User side)		l/s	12,8	13,8	15,1	16,8	19,4	21,9	24,5	27,3	29,7	32,3	35,0	37,8	40,7	43,3	45,9	48,5	54,6	59,4	64,5
SC-EXC	Standard power supply		V	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50
SC-EXC	Sound pressure level	(3)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	75	75	75	76	75	75	76

Size – WSAT-XSC3			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	400.8	440.8	480.8	
SC-PRM	Cooling capacity (EN14511:2013)	(1)	kW	333	379	421	490	529	594	645	693	742	798	848	895	942	1058	1187	1291
SC-PRM	Total power input (EN14511:2013)	(1)	kW	120	136	151	174	189	211	229	246	265	287	306	326	346	382	427	462
SC-PRM	EER (EN14511:2013)	(1)	-	2,77	2,80	2,78	2,82	2,80	2,81	2,82	2,82	2,80	2,79	2,77	2,75	2,72	2,77	2,78	2,80
SC-PRM	ESEER	(1)	-	4,11	4,15	4,12	4,12	4,06	4,12	4,10	4,41	4,38	4,36	4,34	4,30	4,26	4,07	4,09	4,11
SC-PRM	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4
SC-PRM	No. of compressors		Nr	4	4	4	4	4	4	4	6	6	6	6	6	6	8	8	8
SC-PRM	Type of compressors		-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
SC-PRM	Standard power supply		l/s	37459	37103	36017	49946	49471	62135	60028	60934	60029	73120	72035	71339	70643	98941	124271	120057
SC-PRM	Water flow-rate (User side)		l/s	15,9	18,1	20,1	23,4	25,3	28,4	30,8	33,1	35,5	38,1	40,5	42,8	45,0	50,5	56,7	61,7
SC-PRM	Standard power supply		V	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50
SC-PRM	Sound pressure level	(3)	dB(A)	72	72	73	74	74	74	75	72	73	74	74	75	75	76	75	76

Size – WSAN-XSC3			90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8	
SC-EXC	Cooling capacity (EN14511:2013)	(1)	kW	243	262	290	322	369	416	473	518	557	593	692	739	785	831	888	945	1037	1115	1186
SC-EXC	Total power input (EN14511:2013)	(1)	kW	88,7	96,1	105	119	137	151	175	189	206	226	256	273	288	303	326	350	378	412	453
SC-EXC	EER (EN14511:2013)	(1)	-	2,74	2,73	2,75	2,70	2,70	2,75	2,70	2,74	2,70	2,62	2,70	2,70	2,73	2,75	2,72	2,70	2,74	2,70	2,62
SC-EXC	ESEER	(1)	-	3,94	3,99	4,00	3,99	3,97	4,09	4,07	4,12	4,11	4,02	4,05	4,07	4,15	4,18	4,12	4,14	4,19	4,18	4,09
SC-EXC	Heating capacity (EN14511:2013)	(2)	kW	283	312	340	378	426	471	543	600	646	696	803	852	897	942	1014	1086	1201	1292	1391
SC-EXC	Total power input (EN14511:2013)	(2)	kW	88,5	97,1	105	115	131	145	169	184	202	217	246	261	275	290	314	338	369	404	435
SC-EXC	COP (EN 14511:2013)	(2)	-	3,20	3,22	3,22	3,28	3,26	3,25	3,22	3,25	3,20	3,20	3,27	3,26	3,26	3,25	3,23	3,22	3,25	3,20	3,20
SC-EXC	Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4
SC-EXC	No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	8	8	8	8
SC-EXC	Type of compressors		-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
SC-EXC	Standard power supply		l/s	37357	37357	36797	36365	49807	49063	62677	61219	60854	60489	86172	99614	98871	98127	111741	125354	122438	121708	120979
SC-EXC	Water flow-rate (User side)		l/s	11,6	12,5	13,8	15,4	17,7	19,9	22,6	24,8	26,6	28,3	33,0	35,3	37,5	39,7	42,4	45,2	49,5	53,3	56,7
SC-EXC	Standard power supply		V	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50
SC-EXC	Sound pressure level	(3)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	74	74	74	75	75	75	76

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 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 14511:2013 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

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

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

Multifunction reversible heat pump
Air cooled
Outdoor installation
Capacity from 258 to 1296 kW

SPINchiller³ MF



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

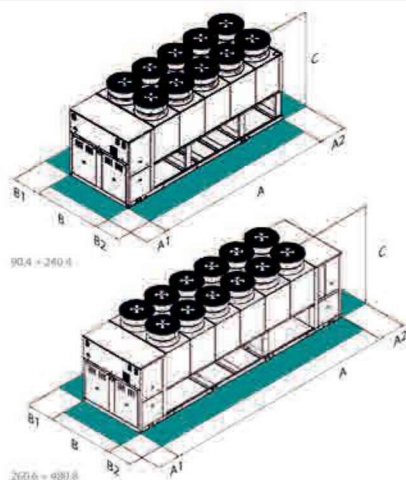
- **VERSATILE AND EFFICIENT** - Thanks to the total energy recovery reversible heat pump technology, the unit meets practically every chilled water, hot water and domestic hot water system requirement automatically and with high energy efficiency in all load conditions.
- **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller³ employs modular Scroll technology with several compressors on the same refrigeration circuit, electronic expansion valves and plate evaporators with highly efficient heat exchange. It stands out for the very high ESEER 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: selection and sizing of components; mechanical and hydraulic connections; electrical and adjustment wiring; functional testing.



functions and features



dimensions and clearances



Size - WSAN-XSC3 MF	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8
A - Length	4151	4151	4151	4151	5126	5126	5995	5995	5995	5995	9317	10294	10294	10294	11215	12122	12122	12122	12122
B - Width	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
C - Height	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668	2668
A1	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535	1535
A2	700	700	700	700	700	700	700	700	700	700	1535	1535	1535	1535	1535	1535	1535	1535	1535
B1	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
B2	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200

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)

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

DOUBLE SET POINT:

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

technical data

Size – WSA-N-XSC3 MF				90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4	260.8	280.8	300.8	320.8	340.8	360.8	400.8	440.8	480.8	
COOLING 0% - HEATING 100%																							
SC-4T	▶ Heating capacity	(1)	kW	296	327	356	397	446	494	568	629	677	731	843	892	940	988	1062	1136	1258	1354	1462	
SC-4T	Total power input	(1)	kW	82.9	90.8	98	108	122	135	157	173	189	203	230	244	257	270	292	314	346	378	406	
SC-4T	COP	(1)	-	3,57	3,60	3,63	3,68	3,66	3,66	3,62	3,64	3,58	3,60	3,67	3,66	3,66	3,66	3,64	3,62	3,64	3,58	3,60	
COOLING 100% - HEATING 0%																							
SC-4T	▶ Cooling capacity	(2)	kW	258	274	297	339	383	433	502	543	600	648	722	766	816	866	935	1004	1086	1200	1296	
SC-4T	Total power input	(2)	kW	88,8	96,1	105	119	137	151	175	189	206	227	256	274	288	302	326	350	378	412	454	
SC-4T	EER	(2)	-	2,91	2,85	2,83	2,85	2,80	2,87	2,87	2,87	2,91	2,85	2,82	2,80	2,83	2,87	2,87	2,87	2,87	2,91	2,85	
COOLING 100% - HEATING 100%																							
SC-4T	▶ Cooling capacity	(3)	kW	255	275	305	344	397	442	509	556	612	670	741	794	839	884	951	1018	1112	1224	1340	
SC-4T	▶ Heating capacity	(3)	kW	331	357	396	447	513	573	658	720	794	866	960	1026	1086	1146	1231	1316	1440	1588	1732	
SC-4T	Total power input	(3)	kW	76,6	82,6	91,2	103	117	132	150	164	183	197	220	234	249	264	282	300	328	366	394	
SC-4T	Overall efficiency	(4)	-	7,65	7,65	7,69	7,68	7,78	7,69	7,78	7,78	7,68	7,80	7,73	7,78	7,73	7,69	7,74	7,78	7,78	7,68	7,80	
Refrigeration circuits			Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
No. of compressors			Nr	4	4	4	4	4	4	4	4	4	4	4	8	8	8	8	8	8	8	8	
Type of compressors			-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	
Standard power supply			V	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	400V-50	
Sound pressure level			(5)	dB(A)	72	72	72	72	72	73	74	74	74	75	73	73	74	74	74	75	75	75	76

Notes

- (1) Data referred to the following conditions: internal exchanger water = 40/45 °C; external exchanger air temperature 7 D.B./6°C W.B.
- (2) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C
- (3) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air 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: internal water exchanger = 12/7 °C; outdoor air temperature 35°C

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

accessories

- ▶ **PIU20** Minimum outdoor air temperature up to +20°C
- ▶ **PIU5** Minimum outdoor air temperature up to +5°C
- ▶ **MEN10G** Minimum outdoor air temperature down to -10°C
- ▶ **MEN15** Minimum outdoor air temperature down to -15°C
- ▶ **MEN15A** Minimum outdoor air temperature with unit powered on but not operational down to -15°C
- ▶ **MEN18A** Minimum outdoor air temperature with unit powered on but not operational down to -18°C
- ▶ **MEN20A** Minimum outdoor air temperature with unit powered on but not operational down to -20°C
- ▶ **MEN25A** Minimum outdoor air temperature with unit powered on but not operational down to -25°C
- ▶ **MEN30A** Minimum outdoor air temperature with unit powered on but not operational down to -30°C
- ▶ **MEN35A** Minimum outdoor air temperature with unit powered on but not operational down to -35°C
- ▶ **MEN39A** Minimum outdoor air temperature with unit powered on but not operational down to -39°C
- ▶ **CREFB** Device for consumption reduction of the external section ECOBREEZE fans
- ▶ **2PM** Hydopack load side with 2 pumps
- ▶ **3PM** Hydopack load side with 3 pumps
- ▶ **2PMV** Hydopack user side with no.2 of inverter pumps (sizes 90.4÷120.4)
- ▶ **3PMV** Hydopack user side with no.3 of inverter pumps
- ▶ **IVFDT** Inverter driven variable flow-rate user side control depending on the temperature differential
- ▶ **HYGR2V** Recovery side hydronic unit with 2 inverter pumps (sizes 90.4÷120.4)
- ▶ **HYGR3V** Hydronic assembly recovery side with no.3 of inverter pumps
- ▶ **IRVFD** Inverter driven variable flow-rate recovery side control depending on the temperature differential
- ▶ **IFWX** Steel mesh strainer on the water side
- ▶ **CSVX** Couple of manual shut-off valves
- ▶ **CAU** Storage tank connection user side
- ▶ **CAR** Storage tank connection recovery side
- ▶ **A550** 550 l. storage tank (sizes 90.4÷120.4)
- ▶ **A700** 700 l. storage tank (sizes 140.4÷160.4)
- ▶ **A900** 900 l. storage tank (sizes 180.4÷240.4)
- ▶ **A550PPS** 550 l. storage tank with primary circuit with built-in pump (sizes 90.4÷120.4)
- ▶ **A700PPS** 700 l. storage tank with primary circuit with built-in pump (sizes 140.4÷160.4)
- ▶ **A900PPS** 900 l. storage tank with primary circuit with built-in pump (sizes 180.4÷240.4)
- ▶ **CCCA** Copper / aluminium condenser coil with acrylic lining
- ▶ **CCCA1** Condenser coil with Energy Guard DCC Aluminum
- ▶ **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 to LonWorks supervisor
- ▶ **CMSC9** Serial communication module to Modbus supervisor
- ▶ **CMSC11** Serial communication module for BACnet-IP supervisor
- ▶ **SPC1** Set point compensation with 4-20 mA signal
- ▶ **SCP4** Set-point compensation with signal 0-10 V
- ▶ **SPC2** Set-point compensation with outdoor air temperature probe
- ▶ **DML0-10** Demand limit with signal 0-10V
- ▶ **DML4-20** Demand limit with signal 4-20mA
- ▶ **ECS** ECOSHARE function for the automatic management of a group of units
- ▶ **PFCCP** Power factor correction capacitors (cosφ > 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.)

Key to symbols and notes

- Accessories separately supplied

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

Water cooler in two sections
Air-cooled condenser
Internal installation
Capacity from 246 to 2019 kW

Remotex

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

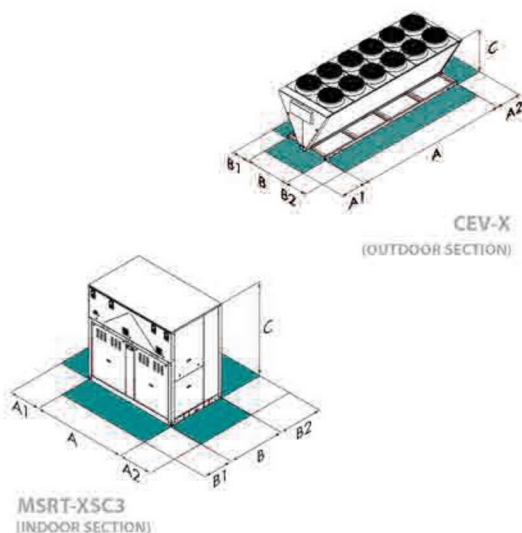
- **MORE PROTECTED AND RELIABLE** - Double refrigeration circuit on all models. All major system components are inside the unit, fully protected from external agents: extended lifespan of the system, high reliability and operation, simplified maintenance. No external water pipes: in cold climates winter 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. Any waste: configuring multiple sections, you have only the functionality you need, in the desired quantity. For example, when the hot water requirement is low, only one of the sections can be equipped with heat recovery. 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



dimensions and clearances



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	2230	2230	2230	2230	2230	2230	2230	2230	2230
B - Width	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100
C - Height	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	500	500	500	500	500	500	500	500	500
B1	mm	500	500	500	500	500	500	500	500	500
B2	mm	500	500	500	500	500	500	500	500	500

Size - CEV-X (SC/EN)	60.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0	135.0
A - Length	mm	2455	2455	2455	3430	2455	2455	3430	2455	3430	3430	3430	4405	3430	4405
B - Width	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height	mm	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410
A1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
B1	mm	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
B2	mm	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800

Size - CEV-X (SC/EN)	140.0	145.0	150.0	160.0	170.0	180.0	190.0	195.0	200.0	210.0	220.0	230.0	240.0	280.0
A - Length	mm	3430	3430	4405	4405	4405	4405	5380	4405	5380	5380	5380	6355	6355
B - Width	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230
C - Height	mm	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410	2410
A1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
B1	mm	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
B2	mm	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800

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.

PRELIMINARY DATA

STANDARD CONFIGURATION



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	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
-	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	400/3~/50	400/3~/50
EXCELLENCE - SOUNDPROOFING (STANDARD)												
SC-EXC	Cooling capacity	(1) kW	265	283	319	351	403	456	512	566	617	673
SC-EXC	Total power input	(1) kW	82,2	91,3	99,3	113	127	143	163	178	199	216
SC-EXC	EER	(1) -	3,22	3,10	3,21	3,11	3,17	3,19	3,14	3,19	3,10	3,12
SC-EXC	ESEER	(1) -	4,39	4,27	4,44	4,30	4,41	4,50	4,49	4,37	4,35	4,34
SC-EXC	Size – CEV-X		90.0 SC	100.0 SC	115.0 SC	120.0 SC	145.0 SC	160.0 SC	180.0 SC	195.0 SC	210.0 SC	230.0 SC
SC-EXC	No. fans	Nr	4	4	6	6	6	8	8	8	10	10
SC-EXC	Standard airflow	l/s	24500	24400	37800	37300	35900	49200	48700	47000	60900	59500
SC-EXC	Sound pressure level	(2) dB(A)	50	50	52	52	52	53	53	53	53	53
EXCELLENCE - SUPERSILENCED												
EN-EXC	Cooling capacity	(1) kW	265	283	319	351	403	456	512	566	617	673
EN-EXC	Total power input	(1) kW	82,6	91,2	100	112	127	143	162	178	198	214
EN-EXC	EER	(1) -	3,21	3,10	3,19	3,15	3,16	3,19	3,16	3,18	3,12	3,15
EN-EXC	ESEER	(1) -	4,37	4,28	4,40	4,35	4,41	4,50	4,53	4,36	4,39	4,38
EN-EXC	Size – CEV-X		115.0 EN	120.0 EN	135.0 EN	150.0 EN	170.0 EN	190.0 EN	200.0 EN	220.0 EN	240.0 EN	280.0 EN
EN-EXC	No. fans	Nr	6	6	8	8	8	10	10	10	12	12
EN-EXC	Standard airflow	l/s	26700	26700	38900	35600	37800	49500	44500	50600	58900	55600
EN-EXC	Sound pressure level	(2) dB(A)	46	46	48	47	47	48	48	49	48	48
PREMIUM - SOUNDPROOFING												
SC-PRM	Cooling capacity	(1) kW	246	264	295	323	378	426	473	522	569	620
SC-PRM	Total power input	(1) kW	90,5	100	107	120	138	152	175	191	214	233
SC-PRM	EER	(1) -	2,72	2,64	2,76	2,69	2,74	2,80	2,70	2,73	2,66	2,66
SC-PRM	ESEER	(1) -	3,95	3,83	4,00	3,90	4,03	4,07	3,92	3,96	3,91	3,86
SC-PRM	Size – CEV-X		60.0 SC	70.0 SC	75.0 SC	85.0 SC	105.0 SC	115.0 SC	130.0 SC	140.0 SC	150.0 SC	160.0 SC
SC-PRM	No. fans	Nr	4	4	4	4	6	6	6	6	8	8
SC-PRM	Standard airflow	l/s	25200	25000	24800	24400	37700	37100	36600	36100	49700	49300
SC-PRM	Sound pressure level	(2) dB(A)	50	50	50	50	52	52	52	52	53	53
PREMIUM - SUPERSILENCED												
EN-PRM	Cooling capacity	(1) kW	246	264	295	323	378	426	473	522	569	620
EN-PRM	Total power input	(1) kW	90,0	99,4	107	120	138	153	176	191	214	233
EN-PRM	EER	(1) -	2,73	2,66	2,76	2,68	2,75	2,79	2,69	2,74	2,67	2,66
EN-PRM	ESEER	(1) -	3,97	3,86	4,00	3,90	4,04	4,05	3,90	3,97	3,92	3,87
EN-PRM	Size – CEV-X		80.0 EN	95.0 EN	105.0 EN	115.0 EN	125.0 EN	135.0 EN	150.0 EN	160.0 EN	190.0 EN	200.0 EN
EN-PRM	No. fans	Nr	6	6	6	6	8	8	8	8	10	10
EN-PRM	Standard airflow	l/s	25200	23400	25000	25600	35600	38400	38900	34500	45000	44500
EN-PRM	Sound pressure level	(2) dB(A)	44	44	44	44	46	47	47	47	48	48

Notes

- (1) Data refer to the following conditions: internal water exchanger = 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.

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

PRELIMINARY DATA

Water chiller

WSA-XSC2: cooling only

Air cooled

Indoor installation

Capacity from 115 to 318 kW

SPINchiller² Duct



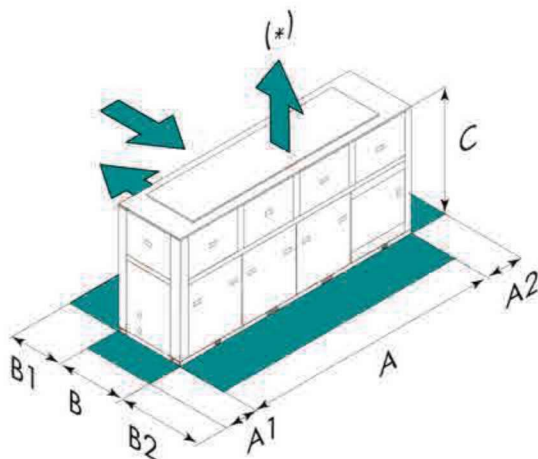
The chillers of **WSA-XSC2** series are indoor units with ducted condensation. They feature uneven Scroll compressors mounted in the same circuit, electronic expansion valves and high efficiency plate type evaporators. Thanks to his special design **SPINchiller² Duct** main features are:

- **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:** SPINchiller² Duct, besides being in Eurovent efficiency class A at full load, grants high seasonal power efficiency thanks to the innovative cooling circuit optimized for partial load operation and the DST (Dynamic Supply Temperature) return control logic;
- **Easy installation:** the units are very compact and are supplied on request with pumps on board; therefore the available space for other purposes is increased and the installations costs are reduced.

functions and features



dimensions and clearances



Size - WSA-XSC2		432	452	552	602	702	80D	90D	100D	110D	120D
A - Length	mm	3312	3312	3312	3312	4400	4400	5486	5486	5486	5486
B - Width	mm	1151	1151	1151	1151	1151	1151	1151	1151	1151	1151
C - Height	mm	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312
A1	mm	900	900	900	900	900	900	900	900	900	900
A2	mm	900	900	900	900	900	900	900	900	900	900
B1	mm	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
B2	mm	1300	1300	1300	1300	1300	1300	1300	1300	1300	1300
Operating weight	kg	1430	1384	1507	1573	1861	1994	2369	2561	2695	2737

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.

B1 = Clearance depending on the type of installation

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

(*) Optional

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 (sizes 702÷120D)

CONFIGURATION:

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

technical data

Size – WSA-XSC2			432	452	552	602	702	80D	90D	100D	110D	120D
Cooling capacity (EN14511:2013)	(1)	kW	115	122	147	166	184	199	238	268	295	318
Total power input (EN14511:2013)	(1)	kW	41,6	45,0	54,1	61,4	66,6	72,6	87,7	99,0	109	126
EER (EN 14511:2013)	(1)	-	2,77	2,72	2,71	2,71	2,76	2,75	2,71	2,71	2,70	2,52
ESEER	-	-	4,24	4,13	4,07	4,11	4,26	4,41	4,18	4,15	4,16	3,92
Refrigeration circuits	Nr	-	1	1	1	1	1	2	2	2	2	2
No. of compressors	Nr	-	2	2	2	2	2	4	4	4	4	4
Type of compressors	(2)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Standard airflow		l/s	12333	12333	12333	12333	16444	16444	20556	20556	21389	22222
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	400/3/50	400/3/50
Sound power in the duct	(3)	dB(A)	92	92	92	92	93	93	95	95	96	97

Notes

(1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 12/7°C - Entering external exchanger air temperature = 35°C

(2) SCROLL = scroll compressor

(3) 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.

accessories

- 1PUS Standard pump
- 2PM Hydropack with 2 pumps
- 3PM Hydropack with 3 pumps (sizes 90D÷120D)
- IFWX Steel mesh strainer on the water side
- CSVX Couple of manual shut-off valves
- ABU Flush hydraulic connections
- CCCA Copper / aluminium condenser coil with acrylic lining
- CCCA1 Condenser coil with Energy Guard DCC Aluminum
- AMMX Spring antivibration mounts
- PGFC Finned coil protection grill
- MF2 Multi-function phase monitor
- CONTA2 Energy meter
- RCMRX Remote control via microprocessor control
- PSX Mains power supply
- CMSC8 Serial communication module to BACnet supervisor
- CMSC10 Serial communication module to LonWorks supervisor
- CMSC9 Serial communication module to Modbus supervisor
- SCP4 Set-point compensation with signal 0-10 V
- 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 (cosφ > 0.9)
- SFSTR Disposal for inrush current reduction
- FANQE Electrical panel ventilation
- MHP High and low pressure gauges
- SDV Cutoff valve on compressor supply and return
- DSP Double set point

Key to symbols and notes

- Accessories separately supplied

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

Water chiller

Air cooled

Outdoor installation

Capacity from 466 to 1423 kW

SCREWLine³



The **SCREWLine³** liquid chillers have a screw compressor with R-134a refrigerant on two separate refrigeration circuits.

► **DUAL ENERGY VERSION** - The standard EXCELLENCE version has a class A Eurovent rating and is ideally suited for applications with high outdoor temperatures. The PREMIUM version focuses on being compact, which means it is designed for installations with greater attention to the initial investment.

► **CONTINUOUS CAPACITY CONTROL** - The continuous capacity control allows for a quick adjustment of the system's load and therefore an accurate control of the chilled water temperature with an exceptionally wide operating range.

► **EFFICIENT AND RELIABLE TECHNOLOGY** - WDAT-SL3 employs the new generation dual screw compressors, electronic expansion valves, shell and tube evaporator and fans with innovative AxiTop diffusers with kinetic energy recovery.

► **FOR ALL CIVIL AND INDUSTRIAL APPLICATIONS** - SCREWLine³ is available in two distinct series: Liquid chiller and Liquid Chiller with Direct free-cooling or glycol-free, for all applications that require high performance levels, continuous operation and lower operating and maintenance costs.

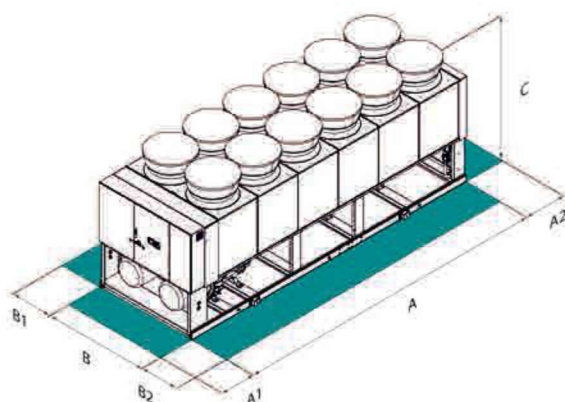


Unit listed on
www.eurovent-certification.com

functions and features



dimensions and clearances



Size – WDAT-SL3			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
ST-EXC	A - Length	mm	4785	4785	5763	5763	5763	6767	6767	7742	7742	8718	8718	10664	10664	10664
ST-EXC	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
ST-EXC	C - Height	mm	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
ST-EXC	A1	mm	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
ST-EXC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST-EXC	B1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
ST-EXC	B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
ST-PRM	A - Length	mm	4785	4785	4785	4785	4785	5763	5763	6767	6767	6767	7742	7742	8718	8718
ST-PRM	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
ST-PRM	C - Height	mm	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
ST-PRM	A1	mm	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
ST-PRM	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST-PRM	B1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
ST-PRM	B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
ST-EXC	Operating weight	kg	4362	4422	5223	5438	5536	5943	6137	6681	7049	7900	8044	8486	8894	9114
ST-PRM	Operating weight	kg	4232	4260	4290	4355	4468	5447	5694	6065	6312	6518	7452	7686	8229	8399

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

ST-PRM Standard (ST)-Premium

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)
- ▶ PRM Premium

ENERGY RECOVERY:

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

ACOUSTIC CONFIGURATION:

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

DOUBLE SET POINT:

- ▶ - Double set point: not required (Standard)
- ▶ DSP Double set point
- ▶ DSPB Double set point for water low temperature

technical data

Size - WDAT-SL3			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
ST/SC-EXC	Cooling capacity (EN14511:2013)	(1) kW	485	509	549	584	635	707	780	836	898	977	1096	1214	1316	1423
ST/SC-EXC	Total power input (EN14511:2013)	(1) kW	156	164	173	185	204	224	246	264	284	313	354	388	424	454
ST/SC-EXC	EER (EN 14511:2013)	(1) -	3,10	3,11	3,17	3,15	3,11	3,16	3,18	3,16	3,17	3,12	3,10	3,13	3,10	3,13
ST/SC-EXC	ESEER	(1) -	4,00	4,01	4,09	4,06	4,01	4,08	4,10	4,08	4,08	4,02	4,00	4,04	4,00	4,04
ST/SC-PRM	Cooling capacity (EN14511:2013)	(1) kW	466	488	512	558	600	666	741	782	834	912	1024	1139	1255	1353
ST/SC-PRM	Total power input (EN14511:2013)	(1) kW	162	172	183	195	214	243	264	284	308	337	379	415	463	482
ST/SC-PRM	EER (EN 14511:2013)	(1) -	2,88	2,83	2,80	2,87	2,79	2,74	2,81	2,75	2,71	2,71	2,70	2,74	2,71	2,81
ST/SC-PRM	ESEER	(1) -	3,91	3,85	3,81	3,90	3,80	3,73	3,82	3,74	3,68	3,68	3,67	3,73	3,69	3,82
Refrigeration circuits			Nr	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of compressors			Nr	2	2	2	2	2	2	2	2	2	2	2	2	2
Type of compressors			(2) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
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	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger entering air = 35°C
- (2) DSW = twin-screw compressor
- ST Standard (ST)-Excellence

- SC-EXC Compressors Insulation (SC)-Excellence
- SC-PRM Compressors insulation (SC)-Premium

PRELIMINARY DATA

accessories

- ▶ 2PM Hydropack with 2 pumps
- ▶ 3PM Hydropack with 3 pumps
- ▶ CCCA Copper / aluminium condenser coil with acrylic lining
- ▶ CCCA1 Condenser coil with Energy Guard DCC Aluminum
- ▶ AMMX Spring antivibration mounts
- ▶ PGCC Finned coil protection grilles and compressor compartment
- ▶ CONTA2 Energy meter
- ▶ RCMRX Remote control via microprocessor control
- ▶ PSX Mains power supply
- ▶ 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
- ▶ SPC2 Set-point compensation with outdoor air temperature probe
- ▶ DML Demand limit
- ▶ ECS ECOSHARE function for the automatic management of a group of units
- ▶ PFCP Power factor correction capacitors (cosφ > 0.9)
- ▶ CBS Overload circuit breakers
- ▶ SFSTR2 Progressive compressor start-up device
- ▶ FANQE Electrical panel ventilation

■ Accessories separately supplied

Water chiller
Air cooled
Outdoor installation
Capacity from 554 to 1335 kW

SCREWLine³



The SCREWLine³ iL3 liquid chillers are equipped with variable-speed screw compressors driven by an INVERTER and filled with R-134a refrigerant.

- **TWO INDEPENDENT INVERTER CIRCUITS** - Both refrigeration circuits adopt compact screw compressors with integrated inverter, for maximum reliability and durability. The iL3 series features top-ranking seasonal efficiency within its category, while guaranteeing considerable energy saving compared to both fixed-speed screw compressors and most inverter-driven screw compressors. In addition, it is extremely silent at low loads.
- **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine³ iL3 comes with electronic expansion valves, shell and tube evaporator and high-efficiency axial fans inclusive of innovative AxiTop diffusers with kinetic energy recovery.

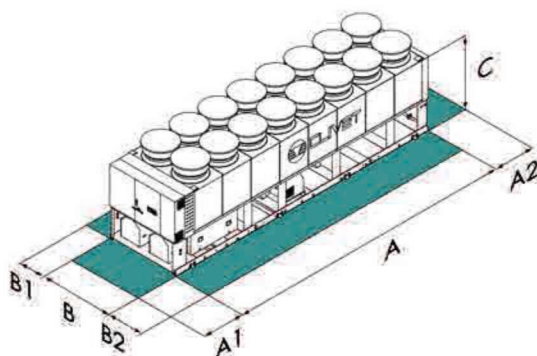


Unit listed on
www.eurovent-certification.com

functions and features



dimensions and clearances



Size - WDAT-il3		250.2	280.2	320.2	360.2	400.2	420.2	440.2	480.2	540.2	580.2
SC	A - Length	mm	4788	5758	6738	7714	8691	8691	8691	10640	10640
SC	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC	C - Height	mm	2668	2668	2668	2668	2668	2668	2668	2668	2668
SC	A1	mm	1535	1535	1535	1535	1535	1535	1535	1535	1535
SC	A2	mm	700	700	700	700	700	700	700	700	700
SC	B1	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
SC	B2	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200

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

SC Acoustic configuration with compressor soundproofing
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

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

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	Cooling capacity (EN14511:2013)	(1) kW	554	632	711	794	878	943	1007	1118	1261	1335
SC	Total power input (EN14511:2013)	(1) kW	198	223	247	276	305	330	356	399	447	462
SC	EER (EN14511:2013)	(1) -	2.80	2.83	2.88	2.88	2.88	2.86	2.83	2.80	2.82	2.89
SC	ESEER	(1) -	4.82	4.84	4.85	4.83	4.84	4.80	4.86	4.92	4.88	4.93
SC	Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2
SC	No. of compressors	Nr	2	2	2	2	2	2	2	2	2	2
SC	Type of compressors	(2) -	ISW	ISW	ISW	ISW	ISW	ISW	ISW	ISW	ISW	ISW
SC	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	400/3/50	400/3/50

Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C, External exchanger entering air = 35°C
- (2) ISW = screw compressor with integrated inverter

SC Acoustic configuration with compressor soundproofing

PRELIMINARY DATA

accessories

- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type
- **CREFO** Device for fan consumption reduction of the external section, on/off type
- **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
- **REGBT** Device for the condensing coil partialization
- **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
- **RPRPDI** Refrigerant leak detector with pump down function in the casing
- **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)
- **CBS** Overload circuit breakers
- **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

Key to symbols and notes

- Accessories separately supplied

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

SCREWLine³



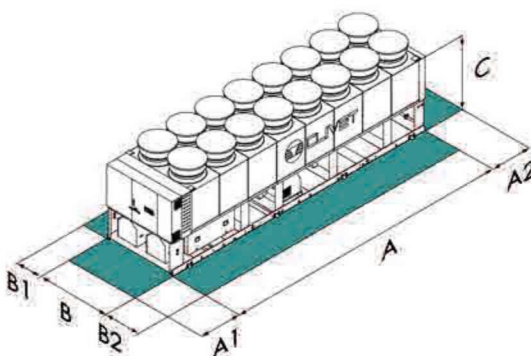
The **SCREWLine³ FREE-COOLING** enables high-level savings on the management costs of the system in applications which also require cooled water during the cold season such as industrial processes, data centres, telecommunications, technological applications and shopping centres.

- **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.
- **CONTINUOUS CAPACITY CONTROL** - The continuous capacity control allows for a quick adjustment of the system's load and therefore an accurate control of the chilled water temperature with an exceptionally wide operating range.
- **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine³ employs the new generation dual screw compressors, electronic expansion valves, shell and tube evaporator and fans with innovative AxiTop diffusers with kinetic energy recovery.

functions and features



dimensions and clearances



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
SC-FCD-EXC B - Width	mm	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
SC-FCD-EXC A1	mm	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
SC-FCD-EXC B1	mm	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
SC-FCD-EXC Operating weight	kg	6102	6134	7214	7255	7344	8112	8163	9213	9710	11012	11074	12035	12169

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-EXC Compressors soundproofing (SC)-Direct FREE-COOLING-Excellence

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

FREE-COOLING:

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

ACOUSTIC CONFIGURATION:

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

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
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	2	2	2	2	2	2	2	2	2	2	2	2	2
SC-EXC	No. of compressors	Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
SC-EXC	Type of compressors	(3) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
SC-EXC	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	400/3~50	400/3~50	400/3~50	400/3~50	400/3~50	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	-	-

Notes

- (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

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

accessories

- 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
- 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
- PGCCCH 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 (cosφ > 0.9)
- SFSTR2 Progressive compressor start-up device
- CBS Overload circuit breakers
- WOGLY Unit supplied without glycol solution (FCI only)

Key to symbols and notes

- ▀ Accessories separately supplied

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

Water chiller

WSH-EE: cooling only
WSHN-EE: reversible heat pump
Water cooled
Indoor installation
Capacity from 6 to 35,5 kW



ELFOEnergy Ground

Geothermal energy from the ground or ground water can provide heating and cooling at considerably less expense. **ELFOEnergy Ground** units are 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



Unit listed on
www.eurovent-certification.com



ErP compliant
(WSHN-EE)

functions and features



Cooling only
(WSH-EE)



Heat pump
(WSHN-EE)



Water cooled



Indoor installation



R-410A



Hermetic Scroll



ELFOControl®

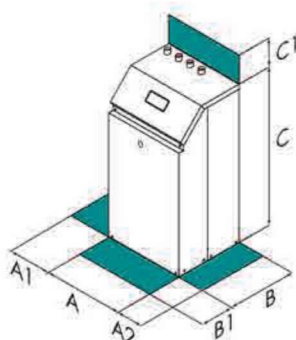


Reversible water
circuit
(WSH-EE)



Vary Flow

dimensions and clearances



Size - WSH-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
B - Width	mm	602	602	602	602	602	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600
C1	mm	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	80	81	85	88	102	114	128	143	157	164

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
B - Width	mm	602	602	602	602	602	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600
C1	mm	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	81	83	86	90	98	115	129	147	163	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.

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

technical data

Size - WSH-EE		17	21	31	41	51	61	71	81	91	101	121
Unit for radiant panels												
W10/W35												
Heating capacity	kW	7,17	7,74	9,47	12,5	16,1	19,7	24,2	26,2	30,7	35,6	41,0
Total power input	kW	1,61	1,74	2,04	2,50	3,33	4,05	5,12	5,30	6,19	7,19	8,32
COP (EN 14511:2013)	-	4,45	4,45	4,64	4,98	4,84	4,87	4,73	4,94	4,96	4,95	4,93
W35/W18												
Cooling capacity	kW	8,45	9,06	10,2	14,1	18,4	22,7	26,3	30,2	33,6	42,3	47,9
Total power input	kW	1,56	1,58	1,94	2,46	3,20	4,28	5,38	5,49	6,43	7,31	8,79
EER (EN 14511:2013)	-	5,43	5,73	5,26	5,75	5,74	5,30	4,89	5,50	5,22	5,79	5,45
Terminal units												
W10/W45												
Heating capacity	kW	6,90	7,52	9,16	11,9	15,5	18,9	23,2	24,9	29,3	33,8	38,9
Total power input	kW	1,98	2,15	2,61	3,14	4,31	4,93	6,23	6,74	7,60	8,82	10,0
COP (EN 14511:2013)	-	3,48	3,49	3,51	3,78	3,59	3,84	3,72	3,70	3,86	3,83	3,89
W35/W7												
Cooling capacity	kW	6,04	6,51	8,01	10,6	13,5	16,9	20,4	22,3	26,0	31,1	35,5
Total power input	kW	1,61	1,75	2,05	2,53	3,30	4,05	5,10	5,29	6,16	7,09	8,15
EER (EN 14511:2013)	-	3,74	3,73	3,91	4,20	4,10	4,17	4,00	4,22	4,23	4,38	4,36
ESEER	-	3,99	3,97	4,17	4,47	4,37	4,44	4,26	4,50	4,50	4,66	4,64
Radiators												
W10/W55												
Heating capacity	kW	6,58	7,30	8,95	11,4	14,7	17,8	22,2	23,6	28,0	31,7	36,2
Total power input	kW	2,53	2,82	3,43	3,94	5,73	6,13	7,66	8,38	9,21	11,2	12,3
COP (EN 14511:2013)	-	2,60	2,59	2,60	2,89	2,57	2,91	2,90	2,82	3,04	2,84	2,94
Water flow-rate (User Side)	(l) l/s	0,29	0,31	0,38	0,51	0,65	0,81	0,98	1,07	1,24	1,48	1,70
Useful pump discharge head	(l) kPa	56	54	53	43	38	60	55	50	44	144	112
Water flow rate (Source Side)	(l) l/s	0,36	0,39	0,48	0,62	0,80	0,99	1,21	1,31	1,52	1,80	2,06
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	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level (1 m)	dB(A)	43	43	44	44	45	46	49	50	51	52	53
Min. leaving water temperature	°C	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0
Max. leaving water temperature	°C	55	55	55	55	55	55	55	55	55	55	55
Size - WSHN-EE												
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 14511:2013)	-	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 14511:2013)	-	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 14511:2013)	-	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 14511:2013)	-	4,04	3,93	3,95	4,39	3,93	3,87	4,07	4,27	4,13	4,00	4,06
ESEER	-	4,33	4,20	4,23	4,70	4,20	4,12	4,36	4,57	4,42	4,38	4,43
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 14511:2013)	-	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)	(l) l/s	0,30	0,31	0,38	0,52	0,63	0,78	0,99	1,07	1,23	1,41	1,58
Useful pump discharge head	(l) kPa	58	58	56	47	39	62	54	50	44	155	132
Water flow rate (Source Side)	(l) l/s	0,36	0,38	0,47	0,62	0,78	0,95	1,20	1,29	1,50	1,72	1,93
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	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Sound pressure level (1 m)	dB(A)	43	43	44	44	45	46	49	50	51	52	53
Min. leaving water temperature	°C	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0	-8,0
Max. leaving water temperature	°C	55	55	55	55	55	55	55	55	55	55	55
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++

Notes

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

Performances according to EN 14511:2013

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

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

Water chiller

WSH-XEE2: cooling only

WSHN-XEE2: reversible heat pump

Water cooled

Indoor installation

Capacity from 29,2 to 356 kW



Unit listed on
www.eurovent-certification.com



ErP compliant
(WSHN-XEE2)

ELFOEnergy Ground Medium²

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. The unit reaches the Eurovent Class A heating and cooling for use with underfloor heating.
- **VERSION GROUND WATER OR GEOTHERMAL** - The use of heat exchangers for specific applications with ground water or geothermal closed loop maximize the energy 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 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
(WSH-XEE2)



Heat pump
(WSHN-XEE2)



Water cooled



Indoor installation



R-410A

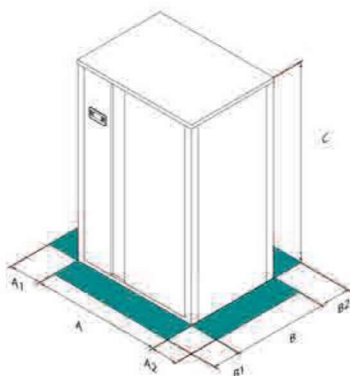


Hermetic Scroll



Vary Flow

dimensions and clearances



Size - WSH-XEE2	10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	110.2	120.2
A - Length	mm	837	837	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	607	607	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
C - Height	mm	1481	1481	1481	1481	1481	1481	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907
A1	mm	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	300	300	350	350	350	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	260	260	277	328	355	361	471	476	580	631	710	675	792	814	863	932	990	1075	1533

Size - WSHN-XEE2	10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	110.2	120.2
A - Length	mm	837	837	837	837	837	837	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110	1110
B - Width	mm	607	607	607	607	607	607	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
C - Height	mm	1481	1481	1481	1481	1481	1481	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907	1907
A1	mm	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	300	300	300	300	300	300	350	350	350	350	350	350	350	350	350	350	350	350	350
Operating weight	kg	279	279	286	356	377	383	501	506	592	670	749	687	838	861	878	995	1006	1106	1666

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:

- **GW** Groundwater version (Standard)
- **GE0** Version for Geothermal application

ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery (sizes 10.2÷90.2)

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			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
► Cooling capacity (EN14511:2013)	(1)	kW	30,8	35,4	42,7	49,6	59,1	68,4	83,8	94,4	109	123	135	147	159	172	197	221	249	280	305	356
Total power input (EN14511:2013)	(1)	kW	6,45	7,63	9,22	10,8	12,5	15,6	17,5	20,4	23,5	26,6	29,8	31,5	34,1	37,7	42,7	48,2	54,7	61,5	68,4	82,4
EER (EN 14511:2013)	(1)	-	4,77	4,64	4,63	4,61	4,72	4,39	4,80	4,63	4,62	4,63	4,53	4,65	4,68	4,58	4,60	4,59	4,55	4,56	4,46	4,32
ESEER	(1)	-	6,31	6,20	5,65	5,52	5,71	5,51	6,19	6,05	6,03	6,02	5,78	6,00	5,97	5,79	5,62	5,78	5,48	5,52	5,48	5,31
► Heating capacity (EN14511:2013)	(2)	kW	35,8	41,4	49,6	57,8	68,6	81,0	96,7	109	126	143	157	169	184	200	227	257	290	328	355	420
Total power input (EN14511:2013)	(2)	kW	8,27	9,79	11,6	13,5	15,7	19,2	21,8	25,3	28,9	32,8	36,7	38,7	41,9	46,5	52,4	59,2	66,7	76,6	83,4	101
COP (EN 14511:2013)	(2)	-	4,33	4,23	4,26	4,29	4,37	4,23	4,43	4,32	4,35	4,35	4,27	4,37	4,39	4,30	4,33	4,34	4,34	4,28	4,25	4,16
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No. of compressors	Nr		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Type of compressors	-		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Standard power supply	V		400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350	400/350
Max. leaving water temperature	°C		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Sound pressure level	(3)	dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	60	61	63	63	64	64	65
Size – WSHN-XEE2			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2	35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
► Cooling capacity (EN14511:2013)	(1)	kW	29,2	34,4	40,7	48,4	57,7	67,6	82,0	91,8	102	120	131	138	155	168	187	217	240	265	292	347
Total power input (EN14511:2013)	(1)	kW	6,40	7,50	9,10	10,6	12,5	15,4	17,5	20,5	23,6	26,8	29,9	31,7	34,2	37,7	42,6	48,2	54,5	61,4	67,8	81,7
EER (EN 14511:2013)	(1)	-	4,57	4,58	4,47	4,56	4,62	4,38	4,68	4,49	4,32	4,47	4,38	4,37	4,52	4,46	4,38	4,50	4,40	4,31	4,31	4,25
ESEER	(1)	-	5,99	5,77	5,39	5,27	5,44	5,25	5,87	5,66	5,71	5,69	5,49	5,74	5,65	5,50	5,41	5,54	5,24	5,28	5,34	5,28
► Heating capacity (EN14511:2013)	(2)	kW	34,4	40,4	48,0	56,8	67,0	79,5	93,8	107	119	139	151	163	178	195	218	252	280	314	343	408
Total power input (EN14511:2013)	(2)	kW	8,18	9,65	11,6	13,4	15,7	19,1	21,4	24,7	28,3	32,3	36,0	38,4	41,3	45,7	51,9	58,0	65,5	75,3	82,5	100
COP (EN 14511:2013)	(2)	-	4,20	4,19	4,15	4,25	4,27	4,15	4,38	4,32	4,21	4,30	4,18	4,24	4,32	4,27	4,20	4,34	4,27	4,17	4,16	4,07
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
No. of compressors	Nr		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Type of compressors	-		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Standard power supply	V		400/350	400/350	400/350	400/350	400/350	400/350	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Directive ErP (Energy Related Products)																						
ErP Energy Class - AVERAGE Climate - W35	(3)	-	A++	A++	A++	A++	A++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ErP Energy Class - AVERAGE Climate - W55		-	A++	A++	A++	A++	A++	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Max. leaving water temperature	°C		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60
Sound pressure level	(3)	dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	60	61	63	63	64	64	65

Notes

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C; Performance data calculated in accordance with UNI-EN14511:2013;
- (2) Data 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 UNI-EN14511:2013;
- (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. Noise levels are determined using the tensiometric method (UNI EN ISO 9614-2); Data referred to the following conditions: Entering / leaving exchanger water temperature user side 12/7°C; Entering / leaving exchanger water temperature source side 30/35°C.

The Heat Pump 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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

accessories

- **SDV** Cutoff valve on compressor supply and return (sizes 10.2÷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 10.2÷80.2)
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **AVIBX** Anti-vibration mount support

WSH-XEE2 only:

- **VS2MC** Cooling side two-way modulating valve (sizes 10.2÷80.2)
- **VS2MCX** Cooling side two-way modulating valve
- **VS3MC** Cooling side three-way modulating valve (sizes 10.2÷80.2)
- **VS3MCX** Cooling side three-way modulating valve
- **VARYC** VARYFLOW + (cooling side 2 inverter pumps)
- **HYGC1** Cooling side hydronic unit with an on-off pump

- **HYGC2** Cooling side hydronic unit with two on-off pumps
- **VS2MH** Heating side two-way modulating valve (sizes 10.2÷80.2)
- **VS2MHX** Heating side two-way modulating valve
- **VS3MH** Heating side three-way modulating valve (sizes 10.2÷80.2)
- **VS3MHX** Heating side three-way modulating valve
- **VARYH** VARYFLOW + (heating side 2 inverter pumps)
- **HYGH1** Heating side hydronic unit with an on-off pump
- **HYGH2** Heating side hydronic unit with two on-off 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 10.2÷80.2)
- **VS2MX** Source side 2-way modulating valve
- **VS3M** Source side 3-way modulating valve (sizes 10.2÷80.2)
- **VS3MX** Source side 3-way modulating valve
- **VARYS** VARYFLOW + (source side 2 inverter pumps)
- **HYGS1** Source side hydronic unit with 1 ON/OFF pump
- **HYGS2** Source side hydronic unit with 2 ON/OFF pumps

Key to symbols:

- Accessories separately supplied

Multifunction reversible heat pump
Water cooled
Indoor installation
Capacity from 30 to 345 kW



ELFOEnergy Ground Medium² MF

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:

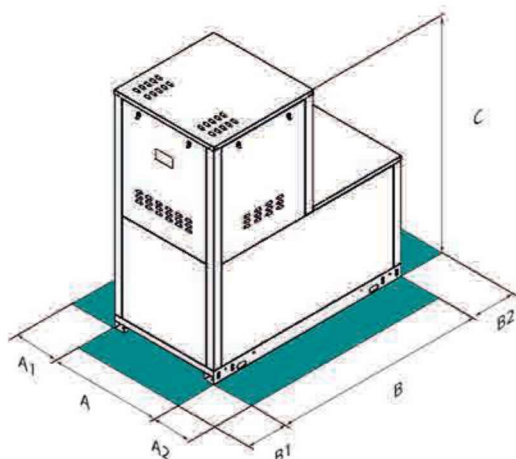
- **HIGH SEASONAL EFFICIENCY** guaranteed by the combination of several control steps, which adapt the capacity supplied to the actual energy demand required by the system, and energy recovery, which recovers up to 100% of the capacity supplied, further increasing efficiency.
- **GROUNDWATER OR GEOTHERMAL WATER VERSION** - Using specific exchangers with groundwater or closed-loop geothermics allows energy efficiency to be maximised.
- **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 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



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		10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2
A - Length	mm	900	900	900	900	900	900	900	900
B - Width	mm	1700	1700	1700	1700	1700	1700	1700	1700
C - Height	mm	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm	100	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100	100
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	403	403	400	471	491	497	550	555

Size - WSHN-XEE2 MF		35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
A - Length	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
B - Width	mm	1700	1700	1700	1700	1700	1700	1700	1700	1700	2000	2000	2000
C - Height	mm	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm	100	100	100	100	100	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100	100	100	100	100	100
B1	mm	700	700	700	700	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700	700	700	700	700
Operating weight	kg	656	721	816	754	901	924	941	1045	1056	1186	1412	1539

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			10.2	12.2	14.2	16.2	19.2	22.2	27.2	30.2
COOLING 0% - HEATING 100%										
Heating capacity	(1)	kW	34,3	40,3	48,0	56,6	66,8	79,2	93,7	106
Total power input	(1)	kW	7,72	9,02	10,7	12,4	14,5	17,4	20,3	23,3
COP at full load	(1)	-	4,44	4,47	4,49	4,56	4,61	4,55	4,62	4,57
COOLING 100% - HEATING 0%										
Cooling capacity	(2)	kW	29,9	34,4	41,4	48,2	57,4	66,5	81,0	91,6
Total power input	(2)	kW	6,25	7,34	8,84	10,3	12,0	14,8	17,2	19,7
EER at full load	(2)	-	4,78	4,69	4,68	4,68	4,78	4,49	4,73	4,65
COOLING 100% - HEATING 100%										
Cooling capacity	(3)	kW	27,2	31,3	37,4	43,9	52,1	61,2	73,8	83,0
Heating capacity	(3)	kW	35,0	40,4	48,3	56,4	66,7	78,8	94,4	107
Total power input	(3)	kW	7,75	9,12	10,9	12,5	14,6	17,6	20,6	23,8
Overall efficiency	(4)	-	8,03	7,86	7,86	8,02	8,14	7,95	8,16	7,98
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1
No. of compressors	Nr		2	2	2	2	2	2	2	2
Type of compressors	-		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
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	(5)	dB(A)	44	44	45	49	49	49	49	49
Directive ErP (Energy Related Products)										
ErP Energy Class - AVERAGE Climate - W35	-		A++	A++	A++	A++	A++	-	-	-
ErP Energy Class - AVERAGE Climate - W55	-		A++	A++	A++	A++	A++	-	-	-

Size – WSHN-XEE2 MF			35.2	40.2	43.2	45.2	50.2	55.2	60.2	70.2	80.2	90.2	100.2	120.2
COOLING 0% - HEATING 100%														
Heating capacity	(1)	kW	119	139	152	163	179	195	218	252	279	314	343	408
Total power input	(1)	kW	26,8	30,7	34,1	36,3	39,2	43,3	48,9	54,9	61,5	71,1	79,6	96,2
COP at full load	(1)	-	4,46	4,51	4,44	4,48	4,56	4,50	4,45	4,59	4,53	4,42	4,31	4,25
COOLING 100% - HEATING 0%														
Cooling capacity	(2)	kW	105	120	131	142	155	167	190	215	242	271	296	345
Total power input	(2)	kW	22,9	26,0	29,0	30,7	33,3	36,8	41,5	47,0	53,3	60,1	68,1	81,8
EER at full load	(2)	-	4,60	4,61	4,53	4,63	4,64	4,54	4,59	4,56	4,53	4,52	4,34	4,22
COOLING 100% - HEATING 100%														
Cooling capacity	(3)	kW	95,0	108	118	128	140	151	174	195	219	248	267	314
Heating capacity	(3)	kW	123	139	153	165	179	195	223	251	282	321	347	411
Total power input	(3)	kW	27,3	31,1	34,5	36,7	39,7	43,9	49,1	55,8	63,0	72,1	80,4	96,8
Overall efficiency	(4)	-	7,97	7,95	7,86	7,97	8,03	7,88	8,10	7,99	7,96	7,89	7,63	7,48
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1	1	1	1
No. of compressors	Nr		2	2	2	2	2	2	2	2	2	2	2	2
Type of compressors	-		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
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	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level	(5)	dB(A)	58	58	60	58	60	60	61	63	63	64	64	65

Notes

- (1) Data referred to the following conditions: Heating water circuit = 45/40°C; Water temperature to external exchanger 10/7 °C
- (2) Data referred to the following conditions: Cooling water circuit = 7/12°C; External exchanger water = 30/35°C
- (3) Data referred to the following conditions: Heating water circuit = 45/40°C; Cooling water circuit = 7/12°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.

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) 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 (sizes 10.2÷80.2)
- **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 (sizes 10.2÷80.2)
- **PFCP** Power factor correction capacitors (cosφ > 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

Key to symbols:

- Accessories separately supplied

Water chiller

WSH-XSC3: cooling only
WSHN-XSC3: reversible heat pump
Water cooled
Indoor installation
Capacity from 209 to 750 kW



SPINchiller³ Water

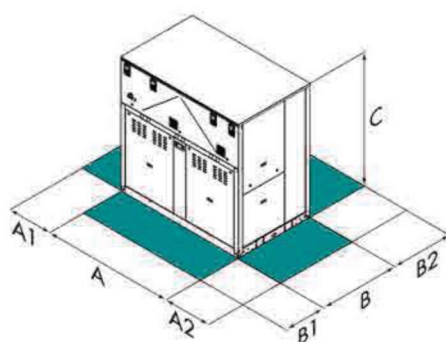
The WSH-XSC3 liquid chiller units and WSHN-XSC3 water source heat pump units for indoor installation belong to the SPINchiller³ family, and are thus distinguished for their excellent energy efficiency, modularity and reliability, thanks to the high degree of industrialisation distinguishing all products of the family.

- The **EFFICIENCY** of these products increases as the load decreases, thanks to the modular technology characterising the compressors and cutting-edge heat exchange solutions, yet they guarantee top-ranking performances in their category even with maximum load conditions. The high seasonal efficiency of SPINchiller³ products and their precision in satisfying the requested load guarantee maximum comfort at all times with excellent performance, resulting in considerably lower energy consumption.
- The high seasonal efficiency of **MODULARITY** offers an effective solution for large-size central heating plants. The possibility of controlling in cascade mode SPINchiller³ units having different functions (chiller or heat pump) allows for satisfying demands of up to 5 MW, with guaranteed superior efficiency, reliability and construction quality compared to most solutions available on the market.
- The extensive range of options available with SPINchiller³, including full soundproofing and the pumping unit mounted on the product – even inverter-driven – make the product suitable for installation in any system.
- The entire series is Eurovent-certified.
- These units with water-based condensation for indoor use can be paired with dry coolers of the REM² series.²

functions and features



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	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230
B - Width	mm	1100	1100	1100	1100	1100	1100	1100	1400	1400	1400	1400	1400	1400	1400
C - Height	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500

Size – WSHN-XSC3		70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
A - Length	mm	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230	2230
B - Width	mm	1100	1100	1100	1100	1100	1100	1100	1400	1400	1400	1400	1400	1400	1400
C - Height	mm	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200	2200
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B1	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500
B2	mm	500	500	500	500	500	500	500	500	500	500	500	500	500	500

PRELIMINARY DATA

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

ACOUSTIC CONFIGURATION:

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

UNIT INSTALLATION:

- **II** Indoor installation (Standard)
- **IO** Outdoor installation

OPERATION (WSH-XSC3 ONLY):

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

technical data

Size – WSH-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
► Cooling capacity (EN14511:2013)	(1)	kW	217	232	248	270	293	322	353	399	453	507	574	628	689	750
Total power input (EN14511:2013)	(1)	kW	46,5	49,6	52,7	57,2	61,7	68,0	74,2	83,3	95,3	107	122	134	148	161
EER (EN 14511:2013)	(1)	-	4,67	4,69	4,70	4,73	4,76	4,74	4,75	4,79	4,75	4,73	4,70	4,68	4,66	4,65
ESEER	(1)	-	5,77	5,83	5,88	5,89	5,92	5,95	5,87	5,94	5,93	5,91	5,93	5,88	5,76	5,76
Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Water flow-rate (User Side)		l/s	10,0	10,7	11,4	12,4	13,5	14,8	16,2	18,4	20,8	23,3	26,4	28,9	31,6	34,3
Water flow rate (Source Side)		l/s	12,3	13,1	14,0	15,3	16,6	18,2	19,9	22,5	25,6	28,7	32,5	35,6	38,9	42,4
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	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50

Size – WSHN-XSC3			70.4	75.4	80.4	85.4	90.4	100.4	110.4	120.4	140.4	160.4	180.4	200.4	220.4	240.4
► Cooling capacity (EN14511:2013)	(1)	kW	209	224	238	261	283	310	340	384	436	488	553	605	660	719
Total power input (EN14511:2013)	(1)	kW	48,2	51,7	55,1	59,8	64,6	70,7	77,7	87,1	99,5	112	128	141	155	169
EER (EN 14511:2013)	(1)	-	4,33	4,33	4,32	4,35	4,38	4,39	4,38	4,41	4,38	4,36	4,32	4,31	4,27	4,25
ESEER	(1)	-	5,41	5,41	5,39	5,45	5,46	5,50	5,49	5,52	5,53	5,45	5,41	5,40	5,32	5,32
► Heating capacity (EN14511:2013)	(2)	kW	236	253	270	294	319	349	384	433	492	551	626	685	745	812
Total power input (EN14511:2013)	(2)	kW	58,3	62,5	66,8	72,5	78,3	85,8	94,3	106	120	134	156	170	187	205
COP (EN 14511:2013)	(2)	-	4,04	4,04	4,04	4,06	4,07	4,07	4,07	4,09	4,10	4,11	4,03	4,04	3,98	3,96
Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
Water flow-rate (User Side)		l/s	10,0	10,7	11,4	12,4	13,5	14,8	16,2	18,4	20,8	23,3	26,4	28,9	31,6	34,3
Water flow rate (Source Side)		l/s	12,3	13,1	14,0	15,3	16,6	18,2	19,9	22,5	25,6	28,7	32,5	35,6	38,9	42,4
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	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50

Notes

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C; Performance data calculated in accordance with UNI-EN14511:2013;
- (2) Data 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 UNI-EN14511:2013;

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) and the Commission delegated Regulation (EU) No 813/2013 (rated heat output ≤ 400 kW at specified reference conditions)

PRELIMINARY DATA

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)
- **HYGS1** Source side hydronic unit with 1 ON/OFF pump
- **HYGS2** Source side hydronic unit with 2 ON/OFF pumps
- **VACSU** User side DHW switching valve
- **VACSUX** User side DHW switching valve
- **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

Key to symbols:

- Accessories separately supplied

- **IFWX** Steel mesh strainer on the water side
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **SFSTR** Disposal for inrush current reduction
- **MHP** High and low pressure gauges
- **SDV** Cutoff valve on compressor supply and return
- **HYP2S** Hydropack source side with 2 on/off pumps
- **HYP2SU** Hydropack user side with 2 on/off pumps
- **1PUS** Standard pump
- **1PU1SB** Standard pump with standby pump
- **RCTX** Remote control

Packaged unit

Simultaneous and independent heating and cooling

Water cooled

Indoor installation

Capacity from 173 to 500 kW

SPINSAVER



SPINSAVER is the high efficiency monobloc unit for centralised systems, able to provide both simultaneous and independent heating and cooling.

SPINchiller technology offers high seasonal efficiency, using several Scroll compressors per circuit and working together with the innovative built-in automatic hydraulic switch system in **SPINSAVER**. In fact, hot and cold fluids are produced simultaneously in all load conditions with maximum energy recovery. The source is therefore only activated to exchange any excess energy, with considerable savings in terms of extraction circuit pumping energy. As a result, total primary energy savings can reach up to 50%.

Thanks to its effective production combination, **SPINSAVER** is therefore the ideal solution for civil and industrial applications with centralised "four-pipe" type installations.

functions and features



Cooling only



Water cooled



Indoor installation



R-410A



Hermetic Scroll

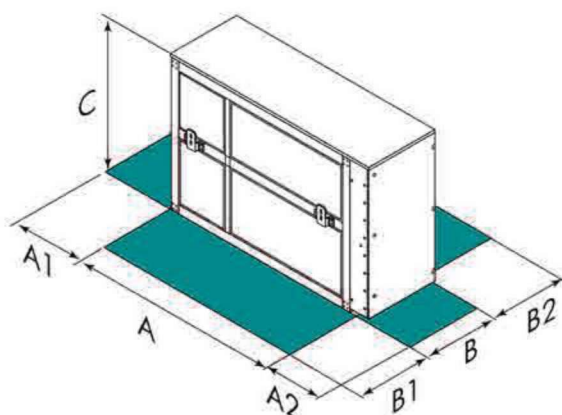


Reversible water circuit



Electronic expansion valve

dimensions and clearances



Size – WSHF-XSC		65D	70D	75D	80D	85D	90D	100D	110D	115D	120D	135E	150F	165F	180F
A - Length	mm	4266	4266	4266	4266	4266	4266	4266	4266	4266	4266	4723	4723	4723	4723
B - Width	mm	850	850	850	850	850	850	850	850	850	850	850	850	850	850
C - Height	mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Operating weight	kg	1238	1320	1360	1397	1489	1490	1604	1694	1723	1731	2012	2272	2409	2406

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

SYSTEM TYPE:

- ▶ - System with terminal units. (Standard)
- ▶ PR System for radiant panels, induction terminals or cold beams.

ACOUSTIC CONFIGURATION:

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

UNIT INSTALLATION:

- ▶ II Indoor installation (Standard)
- ▶ IO Outdoor installation

technical data

Size – WSHF-XSC			65D	70D	75D	80D	85D	90D	100D	110D	115D	120D	135E	150F	165F	180F
COOLING 0% - HEATING 100%																
Heating capacity	(1)	kW	224	237	257	269	289	327	356	383	407	428	466	506	574	646
Total power input		kW	51,4	55,2	58,4	61,8	65,1	73,4	80,1	86,8	93,3	98,4	107	116	130	148
COP at full load		-	4,36	4,29	4,40	4,36	4,43	4,45	4,44	4,41	4,36	4,35	4,37	4,38	4,41	4,37
COOLING 100% - HEATING 0%																
Cooling capacity	(2)	kW	212	227	243	255	272	311	341	364	385	404	443	480	539	608
Total power input		kW	32,6	34,8	37,9	39,9	43,6	47,4	52,2	55,7	59,6	62,4	68,2	74,6	83,6	94,4
EER at full load		-	6,50	6,51	6,41	6,38	6,25	6,56	6,54	6,54	6,46	6,48	6,50	6,46	6,45	6,44
COOLING 100% - HEATING 100%																
Cooling capacity	(3)	kW	173	182	199	208	224	254	276	297	314	330	360	391	444	500
Heating capacity	(3)	kW	224	237	257	269	289	327	356	383	407	428	466	506	574	646
Total power input		kW	51,4	55,2	58,4	61,8	65,1	73,4	80,1	86,8	93,3	98,4	107	116	130	148
Overall efficiency		-	7,73	7,59	7,80	7,72	7,88	7,91	7,89	7,83	7,72	7,70	7,74	7,76	7,83	7,74
Standard (ST)/Extremely low noise(EN)																
Refrigeration circuits		Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
No. of compressors		Nr	4	4	4	4	4	4	4	4	4	4	5	6	6	6
Type of compressors		-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
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	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Standard (ST)																
Sound pressure level	(4)	dB(A)	73	74	74	74	74	74	76	76	76	76	76	76	77	77
Super-silenced (EN)																
Sound pressure level	(4)	dB(A)	64	64	65	65	66	66	67	68	68	68	68	68	68	69

Notes

- (1) Heating water circuit = 45/40°C; Source water circuit = 12/7°C
- (2) Cooling water circuit = 7/12°C; Source water circuit = 15/25°C
- (3) Cooling water circuit = 7/12°C; Heating water circuit = 45/40°C
- (4) Measures according to UNI EN ISO 9614-2 regulations, with respect to the EUROVENT 8/1 certification. 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. Data referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C

accessories

- ▶ **AMRX** Rubber antivibration mounts
- ▶ **PM** Phase monitor
- ▶ **RCMRX** Remote control via microprocessor control
- ▶ **CMSC8** Serial communication module to BACnet supervisor
- ▶ **CMSC10** Serial communication module to LonWorks supervisor
- ▶ **CMSC9** Serial communication module to Modbus supervisor

- ▶ **CFSC** Potential-free contacts for compressor status
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- ▶ **SFSTR** Disposal for inrush current reduction
- ▶ **IFWX** Steel mesh strainer on the water side
- ▶ **MHP** High and low pressure gauges
- ▶ **SDV** Cutoff valve on compressor supply and return

■ Accessories separately supplied

Water chiller
Water cooled
Indoor installation
Capacity from 325 to 1608 kW



Unit listed on
www.eurovent-certification.com

SCREWLine³

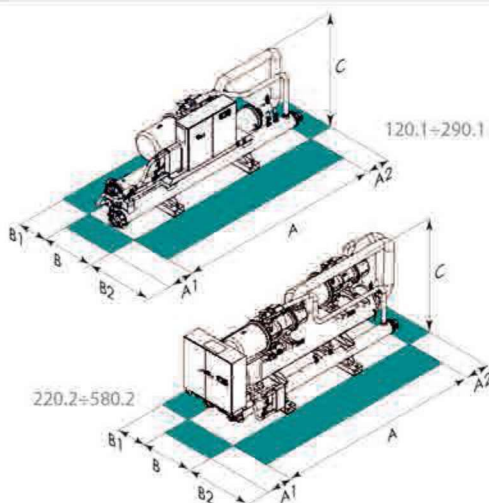
The **SCREWLine³ WDH-SL3** units are water chillers with extremely high efficiency that feature:

- **MAXIMUM ENERGY SAVING** - Excellence version is placed in Eurovent Energy Efficiency Class A and stands for high efficiency at partial load operation with continuous modulation of the compressor capacity from 100% to 25%.
- **HIGH TEMPERATURES** - The configuration HWT (High Water Temperature) is particularly suitable for high leaving water temperature up to 65°C.
- **PERFECT FOR GREEN BUILDINGS** - Top efficiency figures match with demanding protocols such as ECBC and LEED certification requirements. The refrigerant is zero-ODP. Furthermore, its quantity is much smaller than most of the market chillers can do, such as flooded evaporator models, thus further increasing the relevant design credits.
- **RELIABLE TECHNOLOGY** - Excellent energy figures originate from high performance double screw compressor complete with electronic thermostatic valve and innovative shell & tube heat exchangers optimized for operation with R-134a. Single compressor units are especially suitable for parallel system configuration (Ecoshare), while two compressors design allows more reliability, higher flexibility and low starting current.
- **HIGHLY VERSATILE APPLICATION** - Suitable for all terminal types, from fan coil units to radiant systems and chilled beams, WDH-SL3 is also available for low temperature supply (Brine) in high dehumidification or industrial process applications. On the source side, it can easily benefit from tower, dry cooler or well water plant design.

functions and features



dimensions and clearances



Size - WDH-SL3		120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
A - Length	mm	4624	4624	4624	4735	4735	4735	4735	4735	4735
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1552	1552	1552	1684	1684	1684	1684	1684	1684
EN-EXC C - Height	mm	1552	1552	1552	1770	1770	1770	1770	1770	1770
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	1170	1170	1170	1170	1170	1170
ST-EXC Operating weight	kg	2377	2457	2514	3263	3274	3352	3403	3530	3561
EN-EXC Operating weight	kg	2541	2650	2707	3486	3497	3575	3626	3753	3784

Size - WDH-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	4645	4645	4645	4645	4645	4645	5025	5025	5025	5025	5025	5075	5075	5075
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	2006	2006	2006	2006	2006	2006	2223	2223	2223	2223	2223	2390	2390	2390
EN-EXC C - Height	mm	2114	2114	2114	2114	2114	2114	2280	2280	2280	2280	2280	2435	2435	2435
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	3936	3967	4043	4068	4123	4179	5246	5473	5600	5750	5799	6641	6830	6889
EN-EXC Operating weight	kg	4264	4295	4400	4454	4509	4565	5662	5919	6046	6196	6245	7087	7276	7335

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.
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

VERSION:

- EXC Excellence (Standard)

ENERGY EFFICIENCY:

- - High water temperature: not requested (Standard)
- HWT High water temperature

ENERGY RECOVERY:

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

OPERATION:

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

ACOUSTIC CONFIGURATION:

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

APPLICATION:

- T Cooling tower application (Standard)
- P Groundwater application

DOUBLE SET POINT:

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

technical data

Size – WDH-SL3			120.1	140.1	160.1	180.1	200.1	220.1	250.1	270.1	290.1
Eurovent (*)											
ST/EN-EXC	► Cooling capacity (EN14511:2013)	(1) kW	325	392	430	504	550	613	668	736	782
ST/EN-EXC	Total power input (EN14511:2013)	(1) kW	63,0	76,6	85,0	96,6	106	118	130	144	155
ST/EN-EXC	EER (EN 14511:2013)	(1) -	5,15	5,12	5,05	5,22	5,19	5,19	5,13	5,13	5,05
ST/EN-EXC	ESEER	-	5,51	5,50	5,46	5,56	5,56	5,55	5,54	5,52	5,41
ST/EN-EXC	► Heating capacity (EN14511:2013)	(2) kW	360	439	482	560	612	682	745	821	874
ST/EN-EXC	Total power input (EN14511:2013)	(2) kW	75,3	90,2	99,9	114	125	139	153	169	182
ST/EN-EXC	COP (EN 14511:2013)	(2) -	4,79	4,87	4,83	4,92	4,91	4,90	4,86	4,87	4,81
ST/EN-EXC	Refrigeration circuits	Nr	1	1	1	1	1	1	1	1	1
ST/EN-EXC	No. of compressors	Nr	1	1	1	1	1	1	1	1	1
ST/EN-EXC	Type of compressors	(3) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
ST/EN-EXC	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	400/3~/50
ST-EXC	Sound pressure level	(4) dB(A)	74	75	76	76	77	76	76	78	78
EN-EXC	Sound pressure level	(4) dB(A)	69	70	71	72	72	71	71	73	73

Size – WDH-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
Eurovent (*)																
ST/EN-EXC	► Cooling capacity (EN14511:2013)	(1) kW	599	638	693	780	817	855	922	975	1077	1207	1251	1329	1452	1535
ST/EN-EXC	Total power input (EN14511:2013)	(1) kW	116	125	137	152	161	169	178	190	211	236	247	258	282	304
ST/EN-EXC	EER (EN 14511:2013)	(1) -	5,16	5,12	5,05	5,13	5,07	5,05	5,19	5,13	5,11	5,12	5,06	5,15	5,14	5,05
ST/EN-EXC	ESEER	-	5,77	5,78	5,73	5,74	5,71	5,71	5,83	5,80	5,72	5,75	5,70	5,82	5,82	5,66
ST/EN-EXC	► Heating capacity (EN14511:2013)	(2) kW	668	712	779	875	918	962	1030	1096	1210	1354	1409	1482	1618	1727
ST/EN-EXC	Total power input (EN14511:2013)	(2) kW	137	149	163	179	190	199	210	225	248	278	292	304	333	360
ST/EN-EXC	COP (EN 14511:2013)	(2) -	4,87	4,78	4,77	4,88	4,84	4,83	4,90	4,87	4,87	4,87	4,83	4,87	4,86	4,80
ST/EN-EXC	Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
ST/EN-EXC	No. of compressors	Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
ST/EN-EXC	Type of compressors	(3) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
ST/EN-EXC	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	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50	400/3~/50
ST-EXC	Sound pressure level	(4) dB(A)	77	77	78	78	78	79	79	80	79	79	79	80	81	81
EN-EXC	Sound pressure level	(4) dB(A)	71	72	73	73	73	74	74	74	74	74	75	75	76	77

Notes

- (*) The programme applies to air-cooled water chillers up to 600 kW and water-cooled water chillers up to 1500 kW.
- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 30/35°C
- (2) Data referred to unit in 'OHI - Operation with water circuit change-over' configuration; Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: Internal exchanger water = 12/7°C; External exchanger water = 40/45°C
- (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 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
- EN-EXC Extremely low noise(EN)-Excellence
ST-EXC Standard (ST)-Excellence

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
- DML0-10 Demand limit with signal 0-10V
- DML4-20 Demand limit with signal 4-20mA
- CFSCE Potential-free contacts for compressor status and enabling
- ECS ECOSHARE function for the automatic management of a group of units
- PFCP Power factor correction capacitors (cosφ > 0.9)
- CBS Overload circuit breakers
- SFSTR2 Progressive compressor start-up device
- EVE Electronic expansion valves
- PVSX Water flow valve
- IVMSX Modulating valve source side

■ Accessories separately supplied

Water chiller
 Condenserless
 Indoor/outdoor installation
 Capacity from 174 to 487 kW

SPINchiller



The **MSE-SC** units belong to the **SPINchiller** family and therefore feature high energy efficiency, self-adaptation and reliability.

They are condenserless units that may be combined with the remote condensers of the **CEM** series. Thanks to indoor installation and remote dispersal of heat into the ambient air, the noise may be transferred to where it causes less disturbance.

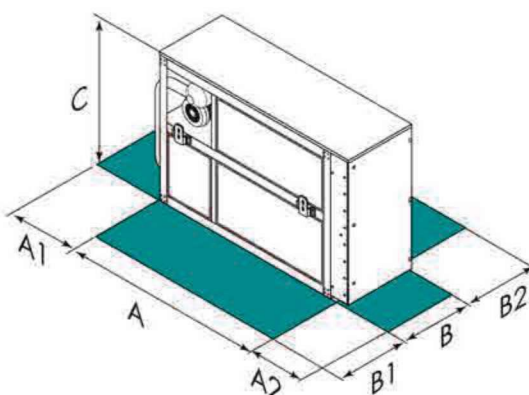
- ▶ **Compactness:** the width in the units up to 500 kW capacity has been reduced to just 85 cm so that they can pass through normal doorways.
- ▶ **Easy connection** to the service system plus a simple control system and easy maintenance drastically reduce work requiring specialised personnel and therefore installation costs.
- ▶ **Efficiency** that increases as the heating load decreases, while guaranteeing maximum requested load when necessary.
- ▶ The particular abundance of optional accessories allows customisation of the unit, also for special requirements both in the civil and technological air-conditioning sphere. In particular the optional for the HydroPack water circulating unit, consistent with the concept of modularity, has several pumps in parallel (up to 3), to monitor the system load variations better.

The innovative and hi-tech features of SPINchiller give this series a much higher quality than can generally be found on the market today.

functions and features



dimensions and clearances



Size - MSE-SC		65D	70D	75D	75C	80D	90D	90C	100D	110D	120D	135F	150F	165F	180F
ST/EN	A - Length	mm	2541	2541	2541	2670	2541	2541	2670	2541	2541	3051	3051	3051	3051
ST/EN	B - Width	mm	850	850	850	850	850	850	850	850	850	850	850	850	850
ST/EN	C - Height	mm	1880	1880	1880	1881	1880	1880	1881	1880	1880	1879	1879	1879	1879
ST/EN	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN	A2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
ST/EN	B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN	B2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
B1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
B2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700	700
ST	Operating weight	kg	2187	2257	2323	1791	2393	2406	1791	2422	2422	2422	3283	3310	3310
EN	Operating weight	kg	2197	2277	2343	1811	2413	2426	1811	2442	2442	2442	3373	3490	3490

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 Standard (ST)
 EN Extremely low noise(EN)

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 (sizes 65D÷75D, 80D÷90D only, Standard)
- ▶ B Water low temperature (sizes 65D÷75D, 80D÷90D)

VOLTAGE:

- ▶ 400T Supply voltage 400/3/50 without neutral (Standard)

ENERGY RECOVERY:

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

ACOUSTIC CONFIGURATION:

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

UNIT INSTALLATION:

- ▶ II Indoor installation (Standard)
- ▶ IO Outdoor installation

DOUBLE SET POINT:

- ▶ - Double set point: not required (Standard)
- ▶ DSP Double set point
- ▶ DSPB Double set point for water low temperature

technical data

Size – MSE-SC				65D	70D	75D	75C	80D	90D	90C	100D	110D	120D	135F	150F	165F	180F
ST/EN	Cooling capacity	(1)	kW	174	184	196	205	206	238	248	271	305	332	360	405	447	487
ST/EN	Compressor power input		kW	54,7	57,6	60,4	60,6	63,3	72,0	75,6	80,7	90,9	101	108	121	136	151
ST/EN	Total power input	(2)	kW	55,1	58,0	60,8	60,9	63,7	72,4	75,9	81,1	91,4	101	109	122	137	152
ST/EN	EER		-	3,15	3,17	3,22	3,37	3,23	3,28	3,27	3,34	3,34	3,27	3,32	3,33	3,27	3,21
ST/EN	Refrigeration circuits		Nr	2	2	2	1	2	2	1	2	2	2	2	2	2	2
ST/EN	No. of compressors		Nr	4	4	4	3	4	4	3	4	4	4	6	6	6	6
ST/EN	Type of compressors	(3)	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL
ST	Sound pressure level	(4)	dB(A)	72	73	74	76	75	76	76	76	76	76	78	79	80	80
EN	Sound pressure level	(4)	dB(A)	67	67	68	70	69	70	71	71	71	70	72	73	74	74

Notes

The units are shipped with a sealed charge of nitrogen.

- (1) Data referred to the following conditions: Internal exchanger water = 12/7°C; Dew Point condensing temperature = 50°C
- (2) The Total Power Input value does not take into account the part related to the pumps and required to overcome the pressure drops for the circulation of the solution inside the exchangers
- (3) SCROLL = scroll compressor

- (4) Data referred to the following conditions: Internal exchanger water = 12/7°C; Dew Point condensing temperature = 50°C; 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.
ST Standard (ST)
EN Extremely low noise(EN)

accessories

- ▶ CFSC Potential-free contacts for compressor status
- ▶ AMRX Rubber antivibration mounts
- ▶ PM Phase monitor
- ▶ RCMRX Remote control via microprocessor control
- ▶ CMSC6 CAN/LON WORKS serial converter kit
- ▶ CMSC4 CAN/Modbus serial converter kit
- ▶ SPC1 Set point compensation with 4-20 mA signal
- ▶ SPC2 Set-point compensation with outdoor air temperature probe
- ▶ SPC3 Set point compensation according to the outside enthalpy
- ▶ PFCP Power factor correction capacitors (cosφ > 0.9)
- ▶ MS LX Master-slave operation
- ▶ IFUX Steel mesh strainer on user side
- ▶ 2PM Hydropack with 2 pumps (sizes 65D÷120D)
- ▶ 2P1SB Hydropack with 2 pumps + 1 in stand-by (sizes 65D÷120D)
- ▶ 3PM Hydropack with 3 pumps
- ▶ EHU Anti-freeze electric heaters user side for hydronic assembly
- ▶ CEHU Connection set exchanger with hydronic assembly (user side)
- ▶ MHP High and low pressure gauges
- ▶ SDV Cutoff valve on compressor supply and return

■ Accessories separately supplied

Water chiller
Condenserless
Indoor installation
Capacity from 300 to 1427 kW

SCREWLine³



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

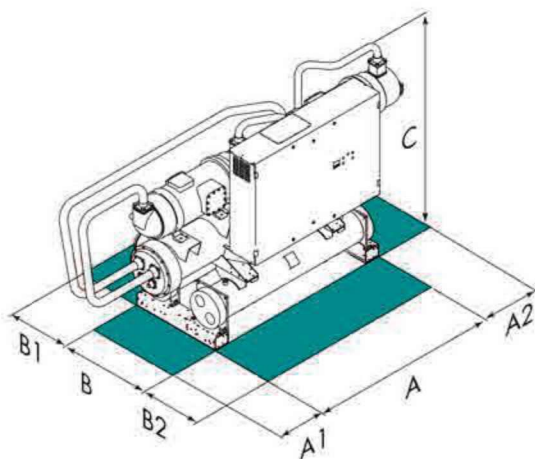
- **BUILDINGS WITH ARCHITECTURAL VALUE** - The chiller is normally installed in a service room and therefore completely concealed from sight, whereas the outdoor exchange section can be positioned remotely.
- **EXTREMELY LOW NOISE EMISSION** - Separated from the chiller, the outdoor exchange section 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.

The energy efficiency of the entire range is particularly high: all sizes use two compact two screw semi-hermetic compressors with continuous adjustment of the supplied cooling capacity. The shell and tube evaporators are specifically optimised to operate with ecological R134a refrigerant fluid and are provided with a standard electronic expansion valve.

functions and features



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	4340	4340	4340	4690	4690	4690	4690	4690	4690
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1480	1480	1480	1660	1660	1660	1660	1660	1660
EN-EXC C - Height	mm	1480	1480	1480	1746	1746	1746	1746	1746	1746
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	2077	2156	2214	2857	2868	2914	2966	3074	3105
EN-EXC Operating weight	kg	2241	2349	2407	3080	3091	3137	3189	3297	3328

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	4635	4635	4635	4635	4635	5010	5010	5000	5000	5000	5070	5070	5070	5070
B - Width	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
ST-EXC C - Height	mm	1810	1810	1810	1810	1810	2020	2020	2030	2030	2030	2160	2160	2160	2160
EN-EXC C - Height	mm	1918	1918	1918	1918	1918	2077	2077	2087	2087	2087	2205	2205	2205	2205
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	3413	3444	3520	3545	3600	3656	4521	4748	4876	4965	5013	5855	6011	6070
EN-EXC Operating weight	kg	3741	3772	3877	3931	3986	4042	4937	5194	5322	5411	5459	6301	6457	6516

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

VERSION:

- ▶ EXC Excellence (Standard)

ENERGY RECOVERY:

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

ACOUSTIC CONFIGURATION:

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

UNIT INSTALLATION:

- ▶ II Indoor installation (Standard)

DOUBLE SET POINT:

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

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	1	1	1	1	1	1	1	1
ST/EN-EXC	▶ No. of compressors	Nr	1	1	1	1	1	1	1	1	1
ST/EN-EXC	▶ Type of compressors	(3) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
ST/EN-EXC	▶ 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	400/3/50
ST-EXC	▶ Sound pressure level	(4) dB(A)	74	75	76	76	77	76	76	78	78
EN-EXC	▶ Sound pressure level	(4) dB(A)	69	70	71	72	72	71	71	73	73

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	2	2	2	2	2	2	2	2	2	2	2	2	2
ST/EN-EXC	▶ No. of compressors	Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2
ST/EN-EXC	▶ Type of compressors	(3) -	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW	DSW
ST-EXC	▶ Sound pressure level	(4) dB(A)	77	77	78	78	78	79	79	80	79	79	79	80	81	81
EN-EXC	▶ Sound pressure level	(4) dB(A)	71	72	73	73	73	74	74	74	74	74	75	75	76	77

Notes

The units are shipped with a sealed charge of nitrogen.

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

PRELIMINARY DATA

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
- ▶ **DML0-10** Demand limit with signal 0-10V
- ▶ **DML4-20** Demand limit with signal 4-20mA
- ▶ **CFSCE** Potential-free contacts for compressor status and enabling
- ▶ **ECS** ECOSHARE function for the automatic management of a group of units
- ▶ **PFCP** Power factor correction capacitors (cosφ > 0.9)
- ▶ **CBS** Overload circuit breakers
- ▶ **SFSTR2** Progressive compressor start-up device

■ Accessories separately supplied

Make-up 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



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

ELFOFresh Large units are designed to guarantee ideal air exchange rates in shops and offices.

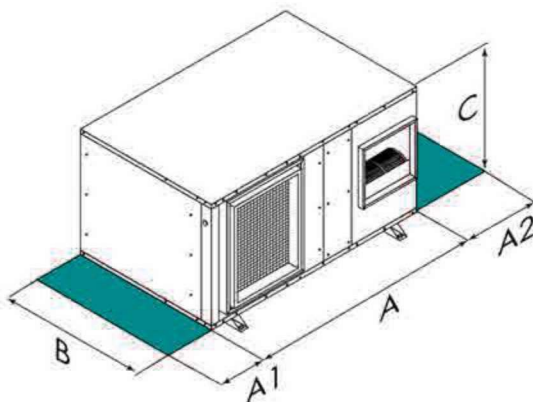
Their main characteristics include:

- 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;
- electronic filtration control for guaranteed purity of incoming fresh air and effective removal of airborne dust (optional).

functions and features



dimensions and clearances



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	443	443	518	518	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.

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:

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

INTEGRATION COIL:

- **-** Additional coil: not required (Standard)
- **CH20** 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	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	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	400/3N~50	400/3N~50	400/3N~50	400/3N~50
Sound pressure level				(6)					

Notes

- (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
- **FEG4** Class G4 air filters on outdoor and exhaust air
- **3WVM** Modulating three-way valve
- **HSE3** 3 kg/h electrode boiler steam humidifier (sizes 17÷21)
- **HSE5** 5 kg/h electrode boiler steam humidifier (sizes 25÷31)
- **HSE8** 8 kg/h electrode boiler 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 separately supplied

Make-up unit, full fresh air

With return/exhaust and thermodynamic heat recovery

Reversible heat pump technology

Indoor or outdoor installation

Air flow rate from 1111 to 3900 l/s

(from 4000 to 14000 m³/h)



ZEPHIR² EVO

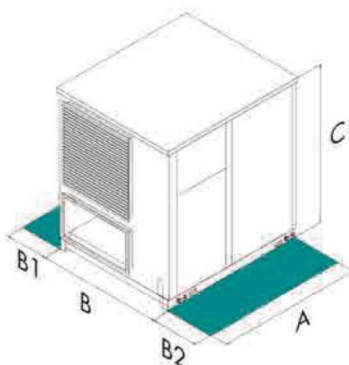
ZEPHIR² EVO encases the entire primary air system in a single packaged system.

- ▶ ZEPHIR² EVO is designed for use in systems in which **primary air is supplied through terminal units** (eg.: fan coils, etc.) or through suitable air diffusers (eg.: elevated heights in commercial galleries).
- ▶ 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 electronically controlled fans with variable flow capability. In this way, it also gets rid of the major consumption due to high pressure drops from passive recovery units. The capacity from the thermodynamic circuit replaces most of the power produced by heating and cooling stations, without fossil fuels and no need for fluid distribution pipework.
- ▶ ZEPHIR² EVO eliminates components with no useful effect, such as storage tanks, pipes and pumps.
- ▶ As it can greatly reduce primary energy consumption, ZEPHIR² EVO increases the property value and makes it easier to access financial support.
- ▶ It sets industrial standards as it eliminates 80% of the on site work, with amazing savings on the Total Life Cycle Cost. Being the core equipment in residential, commercial and industrial applications, it can be matched to fan coils, direct expansion and VRF systems, raising efficiency in existing buildings as well.

functions and features



dimensions and clearances



Size – CPAN-XHE2E		45	60	70	110	130
A - Length	mm	2465	2465	2465	2465	2465
B - Width	mm	1735	1735	1735	2025	2330
C - Height	mm	1810	1810	2260	2260	2260
B1	mm	700	700	700	700	700
B2	mm	1200	1200	1200	1200	1200
Operating weight	kg	972	972	1202	1325	1483

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

CONFIGURATION:

► **SETMC** Operation at the maximum available capacity

VERSION:

► **S** Standard Version (Standard)
 ► **EPWRC** EXTRAPOWER-C (with additional chilled water heat exchanger)
 ► **EPWRHT** EXTRAPOWER-H (with additional hot water heat exchanger)

UNIT INSTALLATION:

► **IO** Outdoor installation (Standard)
 ► **II** Indoor installation

technical data

Size – CPAN-XHE2E			45	60	70	110	130
► Cooling capacity	(1)	kW	33,3	40,8	55,2	74,1	90,3
Sensible capacity	(1)	kW	21,1	26,5	36,6	47,8	58,6
Compressor power input	(1)	kW	9,10	10,5	14,5	20,7	23,7
EER	(1)	-	3,68	3,89	3,81	3,58	3,81
► Heating capacity	(2)	kW	35,9	42,9	58,7	80,9	98,1
Compressor power input	(2)	kW	6,60	7,40	10,6	15,0	17,1
COP	(2)	-	5,48	5,81	5,53	5,39	5,74
Refrigeration circuits		Nr	1	1	1	1	1
No. of compressors		Nr	2	2	2	2	2
Type of compressors	(3)	-	Scroll	Scroll	Scroll	Scroll	Scroll
Supply airflow		l/s	1111	1667	2167	2917	3611
Type of supply fan	(4)	-	RAD	RAD	RAD	RAD	RAD
Number of supply fans		Nr	1	1	1	1	2
Fan diameter		mm	500	500	560	630	500
Max. static pressure supply fan		Pa	650	650	650	460	650
Exhaust airflow		l/s	1111	1667	2167	2917	3611
Type of exhaust fan	(4)	-	RAD	RAD	RAD	RAD	RAD
Number of exhaust fans		Nr	1	1	1	1	2
Max. exhaust static pressure		Pa	650	650	650	420	650
Standard power supply		V	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
Sound pressure level	(5)	dB(A)	62	64	64	65	66

Notes

- (1) Air inlet temperature: expulsion heat exchange coil 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) Air inlet temperature: extract heat exchange coil 20°C D.B. - 13,7°C W.B.; Fresh air temperature: 7°C D.B./ 6,1°C W.B.; COP referred only to compressors.
 (3) SCROLL = scroll compressor
 (4) RAD = radial fan
 (5) 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

accessories

- **3WVM** Modulating three-way valve
 ► **CPHG** Hot gas re-heating coil
 ► **F7AE** F7 high efficiency air filter on outdoor air
 ► **PSTAF** Clogged filter differential pressure switch on extract and delivery
 ► **MHSEX** Immersed electrodes steam humidifying module
 ► **MCHSX** Steam-powered humidifying module
 ► **CMSC10** Serial communication module to LonWorks supervisor
 ► **CMSC9** Serial communication module to Modbus supervisor
 ► **CMSC11** Serial communication module for BACnet-IP supervisor
 ► **CTU** Temperature and humidity control
 ► **PM** Phase monitor
 ► **DESM** Smoke detector
 ► **EH07** 3 kW Electric heaters (sizes 45)
 ► **EH09** 4,5 kW electric heaters (sizes 45)
 ► **EH10** 6 kW electric heaters (sizes 45÷70)
 ► **EH12** 9 kW electric heaters (sizes 45÷70)
 ► **EH14** 12 kW electric heaters
 ► **EH17** 18 kW electric heaters (sizes 60÷130)
 ► **EH20** 24 kW electric heaters (sizes 110÷130)
 ► **AMRX** Rubber antivibration mounts
 ► **RSSX** Remote supply air sensor

Key to symbols:

■ Accessories separately supplied

Water terminal unit

Cased and uncased, vertical and horizontal indoor installation
Capacity from 1,5 to 10,7 kW

ELFOSpace



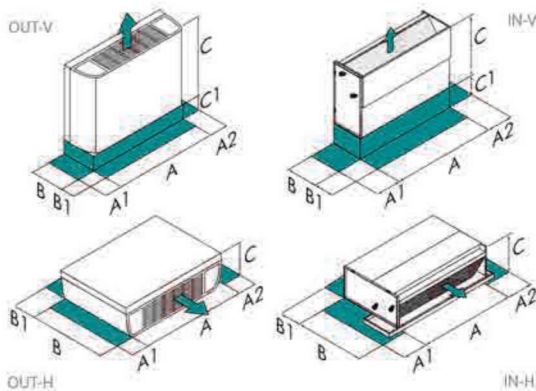
ELFOSpace OUT and IN are the cased and uncased water terminal for installation in the commercial sector.

- 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 ELFOControl² 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



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
OUTV	B - Width	mm	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
OUTV	A1	mm	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
OUTV	B1	mm	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
INV	A - Length	mm	450	450	650	650	850	850	1050	1050	1250	1250	1450
INV	B - Width	mm	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
INV	A1	mm	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
INV	B1	mm	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
OUTH	A - Length	mm	670	670	870	870	1070	1070	1270	1270	1470	1470	1670
OUTH	B - Width	mm	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
OUTH	A1	mm	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
OUTH	B1	mm	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
INH	B - Width	mm	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
INH	A1	mm	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
INH	B1	mm	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
CC2-INH	Operating weight	kg	11	12	14	15	20	21	23	25	27	29	31
CC4-INV	Operating weight	kg	12	12	14	15	21	22	24	26	28	30	32
CC4-INH	Operating weight	kg	12	12	15	16	21	22	24	26	28	30	32
CC2-OUTV	Operating weight	kg	14	14	16	17	22	24	26	28	30	32	34
CC2-OUTH	Operating weight	kg	15	15	18	19	24	26	28	30	33	34	37
CC4-OUTV	Operating weight	kg	16	16	19	20	26	27	30	31	34	36	39
CC4-OUTH	Operating weight	kg	14	15	17	18	24	25	27	29	31	33	35

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-OUTV 4-pipe-Vertical cased version
CC4-OUTH 4-pipe-Horizontal 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													
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	10,7
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
Total power input	kW	0,055	0,055	0,085	0,085	0,075	0,075	0,14	0,14	0,18	0,18	0,28	0,28
Heating capacity	(2) kW	3,74	4,91	5,98	6,71	8,16	9,44	12,0	13,3	15,5	18,1	21,1	23,2
Total power input	kW	0,055	0,055	0,085	0,085	0,075	0,075	0,14	0,14	0,18	0,18	0,28	0,28
Supply airflow	(3) l/s	103	111	139	153	186	200	278	292	356	364	531	539
Type of supply fan	(4) -	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans	Nr	1	1	1	1	2	2	2	2	2	2	3	3
Standard power supply	V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level (1 m)	(5) dB(A)	44	44	50	51	43	43	49	51	54	55	57	57
4-pipe													
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	10,5
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
Total power input	kW	0,055	0,055	0,085	0,085	0,075	0,075	0,14	0,14	0,18	0,18	0,28	0,28
Heating capacity	(6) kW	1,88	1,98	3,18	3,35	4,38	4,55	6,29	6,46	7,99	8,11	11,1	11,2
Total power input	kW	0,055	0,055	0,085	0,085	0,075	0,075	0,14	0,14	0,18	0,18	0,28	0,28
Supply airflow	(3) l/s	97,0	106	133	144	178	189	267	278	342	350	514	522
Type of supply fan	(4) -	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans	Nr	1	1	1	1	2	2	2	2	2	2	3	3
Standard power supply	V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level (1 m)	(5) dB(A)	44	44	50	51	43	43	49	51	54	55	57	57

Notes

- (1) Ambient air at 27°C/19.5 W.B.; inlet water 7°C and outlet 12°C
- (2) Ambient temperature 20°C; Water inlet 70°C and outlet 60°C
- (3) Air flow with free outlet (0 Pa static pressure)
- (4) CFG = AC centrifugal fan

- (5) The sound pressure level is measured 1 metre from the external surface of the wall mounted in view unit; for the built-in unit it is possible a sound pressure reduction of 2 dB or higher.
- (6) Water inlet 70°C and outlet 60°C; Ambient temperature 20°C

accessories

- **MR** 90° air outlet
- **R3** Floor air inlet
- **RF** Front air inlet
- **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
- **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 (3 speed+off+E/I+temp.select.)+ min. temperature thermostat
- **HIDF5** Control on the unit: BULB thermostat + on/off heaters
- **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 room control for 0-10V valves
- **HIDT2X** HID-T2 electronic room control
- **HIDT12X** HID-T12 Flush-mounted electronic room control
- **HIDT3X** HID-T3 electronic room control
- **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 kit
- **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
- **PV90X** Support plinth with cover for in-view vertical units h=90mm
- **PV155X** Support plinth with cover for in-view vertical units h=155mm
- **PVG155X** Support feet with cover h=155mm and return grille
- **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 thermal 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

Key to symbols:

- Accessories separately supplied

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

Water terminal unit

Cassette-type indoor installation

Capacity from 1,98 to 11 kW

ELFOSpace



The **ELFOSpace BOX2** terminal unit has been designed for installation in suspended ceilings without requiring any extra part for operation. The unit has an intake grille and four-way outlet with adjustable diffuser flaps for changing airflow direction.

The ELFOSpace BOX2 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 in electro-mechanical or electronic version with set-up for connection to ELFOControl² or general supervisors;
- ▶ available with DC Brushless ventilating unit;
- ▶ possibility of controlling several units from a single point;
- ▶ suited for installation in standard suspended ceilings with 600 x 600 mm module;
- ▶ the unit comes with a condensate drain pump (650 mm vertical).

functions and features



Cool & heat



Cassette type



Water

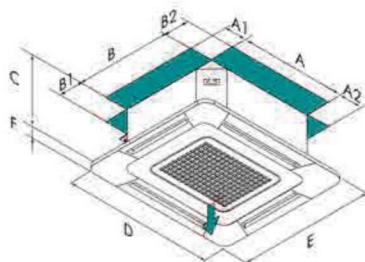


ELFOControl²



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 – ELFOSPACEBOX2			005.0	007.0	011.0	015.0	021.0	031.0	041.0
CC2	A - Length	mm	572	572	572	572	819	819	819
CC2	B - Width	mm	572	572	572	572	819	819	819
CC2	C - Height	mm	296	296	296	296	329	329	329
CC2	D - Length	mm	670	670	670	670	965	965	965
CC2	E - Width	mm	670	670	670	670	965	965	965
CC2	F - Height	mm	41	41	41	41	59	59	59
CC2	A1	mm	500	500	500	500	500	500	500
CC2	A2	mm	500	500	500	500	500	500	500
CC2	B1	mm	100	100	100	100	100	100	100
CC2	B2	mm	100	100	100	100	100	100	100
CC2	Operating weight	kg	25	25	27	27	42	45	45
CC4	A - Length	mm	572	572	572	572	819	819	819
CC4	B - Width	mm	572	572	572	572	819	819	819
CC4	C - Height	mm	296	296	296	296	329	329	329
CC4	D - Length	mm	670	670	670	670	965	965	965
CC4	E - Width	mm	670	670	670	670	965	965	965
CC4	F - Height	mm	41	41	41	41	59	59	59
CC4	A1	mm	500	500	500	500	500	500	500
CC4	A2	mm	500	500	500	500	500	500	500
CC4	B1	mm	100	100	100	100	100	100	100
CC4	B2	mm	100	100	100	100	100	100	100
CC4	Operating weight	kg	27	27	27	27	45	45	45

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:

► **PLAX** Plastic frame for air supply and return

COIL CONFIGURATION:

► **CC2** Coil configuration for 2-pipe system (Standard)
► **CC4** Coil configuration for 4-pipe system

technical data

Size – ELFOSPACEBOX2			005.0	007.0	011.0	015.0	021.0	031.0	041.0
2 pipes									
■ Cooling capacity	(1)	kW	1,98	2,68	4,33	5,02	6,16	9,51	11,1
■ Sensible capacity	(1)	kW	1,64	2,04	3,18	3,74	4,59	6,48	8,25
■ Total power input		kW	0,057	0,044	0,068	0,090	0,077	0,12	0,17
■ Heating capacity	(2)	kW	2,37	3,10	5,12	5,86	7,26	11,1	13,2
■ Supply airflow		l/s	169	144	197	244	317	417	506
■ Type of supply fan	(3)	–	RAD	RAD	RAD	RAD	RAD	RAD	RAD
■ Standard power supply		V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
■ Sound pressure level (1 m)	(4)	dB(A)	36	32	40	46	34	39	44
4-pipe									
■ Cooling capacity	(1)	kW	2,33	2,70	3,93	4,53	6,34	8,77	10,2
■ Sensible capacity	(1)	kW	1,90	1,98	2,95	3,46	4,69	6,49	7,68
■ Total power input		kW	0,057	0,044	0,068	0,090	0,077	0,12	0,17
■ Heating capacity	(5)	kW	3,03	3,46	3,35	3,79	9,10	8,56	9,80
■ Supply airflow		l/s	169	144	197	244	317	417	506
■ Type of supply fan	(3)	–	RAD	RAD	RAD	RAD	RAD	RAD	RAD
■ Standard power supply		V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
■ Sound pressure level (1 m)	(4)	dB(A)	36	32	40	46	34	39	44

Notes

- (1) Ambient air at 27°C/19.5 W.B.; inlet water 7°C and outlet 12°C
(2) Ambient air at 20°C D.B.; water at inlet 50°C and outlet 40°C
(3) RAD = radial fan

- (4) 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.
(5) Ambient temperature 20°C DB; Water inlet 70°C and outlet 60°C

accessories

- **VEC** High efficiency EC fan (sizes 007.0+031.0)
- **2V2X** ON/OFF 2 way valve kit for 2-pipe system
- **2V4X** ON/OFF 2 way valve kit for 4-pipe system
- **3V2X** Three-way valve kit for 2-pipe type "on/off" system
- **3V4X** Three-way valve kit for 4-pipe system type "on/off"
- **CONRX** Fresh air connection
- **MAUXX** Primary air kit
- **CAUX** Auxiliary air distribution duct
- **CIVX** Fairing for in-view installation
- **RE** Electric heaters (sizes 007.0+041.0)
- **CVMB** MB electronics for infrared remote control

- **CTSP1** CLIVET TALK TERMINAL SPACE: electronics with RS485 Modbus serial port
- **CPVM** Control additional card of 0-10V valve
- **HIDE2X** Remote control with E/I +3V +on/off for wall installation
- **HIDE3X** Plurifunctional remote control for wall installation
- **HIDT2X** HID-T2 electronic room control
- **HIDT12X** HID-T12 Flush-mounted electronic room control
- **HIDT3X** HID-T3 electronic room control
- **TIMBX** Infrared remote control with receiver for MB electronics
- **PTABX** Remote probe for room air temperature for electromechanical thermostats.
- **DCPX** Control device for more units with a single room control.

Key to symbols and notes

- Accessories separately supplied

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

Water terminal unit

Uncased horizontal and vertical indoor installation

Ductable

Capacity from 6 to 25,5 kW



ELFODuct MP - HP

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 (MP), 150 Pa (HP)**
- 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.

technical data

Size – ELFODUCT MP			15	21	25	31	41	51	61	71
2 pipes										
• Cooling capacity	(1)	kW	6,01	7,48	8,59	10,3	12,9	15,0	17,2	20,2
Sensible capacity		kW	4,57	5,56	6,16	8,10	9,95	11,1	13,3	14,9
Total power input		kW	0,16	0,16	0,16	0,31	0,31	0,31	0,46	0,46
• Heating capacity	(2)	kW	7,82	9,47	10,0	13,9	17,2	18,3	23,1	24,6
Total power input		kW	0,16	0,16	0,16	0,31	0,31	0,31	0,46	0,46
Supply airflow	(3)	l/s	306	333	319	583	639	611	861	819
Type of supply fan	(4)	-	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans	Nr		1	1	1	2	2	2	3	3
Standard power supply	V		230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level (1 m)	(5)	dB(A)	53	54	54	60	61	61	59	59
4-pipe										
• Cooling capacity	(1)	kW	5,83	7,22	-	9,96	12,4	13,2	16,6	-
Sensible capacity		kW	4,42	5,35	-	7,83	9,53	10,4	12,8	-
Total power input		kW	0,16	0,16	-	0,31	0,31	0,46	0,46	-
• Heating capacity	(2)	kW	6,61	6,97	-	11,6	12,2	15,5	16,4	-
Total power input		kW	0,16	0,16	-	0,31	0,31	0,46	0,46	-
Supply airflow	(3)	l/s	292	317	-	556	603	742	814	-
Type of supply fan	(4)	-	CFG	CFG	-	CFG	CFG	CFG	CFG	-
Number of supply fans	Nr		1	1	-	2	2	3	3	-
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 (1 m)	(5)	dB(A)	53	54	-	60	61	58	59	-

technical data

Size – ELFODUCT HP			015.0	021.0	025.0	031.0	041.0	051.0	061.0	071.0
2 pipes										
• Cooling capacity	(1)	kW	6,82	8,65	10,1	12,0	15,2	17,8	21,2	25,5
Sensible capacity	(1)	kW	5,30	6,58	7,38	9,78	12,1	13,5	17,2	19,4
Total power input		kW	0,29	0,29	0,29	0,56	0,56	0,56	0,65	0,65
• Heating capacity	(2)	kW	15,2	18,9	20,0	28,4	35,2	37,2	50,3	53,7
Total power input		kW	0,29	0,29	0,29	0,56	0,56	0,56	0,65	0,65
Supply airflow	(3)	l/s	375	417	403	764	833	792	1222	1167
Type of supply fan	(4)	-	CFG	CFG	CFG	CFG	CFG	CFG	CFG	CFG
Number of supply fans	Nr		1	1	1	2	2	2	3	3
Max. static pressure supply fan	Pa		184	194	194	182	192	192	196	196
Standard power supply	V		230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
Sound pressure level (1 m)	(5)	dB(A)	58	59	59	61	62	62	63	63
4-pipe										
• Cooling capacity	(1)	kW	6,57	8,28	-	11,5	14,6	16,1	20,3	-
Sensible capacity	(1)	kW	5,07	6,25	-	9,33	11,5	13,3	16,4	-
Total power input		kW	0,29	0,29	-	0,56	0,56	0,65	0,65	-
• Heating capacity	(2)	kW	12,1	12,9	-	22,3	23,6	31,9	33,6	-
Total power input		kW	0,29	0,29	-	0,56	0,56	0,65	0,65	-
Supply airflow	(3)	l/s	353	389	-	714	778	1056	1139	-
Type of supply fan	(4)	-	CFG	CFG	-	CFG	CFG	CFG	CFG	-
Number of supply fans	Nr		1	1	-	2	2	3	3	-
Max. static pressure supply fan	Pa		186	196	-	184	192	186	196	-
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 (1 m)	(5)	dB(A)	58	59	-	61	62	62	63	-

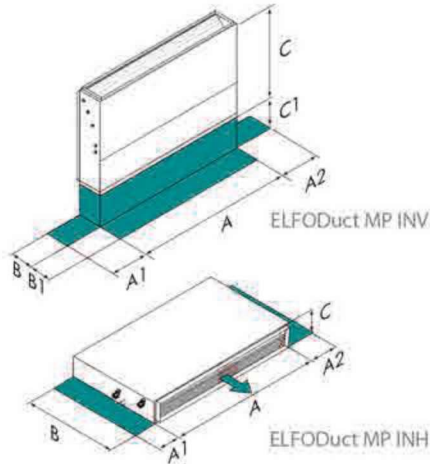
Notes

- (1) Indoor air at 27°C D.B./19°C W.B; Water temperature in / out 7°C / 12°C.
 (2) Indoor air temperature at 20°C; Water temperature in/out = 70°C/60°C.
 (3) Air flow at maximum speed (ESP = 0Pa)
 (4) CFG = centrifugal fan.

- (5) The sound levels refer to ceiling units without false ceiling, with nominal air flow, fan supply 220V, at maximum speed.
 Sound pressure levels referred to 1 m, from unit external surface.
 Measurement made with intake plenum and air filter mounted.

ElfoDuct MP

dimensions and clearances



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

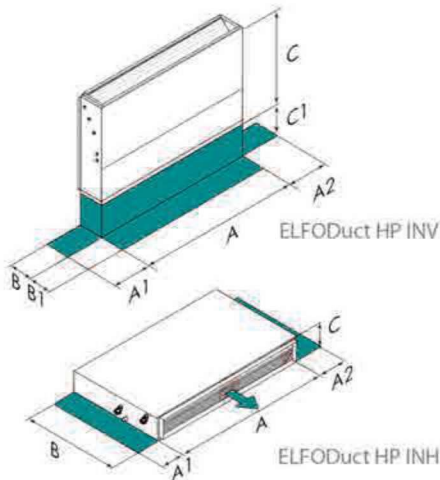
Size – ELFODUCT MP			15	21	25	31	41	51	61	71
CC2-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INV	B - Width	mm	250	250	250	250	250	250	250	250
CC2-INV	C - Height	mm	600	600	600	600	600	600	600	600
CC2-INV	A1	mm	400	400	400	400	400	400	400	400
CC2-INV	A2	mm	200	200	200	200	200	200	200	200
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-INV	A - Length	mm	880	880	880	1280	1280	1280	1680	1680
CC2-INH	B - Width	mm	575	575	575	575	575	575	575	575
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	250	250	-	250	250	250	250	-
CC4-INV	C - Height	mm	600	600	-	600	600	600	600	-
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	250	250	-	250	250	250	250	-
CC4-INH	C - Height	mm	575	575	-	575	575	575	575	-
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

ElfoDuct HP

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

Water terminal unit

Vertical or horizontal indoor installation, cased or uncased

Capacity from 0,9 to 4,2 kW

ELFORoom²



ELFORoom²
OUTVL



ELFORoom²
INVOT



ELFORoom²
OUTVOT



ELFORoom²
INVOT

ELFORoom² is a clever mix of technology and design that provides a high level of comfort.

Its main features are:

- ▶ **ALWAYS WELL BLENDED TEMPERATURE** - It eliminates temperature stratification of the air thanks to the continuous fan speed modulation
- ▶ **REDUCED CONSUMPTION** - the unique motor allows big savings on consumptions
- ▶ **QUIET OPERATION** - the continuous fan operation allows to always operate at the lowest speed reducing the noise
- ▶ **CLEAN AIR WHILE AIRCONDITIONING** - continuously mixing the air allows a constant filtration thus a better air quality
- ▶ **SUITABLE FOR ALL THE INSTALLATIONS** - available in horizontal and vertical versions both cased and uncased.

functions and features



Cool & heat



Vertical: cased



Vertical: uncased



Horizontal: cased



Horizontal: uncased

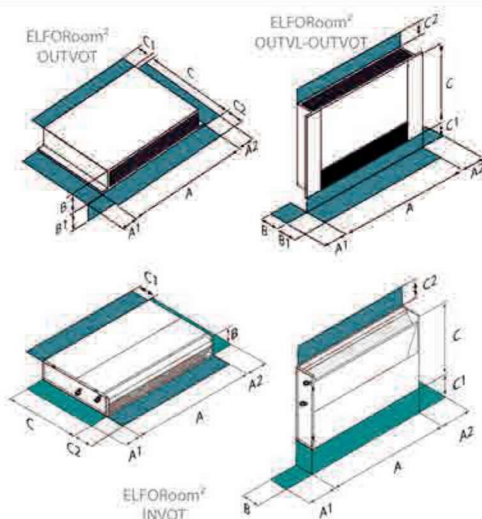


Water



ELFOControl²

dimensions and clearances



Size – ELFOROOM2		003.0	005.0	011.0	015.0	017.0
OUTV	A - Length	mm	737	937	1137	1337
OUTV	B - Width	mm	131	131	131	131
OUTV	C - Height	mm	579	579	579	579
OUTV	A1	mm	20	20	20	20
OUTV	A2	mm	20	20	20	20
OUTV	B1	mm	400	400	400	400
OUTV	C1	mm	80	80	80	80
OUTV	C2	mm	140	140	140	140
INV	A - Length	mm	527	727	927	1127
INV	B - Width	mm	126	126	126	126
INV	C - Height	mm	579	579	579	579
INV	A1	mm	63	63	63	63
INV	A2	mm	100	100	100	100
INV	B1	mm	400	400	400	400
INV	C1	mm	20	20	20	20
INV	C2	mm	360	360	360	360
OUTV	Operating weight	kg	17	20	23	26
INV	Operating weight	kg	9,0	12	15	18

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

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:

- **OUTVL** Vertical cased with LCD display, continuous modulation DC motor, RS485 interface and built-in thermostat (Standard)
- **OUTVOT** Vertical - Horizontal cased with continuous modulation DC motor, RS485 interface without built-in thermostat
- **INVOT** Vertical - Horizontal uncased with continuous modulation DC motor, RS485 interface without built-in thermostat
- **OUTRAD** Vertical cased with continuous modulation DC motor, RS485

- **INRAD** interface with built-in thermostat and ventilated radiant plate
Vertical uncased with continuous modulation DC motor, RS485 interface, without built-in thermostat and with ventilated radiant plate
- **OUTSRAD** Vertical cased with continuous modulation DC motor, RS485 interface, without built-in thermostat and with ventilated radiant plate

technical data

Size - ELFOROOM2			003.0	005.0	011.0	015.0	017.0
► Cooling capacity	(1)	kW	0,89	1,91	2,83	3,69	4,19
Sensible capacity	(1)	kW	0,65	1,29	1,94	2,50	2,78
Total power input	(1)	kW	0,012	0,020	0,022	0,030	0,033
► Heating capacity	(2)	kW	0,93	1,97	2,71	3,45	4,11
Supply airflow	(3)	l/s	45,0	89,0	128	160	180
Type of supply fan	(4)	-	TGZ	TGZ	TGZ	TGZ	TGZ
Standard power supply	(5)	V	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50
L Sound pressure level	(6)	dB(A)	23	26	27	23	27
M Sound pressure level	(6)	dB(A)	32	32	33	30	37
H Sound pressure level	(6)	dB(A)	39	40	39	39	43

Notes

- (1) Ambient air at 27°C/19.5 W.B.; inlet water 7°C and outlet 12°C; Air flow at max speed measured with clean filters
- (2) Ambient temperature 20°C DB; Water inlet 45°C and outlet 40°C; Air flow at max speed measured with clean filters
- (3) Air flow at max speed measured with clean filters
- (4) TGZ=tangential
- (5) Power supply 230/1/50 Hz +/-10%
- (6) The values have been detected in a closed ambient with a volume of 100 m³ and a reverberation time of 0.5 seconds. 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.

- L Low speed (L)
- M Medium speed (M)
- H High speed (H)

accessories

- **DX** Water fittings to the right
- **B4T** Additional coil for 4-pipe syst.
- **UV** UV germicidal lamp kit with support
- **3V010** DC motor modulation electronic board for matching to 3 speeds and 0-10V thermostats without RS485 interface
- **CSEMP** Simplified electronic control with 4 speeds DC motor, built-in thermostat without RS485 interface
- **KV3VBX** 3-way valve kit with electrothermal head and balancing
- **KV3B4X** 3-way valve kit with electrothermal head and balancing for 4-pipe system
- **HIDT2X** HID-T2 electronic room control
- **HIDT3X** HID-T3 electronic room control
- **HIDT12X** HID-T12 Flush-mounted electronic room control
- **HIDE1X** Remote control with 3 position switch + on/off for wall installation

- **HIDE2X** Remote control with E/A +3V +on/off for wall installation
- **HIDE3X** Plurifunctional remote control for wall installation
- **BACKVX** Painted rear panel for cased version
- **PCIX** Uncased closure panel
- **KPDX** Plinth kit
- **CSFIX** Formwork for uncased installation
- **FXPPX** Floor fixing bracket kit
- **PMSTX** Telescopic upper supply plenum kit
- **PR90MX** 90° air outlet plenum
- **KASPX** Return plenum kit
- **GMX** Outlet grille
- **GRA1X** Air outflow grille
- **KCMDX** Motor connection cables for unit with couplings on the right

Key to symbols:

- Accessories separately supplied

Close control air-conditioning unit

Direct expansion

Condenserless

Indoor installation

Capacity from 19 to 95 kW

CLOSEControl



UCP-DX air conditioners are energy efficient modular units, direct expansion water cooled condensing units can be combined with **CE-X** series remote condensers and complete with precision adjustment.

They are specialised in climate control for technological areas with a high thermal load and continuous cycle operation, such as Data Centres, Telecommunication stations, Laboratories and Processing sites.

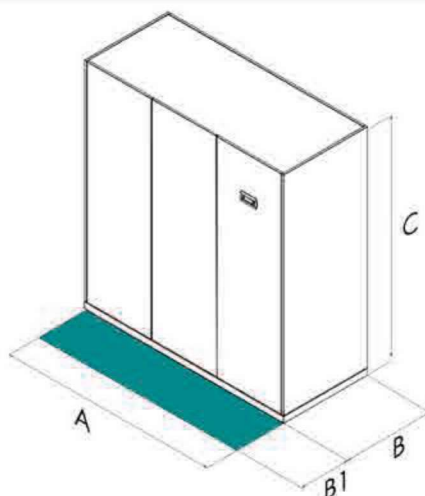
The UCP-DX technological solutions include electronically controlled ventilated sections, electronic thermostatic valve and differently sized compressors connected to the same chilling circuit or two separate chilling circuits with a single compressor. They contribute to reducing operational costs and the environmental impact of the site, thanks to the efficient use of the available energy and simplification of maintenance operations.

The **Twin Cooling version with additional chilled water circuit** also allows an additional increase in the safety level since it is possible to count on two distinct and independent sources.

functions and features



dimensions and clearances



Size – UCP-DX		61	81	82	102	122	162	182	222	262	302
EP	A - Length	mm	1225	1225	1525	1525	2189	2189	2189	2853	2853
EP	B - Width	mm	895	895	895	895	895	895	895	895	895
EP	C - Height	mm	1990	1990	1990	1990	1990	1990	1990	1990	1990
EP	B1	mm	800	800	800	800	800	800	800	800	800
EP	Operating weight	kg	305	320	410	420	610	640	655	870	885

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.
EP Efficiency Plus

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:

- **EP** Efficiency Plus (Standard)
- **DU** Double Circuit (sizes 82÷302)

COMBINATIONS:

- **STD** Standard (Standard)
- **HCOMP** Maximum compactness
- **HEFF** High efficiency

ACOUSTIC CONFIGURATION:

- **ST** Standard acoustic configuration (Standard)
- **LN** Low noise acoustic configuration

CONFIGURATION:

- **DF** DOWNFLOW, air supply downward (Standard)
- **UF** UPFLOW, air supply upward

UNIT TYPE:

- **-** Twin Cooling (with additional coil supplied with chilled water); not required (Standard)
- **TCO** Twin Cooling (with additional coil supplied with chilled water)

technical data

Size - UCP-DX			61	81	82	102	122	162	182	222	262	302
Cooling capacity	(1)	kW	19,4	24,7	31,5	36,8	45,0	51,6	59,2	73,9	84,3	94,7
Sensible capacity	(1)	kW	19,4	23,6	30,3	33,5	44,4	48,9	54,9	70,7	78,2	84,0
SHR	-	-	1	1	1	1	1	1	1	1	1	1
Compressor power input	(1)	kW	4,40	6,10	8,20	9,40	11,9	13,6	15,7	18,7	21,8	24,6
EER	(1)	-	4,38	4,05	3,84	3,92	3,78	3,79	3,77	3,95	3,87	3,85
Refrigeration circuits		Nr	1	1	1	1	1	1	1	1	1	1
No. of compressors		Nr	1	1	2	2	2	2	2	2	2	2
Type of compressors	(2)	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Supply airflow		l/s	1667	1944	2500	2639	3750	4028	4444	5833	6528	6667
Type of supply fan	(3)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
Number of supply fans		Nr	1	1	1	1	2	2	2	3	3	3
Fan diameter		mm	500	500	500	500	500	500	500	500	500	500
Max. static pressure supply fan	(4)	Pa	360	360	360	330	360	360	360	360	360	360
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	400/3~/50	400/3~/50
Sound pressure level	(5)	dB(A)	56	57	59	60	62	63	64	65	66	67

Notes

Performance refers to operation at full re-circulation; Performance not including fan motor capacity

- (1) Ambient air at 24°C D.B./17 °C W.B. Relative humidity 50%; 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) 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. Measurements are made in accordance to the UNI EN ISO 9614-2.

accessories

- **3CWV** Modulating 3-way valve for Twin Cooling
- **2CWV** Modulating 2-way valve for Twin Cooling
- **CPHG** Hot gas re-heating coil
- **HSE3** 3 kg/h electrode boiler steam humidifier (sizes 61÷81)
- **HSE5** 5 kg/h electrode boiler steam humidifier (sizes 61÷182)
- **HSE8** 8 kg/h electrode boiler steam humidifier (sizes 82÷302)
- **HSE9** 15 kg/h electrode boiler steam humidifier (sizes 82÷302)
- **DHFF** Forced dehumidification with flow reduction
- **B3M** Water heating coil with motorised 3-way valve
- **EH10** 6 kW electric heaters (sizes 61÷81)
- **EH12** 9 kW electric heaters (sizes 61÷102)
- **EH14** 12 kW electric heaters (sizes 61÷182)
- **EH17** 18 kW electric heaters (sizes 82÷302)
- **EH22** 27 kW electric heaters (sizes 122÷302)
- **EH24** 36 kW electric heaters (sizes 222÷302)
- **CTU** Temperature and humidity control
- **F5** High efficiency F5 air filter
- **PSAF** Differential pressure switch for dirty air filters
- **CDPX** Condensate drain pump
- **DEFL** Flood detector
- **DESM1** Smoke detector
- **MODB** Modbus serial communication module
- **LONW** LonWorks serial communication module
- **BACN** BACnet serial communication module
- **PM** Phase monitor
- **PFCP** Power factor correction capacitors (cosφ > 0.9)
- **MADX** Motorized air supply damper
- **SFA1X** Adjustable floor stand 300<H<500MM< (supplied separately)
- **SFA2X** Adjustable floor stand 500<H<700mm
- **ZBX** Base H=500 mm with frontal return grille
- **PGFX** Plenum with frontal grille
- **PRAE** Outdoor air intake with filters
- **RCMRX** Remote control via microprocessor control

Key to symbols:

- Accessories separately supplied

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