



"Konut, Ticari ve Endüstriyel Alanlarda İdeal İklimlendirme"



# 50 Yıldır

FORM 50 YIL

## "Verimli Bir Gelecek İçin Çalışıyoruz"

1965 yılında kurulan ve bugün 50 yılı geride bırakan Form Şirketler Grubu, 2015 yılı itibariyle 200'e yakın çalışanıyla 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 yurdisına 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 itibarıyle 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.)

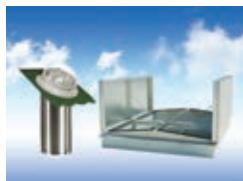
ISKİD, İSKAV, AMPD, ÇEDBİK, GENSED, TABA gibi Türk dernekleri dışında ASHRAE, IGSHPA gibi yabancı derneklerde de üye olan FORM ŞİRKETLER GRUBU, sektörde ve hizmet verdikleri alanlarda sektör etik değerlerine bağlı ciddi, güvenilir ve lider firmalardan biri olmaya devam etmektedir.



Merkezi Klima Sistemleri



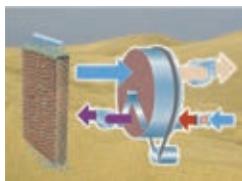
VRF Klima Sistemleri



Endüstriyel Duman Tahliye  
ve Evaporatif Soğutma



Fotovoltaik Sistemleri



Nem Alma  
ve Evaporatif Soğutma

# 25 Yıllık Tecrübe ile Geleceğe Hazır



İtalya Belluno'da

**50.000 m<sup>2</sup>**

modern üretim tesisi

İtalya ve dünya çapında

**700** çalışan

İtalya'da **40** temsilcilik

2013 yılı itibarıyle

**750.000 kW**

kurulu kapasite

**70**

ülkeye ihracat

**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 tasarılanması 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 kullandığı 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 m<sup>2</sup> 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 tesisiinde non-toxic ve çevreye zararsız alaşımaları 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 standartlarına uyumludur.

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

Bu ürünlere Eurovent'in web sayfası [www.eurovent-certification.com](http://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 çalışmaları 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



Yenikent Devlet Hastanesi – Sakarya

ENDÜSTRİYEL



Şişecam Fabrikası – Eskişehir



Çaykur Fabrikası – Rize



Mercedes Fabrikası – Aksaray

AVM / DIĞER



Terracity AVM – Antalya



Forum AVM – Diyarbakır



Novada AVM – Tokat



Ramada Otel – Gebze



Holiday Inn Otel – Gebze



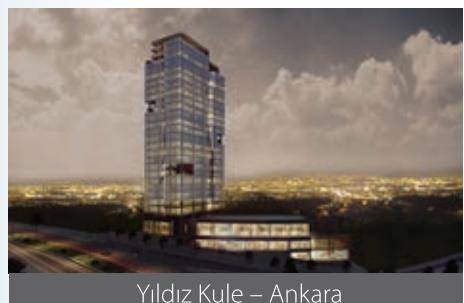
Kaya Thermal Otel – İzmir



Ayazağa Ticaret Merkezi – İstanbul



Bayraktar Twin Tower – Ankara



Yıldız Kule – Ankara



Konak Hastanesi – Gebze



Lancet Medical Center – Gürçistan



Refahiye Hastanesi – Erzincan



Ford Otosan Fabrika – Eskisehir



Eti Gıda Fabrikası – Eskisehir



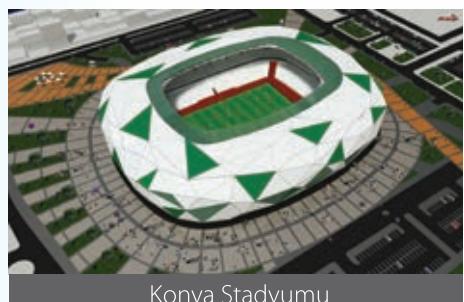
Habom Sabiha Gökçen Havaalanı – İstanbul



Gürpınar Su Ürünleri Hali – İstanbul



Avcılar Nikah Salunu – İstanbul

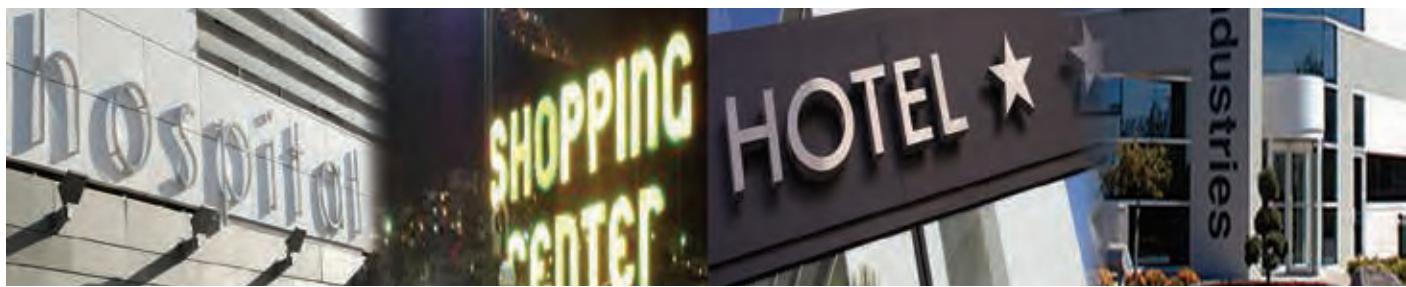


Konya Stadyumu

# HYDRONIC System - Air Source



Small and Medium Commercial			
Capacities (A35/W7)	ELFOEnergy Extended Inverter ELFOEnergy Extended Inverter Duct	ELFOEnergy Medium / Vulcan / Large <sup>3</sup> ELFOEnergy Duct Medium	ELFOEnergy Magnum
	5 ÷ 31 kW	25 ÷ 250 kW	30 ÷ 250 kW
Chillers			
High Temperature Chillers External Air			WSAT-XIN HA 
Free cooling Chillers		WSAT-XEE (FC) 	WSAT-XIN FC 
Heat pumps	WSAN-XIN 	WSAN-XEE 	WSAN-XIN 
Heat pumps High temperature water		WBAN 	WSAN-XIN HW 
Multi-function heat pump			WSAN-XIN MF 
Ducted units	WSA-XIN (Chiller)  WSN-XIN (Heat pumps) 	WSA-XEE (Chiller)  WSN-XEE (Heat pumps) 	



### Large Commercial and Industry

#### SPINchiller<sup>3</sup> / SPINchiller Duct Modular Scroll Technology

270 ÷ 680 kW

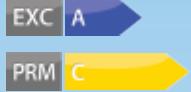
710 ÷ 1360 kW

#### SCREWLine<sup>3</sup>

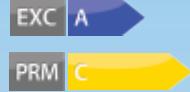
460 ÷ 1420 kW



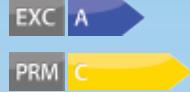
WSAT-XSC3



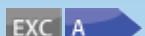
WSAT-XSC3



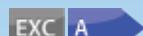
WDAT-SL3



WSAT-XSC3



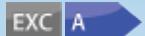
WSAT-XSC3



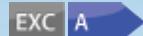
WDAT-SL3



WSAT-XSC3 FC



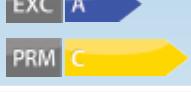
WSAT-XSC3 FC



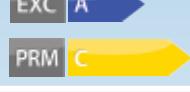
WDAT-SL3 FC



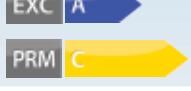
WSAN-XSC3



WSAN-XSC3



WSAN-XSC3 MF



WSAN-XSC3 MF



WSA-XSC2  
(Chiller)



# HYDRONIC System - Water Source



Small and Medium Commercial

	<b>ELFOEnergy Ground</b> 7 ÷ 41 kW	<b>ELFOEnergy Ground Medium<sup>2</sup></b> 39 ÷ 330 kW
Capacities (W10/W35)		
		
 Chillers	WSH-EE	WSH-XEE2
 Heat pumps with inversion on the water circuit	WSH-EE (OHI)	WSH-XEE2
 Heat pumps with inversion on the refrigeration circuit	WSHN-EE	WSHN-XEE2
 Multi-function heat pump		WSHN-XEE2 MF
 Evaporating units	ME	MSE-XEE2



### Large Commercial and Industry

ELFOEnergy Ground Large <sup>2</sup> / SPINSaver Modular Scroll Technology		SCREWLine <sup>3</sup>
300 ÷ 700 kW	800 ÷ 4900 kW	325 ÷ 1610 kW
   R-410A	 	 
WSH-XEE2	 	WDH-SL3 (OCO)
WSH-XEE2		WDH-SL3 (OHI)
WSHN-XEE2		
WSHN-XEE2 MF		
WSHF-XSC		
MSE-XEE2		MDE-SL3

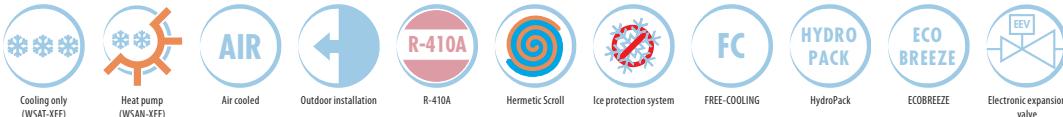
## Water chiller

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

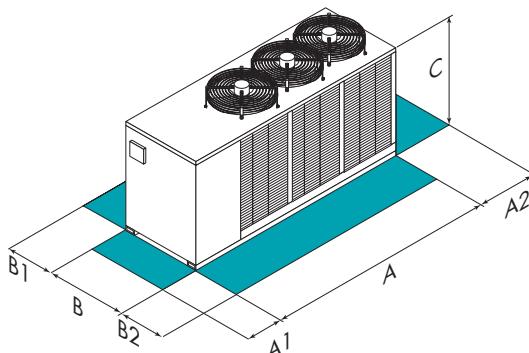


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## 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		<b>352</b>	<b>402</b>	<b>432</b>	<b>452</b>	<b>502</b>	<b>552</b>	<b>602</b>	<b>702</b>	<b>802</b>
SC-EXC	A - Length	mm	3075	3075	3075	4025	4025	4025	4025	5025
SC-EXC	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097
SC-EXC	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805
SC-EXC	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000
SC-EXC	A2	mm	700	700	700	700	700	700	700	700
SC-EXC	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350
SC-EXC	Operating weight	kg	896	933	1024	1207	1234	1256	1302	1497
SC-PRM	Operating weight	kg	778	802	892	924	963	984	1087	1295

Size – WSAN-XEE		<b>352</b>	<b>402</b>	<b>432</b>	<b>452</b>	<b>502</b>	<b>552</b>	<b>602</b>	<b>702</b>	<b>802</b>
A - Length	mm	3075	3075	3075	3075	3075	4025	4025	4025	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
EN	Operating weight	kg	915	975	1059	1101	1126	1326	1341	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	<b>352</b>	<b>402</b>	<b>432</b>	<b>452</b>	<b>502</b>	<b>552</b>	<b>602</b>	<b>702</b>	<b>802</b>
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 (EN 14511:2013) (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 (EN 14511:2013) (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
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

Size - WSAN-XEE	<b>352</b>	<b>402</b>	<b>432</b>	<b>452</b>	<b>502</b>	<b>552</b>	<b>602</b>	<b>702</b>	<b>802</b>
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 (EN 14511:2013) (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	3,24	3,21	3,25	3,25	3,23
SC Refrigeration circuits	Nr	1	1	1	1	1	1	1	1
SC No. of compressors	Nr	2	2	2	2	2	2	2	2
SC Type of compressors	-	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
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	66	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 external 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
- ▶ **FANQE** 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

WSAN-XIN: reversible heat pump

WSAT-XIN: cooling only

Air cooled

Outdoor installation

**Capacity from 4 to 47 kW**



# 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.

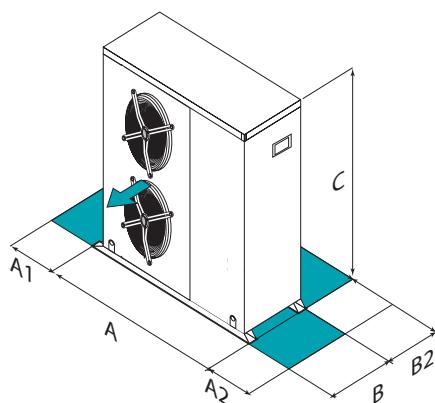


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## functions and features



## dimensions and clearances



Size - WSAT-XIN	21	31	41	51	71	81	91	101	121	131	141
A - Length	mm	895	895	895	1038	1038	1685	1685	1685	1685	1685
B - Width	mm	378	378	378	410	410	629	629	629	629	629
C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1517
A1	mm	100	100	100	100	100	100	100	100	100	100
A2	mm	500	500	500	500	500	500	500	500	500	500
B2	mm	150	150	150	150	150	150	150	150	150	150
Operating weight	kg	102	106	114	160	166	230	230	130	300	300

Size - WSAN-XIN	21	31	41	51	71	81	91	101	121	131	141
A - Length	mm	895	895	895	1038	1038	1685	1685	1685	1685	1685
B - Width	mm	378	378	378	410	410	629	629	629	629	629
C - Height	mm	992	992	992	1234	1234	1137	1137	1137	1517	1517
A1	mm	100	100	100	100	100	100	100	100	100	100
A2	mm	500	500	500	500	500	500	500	500	500	500
B2	mm	150	150	150	150	150	150	150	150	150	150
Operating weight	kg	112	116	124	170	175	240	240	310	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.

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

## versions and configurations

### VOLTAGE:

- **400TN** Supply voltage 400/3/50+N (sizes 51÷171 only, Standard)
- **230M** Voltage 230/1/50 ± 10% (sizes 21÷71)

### ENERGY EFFICIENCY:

- **ES** Standard energy efficiency (Standard)
- **H** High efficiency

## technical data

Size - WSAT-XIN		<b>21</b>	<b>31</b>	<b>41</b>	<b>51</b>	<b>71</b>	<b>81</b>	<b>91</b>	<b>101</b>	<b>121</b>	<b>131</b>	<b>141</b>	<b>151</b>	<b>161</b>	<b>171</b>
<b>Unit for radiant panels</b>															
<b>A35/W18</b>															
► Cooling capacity	kW	4,25	6,33	8,07	10,3	13,0	16,0	18,8	21,0	26,5	29,5	33,1	37,3	44,6	49,6
Total power input	kW	1,14	1,75	2,18	2,83	3,52	4,22	5,11	5,94	7,12	7,95	9,32	10,6	13,5	15,3
EER (EN 14511:2013)	-	3,71	3,62	3,71	3,65	3,70	3,78	3,67	3,53	3,72	3,71	3,55	3,52	3,30	3,24
<b>Terminal units</b>															
<b>A35/W7</b>															
► Cooling capacity	kW	4,39	5,64	8,01	10,1	13,1	15,5	17,5	19,6	25,3	27,8	30,6	36,9	43,1	47,3
Total power input	kW	1,65	2,11	2,99	3,88	5,22	5,53	6,53	8,03	9,57	10,8	12,8	15,1	18,7	21,2
EER (EN 14511:2013)	-	2,66	2,68	2,68	2,61	2,50	2,81	2,68	2,44	2,64	2,58	2,38	2,45	2,30	2,24
ESEER	-	3,83	3,70	3,88	4,08	4,12	4,33	4,39	4,50	4,23	4,36	4,39	4,12	4,34	4,30
Water flow-rate (User Side)	(1) l/s	0,20	0,25	0,37	0,47	0,61	0,73	0,82	0,93	1,19	1,32	1,45	1,76	2,06	2,26
Useful pump discharge head	(1) kPa	52	46	48	44	44	70	65	60	55	48	38	57	48	42
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
Sound Pressure Level (10m)	dB(A)	32	32	32	37	38	40	40	41	40	41	42	32	32	32
Min. entering air temperature	°C	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Max. leaving water temperature	°C	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Size - WSAN-XIN		<b>21</b>	<b>31</b>	<b>41</b>	<b>51</b>	<b>71</b>	<b>81</b>	<b>91</b>	<b>101</b>	<b>121</b>	<b>131</b>	<b>141</b>	<b>151</b>	<b>161</b>	<b>171</b>
<b>Unit for radiant panels</b>															
<b>A7/W35</b>															
► Heating capacity	kW	5,41	6,81	8,70	11,9	14,3	16,5	18,4	19,6	23,8	26,4	30,3	34,8	42,8	47,8
Total power input	kW	1,35	1,71	2,22	2,98	3,61	4,44	4,99	5,22	6,64	7,19	8,31	8,90	11,2	12,5
COP (EN 14511:2013)	-	4,00	3,98	3,93	3,98	3,96	3,72	3,70	3,76	3,58	3,67	3,65	3,90	3,83	3,81
<b>A35/W18</b>															
► Cooling capacity	kW	4,25	6,34	8,07	10,3	13,0	15,9	17,6	19,4	25,4	28,3	32,1	36,6	43,7	48,6
Total power input	kW	1,14	1,74	2,16	2,82	3,50	4,53	4,88	5,52	7,41	8,27	9,60	10,6	13,5	15,3
EER (EN 14511:2013)	-	3,73	3,65	3,73	3,67	3,72	3,52	3,62	3,53	3,43	3,43	3,43	3,43	3,21	3,17
<b>Terminal units</b>															
<b>A7/W45</b>															
► Heating capacity	kW	5,19	6,54	8,25	11,5	13,8	16,2	18,5	20,4	25,8	28,2	31,5	37,6	42,3	50,2
Total power input	kW	1,66	2,09	2,65	3,64	4,42	5,43	6,23	7,17	8,91	9,81	11,4	11,8	13,3	16,2
COP (EN 14511:2013)	-	3,12	3,14	3,11	3,15	3,12	2,98	2,97	2,85	2,89	2,88	2,77	3,20	3,19	3,10
<b>A35/W7</b>															
► Cooling capacity	kW	3,88	5,24	6,11	8,84	11,7	15,5	16,8	19,5	24,0	26,6	29,1	36,2	42,3	46,4
Total power input	kW	1,52	2,04	2,32	3,35	4,45	5,91	6,37	8,37	10,3	11,5	13,4	15,1	18,7	21,2
EER (EN 14511:2013)	-	2,55	2,57	2,63	2,64	2,63	2,62	2,64	2,33	2,33	2,32	2,18	2,40	2,26	2,19
ESEER	-	3,82	3,71	3,47	4,06	4,43	4,17	4,36	4,30	3,84	4,03	4,23	4,04	4,25	4,22
<b>Radiators</b>															
<b>A7/W55</b>															
► Heating capacity	kW	5,05	6,39	8,03	11,0	13,3	15,2	17,7	19,9	24,0	26,6	29,9	36,6	41,3	48,9
Total power input	kW	2,01	2,51	3,25	4,42	5,39	6,56	7,56	8,83	11,1	11,8	13,7	14,3	16,1	19,5
COP (EN 14511:2013)	-	2,52	2,55	2,47	2,50	2,47	2,31	2,34	2,25	2,17	2,25	2,18	2,56	2,57	2,50
Water flow-rate (User Side)	(1) l/s	0,18	0,25	0,29	0,42	0,55	0,73	0,82	0,92	1,14	1,26	1,38	1,73	2,02	2,22
Useful pump discharge head	(1) kPa	54	48	59	51	57	70	67	60	59	51	43	59	51	44
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
Sound Pressure Level (10m)	dB(A)	32	32	32	37	38	40	40	41	40	41	42	48	50	52
Min inlet air temperature (D.B.)	°C	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20	-20
Max. leaving water temperature	°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60

### Notes

(1) User side entering/leaving water temperature 12/7 °C, external exchanger entering air 35°C

Performances according to EN 14511:2013

A7/W35 internal exchanger water 30/35°C; external air temperature 7°C D.B./ 6°C W.B.

A7/W45 internal exchanger water 40/45°C; external air temperature 7°C D.B./ 6°C W.B.

A7/W55 internal exchanger water 45/55°C; external air temperature 7°C D.B./ 6°C W.B.

A35/W18 internal exchanger water 23/18°C; external air temperature 35°C

A35/W7 internal exchanger water 12/7°C; external air temperature 35°C

## accessories

- **AMRX** Rubber antivibration mounts
- **RCTX** Remote control
- **CMSC2X** Serial communication module with RS485 serial converter kit
- **KSAX** 100-litre circuit breaker
- **KTFL1X** 1" water side hose kit (sizes 21÷71)
- **KTFL2X** 1 1/4" water side hose kit (sizes 81÷171)

- Accessories separately supplied

### WSAN-XIN only:

- **CMACSX** Domestic hot water module
- **AC5300X** 300-litre domestic hot water storage tank (sizes 21÷51)
- **AC5500X** 500-litre domestic hot water storage tank (sizes 21÷101)
- **AC53SX** 300-litre domestic hot water storage tank with solar coil (sizes 21÷51)
- **AC55SX** 500-litre domestic hot water storage tank with solar coil (sizes 21÷101)
- **3DHGX** Three-way valve for domestic hot water

## Water chiller

WSAT-XIN: cooling only  
 WSAN-XIN: reversible heat pump  
 Air cooled  
 Outdoor installation  
**Capacity from 50 to 238 kW**

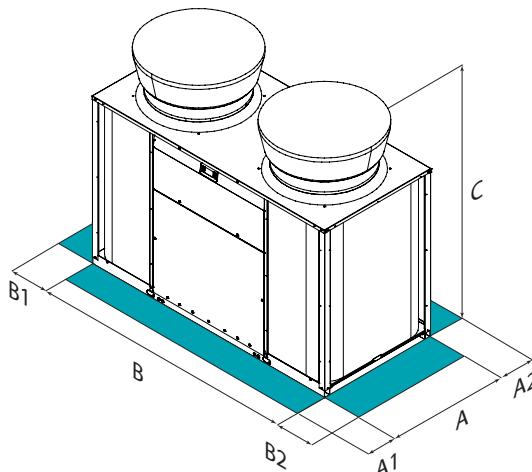


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## functions and features



## dimensions and clearances



Size - WSAT-XIN	18.2	20.2	25.2	30.2	35.2	40.2	48.2	55.2	60.2	65.3	70.4	80.4	85.4
A - Length	mm 2400	2400	2400	2400	3200	3200	4025	4025	4025	4025	5025	5025	5025
B - Width	mm 1100	1100	1100	1100	2200	2200	2200	2200	2200	2200	2200	2200	2200
C - Height	mm 1520	1520	1770	1770	1420	1420	1805	1805	1805	1805	1805	1805	1805
A1	mm 800	800	800	800	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm 800	800	800	800	700	700	700	700	700	700	700	700	700
B1	mm 800	800	800	800	800	800	800	800	800	800	800	800	800
B2	mm 800	800	800	800	800	800	800	800	800	800	800	800	800

Size - WSAN-XIN	18.2	20.2	25.2	30.2	35.2	40.2	48.2	55.2	60.2	65.3	70.4	80.4	85.4
A - Length	mm 2400	2400	2400	2400	3200	3200	4025	4025	4025	4025	5025	5025	5025
B - Width	mm 1100	1100	1100	1100	2200	2200	2200	2200	2200	2200	2200	2200	2200
C - Height	mm 1520	1520	1770	1770	1420	1420	1805	1805	1805	1805	1805	1805	1805
A1	mm 800	800	800	800	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm 800	800	800	800	700	700	700	700	700	700	700	700	700
B1	mm 800	800	800	800	800	800	800	800	800	800	800	800	800
B2	mm 800	800	800	800	800	800	800	800	800	800	800	800	800

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 (WSAT-XIN ONLY):  
 ▷ Energy recovery: not required (Standard)  
 ▷ R Total energy recovery

## Elfo Energy Magnum

### technical data

Size - WSAT-XIN			<b>18.2</b>	<b>20.2</b>	<b>25.2</b>	<b>30.2</b>	<b>35.2</b>	<b>40.2</b>	<b>48.2</b>	<b>55.2</b>	<b>60.2</b>	<b>65.3</b>	<b>70.4</b>	<b>80.4</b>	<b>85.4</b>
► Cooling capacity (EN14511:2013)	(1)	kW	49,9	62,7	71,7	84,1	100	117	131	144	161	179	199	220	238
Total power input (EN14511:2013)	(1)	kW	16,1	20,0	22,9	27,0	32,1	37,5	42,4	46,2	51,2	57,7	64,0	70,1	76,1
EER (EN 14511:2013)	(1)	-	3,10	3,14	3,13	3,11	3,12	3,12	3,10	3,12	3,14	3,11	3,11	3,14	3,13
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	3	4	4	4
Type of compressors	-														
Standard power supply	V		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N
Size - WSAN-XIN			<b>18.2</b>	<b>20.2</b>	<b>25.2</b>	<b>30.2</b>	<b>35.2</b>	<b>40.2</b>	<b>48.2</b>	<b>55.2</b>	<b>60.2</b>	<b>65.3</b>	<b>70.4</b>	<b>80.4</b>	<b>85.4</b>
► Cooling capacity (EN14511:2013)	(1)	kW	49,6	59,3	69,7	82,2	96,7	109	127	146	162	174	193	211	226
Total power input (EN14511:2013)	(1)	kW	16,9	20,6	23,6	28,8	34,7	40,2	44,1	51,4	57,7	63,5	67,2	73,2	79,9
EER (EN 14511:2013)	(1)	-	2,93	2,87	2,95	2,85	2,78	2,72	2,87	2,83	2,81	2,74	2,87	2,88	2,83
► Heating capacity (EN14511:2013)	(2)	kW	56,1	68,5	78,4	93,3	111	127	147	168	187	202	220	242	261
Total power input (EN14511:2013)	(2)	kW	17,5	21,4	24,4	29,1	34,6	39,7	46,0	52,4	58,5	63,1	68,8	75,5	81,5
COP (EN 14511:2013)	(2)	-	3,20	3,21	3,21	3,20	3,21	3,21	3,20	3,20	3,20	3,20	3,20	3,20	3,20
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	3	4	4	4
Type of compressors	-														
Standard power supply	V		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N

### 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 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.

PRELIMINARY DATA

## Elfo Energy Magnum FC (FreeCooling)

### technical data

Size - WSAT-XIN FC			<b>35.2</b>	<b>40.2</b>	<b>48.2</b>	<b>55.2</b>	<b>60.2</b>	<b>65.3</b>	<b>70.4</b>	<b>80.4</b>	<b>85.4</b>
<b>FREE-COOLING OFF</b>											
Cooling capacity	(1)	kW	110	128	144	158	176	197	218	242	261
Total power input	(1)	kW	31,4	36,7	41,5	45,3	50,1	56,5	62,6	68,1	74,1
EER at full load	(1)	-	3,49	3,49	3,47	3,49	3,52	3,48	3,48	3,54	3,52
<b>FREE-COOLING</b>											
Cooling capacity	(2)	kW	86,4	92,5	139	137	139	142	195	203	206
Total power input	(2)	kW	3,60	3,60	6,24	6,28	6,40	6,28	9,54	9,66	9,66
EER at full load	(2)	-	24,0	25,7	22,2	21,8	21,7	22,6	20,5	21,0	21,3
Refrigeration circuits	Nr		2	2	2	2	2	2	2	2	2
No. of compressors	Nr		2	2	2	2	2	3	4	4	4
Type of compressors	-										
Standard power supply	V		400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	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%

### FREE-COOLING:

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

PRELIMINARY DATA

### accessories

- **CCCA** Copper / aluminium condenser coil with acrylic lining
- **CCCA1** Condenser coil with Energy Guard DCC Aluminum
- **HYG1** Hydronic assembly unit with 1 ON/OFF pump
- **HYG2** Hydronic assembly with 2 ON/OFF pumps
- **VARYP** VARYFLOW + (2 inverter pumps)
- **ACCI** Teflon steel storage device (sizes 35.2÷85.4)
- **CMSC10** Serial communication module to LonWorks supervisor
- **CMSC8** Serial communication module to BACnet supervisor
- **CMSC9** Serial communication module to Modbus supervisor
- **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
- **IFWX** Steel mesh strainer on the water side
- **PFCP** Power factor correction capacitors ( $\cos\phi > 0.9$ )
- WSAT-XIN only:**
- **HYGR1V** Recovery side hydronic unit with 1 inverter pump
- WSAN-XIN only:**
- **VACS** Translation not found for code 85723 on language 2

■ Accessories separately supplied

## Multifunction reversible heat pump

Air cooled  
Outdoor installation

**Capacity from 50 to 227 kW**



# ELFOEnergy Magnum MF

The **ELFOEnergy Magnum Multifunction** 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 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 Multifunction:

► **HIGHLY SILENT OPERATION:** The brand new AxiTop diffuser creates ideal air distribution: it aerodynamically decelerates the flow and converts most of its kinetic energy into static pressure, thereby achieving lower noise levels and absorbing less energy.

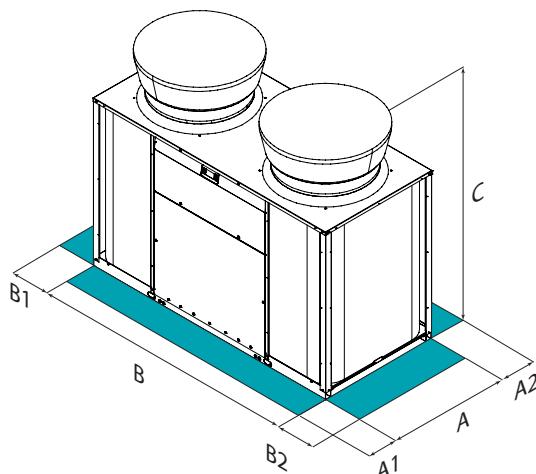
► **ADVANCED TECHNOLOGY:** The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load 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-XIN MF	18.2	20.2	25.2	30.2	35.2	40.2	48.2	55.2	60.2	65.3	70.4	80.4	85.4
A - Length	mm 2400	2400	2400	2400	3200	3200	4025	4025	4025	4025	5025	5025	5025
B - Width	mm 1100	1100	1100	1100	2200	2200	2200	2200	2200	2200	2200	2200	2200
C - Height	mm 1520	1520	1770	1770	1420	1420	1805	1805	1805	1805	1805	1805	1805
A1	mm 800	800	800	800	1000	1000	1000	1000	1000	1000	1000	1000	1000
A2	mm 800	800	800	800	700	700	700	700	700	700	700	700	700
B1	mm 800	800	800	800	800	800	800	800	800	800	800	800	800
B2	mm 800	800	800	800	800	800	800	800	800	800	800	800	800

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

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

## versions and configurations

### ENERGY RECOVERY:

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

### CONFIGURATION:

- › **2T** Configuration for 2-pipe system
- › **4T** Configuration for 4-pipe system

## technical data

Size - WSAN-XIN MF		<b>18.2</b>	<b>20.2</b>	<b>25.2</b>	<b>30.2</b>	<b>35.2</b>	<b>40.2</b>	<b>48.2</b>	<b>55.2</b>	<b>60.2</b>	<b>65.3</b>	<b>70.4</b>	<b>80.4</b>	<b>85.4</b>	
<b>COOLING 0% - HEATING 100%</b>															
Heating capacity	(1)	kW	55,8	68,0	78,0	92,8	111	127	147	167	187	201	219	240	259
Total power input	(1)	kW	17,2	20,9	24,1	28,7	34,2	39,1	45,4	51,8	57,7	62,2	67,9	74,3	80,1
COP at full load	(1)	-	3,24	3,25	3,24	3,24	3,24	3,24	3,23	3,23	3,23	3,23	3,23	3,23	3,24
<b>COOLING 100% - HEATING 0%</b>															
Cooling capacity	(2)	kW	48,3	57,8	67,9	80,0	94,1	106	123	142	158	170	188	206	220
Total power input	(2)	kW	17,0	20,7	23,8	29,0	35,0	40,5	44,5	52,0	58,2	64,0	67,7	73,6	80,4
EER at full load	(2)	-	2,84	2,79	2,85	2,76	2,69	2,62	2,77	2,73	2,71	2,65	2,77	2,80	2,74
<b>COOLING 100% - HEATING 100%</b>															
Cooling capacity	(3)	kW	49,8	59,6	70,0	82,5	97,0	110	127	146	163	175	193	212	227
Heating capacity	(3)	kW	55,8	68,0	78,0	92,8	111	127	147	167	187	201	219	240	259
Total power input	(3)	kW	14,5	18,1	20,4	25,6	31,0	36,1	37,4	44,6	50,8	56,5	56,8	62,4	69,2
Overall efficiency	(4)	-	7,30	7,06	7,24	6,86	6,70	6,54	7,33	7,02	6,88	6,66	7,27	7,25	7,04
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	3	4	4	4
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	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N	400/3/50+N

### 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)

### PRELIMINARY DATA

## accessories

- › **CCCA** Copper / aluminium condenser coil with acrylic lining
- › **CCCA1** Condenser coil with Energy Guard DCC Aluminum
- › **HYG1** Hydronic assembly unit with 1 ON/OFF pump
- › **HYG2** Hydronic assembly 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
- › **ACC1** Teflon steel storage device (sizes 35.2÷85.4)
- › **CMSC10** Serial communication module to LonWorks supervisor

- › **CMSC8** Serial communication module to BACnet supervisor
- › **CMSC9** Serial communication module to Modbus supervisor
- **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
- **IFWX** Steel mesh strainer on the water side
- › **PFCP** Power factor correction capacitors (cosfi > 0,9)

### Key to symbols:

- Accessories separately supplied

## Water chiller

WSAT-XSC3: cooling only  
 WSAN-XSC3: reversible heat pump  
 Air cooled  
 Outdoor installation  
**Capacity from 270 to 1350 kW**

# SPINchiller<sup>3</sup>

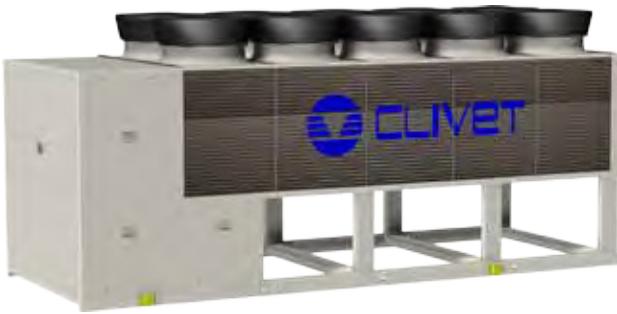
The SPINchiller<sup>3</sup> heat pumps and liquid chillers ensure maximum energy efficiency over the entire operation cycle.

► **MODULAR SCROLL TECHNOLOGY** - Designed for outdoor installation, SPINchiller<sup>3</sup> 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.

► **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 AxiTop 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.

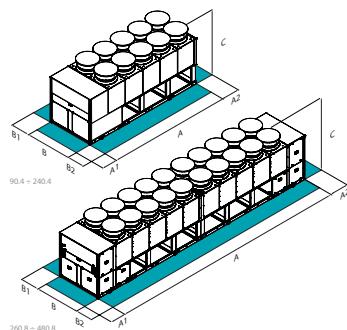


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## 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-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	320.8	360.8	400.8	440.8	480.8
SC-EXC	A-Length	mm	4060	4060	4060	4060	5035	5035	6010	6010	6010	9095	10070	10070	10070	10070	12020	12020
SC-EXC	B-Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC-EXC	C-Height	mm	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
SC-EXC	A1	mm	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
SC-EXC	A2	mm	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
SC-EXC	B1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SC-EXC	B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SC-PRM	A-Length	mm	-	-	-	4060	4060	4060	5035	5035	6010	6010	8120	8120	8120	10070	10070	12020
SC-PRM	B-Width	mm	-	-	-	2227	2227	2227	2227	2227	2227	2227	2227	2227	2227	2227	2227	2227
SC-PRM	C-Height	mm	-	-	-	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
SC-PRM	A1	mm	-	-	-	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
SC-PRM	A2	mm	-	-	-	750	750	750	750	750	750	750	750	750	750	750	750	750
SC-PRM	B1	mm	-	-	-	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SC-PRM	B2	mm	-	-	-	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100

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	320.8	360.8	400.8	440.8	480.8
A-Length	mm	4060	4060	4060	4060	5035	5035	6010	6010	6010	9095	10070	10070	10070	10070	12020	12020	12020
B-Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
C-Height	mm	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
A1	mm	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
A2	mm	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
B1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100

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

### 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
- **DSPB** Double set point for water low temperature

### ENERGY RECOVERY (WSAT-XSC3 ONLY):

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

## technical data

Size - WSAT-XSC3		<b>90.4</b>	<b>100.4</b>	<b>110.4</b>	<b>120.4</b>	<b>140.4</b>	<b>160.4</b>	<b>180.4</b>	<b>200.4</b>	<b>220.4</b>	<b>240.4</b>	
<b>Eurovent</b>	(*)									-	-	
SC-EXC	► Cooling capacity (EN14511:2013) (1)	kW	267	290	316	353	405	459	513	572	621	675
SC-EXC	Total power input (EN14511:2013) (1)	kW	85,8	92,9	102	114	130	145	165	181	200	218
SC-EXC	EER (EN 14511:2013) (1)	-	3,11	3,12	3,10	3,10	3,11	3,16	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
SC-EXC	Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2
SC-EXC	No. of compressors	Nr	4	4	4	4	4	4	4	4	4	4
SC-EXC	Type of compressors	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
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
SC-PRM	► Cooling capacity (EN14511:2013) (1)	kW	-	-	-	333	379	421	490	529	594	645
SC-PRM	Total power input(EN14511:2013) (1)	kW	-	-	-	120	136	151	174	189	211	229
SC-PRM	EER (EN 14511:2013) (1)	-	-	-	-	2,77	2,80	2,78	2,82	2,80	2,81	2,82
SC-PRM	ESEER (1)	-	-	-	-	4,11	4,15	4,12	4,06	4,12	4,10	4,10
SC-PRM	Refrigeration circuits	Nr	-	-	-	2	2	2	2	2	2	2
SC-PRM	No. of compressors	Nr	-	-	-	4	4	4	4	4	4	4
SC-PRM	Type of compressors	-	-	-	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
SC-PRM	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

Size - WSAN-XSC3		<b>90.4</b>	<b>100.4</b>	<b>110.4</b>	<b>120.4</b>	<b>140.4</b>	<b>160.4</b>	<b>180.4</b>	<b>200.4</b>	<b>220.4</b>	<b>240.4</b>	
<b>Eurovent</b>	(*)											
SC-EXC	► Cooling capacity (EN14511:2013) (1)	kW	243	262	290	322	369	416	473	518	557	593
SC-EXC	Total power input (EN14511:2013) (1)	kW	88,7	96,1	105	119	137	151	175	189	206	226
SC-EXC	EER (EN 14511:2013) (1)	-	2,74	2,73	2,75	2,70	2,70	2,75	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
SC-EXC	► Heating capacity (EN14511:2013) (2)	kW	284	312	339	375	425	470	540	600	648	696
SC-EXC	Total power input (EN14511:2013) (2)	kW	88,6	97,0	105	115	131	144	169	185	203	217
SC-EXC	COP (EN 14511:2013) (2)	-	3,21	3,21	3,22	3,25	3,25	3,26	3,20	3,25	3,20	3,20
Refrigeration circuits	Nr	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
Type of compressors	-	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

Size - WSAT-XSC3		<b>260.8</b>	<b>280.8</b>	<b>320.8</b>	<b>360.8</b>	<b>400.8</b>	<b>440.8</b>	<b>480.8</b>	
SC-EXC	► Cooling capacity (EN14511:2013) (1)	kW	758	811	917	1027	1143	1242	1350
SC-EXC	Total power input (EN14511:2013) (1)	kW	244	261	290	331	362	401	435
SC-EXC	EER (EN 14511:2013) (1)	-	3,11	3,11	3,16	3,10	3,16	3,10	3,10
SC-EXC	ESEER (1)	-	4,47	4,50	4,73	4,62	4,51	4,49	4,55
SC-EXC	Refrigeration circuits	Nr	4	4	4	4	4	4	4
SC-EXC	No. of compressors	Nr	8	8	8	8	8	8	8
SC-EXC	Type of compressors	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
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
SC-PRM	► Cooling capacity (EN14511:2013) (1)	kW	712	759	843	981	1058	1187	1291
SC-PRM	Total power input(EN14511:2013) (1)	kW	256	271	303	348	378	423	457
SC-PRM	EER (EN 14511:2013) (1)	-	2,78	2,80	2,78	2,82	2,80	2,81	2,82
SC-PRM	ESEER (1)	-	4,22	4,25	4,21	4,22	4,16	4,22	4,20
SC-PRM	Refrigeration circuits	Nr	4	4	4	4	4	4	4
SC-PRM	No. of compressors	Nr	8	8	8	8	8	8	8
SC-PRM	Type of compressors	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
SC-PRM	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

Size - WSAN-XSC3		<b>260.8</b>	<b>280.8</b>	<b>320.8</b>	<b>360.8</b>	<b>400.8</b>	<b>440.8</b>	<b>480.8</b>	
SC-EXC	► Cooling capacity (EN14511:2013) (1)	kW	692	739	831	945	1037	1115	1186
SC-EXC	Total power input (EN14511:2013) (1)	kW	256	273	303	350	378	412	453
SC-EXC	EER (EN 14511:2013) (1)	-	2,70	2,70	2,75	2,70	2,74	2,70	2,62
SC-EXC	ESEER (1)	-	4,05	4,07	4,18	4,14	4,19	4,18	4,09
SC-EXC	► Heating capacity (EN14511:2013) (2)	kW	801	851	941	1081	1200	1296	1391
SC-EXC	Total power input (EN14511:2013) (2)	kW	246	262	289	337	369	405	435
SC-EXC	COP (EN 14511:2013) (2)	-	3,25	3,25	3,26	3,20	3,25	3,20	3,20
Refrigeration circuits	Nr	4	4	4	4	4	4	4	4
No. of compressors	Nr	8	8	8	8	8	8	8	8
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

### 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 temperature = 40/45°C. Entering external exchanger air temperature = 7°C D.B./6°C W.B.
- SC-EXC Compressors soundproofing (SC)-Excellence
- SC-PRM Compressors soundproofing (SC)-Premium

# WSAN-XSC3 MF

90.4-480.8

## Multifunction reversible heat pump

Air cooled  
Outdoor installation  
**Capacity from 244 to 1190 kW**

new product

# SPINchiller<sup>3</sup> MF

**SPINCHILLER<sup>3</sup> 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, SPINchiller<sup>3</sup> 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.

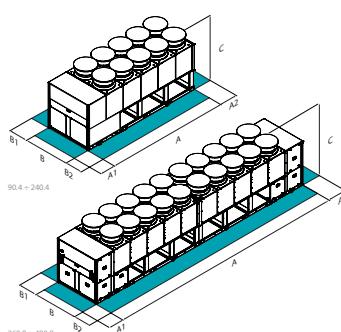
► **INDUSTRIALISED SYSTEM** - Packaged unit can reduce the initial system costs even by 40% compared to a traditional solution with separated production, for example using chillers or boilers. Most of the routine system activities are in fact realized by Clivet inside the unit: selection and sizing of 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	320.8	360.8	400.8	440.8	480.8
A - Length	mm 4060	4060	4060	4060	5035	5035	6010	6010	6010	6010	9095	10070	10070	10070	10070	12020	12020
B - Width	mm 2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
C - Height	mm 2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
A1	mm 1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
A2	mm 750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750	750
B1	mm 1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
B2	mm 1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100

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 Acoustic configuration with compressor soundproofing

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

## versions and configurations

### VERSION:

► **EXC** Excellence (Standard)

### MULTIFUNCTION:

► **MF** Chilled and hot water produced at the same time(Standard)

### ACOUSTIC CONFIGURATION:

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

## technical data

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	320.8	360.8	400.8	440.8	480.8		
<b>COOLING 100%</b>																				
SC	► Cooling capacity	(1)	kW	244	263	291	323	371	417	474	520	559	595	694	741	834	948	1040	1118	1190
SC	Total power input	(1)	kW	88	95	104	118	135	150	173	188	204	224	254	271	300	347	375	409	449
SC	EER	(1)	-	2,78	2,77	2,79	2,74	2,74	2,78	2,73	2,77	2,73	2,65	2,74	2,74	2,78	2,73	2,77	2,73	2,65
<b>HEATING 100%</b>																				
SC	► Heating capacity	(2)	kW	283	310	337	374	424	468	539	597	646	693	797	847	937	1077	1195	1291	1385
SC	Total power input	(2)	kW	87	96	104	114	129	142	167	182	200	214	243	258	285	334	364	400	429
SC	COP	(2)	-	3,24	3,24	3,25	3,28	3,28	3,29	3,23	3,28	3,23	3,23	3,28	3,28	3,29	3,23	3,28	3,23	3,23
<b>COOLING 100% - HEATING 100%</b>																				
SC	► Cooling capacity	(3)	kW	252	273	305	339	394	446	504	556	598	648	733	787	891	1009	1111	1195	1296
SC	► Heating capacity	(3)	kW	327	354	393	441	508	575	650	718	774	840	948	1015	1150	1301	1436	1548	1681
SC	Total power input	(3)	kW	76	82	89	102	115	130	146	163	177	193	217	229	260	293	326	354	386
SC	Overall efficiency	(4)	-	7,62	7,67	7,82	7,64	7,87	7,85	7,89	7,83	7,76	7,71	7,76	7,87	7,85	7,89	7,83	7,76	7,71
Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	
No. of compressors	Nr	4	4	4	4	4	4	4	4	4	4	4	4	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	
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	400/3~/50	400/3~/50	400/3~/50	400/3~/50	

### Notes

- (1) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 35°C  
 (2) Data referred to the following conditions: internal exchanger water = 40/45 °C, external exchanger air temperature 7 D.B./6°C W.B.  
 (3) Data refer to the following conditions: internal water exchanger = 12/7 °C; outdoor air temperature 40/45°C  
 (4) Overall efficiency = (Heating capacity + Cooling capacity) / (Total power input)

### PRELIMINARY DATA

## accessories

► <b>1PUS</b>	Standard pump	► <b>RCMRX</b>	Remote control via microprocessor control
► <b>1PU1SB</b>	Standard pump with emergency pump	► <b>CMSC8</b>	Serial communication module to BACnet supervisor
► <b>2PM</b>	Hydropack with 2 pumps	► <b>CMSC10</b>	Serial communication module to LonWorks supervisor
► <b>3PM</b>	Hydropack with 3 pumps	► <b>CMSC9</b>	Serial communication module to Modbus supervisor
► <b>IFWX</b>	Steel mesh strainer on the water side	► <b>SCP4</b>	Set-point compensation with signal 0-10V
► <b>CSVX</b>	Couple of manual shut-off valves	► <b>SPC2</b>	Set-point compensation with outdoor air temperature probe
► <b>A400</b>	400 l. storage tank	► <b>DML</b>	Demand limit
► <b>A500</b>	500 l. storage tank	► <b>ECS</b>	ECOSHARE function for the automatic management of a group of units
► <b>CCCA</b>	Copper / aluminium condenser coil with acrylic lining	► <b>PFCP</b>	Power factor correction capacitors (cosfi > 0.9)
► <b>CCCA1</b>	Condenser coil with Energy Guard DCC Aluminum	► <b>SFSTR</b>	Disposal for inrush current reduction
► <b>AMMX</b>	Spring antivibration mounts	► <b>FANQE</b>	Electrical panel ventilation
► <b>PGFC</b>	Finned coil protection grill	► <b>MHP</b>	High and low pressure gauges
► <b>PGCT</b>	Coil and technical compartment guards	► <b>SDV</b>	Cutoff valve on compressor supply and return
► <b>MF2</b>	Multi-function phase monitor	<b>WSAN - XSC3 and WSAN XSC3MF only:</b>	
► <b>CONTA2</b>	Energy meter	► <b>OHE</b>	Limit extension kit in heating up to -10°C (W.B.)

■ Accessories separately supplied

**Water chiller**

WSA-XSC2: cooling only

Air cooled

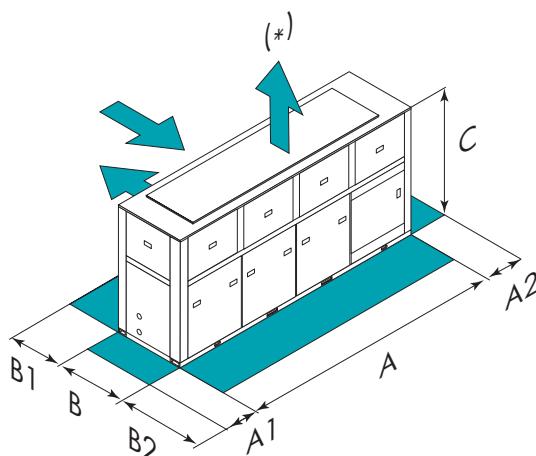
Indoor installation

**Capacity from 115 to 318 kW**

# SPINchiller<sup>2</sup> 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 **SPINchiller<sup>2</sup> 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:** SPINchiller<sup>2</sup> 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

### CONFIGURATION:

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

### ENERGY RECOVERY:

- - Energy recovery: not required (Standard)
- **D** Partial energy recovery
- **R** Total energy recovery (sizes 702÷120D)

## technical data

Size - WSA-XSC2		<b>432</b>	<b>452</b>	<b>552</b>	<b>602</b>	<b>702</b>	<b>80D</b>	<b>90D</b>	<b>100D</b>	<b>110D</b>	<b>120D</b>
► Cooling capacity (EN14511:2013)	(1)	kW	115	122	147	166	184	199	238	268	295
Total power input (EN14511:2013)	(1)	kW	41,6	45,0	54,1	61,4	66,6	72,6	87,7	99,0	109
EER (EN 14511:2013)	(1)	-	2,77	2,72	2,71	2,71	2,76	2,75	2,71	2,70	2,52
ESEER	-		4,24	4,13	4,07	4,11	4,26	4,41	4,18	4,15	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
Standard airflow	I/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	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
- **CCA** 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 ( $\cos\phi > 0.9$ )
- **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**



# SCREWLine<sup>3</sup>

The **SCREWLine<sup>3</sup>** 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.

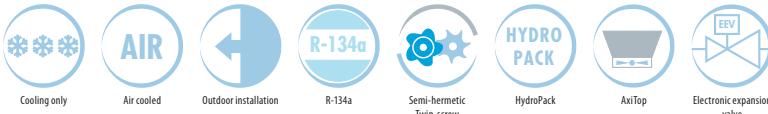
► **EFFICIENT AND RELIABLE TECHNOLOGY** - WDAT-SL3 employs the new generation dual screw compressors, electronic expansion valves, shell and tube evaporator and fans with innovative AxiTop diffusers with kinetic energy recovery.

► **FOR ALL CIVIL AND INDUSTRIAL APPLICATIONS** - SCREWLine<sup>3</sup> 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.

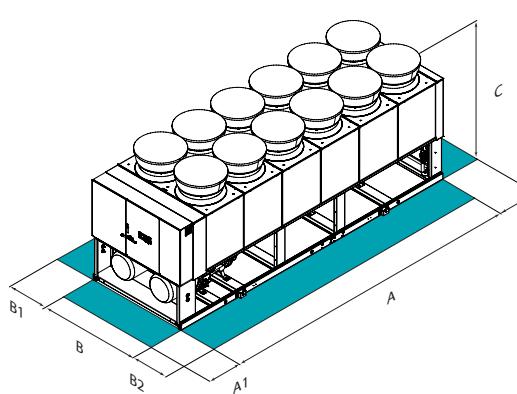


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

## 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
ST-EXC	B - Width	mm	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
ST-EXC	A1	mm	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
ST-EXC	B1	mm	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
ST-PRM	A - Length	mm	4785	4785	4785	4785	5763	5763	6767	6767	6767	6767	7742	7742	8718
ST-PRM	B - Width	mm	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
ST-PRM	A1	mm	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
ST-PRM	B1	mm	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
ST-EXC	Operating weight	kg	4362	4422	5223	5438	5536	5943	6137	6681	7049	7900	8044	8486	8894
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		<b>200.2</b>	<b>210.2</b>	<b>220.2</b>	<b>240.2</b>	<b>260.2</b>	<b>280.2</b>	<b>320.2</b>	<b>340.2</b>	<b>360.2</b>	<b>400.2</b>	<b>440.2</b>	<b>500.2</b>	<b>540.2</b>	<b>580.2</b>		
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	3,13	
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	4,04	
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	2,81	
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	2	2	
No. of compressors	Nr	2	2	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	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	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

■ Accessories separately supplied

- **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
- **PFPC** Power factor correction capacitors (cosfi > 0.9)
- **CBS** Overload circuit breakers
- **SFSTR2** Progressive compressor start-up device
- **FANQE** Electrical panel ventilation

**Water chiller with free cooling**

Air cooled  
Outdoor installation

**Capacity from 523 to 1548 kW**



# SCREWLine<sup>3</sup> FC

The **SCREWLine<sup>3</sup> 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.

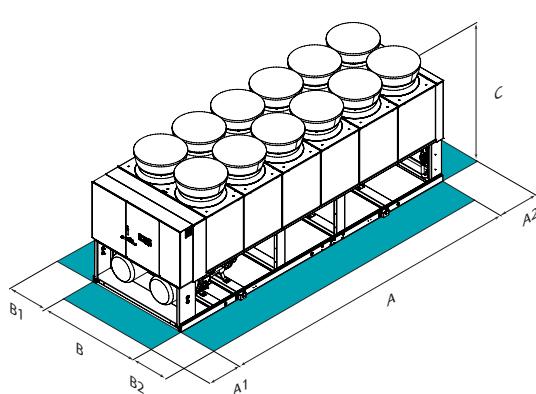
► **CONTINUOUS CAPACITY CONTROL** - The continuous capacity control allows for a quick adjustment of the system's load and therefore an accurate control of the chilled water temperature with an exceptionally wide operating range.

► **EFFICIENT AND RELIABLE TECHNOLOGY** - SCREWLine<sup>3</sup> 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		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	A - Length	mm	5110	5110	6088	6088	6088	7092	7092	8067	8067	9043	9043	10989	10989
SC	B - Width	mm	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246	2246
SC	C - Height	mm	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
SC	A1	mm	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690	1690
SC	A2	mm	700	700	700	700	700	700	700	700	700	700	700	700	700
SC	B1	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SC	B2	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
SC	Operating weight	kg	6040	6100	7220	7435	7533	8259	8453	9317	9685	10855	10999	12080	12488
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 Acoustic configuration with compressor soundproofing															

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

## versions and configurations

### LOW TEMPERATURE:

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

### VERSION:

- **EXC** Excellence (Standard)

### ACOUSTIC CONFIGURATION:

- **SC** Acoustic configuration with compressor soundproofing
- **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

### FREE COOLING:

- **FDC** direct FREE-COOLING (Standard)
- **FCI** direct FREE-COOLING

## technical data

Size - WDAT-SL3 FC		<b>200.2</b>	<b>210.2</b>	<b>220.2</b>	<b>240.2</b>	<b>260.2</b>	<b>280.2</b>	<b>320.2</b>	<b>340.2</b>	<b>360.2</b>	<b>400.2</b>	<b>440.2</b>	<b>500.2</b>	<b>540.2</b>	<b>580.2</b>		
<b>FREE-COOLING OFF</b>																	
SC	‣ Cooling capacity	(1)	kW	523	548	591	629	682	765	838	899	961	1061	1191	1298	1428	1548
SC	Total power input	(1)	kW	158	166	177	184	203	226	247	267	288	314	354	393	427	455
SC	EER	(1)	-	3,30	3,31	3,35	3,42	3,37	3,38	3,40	3,37	3,33	3,38	3,36	3,30	3,35	3,40
<b>FREE-COOLING</b>																	
SC	‣ Cooling capacity	(2)	kW	340	348	447	447	455	568	567	615	618	726	744	964	982	982
SC	Total power input	(2)	kW	12,5	12,6	15,4	15,6	15,8	18,7	19,1	21,9	22,3	24,9	25,4	30,8	31,2	31,8
SC	EER	(2)	-	27,3	27,6	29,0	28,7	28,8	30,4	29,7	28,0	27,8	29,1	29,3	31,3	31,5	30,8
Refrigeration circuits	Nr	2	2	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	2	2	
Type of compressors	(3)	-	DSW	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	400/3~/50	400/3~/50	

### 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%

(3) DSW = twin-screw compressor

### PRELIMINARY DATA

## accessories

‣ <b>2PM</b>	Hydropack with 2 pumps	‣ <b>CMSC10</b>	Serial communication module to LonWorks supervisor
‣ <b>3PM</b>	Hydropack with 3 pumps	‣ <b>CMSC11</b>	Serial communication module for BACnet-IP supervisor
‣ <b>CCCA</b>	Copper / aluminium condenser coil with acrylic lining	‣ <b>SCP4</b>	Set-point compensation with signal 0-10 V
‣ <b>CCCA1</b>	Condenser coil with Energy Guard DCC Aluminum	‣ <b>SPC2</b>	Set-point compensation with outdoor air temperature probe
‣ <b>AMMX</b>	Spring antivibration mounts	‣ <b>DML</b>	Demand limit
‣ <b>PGCC</b>	Finned coil protection grilles and compressor compartment	‣ <b>ECS</b>	ECOSHARE function for the automatic management of a group of units
‣ <b>CONTA2</b>	Energy meter	‣ <b>PFCP</b>	Power factor correction capacitors (cosfi > 0.9)
‣ <b>RCMRX</b>	Remote control via microprocessor control	‣ <b>CBS</b>	Overload circuit breakers
‣ <b>PSX</b>	Mains power supply	‣ <b>SFSTR2</b>	Progressive compressor start-up device
‣ <b>CMSC9</b>	Serial communication module to Modbus supervisor	‣ <b>FANQE</b>	Electrical panel ventilation

■ Accessories separately supplied

## Water chiller

WSHN-EE: reversible heat pump  
 WSH-EE: cooling only  
 Water cooled  
 Indoor installation  
**Capacity from 6,95 to 41,2 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

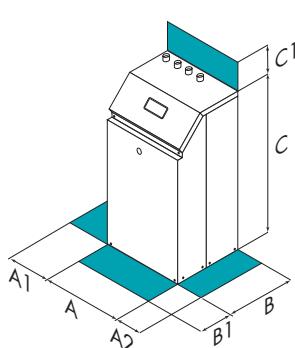


Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

### functions and features



### dimensions and clearances



Size - WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
A - Length	mm	402	402	402	402	402	573	573	573	573	573	573
B - Width	mm	602	602	602	602	602	604	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600	600
C1	mm	300	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	81	83	86	90	98	115	129	147	163	164	170

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	573
B - Width	mm	602	602	602	602	602	604	604	604	604	604	604
C - Height	mm	785	785	785	785	785	858	858	858	858	858	858
A1	mm	150	150	150	150	150	150	150	150	150	150	150
A2	mm	150	150	150	150	150	150	150	150	150	150	150
B1	mm	600	600	600	600	600	600	600	600	600	600	600
C1	mm	300	300	300	300	300	300	300	300	300	300	300
Operating weight	kg	80	81	85	88	102	114	128	143	157	159	164

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 - WSHN-EE		17	21	31	41	51	61	71	81	91	101	121
<b>Unit for radiant panels</b>												
<b>W10/W35</b>												
► 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
<b>B0/W35</b>												
► Heating capacity	kW	5,11	6,67	7,61	9,82	11,3	13,7	16,2	18,5	21,2	24,3	28,0
Total power input	kW	1,49	1,90	2,16	2,66	3,08	3,84	4,69	5,20	5,82	6,42	7,23
COP (EN 14511:2013)	-	3,43	3,51	3,52	3,69	3,66	3,57	3,47	3,55	3,64	3,79	3,87
<b>W35/W18</b>												
► 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
Water flow-rate (User Side)	(1) l/s	0,39	0,43	0,51	0,66	0,85	1,05	1,29	1,41	1,61	1,79	2,03
Useful pump discharge head	(1) kPa	52	49	47	36	20	41	30	24	18	84	41
Water flow rate (Source Side)	(1) l/s	0,45	0,49	0,59	0,77	0,99	1,23	1,48	1,66	1,89	2,12	2,39
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
<b>Terminal units</b>												
<b>W10/W45</b>												
► Heating capacity	kW	6,70	7,30	8,80	11,5	15,6	18,9	23,6	25,1	29,3	34,2	38,7
Total power input	kW	1,60	1,70	2,40	3,00	4,00	4,80	5,90	6,60	7,50	8,80	9,80
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
<b>B0/W45</b>												
► Heating capacity	kW	5,01	6,57	7,42	9,35	10,8	13,1	15,7	17,6	20,4	23,1	26,8
Total power input	kW	1,88	2,39	2,72	3,25	3,85	4,72	5,83	6,47	7,14	7,92	8,81
COP (EN 14511:2013)	-	2,67	2,75	2,73	2,87	2,80	2,77	2,69	2,72	2,87	2,92	3,04
<b>W35/W7</b>												
► 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
Water flow-rate (User Side)	(2) l/s	0,29	0,31	0,38	0,51	0,63	0,77	0,96	1,06	1,22	1,39	1,56
Useful pump discharge head	(2) kPa	58	58	56	47	39	62	54	50	44	155	132
Water flow rate (Source Side)	(2) l/s	0,35	0,38	0,46	0,61	0,78	0,95	1,18	1,28	1,50	1,71	1,91
<b>Radiators</b>												
<b>W10/W55</b>												
► 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
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 - WSH-EE		17	21	31	41	51	61	71	81	91	101	121
<b>Unit for radiant panels</b>												
<b>W10/W35</b>												
► Heating capacity	kW	7,20	7,70	9,50	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
<b>W35/W18</b>												
► 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
Water flow-rate (User Side)	(1) l/s	0,40	0,43	0,48	0,67	0,87	1,08	1,25	1,43	1,60	2,00	2,27
Useful pump discharge head	(1) kPa	46	42	45	27	18	39	34	23	19	38	15
Water flow rate (Source Side)	(1) l/s	0,47	0,50	0,57	0,78	1,02	1,26	1,48	1,68	1,88	2,31	2,65
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
<b>Terminal units</b>												
<b>W10/W45</b>												
► 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
<b>W35/W7</b>												
► 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
Water flow-rate (User Side)	(2) l/s	0,28	0,31	0,38	0,50	0,64	0,80	0,97	1,06	1,23	1,46	1,67
Useful pump discharge head	(2) kPa	56	54	53	43	38	60	55	50	44	144	112
Water flow rate (Source Side)	(2) l/s	0,36	0,39	0,47	0,62	0,79	0,98	1,20	1,30	1,51	1,77	2,03
<b>Radiators</b>												
<b>W10/W55</b>												
► 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
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

### Notes

- (1) Data referred to the following conditions: Internal exchanger water = 23/18°C; External exchanger water = 30/35°C
- (2) 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  
 B0/W35 water at the user side heat exchanger 40/45°C; inlet water at the source side heat exchanger 0°C; ethylenic glycol 30%
- 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/W18 water at the user side heat exchanger 30/35°C; inlet water at the source side heat exchanger 0°C; ethylenic glycol 30%
- W35/W7 water at the user side heat exchanger 12/7°C; inlet water at the source side heat exchanger 30/35°C

# WSH-XEE2 WSHN-XEE2

10.2÷80.2

**new product**

## Water chiller

WSH-XEE2: cooling only

WSHN-XEE2: reversible heat pump

Water cooled

Indoor installation

**Capacity from 31 to 255 kW**



# ELFOEnergy Ground Medium<sup>2</sup>

**ELFOEnergy Ground Medium<sup>2</sup>** are water cooled water chillers and heat pumps for indoor installation, ideal for multi-family and commercial buildings.

The main features are:

► **HIGH SEASONAL EFFICIENCY** - 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.

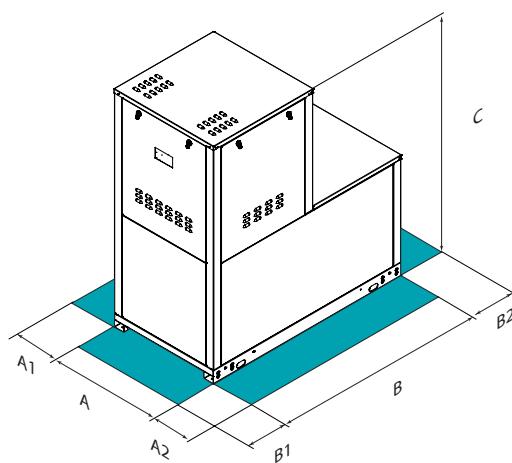


Unit listed on  
www.eurovent-certification.com

## functions and features



## 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
A - Length	mm 900	900	900	900	900	900	900	900	1100	1100	1100	1100	1100	1100	1100	1100	1100
B - Width	mm 1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
C - Height	mm 1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm 400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
A2	mm 400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
B1	mm 600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
B2	mm 700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Operating weight	kg 355	355	353	411	425	431	466	471	568	617	702	643	763	785	802	873	883

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
A - Length	mm 900	900	900	900	900	900	900	900	1100	1100	1100	1100	1100	1100	1100	1100	1100
B - Width	mm 1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
C - Height	mm 1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm 400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
A2	mm 400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
B1	mm 600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
B2	mm 700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700	700
Operating weight	kg 370	370	367	429	443	449	485	490	591	642	732	670	795	818	835	909	920

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)
- **GEO** Version for Geothermal application

### ENERGY RECOVERY (WSH-XEE2 ONLY):

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

## technical data

<b>Size – WSH-XEE2</b>	<b>10.2</b>	<b>12.2</b>	<b>14.2</b>	<b>16.2</b>	<b>19.2</b>	<b>22.2</b>	<b>27.2</b>	<b>30.2</b>	<b>35.2</b>	<b>40.2</b>	<b>43.2</b>	<b>45.2</b>	<b>50.2</b>	<b>55.2</b>	<b>60.2</b>	<b>70.2</b>	<b>80.2</b>	
‣ Cooling capacity (EN14511:2013)	(1) kW	31,4	36,5	42,8	52,2	61,5	71,5	87,5	98,0	110	128	139	148	168	180	201	233	255
Total power input (EN14511:2013)	(1) kW	6,39	7,58	9,20	10,9	12,8	15,9	17,3	20,1	23,3	26,5	29,5	31,3	34,3	37,3	42,2	48,0	54,4
EER (EN 14511:2013)	(1) -	4,92	4,82	4,66	4,80	4,80	4,50	5,06	4,88	4,73	4,82	4,72	4,74	4,91	4,84	4,75	4,84	4,70
ESEER	(2) -	6,31	6,20	5,65	5,52	5,71	5,56	6,19	6,05	6,03	6,02	5,78	6,00	5,97	5,79	5,62	5,78	5,54
‣ Heating capacity (EN14511:2013)	(3) kW	36,1	42,2	49,6	60,1	70,5	83,3	99,2	111	126	146	160	169	189	206	229	261	289
Total power input (EN14511:2013)	(3) kW	8,21	9,74	11,7	13,7	15,9	19,5	21,5	24,8	28,6	32,6	36,2	38,5	41,2	45,7	52,0	58,5	66,0
COP (EN 14511:2013)	(3) -	4,40	4,34	4,24	4,39	4,42	4,26	4,61	4,49	4,40	4,48	4,43	4,40	4,59	4,49	4,41	4,47	4,38
Refrigeration circuits	Nr	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
Type of compressors	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	
Max. leaving water temperature	°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
Sound pressure level	(4) dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	61	63	63	
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	400/3/50	400/3/50	
<b>Size – WSHN-XEE2</b>	<b>10.2</b>	<b>12.2</b>	<b>14.2</b>	<b>16.2</b>	<b>19.2</b>	<b>22.2</b>	<b>27.2</b>	<b>30.2</b>	<b>35.2</b>	<b>40.2</b>	<b>43.2</b>	<b>45.2</b>	<b>50.2</b>	<b>55.2</b>	<b>60.2</b>	<b>70.2</b>	<b>80.2</b>	
‣ Cooling capacity (EN14511:2013)	(5) kW	29,2	34,4	40,7	48,4	57,6	67,5	82,0	91,8	102	120	131	138	155	168	187	217	240
Total power input (EN14511:2013)	(5) kW	6,39	7,49	9,10	10,7	12,6	15,6	17,5	20,4	23,5	26,9	29,9	31,7	34,2	37,6	42,6	48,2	54,6
EER (EN 14511:2013)	(5) -	4,57	4,59	4,48	4,52	4,56	4,31	4,68	4,50	4,33	4,45	4,38	4,37	4,52	4,46	4,38	4,50	4,40
ESEER	(2) -	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
‣ Heating capacity (EN14511:2013)	(6) 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
Total power input (EN14511:2013)	(6) kW	8,17	9,63	11,6	13,5	15,7	19,2	21,4	24,6	28,3	32,5	36,0	38,4	41,2	45,7	51,8	58,1	65,5
COP (EN 14511:2013)	(6) -	4,21	4,20	4,16	4,21	4,26	4,15	4,39	4,33	4,22	4,28	4,19	4,24	4,33	4,27	4,21	4,34	4,27
Refrigeration circuits	Nr	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
Type of compressors	-	Scroll	Scroll	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	400/3/50	400/3/50	
Max. leaving water temperature	°C	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
Sound pressure level	(4) dB(A)	44	44	45	49	49	49	49	49	58	58	60	58	60	60	61	63	63

### 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; The unit can operate in cooling-only or in heating-only mode. To be able to operate in both modes, the system must be designed with a water circuit change-over.
- (2) ESEER calculated by EUROVENT, for systems featuring terminal units with water produced at 7°C; Performance data calculated in accordance with UNI-EN14511:2013
- (3) 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 unit can operate in cooling-only or in heating-only mode. To be able to operate in both modes, the system must be designed with a water circuit change-over.
- (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) 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
- (6) 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

### PRELIMINARY DATA

## accessories

- |                       |   |                        |   |
|-----------------------|---|------------------------|---|
| ‣ <b>MF2</b>          | Multi-function phase monitor                              | ‣ <b>VS3MH</b>         | Heating side three-way modulating valve     |
| ‣ <b>CMSC10</b>       | Serial communication module to LonWorks supervisor        | ‣ <b>VS3MHX</b>        | Heating side three-way modulating valve     |
| ‣ <b>CMSC8</b>        | Serial communication module to BACnet supervisor          | ‣ <b>VARYC</b>         | VARYFLOW + (heating side 2 inverter pumps)  |
| ‣ <b>CMSC9</b>        | Serial communication module to Modbus supervisor          | ‣ <b>VARYR</b>         | VARYFLOW + (recovery side 2 inverter pumps) |
| ‣ <b>SPCX</b>         | Set-point compensation with outdoor air temperature probe | ‣ <b>VACSH</b>         | Heating side DHW switching valve            |
| ‣ <b>IFWX</b>         | Steel mesh strainer on the water side                     | ‣ <b>VACSHX</b>        | Heating side DHW switching valve            |
| ‣ <b>SFSTR</b>        | Disposal for inrush current reduction                     | <b>WSHN-XEE2 only:</b> |   |
| ‣ <b>PFCP</b>         | Power factor correction capacitors ( $\cos\phi > 0.9$ )   | ‣ <b>VACSU</b>         | User side DHW switching valve               |
| <b>WSH-XEE2 only:</b> |   | ‣ <b>VACSUX</b>        | User side DHW switching valve               |
| ‣ <b>VS2MC</b>        | Cooling side two-way modulating valve                     | ‣ <b>VARYU</b>         | VARYFLOW + (user side 2 inverter pumps)     |
| ‣ <b>VS2MCX</b>       | Cooling side two-way modulating valve                     | ‣ <b>VS2M</b>          | Source side 2-way modulating valve          |
| ‣ <b>VS3MC</b>        | Cooling side three-way modulating valve                   | ‣ <b>VS2MX</b>         | Source side 2-way modulating valve          |
| ‣ <b>VS3MCX</b>       | Cooling side three-way modulating valve                   | ‣ <b>VS3M</b>          | Source side 3-way modulating valve          |
| ‣ <b>VARYF</b>        | VARYFLOW + (cooling side 2 inverter pumps)                | ‣ <b>VS3MX</b>         | Source side 3-way modulating valve          |
| ‣ <b>VS2MH</b>        | Heating side two-way modulating valve                     | ‣ <b>VARYS</b>         | VARYFLOW + (source side 2 inverter pumps)   |
| ‣ <b>VS2MHX</b>       | Heating side two-way modulating valve                     |                        |   |

# WSHN-XEE2 MF

10.2÷80.2

**new product**

## Multifunction reversible heat pump

Water cooled

Indoor installation

**Capacity from 30,5 to 248 kW**



# ELFOEnergy Ground Medium<sup>2</sup> MF

The **ELFOEnergy Ground Medium<sup>2</sup> Multifunction** heat pumps and liquid chillers are water-condensed units for indoor installation ideal for multi-family and commercial buildings. **They can generate thermal and cooling energy simultaneously and independently.**

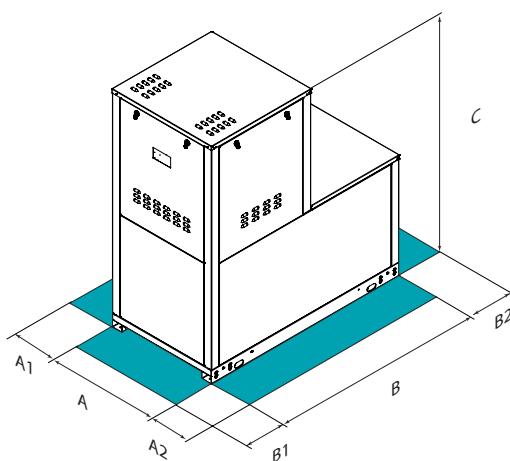
The main features are:

- ▶ **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



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	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400
B1	mm	600	600	600	600	600	600	600	600
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
A - Length	mm	1100	1100	1100	1100	1100	1100	1100	1100	1100
B - Width	mm	1700	1700	1700	1700	1700	1700	1700	1700	1700
C - Height	mm	1870	1870	1870	1870	1870	1870	1870	1870	1870
A1	mm	400	400	400	400	400	400	400	400	400
A2	mm	400	400	400	400	400	400	400	400	400
B1	mm	600	600	600	600	600	600	600	600	600
B2	mm	700	700	700	700	700	700	700	700	700
Operating weight	kg	656	721	816	754	901	924	941	1045	1056

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

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)
- **GEO** Version for Geothermal application

### ENERGY RECOVERY:

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

### CONFIGURATION:

- **2T** Configuration for 2-pipe system
- **4T** Configuration for 4-pipe system

## technical data

Size - WSHN-XEE2 MF		<b>10.2</b>	<b>12.2</b>	<b>14.2</b>	<b>16.2</b>	<b>19.2</b>	<b>22.2</b>	<b>27.2</b>	<b>30.2</b>	
<b>COOLING 0% - HEATING 100%</b>										
Heating capacity	(1) kW	34,2	40,2	47,8	56,4	66,6	78,9	93,4	106	
Total power input	(1) kW	7,79	9,11	10,8	12,5	14,6	17,6	20,5	23,6	
COP at full load	(1) -	4,39	4,41	4,41	4,51	4,56	4,48	4,56	4,49	
<b>COOLING 100% - HEATING 0%</b>										
Cooling capacity	(2) kW	30,6	35,7	41,9	51,1	60,3	70,2	85,0	95,0	
Total power input	(2) kW	6,21	7,32	8,83	10,3	12,0	14,7	16,9	19,6	
EER at full load	(2) -	4,93	4,88	4,75	4,96	5,03	4,78	5,03	4,85	
<b>COOLING 100% - HEATING 100%</b>										
Cooling capacity	(3) kW	27,3	31,9	37,5	45,8	54,1	63,3	76,4	85,4	
Heating capacity	(3) kW	35,1	41,1	48,4	58,4	68,7	80,9	97,0	109	
Total power input	(3) kW	7,80	9,20	10,9	12,6	14,6	17,7	20,6	23,6	
Overall efficiency	(4) -	8,00	7,97	7,87	8,29	8,38	8,14	8,43	8,24	
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	
Size - WSHN-XEE2 MF		<b>35.2</b>	<b>40.2</b>	<b>43.2</b>	<b>45.2</b>	<b>50.2</b>	<b>55.2</b>	<b>60.2</b>	<b>70.2</b>	<b>80.2</b>
<b>COOLING 0% - HEATING 100%</b>										
Heating capacity	(1) kW	119	138	150	162	178	194	217	251	278
Total power input	(1) kW	26,9	31,0	34,4	36,6	39,6	43,7	49,3	55,4	62,1
COP at full load	(1) -	4,41	4,46	4,36	4,42	4,49	4,45	4,40	4,53	4,48
<b>COOLING 100% - HEATING 0%</b>										
Cooling capacity	(2) kW	107	125	136	145	164	176	196	227	249
Total power input	(2) kW	22,6	25,8	28,8	30,5	33,6	36,4	41,1	46,9	52,8
EER at full load	(2) -	4,73	4,84	4,72	4,75	4,88	4,84	4,77	4,84	4,72
<b>COOLING 100% - HEATING 100%</b>										
Cooling capacity	(3) kW	96,0	111	121	129	146	158	175	204	225
Heating capacity	(3) kW	123	142	156	166	186	201	224	259	287
Total power input	(3) kW	27,0	30,8	34,3	36,4	39,9	43,4	49,0	55,4	62,2
Overall efficiency	(4) -	8,10	8,23	8,07	8,09	8,32	8,26	8,14	8,34	8,22
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
Sound pressure level	(5) dB(A)	58	58	60	58	60	60	61	63	63

### 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.

### 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)
- **VARYR** VARYFLOW + (recovery side 2 inverter pumps)
- **VACSR** Total recovery side DHW switching valve
- **VACSRX** Total recovery side DHW switching valve

- Accessories separately supplied

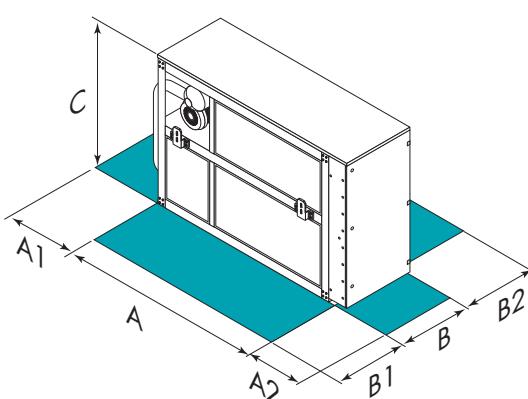
- **MF2** Multi-function phase monitor
- **CMSC10** Serial communication module to LonWorks supervisor
- **CMSC8** Serial communication module to BACnet supervisor
- **CMSC9** Serial communication module to Modbus supervisor
- **SPCX** Set-point compensation with outdoor air temperature probe
- **IFWX** Steel mesh strainer on the water side
- **SFSTR** Disposal for inrush current reduction
- **PFCP** Power factor correction capacitors (cosfi > 0,9)

**Water chiller**

Water cooled  
Indoor/outdoor installation  
**Capacity from 194 to 558 kW**



Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

**functions and features****dimensions and clearances**

Size – WSH-XSC	65D	70D	75D	80D	85D	90D	100D	110D	115D	120D	135E	150F	165F	180F
A - Length	mm 2547	2547	2547	2547	2552	2552	2552	2552	2552	2552	3062	3062	3062	3062
B - Width	mm 850	850	850	850	850	850	850	850	850	850	850	850	850	850
C - Height	mm 1886	1886	1886	1886	1886	1886	1886	1886	1886	1886	1886	1886	1886	1886
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 (sizes 65D÷80D, 180F only, Standard)
- **B** Water low temperature (sizes 65D÷80D, 180F)

### 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
- **OHP** Operation in heat pump

### 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 - WSH-XSC		<b>65D</b>	<b>70D</b>	<b>75D</b>	<b>80D</b>	<b>85D</b>	<b>90D</b>	<b>100D</b>	<b>110D</b>	<b>115D</b>	<b>120D</b>	<b>135E</b>	<b>150F</b>	<b>165F</b>	<b>180F</b>		
ST/EN	► Cooling capacity (EN14511:2013) (1)	kW	194	206	222	233	250	285	311	333	352	370	404	438	495	558	
ST/EN	Total power input (EN14511:2013) (1)	kW	43,3	46,5	49,8	52,5	55,5	62,1	67,5	72,8	78,3	82,5	89,9	97,8	110	126	
ST/EN	EER (EN 14511:2013)	(1)	-	4,48	4,43	4,46	4,44	4,51	4,59	4,61	4,57	4,49	4,48	4,50	4,48	4,50	4,44
ST/EN	ESEER	(1)	-	5,40	5,42	5,11	5,34	5,17	5,31	5,21	5,44	5,39	5,37	5,40	5,56	5,50	5,52
ST/EN	► Heating capacity (EN14511:2013) (2)	kW	224	237	257	269	289	327	356	383	407	428	466	506	574	646	
ST/EN	Total power input (EN14511:2013) (2)	kW	51,2	55,0	58,2	61,6	64,9	73,2	79,9	86,6	93,1	98,2	107	115	130	147	
ST/EN	COP (EN 14511:2013) (2)	-	4,38	4,31	4,42	4,37	4,45	4,47	4,46	4,42	4,37	4,36	4,36	4,40	4,42	4,39	
ST/EN	Refrigeration circuits	Nr	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
ST/EN	No. of compressors	Nr	4	4	4	4	4	4	4	4	4	4	5	6	6	6	
ST/EN	Type of compressors	-	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	SCROLL	
ST/EN	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	Sound pressure level	(3)	dB(A)	73	74	74	74	74	76	76	76	76	76	77	77	77	
EN	Sound pressure level	(3)	dB(A)	64	64	65	65	66	66	67	68	68	68	68	68	69	

### Notes

- (1) Data calculated in compliance with Standard EN 14511:2013 referred to the following conditions: - internal exchanger water (evaporator) = 12/7°C - external exchanger water (condenser) = 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 (evaporator) = 12/7°C - external exchanger water (condenser) = 40/45°C
- (3) 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

ST Standard (ST)

EN Extremely low noise(EN)

## accessories

- |                |   |                 |   |
|----------------|---|-----------------|---|
| ► <b>AMRX</b>  | Rubber antivibration mounts                               | ► <b>3PM</b>    | Hydropack with 3 pumps  |
| ► <b>PM</b>    | Phase monitor   | ► <b>EHU</b>    | Anti-freeze electric heaters user side for hydronic assembly  |
| ► <b>RCMRX</b> | Remote control via microprocessor control                 | ► <b>CEHU</b>   | Connection set exchanger with hydronic assembly (user side)   |
| ► <b>CMSC6</b> | CAN/LON WORKS serial converter kit                        | ► <b>IFS2X</b>  | Steel mesh strainer on source side                            |
| ► <b>CMSC4</b> | CAN/Modbus serial converter kit                           | ► <b>3PMS</b>   | Hydropack source side with 3 pumps                            |
| ► <b>CMSC5</b> | CAN/BACnet serial converter kit                           | ► <b>2PMS</b>   | Hydropack source side with 2 pumps                            |
| ► <b>SPC1</b>  | Set point compensation with 4-20 mA signal                | ► <b>2P1SBS</b> | Hydropack source side with 2 pumps + 1 in stand-by            |
| ► <b>SPC2</b>  | Set-point compensation with outdoor air temperature probe | ► <b>EHS</b>    | Antifreeze electric heaters source side for hydronic assembly |
| ► <b>SCP3</b>  | Set point compensation according to the outside enthalpy  | ► <b>CEHS</b>   | Connection set exchanger with hydronic assembly (source side) |
| ► <b>SCP4</b>  | Set-point compensation with signal 0-10 V                 | ► <b>VP</b>     | Varypack  |
| ► <b>CFSC</b>  | Potential-free contacts for compressor status             | ► <b>MHP</b>    | High and low pressure gauges                                  |
| ► <b>MSLX</b>  | Master-slave operation                                    | ► <b>DSP</b>    | Double set point  |
| ► <b>PFCP</b>  | Power factor correction capacitors ( $\cos\phi > 0.9$ )   | ► <b>DSPB</b>   | Double set point for water low temperature                    |
| ► <b>SFSTR</b> | Disposal for inrush current reduction                     | ► <b>SDV</b>    | Cutoff valve on compressor supply and return                  |
| ► <b>IFUX</b>  | Steel mesh strainer on user side                          | ► <b>PVSX</b>   | Water flow valve  |
| ► <b>2P1SB</b> | Hydropack with 2 pumps + 1 in stand-by                    | ► <b>IVMSX</b>  | Modulating valve source side                                  |
| ► <b>2PM</b>   | Hydropack with 2 pumps                                    |                 |   |

■ Accessories separately supplied

**Packaged unit**

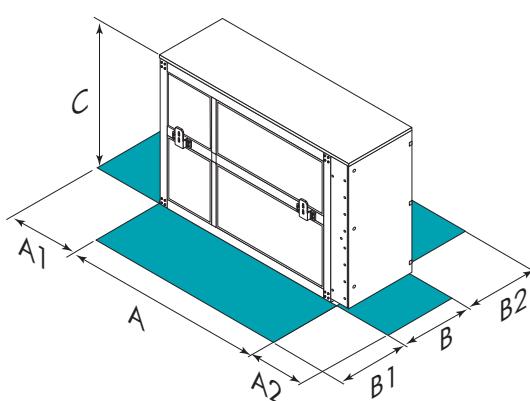
Simultaneous and independent heating and cooling  
Water cooled  
Indoor installation  
**Capacity from 173 to 500 kW**

**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****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		<b>65D</b>	<b>70D</b>	<b>75D</b>	<b>80D</b>	<b>85D</b>	<b>90D</b>	<b>100D</b>	<b>110D</b>	<b>115D</b>	<b>120D</b>	<b>135E</b>	<b>150F</b>	<b>165F</b>	<b>180F</b>	
<b>COOLING 0% - HEATING 100%</b>																
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
<b>COOLING 100% - HEATING 0%</b>																
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
<b>COOLING 100% - HEATING 100%</b>																
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
<b>Standard (ST)/Extremely low noise(EN)</b>																
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	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	400/3/50
<b>Standard (ST)</b>																
Sound pressure level	(4)	dB(A)	73	74	74	74	74	74	76	76	76	76	76	77	77	77
<b>Super-silenced (EN)</b>																
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 (cosfi > 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

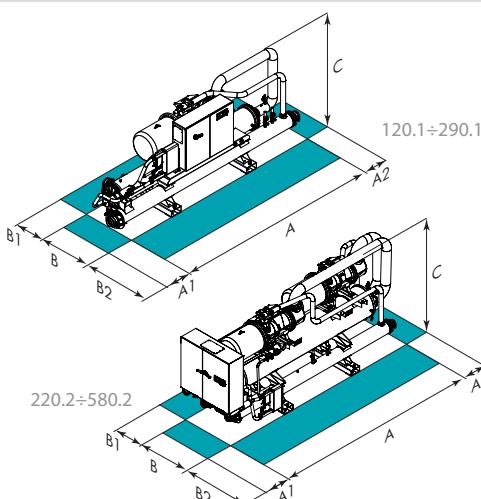
- Accessories separately supplied

**Water chiller**

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



Unit listed on  
[www.eurovent-certification.com](http://www.eurovent-certification.com)

**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

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

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 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			<b>120.1</b>	<b>140.1</b>	<b>160.1</b>	<b>180.1</b>	<b>200.1</b>	<b>220.1</b>	<b>250.1</b>	<b>270.1</b>	<b>290.1</b>
<b>Eurovent</b>	(*)										
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	96,5	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
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
EN-EXC	Sound pressure level	(4)	dB(A)	69	70	71	72	71	71	73	73

Size - WDH-SL3			<b>220.2</b>	<b>240.2</b>	<b>260.2</b>	<b>280.2</b>	<b>300.2</b>	<b>320.2</b>	<b>340.2</b>	<b>360.2</b>	<b>400.2</b>	<b>440.2</b>	<b>470.2</b>	<b>500.2</b>	<b>540.2</b>	<b>580.2</b>
<b>Eurovent</b>	(*)														-	
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	4,83	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	
ST/EN-EXC	No. of compressors	Nr	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	
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	
ST-EXC	Sound pressure level	(4)	dB(A)	77	77	78	78	78	79	79	80	79	79	80	81	81
EN-EXC	Sound pressure level	(4)	dB(A)	71	72	73	73	73	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

- Accessories separately supplied

- **DML0-10** Demand limit with signal 0-10V

- **DML4-20** Demand limit with signal 4-20mA

- **CFSC** Potential-free contacts for compressor status and enabling

- **ECS** ECOSHARE function for the automatic management of a group of units

- **PFPC** Power factor correction capacitors (cosfi > 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

**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.

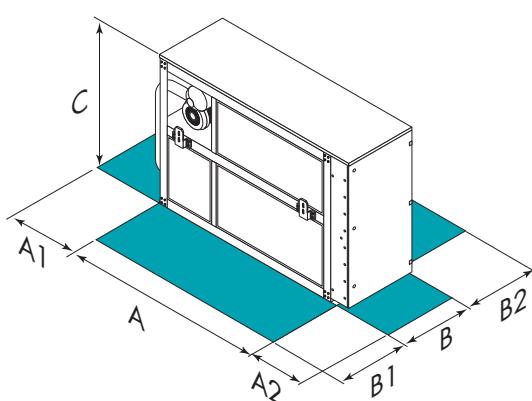
► **Compactness:** the width in the units up to 500 kW capacity has been reduced to just 85 cm so that they can pass through normal doorways.

► **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		<b>65D</b>	<b>70D</b>	<b>75D</b>	<b>75C</b>	<b>80D</b>	<b>90D</b>	<b>90C</b>	<b>100D</b>	<b>110D</b>	<b>120D</b>	<b>135F</b>	<b>150F</b>	<b>165F</b>	<b>180F</b>
ST/EN		<b>A - Length</b>	mm	2541	2541	2541	2670	2541	2541	2670	2541	2541	2541	3051	3051
ST/EN		<b>B - Width</b>	mm	850	850	850	850	850	850	850	850	850	850	850	850
ST/EN		<b>C - Height</b>	mm	1880	1880	1880	1881	1880	1880	1881	1880	1880	1880	1879	1879
ST/EN		<b>A1</b>	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN		<b>A2</b>	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
ST/EN		<b>B1</b>	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
ST/EN		<b>B2</b>	mm	700	700	700	700	700	700	700	700	700	700	700	700
		<b>A1</b>	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		<b>A2</b>	mm	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
		<b>B1</b>	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
		<b>B2</b>	mm	700	700	700	700	700	700	700	700	700	700	700	700
ST	<b>Operating weight</b>	kg	2187	2257	2323	1791	2393	2406	1791	2422	2422	2422	3283	3310	3310
EN	<b>Operating weight</b>	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			<b>65D</b>	<b>70D</b>	<b>75D</b>	<b>75C</b>	<b>80D</b>	<b>90D</b>	<b>90C</b>	<b>100D</b>	<b>110D</b>	<b>120D</b>	<b>135F</b>	<b>150F</b>	<b>165F</b>	<b>180F</b>	
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	
ST	Sound pressure level	(4)	dB(A)	72	73	74	76	75	76	76	76	76	78	79	80	80	80
EN	Sound pressure level	(4)	dB(A)	67	67	68	70	69	70	71	71	70	72	73	74	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

- |                                   |   |                |  |
|-----------------------------------|---|----------------|--|
| ► <b>CFSC</b>                     | Potential-free contacts for compressor status             | ► <b>MSLX</b>  | Master-slave operation                                       |
| ► <b>AMRX</b>                     | Rubber antivibration mounts                               | ► <b>IFUX</b>  | Steel mesh strainer on user side                             |
| ► <b>PM</b>                       | Phase monitor   | ► <b>2PM</b>   | Hydropack with 2 pumps (sizes 65D÷120D)                      |
| ► <b>RCMRX</b>                    | Remote control via microprocessor control                 | ► <b>2P1SB</b> | Hydropack with 2 pumps + 1 in stand-by (sizes 65D÷120D)      |
| ► <b>CMS6</b>                     | CAN/LON WORKS serial converter kit                        | ► <b>3PM</b>   | Hydropack with 3 pumps                                       |
| ► <b>CMSC4</b>                    | CAN/Modbus serial converter kit                           | ► <b>EHU</b>   | Anti-freeze electric heaters user side for hydronic assembly |
| ► <b>SPC1</b>                     | Set point compensation with 4-20 mA signal                | ► <b>CEHU</b>  | Connection set exchanger with hydronic assembly (user side)  |
| ► <b>SPC2</b>                     | Set-point compensation with outdoor air temperature probe | ► <b>MHP</b>   | High and low pressure gauges                                 |
| ► <b>SCP3</b>                     | Set point compensation according to the outside enthalpy  | ► <b>SDV</b>   | Cutoff valve on compressor supply and return                 |
| ► <b>PFCP</b>                     | Power factor correction capacitors ( $\cos\phi > 0.9$ )   |                |  |
| ■ Accessories separately supplied |   |                |  |

## Water chiller

Condenserless  
Indoor installation  
**Capacity from 300 to 1427 kW**

## SCREWLine<sup>3</sup>



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.

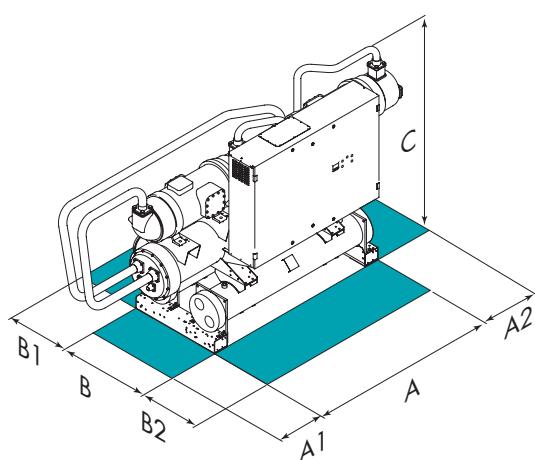
► **PARTICULARLY SEVERE CLIMATES** - The two section solution makes it possible to avoid having an outdoor water system and therefore having to perform the winter emptying needed to protect it against freezing. With MDE-SL3, the pipes between the two sections contain a refrigerant fluid and not water.

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



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	4635	5010	5010	5000	5000	5000	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	1810	2020	2020	2030	2030	2160	2160	2160	2160
EN-EXC   C - Height	mm	1918	1918	1918	1918	1918	1918	2077	2077	2087	2087	2087	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

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 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		<b>120.1</b>	<b>140.1</b>	<b>160.1</b>	<b>180.1</b>	<b>200.1</b>	<b>220.1</b>	<b>250.1</b>	<b>270.1</b>	<b>290.1</b>
ST/EN-EXC	Cooling capacity	(1) kW	300	364	401	466	508	566	620	683
ST/EN-EXC	Compressor power input	(1) kW	69,1	82,4	90,5	105	114	128	140	154
ST/EN-EXC	Total power input	(1) kW	69,6	82,9	91,0	105	114	128	140	154
ST/EN-EXC	EER	(2)	-	4,35	4,42	4,43	4,44	4,46	4,42	4,43
ST/EN-EXC	Refrigeration circuits	Nr	1	1	1	1	1	1	1	1
ST/EN-EXC	No. of compressors	Nr	1	1	1	1	1	1	1	1
ST/EN-EXC	Type of compressors	(3)	-	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
ST-EXC	Sound pressure level	(4) dB(A)	74	75	76	76	77	76	78	78
EN-EXC	Sound pressure level	(4) dB(A)	69	70	71	72	72	71	73	73

Size - MDE-SL3		<b>220.2</b>	<b>240.2</b>	<b>260.2</b>	<b>280.2</b>	<b>300.2</b>	<b>320.2</b>	<b>340.2</b>	<b>360.2</b>	<b>400.2</b>	<b>440.2</b>	<b>470.2</b>	<b>500.2</b>	<b>540.2</b>	<b>580.2</b>
ST/EN-EXC	Cooling capacity	(1) kW	550	585	642	720	757	794	848	899	997	1115	1159	1231	1344
ST/EN-EXC	Compressor power input	(1) kW	128	137	150	164	173	181	195	208	228	255	267	280	307
ST/EN-EXC	Total power input	(1) kW	128	138	151	165	174	182	196	209	228	256	268	281	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	4,38
ST/EN-EXC	Refrigeration circuits	Nr	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
ST/EN-EXC	Type of compressors	(3)	-	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
EN-EXC	Sound pressure level	(4) dB(A)	71	72	73	73	73	74	74	74	74	74	75	75	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

‣ <b>AMRX</b>	Rubber antivibration mounts	‣ <b>SPC2</b>	Set-point compensation with outdoor air temperature probe
‣ <b>RCMRX</b>	Remote control via microprocessor control	‣ <b>DML0-10</b>	Demand limit with signal 0-10V
‣ <b>PSX</b>	Mains power supply	‣ <b>DML4-20</b>	Demand limit with signal 4-20mA
‣ <b>CONTA2</b>	Energy meter	‣ <b>CFSCF</b>	Potential-free contacts for compressor status and enabling
‣ <b>CMSC9</b>	Serial communication module to Modbus supervisor	‣ <b>ECS</b>	ECOSHARE function for the automatic management of a group of units
‣ <b>CMSC10</b>	Serial communication module to LonWorks supervisor	‣ <b>PFCP</b>	Power factor correction capacitors (cosfi > 0.9)
‣ <b>CMSC11</b>	Serial communication module for BACnet-IP supervisor	‣ <b>CBS</b>	Overload circuit breakers
‣ <b>SCP4</b>	Set-point compensation with signal 0-10 V	‣ <b>SFSTR2</b>	Progressive compressor start-up device
‣ <b>SPC1</b>	Set point compensation with 4-20 mA signal		

■ 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).

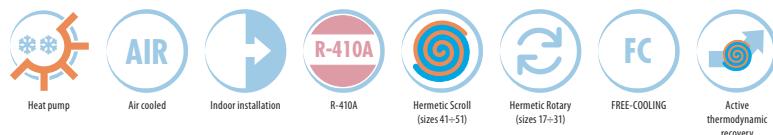
## ELFOFresh Large

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

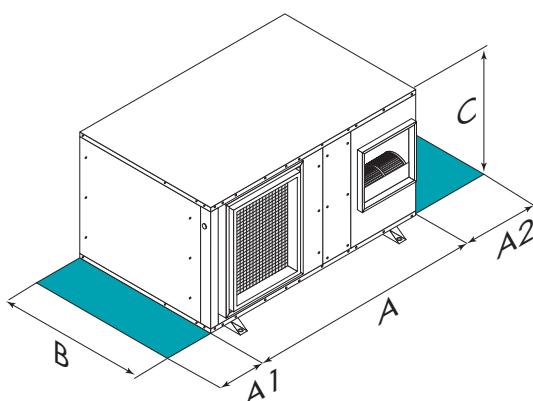
Their main characteristics include:

- ▶ 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
B - Width	mm	950	950	950	950	950
C - Height	mm	443	443	518	518	668
A1	mm	900	900	900	900	900
A2	mm	700	700	700	700	700
Operating weight	kg	135	145	175	185	215

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)
- ▶ **CH2O** Integration water coil

## technical data

Size – CPAN-U			<b>17</b>	<b>21</b>	<b>25</b>	<b>31</b>	<b>41</b>	<b>51</b>
SM	▶ Cooling capacity	(1)	kW	6,20	7,60	8,60	10,9	12,4
SM	Sensible capacity	(1)	kW	5,00	5,80	7,00	8,60	9,50
SM	Compressor power input	(1)	kW	1,70	2,10	2,20	2,90	2,80
SM	EER	-		3,55	3,56	3,93	3,77	4,48
SM	▶ Heating capacity	(2)	kW	6,80	8,30	9,20	11,9	13,2
SM	Compressor power input	(2)	kW	1,30	1,70	1,80	2,20	2,00
SM	COP	-		5,19	4,92	5,22	5,34	6,47
SM	Refrigeration circuits	Nr		1	1	1	1	1
SM	No. of compressors	Nr		1	1	1	1	1
SM	Type of compressors	(3)	-	Rot	Rot	Rot	Rot	Scroll
SM	Supply airflow	I/s		330	390	470	610	690
SM	Type of supply fan	(4)	-	CFG	CFG	CFG	CFG	CFG
SM	Number of supply fans	Nr		1	1	1	1	1
SM	Max. static pressure supply fan	(5)	Pa	190	175	300	180	270
SM	Exhaust airflow	I/s		300	360	440	550	640
SM	Number of exhaust fans	Nr		1	1	1	1	1
SM	Max. exhaust static pressure	Pa		180	165	290	210	250
SM	Standard power supply	V		230/1~/50	230/1~/50	400/3N~/50	400/3N~/50	400/3N~/50
Sound pressure level		(6)	dBA(A)	53	55	57	59	61
								62

### 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

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

■ 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 m<sup>3</sup>/h)**

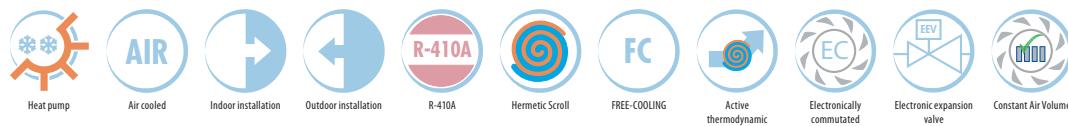


## ZEPHIR<sup>2</sup> EVO

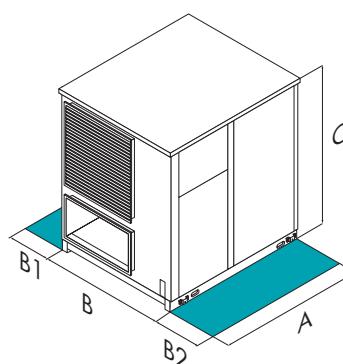
**ZEPHIR<sup>2</sup> EVO** encases the entire primary air system in a single packaged system.

- **ZEPHIR<sup>2</sup> 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 air 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.
- **ZEPHIR<sup>2</sup> EVO** eliminates components with no useful effect, such as storage tanks, pipes and pumps.
- As it can greatly reduce primary energy consumption, **ZEPHIR<sup>2</sup> 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
B - Width	mm	1735	1735	1735	2025
C - Height	mm	1810	1810	2260	2260
B1	mm	700	700	700	700
B2	mm	1200	1200	1200	1200
Operating weight	kg	972	972	1202	1325

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		<b>45</b>	<b>60</b>	<b>70</b>	<b>110</b>	<b>130</b>
► 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

# ELFOSPACE ELFODUCT MP

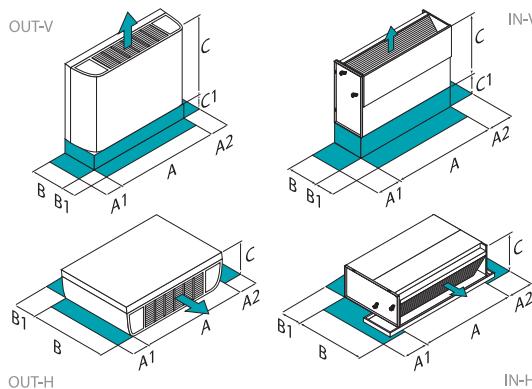
003.0÷071.0

## Water terminal unit

Cased and uncased, vertical and horizontal indoor installation



## dimensions and clearances



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

# ELFOSpace Capacity from 1,5 to 10,7 kW

new range

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

- ▶ Versions for 2 and 4-pipe systems;
- ▶ Available with DC Brushless ventilating unit (sizes 003.0÷031.0);
- ▶ The available controls are simple and user-friendly, satisfying the most varied of requirements;
- ▶ Designed for connection to the ELFOControl<sup>2</sup> 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.

# ELFODuct Capacity from 6 to 20,2 kW

The **ELFODuct MP** are the new generation air-treatment water terminal units ideal for installations where ducted air distribution is necessary.

- ▶ Version for 2 and 4-pipe systems;
- ▶ Version for horizontal installations in suspended ceilings and version for vertical installations in lining walls;
- ▶ High energy efficiency thanks to the configuration with fan deck with DC Brushless motor;
- ▶ Available head up to **120 Pa**;
- ▶ Very low sound levels;
- ▶ Internal exchanger with large exchange surface, easily reversed water connections even on construction site;

Size - ELFOSPACE	003.0	005.0	007.0	009.0	011.0	015.0	017.0	021.0	025.0	031.0	041.0	051.0
OUTV A-Length	mm 670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTV B-Width	mm 220	220	220	220	220	220	220	220	220	220	220	220
OUTV C-Height	mm 470	470	470	470	470	470	470	470	470	470	470	470
OUTV A1	mm 20	20	20	20	20	20	20	20	20	20	20	20
OUTV A2	mm 20	20	20	20	20	20	20	20	20	20	20	20
OUTV B1	mm 250	250	250	250	250	250	250	250	250	250	250	250
OUTV C1	mm 90	90	90	90	90	90	90	90	90	90	90	90
INV A-Length	mm 450	450	650	650	850	850	1050	1050	1250	1250	1450	1450
INV B-Width	mm 215	215	215	215	215	215	215	215	215	215	215	215
INV C-Height	mm 450	450	450	450	450	450	450	450	450	450	450	450
INV A1	mm 200	200	200	200	200	200	200	200	200	200	200	200
INV A2	mm 200	200	200	200	200	200	200	200	200	200	200	200
INV B1	mm 250	250	250	250	250	250	250	250	250	250	250	250
INV C1	mm 90	90	90	90	90	90	90	90	90	90	90	90
OUTH A-Length	mm 670	670	870	870	1070	1070	1270	1270	1470	1470	1670	1670
OUTH B-Width	mm 470	470	470	470	470	470	470	470	470	470	470	470
OUTH C-Height	mm 220	220	220	220	220	220	220	220	220	220	220	220
OUTH A1	mm 20	20	20	20	20	20	20	20	20	20	20	20
OUTH A2	mm 20	20	20	20	20	20	20	20	20	20	20	20
OUTH B1	mm 90	90	90	90	90	90	90	90	90	90	90	90
INH A-Length	mm 545	545	745	745	945	945	1145	1145	1345	1345	1545	1545
INH B-Width	mm 450	450	450	450	450	450	450	450	450	450	450	450
INH C-Height	mm 215	215	215	215	215	215	215	215	215	215	215	215
INH A1	mm 200	200	200	200	200	200	200	200	200	200	200	200
INH A2	mm 200	200	200	200	200	200	200	200	200	200	200	200
INH B1	mm 90	90	90	90	90	90	90	90	90	90	90	90
CC2-INV Operating weight	kg 11	11	14	14	20	20	23	24	27	28	31	34
CC2-INV Operating weight	kg 11	12	14	15	20	21	23	25	27	29	31	35
CC4-INV Operating weight	kg 12	12	14	15	21	22	24	26	28	30	32	36
CC4-INV Operating weight	kg 12	12	15	16	21	22	24	26	28	30	32	36
CC2-OUTV Operating weight	kg 14	14	16	17	22	24	26	28	30	32	34	38
CC2-OUTV Operating weight	kg 15	15	18	19	24	26	28	30	33	34	37	41
CC4-OUTH Operating weight	kg 16	16	19	20	26	27	30	31	34	36	39	42
CC4-OUTV Operating weight	kg 14	15	17	18	24	25	27	29	31	33	35	39

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.  
 OUTV Vertical cased version  
 INV Vertical uncased version  
 OUTH Horizontal cased version  
 INH Horizontal uncased version  
 CC2-INV 2 pipes-Vertical uncased version

CC4-INV 4 tubes-Vertical uncased version  
 CC4-INH 4 tubes-Horizontal uncased version  
 CC2-OUTV 2 pipes-Vertical cased version  
 CC2-OUTH 2 pipes-Horizontal cased version  
 CC4-OUTH 4 tubes-Horizontal cased version  
 CC4-OUTV 4 tubes-Vertical cased version

## versions and configurations

### VERSION:

- **INV** Vertical uncased version (Standard)
- **OUTV** Vertical cased version
- **OUTH** Horizontal cased version
- **INH** Horizontal uncased version

### COIL CONFIGURATION:

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

### WATER FITTINGS:

- **SX** Water fittings to the left (Standard)
- **DX** Water fittings to the right

### RETURN:

- **RP** Rear intake (Standard)
- **R3** Downflow return
- **RF** Front air inlet

## technical data

Size - ELFOSPACE	<b>003.0</b>	<b>005.0</b>	<b>007.0</b>	<b>009.0</b>	<b>011.0</b>	<b>015.0</b>	<b>017.0</b>	<b>021.0</b>	<b>025.0</b>	<b>031.0</b>	<b>041.0</b>	<b>051.0</b>
<b>2 pipes</b>												
► 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	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
<b>4 tubes</b>												
► 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	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

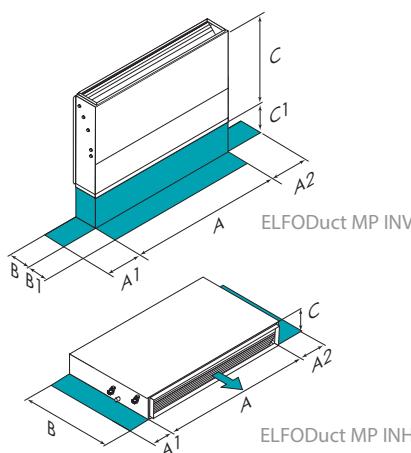
Size - ELFODUCT MP	<b>15</b>	<b>21</b>	<b>25</b>	<b>31</b>	<b>41</b>	<b>51</b>	<b>61</b>	<b>71</b>
<b>2 pipes</b>								
► Cooling capacity (1) kW	6,01	7,48	8,59	10,3	12,9	15,0	17,2	20,2
Sensible capacity kW	4,57	5,56	6,16	8,10	9,95	11,1	13,3	14,9
Total power input kW	0,16	0,16	0,16	0,31	0,31	0,31	0,46	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
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
<b>4 tubes</b>								
► 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	-
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	-

### Notes

- (1) Indoor air at 27°C D.B./19°C W.B.; Water temperature in / out 7°C / 12°C; Air flow at maximum speed (ESP = 0Pa)  
(2) Indoor air temperature at 20°C; Water inlet temperature = 50°C; Air flow at maximum speed (ESP = 0Pa)  
(3) Air flow at maximum speed (ESP = 0Pa)

- (4) CFG = AC 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.

## dimensions and clearances



Size - ELFODUCT MP	<b>15</b>	<b>21</b>	<b>25</b>	<b>31</b>	<b>41</b>	<b>51</b>	<b>61</b>	<b>71</b>
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-INH 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 B1 mm	250	250	250	250	250	250	250	250
CC2-INH C1 mm	100	100	-	100	100	100	100	-
CC2-INH Operating weight kg	34	35	-	51	53	67	69	-
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	575	575	-	575	575	575	575	-
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 B1 mm	250	250	-	250	250	250	250	-
CC4-INH C1 mm	100	100	-	100	100	100	100	-
CC4-INH Operating weight kg	36	37	-	51	53	67	69	-

## Water terminal unit

Vertical or horizontal indoor installation, cased or uncased  
**Capacity from 0,9 to 4,2 kW**

# ELFORoom<sup>2</sup>



**ELFORoom<sup>2</sup>** is a clever mix of technology and design that provides a high level of comfort.

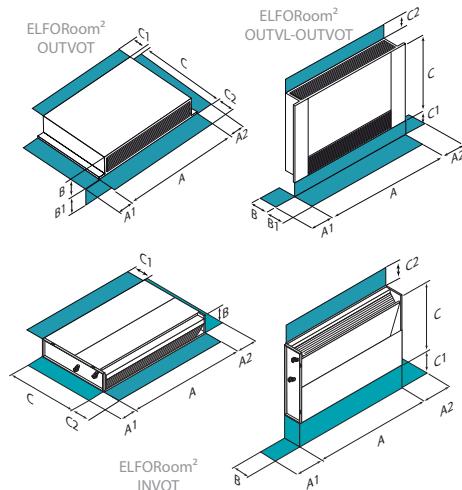
Its main features are:

- **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



## dimensions and clearances



Size - ELFOROOM2	003.0	005.0	011.0	015.0	017.0
OUTV A - Length mm	737	937	1137	1337	1537
OUTV B - Width mm	131	131	131	131	131
OUTV C - Height mm	579	579	579	579	579
OUTV A1 mm	20	20	20	20	20
OUTV A2 mm	20	20	20	20	20
OUTV B1 mm	400	400	400	400	400
OUTV C1 mm	80	80	80	80	80
OUTV C2 mm	140	140	140	140	140
INV A - Length mm	527	727	927	1127	1327
INV B - Width mm	126	126	126	126	126
INV C - Height mm	579	579	579	579	579
INV A1 mm	63	63	63	63	63
INV A2 mm	100	100	100	100	100
INV B1 mm	400	400	400	400	400
INV C1 mm	20	20	20	20	20
INV C2 mm	360	360	360	360	360
OUTV Operating weight kg	17	20	23	26	29
INV Operating weight kg	9,0	12	15	18	21

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

		<b>003.0</b>	<b>005.0</b>	<b>011.0</b>	<b>015.0</b>	<b>017.0</b>
► 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 m<sup>3</sup> 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
- **HIDI12X** HID-T12 Flush-mounted electronic room control
- **HIDE1X** Remote control with 3 position switch + on/off for wall installation

- **HIDE2X** Remote control with E/I +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
- **FXPX** 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

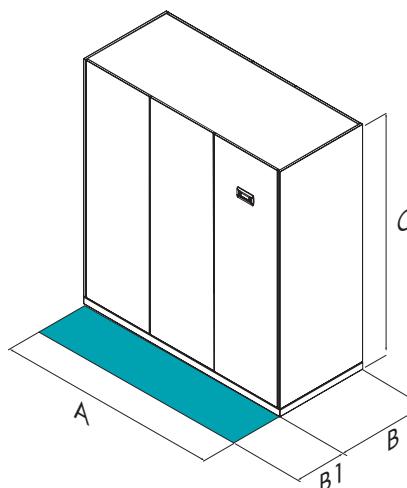
**Capacity from 19 to 95 kW****CLOSEControl**

**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**

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

Size - UCP-DX		61	81	82	102	122	162	182	222	262	302
EP	A - Length	mm	1225	1225	1525	1525	2189	2189	2853	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

## 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		<b>61</b>	<b>81</b>	<b>82</b>	<b>102</b>	<b>122</b>	<b>162</b>	<b>182</b>	<b>222</b>	<b>262</b>	<b>302</b>
▶ Cooling capacity	(1)	kW	19,4	24,7	31,5	36,8	45,0	51,6	59,2	73,9	84,3
Sensible capacity	(1)	kW	19,4	23,6	30,3	33,5	44,4	48,9	54,9	70,7	78,2
SHR	-		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
EER	(1)	-	4,38	4,05	3,84	3,92	3,78	3,79	3,77	3,95	3,85
Refrigeration circuits	Nr		1	1	1	1	1	1	1	1	1
No. of compressors	Nr		1	1	2	2	2	2	2	2	2
Type of compressors	(2)	-	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Supply airflow	l/s		1667	1944	2500	2639	3750	4028	4444	5833	6528
Type of supply fan	(3)	-	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD	RAD
Number of supply fans	Nr		1	1	1	1	2	2	3	3	3
Fan diameter	mm		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
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
Sound pressure level	(5)	dB(A)	56	57	59	60	62	63	64	65	66

### 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

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

### Key to symbols:

- Accessories separately supplied

# FORM ENDÜSTRİ ÜRÜNLERİ

Form Endüstri Ürünleri firmasının ana faaliyet alanı Klima sistemleri konusunda temsilcilik, satış ve satış sonrası hizmetlerdir. Konularında dünya lideri olan firmalardan oluşan, Türkiye ve diğer bölgeleri kapsayan 8 farklı firma temsilciliği bulunmaktadır. Özellikle yüksek enerji verimliliği içeren ve çevre dostu olan sistem çözümleri konusunda geniş bir tecrübe ve çok sayıda uygulamaya sahiptir.

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