CLIVET

GUIDE EU ***2020***

PRODUCTS AND SYSTEMS

HYDRONIC

Inspiring Solutions since 1989

WSAN-YSi

10.1÷22.2

ELFOEnergy Sheen EVO

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 22,3 to 55,0 kW

NEW PRODUCT

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

ErP
ErP compliant

DC INVERTER

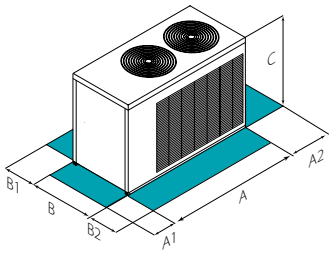
The **ELFOEnergy Sheen EVO** heat pumps are high efficiency packaged units for outdoor installation with the ecological R-32 refrigerant.

- **SEASONAL EFFICIENCY:** Guaranteed by DC Inverter technology applied to the compressor and fans, which can modulate its speed to the energy needs required. This solution allows a further reduction in consumption and a significant improvement of the seasonal efficiency.
- **EXTENDED OPERATING RANGE:** ELFOEnergy Sheen Evo is able to meet the strictest requirements in terms of operating temperatures, with great efficiency. In cooling, its operation is guaranteed even with very low outside temperatures (from 48°C to -10°C), ideal for the requirements of IT applications. In heating, its operation is guaranteed down to external air temperatures of -14°C producing hot water of up to 54°C.

functions and features

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

dimensions and clearances



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

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

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

versions and configurations

TYPE OF FANS:

VEND DC high efficiency fan (Standard)

technical data

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

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

HYG1 Hydronic assembly with 1 ON/OFF pump

HYGU1V User side hydronic group with 1 inverter pump

ACC Storage tank

VACS DHW switching valve

✓**IFWX** Steel mesh strainer on the water side

✓**AVIBX** Anti-vibration mount support

Key to symbols:

✓ Accessories separately supplied

WSAT-YES WSAN-YES

18.2÷35.2

NEW PRODUCT

ELFOEnergy STORM EVO

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

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Unit listed on www.eurovent-certification.com

ErP

ErP compliant

DC INVERTER

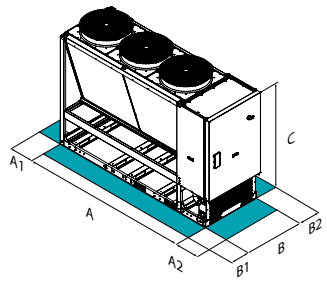
The **ELFOEnergy STORM EVO** chillers and heat pumps are high efficiency packaged units for outdoor installation with the ecological R-32 refrigerant. Thanks to the highest energy efficiency over the entire operating cycle, the domestic hot water production and high configurability, they are suitable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

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

functions and features

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

dimensions and clearances



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

SIZE – WSAT-YES		18.2*	20.2*	25.2*	30.2*	35.2*
A - Length	mm	2337	2337	3190	3190	3190
B - Width	mm	1130	1130	1130	1130	1130
C - Height	mm	2152	2152	2155	2155	2155
A1	mm	800	800	800	800	800
A2	mm	800	800	800	800	800
B1	mm	500	500	500	500	500
B2	mm	500	500	500	500	500
Operating weight	kg	-	-	-	-	-

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

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

* Preliminary data, sizes available from the second half of 2020

versions and configurations

TYPE OF FANS:

VENDC DC high efficiency fan (Standard)

technical data

SIZE – WSAT-YES			18.2*	20.2*	25.2*	30.2*	35.2*
Cooling capacity (EN14511:2018)	(1)	kW	52,2	58,7	72,0	78,0	85,0
Total power input (EN14511:2018)	(1)	kW	16,7	19,9	22,9	25,2	29,1
EER (EN14511:2018)	(1)	-	3,14	2,95	3,22	3,17	3,00
SEER	(4)	-	4,77	4,70	4,71	4,69	4,60
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER			SCROLL INVERTER	
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V			400/3/50+N		
Sound pressure level	(3)	dB(A)	65	65	66	67	67

SIZE – WSAN-YES			18.2	20.2	25.2	30.2	35.2
Cooling capacity (EN14511:2018)	(1)	kW	53,3	58,9	72,0	77,7	85,0
Total power input (EN14511:2018)	(1)	kW	18,1	20,3	22,9	25,1	29,2
EER (EN14511:2018)	(1)	-	2,95	2,90	3,15	3,10	2,91
SEER	(4)	-	4,57	4,51	4,64	4,62	4,50
Heating capacity (EN14511:2018)	(2)	kW	53,0	66,0	79,3	84,7	91,0
Total power input (EN14511:2018)	(2)	kW	16,5	20,8	23,8	25,7	28,00
COP (EN14511:2018)	(2)	-	3,21	3,17	3,33	3,29	3,25
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER			SCROLL INVERTER	
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V			400/3/50+N		
Sound pressure level	(3)	dB(A)	65	65	66	67	67
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35		-	A++	A++	A++	-	-
SCOP - AVERAGE Climate - W35	(4)	-	3,93	3,91	4,08	4,07	4,06

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

* Preliminary data, sizes available from the second half of 2020

accessories

CCCA Copper / aluminium condenser coil with acrylic lining

CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment

3DHW Built-in 3-way valve for domestic hot water on the unit

HYGU1V User side hydronic assembly with 1 inverter pump

ACIMP Steel inertial storage tank

✓ **IFWX** Steel mesh strainer on the water side

✓ **AVIBX** Anti-vibration mount support

PGFC Finned coil protection grill

✓ **AMODX** Water fittings for modular unit

Key to symbols:

✓ Accessories separately supplied

WSAN-XES

18.2÷35.2

ELFOEnergy STORM

Reversible heat pump
Air cooled
Outdoor installation
Capacity from 53,0 to 85,0 kW

Unit listed on www.eurovent-certification.com

ErP compliant

DC INVERTER

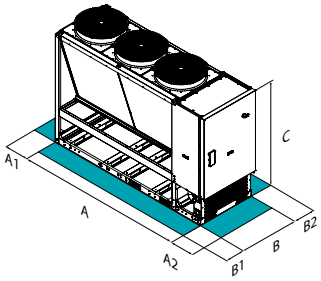
The **ELFOEnergy STORM** heat pumps are high efficiency packaged units for outdoor installation. Thanks to the highest energy efficiency over the entire operating cycle, the domestic hot water production and high configurability, they are suitable for residential and tertiary applications.

- **ADVANCED TECHNOLOGY:** the DC Inverter technology for the compressor and fans, a specially-conceived design for modularity that allows to hydraulically connect up to 4 units and manage up to 16 units in a local network, are some of the construction features.
- **EXTENDED OPERATING RANGE:** In cooling, its operation is guaranteed even with very low outside temperatures (from 52°C to -10°C), ideal for the requirements of IT applications. In heating, its operation is guaranteed down to external air temperatures of -15°C producing hot water of up to 55°C. The two silent and super silent modes also ensure a greater acoustic comfort in the desired hours.

functions and features

Heat pump | Air cooled | Outdoor installation | R-410A | Hermetic rotary | Hermetic Scroll | Full Inverter DC | Electronic expansion valve

dimensions and clearances



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

SIZE – WSAN-XES		18.2	20.2	25.2	30.2	35.2
A - Length	mm	2375	2375	3230	3230	3230
B - Width	mm	1130	1130	1130	1130	1130
C - Height	mm	2155	2155	2155	2155	2155
A1	mm	800	800	800	800	800
A2	mm	800	800	800	800	800
B1	mm	500	500	500	500	500
B2	mm	500	500	500	500	500
Operating weight	kg	580	580	780	780	780

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

versions and configurations

TYPE OF FANS:

VENDC DC high efficiency fan (Standard)

technical data

SIZE – WSAN-XES			18.2	20.2	25.2	30.2	35.2
Cooling capacity (EN14511:2018)	(1)	kW	53,0	58,5	71,5	77,5	85,0
Total power input (EN14511:2018)	(1)	kW	17,1	20,1	22,7	25,0	29,3
EER (EN14511:2018)	(1)	-	3,10	2,91	3,15	3,10	2,90
SEER	(4)	-	4,34	4,21	4,70	4,69	4,67
Heating capacity (EN14511:2018)	(2)	kW	53,0	65,0	79,0	85,0	92,5
Total power input (EN14511:2018)	(2)	kW	16,6	21,7	24,2	26,6	30,7
COP (EN14511:2018)	(2)	-	3,20	3,00	3,26	3,20	3,01
No. of compressors		Nr			2		
Refrigeration circuits		Nr			1		
Type of compressors			ROTARY INVERTER			SCROLL INVERTER	
Standard airflow		l/s	6889	6889	10333	10333	10333
Standard power supply		V			400/3/50+N		
Sound pressure level	(3)	dB(A)	64	65	62	65	67
Directive ErP (Energy Related Products)							
ErP Energy Class - AVERAGE Climate - W35		-	A++	A++	A++	A++	A++
SCOP - AVERAGE Climate - W35	(4)	-	3,83	3,82	4,18	4,08	3,94

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

CCCA Copper / aluminium condenser coil with acrylic lining

CCCA1 Condenser coil with Aluminium Energy Guard DCC treatment

AMOD Water fittings for modular unit

3DHW VBuilt-in 3-way valve for domestic hot water on the unit

HYG1 Hydronic assembly with 1 ON/OFF pump

HYGU1V User side hydronic assembly with 1 inverter pump

ACIMP Steel inertial storage tank

✓ **IFWX** Steel mesh strainer on the water side

✓ **AVIBX** Anti-vibration mount support

PGFC Finned coil protection grill

Key to symbols:

✓ Accessories separately supplied

WSAT-XEE WSAN-XEE

82÷302

ELFOEnergy Medium

Water chiller
WSAT-XEE: cooling only
WSAN-XEE: reversible heat pump
Air cooled
Outdoor installation
Capacity from 24 to 73,1 kW

Unit listed on www.eurovent-certification.com

ErP compliant

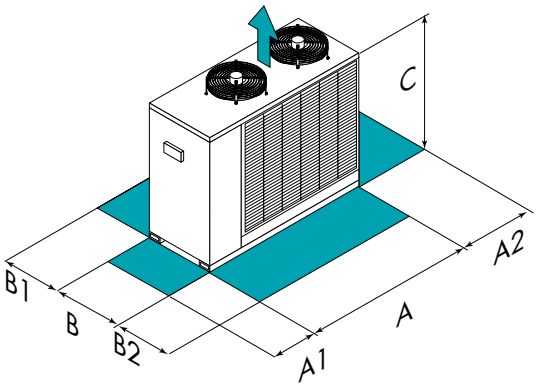
Liquid chillers and heat pumps of the **ELFOEnergy Medium** range, ideal for the small-scale commercial sector, are specifically designed for outdoor installation.

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

functions and features

Cooling only (WSAT-XEE)
Heat pump (WSAN-XEE)
Air cooled
Outdoor installation
R-410A
Hermetic Scroll
ELFOControl³ EVO
Ice protection system
FREE-COOLING

dimensions and clearances



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

SIZE – WSAT-XEE		82	102	122	162	182	222	262	302
A - Length	mm	1771	1771	1771	2012	2012	2012	2406	2406
B - Width	mm	680	680	680	1100	1100	1100	1100	1100
C - Height	mm	1287	1287	1287	1599	1599	1599	1593	1593
A1	mm	700	700	700	700	700	700	700	700
A2	mm	700	700	700	700	700	700	700	700
B1	mm	700	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700	700
Operating weight	kg	298	303	323	456	469	490	547	561

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

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

versions and configurations

LOW TEMPERATURE:

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

DOUBLE SET POINT:

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

ENERGY RECOVERY:

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

FREE-COOLING (WSAT-XEE ONLY):

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

EXTERNAL SECTION FAN CONSUMPTION REDUCTION (WSAT-XEE ONLY):

- \- Device for fan consumption reduction of the external section: not required (Standard)
- **CREFB** Device for fan consumption reduction of the external section, ECOBREEZE type

OPERATION (WSAN-XEE ONLY):

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

technical data

SIZE – WSAT-XEE			82	102	122	162	182	222	262	302
Cooling capacity (EN 14511:2018)	(1)	kW	24,7	28,7	34,2	40,5	46,4	55,2	65,0	73,1
Total power input (EN 14511:2018)	(1)	kW	9,26	10,7	12,8	14,6	17,1	20,8	24,1	27,2
EER (EN 14511:2018)	(1)	-	2,67	2,67	2,68	2,78	2,72	2,65	2,70	2,69
SEER	(4)	-	3,85	3,84	3,82	3,84	3,84	3,82	3,83	3,83
Refrigeration circuits		Nr	1							
No. of compressors		Nr	2							
Type of compressors			SCROLL							
Standard airflow		l/s	2545	2538	2514	4933	4875	4778	7196	7145
Water flow-rate (User Side)		l/s	1,20	1,30	1,60	1,90	2,20	2,60	3,10	3,40
Useful pump discharge head		kPa	132	126	120	104	88	148	139	131
Standard power supply		V	400/3/50+N							
Sound pressure level (1 m)	(3)	dB(A)	60	60	60	64	64	65	65	65

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

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

WSAT-XEE only:

- ✓ **SPCX** Set-point compensation with outdoor air temperature probe

Key to symbols:

✓ Accessories separately supplied

WSAT-XEE WSAN-XEE

352÷802

ELFOEnergy Large²

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

Unit listed on www.eurovent-certification.com

ErP compliant

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

ELFOEnergy Large² is available in two versions: EXCELLENCE and PREMIUM.

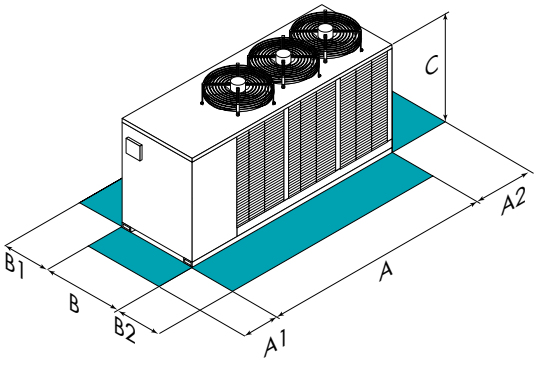
The EXCELLENCE version offers the highest efficiency both at full and at part load. The PREMIUM version offers high efficiency at part load but favour also the compact dimensions being therefore extremely competitive.

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

functions and features

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

dimensions and clearances



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

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
SC-EXC Compressors soundproofing (SC)-Excellence
SC-PRM Compressors soundproofing (SC)-Premium
SC Compressors soundproofing (SC)

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

SIZE – WSAT-XEE			352	402	432	452	502	552	602	702	802
SC-PRM	A - Length	mm	2710	2710	2710	2710	2710	2710	3075	4025	4025
SC-PRM	B - Width	mm	1097	1097	1097	1097	1097	1097	1097	1097	1097
SC-PRM	C - Height	mm	1805	1805	1805	1805	1805	1805	1805	1805	1805
SC-PRM	A1	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
SC-PRM	A2	mm	700	700	700	700	700	700	700	700	700
SC-PRM	B1	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC-PRM	B2	mm	1350	1350	1350	1350	1350	1350	1350	1350	1350
SC-PRM	Operating weight	kg	778	802	892	924	963	984	1087	1295	1324

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

versions and configurations

LOW TEMPERATURE:

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

ENERGY RECOVERY:

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

ACOUSTIC CONFIGURATION:

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

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

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

VERSION (WSAT-XEE ONLY):

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

FREE-COOLING (WSAT-XEE ONLY):

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

technical data

SIZE - WSAT-XEE				352	402	432	452	502	552	602	702	802
SC-EXC	Cooling capacity (EN14511:2018)	(1)	kW	95,6	109	120	129	140	152	174	195	216
SC-EXC	Total power input(EN14511:2018)	(1)	kW	30,7	34,8	38,8	40,9	45,0	49,0	55,8	62,3	69,6
SC-EXC	EER (EN14511:2018)	(1)	-	3,12	3,13	3,10	3,15	3,12	3,10	3,12	3,13	3,11
SC-EXC	SEER	(4)	-	4,12	4,24	4,11	4,22	4,17	4,11	4,14	4,22	4,00
SC-EXC	Refrigeration circuits		Nr					1				
SC-EXC	No. of compressors		Nr					2				
SC-EXC	Type of compressors		-					SCROLL				
SC-EXC	Standard airflow		l/s	12327	12248	12182	18373	18373	18216	18102	24227	24069
SC-EXC	Water flow-rate (User Side)		l/s	4,60	5,20	5,80	6,20	6,70	7,30	8,40	9,30	10,40
SC-EXC	Standard power supply		V					400/3/50				
SC-EXC	Sound pressure level	(3)	dB(A)	67	67	68	68	68	69	69	70	70

SIZE - WSAT-XEE				352	402	432	452	502	552	602	702	802
SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW	89,8	101	111	119	130	143	159	185	203
SC-PRM	Total power input(EN14511:2018)	(1)	kW	32,6	37,7	42,0	44,2	48,0	53,2	61,0	66,9	75,9
SC-PRM	EER (EN14511:2018)	(1)	-	2,75	2,67	2,64	2,70	2,71	2,69	2,61	2,76	2,67
SC-PRM	SEER	(4)	-	3,81	3,80	3,80	3,85	3,85	3,81	3,82	3,89	3,81
SC-PRM	Refrigeration circuits		Nr					1				
SC-PRM	No. of compressors		Nr					2				
SC-PRM	Type of compressors		-					SCROLL				
SC-PRM	Standard airflow		l/s	12474	12474	12394	12119	11871	11871	12268	18536	18536
SC-PRM	Water flow-rate (User Side)		l/s	4,30	4,80	5,30	5,70	6,20	6,90	7,60	8,90	9,70
SC-PRM	Standard power supply		V					400/3/50				
SC-PRM	Sound pressure level	(3)	dB(A)	67	67	67	67	68	68	68	69	69

SIZE - WSAN-XEE				352	402	432	452	502	552	602	702	802
SC	Cooling capacity (EN14511:2018)	(1)	kW	84,4	96,7	105	114	122	140	156	183	202
SC	Total power input(EN14511:2018)	(1)	kW	32,7	36,5	41,3	43,6	48,5	51,3	60,8	66,9	76,5
SC	EER (EN14511:2018)	(1)	-	2,58	2,65	2,55	2,61	2,52	2,73	2,56	2,73	2,64
SC	SEER	(4)	-	3,37	3,50	3,40	3,57	3,52	3,62	3,47	3,66	3,50
SC	Heating capacity (EN14511:2018)	(2)	kW	101	116	127	136	147	165	183	212	234
SC	Total power input (EN14511:2018)	(2)	kW	32,6	36,7	40,4	42,1	45,8	51,1	57,1	65,3	72,6
SC	COP (EN14511:2018)	(2)	-	3,08	3,16	3,14	3,23	3,20	3,24	3,21	3,25	3,23
SC	Refrigeration circuits		Nr					1				
SC	No. of compressors		Nr					2				
SC	Type of compressors		-					SCROLL				
SC	Standard airflow		l/s	12497	12281	12281	12217	12105	18255	18255	24267	24267
SC	Water flow-rate (User Side)		l/s	4,10	4,60	5,10	5,50	5,90	6,70	7,40	8,70	9,70
SC	Standard power supply		V					400/3/50				
SC	Sound pressure level	(3)	dB(A)	67	67	67	67	67	68	68	71	71
Directive ErP (Energy Related Products)												
SCOP - AVERAGE Climate - W35		(4)	-	3,23	3,27	3,33	3,38	3,38	3,33	3,34	3,29	3,26

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

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

accessori

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

WSAT-XEE only:

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

WSAN-XEE only:

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

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.

ELFOEnergy Vulcan Medium

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

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

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

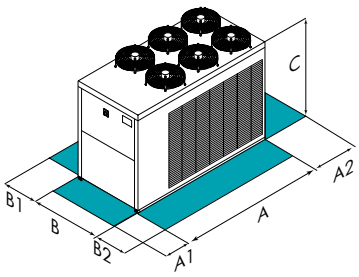
Unit listed on www.eurovent-certification.com

ErP compliant

functions and features

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

dimensions and clearances



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

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

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

versions and configurations

BASSA TEMPERATURA:

- \- Low temperature: not required (Standard)
- **B** Bassa temperatura acqua

ENERGY RECOVERY:

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

OPERATION:

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

technical data

SIZE - WBAN			82	122	162	202	262	302
Cooling capacity (EN 14511:2018)	(1)	kW	21,3	32,2	39,7	53,9	65,9	80,3
Total power input (EN 14511:2018)	(1)	kW	7,79	12,5	14,9	21,9	27,6	32,1
EER (EN 14511:2018)	(1)	-	2,73	2,58	2,67	2,46	2,39	2,50
SEER	(4)	-	2,68	2,70	2,79	2,69	2,60	2,74
Heating capacity (EN 14511:2018)	(2)	kW	29,1	40,3	51,0	71,1	80,4	99,5
Total power input (EN 14511:2018)	(2)	kW	8,53	12,1	15,5	20,8	24,8	30,8
COP (EN 14511:2018)	(2)	-	3,41	3,34	3,28	3,41	3,24	3,23
Refrigeration circuits		Nr	2					
No. of compressors		Nr	2					
Type of compressors		-	SCROLL					
Water flow-rate (User Side)	(1)	l/s	1,00	1,50	1,90	2,60	3,10	3,80
Useful pump discharge head	(1)	kPa	183	183	173	195	184	201
Standard power supply		V	400/3/50+N					
Sound pressure level	(3)	dB(A)	62	63	65	65	66	67
Directive ErP (Energy Related Products)								
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	A+	A+
ErP Energy Class - AVERAGE Climate - W55			-	A+	-	A+	-	-
SCOP - AVERAGE Climate - W35	(4)		3,24	3,63	3,42	3,70	3,45	3,19
SCOP - AVERAGE Climate - W55	(4)		-	2,95	-	2,99	-	-

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

Key to symbols:

✓ Accessories separately supplied

WSAT-XIN WSAN-XIN

18.2÷45.2

ELFOEnergy Magnum

Water chiller
WSAT-XIN: cooling only
WSAN-XIN: reversible heat pump
Air cooled
Outdoor installation
Capacity from 50 to 124 kW

DC INVERTER

Unit listed on
www.eurovent-certification.com

ErP compliant

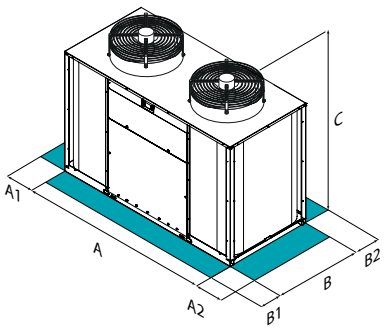
The ELFOEnergy Magnum heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, thanks to the continuous capacity modulation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

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

functions and features

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

dimensions and clearances



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

SIZE – WSAT-XIN		18.2	20.2	25.2	30.2	35.2	40.2	45.2
A - Length	mm	2400	2400	2400	2400	3600	3600	3600
B - Width	mm	1100	1100	1100	1100	1100	1100	1100
C - Height	mm	1540	1540	1790	1790	1890	1890	1890
A1	mm	800	800	800	800	800	800	800
A2	mm	800	800	800	800	800	800	800
B1	mm	800	800	800	800	800	800	800
B2	mm	800	800	800	800	800	800	800
Operating weight	kg	585	595	634	676	813	860	923

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

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

versions and configurations

ENERGY RECOVERY:

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

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

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

technical data

SIZE – WSAT-XIN			18.2	20.2	25.2	30.2	35.2	40.2	45.2
Cooling capacity (EN14511:2018)	(1)	kW	50,1	62,7	74,3	86,3	99,1	112,0	124,0
Total power input (EN14511:2018)	(1)	kW	16,1	20,2	23,9	27,6	31,8	36,1	40,1
EER (EN 14511:2018)	(1)	-	3,12	3,10	3,11	3,13	3,12	3,11	3,10
SEER	(4)	-	3,80	3,86	3,80	4,09	4,00	4,05	4,34
Refrigeration circuits		Nr				2			
No. of compressors		Nr				2			
Type of compressors		-				ON/OFF + INVERTER			
Supply airflow		l/s	10556	10556	13056	13056	13333	14167	14167
Water flow-rate (User Side)		l/s	2,40	3,00	3,50	4,10	4,70	5,40	5,90
Standard power supply		V				400/3/50+N			
Sound pressure level	(3)	dB(A)	65	65	66	66	68	68	69

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

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

WSAN-XIN only:

- **VACS** DHW switching valve: required

Key to symbols:

✓ Accessories separately supplied

WSAT-XEM WSAN-XEM

50.4÷120.4

ELFOEnergy Magnum

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

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

ErP
ErP compliant

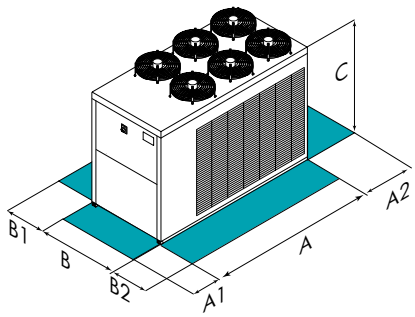
The **ELFOEnergy Magnum** heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions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

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

functions and features

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

dimensions and clearances



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

The above mentioned data are referred to standard units for the constructive configurations indicated. For all the other configurations, refer to the relative Technical Bulletin.
SC-EXC Compressors soundproofing (SC)-Excellence
SC-PRM Compressors soundproofing (SC)-Premium

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

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

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

versions and configurations

VERSION (WSAT-XEM ONLY):

- **EXC** Excellence (Standard)
- **PRM** Premium (sizes 70.4÷120.4)

ENERGY RECOVERY:

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

ACOUSTIC CONFIGURATION (WSAT-XEM ONLY):

- **SC** Acoustic configuration with compressor soundproofing (Standard)
- **EN** Super-silenced acoustic configuration

technical data

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

SIZE - WSAT-XEM				70.4	80.4	90.4	100.4	110.4	120.4
SC-PRM	Cooling capacity (EN14511:2018)	(1)	kW	183	207	242	261	288	330
SC-PRM	Total power input (EN14511:2018)	(1)	kW	66,9	76,0	89,3	96,4	105	122
SC-PRM	EER (EN14511:2018)	(1)	-	2,74	2,73	2,71	2,71	2,73	2,71
SC-PRM	SEER	(4)	-	4,08	4,13	4,32	4,17	4,19	4,10
SC-PRM	Refrigeration circuits		Nr	2					
SC-PRM	No. of compressors		Nr	4					
SC-PRM	Type of compressors		-	SCROLL					
SC-PRM	Standard airflow		l/s	23800	23550	24450	24450	23900	34450
SC-PRM	Water flow-rate (User Side)		l/s	8,70	9,90	11,5	12,4	13,7	15,8
SC-PRM	Standard power supply		V	400/3/50					
SC-PRM	Sound pressure level	(3)	dB(A)	67	67	68	68	68	71

SIZE - WSAN-XEM				50.4	55.4	60.4	65.4	70.4	80.4	90.4	100.4	110.4	120.4
EXC	Cooling capacity (EN14511:2018)	(1)	kW	139	148	160	170	184	208	235	273	296	321
EXC	Total power input(EN14511:2018)	(1)	kW	48,7	53,6	58,4	63,7	67,6	77,0	92,7	98,1	110	126
EXC	EER (EN14511:2018)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
EXC	SEER	(4)	-	3,99	4,00	4,04	4,07	3,94	4,08	4,08	3,93	3,91	3,85
EXC	Heating capacity (EN14511:2018)	(2)	kW	155	167	183	194	210	239	274	313	340	378
EXC	Total power input (EN14511:2018)	(2)	kW	47,9	52,3	56,5	60,1	65,3	74,3	85,1	97,5	106	118
EXC	COP (EN14511:2018)	(2)	-	3,24	3,20	3,24	3,23	3,22	3,22	3,22	3,21	3,21	3,20
EXC	Refrigeration circuits		Nr	2									
EXC	No. of compressors		Nr	4									
EXC	Type of compressors		-	SCROLL									
EXC	Standard airflow		l/s	20300	20300	20000	20000	25000	24200	24200	35000	35000	35000
EXC	Water flow-rate (User Side)		l/s	6,70	7,10	7,70	8,10	8,80	10,0	11,2	13,1	14,2	15,5
EXC	Standard power supply		V	400/3/50+N				400/3/50					
EXC	Sound pressure level	(3)	dB(A)	69	69	69	69	68	68	68	72	72	72
Directive ErP (Energy Related Products)													
SCOP - AVERAGE Climate - W35		(4)	-	3,70	3,66	3,72	3,72	3,64	3,64	3,76	3,25	3,70	3,80

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

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

accessories

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

WSAN-XEM only:

- ✓ **VACSUX** User side DHW switching valve

WSAT-XEM only:

- **CREFO** Device for fan consumption reduction of the external section, on/off type (sizes 70.4÷120.4)
- **SDV** Cutoff valve on compressor supply and return
- **RPRPDI** Refrigerant leak detector with pump down function in the casing

Key to symbols:

✓ Accessories separately supplied

ELFOEnergy Magnum MF

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

Unit listed on www.eurovent-certification.com

ErP compliant

DC INVERTER

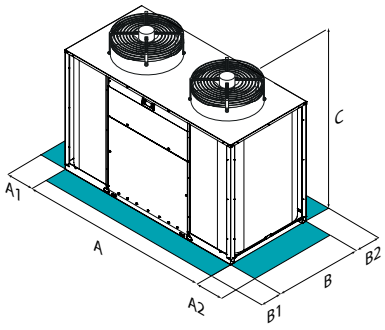
The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently.**
Designed for outdoor installation, they ensure extremely high efficiency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

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

functions and features

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

dimensions and clearances



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

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

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

versions and configurations

ENERGY RECOVERY:

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

CONFIGURATION:

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

EXTERNAL SECTION FAN CONSUMPTION REDUCTION:

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

technical data

SIZE – WSAN-XIN MF			18.2	20.2	25.2	30.2	35.2	40.2	45.2
COOLING 100% - HEATING 0%									
Cooling capacity (EN14511:2018)	(1)	kW	49,6	59,3	69,5	82,2	92,5	106	120
Total power input (EN14511:2018)	(1)	kW	16,9	20,6	23,7	28,7	33,7	39,0	46,2
EER (EN14511:2018)	(1)	-	2,93	2,88	2,93	2,86	2,75	2,72	2,60
SEER	(6)	-	3,34	3,43	3,47	3,63	3,72	3,70	3,79
COOLING 0% - HEATING 100%									
Heating capacity (EN14511:2018)	(2)	kW	57,1	69,8	79,7	94,9	109	125	143
Total power input (EN14511:2018)	(2)	kW	17,2	20,9	24,0	28,6	32,7	37,5	42,9
COP (EN14511:2018)	(2)	-	3,32	3,34	3,32	3,32	3,33	3,33	3,33
COOLING 100% - HEATING 100%									
Cooling capacity (EN14511:2018)	(3)	kW	49,8	59,7	69,6	82,8	95,8	109	128
Heating capacity (EN14511:2018)	(3)	kW	64,9	78,0	90,8	107	125	141	169
Total power input (EN14511:2018)	(3)	kW	15,3	18,6	21,5	25,4	29,6	33,7	41,1
Overall efficiency (EN14511:2018)	(4)	-	7,51	7,41	7,46	7,48	7,47	7,42	7,22
Refrigeration circuits		Nr				2			
No. of compressors		Nr				2			
Type of compressors		-				INVERTER + ON/OFF SCROLL			
Standard power supply		V				400/3/50+N			
Sound pressure level	(5)	dB(A)	65	65	66	66	68	68	69
Directive ErP (Energy Related Products)									
ErP Energy Class - AVERAGE Climate - W35		-	A+	A+	A+	A+	-	-	-
SCOP - AVERAGE Climate - W35	(6)	-	3,69	3,74	3,59	3,75	3,83	3,80	3,96

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

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

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

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

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

(6) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

Key to symbols:

✓ Accessories separately supplied

WSAN-XEM MF

50.4÷120.4

ELFOEnergy Magnum MF

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

Unit listed on
www.eurovent-certification.com

ErP compliant

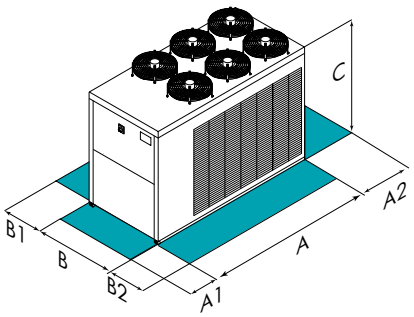
The **ELFOEnergy Magnum Multifunction** heat pumps are high efficiency packaged units for small and medium-sized applications in the services sector that **can generate thermal and cooling energy simultaneously and independently.**
Designed for outdoor installation, they ensure extremely high efficiency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

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

functions and features

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

dimensions and clearances



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

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

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

versions and configurations

ENERGY RECOVERY:

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

CONFIGURATION

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

technical data

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

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

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

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

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

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

(6) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

Key to symbols:

✓ Accessories separately supplied

ELFOEnergy Magnum HW

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

Unit listed on www.eurovent-certification.com

ErP compliant

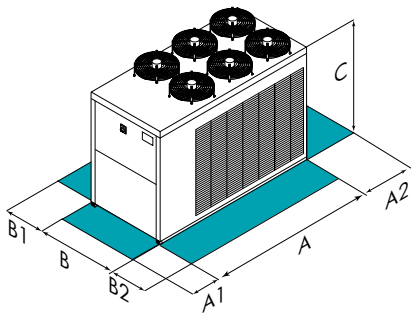
ELFOEnergy Magnum HW is a series of high temperature heat pumps, ideal for heating, cooling and hot water solution for centralised systems.
Benefits of ELFOEnergy Magnum HW:

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

functions and features

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

dimensions and clearances



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

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

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

versions and configurations

ENERGY RECOVERY:

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

technical data

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

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

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

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

(4) Data calculated according to the EN 14825:2016 Regulation

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

accessories

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

Key to symbols:

✓ Accessories separately supplied

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