WSAT-XEM WSAN-XEM

50.4÷120.4

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

Unit listed on www.eurovent-certification.com

ErP compliant

ELFOEnergy Magnum

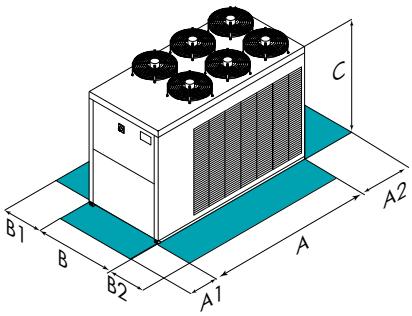
*The **ELFOEnergy Magnum** heat pumps and liquid chillers are high efficiency packaged units for small and medium-sized applications in the services sector. Designed for outdoor installation, they ensure the highest energy efficiency over the entire operating cycle, especially under load staging conditions that coincide with the unit's longer operating time, **thanks to the modular scroll technology** that adapts the capacity supplied to the actual energy demand required by the system.*
ELFOEnergy Magnum is available in the two EXCELLENCE and PREMIUM versions. The EXCELLENCE version offers the highest energy efficiency both during the seasonal cycle and under full load conditions. The PREMIUM version provides excellent performance under partial load conditions, but has a compact design which gives it an additional competitive edge.
Benefits of ELFOEnergy Magnum:

- ***HIGH UNIT RELIABILITY**, thanks to the double refrigerant circuit, to the proven architecture and to the components produced at high volumes.*
- ***ADVANCED TECHNOLOGY**: The modulating pumping unit developed by Clivet, consisting of two parallel pumps controlled by an inverter, allows for lower consumption and at the same time ensures operation even under critical conditions. It automatically reduces the water flow rate according to the load required by the system, by controlling the temperature, and prevents blocks due to overloads in the event of critical conditions.*
- ***MODULARITY AND MANAGEMENT OF MORE UNITS IN CASCADE**: The compact construction allows to combine multiple units in confined spaces, realizing a high power system. The control allows to coordinate up to 7 units managing automatically the operation with maximum efficiency.*

functions and features

Cooling only (WSAT-XEM) · Heat pump (WSAN-XEM) · Air cooled · Outdoor installation · R-410A · Hermetic Scroll · 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.

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

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

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 (EN14511:2013)	(1)	kW	143	157	170	182	197	223	260	287	317	354
SC-EXC	Total power input(EN14511:2013)	(1)	kW	45,8	50,2	54,5	58,4	63,0	71,5	83,7	91,6	102	114
SC-EXC	EER (EN14511:2013)	(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 (EN14511:2013)	(1)	kW	183	207	242	261	288	330
SC-PRM	Total power input (EN14511:2013)	(1)	kW	66,9	76,0	89,3	96,4	105	122
SC-PRM	EER (EN14511:2013)	(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 (EN14511:2013)	(1)	kW	139	148	160	170	184	208	235	273	296	321
EXC	Total power input(EN14511:2013)	(1)	kW	48,7	53,6	58,4	63,7	67,6	77,0	92,7	98,1	110	126
EXC	EER (EN14511:2013)	(1)	-	2,85	2,76	2,73	2,66	2,72	2,70	2,54	2,79	2,69	2,55
EXC	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 (EN14511:2013)	(2)	kW	155	167	183	194	210	239	274	313	340	378
EXC	Total power input (EN14511:2013)	(2)	kW	47,9	52,3	56,5	60,1	65,3	74,3	85,1	97,5	106	118
EXC	COP (EN14511:2013)	(2)	-	3,24	3,20	3,24	3,23	3,22	3,22	3,22	3,21	3,21	3,20
EXC	Refrigeration circuits		Nr	2									
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

Notes

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

(2) Data compliant to Standard EN 14511:2013 referred to the following conditions: - Internal exchanger water temperature = 40/45°C - Entering external exchanger air temperature = 7°C D.B./6°C W.B

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

(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