

ELFOENERGY GROUND MEDIUM2 MF

Water-cooled multi-functional reversible heat pump for indoor installation

Capacity from 34,3 to 241 kW



Clivet participates in the EUROVENT "Liquid Chilling Packages and Hydronic Heat Pumps".
Check ongoing validity of certificate on www.eurovent-certification.com



Heat pump



Water cooled



Indoor installation



R-410A



Hermetic Scroll



Electronic expansion valve



Vary Flow



INTELLIPLANT



ErP compliant

- ✓ Scroll compressors and plate heat exchangers
- ✓ Polyvalent technology configurable for 4-pipe or 2-pipe systems for maximum versatility
- ✓ Refrigerant R410A - GWP = 2088
- ✓ High efficiency thanks to total heat recovery
- ✓ Hot water up to 60°C, chilled water down to 4°C
- ✓ Modular operation management, up to 8 units in cascade
- ✓ Integrated source side, user side and recovery side hydronic assemblies

Versions and configurations

VERSION:

- OTH4 Operating conditions above 4°C (standard)
OTL4 Operating conditions below 4°C

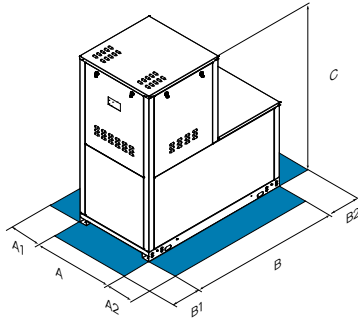
CONFIGURATION:

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

ENERGY RECOVERY:

- R Total energy recovery (Standard)

Dimensions and connections



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

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

Size	WSHN-XEE2 MF	35.2	40.2	45.2	50.2	60.2	70.2	80.2
A - Length	mm	1100	1100	1100	1100	1100	1100	1100
B - Width	mm	1700	1700	1700	1700	1700	1700	1700
C - Height	mm	1870	1870	1870	1870	1870	1870	1870
A1	mm	100	100	100	100	100	100	100
A2	mm	100	100	100	100	100	100	100
B1	mm	700	700	700	700	700	700	700
B2	mm	700	700	700	700	700	700	700
Operating weight	kg	656	721	754	901	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.

Technical data

Size	WSHN-XEE2 MF	12.2	16.2	19.2	22.2	27.2
Cooling 100% - Heating 0%						
Cooling capacity (EN 14511:2022)	(1) kW	34,3	48,1	57,3	66,3	81,2
Total power input (EN 14511:2022)	(1) kW	7,60	10,7	12,6	15,8	17,6
EER (EN 14511:2022)	(1) -	4,51	4,48	4,56	4,20	4,6
SEER	(6) -	5,30	4,85	4,84	4,85	5,05
$\eta_{s,c}$	(6) %	204,0	186,2	185,7	186,0	194,1
Cooling 0% - Heating 100%						
Heating capacity (EN 14511:2022)	(2) kW	40,3	56,6	66,9	79,3	93,7
Total power input (EN 14511:2022)	(2) kW	9,46	13,2	15,6	19,1	21,2
COP (EN 14511:2022)	(2) -	4,26	4,3	4,28	4,15	4,42
Cooling 100% - Heating 100%						
Cooling capacity (EN 14511:2022)	(3) kW	31,2	43,7	52,0	61	73,6
Heating capacity (EN 14511:2022)	(3) kW	40,5	56,6	67,0	79,1	94,6
Total power input (EN 14511:2022)	(3) kW	9,4	12,9	15,2	18,6	21,2
TER (EN 14511:2022)	(4)	7,62	7,75	7,82	7,55	7,93
Refrigeration circuits	Nr	1				
No. of compressors	Nr	2				
Type of compressors	-	SCROLL				
Refrigerant	-	R-410A				
Standard power supply	V	400/3~/50				
Sound power level	(5) dB(A)	60	64	65	64	64
Directive ErP (Energy Related Products)						
ErP Energy Class - AVERAGE Climate - W35	-	A+++	A+++	-	-	-
ErP Energy Class - AVERAGE Climate - W35	-	A+++	A+++	A+++	-	-
SCOP - AVERAGE Climate - W35	(6) -	5,69	5,45	5,47	4,85	5,97
$\eta_{s,h}$	(6) %	225,0	215,0	216,0	191,0	231,0
SCOP - AVERAGE Climate - W55	(6) -	4,56	4,42	4,42	4,46	4,89
$\eta_{s,h}$	(6) %	174,0	169,0	169,0	170,0	188,0

(1) Data calculated in compliance with Standard EN 14511:2022 referred to the following conditions: Cold side water temperature = 12/7°C; Source side water temperature = 30/35°C

(2) Data calculated in compliance with Standard EN 14511:2022 referred to the following conditions: Hot side water temperature = 40/45°C; Source side water temperature = 10/7°C

(3) Data compliant to Standard EN 14511:2022 referred to the following conditions: Cold side water temperature = *7°C; Hot side water temperature = */45°C

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

(5) Sound pressure levels are referred to units operating at nominal load in nominal conditions. Measurements are carried out accordingly to UNI EN ISO 9614-1 at nominal standard conditions defined in respective regulations: EU 2016/2281, UE 813/2013, UE 811/2013.

Sound power level are not Eurovent certified.

(6) Data calculated according to the EN 14825:2022 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).

Size	WSHN-XEE2 MF		35.2	40.2	45.2	50.2	60.2	70.2	80.2
Cooling 100% - Heating 0%									
Cooling capacity (EN 14511:2022)	(1)	kW	105	120	142	154	190	214	241
Total power input (EN 14511:2022)	(1)	kW	23,7	26,8	31,8	34,5	43,1	48,8	55,5
EER (EN 14511:2022)	(1)	-	4,44	4,46	4,46	4,48	4,41	4,39	4,35
SEER	(6)	-	5,17	5,31	5,29	5,06	4,92	5,00	4,82
η _{s,c}	(6)	%	203,7	209,2	208,4	199,5	193,7	197,2	189,7
Cooling 0% - Heating 100%									
Heating capacity (EN 14511:2022)	(2)	kW	119	139	163	179	218	252	279
Total power input (EN 14511:2022)	(2)	kW	28,4	32,3	38,4	41,2	51,8	58	65,4
COP (EN 14511:2022)	(2)	-	4,2	4,29	4,24	4,33	4,2	4,34	4,26
Cooling 100% - Heating 100%									
Cooling capacity (EN 14511:2022)	(3)	kW	95,0	108	128	139	174	195	219
Heating capacity (EN 14511:2022)	(3)	kW	123	140	165	180	224	251	283
Total power input (EN 14511:2022)	(3)	kW	28,3	32,1	38	41	50,9	57,7	65,2
TER (EN 14511:2022)	(4)	-	7,69	7,7	7,71	7,78	7,82	7,73	7,69
Refrigeration circuits	—	Nr				1			
No. of compressors	—	Nr				2			
Type of compressors	—	-				SCROLL			
Refrigerant	—	-				R-410A			
Standard power supply	—	V				400/3~/50			
Sound power level	(5)	dB(A)	74	74	74	77	77	79	80
Directive ErP (Energy Related Products)									
SCOP - AVERAGE Climate - W35	(6)	-	5,67	5,84	5,68	5,78	5,55	5,63	5,45
η _{s,h}	(6)	%	219,0	226,0	219,0	223,0	214,0	217,0	210,0
SCOP - AVERAGE Climate - W55	(6)	-	4,60	4,69	4,67	4,71	4,61	4,69	4,65
η _{s,h}	(6)	%	176,0	180,0	179,0	180,0	176,0	180,0	178,0

(1) Data calculated in compliance with Standard EN 14511:2022 referred to the following conditions: Cold side water temperature = 12/7°C; Source side water temperature = 30/35°C

(2) Data calculated in compliance with Standard EN 14511:2022 referred to the following conditions: Hot side water temperature = 40/45°C; Source side water temperature = 10/7°C

(3) Data compliant to Standard EN 14511:2022 referred to the following conditions: Cold side water temperature = 7/7°C; Hot side water temperature = 45/45°C

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

(5) Sound pressure levels are referred to units operating at nominal load in nominal conditions. Measurements are carried out accordingly to UNI EN ISO 9614-1 at nominal standard conditions defined in respective regulations: EU 2016/2281, UE 813/2013, UE 811/2013

Sound power level are not Eurovent certified.

(6) Data calculated according to the EN 14825:2022 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).

Accessories

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

Accessories whose code ends with "X" are supplied separately