

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

**Multi-purpose reversible heat pump**

Water cooled

Indoor installation

**Capacity from 34,3 to 241 kW**



- ✓ 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
- ✓ Domestic hot water up to 60°C, low water temperature down to 4°C
- ✓ Modular operation management, up to 8 units in cascade
- ✓ Integrated source side, user side and recovery side hydronic assemblies



Clivet participates in the EUROVENT "Liquid Chilling Packages and Hydronic Heat Pumps". The products concerned feature on the website [www.eurovent-certification.com](http://www.eurovent-certification.com)



compliant  
ErP

HYDRONIC

## functions and features



Heat pump



Water cooled



Indoor installation



R-410A



Hermetic Scroll



Electronic expansion valve

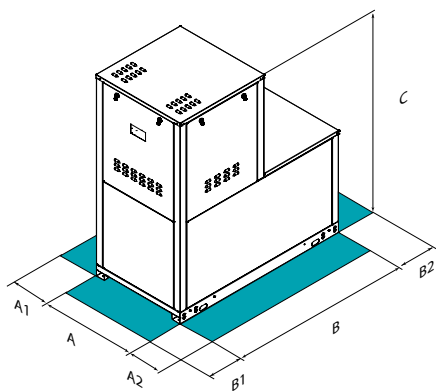


Vary Flow



Intelliplant

## dimensions and clearances



### CAUTION!

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

Size	▶▶ WSHN-XEE2 MF	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.

## versions and configurations

### VERSION:

<b>GW</b>	Groundwater version (Standard)
<b>GEO</b>	Version for Geothermal application

### CONFIGURATION:

<b>4T</b>	Configuration for 4-pipe system (Standard)
<b>2T</b>	Configuration for 2-pipe system

### ENERGY RECOVERY:

<b>R</b>	Total energy recovery (Standard)
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## technical data

Size		WSHN-XEE2 MF	12.2	16.2	19.2	22.2	27.2		
<b>Cooling 100% - Heating 0%</b>									
Cooling capacity (EN 14511:2022)	(1)	kW	34,3	48,0	57,2	66,2	81,0		
Total power input (EN 14511:2022)	(1)	kW	7,69	10,9	12,7	15,8	17,8		
EER at full load (EN14511:2022)	(1)	-	4,46	4,42	4,51	4,20	4,56		
SEER	(6)	-	5,30	4,85	4,84	4,85	5,05		
$\eta_{sc}$	(6)	%	204,0	186,2	185,7	186,0	194,1		
<b>Cooling 0% - Heating 100%</b>									
Heating capacity (EN 14511:2022)	(2)	kW	40,4	56,8	67,2	79,8	94,0		
Total power input (EN 14511:2022)	(2)	kW	9,42	13,2	15,6	19,0	21,1		
COP at full load (EN14511:2022)	(2)	-	4,29	4,32	4,31	4,20	4,46		
<b>Cooling 100% - Heating 100%</b>									
Cooling capacity (EN 14511:2022)	(3)	kW	31,2	43,7	52,0	60,9	73,6		
Heating capacity (EN 14511:2022)	(3)	kW	40,5	56,6	67,1	79,4	94,7		
Total power input (EN 14511:2022)	(3)	kW	9,37	12,9	15,1	18,4	21,1		
TER (EN 14511:2022)	(4)	-	7,65	7,77	7,87	7,61	7,96		
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		
<b>Directive ErP (Energy Related Products)</b>									
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		
$\eta_{sh}$	(6)	%	225,0	215,0	216,0	191,0	231,0		
SCOP - AVERAGE Climate - W35	(6)	-	4,56	4,42	4,42	4,46	4,89		
$\eta_{sh}$	(6)	%	174,0	169,0	169,0	170,0	188,0		
Size		WSHN-XEE2 MF	35.2	40.2	45.2	50.2	60.2	70.2	80.2
<b>Cooling 100% - Heating 0%</b>									
Cooling capacity (EN 14511:2022)	(1)	kW	105	119	142	154	190	214	241
Total power input (EN 14511:2022)	(1)	kW	23,8	26,9	31,9	34,5	43,2	48,9	55,4
EER at full load (EN14511:2022)	(1)	-	4,42	4,43	4,45	4,47	4,40	4,38	4,35
SEER	(6)	-	5,17	5,31	5,29	5,06	4,92	5,00	4,82
$\eta_{sc}$	(6)	%	203,7	209,2	208,4	199,5	193,7	197,2	189,7
<b>Cooling 0% - Heating 100%</b>									
Heating capacity (EN 14511:2022)	(2)	kW	120	139	163	179	219	253	280
Total power input (EN 14511:2022)	(2)	kW	28,2	32,0	38,1	40,8	51,5	57,6	65,0
COP at full load (EN14511:2022)	(2)	-	4,25	4,34	4,28	4,39	4,25	4,39	4,31
<b>Cooling 100% - Heating 100%</b>									
Cooling capacity (EN 14511:2022)	(3)	kW	95,0	108	128	139	174	194	219
Heating capacity (EN 14511:2022)	(3)	kW	123	140	165	180	225	252	284
Total power input (EN 14511:2022)	(3)	kW	28,2	32,1	37,9	40,8	50,8	57,5	65,2
TER (EN 14511:2022)	(4)	-	7,73	7,73	7,74	7,82	7,85	7,76	7,71
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
<b>Directive ErP (Energy Related Products)</b>									
SCOP - AVERAGE Climate - W35	(6)	-	5,67	5,84	5,68	5,78	5,55	5,63	5,45
$\eta_{sh}$	(6)	%	219,0	226,0	219,0	223,0	214,0	217,0	210,0
SCOP - AVERAGE Climate - W35	(6)	-	4,60	4,69	4,67	4,71	4,61	4,69	4,65
$\eta_{sh}$	(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 = 7/45°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 14825:2018 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

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

Accessories whose code ends with "X" are supplied separately