

# Air Cooled Heat Pump VLH 524-1204

 134-300 kW

 150-336 kW

 HFC 410A

 Scroll

## Technical feature

- 8 sizes.
- Cooling capacity from 134 to 300 kW.
- Heating capacity from 150 to 336 kW.
- 4 versions:
  - STD (Standard);
  - HSE (High Seasonal Efficiency);
  - HT (High Temperature);
  - HPF (High Pressure Fans).
- 3 acoustic versions:
  - BLN (Base Low Noise);
  - LN (Low Noise);
  - ELN (Extra Low Noise).
- Two refrigerant circuits.
- Scroll compressors.
- Microprocessor control.
- Electronic expansion valve.
- Inverter fans (Standard on HSE and HT).

## Accessories and options

- Hydrokit with 1 or 2 pumps with or without buffer tank (500 lt).
- Desuperheater.
- Coils treatments.
- Unit protection grilles.
- Sofstart.
- BMS interface.
- Overload protection for compressors.
- Automatic circuit breaker.
- Flow switch.
- Differential pressure switch as standard.
- Water filter.
- Fan speed control (-18°C).
- Power factor corrector capacitors.
- Sequence phases control as standard.
- Mechanical gauges kit.
- Compressors acoustic box as standard.
- Compressors jackets.



## Operating limit

VLH			524		604		704		804	
			Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature	Water	°C	from +6 to +15							
	Water + glycol	°C	from -8 to +15							
	Δ T	K	from 3 to 8							
Air temperature	BLN	°C	from 0 to +46	from -5 to +47	from -5 to +47	from 0 to +46				
	Cooling LN	°C	from 0 to +44	from -5 to +45	from -5 to +45	from 0 to +44				
	Cooling ELN	°C	from -18 to +40	from -18 to +41	from -18 to +41	from -18 to +40				
	Cooling HT/HSE	°C	from -18 to +48	from -18 to +49	from -18 to +49	from -18 to +48				
	Heating	°C	from -10 to +20							
High pressure fans	Standard fans	Pa	0							
	Invert fans SIF	Pa	≤120							

VLH			904		1004		1104		1201	
			Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature	Water	°C	from +6 to +15							
	Water + glycol	°C	from -8 to +15							
	Δ T	K	from 3 to 8							
Air temperature	BLN	°C	from 0 to +47	from 0 to +46	from 0 to +45	from 0 to +45				
	Cooling LN	°C	from 0 to +45	from 0 to +44	from 0 to +42	from 0 to +42				
	Cooling ELN	°C	from -18 to +41	from -18 to +40	from -18 to +38	from -18 to +38				
	Cooling HT/HSE	°C	from -18 to +49	from -18 to +48	from -18 to +47	from -18 to +47				
	Heating	°C	from -10 to +20							
External static pressure	Standard fans	Pa	0							
	Invert fans SIF	Pa	≤120							

Chillers suitable for operation without buffer tank for water content greater than 3 liters of water per kW of output.

**Technical feature VLH STD/HSE/SIF 524-1204 BLN**

Model VLH STD/HSE/SIF-BLN		524	604	704	804	904	1004	1104	1204
Cooling capacity (1)	kW	134,2	150,1	174,0	197,6	226,7	246,8	273,9	300,5
Power input (3)	kW	45,0	50,2	59,4	65,5	74,2	78,4	91,3	105,7
GROSS EER		2,75	2,69	2,67	2,78	2,77	2,87	2,77	2,65
GROSS ESEER		3,72	3,63	3,62	3,75	3,75	3,88	3,75	3,59
GROSS EER HSE		2,82	2,77	2,74	2,84	2,85	2,95	2,84	2,71
GROSS ESEER HSE		4,29	4,21	4,17	4,32	4,34	4,48	4,31	4,12
EER		2,72	2,65	2,62	2,73	2,74	2,84	2,74	2,63
ESEER		3,55	3,38	3,41	3,43	3,45	3,57	3,46	3,41
EER HSE		2,78	2,73	2,69	2,79	2,82	2,92	2,81	2,68
ESEER HSE		3,90	3,83	3,79	3,93	3,95	3,77	3,91	3,80
Heating capacity (2)	kW	149,6	169,0	199,2	221,9	254,1	270	300,8	335,8
Power input (3)	kW	44,7	51,3	60,6	63,5	71,4	79,3	91,3	103,4
GROSS COP		3,35	3,29	3,29	3,49	3,56	3,40	3,29	3,25
COP		3,06	2,93	2,97	3,17	3,20	3,09	3,02	3,00
COP HSE		3,13	3,03	3,05	3,25	3,29	3,17	3,09	3,06
Number of refrigerant circuits		2	2	2	2	2	2	2	2
Part load steps	%	25-50-75-100	28-57-78-100	20-50-70-100	25-50-75-100	28-50-78-100	25-50-75-100	23-50-73-100	25-50-75-100
<b>Refrigerant</b>									
Type		HFC 410A							
Charge	kW	32,9	37,2	42,6	48,8	54,1	61,0	68,3	74,8
<b>Compressor</b>									
Qty		4	4	4	4	4	4	4	4
Type		Scroll							
<b>Evaporator</b>									
Qty		1	1	1	1	1	1	1	1
Type		Plate exchanger AISI 316							
Water flow	l/h	23.082	25.817	29.928	33.987	38.992	42.449	47.110	51.686
Connection type		Male gas threaded							
Inlet/outlet diameter	inch	2½"	2½"	2½"	2½"	3"	3"	3"	3"
<b>Condenser</b>									
Qty		2	2	2	2	2	2	2	2
Frontal surface	mm²	3,5	3,5	4,8	4,8	4,8	4,8	4,8	4,8
<b>Fan</b>									
Qty		2	3	3	3	4	4	4	4
Speed	rpm/min	900	900	900	900	900	900	900	900
Air flow	m³/h	46.300	63.000	68.300	68.300	85.000	80.000	75.500	75.500
Power input	kW	3,8	5,7	5,7	5,7	7,6	7,6	7,6	7,6
Power input HSE	kW	2,6	4,0	4,0	4,0	5,3	5,3	5,3	5,3
Static head pressure	Pa	from 0 to 120**							
<b>Weight</b>									
Shipping	kg	1.248	1.473	1.663	1.806	1.955	2.100	2.190	2.200
Operating	kg	1.260	1.485	1.675	1.820	1.980	2.125	2.215	2.225
<b>Additional weights</b>									
Versions HSE/SIF	kg	30	30	30	30	40	40	40	40
With desuperheater	kg	20	20	20	30	30	30	30	30
With one pump	kg	50	50	85	85	90	90	95	95
With two pumps	kg	140	140	200	200	205	205	215	215
With copper/copper coils	kg	380	380	520	520	520	700	880	880
<b>Dimensions</b>									
Length	mm	3.300	3.300	4.300	4.300	4.300	4.300	4.300	4.300
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300	2.300
<b>Acoustical data</b>									
Sound power level (4)	dB(A)	92	93	93	93	94	94	95	95
Sound pressure level (5)	dB(A)	60	61	61	61	62	62	63	63

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.

(3) Only compressors.

(4) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(5) Pressure power values in accordance with ISO 3744.

GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.

EER-COP: efficiency in cooling-heating unit according to EN14511-2011.

## Technical feature VLH STD/HSE 524-1204 LN

Model VLH STD/HSE-LN		524	604	704	804	904	1004	1104	1204
Cooling capacity (1)	kW	130,0	145,9	169,2	191,6	221,2	237,8	262,1	286,2
Power input (3)	kW	47,3	52,5	62,1	68,8	78,3	82,9	97,7	113,8
GROSS EER		2,62	2,60	2,58	2,65	2,66	2,71	2,56	2,41
GROSS ESEER		3,83	3,81	3,78	3,88	3,90	3,98	3,75	3,54
GROSS EER HSE		2,68	2,68	2,64	2,71	2,74	2,78	2,62	2,46
GROSS ESEER HSE		4,23	4,23	4,17	4,28	4,32	4,39	4,13	3,88
EER		2,59	2,56	2,54	2,61	2,63	2,68	2,54	2,38
ESEER		3,74	3,60	3,58	3,64	3,59	3,70	3,63	3,49
EER HSE		2,65	2,65	2,61	2,66	2,71	2,76	2,59	2,44
ESEER HSE		4,07	3,97	3,88	3,93	3,93	4,02	3,93	3,78
Heating capacity (2)	kW	145,6	164,5	194,2	215,6	246,5	262,1	287,6	320,7
Power input (3)	kW	44,6	51,4	60,6	63,3	71,2	79,1	91,2	103,3
GROSS COP		3,26	3,20	3,20	3,41	3,46	3,31	3,15	3,10
COP		3,08	2,96	2,99	3,18	3,22	3,09	2,98	2,95
COP HSE		3,15	3,06	3,08	3,27	3,33	3,18	3,05	3,00
Number of refrigerant circuits		2	2	2	2	2	2	2	2
Part load steps	%	25-50-75-100	28-57-78-100	20-50-70-100	25-50-75-100	28-50-78-100	25-50-75-100	23-50-73-100	25-50-75-100
<b>Refrigerant</b>									
Type		HFC 410A							
Charge	kW	32,9	37,2	42,6	48,8	54,1	61,0	68,3	74,8
<b>Compressor</b>									
Qty		4	4	4	4	4	4	4	4
Type		Scroll							
<b>Evaporator</b>									
Qty		1	1	1	1	1	1	1	1
Type		Plate exchanger AISI 316							
Water flow	l/h	22.360	25.094	29.102	32.955	38.046	40.901	45.081	49.226
Connection type		Male gas threaded							
Inlet/outlet diameter	inch	2½"	2½"	2½"	2½"	3"	3"	3"	3"
<b>Condenser</b>									
Qty		2	2	2	2	2	2	2	2
Frontal surface	mm <sup>2</sup>	3,5	3,5	4,8	4,8	4,8	4,8	4,8	4,8
<b>Fan</b>									
Qty		2	3	3	3	4	4	4	4
Speed	rpm/min	700	700	700	700	700	700	700	700
Air flow	m <sup>3</sup> /h	35.400	47.300	52.200	52.200	63.700	58.800	54.900	54.900
Power input	kW	2,4	3,6	3,6	3,6	4,8	4,8	4,8	4,8
Power input HSE	kW	1,2	1,9	1,9	1,9	2,5	2,5	2,5	2,5
Static head pressure	Pa	0							
<b>Weight</b>									
Shipping	kg	1.248	1.473	1.663	1.806	1.955	2.100	2.190	2.200
Operating	kg	1.260	1.485	1.675	1.820	1.980	2.125	2.215	2.225
<b>Additional weights</b>									
Versions HSE/SIF	kg	30	30	30	30	40	40	40	40
With desuperheater	kg	20	20	20	30	30	30	30	30
With one pump	kg	50	50	85	85	90	90	95	95
With two pumps	kg	140	140	200	200	205	205	215	215
With copper/copper coils	kg	380	380	520	520	520	700	880	880
<b>Dimensions</b>									
Length	mm	3.300	3.300	4.300	4.300	4.300	4.300	4.300	4.300
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300	2.300
<b>Acoustical data</b>									
Sound power level (4)	dB(A)	86	87	87	87	88	88	89	89
Sound pressure level (5)	dB(A)	54	55	55	55	56	56	57	57

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.

(3) Only compressors.

(4) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(5) Pressure power values in accordance with ISO 3744.

GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.

EER-COP: efficiency in cooling-heating unit according to EN14511-2011.

**Technical feature VLH STD/HSE 524-1204 ELN**

Model VLH STD/HSE-ELN		524	604	704	804	904	1004	1104	1204
Cooling capacity (1)	kW	125,6	142,2	164,6	185,7	214,8	231,0	254,1	276,7
Power input (3)	kW	49,7	54,6	64,9	72,3	81,6	86,3	102,2	119,4
GROSS EER		2,43	2,47	2,42	2,47	2,51	2,56	2,39	2,24
GROSS ESEER		3,79	3,85	3,78	3,84	3,91	3,99	3,73	3,50
GROSS EER HSE		2,50	2,56	2,50	2,54	2,59	2,64	2,46	2,29
GROSS ESEER HSE		4,14	4,25	4,15	4,21	4,30	4,38	4,08	3,81
EER		2,40	2,44	2,38	2,43	2,49	2,54	2,37	2,21
ESEER		3,61	3,49	3,46	3,51	3,60	3,67	3,51	3,40
EER HSE		2,47	2,53	2,46	2,50	2,57	2,61	2,44	2,27
ESEER HSE		4,01	3,96	3,84	3,88	3,91	3,98	3,88	3,70
Heating capacity (2)	kW	137,1	156,4	183,7	202,4	232,4	244,5	266,3	296,0
Power input (3)	kW	44,6	51,5	60,7	63,1	71,1	78,8	90,1	103,1
GROSS COP		3,07	3,04	3,03	3,21	3,27	3,10	2,96	2,87
COP		2,92	2,85	2,85	3,03	3,07	2,93	2,81	2,75
COP HSE		3,01	2,95	2,95	3,13	3,19	3,04	2,90	2,83
Number of refrigerant circuits		2	2	2	2	2	2	2	2
Part load steps	%	25-50-75-100	28-57-78-100	20-50-70-100	25-50-75-100	28-50-78-100	25-50-75-100	23-50-73-100	25-50-75-100
<b>Refrigerant</b>									
Type		HFC 410A							
Charge	kW	32,9	37,2	42,6	48,8	54,1	61,1	68,3	74,8
<b>Compressor</b>									
Qty		4	4	4	4	4	4	4	4
Type		Scroll							
<b>Evaporator</b>									
Qty		1	1	1	1	1	1	1	1
Type		Plate exchanger AISI 316							
Water flow	l/h	21.603	24.458	28.311	31.940	36.945	39.732	43.705	47.592
Connection type		Male gas threaded							
Inlet/outlet diameter	inch	2½"	2½"	2½"	2½"	3"	3"	3"	3"
<b>Condenser</b>									
Qty		2	2	2	2	2	2	2	2
Frontal surface	mm²	3,5	3,5	4,8	4,8	4,8	4,8	4,8	4,8
<b>Fan</b>									
Qty		2	3	3	3	4	4	4	4
Speed	rpm/min	550	550	550	550	550	550	550	550
Air flow	m³/h	28.300	38.500	41.800	41.800	52.000	48.900	46.200	46.200
Power input	kW	2	3	3	3	4	4	4	4
Power input HSE	kW	0,6	0,9	0,9	0,9	1,2	1,2	1,2	1,2
Static head pressure	Pa	0							
<b>Weight</b>									
Shipping	kg	1.278	1.508	1.698	1.841	1.990	2.140	2.230	2.240
Operating	kg	1.290	1.520	1.710	1.855	2.015	2.165	2.255	2.265
<b>Additional weights</b>									
Versions HSE/SIF	kg	30	30	30	30	40	40	40	40
With desuperheater	kg	20	20	20	30	30	30	30	30
With one pump	kg	50	50	85	85	90	90	95	95
With two pumps	kg	140	140	200	200	205	205	215	215
With copper/copper coils	kg	380	380	520	520	520	700	880	880
<b>Dimensions</b>									
Length	mm	3.300	3.300	4.300	4.300	4.300	4.300	4.300	4.300
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300	2.300
<b>Acoustical data</b>									
Sound power level (4)	dB(A)	83	83	83	83	84	84	85	85
Sound pressure level (5)	dB(A)	51	51	51	51	52	52	53	53

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.

(3) Only compressors.

(4) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(5) Pressure power values in accordance with ISO 3744.

GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.

EER-COP: efficiency in cooling-heating unit according to EN14511-2011.

## Technical feature VLH HT 524-1204

Model VLH HT		524	604	704	804	904	1004	1104	1204
Cooling capacity (1)	kW	135,8	151,7	175,6	199,7	229,5	250,1	276,5	305,6
Power input (3)	kW	44,2	49,2	58,4	64,4	73,2	76,8	89,9	102,8
GROSS EER		2,79	2,69	2,69	2,80	2,77	2,88	2,77	2,71
Heating capacity (2)	kW	150,9	170,5	200,7	224,0	256,6	273,7	305,5	341,5
Power input (3)	kW	44,6	51,3	60,6	63,5	71,4	79,3	91,4	103,5
GROSS COP		3,07	2,91	2,97	3,18	3,17	3,07	3,01	3,01
Number of refrigerant circuits		2	2	2	2	2	2	2	2
Part load steps	%	25-50-75-100	28-57-78-100	20-50-70-100	25-50-75-100	28-50-78-100	25-50-75-100	23-50-73-100	25-50-75-100
<b>Refrigerant</b>									
Type		HFC 410A							
Charge	kW	32,9	37,2	42,6	48,8	54,1	61,0	68,3	74,8
<b>Compressor</b>									
Qty		4	4	4	4	4	4	4	4
Type		Scroll							
<b>Evaporator</b>									
Qty		1	1	1	1	1	1	1	1
Type		Plate exchanger AISI 316							
Water flow	l/h	23.357	26.092	30.203	34.348	39.474	43.017	47.558	52.563
Connection type		Male gas threaded							
Inlet/outlet diameter	inch	2½"	2½"	2½"	2½"	3"	3"	3"	3"
<b>Condenser</b>									
Qty		2	2	2	2	2	2	2	2
Frontal surface	mm <sup>2</sup>	3,5	3,5	4,8	4,8	4,8	4,8	4,8	4,8
<b>Fan</b>									
Qty		2	3	3	3	4	4	4	4
Speed	rpm/min	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110
Air flow	m <sup>3</sup> /h	51.700	71.800	76.200	76.200	95.800	91.200	87.600	87.600
Power input	kW	4,5	7,2	6,9	6,9	9,6	9,9	10	10
Static head pressure	Pa	0							
<b>Weight</b>									
Shipping	kg	1.278	1.503	1.693	1.836	1.995	2.140	2.230	2.240
Operating	kg	1.290	1.515	1.705	1.850	2.020	2.165	2.255	2.265
<b>Additional weights</b>									
With desuperheater	kg	20	20	20	30	30	30	30	30
With one pump	kg	50	50	85	85	90	90	95	95
With two pumps	kg	140	140	200	200	205	205	215	215
With copper/copper coils	kg	380	380	520	520	520	700	880	880
<b>Dimensions</b>									
Length	mm	3.300	3.300	4.300	4.300	4.300	4.300	4.300	4.300
Width	mm	1.100	1.100	1.100	1.100	1.100	1.100	1.100	1.100
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300	2.300
<b>Acoustical data</b>									
Sound power level (4)	dB(A)	97	99	99	99	100	100	100	100
Sound pressure level (5)	dB(A)	65	67	67	67	68	68	68	68

(1) Data based on 7°C leaving chilled water temperature and 35°C ambient air temperature.

(2) Data based on 45°C leaving hot water temperature and 7°C ambient air temperature.

(3) Only compressors.

(4) Acoustic data are at full load. Sound power values in accordance with ISO 3744 and Eurovent 8/1.

(5) Pressure power values in accordance with ISO 3744.

GROSS EER-COP: efficiency in cooling-heating mode without considering the available head of the pump or the pressure drop of the heat exchanger.