

Air Cooled Heat Pump

VLH 604-1204



149-300 kW



Air cooled



Scroll



170-337 kW



Plate



HFC 410A

Technical feature

- 7 sizes
- Cooling capacity from 149,4 to 299,9 kW
- Heating capacity from 169,8 to 337,4 kW
- 3 versions:
 - STD (Standard)
 - 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 HT)
- "Polar" version for extreme conditions (on request)

Accessories and options

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



Operating limit (to be confirmed following selection software issue)

VLH 604-804			604		704		804	
			Min	Max	Min	Max	Min	Max
Leaving water temperature	Water	°C	from +6 to +15					
	Water + glycol	°C	from 0 to +15					
	Water with Glycol (Brine version)	°C	from -8 to +15					
	Δ T	K	from 3 to 8					
Air temperature	BLN	°C	from -5 to +47	from -5 to +47		from 0 to +46		
	Cooling LN	°C	from -5 to +45	from -5 to +45		from 0 to +44		
	Cooling ELN	°C	from -18 to +41	from -18 to +41		from -18 to +40		
	Cooling HT/HSE	°C	from -18 to +49	from -18 to +49		from -18 to +48		
	Heating	°C	from -10 (-4 LN/ELN) to +20					
High pressure fans	Standard fans	Pa	0					
	Invert fans HPP	Pa	≤120					

VLH 904-1204			904		1004		1104		1204	
			Min	Max	Min	Max	Min	Max	Min	Max
Leaving water temperature	Water	°C	from +6 to +15							
	Water + glycol	°C	from 0 to +15							
	Water + Glycol (Brine version)	°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 a +47		from -18 to +47		
	Heating	°C	from -10 (-4 LN/ELN) to +20							
External static pressure	Standard fans	Pa	0							
	Invert fans HPP	Pa	≤120							

Technical feature

VLH STD/HPF 604-1204 BLN		604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	149,4	173,2	197,1	226,4	246,3	273,1	299,9
Power input ¹	kW	56,4	66,1	72,2	82,6	86,7	99,7	114,0
EER ¹		2,65	2,62	2,73	2,74	2,84	2,74	2,63
Energy efficiency class		D	D	C	C	C	C	D
ESEER		3,38	3,41	3,43	3,45	3,57	3,46	3,41
Heating capacity ²	kW	169,8	200,1	223,2	254,7	270,8	302,1	337,4
Power input ²	kW	58,0	67,4	70,4	79,6	87,6	100,0	112,5
COP ²		2,93	2,97	3,17	3,20	3,09	3,02	3,00
Energy efficiency class		B	B	B	A	B	B	B
Part load steps	%	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
Refrigerant								
Type		HFC 410A						
Number of refrigerant circuits		2						
Compressor								
Qty		4						
Type		Scroll						
Evaporator								
Qty		1						
Type		Plate exchanger AISI 316						
Water flow	l/h	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"	3"	3"	3"	3"
Condenser								
Qty		2						
Total coil face area per coil	mm ²	3,5	4,8	4,8	4,8	4,8	4,8	4,8
Fan								
Qty		3	3	3	4	4	4	4
Speed	rpm/min	900	900	900	900	900	900	900
Air flow	m ³ /h	63.000	68.300	68.300	85.000	80.000	75.500	75.500
Power input	kW	5,7	5,7	5,7	7,6	7,6	7,6	7,6
Static head pressure	Pa	from 0 to 120*						
Weight								
Shipping	kg	1.473	1.663	1.806	1.955	2.100	2.190	2.200
Operating	kg	1.485	1.675	1.820	1.980	2.125	2.215	2.225
Additional weights								
Versions HPF	kg	30	30	30	40	40	40	40
With desuperheater	kg	20	20	30	30	30	30	30
With one pump	kg	50	85	85	90	90	95	95
With two pumps	kg	140	200	200	205	205	215	215
With copper/copper coils	kg	380	520	520	520	700	880	880
Dimensions								
Length	mm	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
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300
Acoustical data								
Sound power level ³	dB(A)	91	91	91	92	92	93	93
Sound pressure level ⁴	dB(A)	59	59	59	60	60	61	61

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

* For version with High Pressure Fans (HPF).

Technical feature

VLH STD 604-1204 LN		604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	145,4	168,2	191,2	220,4	237,3	261,2	285,1
Power input ¹	kW	56,8	66,2	73,3	83,8	88,5	102,8	119,8
EER ¹		2,56	2,54	2,61	2,63	2,68	2,54	2,38
Energy efficiency class		D	D	D	D	D	D	E
ESEER		3,60	3,58	3,64	3,59	3,70	3,63	3,49
Heating capacity ²	kW	165,7	195,0	217,1	247,7	261,8	288,9	322,2
Power input ²	kW	56,0	65,2	68,3	76,9	84,7	97,0	109,2
COP ²		2,96	2,99	3,18	3,22	3,09	2,98	2,95
Energy efficiency class		C	C	B	A	B	C	C
Part load steps	%	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
Refrigerant								
Type		HFC 410A						
Number of refrigerant circuits		2	2	2	2	2	2	2
Compressor								
Qty		4						
Type		Scroll						
Evaporator								
Qty		1						
Type		Plate exchanger AISI 316						
Water flow	l/h	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"	3"	3"	3"	3"
Condenser								
Qty		2						
Total coil face area per coil	mm ²	3,5	4,8	4,8	4,8	4,8	4,8	4,8
Fan								
Qty		3	3	3	4	4	4	4
Speed	gir/min	700	700	700	700	700	700	700
Air flow	m ³ /h	47.300	52.200	52.200	63.700	58.800	54.900	54.900
Power input	kW	3,6	3,6	3,6	4,8	4,8	4,8	4,8
Static head pressure	Pa	0						
Weight								
Shipping	kg	1.473	1.663	1.806	1.955	2.100	2.190	2.200
Operating	kg	1.485	1.675	1.820	1.980	2.125	2.215	2.225
Additional weights								
With desuperheater	kg	20	20	30	30	30	30	30
With one pump	kg	50	85	85	90	90	95	95
With two pumps	kg	140	200	200	205	205	215	215
With copper/copper coils	kg	380	520	520	520	700	880	880
Dimensions								
Length	mm	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
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300
Acoustical data								
Sound power level ³	dB(A)	87	87	87	88	88	89	89
Sound pressure level ⁴	dB(A)	55	55	55	56	56	57	57

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

VLH STD 604-1204 ELN		604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	141,5	164,3	185,2	214,5	230,4	253,3	276,1
Power input ¹	kW	58,0	69,0	76,2	86,1	90,7	106,9	124,9
EER ¹		2,44	2,38	2,43	2,49	2,54	2,37	2,21
Energy efficiency class		E	E	E	E	D	E	F
ESEER		3,49	3,46	3,51	3,60	3,67	3,51	3,40
Heating capacity ²	kW	156,6	184,9	202,9	232,6	245,7	266,8	297,0
Power input ²	kW	55,0	64,9	67,0	75,8	83,9	95,0	108,0
COP ²		2,85	2,85	3,03	3,07	2,93	2,81	2,75
Energy efficiency class		C	C	B	B	B	C	C
COP HSE		2,95	2,95	3,13	3,19	3,04	2,90	2,83
Part load steps	%	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
Refrigerant								
Type		HFC 410A						
Number of refrigerant circuits		2						
Compressor								
Qty		4						
Type		Scroll						
Evaporator								
Qty		1						
Type		Plate exchanger AISI 316						
Water flow	l/h	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"	3"	3"	3"	3"
Condenser								
Qty		2						
Total coil face area per coil	mm ²	3,5	4,8	4,8	4,8	4,8	4,8	4,8
Fan								
Qty		3	3	3	4	4	4	4
Speed	rpm/min	550	550	550	550	550	550	550
Air flow	m ³ /h	38.500	41.800	41.800	52.000	48.900	46.200	46.200
Power input	kW	3	3	3	4	4	4	4
Static head pressure	Pa	0						
Weight								
Shipping	kg	1.508	1.698	1.841	1.990	2.140	2.230	2.240
Operating	kg	1.520	1.710	1.855	2.015	2.165	2.255	2.265
Additional weights								
With desuperheater	kg	20	20	30	30	30	30	30
With one pump	kg	50	85	85	90	90	95	95
With two pumps	kg	140	200	200	205	205	215	215
With copper/copper coils	kg	380	520	520	520	700	880	880
Dimensions								
Length	mm	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
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300
Acoustical data								
Sound power level ³	dB(A)	83	83	83	84	84	85	85
Sound pressure level ⁴	dB(A)	51	51	51	52	52	53	53

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁴ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.

Technical feature

VLH 604-1204 HT		604	704	804	904	1004	1104	1204
Cooling capacity ¹	kW	151,7	175,6	199,7	229,5	250,1	276,5	305,6
Power input ²	kW	49,2	58,4	64,4	73,2	76,8	89,9	102,8
EER		2,69	2,69	2,80	2,77	2,88	2,77	2,71
Energy efficiency class		D	D	D	D	D	D	E
Heating capacity ²	kW	170,5	200,7	224,0	256,6	273,7	305,5	341,5
Power input ³	kW	51,3	60,6	63,5	71,4	79,3	91,4	103,5
COP		2,91	2,97	3,18	3,17	3,07	3,01	3,01
Energy efficiency class		C	C	B	A	B	C	C
Part load steps	%	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
Refrigerant								
Type		HFC 410A						
Number of refrigerant circuits		2						
Compressor								
Qty		4						
Type		Scroll						
Evaporator								
Qty		1						
Type		Plate exchanger AISI 316						
Water flow	l/h	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"	3"	3"	3"	3"
Condenser								
Qty		2						
Total coil face area per coil	mm ²	3,5	4,8	4,8	4,8	4,8	4,8	4,8
Fan								
Qty		3	3	3	4	4	4	4
Speed	rpm/min	1.110	1.110	1.110	1.110	1.110	1.110	1.110
Air flow	m ³ /h	71.800	76.200	76.200	95.800	91.200	87.600	87.600
Power input	kW	7,2	6,9	6,9	9,6	9,9	10	10
Static head pressure	Pa	0						
Weight								
Shipping	kg	1.503	1.693	1.836	1.995	2.140	2.230	2.240
Operating	kg	1.515	1.705	1.850	2.020	2.165	2.255	2.265
Additional weights								
With desuperheater	kg	20	20	30	30	30	30	30
With one pump	kg	50	85	85	90	90	95	95
With two pumps	kg	140	200	200	205	205	215	215
With copper/copper coils	kg	380	520	520	520	700	880	880
Dimensions								
Length	mm	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
Height	mm	2.300	2.300	2.300	2.300	2.300	2.300	2.300
Acoustical data								
Sound power level ⁴	dB(A)	99	99	99	100	100	100	100
Sound pressure level ⁵	dB(A)	67	67	67	68	68	68	68

¹ Data refers to 7°C leaving chilled water temperature and 35°C condenser air temperature, according EN14511 standard.

² Data refers to 45°C leaving warm water temperature and 7°C ambient coil air temperature with 87% R.H., according EN14511 standard.

³ Input power (only compressors).

⁴ Sound levels are at fully loaded conditions. Sound power level values refers to ISO 3744 standard.

⁵ Sound pressure levels refer to ISO 3744 standard, parallelepiped shape.