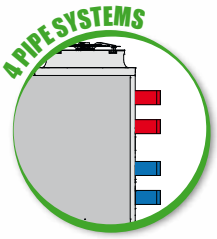
GPE N

HIGH EFFICIENCY AIR TO WATER MULTIPURPOSE UNIT AND 4 PIPE HEAT PUMPS
EQUIPPED WITH SCROLL COMPRESSOR AND AXIAL FANS WITH LOW GWP REFRIGERANT

Heating power from 80 kW to 1260 kW



Multipurpose units, ideal for all installed applications where simultaneous production of hot and cold water is required, through the use of dedicated, independent circuits in 2- or 4-pipe hydronic systems. The polyvalent represents an effective and convenient alternative to traditional solutions (Boiler + Chiller) with a particular energy benefit in the conditions of demand for both fluids, hot and cold. Multiscroll technology allows to reach great efficiency improvements at part load. All the units are totally factory assembled and tested, following specific quality procedures. Besides they are totally hydraulic, cooling and electrical connected permitting a quick installation once on site. Before the test the cooling circuits of each unit are subjected to a pressure test and then charged with Refrigerant R410A or R454B and non-freezing oil.

VERSIONS

HE	High efficiency, EC fans.
U	Ultra low noise.

TECHNICAL DATA

GPE N Kc		601	801	1001	1201	1401	1601	1801	1802	2002	2101	2302	2502	2802
Heating capacity (EN14511) (1)	kW	83,6	99,1	124,0	151,0	178,0	199,0	227,0	221,0	254,0	258,0	283	312	342
Total input power (EN14511) (1)	kW	19,6	24.7	30,1	35,9	42,3	48,3	53,5	52,9	57,5	60,8	65,1	72,5	84,1
COP (EN14511) (1)	A	41,1	48,0	59,2	67,8	80,3	89,6	98,1	106	112	112	125	138	160
COP (EN14511) (1)	W/W	4,27	4,01	4,12	4,21	4,21	4,12	4,24	4,18	4,42	4,24	4,35	4,30	4,07
SCOP	W/W	3,50	3,40	3,50	3,70	3,70	3,70	3,70	3,60	3,90	3,70	3,90	4,00	3,70
ηs,h (2)	%	137	133	137	145	145	145	145	141	153	145	153	157	145
Cooling capacity (EN14511) (3)	kW	73,6	84,4	104,0	126,0	148,0	167,0	186,0	184,0	209,0	217,0	237	256	295
Total input power (EN14511) (3)	kW	22,9	30,4	35,9	44,1	50,7	59,6	66,2	63,4	66,8	72,3	77,2	86,7	104,0
Input current	A	44,4	55,5	65,8	77,5	90,1	104	114	118	122	126	138	153	182
EER	W/W	3,21	2,78	2,90	2,86	2,92	2,80	2,81	2,90	3,13	3,00	3,07	2,95	2,84
Cooling capacity (EN14511) (4)	kW	74,7	94,2	113,0	139,0	161,0	185,0	207,0	199,0	222,0	233,0	256	279	325
Heating capacity (EN14511) (4)	kW	90,9	115,0	139,0	171,0	198,0	229,0	256,0	245,0	272,0	287,0	313	343	400
Total input power (EN14511) (4)	kW	16,3	21,6	27,3	32,9	37,7	44,4	49,8	46,2	50,6	55,6	58,3	65,9	76,1
Input current	A	31,7	38,8	49,6	58,1	66,0	76,2	84,6	86,1	90,4	93,9	104	117	134
TER	W/W	10,2	9,69	9,23	9,42	9,52	9,32	9,30	9,61	9,76	9,35	9,76	9,44	9,53
Sound power (5)	dB(A)	83	86	86	88	89	90	90	88	90	91	90	90	91
Sound pressure (6)	dB(A)	51	54	54	56	57	58	58	56	58	59	58	58	58
Power supply	V/ph/Hz	400/3/50												
Circuits	n°	1	1	1	1	1	1	1	2	2	1	2	2	2
Compressors	n°	2	2	2	2	2	2	2	4	4	2	4	4	4
Fans	n°	2	2	2	2	3	3	3	6	6	4	6	6	8
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	22	23	34	47	51	51	69	60	90	68	92	90	84
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	45,9	48,0	71,0	98,1	106,5	106,5	144,1	125,3	187,9	142,0	192,1	187,9	175,4
Frame		1	1	1	1	2	2	2	4	4	3	4	4	5
Transport weight	kg	1017	1086	1169	1363	1517	1532	1824	1906	2183	1818	2131	2616	2776
Operating weight	kg	1023	1092	1176	1371	1525	1541	1835	1918	2195	1830	2147	2633	2793

GPE N Kc		3202	3602	4202	4802	5202	5602	6002	7004	7504	8504	9504	1004	11004
Heating capacity (EN14511) (1)	kW	402	442	493	593	634	682	711	818,0	884,6	982,6	1100,0	1181,0	1264,8
Total input power (EN14511) (1)	kW	95,9	108,0	118,0	142,0	152,0	168,0	215,0	202,5	216,4	237,0	264,4	285,2	305,6
COP (EN14511) (1)	A	178	197	214	261	277	304	316	378,0	394,2	427,4	501,6	522,4	555,0
COP (EN14511) (1)	W/W	4,19	4,09	4,18	4,18	4,17	4,06	3,31	4,04	4,09	4,15	4,16	4,14	4,14
SCOP	W/W	3,90	3,80	4,10	3,90	4,00	3,80	-	-	-	-	-	-	-
ηs,h (2)	%	153	149	161	153	157	149	-	-	-	-	-	-	-
Cooling capacity (EN14511) (3)	kW	341	379	425	509	548	591	662	700,2	765,6	852,4	951,2	1001,6	1114,0
Total input power (EN14511) (3)	kW	113,0	131,0	143,0	171,0	189,0	206,0	220,0	233,9	260,4	288,4	322,4	341,0	376,0
Input current	A	197	227	249	297	325	353	365	395,2	451,2	496,8	554,3	594,4	648,0
EER	W/W	3,02	2,89	2,97	2,98	2,90	2,87	3,01	2,99	2,94	2,96	2,95	2,94	2,96
Cooling capacity (EN14511) (4)	kW	365	414	460	553	605	647	700	763,2	837,0	933,2	1036,8	1112,2	1219,0
Heating capacity (EN14511) (4)	kW	451	513	570	683	746	802	869	957,1	1036,4	1153,8	1287,0	1373,4	1502,0
Total input power (EN14511) (4)	kW	89,0	102,0	113,0	135,0	146,0	161,0	176,0	195,8	205,2	227,6	252,7	270,6	293,8
Input current	A	152	174	191	230	248	270	293	332,0	348,0	383,4	428,5	460,6	497,2
TER	W/W	9,17	9,09	9,12	9,16	9,25	9,00	8,91	8,79	9,13	9,17	9,20	9,19	9,26
Sound power (5)	dB(A)	90	92	94	92	94	94	96	93,0	93,0	96,0	95,0	95,0	96,0
Sound pressure (6)	dB(A)	58	59	62	60	62	62	63	60,0	60,0	63,0	62,0	62,0	63,0
Power supply	V/ph/Hz	400/3/50												
Circuits	n°	2	2	2	2	2	2	2	4	4	4	4	4	4
Compressors	n°	4	4	4	6	6	6	6	8	8	8	12	12	12
Fans	n°	8	8	8	10	10	12	12	16	16	16	20	20	20
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	128	132	172	214	212	188	260	253	258	298	285	326	332
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	267,3	275,6	359,1	446,8	442,7	392,5	542,9	528	539	622	594	682	692
Frame		5	5	5	6	6	7	7	9	9	9	10	10	10
Transport weight	kg	3245	3324	3814	4465	4532	4775	5298	7703	7780	8107	9039	9427	9521
Operating weight	kg	3264	3358	3850	4512	4581	4825	5357	7807	7915	8271	9181	9603	9771

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(4) Cooling during heating : Outdoor air 7°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N U Kc		601	801	1001	1201	1401	1601	1801	1802	2002	2101	2302	2502	2802
Heating capacity (EN14511) (1)	kW	79,5	105,0	125,0	156,0	181,0	204,0	231,0	229,0	252,0	255,0	286	303	359
Total input power (EN14511) (1)	kW	18,3	24,5	29,0	35,8	40,2	46,5	52,8	50,9	55,5	58,1	63,1	72,3	81,5
COP (EN14511) (1)	A	37,0	44,1	55,1	66,4	72,2	83,7	94,6	99,1	104,0	103,0	117	134	150
COP (EN14511) (1)	W/W	4,34	4,29	4,31	4,36	4,50	4,39	4,38	4,50	4,54	4,39	4,53	4,19	4,40
SCOP	W/W	3,80	3,80	3,80	3,80	4,10	4,00	3,90	4,00	4,20	3,90	4,20	4,00	4,10
ηs,h (2)	%	149	149	149	149	161	157	153	157	165	153	165	157	161
Cooling capacity (EN14511) (3)	kW	68,6	91,3	102,0	129,0	146,0	164,0	190,0	189,0	205,0	209,0	235	254	300
Total input power (EN14511) (3)	kW	22,3	30,9	35,1	42,7	49,7	59,0	64,1	59,5	67,2	72,4	76,4	87,5	99,2
Input current	A	41,6	50,6	62,9	74,8	86,8	99,8	109,0	109,0	118,0	122,0	133	152	170
EER	W/W	3,08	2,95	2,91	3,02	2,94	2,78	2,96	3,18	3,05	2,89	3,08	2,90	3,02
Cooling capacity (EN14511) (4)	kW	74,7	94,0	112,0	139,0	161,0	185,0	207,0	199,0	223,0	233,0	256	279	325
Heating capacity (EN14511) (4)	kW	90,9	115,0	139,0	171,0	197,0	229,0	256,0	244,0	272,0	287,0	313	343	400
Total input power (EN14511) (4)	kW	16,3	21,6	27,3	32,9	37,7	44,4	49,8	46,2	50,6	55,6	58,3	65,8	76,1
Input current	A	31,7	38,8	49,6	58,1	66,0	76,2	84,6	86,1	90,4	93,9	104	117	134
TER	W/W	10,2	9,68	9,19	9,42	9,50	9,32	9,30	9,59	9,78	9,35	9,76	9,45	9,53
Sound power (5)	dB(A)	80	82	82	84	85	86	86	83	84	87	84	84	85
Sound pressure (6)	dB(A)	49	50	50	51	53	53	53	50	52	55	52	52	52
Power supply	V/ph/Hz	400/3/50												
Circuits	n°	1	1	1	1	1	1	1	2	2	1	2	2	2
Compressors	n°	2	2	2	2	2	2	2	4	4	2	4	4	4
Fans	n°	2	2	2	3	3	3	4	6	6	4	6	8	8
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	22	34	45	52	67	67	68	90	90	90	124	84	126
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	45,9	71,0	94,0	108,6	139,9	139,9	142,0	187,9	187,9	187,9	258,9	175,4	263,1
Frame		1	1	1	2	2	2	3	4	4	3	4	5	5
Transport weight	kg	1039	1122	1205	1393	1559	1575	1846	1928	2155	1912	2192	2630	2852
Operating weight	kg	1045	1129	1211	1400	1567	1584	1857	1940	2167	1924	2208	2646	2870

GPE N U Kc		3202	3602	4202	4802	5202	5602	6002	7004	7504	8504	9504	10004	11004
Heating capacity (EN14511) (1)	kW	411	451	521	604	630	698	743	813,1	879,4	1003,0	1112,0	1171,4	1259,8
Total input power (EN14511) (1)	kW	93,2	105,0	118,0	140,0	150,0	164,0	171,0	194,1	210,8	235,4	265,4	280,6	301,8
COP (EN14511) (1)	A	168	187	208	252	268	289	298	352,0	373,2	416,6	501,6	503,6	536,2
COP (EN14511) (1)	W/W	4,41	4,30	4,42	4,31	4,20	4,26	4,35	4,19	4,17	4,26	4,19	4,17	4,17
SCOP	W/W	4,10	4,00	4,10	4,00	4,10	4,00	-	-	-	-	-	-	-
ηs,h (2)	%	161	157	161	157	161	157	-	-	-	-	-	-	-
Cooling capacity (EN14511) (3)	kW	351	400	441	528	537	609	660	700,0	760,0	865,0	953,0	1011,0	1127,2
Total input power (EN14511) (3)	kW	113,0	130,0	147,0	175,0	191,0	208,0	220,0	234,9	258,2	289,6	323,1	343,4	379,4
Input current	A	193	221	246	294	323	347	360	407,0	440,4	491,2	554,3	587,2	646,8
EER	W/W	3,11	3,08	3,00	3,02	2,81	2,93	3,00	2,98	2,94	2,99	2,95	2,94	2,97
Cooling capacity (EN14511) (4)	kW	364	414	460	553	605	647	699	763,2	837,0	933,2	1036,8	1112,2	1219,0
Heating capacity (EN14511) (4)	kW	450	513	570	683	746	802	868	957,1	1036,4	1153,8	1287,0	1373,4	1502,0
Total input power (EN14511) (4)	kW	89,0	102,0	113,0	135,0	146,0	161,0	176,0	195,8	205,2	227,6	252,7	270,6	293,8
Input current	A	152	174	191	230	248	270	292	332,0	348,0	383,4	428,5	460,6	497,2
TER	W/W	9,15	9,09	9,12	9,16	9,25	9,00	8,90	8,79	9,13	9,17	9,20	9,19	9,26
Sound power (5)	dB(A)	84	86	88	86	88	88	90	89,0	90,0	93,0	94,0	91,0	93,0
Sound pressure (6)	dB(A)	52	53	56	53	56	56	57	55,0	56,0	60,0	61,0	57,0	60,0
Power supply	V/ph/Hz	400/3/50												
Circuits	n°	2	2	2	2	2	2	2	4	4	4	4	4	4
Compressors	n°	4	4	4	6	6	6	6	8	8	12	12	12	12
Fans	n°	8	8	10	12	12	12	14	16	16	20	24	24	24
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	170	174	156	196	192	254	232	258	298	327	403	477	482
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	355,0	363,3	325,7	409,2	400,9	530,4	484,4	539	621	682	841	997	1007
Frame		5	5	6	7	7	7	8	9	9	10	11	11	11
Transport weight	kg	3323	3401	3816	4463	4529	4879	5285	7397	7476	8393	9718	9874	9947
Operating weight	kg	3342	3435	3852	4509	4579	1928	5344	7477	7576	8513	9838	10014	10127

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Average conditions, low temperature, variable - Reg EU 811/2013
(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(4) Cooling during heating : Outdoor air 7°C.
(5) Sound power level in accordance with ISO 3744.
(6) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N HE U Kc		1001	1201	1401	1601	1802	2002	2302	2502	2802	3202	3602
Heating capacity (EN14511) (1)	kW	126	155	180	205	220	249	276	308	345	387	461
Total input power (EN14511) (1)	kW	33,8	40,7	46,7	52,9	55,9	62,6	71,5	79,6	92,4	106,0	100,0
COP (EN14511) (1)	A	53,4	62,1	70,9	79,9	90,2	95,8	109,0	123,0	140	158	177
COP (EN14511) (1)	W/W	3,73	3,81	3,85	3,88	3,94	3,98	3,86	3,87	3,73	3,65	4,61
SCOP	W/W	4,00	4,20	4,30	4,30	4,50	4,70	6,00	4,60	4,60	4,40	4,60
ηs,h (2)	%	157	165	169	169	177	185	237	181	181	173	181
Cooling capacity (EN14511) (3)	kW	109	134	156	184	194	216	235	268	300	339	382
Total input power (EN14511) (3)	kW	32,9	40,8	46,6	54,5	57,7	63,4	73,7	80,5	96,2	108,0	124,0
Input current	A	59,7	71,1	80,8	93,3	105,0	113,0	128,0	141,0	164	187	210
EER	W/W	3,31	3,28	3,35	3,38	3,36	3,41	3,19	3,33	3,12	3,14	3,08
Cooling capacity (EN14511) (4)	kW	114	143	164	198	210	233	256	286	330	367	419
Heating capacity (EN14511) (4)	kW	140	175	201	241	255	282	313	350	405	453	516
Total input power (EN14511) (4)	kW	27,2	32,7	37,6	43,6	45,5	50,7	58,3	64,2	76,0	87,8	99,9
Input current	A	49,7	58,1	66,1	75,5	85,4	90,7	104,0	116,0	134	152	171
TER	W/W	9,34	9,72	9,71	10,10	10,20	10,20	9,76	9,91	9,67	9,34	9,36
Sound power (5)	dB(A)	80	82	82	83	82	84	84	84	85	84	86
Sound pressure (6)	dB(A)	48	49	50	50	49	52	52	52	52	52	53
Power supply	V/ph/Hz						400/3/50					
Circuits	n°	1	1	1	1	2	2	2	2	2	2	2
Compressors	n°	2	2	2	2	4	4	4	4	4	4	4
Fans	n°	3	3	4	4	6	6	6	8	8	8	10
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	51	67	68	90	92	124	124	126	130	180	158
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	106,5	139,9	142,0	187,9	192,1	258,9	258,9	263,1	271,4	375,8	329,9
Frame		2	2	3	3	4	4	4	5	5	5	6
Transport weight	kg	1401	1547	1755	1936	2320	2570	2571	3015	3198	3713	3862
Operating weight	kg	1410	1558	1766	1952	2337	2588	2588	3033	3220	3738	3896

GPE N HE U Kc		4202	4802	5202	5602	6002	7004	7504	8504	9504	10004
Heating capacity (EN14511) (1)	kW	493	594	638	687	728	810,0	921,4	985,2	1102,0	1185,2
Total input power (EN14511) (1)	kW	117,0	132,0	146,0	157,0	170,0	183,1	200,4	234,2	244,9	264,8
COP (EN14511) (1)	A	195	236	258	276	305	322,8	353,2	388,0	431,6	470,0
COP (EN14511) (1)	W/W	4,21	4,50	4,37	4,38	4,28	4,42	4,60	4,21	4,50	4,48
SCOP	W/W	4,70	4,50	-	-	-	-	-	-	-	-
ηs,h (2)	%	185	177	-	-	-	-	-	-	-	-
Cooling capacity (EN14511) (3)	kW	431	517	563	609	645	702,0	754,0	853,8	950,0	1011,0
Total input power (EN14511) (3)	kW	144,0	163,0	180,0	195,0	212,0	227,9	247,8	279,6	310,5	330,4
Input current	A	235	279	304	330	354	389,0	423,2	472,4	554,3	563,0
EER	W/W	2,99	3,17	3,13	3,12	3,04	3,08	3,04	3,05	3,06	3,06
Cooling capacity (EN14511) (4)	kW	477	562	610	661	704	781,4	847,8	959,4	1051,6	1130,8
Heating capacity (EN14511) (4)	kW	586	690	753	815	871	953,4	1043,2	1176,8	1285,0	1387,8
Total input power (EN14511) (4)	kW	111,0	133,0	147,0	160,0	174,0	184,0	200,8	222,8	247,4	265,6
Input current	A	189	227	250	269	290	315,3	342,6	379,0	424,0	455,2
TER	W/W	9,58	9,41	9,27	9,22	9,05	9,43	9,42	9,59	9,45	9,48
Sound power (5)	dB(A)	88	86	88	88	92	89	90	93	91	91
Sound pressure (6)	dB(A)	56	54	56	56	60	56	57	60	58	58
Power supply	V/ph/Hz					400/3/50					
Circuits	n°	2	2	2	2	2	4	4	4	4	4
Compressors	n°	4	6	6	6	6	8	8	8	12	12
Fans	n°	10	12	14	14	14	16	20	20	24	24
Refrigerant		R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A	R410A
Refrigerant charge	kg	204	256	232	304	304	299	285	328	405	479
Global warming potential	GWP	2088	2088	2088	2088	2088	2088	2088	2088	2088	2088
Equivalent CO_2 charge	t	426,0	534,5	484,4	634,8	634,8	624	596	684	845	1000
Frame		6	7	8	8	8	9	10	10	11	1
Transport weight	kg	4271	4927	5050	5576	5607	7620	8012	8665	9453	10086
Operating weight	kg	4311	4976	5108	5635	5666	7755	8159	8797	9610	10263

Performances are referred to the following conditions:

(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.

(2) Average conditions, low temperature, variable - Reg EU 811/2013

(3) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C

(4) Sound power level in accordance with ISO 3744.

(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N Kr		601	801	1001	1201	1401	1601	1801	1802	2002	2101	2302	2502	2802
Heating capacity (EN14511) (1)	kW	73,2	90,9	119,0	146,0	170,0	191,0	211,0	214,0	246,0	240,0	272,0	297,0	327,0
Total input power (EN14511) (1)	kW	18,3	22,5	28,7	35,6	41,4	47,3	51,1	53,7	60,9	58,6	66,1	71,8	82,8
Input current	A	39,2	47,7	58,0	68,8	77,7	91,1	95,0	106,0	115,0	112,0	126,0	138,0	153,0
COP (EN14511) (1)	W/W	4,00	4,04	4,15	4,10	4,11	4,04	4,13	3,99	4,04	4,10	4,11	4,14	3.95
Cooling capacity (EN14511) (2)	kW	63,8	77,2	103,0	127,0	145,0	165,0	189,0	186,0	218,0	217,0	241,0	262,0	292,0
Total input power (EN14511) (2)	kW	21,0	26,6	34,0	41,6	47,8	54,5	59,5	61,4	67,4	65,7	74,9	82,1	97,1
Input current	A	41,2	51,7	63,0	74,5	83,9	98,4	104,0	113,0	120,0	119,0	134,0	147,0	168,0
EER	W/W	3,04	2,90	3,03	3,05	3,03	3,03	3,18	3,03	3,23	3,30	3,22	3,19	3,01
Cooling capacity (EN14511) (3)	kW	68,1	82,4	112,0	136,0	154,0	177,0	201,0	197,0	229,0	227,0	253,0	277,0	313,0
Heating capacity (EN14511) (3)	kW	83,1	101,0	137,0	168,0	190,0	219,0	247,0	244,0	282,0	278,0	312,0	341,0	386,0
Total input power (EN14511) (3)	kW	15,2	19,3	25,8	33,0	36,9	42,7	46,1	47,0	54,2	52,1	59,7	66,0	74,7
Input current	A	29,2	37,9	47,9	58,4	62,6	76,5	80,4	86,9	95,6	93,1	107,0	118,0	128,0
TER	W/W	9,95	9,50	9,65	9,21	9,32	9,27	9,72	9,38	9,43	9,69	9,46	9,36	9,36
Sound power (4)	dB(A)	83	86	86	88	89	90	90	88	90	91	90	90	91
Sound pressure (5)	dB(A)	51	54	54	56	57	58	58	56	58	59	58	58	58
Power supply	V/ph/Hz							400/3/50						
Circuits	n°	1	1	1	1	1	1	1	2	2	1	2	2	2
Compressors	n°	2	2	2	2	2	2	2	4	4	2	4	4	4
Fans	n°	2	2	2	2	3	3	3	6	6	4	6	6	8
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	22	22	34	45	50	50	67	66	96	68	94	94	88
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	10	10	16	21	23	23	31	31	45	32	44	44	41
Frame		1	1	1	1	2	2	2	4	4	3	4	4	5
Transport weight	kg	1017	1086	1169	1363	1517	1532	1824	1906	2183	1818	2131	2616	2776
Operating weight	kg	1023	1092	1176	1371	1525	1541	1835	1918	2195	1830	2147	2633	2793

GPE N Kr		3202	3602	4202	4802	5202	5602	6002	7004	7504	8504	9504	10004	11004
Heating capacity (EN14511) (1)	kW	374,0	420,0	470,0	555,0	569,0	653,0	708,0	782,4	846,1	939,9	1036,9	1113,2	1192,2
Total input power (EN14511) (1)	kW	91,7	103,0	113,0	135,0	146,0	158,0	172,0	190,4	202,8	221,2	249,6	267,1	285,2
Input current	A	163,0	188,0	211,0	238,0	262,0	291,0	149,0	346,6	369,1	402,6	454,2	486,1	519,1
COP (EN14511) (1)	W/W	4,08	4,08	4,16	4,11	4,08	4,13	4,12	4,11	4,17	4,25	4,15	4,17	4,18
Cooling capacity (EN14511) (2)	kW	336,0	375,0	421,0	497,0	537,0	582,0	642,0	690,9	754,5	840,0	923,5	972,4	1081,6
Total input power (EN14511) (2)	kW	104,0	118,0	128,0	153,0	168,0	185,0	197,0	219,0	244,7	271,1	305,1	321,3	352,8
Input current	A	175,0	205,0	228,0	258,0	288,0	323,0	341,0	392,6	424,0	467,0	524,5	560,0	608,0
EER	W/W	3,23	3,18	3,29	3,25	3,20	3,15	3,26	3,15	3,08	3,10	3,03	3,03	3,07
Cooling capacity (EN14511) (3)	kW	349,0	395,0	441,0	518,0	567,0	621,0	666,0	719,4	789,0	879,6	977,3	1048,4	1149,0
Heating capacity (EN14511) (3)	kW	431,0	488,0	543,0	640,0	699,0	764,0	820,0	886,4	963,6	1073,3	1192,3	1278,6	1398,9
Total input power (EN14511) (3)	kW	83,7	96,4	106,0	125,0	137,0	147,0	160,0	175,9	184,4	204,5	227,0	243,1	264,0
Input current	A	138,0	164,0	186,0	206,0	231,0	254,0	280,0	322,6	338,1	375,0	416,3	445,8	484,1
TER	W/W	9,32	9,16	9,28	9,26	9,24	9,42	9,29	9,13	9,51	9,55	9,56	9,57	9,65
Sound power (4)	dB(A)	90	92	94	92	94	94	96	95	95	97	98	98	98
Sound pressure (5)	dB(A)	58	59	62	60	62	62	63	62	62	65	65	65	65
Power supply	V/ph/Hz							400/3/50						
Circuits	n°	2	2	2	2	2	2	2	4	4	4	4	4	4
Compressors	n°	4	4	4	6	6	6	6	8	8	8	12	12	12
Fans	n°	8	8	8	10	10	12	12	16	16	16	20	20	20
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	138	138	172	212	212	192	256	253	258	298	285	326	332
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	64	64	80	99	99	89	119	118	120	139	133	152	154
Frame		5	5	5	6	6	7	7	9	9	9	10	10	10
Transport weight	kg	3245	3324	3814	4465	4532	4775	5298	7836	7914	8247	9195	9589	9685
Operating weight	kg	3264	3358	3850	4512	4581	4825	5357	7876	7974	8339	9251	9671	9835

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(3) Cooling during heating : Outdoor air 7°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N U Kr		601	801	1001	1201	1401	1601	1801	1802	2002	2101	2302	2502	2802
Heating capacity (EN14511) (1)	kW	72,7	92,0	115,0	149,0	166,0	190,0	213,0	212,0	242,0	236,0	263	291	332
Total input power (EN14511) (1)	kW	17,2	21,3	27,5	35,5	39,5	45,4	50,3	51,0	57,9	55,9	63,1	70,4	79,1
Input current	A	35,0	43,7	53,9	67,3	71,4	84,9	91,4	98,0	107,0	104,0	118	134	143
COP (EN14511) (1)	W/W	4,23	4,32	4,18	4,20	4,20	4,19	4,23	4,16	4,18	4,22	4,17	4,13	4,20
Cooling capacity (EN14511) (2)	kW	63,1	79,4	104,0	128,0	145,0	166,0	191,0	189,0	216,0	213,0	240	257	296
Total input power (EN14511) (2)	kW	20,2	24,5	32,4	40,7	45,6	52,6	57,4	56,9	66,6	64,8	72,3	83,2	90,9
Input current	A	37,9	46,8	58,9	72,1	78,0	92,9	99,3	104,0	116,0	114,0	127	146	156
EER	W/W	3,12	3,24	3,21	3,14	3,18	3,16	3,33	3,32	3,24	3,29	3,32	3,09	3,26
Cooling capacity (EN14511) (3)	kW	66,8	82,6	112,0	136,0	154,0	177,0	201,0	197,0	229,0	227,0	253	277	312
Heating capacity (EN14511) (3)	kW	81,4	101,0	137,0	168,0	190,0	219,0	247,0	243,0	282,0	278,0	312	341	385
Total input power (EN14511) (3)	kW	14,8	19,3	25,8	33,0	36,9	42,7	46,1	47,0	54,2	52,1	59,7	66,0	74,7
Input current	A	29,2	37,9	47,9	58,4	62,6	76,5	80,4	86,9	95,6	93,1	107	118	128
TER	W/W	10,0	9,51	9,65	9,21	9,32	9,27	9,72	9,36	9,43	9,69	9,46	9,36	9,33
Sound power (4)	dB(A)	80	82	82	84	85	86	86	83	84	87	84	84	85
Sound pressure (5)	dB(A)	49	50	50	51	53	53	53	50	52	55	52	52	52
Power supply	V/ph/Hz							400/3/50						
Circuits	n°	1	1	1	1	1	1	1	2	2	1	2	2	2
Compressors	n°	2	2	2	2	2	2	2	4	4	2	4	4	4
Fans	n°	2	2	2	2	3	3	3	6	6	4	6	8	8
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	22	33	45	51	67	67	67	94	124	122	122	128	128
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	10	15	21	24	31	31	31	44	58	57	57	60	60
Frame		1	1	1	1	2	2	2	4	4	3	4	5	5
Transport weight	kg	1039	1112	1205	1393	1559	1575	1846	1928	2155	1912	2192	2630	2852
Operating weight	kg	1045	1129	1211	1400	1567	1584	1857	1940	2167	1924	2208	2646	2870

GPE N U Kr		3202	3602	4202	4802	5202	5602	6002	7004	7504	8504	9504	10004	11004
Heating capacity (EN14511) (1)	kW	363	409	467	547	586	641	692	759,0	820,9	936,3	1038,1	1093,5	1176,1
Total input power (EN14511) (1)	kW	87,8	99,1	110,0	131,0	142,0	152,0	161,0	182,0	196,8	220,4	248,6	263,0	280,6
Input current	A	152	177	204	227	251	274	295	331,2	358,2	401,2	452,5	478,7	510,7
COP (EN14511) (1)	W/W	4,13	4,13	4,25	4,18	4,13	4,22	4,30	4,17	4,17	4,25	4,18	4,16	4,19
Cooling capacity (EN14511) (2)	kW	333	373	419	483	522	578	624	683,1	741,6	844,1	920,8	976,8	1089,1
Total input power (EN14511) (2)	kW	101,0	116,0	131,0	156,0	171,0	181,0	192,0	226,2	246,2	274,9	307,1	326,2	361,7
Input current	A	168	197	228	258	289	312	334	391,9	419,9	466,3	526,9	557,7	616,6
EER	W/W	3,30	3,22	3,20	3,10	3,05	3,19	3,25	3,02	3,01	3,07	3,00	2,99	3,01
Cooling capacity (EN14511) (3)	kW	349	395	442	517	567	621	665	719,4	789,0	879,6	977,3	1048,4	1149,0
Heating capacity (EN14511) (3)	kW	431	488	544	639	699	764	819	886,4	963,6	1073,3	1192,3	1278,6	1398,9
Total input power (EN14511) (3)	kW	83,7	96,4	106,0	125,0	137,0	147,0	160,0	175,9	184,4	204,5	227,0	243,1	264,0
Input current	A	138	164	186	206	231	254	280	322,6	338,1	375,0	416,3	445,8	484,1
TER	W/W	9,32	9,16	9,30	9,25	9,24	9,42	9,28	9,13	9,51	9,55	9,56	9,57	9,65
Sound power (4)	dB(A)	84	86	88	86	88	88	90	91	92	95	97	94	96
Sound pressure (5)	dB(A)	52	53	56	53	56	56	57	57	58	62	64	60	63
Power supply	V/ph/Hz							400/3/50						
Circuits	n°	2	2	2	2	2	2	2	4	4	4	4	4	4
Compressors	n°	4	4	4	6	6	6	6	8	8	12	12	12	12
Fans	n°	8	8	10	12	12	12	14	16	16	20	24	24	24
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	178	158	210	252	228	296	296	255	294	322	398	471	476
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	83	74	98	117	106	138	138	119	137	150	185	220	222
Frame		5	5	6	7	7	7	8	9	9	10	11	11	11
Transport weight	kg	3323	3401	3816	4463	4529	4879	5285	7180	7535	8544	9321	9945	10013
Operating weight	kg	3342	3435	3852	4509	4579	4928	5344	7220	7585	8604	9381	10015	10103

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(3) Cooling during heating : Outdoor air 7°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N HE Kr		1001	1201	1401	1601	1802	2002	2302	2502	2802	3202	3602
Heating capacity (EN14511) (1)	kW	124	145	174	200	218	248	274	304	340	375	434
Total input power (EN14511) (1)	kW	29,8	35,4	41,8	47,7	53,6	61,1	66,5	74,2	83,2	92,4	104,0
Input current	A	56,3	66,9	74,1	87,1	100,0	110,0	121,0	137,0	146	157	183
COP (EN14511) (1)	W/W	4,16	4,10	4,16	4,19	4,07	4,06	4,12	4,10	4,09	4,06	4,17
Cooling capacity (EN14511) (2)	kW	108	134	153	175	193	225	246	272	302	341	382
Total input power (EN14511) (2)	kW	31,6	38,9	43,3	49,8	56,5	63,9	71,3	78,0	90,4	98,9	115,0
Input current	A	57,9	69,1	75,3	88,9	103,0	112,0	126,0	139,0	155	164	196
EER	W/W	3,42	3,44	3,53	3,51	3,42	3,52	3,45	3,49	3,34	3,45	3,32
Cooling capacity (EN14511) (3)	kW	112	139	157	179	197	229	253	277	312	349	397
Heating capacity (EN14511) (3)	kW	137	170	192	221	243	282	312	341	385	430	488
Total input power (EN14511) (3)	kW	25,8	32,0	35,9	41,8	47,0	54,2	59,7	66,0	74,7	83,7	93,3
Input current	A	47,9	57,6	63,0	75,6	86,9	95,6	107,0	118,0	128	138	161
TER	W/W	9,65	9,66	9,72	9,57	9,36	9,43	9,46	9,36	9,33	9,31	9,49
Sound power (4)	dB(A)	84	87	87	87	89	91	91	91	91	91	92
Sound pressure (5)	dB(A)	52	55	55	55	57	58	58	59	59	58	60
Power supply	V/ph/Hz						400/3/50					
Circuits	n°	1	1	1	1	2	2	2	2	2	2	2
Compressors	n°	2	2	2	2	4	4	4	4	4	4	4
Fans	n°	3	3	4	4	6	6	6	8	8	8	10
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	51	67	67	89	96	126	126	132	132	182	158
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	24	31	31	41	45	59	59	62	62	85	74
Frame		2	2	3	3	4	4	4	5	5	5	6
Transport weight	kg	1379	1525	1733	1733	2298	2548	2549	2933	3176	3691	3840
Operating weight	kg	1388	1536	1744	1744	2312	2566	2566	3100	3198	3716	3874

GPE N HE Kr		4202	4802	5202	5602	6002	7004	7504	8504	9504	10004
Heating capacity (EN14511) (1)	kW	488	565	622	675	723	761,7	868,8	973,0	1066,3	1127,6
Total input power (EN14511) (1)	kW	116,0	138,0	151,0	162,0	174,0	192,1	216,7	237,2	269,4	282,2
Input current	A	210	234	262	286	312	349,6	394,5	431,7	490,3	513,6
COP (EN14511) (1)	W/W	4,21	4,09	4,12	4,17	4,16	3,97	4,01	4,10	3,96	4,00
Cooling capacity (EN14511) (2)	kW	443	506	557	605	647	704,0	762,0	867,6	956,0	1033,6
Total input power (EN14511) (2)	kW	125,0	148,0	166,0	175,0	189,0	220,6	247,2	274,9	300,0	322,1
Input current	A	220	246	282	302	331	372,3	417,6	462,5	532,3	543,1
EER	W/W	3,54	3,42	3,36	3,46	3,42	3,19	3,08	3,16	3,19	3,21
Cooling capacity (EN14511) (3)	kW	451	519	573	620	665	736,6	799,1	904,3	991,2	1065,9
Heating capacity (EN14511) (3)	kW	554	640	705	762	819	896,0	973,2	1097,3	1205,6	1296,0
Total input power (EN14511) (3)	kW	106,0	125,0	137,0	147,0	160,0	168,5	183,9	204,0	226,5	243,2
Input current	A	187	206	231	254	280	303,1	330,8	367,1	407,6	437,6
TER	W/W	9,48	9,27	9,33	9,40	9,28	9,69	9,64	9,81	9,70	9,71
Sound power (4)	dB(A)	94	92	95	95	96	97	98	99	98	99
Sound pressure (5)	dB(A)	62	60	62	62	63	64	65	66	65	66
Power supply	V/ph/Hz						400/3/50				
Circuits	n°	2	2	2	2	2	4	4	4	4	4
Compressors	n°	4	6	6	6	6	8	8	8	12	12
Fans	n°	10	12	14	14	14	16	20	20	24	24
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	216	260	234	304	304	300	315	351	491	508
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	101	121	109	142	142	140	147	164	229	237
Frame		6	7	8	8	8	9	10	10	11	11
Transport weight	kg	4249	4905	5028	5554	5585	7852	8258	8907	9714	10364
Operating weight	kg	4289	4954	5086	5613	5644	7940	8358	9007	9816	10476

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(3) Cooling during heating : Outdoor air 7°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

GPE N HE U Kr		1001	1201	1401	1601	1802	2002	2302	2502	2802	3202	3602
Heating capacity (EN14511) (1)	kW	126	150	172	195	214	243	269	299	335	368	424
Total input power (EN14511) (1)	kW	27,0	33,2	38,1	43,9	49,0	56,2	61,4	68,0	76,6	85,4	98,1
Input current	A	52,3	62,6	68,6	81,5	93,2	102,0	114,0	128,0	137	146	174
COP (EN14511) (1)	W/W	4,67	4,52	4,51	4,44	4,37	4,32	4,38	4,40	4,337	4,31	4,32
Cooling capacity (EN14511) (2)	kW	107	132	151	173	189	220	240	267	297	334	374
Total input power (EN14511) (2)	kW	30,3	37,6	41,7	48,4	54,6	62,3	70,2	75,7	87,8	97,3	112,0
Input current	A	55,8	67,0	72,7	86,6	99,6	109,0	124,0	135,0	150	161	191
EER	W/W	3,53	3,51	3,62	3,57	3,46	3,53	3,42	3,53	3,38	3,43	3,34
Cooling capacity (EN14511) (3)	kW	112	139	157	179	197	229	254	277	312	349	392
Heating capacity (EN14511) (3)	kW	137	170	192	221	244	282	312	341	385	430	485
Total input power (EN14511) (3)	kW	25,8	32,0	35,9	41,8	47,0	54,2	59,7	66,0	74,7	83,7	95,9
Input current	A	47,9	57,6	63,0	75,6	86,9	95,6	107,0	118,0	128	138	164
TER	W/W	9,65	9,66	9,72	9,57	9,38	9,43	9,48	9,36	9,33	9,31	9,14
Sound power (4)	dB(A)	80	82	82	83	82	84	84	84	85	84	86
Sound pressure (5)	dB(A)	48	49	50	50	49	52	52	52	52	52	53
Power supply	V/ph/Hz						400/3/50					
Circuits	n°	1	1	1	1	2	2	2	2	2	2	2
Compressors	n°	2	2	2	2	4	4	4	4	4	4	4
Fans	n°	3	3	4	4	6	6	6	8	8	8	10
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	50	66	66	88	94	124	122	128	128	178	158
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	23	31	31	41	44	58	57	60	60	83	74
Frame		2	2	3	3	4	4	4	5	5	5	6
Transport weight	kg	1401	1547	1755	1936	2320	2570	2571	3015	3198	3713	3862
Operating weight	kg	1410	1558	1766	1952	2337	2588	2588	3033	3220	3738	3896

GPE N HE U Kr		4202	4802	5202	5602	6002	7004	7504	8504	9504	10004
Heating capacity (EN14511) (1)	kW	472	554	605	658	698	756,2	860,2	919,7	1028,8	1106,4
Total input power (EN14511) (1)	kW	108,0	128,0	139,0	150,0	161,0	174,3	191,7	211,1	234,0	251,5
Input current	A	197	219	245	269	294	317,3	348,9	384,2	426,0	457,7
COP (EN14511) (1)	W/W	4,37	4,33	4,35	4,39	4,34	4,34	4,49	4,36	4,40	4,40
Cooling capacity (EN14511) (2)	kW	430	496	543	594	633	702,0	754,0	853,8	950,0	1011,0
Total input power (EN14511) (2)	kW	123,0	146,0	161,0	171,0	186,0	214,2	235,3	264,4	294,2	312,2
Input current	A	216	242	274	296	326	365,6	401,9	446,7	525,2	531,9
EER	W/W	3,50	3,40	3,37	3,47	3,40	3,28	3,20	3,23	3,23	3,24
Cooling capacity (EN14511) (3)	kW	451	520	572	621	665	736,6	799,1	904,3	991,2	1065,9
Heating capacity (EN14511) (3)	kW	554	641	704	764	819	896,0	973,2	1097,3	1205,6	1296,0
Total input power (EN14511) (3)	kW	106,0	125,0	136,0	147,0	160,0	168,5	183,9	204,0	226,5	243,2
Input current	A	187	206	231	254	280	303,1	330,8	367,1	407,6	437,6
TER	W/W	9,48	9,29	9,38	9,42	9,28	9,69	9,64	9,81	9,70	9,71
Sound power (4)	dB(A)	88	86	88	88	92	91	92	93	94	94
Sound pressure (5)	dB(A)	56	54	56	56	60	58	59	60	61	61
Power supply	V/ph/Hz					400/3/50					
Circuits	n°	2	2	2	2	2	4	4	4	4	4
Compressors	n°	4	6	6	6	6	8	8	8	12	12
Fans	n°	10	12	14	14	14	16	20	20	24	24
Refrigerant		R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B	R454B
Refrigerant charge	kg	210	252	228	296	296	294	281	322	398	471
Global warming potential	GWP	466	466	466	466	466	466	466	466	466	466
Equivalent CO_2 charge	t	98	117	106	138	138	137	131	150	185	220
Frame		6	7	8	8	8	9	10	10	11	11
Transport weight	kg	4271	4927	5050	5576	5607	7852	8258	8907	9714	10364
Operating weight	kg	4311	4976	5108	5635	5666	7940	8358	9007	9816	10476

Performances are referred to the following conditions:
(1) Heating: Ambient temperature 7°C DB, 6°C WB, water temperature 30/35°C.
(2) Cooling: ambient air temperature 35°C, evaporator water temperature in/out 12/7 °C
(3) Cooling during heating : Outdoor air 7°C.
(4) Sound power level in accordance with ISO 3744.
(5) Sound pressure level at 10 mt from the unit in free field conditions in accordance with ISO 3744.

COMPONENTS

FRAME
All units are made from hot-galvanised sheet steel, painted with polyurethane powder enamel and stoved at 180°C to provide maximum protection against corrosion. The frame is self-supporting with removable panels. All screws and rivets used are made from stainless steel. The standard colour of the units is RAL9018.

REFRIGERANT CIRCUIT
The refrigerant circuit is assembled using internationally recognised brand name components with all brazing and welding being performed in accordance with ISO 97/23. The refrigerant utilised are R410A or R454B. The refrigerant circuit includes: sight glass, filter drier,electronic expansion valves, 4 way reversing valve, check valves, liquid receiver, liquid separator, schrader valves for maintenance and control, pressure safety device (for compliance with PED regulations).

COMPRESSORS
The compressors are scroll type, with crankcase resistance and thermal protection, installed in a separate compartment from the airflow in order to reduce noise. When the unit is on standby mode, the crankcase heater is always powered. Through the unit's front panel, it is possible to inspect and repair the compressors even when the unit is running.
The compressors used are tandem type. This solution allows a significantly higher efficiency with partial loads compared to the option with independent refrigerant circuits. The control system constantly monitors the discharge temperature of the single compressors.

SOURCE HEAT EXCHANGER
The source heat exchanger is made from 3/8" copper pipes and 0,1mm at least thick aluminium fins with the tubes being mechanically expanded into the aluminium fins in order to maximise heat transfer. Furthermore, the design guarantees a low air side pressure drop thus enabling the use of low rotation speed (and hence low noise) fans. All heat exchangers are supplied standard with fins hydrophilic coating "Blue Fins".

COOLING OR HEATING USER CIRCUIT HEAT EXCHANGERS
The user heat exchanger is a braze welded, plate type heat exchanger, manufactured from AISI 316 stainless steel. The use of this type of exchanger results in a massive reduction of the refrigerant charge of the unit compared to a traditional shell-in-tube type. A further advantage is a reduction in the overall dimensions of the unit. The exchangers are factory insulated with flexible close cell material and can be fitted with an antifreeze heater (accessory). Each exchanger is fitted with a temperature sensor on the discharge water side for antifreeze protection.

FANS
The fans are direct drive axial type with aerofoil blades, are statically and dynamically balanced and are supplied complete with a safety fan guard complying with the requirements of EN 60335. They are fixed to the unit frame via rubber anti-vibration mountings. The electric motors, in standard versions are 6 poles type and a phase-cut regulator or inverter that adjusts the rotation speed according to the ambient temperature. In the HE versions, the fans are electronic type, with permanent magnet motors with an integrated driver that modulates the speed of rotation. The motors are fitted with integrated thermal overload protection and have a moisture protection rating of IP 54.

MICROPROCESSORS
All units are supplied as standard with microprocessor controls. The microprocessor controls the following functions: control of the water temperature, antifreeze protection, compressor timing, compressor automatic starting sequence (For multiple compressors), alarm reset.

The control panel is supplied with display showing all operational icons. The microprocessor is set for automatic defrost (when operating in severe ambient conditions) and for summer/ winter change over. The control also manages the integration with other heating sources (electric heaters, boilers, solar panels etc) and both the heating circuit pump and the domestic hot water circuit pump. If required (available as an option), the microprocessor can be configured in order for it to connect to a site BMS system thus enabling remote control and management.

ELECTRIC ENCLOSURE
The enclosure is manufactured in order to comply with the requirements of the electromagnetic compatibility standards 2014/35/UE and 2014/30/UE. Access to the enclosure is achieved by removing the front panel of the unit. The following components are supplied as standard on all units: main switch, a sequence relay that disables the power supply in the event that the phase sequence is incorrect (scroll compressors can be damaged if they rotate in the wrong direction), thermal overloads (protection of pumps and fans), compressor fuses, control circuit automatic breakers, compressor contactors, fan contactors and pump contactors. The terminal board has volt free contacts for remote ON-OFF, Summer/ winter change over (heat pumps only) and general alarm.

CONTROL AND PROTECTION DEVICES
All units are standardly equipped with several control and safety devices: water return temperature sensor, installed on the water return pipe of the system, and anti-freeze probe, installed on the water supply pipe to the system high-pressure switch with automatic reset. There are also included a low-pressure automatic reset, pressure transducer (used to optimize the defrosting cycle and modulate the rotation speed of the fans according to external conditions), Freon side safety device, compressor thermal protection, fan thermal protection, flow switch, and external air compensation probe.

LEAK DETECTOR (Kr version only)
When the unit is powered ON, the sensor is warmed up/initialised (duration approx. 1min.).
During this period, the LEDs inside the sensor blink, the refrigerant leakage alarm is notified and the 24Vac auxiliary circuit is switched off. After this period, if in the absence of any further feedback from the sensor, the PLC control is powered up and the unit is ready to operate. If refrigerant leaks occur, the sensor is activated and the power supply to the control PLC is immediately switched off until the sensor indicates the refrigerant is still present.

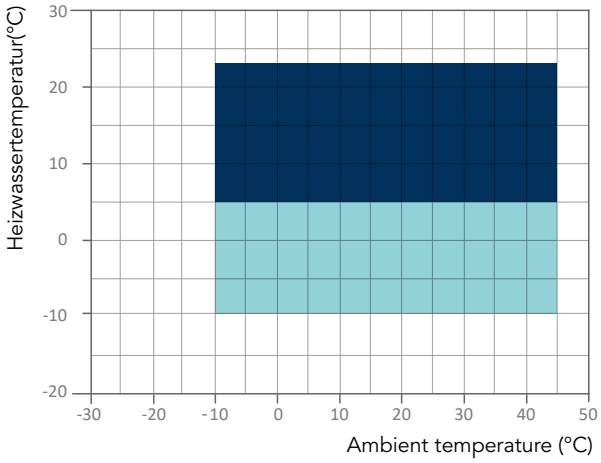
VERSION

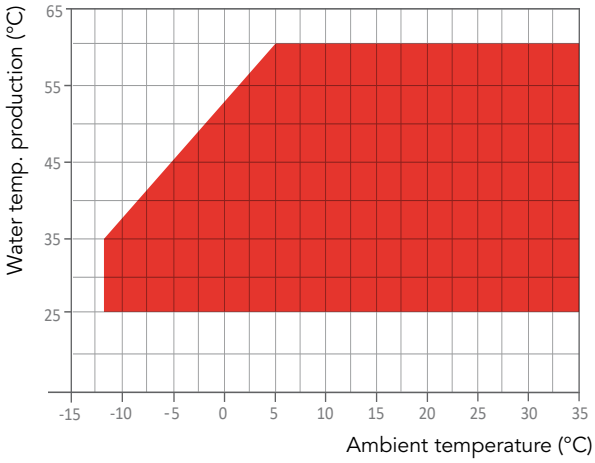
Ultrasilenced version (U)
The remarkably low sound level is reached on U versions without sacrificing performance or working limits.
This is done by:
• Adopting refrigerant/air exchangers with wider surfaces than those of the units in standard version.
• Soundproof compressor casing with higher thickness of the soundproof material;
• Fan speed control through variable fixed drive.

HE Version
High efficiency version, according to current standard. Unit equipped with EC fans.

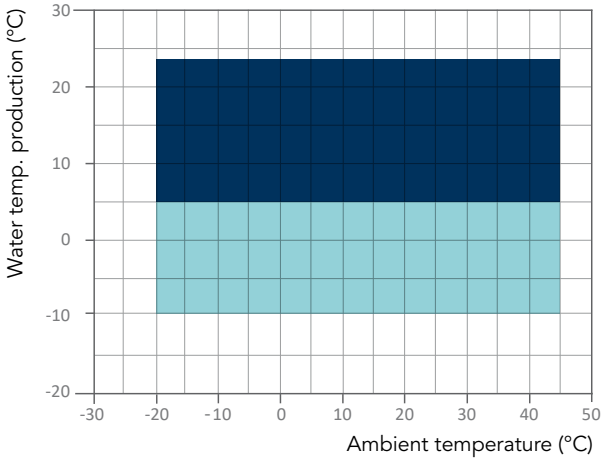
OPERATION LIMITS

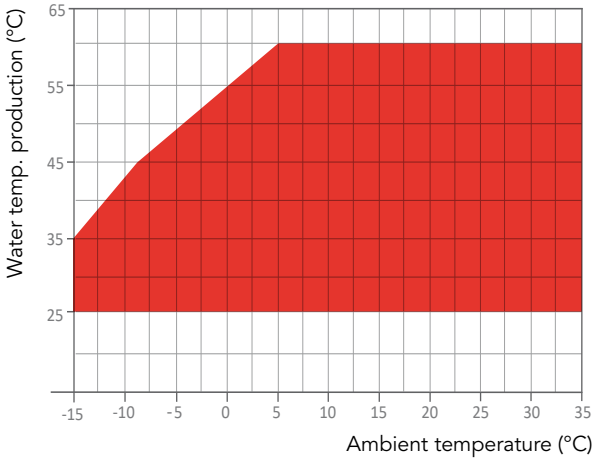
Standard version





HE version





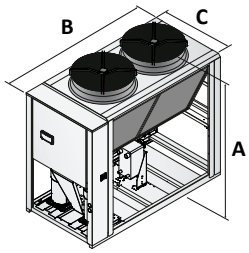
Cooling mode
Glycol set-up
Heating mode

ACCESSORIES

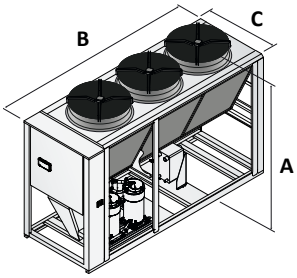
GPE N Kc/Kr		601÷1201	1401÷1801	1802-2002	2101	2302÷2802	3602÷6002	7004÷11004
Amperometer	A	o	o	o	o	o	o	o
Electrical power supply different than standard	AE	o	o	o	o	o	o	o
Coil with Electrofin treatment	BEF	o	o	o	o	o	o	o
Operation in cooling mode down to -20°C	BF (1)	o	o	o	o	o	o	o
Operation in cooling mode down to -10°C	BT (1)	●	●	●	●	●	●	●
Soundproofed compressors cabinet with standard material	CF	●	●	●	●	●	●	●
Soundproofed compressors cabinet with higher thickness material	CFU (2)	o	o	o	o	o	o	o
Soundproofing jacket on compressors	CI	o	o	o	o	o	o	o
Compressors inrush counter	CS	o	o	o	o	o	o	o
Refrigerant leakage detector	DR (3)	●	●	●	●	●	●	●
Axial fans with electronic commutated motor	EC (4)	o	o	o	o	o	o	o
Condensing coil protection grid	GP	o	o	o	o	o	o	o
Anti-intrusion grid	GP2	o	o	o	o	o	o	o
Anti-intrusion grid	GP3	o	o	o	o	o	o	o
Web application	HiPro.web	o	o	o	o	o	o	o
Visograph interface accessory	HMI.Pro	o	o	o	o	o	o	o
Victaulic insulation on pump side	I1	o	o	o	o	o	o	o
Victaulic insulation buffer tank side	I2	o	o	o	o	o	o	o
RS 485 Serial interface	IH	o	o	o	o	o	o	o
BAC-NET Serial interface	IH BAC	o	o	o	o	o	o	o
Seawood packing	IM	o	o	o	o	o	o	o
TCP/IP Protocol serial interface	IWG	o	o	o	o	o	o	o
Phase monitor	MF	o	o	o	o	o	o	o
Group 1 Pump Heating Circuit Variable water flow	P12CVS	o	o	o	o	o	o	o
Group 1 Pump Cooling Circuit Variable water flow	P12FVS	o	o	o	o	o	o	o
Group 1 Pump Heating Circuit low pressure	P1C	o	o	o	o	o	o	o
Group 1 Pump Cooling Circuit low pressure	P1F	o	o	o	o	o	o	o
Group 1 Pump Heating Circuit high pressure	P1HC	o	o	o	o	o	o	o
Group 1 Pump Cooling Circuit high pressure	P1HF	o	o	o	o	o	o	o
Group 2 Pumps Heating Circuit Variable water flow	P22CVS(5)	o	o	o	o	o	o	o
Group 2 Pumps Cooling Circuit Variable water flow	P22FVS (5)	o	o	o	o	o	o	o
Group 2 Pumps Heating Circuit low pressure	P2C	o	o	o	o	o	o	o
Group 2 Pumps Cooling Circuit low pressure	P2F	o	o	o	o	o	o	o
Group 2 Pumps Heating Circuit high pressure	P2HC	o	o	o	o	o	o	o
Group 2 Pumps Cooling Circuit high pressure	P2HF	o	o	o	o	o	o	o
Rubber-type vibration dampers	PA	o	o	o	o	o	o	o
Spring-type vibration dampers	PM	o	o	o	o	o	o	o
Remote display	PQ	o	o	o	o	o	o	o
Heating circuit In-line twin pump	PTC	--	o	o	o	o	o	o
Cooling circuit In-line twin pump	PTF	--	o	o	o	o	o	o
Anti-freeze heater on evaporator	RA	o	o	o	o	o	o	o
Shut-off valve on compressors discharge side	RD	o	o	o	o	o	o	o
Power factor correction system cosfi ≥0,9	RF	o	o	o	o	o	o	o
Shut-off valve on compressors suction side	RH	o	o	o	o	o	o	o
Compressor overload relays	RL	o	o	o	o	o	o	o
Condensing coil with pre-painted fins	RM	o	o	o	o	o	o	o
Copper/Copper coil	RR	o	o	o	o	o	o	o
Electronic thermostatic valve	TE	●	●	●	●	●	●	●
Voltmeter	V	o	o	o	o	o	o	o
Brine Version	VB	o	o	o	o	o	o	o

● Standard O Optional – Not available

(1) Not available for HE versions
(2) Standard for U versions
(3) Available only with R454B (Kr)
(4) Standard for HE versions
(5) 4 poles for U versions (P24)



F1



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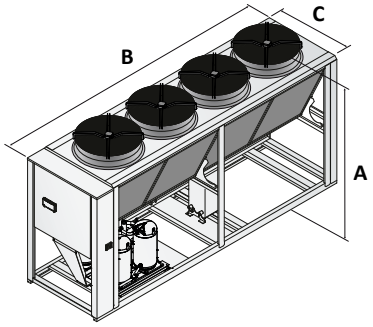

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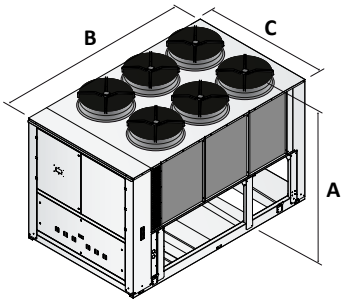

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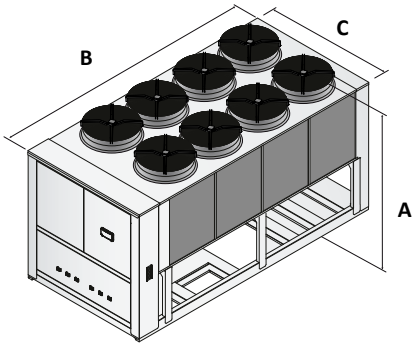

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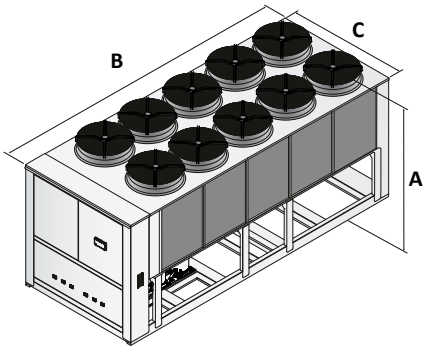

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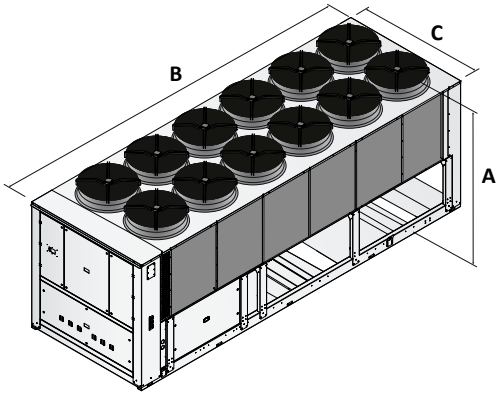

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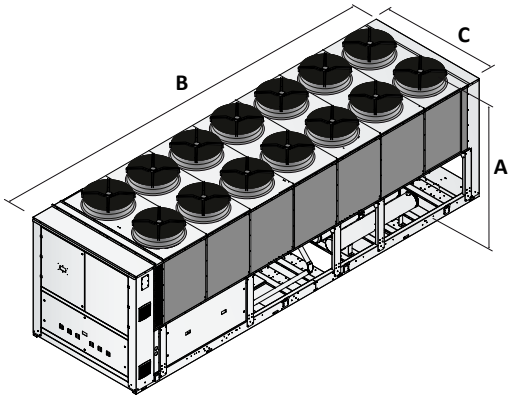

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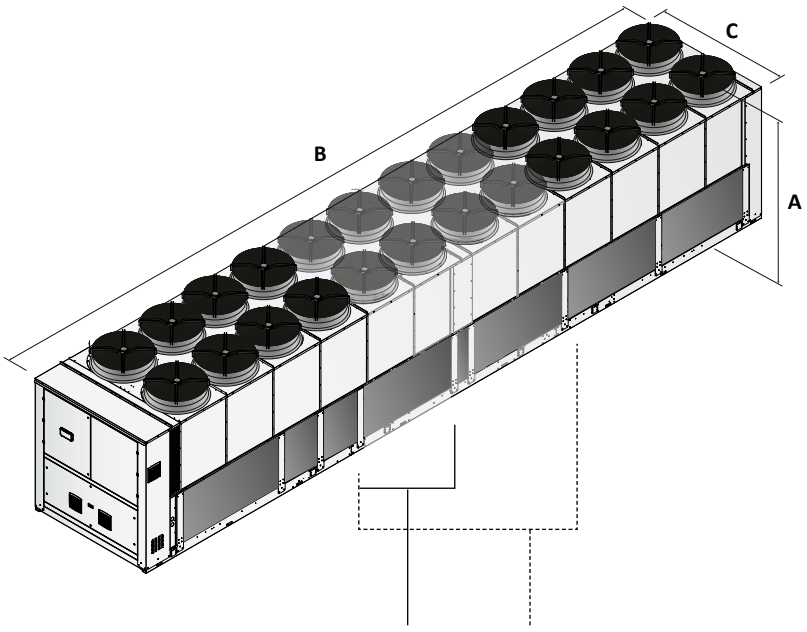

F9 F10 F11

FRAME	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11
A (mm)	2420	2420	2420	2560	2560	2560	2560	2560	2560	2560	2560
B (mm)	2660	3700	4740	3775	4750	5725	6700	7250	9800	10680	12780
C (mm)	1370	1370	1370	2300	2300	2300	2300	2300	2300	2300	2300