

High efficiency air cooled chiller with evaporative free-cooling
300-1682 kW



Version

K	Key efficiency, compact version
CA	High energy efficiency units

Configurations

-	Basic function
NG	Function for free-cooling without use of glycole

Features

EXTENSION OF FREE-COOLING TEMPERATURE RANGE

Thanks to the evaporative cooling system that decreases the outdoor air temperature, the unit can take full advantage of the free-cooling benefit also in climatic conditions that normally don't permit it.

ENERGY SAVING

Energy saving guaranteed by free-cooling, which exploits the low external air temperatures; free-cooling control with optional modulating valve.

VERY HIGH EFFICIENCY

Top-level seasonal efficiency thanks to technological solutions at the forefront: magnetic levitation centrifugal compressors, flooded evaporator, EC fans and advanced control algorithms.

WIDE RANGE

Extended capacity range.

LOW INRUSH CURRENTS

Reduced breakaway starting currents thanks to the revolutionary centrifugal compressor.

EXTREMELY SILENT OPERATION

Extremely silent operation in line with the best on the market, and highly reduced vibrations

INTEGRATED HYDRONIC GROUP

It consists of 2 pumps with 4-pole motor, fixed or variable speed, with high or low head options to satisfy different industrial or IT-cooling applications and demands for comfort.

Accessory

- Modulating valve for water temperature control in Free-Cooling mode
- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Fast restart
- Double power supply with automatic changeover (ATS) or motorized changeover
- Compressor power factor correction
- Set-up for remote connectivity with ModBus/Echelon protocol cards
- Touch Screen visual display
- Remote control keyboard (distance to 200m and to 500m)

Outdoor unit for the production of chilled water, equipped with oil-free centrifugal compressors, R134a refrigerant, axial EC fans, condensing coil with copper tubes and aluminum fins, shell and tube flooded evaporator and electronic expansion valve. Base, supporting structure and panels are of galvanized epoxy powder coated steel. The unit is supplied with refrigerant and has been factory tested. On-site installation therefore just involves making connections to the mains power and water supplies.

The rotor speed digital control allows an accurate and efficient thermoregulation in every operating condition. The economizer improves the refrigerant circuit efficiency (not present in sizes 0211 and 0452).

These chillers, fitted with free-cooling coils and evaporative cooling system, are used in IT-cooling, industrial and civil applications, when the cooling load is constant all-year-round.

In free cooling mode, the liquid is cooled by outdoor air, thus lowering the load of the compressors until it is reduced to zero. The evaporative cooling system is made of treated cellulose pads and a water circulator that keeps the pads wet. It lowers the air temperature before it reaches unit's coils, thus increasing mechanical cooling efficiency and allowing free-cooling benefits to begin at higher outdoor temperatures.

The NG configuration complies with applications where it is not allowed or desired the use of ethylene glycol.

Controls

Electronic control W3000 TE

The brand new W3000TE controller offers advanced functions and algorithms. The large format keyboard and the wide LCD display favour an easy and safe access to the machine setup and a complete view of unit's status. The assessment and intervention on the unit is managed through a multi-level menu, with selectable user's language. The led icons immediately show the operating status of the circuits, as well as of the fans and of the water pumps (if present). An optional extra is the touch screen interface: 7.0" WVGA colour display with adjustable LED backlight and front USB port. The touch screen technology allows intuitive navigation between the various screens, safe access to the data with a three-level password protection as well as the graphic display of the performance of some monitored measurements.

The diagnostics comprises a complete alarm management system, with "black box" (via PC) and alarm log functions (via display or also PC) for a better analysis of the unit performance.

For the systems made of several units, the adjustment of the resources is performed by optional proprietary devices.

Consumption metering and performance measurement are possible as well. Supervision can be easily developed via proprietary devices or the integration in third party systems by means of the most common protocols as ModBus, Bacnet-over-IP, Echelon LonWorks, Bacnet MS/TP protocols.

Compatibility with the remote keyboard managing up to 8 units.

The presence of the programmable timer allows the creation of an operating profile containing up to 4 typical days and 10 time bands.

The control is characterized by the continuous modulation of the unit capacity, based on PID algorithms and referring to the water delivery temperature.

Optionally (VPF package), capacity modulation can be integrated with hydraulic flow modulation, thanks to inverter-driven pumps and to specific resources for the hydraulic circuit.



TECS-EFC /K		0211	0351	0452	0552	0652	0712
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE							
COOLING ONLY (GROSS VALUE)							
Cooling capacity	(1) kW	300	479	590	685	935	974
EER	(1) kW/kW	4,06	4,23	3,98	4,33	4,25	4,29
EER (evaporative system OFF)	(1) kW/kW	3,43	3,37	3,29	3,77	3,25	3,51
COOLING ONLY (EN14511 VALUE)							
Cooling capacity	(1)(2) kW	298	476	586	680	928	967
EER	(1)(2) kW/kW	3,91	4,07	3,85	4,16	4,09	4,12
EER (evaporative system OFF)	(1)(2) kW/kW	3,32	3,26	3,20	3,64	3,16	3,39
FREE-COOLING TOTALE (GROSS VALUE)							
Cooling capacity	(3) kW	300	479	590	685	935	974
EER	(3) kW/kW	58,86	49,91	49,13	67,14	55,65	50,74
Total free-cooling temperature	(3) °C	-2,3	-2,8	-2,3	-1,8	-3,1	-1,9
COOLING ONLY - maximum cooling capacity (GROSS VALUE)							
Cooling capacity	(1) kW	318	507	631	718	1004	1016
EER	(1) kW/kW	3,82	3,96	3,69	4,16	3,86	4,10
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)							
Cooling capacity	(1)(2) kW	315	503	626	712	996	1008
EER	(1)(2) kW/kW	3,68	3,80	3,56	3,99	3,71	3,94
ENERGY EFFICIENCY							
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)							
Ambient refrigeration							
Prated,c	(8) kW	258	409	501	601	788	841
SEER	(8)(9)	4,63	4,45	4,49	5,04	4,58	4,61
Performance ηs	(8)(10) %	182	175	177	199	180	182
EXCHANGERS							
HEAT EXCHANGER USER SIDE IN REFRIGERATION							
Water flow	(1) l/s	15,91	25,38	31,23	36,28	49,54	51,62
Pressure drop	(1) kPa	85,1	97,4	88,1	103	102	106
REFRIGERANT CIRCUIT							
Compressors nr.	N°	1	1	2	2	2	2
No. Circuits	N°	1	1	1	1	1	1
Refrigerant charge	kg	120	140	260	260	320	320
NOISE LEVEL							
Sound Pressure	(4) dB(A)	56	61	62	58	63	63
Sound power level in cooling	(5)(6) dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT							
A	(7) mm	4000	4000	4900	6400	7000	7900
B	(7) mm	3060	3060	3060	3060	3060	3060
H	(7) mm	2500	2500	2500	2500	2500	2500
Operating weight	(7) kg	3760	4180	5490	6360	6940	7580

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 30%.
 - 4 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 - 5 Sound power on the basis of measurements made in compliance with ISO 9614.
 - 6 Sound power level in cooling, outdoors.
 - 7 Unit in standard configuration/execution, without optional accessories.
 - 8 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
 - 9 Seasonal space heating energy index
 - 10 Seasonal energy efficiency of the space cooling
- The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

TECS-EFC /K		0903	0953	1003	1164	1204
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1) kW	1179	1243	1409	1567	1638
EER	(1) kW/kW	4,26	4,18	4,24	4,17	4,24
EER (evaporative system OFF)	(1) kW/kW	3,66	3,31	3,29	3,42	3,53
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2) kW	1171	1236	1399	1556	1626
EER	(1)(2) kW/kW	4,12	4,06	4,09	4,02	4,08
EER (evaporative system OFF)	(1)(2) kW/kW	3,56	3,23	3,20	3,32	3,42
FREE-COOLING TOTALE (GROSS VALUE)						
Cooling capacity	(3) kW	1179	1243	1409	1567	1638
EER	(3) kW/kW	49,13	51,79	53,37	50,22	52,50
Total free-cooling temperature	(3) °C	-1,7	-3,0	-2,9	-2,1	-2,2
COOLING ONLY - maximum cooling capacity (GROSS VALUE)						
Cooling capacity	(1) kW	1225	1328	1505	1653	1721
EER	(1) kW/kW	4,12	3,85	3,89	3,93	4,03
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)						
Cooling capacity	(1)(2) kW	1217	1320	1493	1640	1707
EER	(1)(2) kW/kW	3,98	3,73	3,75	3,79	3,87
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)						
Ambient refrigeration						
Prated,c	(8) kW	1034	1054	1195	1344	1418
SEER	(8)(9)	4,46	4,30	4,39	4,23	4,26
Performance ηs	(8)(10) %	175	169	173	166	167
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1) l/s	62,46	65,84	74,63	83,03	86,79
Pressure drop	(1) kPa	91,1	79,1	102	105	114
REFRIGERANT CIRCUIT						
Compressors nr.	N°	3	3	3	4	4
No. Circuits	N°	2	2	2	2	2
Refrigerant charge	kg	430	520	520	540	540
NOISE LEVEL						
Sound Pressure	(4) dB(A)	64	64	65	65	65
Sound power level in cooling	(5)(6) dB(A)	97	97	98	98	98
SIZE AND WEIGHT						
A	(7) mm	10600	11200	11200	13000	13600
B	(7) mm	3060	3060	3060	3060	3060
H	(7) mm	2500	2500	2500	2500	2500
Operating weight	(7) kg	10670	11240	11510	13430	13540

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TECS-EFC /CA		0211	0251	0351	0452	0552	0712	0803	0903	1003	
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	308	353	494	612	712	985	1065	1205	1436
EER	(1)	kW/kW	4,16	4,35	4,38	4,14	4,43	4,37	4,42	4,41	4,32
EER (evaporative system OFF)	(1)	kW/kW	3,59	3,90	3,64	3,52	3,99	3,64	3,97	3,88	3,45
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	306	350	490	608	706	978	1059	1197	1426
EER	(1)(2)	kW/kW	4,00	4,17	4,19	4,00	4,24	4,20	4,29	4,25	4,16
EER (evaporative system OFF)	(1)(2)	kW/kW	3,47	3,76	3,51	3,41	3,84	3,51	3,86	3,76	3,35
FREE-COOLING TOTALE (GROSS VALUE)											
Cooling capacity	(3)	kW	308	353	494	612	712	985	1065	1205	1436
EER	(3)	kW/kW	60,39	51,85	58,06	60,01	52,36	57,95	52,21	54,52	64,98
Total free-cooling temperature	(3)	°C	-0,6	-0,6	-1,4	-0,9	-0,1	-1,3	-0,2	-0,5	-2,0
COOLING ONLY - maximum cooling capacity (GROSS VALUE)											
Cooling capacity	(1)	kW	321	360	510	643	721	1018	1081	1226	1513
EER	(1)	kW/kW	3,99	4,28	4,23	3,94	4,39	4,23	4,37	4,34	4,06
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	318	357	505	638	715	1010	1075	1218	1501
EER	(1)(2)	kW/kW	3,84	4,10	4,05	3,79	4,20	4,06	4,24	4,19	3,90
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Ambient refrigeration											
Prated,c	(8)	kW	268	317	430	529	646	858	965	1077	1229
SEER	(8)(9)		4,76	4,72	4,86	4,99	5,01	4,95	5,00	4,84	4,76
Performance ηs	(8)(10)	%	187	186	191	196	197	195	197	191	187
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	16,32	18,68	26,14	32,43	37,72	52,18	56,41	63,86	76,09
Pressure drop	(1)	kPa	89,6	95,8	103	95,0	111	108	74,2	95,2	106
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(4)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(5)(6)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(7)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(7)	mm	3060	3060	3060	3060	3060	3060	3060	3060	3060
H	(7)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(7)	kg	3990	4120	4790	6260	7450	9740	11590	12510	12870

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 30%.
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TECS-EFC /NG /K			0211	0351	0452	0552	0652	0712
Power supply		V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE								
COOLING ONLY (GROSS VALUE)								
Cooling capacity	(1)	kW	308	492	605	703	960	1001
EER	(1)	kW/kW	4,15	4,32	4,07	4,43	4,34	4,38
EER (evaporative system OFF)	(1)	kW/kW	3,51	3,45	3,36	3,86	3,32	3,59
COOLING ONLY (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	306	488	601	697	952	993
EER	(1)(2)	kW/kW	4,00	4,13	3,92	4,22	4,15	4,20
EER (evaporative system OFF)	(1)(2)	kW/kW	3,39	3,32	3,26	3,70	3,21	3,46
FREE-COOLING TOTALE (GROSS VALUE)								
Cooling capacity	(3)	kW	308	492	605	703	960	1001
EER	(3)	kW/kW	38,06	32,58	31,05	39,73	30,19	29,27
Total free-cooling temperature	(3)	°C	-5,3	-5,9	-5,4	-4,9	-6,2	-4,9
COOLING ONLY - maximum cooling capacity (GROSS VALUE)								
Cooling capacity	(1)	kW	326	521	648	737	1031	1044
EER	(1)	kW/kW	3,90	4,04	3,76	4,25	3,94	4,19
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)								
Cooling capacity	(1)(2)	kW	324	516	643	730	1021	1035
EER	(1)(2)	kW/kW	3,75	3,85	3,62	4,05	3,76	4,01
ENERGY EFFICIENCY								
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)								
Ambient refrigeration								
Prated,c	(8)	kW	257	408	500	600	786	839
SEER	(8)(9)		4,48	4,27	4,33	4,76	4,38	4,42
Performance ηs	(8)(10)	%	176	168	170	187	172	174
EXCHANGERS								
HEAT EXCHANGER USER SIDE IN REFRIGERATION								
Water flow	(1)	l/s	14,75	23,54	28,97	33,66	45,95	47,89
Pressure drop	(1)	kPa	97,1	126	111	136	133	129
REFRIGERANT CIRCUIT								
Compressors nr.		N°	1	1	2	2	2	2
No. Circuits		N°	1	1	1	1	1	1
Refrigerant charge		kg	120	140	260	260	320	320
NOISE LEVEL								
Sound Pressure	(4)	dB(A)	56	61	62	58	63	63
Sound power level in cooling	(5)(6)	dB(A)	88	93	94	91	96	96
SIZE AND WEIGHT								
A	(7)	mm	4000	4000	4900	6400	7000	7900
B	(7)	mm	3060	3060	3060	3060	3060	3060
H	(7)	mm	2500	2500	2500	2500	2500	2500
Operating weight	(7)	kg	4450	4950	6510	7530	8210	8960

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
 - 4 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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TECS-EFC /NG /K		0903	0953	1003	1164	1204
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50
PERFORMANCE						
COOLING ONLY (GROSS VALUE)						
Cooling capacity	(1) kW	1210	1276	1448	1610	1682
EER	(1) kW/kW	4,36	4,27	4,32	4,26	4,34
EER (evaporative system OFF)	(1) kW/kW	3,74	3,38	3,37	3,50	3,61
COOLING ONLY (EN14511 VALUE)						
Cooling capacity	(1)(2) kW	1202	1267	1436	1596	1666
EER	(1)(2) kW/kW	4,20	4,12	4,14	4,07	4,12
EER (evaporative system OFF)	(1)(2) kW/kW	3,62	3,28	3,25	3,36	3,46
FREE-COOLING TOTALE (GROSS VALUE)						
Cooling capacity	(3) kW	1210	1276	1448	1610	1682
EER	(3) kW/kW	31,03	30,02	29,92	26,31	27,48
Total free-cooling temperature	(3) °C	-4,7	-6,1	-6,0	-5,1	-5,3
COOLING ONLY - maximum cooling capacity (GROSS VALUE)						
Cooling capacity	(1) kW	1258	1364	1545	1698	1768
EER	(1) kW/kW	4,21	3,93	3,98	4,02	4,12
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)						
Cooling capacity	(1)(2) kW	1249	1354	1531	1682	1750
EER	(1)(2) kW/kW	4,05	3,79	3,80	3,83	3,91
ENERGY EFFICIENCY						
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)						
Ambient refrigeration						
Prated,c	(8) kW	1032	1052	1192	1340	1414
SEER	(8)(9)	4,30	4,14	4,19	4,10	4,10
Performance ηs	(8)(10) %	169	163	165	161	161
EXCHANGERS						
HEAT EXCHANGER USER SIDE IN REFRIGERATION						
Water flow	(1) l/s	57,90	61,07	69,29	77,05	80,49
Pressure drop	(1) kPa	112	108	138	153	168
REFRIGERANT CIRCUIT						
Compressors nr.	N°	3	3	3	4	4
No. Circuits	N°	2	2	2	2	2
Refrigerant charge	kg	430	520	520	540	540
NOISE LEVEL						
Sound Pressure	(4) dB(A)	64	64	65	65	65
Sound power level in cooling	(5)(6) dB(A)	97	97	98	98	98
SIZE AND WEIGHT						
A	(7) mm	10600	11200	11200	13000	13600
B	(7) mm	3060	3060	3060	3060	3060
H	(7) mm	2500	2500	2500	2500	2500
Operating weight	(7) kg	12620	13300	13620	15890	16010

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
 - 4 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
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TECS-EFC /NG /CA		0211	0251	0351	0452	0552	0712	0803	0903	1003	
Power supply	V/ph/Hz	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	400/3/50	
PERFORMANCE											
COOLING ONLY (GROSS VALUE)											
Cooling capacity	(1)	kW	316	362	507	629	731	1012	1094	1237	1474
EER	(1)	kW/kW	4,25	4,44	4,47	4,24	4,53	4,47	4,51	4,51	4,42
EER (evaporative system OFF)	(1)	kW/kW	3,67	3,99	3,72	3,59	4,08	3,72	4,06	3,96	3,53
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	314	359	502	624	724	1004	1088	1228	1461
EER	(1)(2)	kW/kW	4,09	4,24	4,26	4,06	4,30	4,27	4,37	4,33	4,22
EER (evaporative system OFF)	(1)(2)	kW/kW	3,54	3,83	3,57	3,47	3,89	3,58	3,94	3,82	3,39
FREE-COOLING TOTALE (GROSS VALUE)											
Cooling capacity	(3)	kW	316	362	507	629	731	1012	1094	1237	1474
EER	(3)	kW/kW	39,05	29,44	36,20	40,04	29,73	31,63	30,90	30,47	33,42
Total free-cooling temperature	(3)	°C	-3,7	-3,7	-4,5	-4,1	-3,2	-4,4	-3,3	-3,6	-5,1
COOLING ONLY - maximum cooling capacity (GROSS VALUE)											
Cooling capacity	(1)	kW	329	370	523	660	740	1045	1110	1260	1554
EER	(1)	kW/kW	4,08	4,37	4,33	4,02	4,49	4,32	4,46	4,44	4,15
COOLING ONLY - maximum cooling capacity (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	327	367	519	654	733	1036	1103	1251	1540
EER	(1)(2)	kW/kW	3,91	4,17	4,12	3,86	4,26	4,13	4,32	4,27	3,95
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Ambient refrigeration											
Prated,c	(8)	kW	268	316	428	528	644	856	963	1075	1225
SEER	(8)(9)		4,60	4,50	4,63	4,76	4,71	4,73	4,82	4,64	4,51
Performance ηs	(8)(10)	%	181	177	182	188	185	186	190	183	177
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	15,14	17,33	24,25	30,08	35,00	48,43	52,34	59,18	70,55
Pressure drop	(1)	kPa	102	119	130	119	147	132	91,8	116	144
REFRIGERANT CIRCUIT											
Compressors nr.		N°	1	1	1	2	2	2	3	3	3
No. Circuits		N°	1	1	1	1	1	1	2	2	2
Refrigerant charge		kg	120	120	140	260	280	320	430	430	520
NOISE LEVEL											
Sound Pressure	(4)	dB(A)	56	57	58	58	59	60	61	61	61
Sound power level in cooling	(5)(6)	dB(A)	88	89	90	91	92	93	94	94	94
SIZE AND WEIGHT											
A	(7)	mm	4000	4000	4900	6400	7900	10000	12100	13000	13000
B	(7)	mm	3060	3060	3060	3060	3060	3060	3060	3060	3060
H	(7)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(7)	kg	4730	4880	5670	7410	8810	11520	13700	14790	15220

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Source (side) heat exchanger air (in) 30°C - 50% R.H.; Ethylene glycol 0%.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) cooling exchanger water (in/out) 15°C/10°C; Ethylene glycol 0%.
 - 4 Average sound pressure level at 10m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 - 5 Sound power on the basis of measurements made in compliance with ISO 9614.
 - 6 Sound power level in cooling, outdoors.
 - 7 Unit in standard configuration/execution, without optional accessories.
 - 8 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
 - 9 Seasonal space heating energy index
 - 10 Seasonal energy efficiency of the space cooling
- The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

