

Reversible unit, air source for outdoor installation
441-1162 kW

**Version**

B	Basic
CA	Class A of efficiency
LN-CA	Low Noise, Class A of efficiency
SL-CA	Super Low noise version, Class A of efficiency

Configurations

-	Basic function
D	Partial condensing heat recovery function

Features**HIGH EFFICIENCY**

Unit in Class A as per Eurovent (in heating). High efficiency for low energy consumption during the operating hours.

COMPACTNESS

Reduced dimensions, for easy installation even in sites with space constraints

WIDE OPERATING RANGE

Unit's operation guaranteed with external air temperature down to -10 °C during winter and up to 46 °C during summer.

HOT WATER SUPPLY

Supply of hot water in use up to 55°C, offering maximum versatility with respect to different plant engineering solutions

Accessory

- Hydronic group
- VPF (Variable Primary Flow) kit: variable flow pumps with on board regulation
- Electronic expansion valve
- Set-up for remote connectivity with ModBus/Echelon protocol cards

Outdoor heat pump unit for the production of chilled/hot water with semi-hermetic screw compressors optimized for R134a, axial-flow fans, external coil with copper tubes and aluminium fines, shell and tubes heat exchanger designed by Climaveneta and electronic expansion valve.

Base and supporting structure and panels are galvanized epoxy powder coated steel with increased thickness.

These units are designed for two-pipes systems and are able to produce hot or cold water according to the selected operation mode; the precise thermoregulation guarantees an optimal response to load's changes, in every operating conditions.

Controls**W3000SE Large**

The W3000SE Large controller offers advanced functions and algorithms.

The keypad features an easy-to-use interface and a complete LCD display, allowing to consult and intervene on the unit by means of a multi-level menu, with selectable language setting.

The regulation features the continuous modulation of capacity, based on a dynamic dead band and referring to the leaving water temperature. As alternative, step-wise regulation is also available, referred to the return water temperature with selectable proportional- or proportional-integral logic.

The diagnostics includes a complete alarm management, with the "black-box" and alarm logging functions for enhanced analysis of the unit operation.

For multiple units' systems, the regulation of the resources, via optional proprietary devices, can be implemented. Energy metering, for both consumption and capacity, can also be developed. 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, Bacnet-over-IP, Echelon LonWorks. Compatibility with the remote keyboard managing up to 10 units.

Availability of an internal real time clock for operation scheduling (4-day profiles with 10 hour belts).

The defrost adopts a proprietary self-adaptive logic, which features the monitoring of numerous operational parameters. This allows to reduce the number and duration of the defrost cycles, with a benefit for the overall energy efficiency.





FOCS-N / B		2022	2222	2422	2722	3222	3622	4222	4822
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
PERFORMANCE									
COOLING ONLY (GROSS VALUE)									
Cooling capacity	(1) kW	450	494	531	663	791	916	1029	1146
Total power input	(1) kW	163	177	187	225	267	293	337	382
EER	(1) kW/kW	2,76	2,79	2,85	2,95	2,96	3,13	3,06	3,00
ESEER	(1) kW/kW	3,71	3,75	3,81	4,06	3,94	3,98	4,06	4,01
COOLING ONLY (EN14511 VALUE)									
Cooling capacity	(1)(2) kW	448	493	529	661	789	914	1026	1143
EER	(1)(2) kW/kW	2,73	2,76	2,81	2,92	2,93	3,10	3,02	2,97
ESEER	(1)(2) kW/kW	3,61	3,64	3,69	4,50	4,42	4,40	4,53	4,46
Cooling energy class		C	C	C	B	B	B	B	B
HEATING ONLY (GROSS VALUE)									
Total heating capacity	(3) kW	479	524	566	699	824	946	1073	1195
Total power input	(3) kW	152	166	178	211	247	277	316	356
COP	(3) kW/kW	3,14	3,15	3,18	3,32	3,33	3,41	3,40	3,36
HEATING ONLY (EN14511 VALUE)									
Total heating capacity	(3)(2) kW	480	525	568	701	826	948	1077	1199
COP	(3)(2) kW/kW	3,12	3,13	3,16	3,30	3,31	3,39	3,37	3,34
Cooling energy class		B	B	B	A	A	A	A	A
ENERGY EFFICIENCY									
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)									
Ambient refrigeration									
Prated,c	(10) kW	-	-	-	661	789	914	1026	1143
SEER	(10)(11)	-	-	-	4,18	4,10	4,14	4,24	4,18
Performance ηs	(10)(12) %	-	-	-	164	161	162	166	164
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)									
PDesign	(4) kW	336	362	399	-	-	-	-	-
SCOP	(4)(13)	3,20	3,20	3,20	-	-	-	-	-
Performance ηs	(4)(14) %	125	125	125	-	-	-	-	-
Seasonal efficiency class	(4)	-	-	-	-	-	-	-	-
EXCHANGERS									
HEAT EXCHANGER USER SIDE IN REFRIGERATION									
Water flow	(1) l/s	21,50	23,62	25,39	31,69	37,82	43,81	49,20	54,80
Pressure drop	(1) kPa	30,0	33,3	38,4	32,5	36,7	33,3	42,3	37,0
HEAT EXCHANGER USER SIDE IN HEATING									
Water flow	(3) l/s	23,10	25,28	27,35	33,72	39,77	45,66	51,78	57,69
Pressure drop	(3) kPa	34,6	38,1	44,6	36,8	40,6	36,2	46,9	41,0
REFRIGERANT CIRCUIT									
Compressors nr.	N°	2	2	2	2	2	2	2	2
No. Circuits	N°	2	2	2	2	2	2	2	2
Refrigerant charge	kg	159	176	185	233	256	294	355	355
NOISE LEVEL									
Sound Pressure	(5) dB(A)	79	80	80	80	81	80	82	81
Sound power level in cooling	(6)(7) dB(A)	99	101	101	101	102	102	104	104
Sound power level in heating	(6)(8) dB(A)	99	101	101	0	0	0	0	0
SIZE AND WEIGHT									
Operating weight	(9) kg	5900	6330	6420	7290	9390	10400	10700	11310
A	(9) mm	4900	5800	5800	7000	7900	10000	10000	11800
B	(9) mm	2260	2260	2260	2260	2260	2260	2260	2260
H	(9) mm	2430	2430	2430	2430	2430	2430	2430	2430

Notes:

- Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
- Values in compliance with EN14511-3:2013.
- Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
- Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
- Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Sound power level in cooling, outdoors.
- Sound power level in heating, outdoors.
- Unit in standard configuration/execution, without optional accessories.
- Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
- Seasonal space heating energy index
- Seasonal energy efficiency of the space cooling
- Seasonal performance coefficient
- Seasonal space heating energy efficiency

The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

FOCS-N / CA			2022	2222	2422	2622	2722	3222	3622	4222	4822
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	460	503	538	586	672	803	929	1041	1162
Total power input	(1)	kW	158	170	181	202	218	259	285	336	370
EER	(1)	kW/kW	2,91	2,96	2,97	2,91	3,08	3,10	3,26	3,10	3,14
ESEER	(1)	kW/kW	3,88	3,89	3,91	3,96	4,37	4,22	4,24	4,25	4,28
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	458	501	536	585	670	801	926	1038	1159
EER	(1)(2)	kW/kW	2,88	2,93	2,93	2,88	3,05	3,06	3,22	3,06	3,10
ESEER	(1)(2)	kW/kW	3,77	3,79	3,79	3,86	4,23	4,08	4,12	4,10	4,15
Cooling energy class			C	B	B	C	B	B	A	B	A
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(3)	kW	470	520	553	590	683	804	923	1051	1166
Total power input	(3)	kW	143	156	167	177	197	232	258	300	333
COP	(3)	kW/kW	3,28	3,33	3,31	3,33	3,46	3,47	3,57	3,50	3,50
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(3)(2)	kW	472	522	555	591	684	807	925	1054	1169
COP	(3)(2)	kW/kW	3,26	3,31	3,28	3,31	3,44	3,44	3,55	3,47	3,48
Cooling energy class			A	A	A	A	A	A	A	A	A
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Ambient refrigeration											
Prated,c	(10)	kW	-	-	-	-	670	801	926	1038	1159
SEER	(10)(11)		-	-	-	-	4,32	4,23	4,29	4,29	4,34
Performance ηs	(10)(12)	%	-	-	-	-	170	166	168	168	171
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesignn	(4)	kW	339	368	400	390	-	-	-	-	-
SCOP	(4)(13)		3,44	3,46	3,50	3,61	-	-	-	-	-
Performance ηs	(4)(14)	%	134	135	137	141	-	-	-	-	-
Seasonal efficiency class	(4)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	21,98	24,05	25,72	28,02	32,11	38,39	44,42	49,77	55,59
Pressure drop	(1)	kPa	31,3	34,5	39,4	26,5	33,4	37,8	34,3	43,3	38,0
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(3)	l/s	22,70	25,11	26,70	28,47	32,95	38,83	44,55	50,74	56,29
Pressure drop	(3)	kPa	33,4	37,6	42,5	27,3	35,2	38,7	34,5	45,0	39,0
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	171	191	198	209	249	282	321	321	387
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	79	80	80	80	80	81	80	81	81
Sound power level in cooling	(6)(7)	dB(A)	99	101	101	101	101	102	102	104	104
Sound power level in heating	(6)(8)	dB(A)	99	101	101	0	0	0	0	0	0
SIZE AND WEIGHT											
Operating weight	(9)	kg	6050	6630	6710	6950	7480	9620	10650	11260	11690
A	(9)	mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(9)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(9)	mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
 - 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
 - 5 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 - 6 Sound power on the basis of measurements made in compliance with ISO 9614.
 - 7 Sound power level in cooling, outdoors.
 - 8 Sound power level in heating, outdoors.
 - 9 Unit in standard configuration/execution, without optional accessories.
 - 10 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
 - 11 Seasonal space heating energy index
 - 12 Seasonal energy efficiency of the space cooling
 - 13 Seasonal performance coefficient
 - 14 Seasonal space heating energy efficiency
- The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

FOCS-N / LN-CA			2022	2222	2422	2622	2722	3222	3622	4222	4822
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	444	492	524	564	654	780	904	1013	1130
Total power input	(1)	kW	160	169	182	205	219	262	283	334	372
EER	(1)	kW/kW	2,78	2,91	2,87	2,75	2,99	2,98	3,19	3,03	3,04
ESEER	(1)	kW/kW	3,86	3,92	3,92	3,93	4,33	4,20	4,22	4,23	4,27
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	443	491	523	563	653	777	901	1010	1127
EER	(1)(2)	kW/kW	2,75	2,88	2,84	2,72	2,96	2,95	3,16	3,00	3,01
ESEER	(1)(2)	kW/kW	3,76	3,81	3,80	3,85	4,21	4,08	4,11	4,10	4,14
Cooling energy class			C	C	C	C	B	B	A	B	B
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(3)	kW	467	520	553	586	683	804	923	1051	1166
Total power input	(3)	kW	143	156	167	177	197	232	258	300	333
COP	(3)	kW/kW	3,26	3,33	3,31	3,30	3,46	3,47	3,57	3,50	3,50
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(3)(2)	kW	468	522	555	587	684	807	925	1054	1169
COP	(3)(2)	kW/kW	3,24	3,31	3,28	3,29	3,44	3,44	3,55	3,47	3,48
Cooling energy class			A	A	A	A	A	A	A	A	A
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Ambient refrigeration											
Prated,c	(10)	kW	-	-	-	-	653	777	901	1010	1127
SEER	(10)(11)		-	-	-	-	4,31	4,20	4,26	4,26	4,31
Performance ηs	(10)(12)	%	-	-	-	-	169	165	167	167	169
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesignn	(4)	kW	336	368	400	387	-	-	-	-	-
SCOP	(4)(13)		3,41	3,46	3,50	3,58	-	-	-	-	-
Performance ηs	(4)(14)	%	134	135	137	140	-	-	-	-	-
Seasonal efficiency class	(4)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	21,25	23,53	25,07	26,97	31,30	37,28	43,21	48,44	54,04
Pressure drop	(1)	kPa	29,3	33,0	37,5	24,5	31,7	35,7	32,4	41,1	36,0
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(3)	l/s	22,54	25,11	26,70	28,27	32,95	38,83	44,55	50,74	56,29
Pressure drop	(3)	kPa	32,9	37,6	42,5	26,9	35,2	38,7	34,5	45,0	39,0
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	171	191	198	209	249	282	321	321	387
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	73	74	74	74	74	75	74	75	75
Sound power level in cooling	(6)(7)	dB(A)	93	95	95	95	95	96	96	98	98
Sound power level in heating	(6)(8)	dB(A)	94	96	96	0	0	0	0	0	0
SIZE AND WEIGHT											
Operating weight	(9)	kg	6120	6610	6700	6930	7580	9730	10800	11400	11860
A	(9)	mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(9)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(9)	mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
 - 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
 - 5 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 - 6 Sound power on the basis of measurements made in compliance with ISO 9614.
 - 7 Sound power level in cooling, outdoors.
 - 8 Sound power level in heating, outdoors.
 - 9 Unit in standard configuration/execution, without optional accessories.
 - 10 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
 - 11 Seasonal space heating energy index
 - 12 Seasonal energy efficiency of the space cooling
 - 13 Seasonal performance coefficient
 - 14 Seasonal space heating energy efficiency
- The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

FOCS-N / SL-CA			2022	2222	2422	2622	2722	3222	3622	4222	4822
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	441	488	520	559	649	772	895	1004	1119
Total power input	(1)	kW	163	172	185	209	221	265	285	336	375
EER	(1)	kW/kW	2,71	2,84	2,81	2,68	2,93	2,92	3,14	2,99	2,98
ESEER	(1)	kW/kW	3,84	3,91	3,91	3,93	4,24	4,08	4,13	4,13	4,16
COOLING ONLY (EN14511 VALUE)											
Cooling capacity	(1)(2)	kW	440	487	518	557	647	769	893	1001	1116
EER	(1)(2)	kW/kW	2,69	2,81	2,78	2,66	2,90	2,89	3,11	2,95	2,95
ESEER	(1)(2)	kW/kW	3,74	3,81	3,79	3,84	4,72	4,59	4,59	4,62	4,65
Cooling energy class			D	C	C	D	B	C	A	B	B
HEATING ONLY (GROSS VALUE)											
Total heating capacity	(3)	kW	461	514	546	578	674	794	911	1039	1151
Total power input	(3)	kW	142	154	166	175	194	229	254	296	328
COP	(3)	kW/kW	3,25	3,33	3,30	3,30	3,47	3,47	3,58	3,51	3,51
HEATING ONLY (EN14511 VALUE)											
Total heating capacity	(3)(2)	kW	462	516	548	579	676	797	913	1042	1154
COP	(3)(2)	kW/kW	3,23	3,31	3,28	3,28	3,44	3,45	3,56	3,49	3,49
Cooling energy class			A	A	A	A	A	A	A	A	A
ENERGY EFFICIENCY											
SEASONAL EFFICIENCY IN COOLING (Reg. EU 2016/2281)											
Ambient refrigeration											
Prated,c	(10)	kW	-	-	-	-	647	769	893	1001	1116
SEER	(10)(11)		-	-	-	-	4,32	4,19	4,27	4,28	4,31
Performance ηs	(10)(12)	%	-	-	-	-	170	165	168	168	170
SEASONAL EFFICIENCY IN HEATING (Reg. EU 813/2013)											
PDesignn	(4)	kW	337	368	361	389	-	-	-	-	-
SCOP	(4)(13)		3,44	3,49	3,46	3,61	-	-	-	-	-
Performance ηs	(4)(14)	%	135	137	135	142	-	-	-	-	-
Seasonal efficiency class	(4)		-	-	-	-	-	-	-	-	-
EXCHANGERS											
HEAT EXCHANGER USER SIDE IN REFRIGERATION											
Water flow	(1)	l/s	21,08	23,33	24,85	26,71	31,02	36,90	42,80	48,01	53,53
Pressure drop	(1)	kPa	28,8	32,5	36,8	24,0	31,2	34,9	31,8	40,3	35,3
HEAT EXCHANGER USER SIDE IN HEATING											
Water flow	(3)	l/s	22,25	24,83	26,37	27,90	32,55	38,34	43,96	50,17	55,56
Pressure drop	(3)	kPa	32,1	36,8	41,5	26,2	34,3	37,7	33,6	44,0	38,0
REFRIGERANT CIRCUIT											
Compressors nr.		N°	2	2	2	2	2	2	2	2	2
No. Circuits		N°	2	2	2	2	2	2	2	2	2
Refrigerant charge		kg	171	191	198	209	249	282	321	321	387
NOISE LEVEL											
Sound Pressure	(5)	dB(A)	69	70	70	70	70	71	70	71	71
Sound power level in cooling	(6)(7)	dB(A)	89	91	91	91	91	92	92	94	94
Sound power level in heating	(6)(8)	dB(A)	90	92	0	0	0	0	0	0	0
SIZE AND WEIGHT											
Operating weight	(9)	kg	6190	6680	6770	7010	7650	9820	10890	11510	11950
A	(9)	mm	4900	5800	5800	5800	7000	7900	10000	11800	11800
B	(9)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(9)	mm	2430	2430	2430	2430	2430	2430	2430	2430	2430

Notes:

- 1 Plant (side) cooling exchanger water (in/out) 12°C/7°C; Source (side) heat exchanger air (in) 35°C.
 - 2 Values in compliance with EN14511-3:2013.
 - 3 Plant (side) heat exchanger water (in/out) 40°C/45°C; Source (side) heat exchanger air (in) 7°C - 87% R.H.
 - 4 Seasonal space heating energy efficiency class LOW TEMPERATURE in AVERAGE climate conditions [REGULATION (EU) N. 813/2013]
 - 5 Average sound pressure level at 1m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
 - 6 Sound power on the basis of measurements made in compliance with ISO 9614.
 - 7 Sound power level in cooling, outdoors.
 - 8 Sound power level in heating, outdoors.
 - 9 Unit in standard configuration/execution, without optional accessories.
 - 10 Seasonal energy efficiency of the cooling environment [REGULATION (EU) N. 2016/2281]
 - 11 Seasonal space heating energy index
 - 12 Seasonal energy efficiency of the space cooling
 - 13 Seasonal performance coefficient
 - 14 Seasonal space heating energy efficiency
- The units highlighted in this publication contain HFC R134a [GWP₁₀₀ 1430] fluorinated greenhouse gases.

Certified data in EUROVENT

