

# FOCS60

Air source chillers for outdoor installation



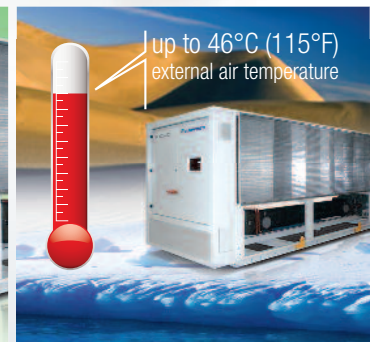
HIGH EFFICIENCY



LATEST CONTROL SYSTEM



GREEN RELEVANT PRODUCT



EXTENSIVE RANGE OF OPERATION

 **CLIMAVENETA**  
SUSTAINABLE COMFORT

# FOCS60 Features

## FOCS60/CA

High efficiency air source chiller for outdoor installation - 60 Hz

313-1521 kW (89-433 tons<sub>R</sub>)

Outdoor unit (voltages available 460V, 380V or 230V) for the production of chilled water with semi-hermetic screw compressors optimized for R134a, axial-flow fans, condensing coil with copper tubes and aluminium fins, single pass shell-and-tube evaporator and electronic expansion valve.

Base, supporting structure and panels are of galvanized epoxy powder coated steel with increased thickness. Thanks to its precise and accurate thermoregulation, this extremely flexible and reliable unit easily adapts to different thermal load conditions. The high performance level is achieved thanks to the accurate sizing of all internal components.



### Version

CA: High efficiency

### Configurations

- basic function
- D partial condensing heat recovery function



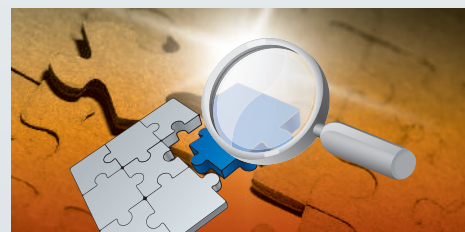
### High efficiency

Premium energy efficiency levels, with consequent low operating costs and quick return on investment.



### Adaptability

FOCS60 units have been conceived to adapt to any building request thanks to the continuous capacity regulation of a sophisticated control logic.



### Flexibility

Maximum flexibility in all kinds of applications thanks to the many available configurations and accessories.



### Silent operation

As result of a systematic research oriented to minimising noise levels, FOCS60 can be optionally combined with a special NR noise reduction kit that reduces the sound power of 6 dB(A).



### GREEN relevant product

FOCS60 units comply with the minimum efficiency requirements of air cooled chillers defined in ASHRAE 90.1-2010.



### Extensive range of operation

Extensive range of operation with external air temperature up to 46°C (115°F) at full load. For the unit's operation with temperature above 46°C, a special HT kit can be provided as optional.



### W3000 controller

The new controller with modern graphical interface features proprietary settings in order to ensure faster adaptive responses to different dynamics.



### As an option a new touch screen interface is available:

- color display 7" that allows to intuitively navigate between the different screens.
- USB port for quick and easy updates.

# FOCS60/K

## Air source chiller for outdoor installation - 60 Hz 148-1745 kW (42-496 tons<sub>R</sub>)

Outdoor unit (voltages available 460V, 380V or 230V) for the production of chilled water with semi-hermetic screw compressors optimized for R134a, axial-flow fans, condensing coil with copper tubes and aluminium fins, plate or shell and tubes evaporators and electronic expansion valve (mechanical on sizes 0751-0961, 1532-1962).

Structure with suitably-thick hot galvanised steel sheet base, painted with polyester powder coat, perimeter frame made of aluminium section bars. Both the sturdy aluminium alloy external casing (on sizes 0751-2632) and the panels of galvanized epoxy powder coated steel (on sizes 1922-7223) have been designed to provide total accessibility to the inside components. Thanks to its precise and accurate thermoregulation, this extremely flexible and reliable unit easily adapts to different thermal load conditions, always ensuring the best costs-performances ratio.



### Version

**K:** Standard efficiency, compact version

### Configurations

- basic function
- D** partial condensing heat recovery function

## FOCS60/K

147-505 kW (41-144 tons<sub>R</sub>)

Air source chiller with semi-hermetic screw compressors and plate heat exchanger

## SI SYSTEM

FOCS60 /K			0751	0951	0961	1021	1301	1532	1732	1932	1952	2432	2632
Power supply	V/ph/Hz							460/3/60 - 380/3/60 - 230/3/60					
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	kW	147	173	194	236	255	290	319	356	382	459	505
Total power input	(1)(2)	kW	51,4	61,8	68,6	79,0	87,1	98,3	111	120	133	157	173
COP <sub>r</sub>	(1)(2)	kW/kW	2,85	2,80	2,83	2,99	2,93	2,95	2,88	2,96	2,87	2,92	2,91
IPLV (referred to COP <sub>r</sub> )	(1)(2)	kW/kW	4,02	3,99	3,75	4,19	4,25	4,33	4,37	4,27	4,27	4,40	4,36
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	l/s	6,31	7,43	8,35	10,2	11,0	12,5	13,7	15,3	16,4	19,7	21,7
Pressure drop	(1)(2)	kPa	26,5	21,5	21,7	26,7	23,7	28,6	25,6	25,0	23,2	27,5	25,5
<b>COMPRESSORS</b>													
Compressors nr.		N°	1	1	1	1	1	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	2	2	2	2	2	2
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	63	64	65	65	65	66	66	67	67	67	67
Noise Power	(4)	dB(A)	95	96	97	97	97	98	98	99	99	100	100
<b>SIZE AND WEIGHT</b>													
A	(5)	mm	3110	3110	4110	4110	4110	4610	4610	5610	5610	6610	6610
B	(5)	mm	2220	2220	2220	2220	2220	2220	2220	2220	2220	2220	2220
H	(5)	mm	2150	2150	2150	2150	2150	2420	2420	2430	2430	2430	2430
Operating weight	(5)	kg	1650	1920	2260	2360	2390	3030	3070	4020	4060	4530	4670

## Notes:

- 1 Plant (side) cooling exchanger water (out) 6,7°C; with water flow 0,043 l/s for kW; Source (side) heat exchanger air (in) 35,0°C.
- 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 3 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.
- 4 Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 Unit in standard configuration/execution, without optional accessories.

## Accessories

- KIT HT to increase the unit operating conditions range
- NOISE REDUCER
- DWF: autotransformer together with the fractionation of the number of the working fans
- Hydronic group with possible storage tank
- Electronic expansion valve
- EC fans with electronic DC brushless motor
- Soft start
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Remote control keyboard (distance to 200m and to 500m)

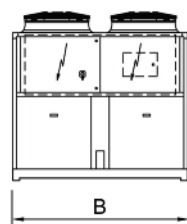
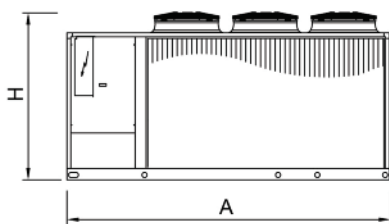


### I-P SYSTEM

FOCS60 /K			0751	0951	0961	1021	1301	1532	1732	1932	1952	2432	2632
Power supply		V/ph/Hz	460/3/60 - 380/3/60 - 230/3/60										
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	tons <sub>ref</sub>	41,7	49,2	55,2	67,2	72,6	82,4	90,8	101	109	130	144
Total power input	(1)(2)	kW	51,4	61,8	68,6	79,0	87,1	98,3	111	120	133	157	173
Power input per capacity	(1)(2)	kW/tons <sub>ref</sub>	1,23	1,26	1,24	1,18	1,20	1,19	1,22	1,19	1,22	1,21	1,20
EER	(1)(2)	Btu/hW	9,74	9,55	9,66	10,21	10,00	10,06	9,82	10,08	9,78	9,95	9,93
IPLV (referred to EER)	(1)(2)	Btu/hW	13,72	13,61	12,80	14,30	14,50	14,77	14,91	14,57	14,57	15,01	14,88
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	GPM	100	118	132	161	174	198	218	242	260	313	344
Pressure drop	(1)(2)	ftH <sub>2</sub> O	8,87	7,19	7,25	8,93	7,94	9,56	8,58	8,35	7,76	9,20	8,52
<b>COMPRESSORS</b>													
Compressors nr.		N°	1	1	1	1	1	2	2	2	2	2	2
No. Circuits		N°	1	1	1	1	1	2	2	2	2	2	2
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	63	64	65	65	65	66	66	67	67	67	67
Noise Power	(4)	dB(A)	95	96	97	97	97	98	98	99	99	100	100
<b>SIZE AND WEIGHT</b>													
A	(5)	in	122,4	122,4	161,8	161,8	161,8	181,5	181,5	220,9	220,9	260,2	260,2
B	(5)	in	87,4	87,4	87,4	87,4	87,4	87,4	87,4	87,4	87,4	87,4	87,4
H	(5)	in	84,6	84,6	84,6	84,6	84,6	95,3	95,3	95,7	95,7	95,7	95,7
Operating weight	(5)	lb	3638	4233	4982	5203	5269	6680	6768	8863	8951	9987	10296

**Notes:**

- 1 Plant (side) cooling exchanger water (out) 44.1°F; with water flow 2,4 GPM/tons; Source (side) heat exchanger air (in) 95,0°F.
- 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 3 Average sound pressure level at 33ft distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- 4 Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 Unit in standard configuration/execution, without optional accessories.



## FOCS60/K

290-382 kW (82-109 tons<sub>R</sub>)

Air source chiller with semi-hermetic screw compressors and shell and tubes heat exchanger

## SI SYSTEM

FOCS60 /K			1542	1742	1942	1962
Power supply		V/ph/Hz	460/3/60 - 380/3/60 - 230/3/60			
<b>PERFORMANCE</b>						
<b>COOLING ONLY (GROSS VALUE)</b>						
Cooling capacity	(1)(2)	kW	290	319	356	382
Total power input	(1)(2)	kW	98,3	111	120	133
COP <sub>r</sub>	(1)(2)	kW/kW	2,95	2,88	2,96	2,87
IPLV (referred to COP <sub>r</sub> )	(1)(2)	kW/kW	4,33	4,37	4,27	4,27
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>						
Water flow	(1)(2)	l/s	12,5	13,7	15,3	16,4
Pressure drop	(1)(2)	kPa	35,2	42,8	36,6	23,8
<b>COMPRESSORS</b>						
Compressors nr.		N°	2	2	2	2
No. Circuits		N°	2	2	2	2
<b>NOISE LEVEL</b>						
Noise Pressure	(3)	dB(A)	66	66	67	67
Noise Power	(4)	dB(A)	98	98	99	99
<b>SIZE AND WEIGHT</b>						
A	(5)	mm	4610	4610	5610	5610
B	(5)	mm	2220	2220	2220	2220
H	(5)	mm	2420	2420	2430	2430
Operating weight	(5)	kg	3280	3300	4220	4550

## Notes:

- 1 Plant (side) cooling exchanger water (out) 6,7°C; with water flow 0,043 l/s for kW; Source (side) heat exchanger air (in) 35,0°C.  
 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).  
 3 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.  
 4 Sound power on the basis of measurements made in compliance with ISO 9614.  
 5 Unit in standard configuration/execution, without optional accessories.

## Accessories

- KIT HT to increase the unit operating conditions range
- NOISE REDUCER
- DWF: autotransformer together with the fractionation of the number of the working fans
- Hydronic group
- Electronic expansion valve
- EC fans with electronic DC brushless motor
- Soft start
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Remote control keyboard (distance to 200m and to 500m)

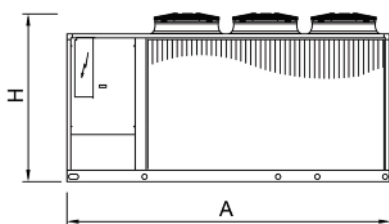


## I-P SYSTEM

FOCS60 /K			1542	1742	1942	1962
Power supply		V/ph/Hz	460/3/60 - 380/3/60 - 230/3/60			
<b>PERFORMANCE</b>						
<b>COOLING ONLY (GROSS VALUE)</b>						
Cooling capacity	(1)(2)	tons <sub>R</sub>	82,4	90,8	101	109
Total power input	(1)(2)	kW	98,3	111	120	133
Power input per capacity	(1)(2)	kW/tons <sub>R</sub>	1,19	1,22	1,19	1,22
EER	(1)(2)	Btu/hW	10,06	9,82	10,08	9,78
IPLV (referred to EER)	(1)(2)	Btu/hW	14,77	14,91	14,57	14,57
<b>EXCHANGERS</b>						
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>						
Water flow	(1)(2)	GPM	198	218	242	260
Pressure drop	(1)(2)	ftH <sub>2</sub> O	11,8	14,3	12,2	7,96
<b>COMPRESSORS</b>						
Compressors nr.		N°	2	2	2	2
No. Circuits		N°	2	2	2	2
<b>NOISE LEVEL</b>						
Noise Pressure	(3)	dB(A)	66	66	67	67
Noise Power	(4)	dB(A)	98	98	99	99
<b>SIZE AND WEIGHT</b>						
A	(5)	in	181,5	181,5	220,9	220,9
B	(5)	in	87,4	87,4	87,4	87,4
H	(5)	in	95,3	95,3	95,7	95,7
Operating weight	(5)	lb	7231	7275	9304	10031

### Notes:

- 1 Plant (side) cooling exchanger water (out) 44,1°F; with water flow 2,4 GPM/tons; Source (side) heat exchanger air (in) 95,0°F.
- 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 3 Average sound pressure level at 33ft distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- 4 Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 Unit in standard configuration/execution, without optional accessories.



## FOCS60/K

429-1728 kW (122-491 tons<sub>R</sub>)

Air source chiller with semi-hermetic screw compressors and shell and tubes heat exchanger

## SI SYSTEM

FOCS60/K			1922	2202	2652	2702	2722	3152	3602	4202	4502	4802
Power supply	V/ph/Hz		460/3/60 - 380/3/60 - 230/3/60									
<b>PERFORMANCE</b>												
<b>COOLING ONLY</b>												
Cooling capacity	(1)(2)	kW	429	486	579	598	651	709	797	880	971	1033
Total power input	(1)(2)	kW	148	171	197	211	218	253	273	305	336	358
COPr	(1)(2)	kW/kW	2,90	2,84	2,94	2,83	2,98	2,80	2,92	2,88	2,89	2,89
IPLV (referred to COPr)	(1)(2)	kW/kW	4,61	4,20	4,41	4,52	4,47	4,46	4,20	4,48	4,45	4,57
<b>EXCHANGERS</b>												
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>												
Water flow	(1)(2)	l/s	18,5	20,9	24,9	25,7	28,0	30,5	34,3	37,9	41,8	44,4
Pressure drop	(1)(2)	kPa	37,8	26,8	30,3	32,3	30,4	36,1	32,6	35,1	33,0	37,3
<b>COMPRESSORS</b>												
Compressors nr.	N°		2	2	2	2	2	2	2	2	2	2
No. Circuits	N°		2	2	2	2	2	2	2	2	2	2
<b>NOISE LEVEL</b>												
Noise Pressure	(3)	dB(A)	69	69	70	70	71	71	71	71	72	72
Noise Power	(4)	dB(A)	101	101	102	102	103	103	104	104	105	105
<b>SIZE AND WEIGHT</b>												
A	(5)	mm	4000	4900	4900	4900	5800	5800	7000	7000	7600	7600
B	(5)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(5)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(5)	kg	3590	4130	4920	4940	5650	5700	6160	6580	7590	7800
			<b>4822</b>	<b>5412</b>	<b>6002</b>	<b>6022</b>	<b>6303</b>	<b>6903</b>	<b>7203</b>	<b>7213</b>	<b>7223</b>	
Power supply	V/ph/Hz		460/3/60 - 380/3/60									
<b>PERFORMANCE</b>												
<b>COOLING ONLY (GROSS VALUE)</b>												
Cooling capacity	(1)(2)	kW	1105	1206	1255	1338	1440	1507	1599	1599	1653	1728
Total power input	(1)(2)	kW	387	412	441	467	496	522	554	554	582	616
COPr	(1)(2)	kW/kW	2,86	2,93	2,84	2,87	2,90	2,89	2,89	2,84	2,84	2,80
IPLV (referred to COPr)	(1)(2)	kW/kW	4,63	4,62	4,57	4,78	4,46	4,43	4,65	4,66	4,66	4,71
<b>EXCHANGERS</b>												
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>												
Water flow	(1)(2)	l/s	47,5	51,8	54,0	57,5	61,9	64,8	68,8	68,8	71,1	74,3
Pressure drop	(1)(2)	kPa	40,1	30,0	32,5	36,9	38,8	42,4	36,8	36,8	39,3	46,5
<b>COMPRESSORS</b>												
Compressors nr.	N°		2	2	2	2	3	3	3	3	3	3
No. Circuits	N°		2	2	2	2	3	3	3	3	3	3
<b>NOISE LEVEL</b>												
Noise Pressure	(3)	dB(A)	72	73	73	73	73	73	74	74	74	74
Noise Power	(4)	dB(A)	105	106	106	106	106	106	107	107	107	107
<b>SIZE AND WEIGHT</b>												
A	(5)	mm	7600	9400	9400	11200	11200	11200	11200	11200	11200	11200
B	(5)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(5)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(5)	kg	7970	9090	9110	9750	11260	11450	12060	12320	12320	12360

## Notes:

- Plant (side) cooling exchanger water (out) 6,7°C; with water flow 0,043 l/s for kW; Source (side) heat exchanger air (in) 35,0°C.
- Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 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.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Unit in standard configuration/execution, without optional accessories.

## Accessories

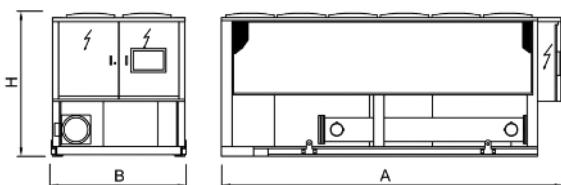
- KIT HT to increase the unit operating conditions range
- NOISE REDUCER
- DWF: autotransformer together with the fractionation of the number of the working fans
- Hydronic group
- EC fans with electronic DC brushless motor
- Soft start
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Remote control keyboard (distance to 200m and to 500m)





## I-P SYSTEM

FOCS60/K			1922	2202	2652	2702	2722	3152	3602	4202	4502	4802	
Power supply	V/ph/Hz		460/3/60 - 380/3/60 - 230/3/60						460/3/60 - 380/3/60				
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	tons <sub>R</sub>	122	138	165	170	185	202	227	250	276	294	
Total power input	(1)(2)	kW	148	171	197	211	218	253	273	305	336	358	
Power input per capacity	(1)(2)	kW/tons <sub>R</sub>	1,21	1,24	1,19	1,24	1,18	1,25	1,20	1,22	1,22	1,22	
EER	(1)(2)	Btu/hW	9,90	9,69	10,02	9,66	10,17	9,55	9,98	9,84	9,85	9,86	
IPLV (referred to EER)	(1)(2)	Btu/hW	15,73	14,33	15,05	15,42	15,25	15,22	14,33	15,29	15,18	15,59	
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	GPM	293	332	395	408	443	483	543	600	662	704	
Pressure drop	(1)(2)	ftH <sub>2</sub> O	12,7	8,95	10,1	10,8	10,2	12,1	10,9	11,7	11,0	12,5	
<b>COMPRESSORS</b>													
Compressors nr.	N°		2	2	2	2	2	2	2	2	2	2	
No. Circuits	N°		2	2	2	2	2	2	2	2	2	2	
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	69	69	70	70	71	71	71	71	72	72	
Noise Power	(4)	dB(A)	101	101	102	102	103	103	104	104	105	105	
<b>SIZE AND WEIGHT</b>													
A	(5)	in	157,5	192,9	192,9	192,9	228,3	228,3	275,6	275,6	299,2	299,2	
B	(5)	in	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	
H	(5)	in	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	
Operating weight	(5)	lb	7915	9105	10847	10891	12456	12566	13580	14506	16733	17196	
			<b>4822</b>	<b>5412</b>	<b>6002</b>	<b>6022</b>	<b>6303</b>	<b>6903</b>	<b>7203</b>	<b>7213</b>	<b>7223</b>		
Power supply	V/ph/Hz		460/3/60 - 380/3/60						460/3/60 - 380/3/60				
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	tons <sub>R</sub>	314	343	357	381	409	428	455	470	491		
Total power input	(1)(2)	kW	387	412	441	467	496	522	554	582	616		
Power input per capacity	(1)(2)	kW/tons <sub>R</sub>	1,23	1,20	1,24	1,23	1,21	1,22	1,22	1,24	1,25		
EER	(1)(2)	Btu/hW	9,75	10,00	9,70	9,78	9,91	9,85	9,85	9,70	9,56		
IPLV (referred to EER)	(1)(2)	Btu/hW	15,80	15,76	15,59	16,31	15,22	15,12	15,87	15,90	16,07		
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	GPM	753	822	855	912	981	1027	1090	1127	1178		
Pressure drop	(1)(2)	ftH <sub>2</sub> O	13,4	10,0	10,9	12,3	13,0	14,2	12,3	13,2	15,6		
<b>COMPRESSORS</b>													
Compressors nr.	N°		2	2	2	2	3	3	3	3	3	3	
No. Circuits	N°		2	2	2	2	3	3	3	3	3	3	
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	72	73	73	73	73	73	74	74	74		
Noise Power	(4)	dB(A)	105	106	106	106	106	106	107	107	107		
<b>SIZE AND WEIGHT</b>													
A	(5)	in	299,2	370,1	370,1	440,9	440,9	440,9	440,9	440,9	440,9	440,9	
B	(5)	in	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	
H	(5)	in	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	
Operating weight	(5)	lb	17571	20040	20084	21495	24824	25243	26588	27161	27249		



### Notes:

- 1 Plant (side) cooling exchanger water (out) 44,1°F; with water flow 2,4 GPM/tons<sub>R</sub>; Source (side) heat exchanger air (in) 95,0°F.
- 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 3 Average sound pressure level at 33ft distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- 4 Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 Unit in standard configuration/execution, without optional accessories.

## FOCS60/CA

310-1506 kW (88-428 tons<sub>R</sub>)

High efficiency air source chiller with semi-hermetic screw compressors and shell and tubes heat exchanger

## SI SYSTEM

FOCS60/CA			1502	1702	1902	1922	2202	2602	2652	2702	2722	3152
Power supply	V/ph/Hz		460/3/60 - 380/3/60 - 230/3/60									
<b>PERFORMANCE</b>												
<b>COOLING ONLY (GROSS VALUE)</b>												
Cooling capacity	(1)(2)	kW	310	352	398	454	501	563	603	633	684	750
Total power input	(1)(2)	kW	96,6	113	126	146	160	181	190	200	215	243
COPr	(1)(2)	kW/kW	3,21	3,11	3,15	3,12	3,12	3,12	3,18	3,17	3,18	3,08
IPLV (referred to COPr)	(1)(2)	kW/kW	4,48	4,63	4,76	4,90	4,49	4,61	4,62	4,71	4,60	4,53
<b>EXCHANGERS</b>												
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>												
Water flow	(1)(2)	l/s	13,3	15,2	17,1	19,5	21,5	24,2	25,9	27,2	29,4	32,3
Pressure drop	(1)(2)	kPa	19,7	25,5	32,5	23,3	28,4	28,7	32,8	36,2	33,6	40,5
<b>COMPRESSORS</b>												
Compressors nr.	N°		2	2	2	2	2	2	2	2	2	2
No. Circuits	N°		2	2	2	2	2	2	2	2	2	2
<b>NOISE LEVEL</b>												
Noise Pressure	(3)	dB(A)	67	67	68	69	69	70	71	70	70	70
Noise Power	(4)	dB(A)	99	99	100	101	101	102	103	103	103	103
<b>SIZE AND WEIGHT</b>												
A	(5)	mm	4000	4000	4000	4900	4900	5800	5800	7000	7600	7600
B	(5)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	2260
H	(5)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Operating weight	(5)	kg	3210	3490	3760	4180	4310	5060	5430	5890	6560	6600
			<b>3602</b>	<b>3902</b>	<b>4202</b>	<b>4502</b>	<b>4802</b>	<b>4822</b>	<b>5412</b>	<b>5703</b>	<b>6603</b>	
Power supply	V/ph/Hz		460/3/60-380/3/60-230/3/60									
<b>PERFORMANCE</b>												
<b>COOLING ONLY (GROSS VALUE)</b>												
Cooling capacity	(1)(2)	kW	819	880	933	1030	1086	1183	1250	1347	1506	
Total power input	(1)(2)	kW	262	281	291	321	345	371	395	437	485	
COPr	(1)(2)	kW/kW	3,13	3,14	3,21	3,21	3,14	3,19	3,16	3,08	3,10	
IPLV (referred to COPr)	(1)(2)	kW/kW	4,39	4,47	4,57	4,65	4,66	4,69	4,72	4,49	4,71	
<b>EXCHANGERS</b>												
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>												
Water flow	(1)(2)	l/s	35,2	37,8	40,1	44,3	46,7	50,9	53,8	57,9	64,8	
Pressure drop	(1)(2)	kPa	34,4	39,7	39,4	37,1	41,3	46,0	32,2	17,4	21,8	
<b>COMPRESSORS</b>												
Compressors nr.	N°		2	2	2	2	2	2	2	3	3	
No. Circuits	N°		2	2	2	2	2	2	2	3	3	
<b>NOISE LEVEL</b>												
Noise Pressure	(3)	dB(A)	70	71	71	71	72	72	72	73	73	
Noise Power	(4)	dB(A)	103	104	104	104	105	105	105	106	106	
<b>SIZE AND WEIGHT</b>												
A	(5)	mm	7600	8500	9400	9400	10300	11200	11200	11200	11200	
B	(5)	mm	2260	2260	2260	2260	2260	2260	2260	2260	2260	
H	(5)	mm	2500	2500	2500	2500	2500	2500	2500	2500	2500	
Operating weight	(5)	kg	6950	7730	8290	8890	9290	9720	9960	11530	12540	

## Notes:

- Plant (side) cooling exchanger water (out) 6,7°C; with water flow 0,043 l/s for kW; Source (side) heat exchanger air (in) 35,0°C.
- Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 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.
- Sound power on the basis of measurements made in compliance with ISO 9614.
- Unit in standard configuration/execution, without optional accessories.

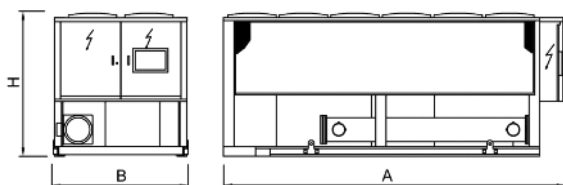
## Accessories

- KIT HT to increase the unit operating conditions range
- NOISE REDUCER
- Hydronic group
- EC fans with electronic DC brushless motor
- Soft start
- Set-up for remote connectivity with ModBus, Echelon LonTalk, Bacnet protocol board
- Remote control keyboard (distance to 200m and to 500m)



## I-P SYSTEM

FOCS60/CA			1502	1702	1902	1922	2202	2602	2652	2702	2722	3152	
Power supply	V/ph/Hz		460/3/60 - 380/3/60 - 230/3/60										
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	tons <sub>R</sub>	88,1	100	113	129	142	160	171	180	195	213	
Total power input	(1)(2)	kW	96,6	113	126	146	160	181	190	200	215	243	
Power input per capacity	(1)(2)	kW/tons <sub>R</sub>	1,10	1,13	1,12	1,13	1,13	1,13	1,11	1,11	1,10	1,14	
EER	(1)(2)	Btu/hW	10,94	10,62	10,75	10,64	10,65	10,63	10,84	10,82	10,87	10,52	
IPLV (referred to EER)	(1)(2)	Btu/hW	15,29	15,80	16,24	16,72	15,32	15,73	15,76	16,07	15,70	15,46	
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	GPM	211	240	271	309	341	384	411	432	466	511	
Pressure drop	(1)(2)	ftH <sub>2</sub> O	6,59	8,53	10,9	7,80	9,49	9,59	11,0	12,1	11,3	13,5	
<b>COMPRESSORS</b>													
Compressors nr.	N°		2	2	2	2	2	2	2	2	2	2	
No. Circuits	N°		2	2	2	2	2	2	2	2	2	2	
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	67	67	68	69	69	70	71	70	70	70	
Noise Power	(4)	dB(A)	99	99	100	101	101	102	103	103	103	103	
<b>SIZE AND WEIGHT</b>													
A	(5)	in	157,5	157,5	157,5	192,9	192,9	228,3	228,3	275,6	299,2	299,2	
B	(5)	in	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0	
H	(5)	in	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4	
Operating weight	(5)	lb	7077	7694	8289	9215	9502	11155	11971	12985	14462	14551	
			<b>3602</b>			<b>3902</b>	<b>4202</b>	<b>4502</b>	<b>4802</b>	<b>4822</b>	<b>5412</b>	<b>5703</b>	<b>6603</b>
Power supply	V/ph/Hz		460/3/60-380/3/60-230/3/60										
<b>PERFORMANCE</b>													
<b>COOLING ONLY (GROSS VALUE)</b>													
Cooling capacity	(1)(2)	tons <sub>R</sub>	233			250	265	293	309	336	356	383	428
Total power input	(1)(2)	kW	262			281	291	321	345	371	395	437	485
Power input per capacity	(1)(2)	kW/tons <sub>R</sub>	1,12			1,12	1,10	1,10	1,12	1,10	1,11	1,14	1,13
EER	(1)(2)	Btu/hW	10,66			10,70	10,94	10,94	10,73	10,87	10,79	10,51	10,59
IPLV (referred to EER)	(1)(2)	Btu/hW	14,98			15,25	15,59	15,87	15,90	16,00	16,11	15,32	16,07
<b>EXCHANGERS</b>													
<b>HEAT EXCHANGER USER SIDE IN REFRIGERATION</b>													
Water flow	(1)(2)	GPM	558			600	636	702	740	806	852	918	1027
Pressure drop	(1)(2)	ftH <sub>2</sub> O	11,5			13,3	13,2	12,4	13,8	15,4	10,8	5,82	7,28
<b>COMPRESSORS</b>													
Compressors nr.	N°		2			2	2	2	2	2	2	3	3
No. Circuits	N°		2			2	2	2	2	2	2	3	3
<b>NOISE LEVEL</b>													
Noise Pressure	(3)	dB(A)	70			71	71	71	72	72	72	73	73
Noise Power	(4)	dB(A)	103			104	104	104	105	105	105	106	106
<b>SIZE AND WEIGHT</b>													
A	(5)	in	299,2			334,6	370,1	370,1	405,5	440,9	440,9	440,9	440,9
B	(5)	in	89,0			89,0	89,0	89,0	89,0	89,0	89,0	89,0	89,0
H	(5)	in	98,4			98,4	98,4	98,4	98,4	98,4	98,4	98,4	98,4
Operating weight	(5)	lb	15322			17042	18276	19599	20481	21429	21958	25419	27646



### Notes:

- 1 Plant (side) cooling exchanger water (out) 44,1°F; with water flow 2,4 GPM/tons; Source (side) heat exchanger air (in) 95,0°F.
- 2 Rated in accordance with AHRI Standard 550/590 (2011 with addendum 1).
- 3 Average sound pressure level at 33ft distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level.
- 4 Sound power on the basis of measurements made in compliance with ISO 9614.
- 5 Unit in standard configuration/execution, without optional accessories.

# “By far the best Proof is Experience”

Sir Francis Bacon  
British philosopher  
(1561 - 1626)

## Embotelladora Mexicana

2009 Tultitlan (Mexico)



### Project

Embotelladora Mexicana is a company specialized in the production and distribution of fruit flavoured non-alcoholic beverages which embrace the Mexican tradition of nature's goodness and authenticity. The company has been operating on the market since 1983 and is part of the AGA Consortium, one of the most important Mexican ones in the beverage industry, and has 11 distribution centres, 8 of which are in the metropolitan area and 3 elsewhere in the country.

### Challenge

Respect for nature and strong ethics, together with the greatest attention to hygiene standards in each production phase, are fundamental company

Installed machines:  
2x FOCS 2602, 1x FOCS 2622

Cooling Capacity: 1500 kW



principles. The objective is always to supply the highest quality and healthiest products, together with the necessity of reliability and flexibility. These have been the determining factors in the choice of an eco-compatible air conditioning system which ensures the greatest energy savings.

### Solution

Climaveneta has installed 3 FOCS units with semi-hermetic screw compressors for the production of chilled water. These chillers easily adapt to the plant's requested thermal load conditions thanks to the continuous modulation of the cooling capacity guaranteed by sophisticated regulation logic and control precision, increasing overall efficiency of the building.

# Hotel Melià Cayo Guillermo

2010 Cuba

Installed machines:  
1x FOCS CA/LN

Cooling Capacity: 1074 kW



## Project

Unique for their 5-star designation in Cayo Guillermo and their emblematic and panoramic over-water beach boardwalk called Ernest Hemingway, with belvedere towers and private huts providing shade by the sea, Hotel Melià Cayo Guillermo – which occupies a total area of 11,600 m<sup>2</sup> - is the ideal space to enjoy the sea, immersed in extraordinary natural beauty.

## Challenge

The resort is the result of an innovative philosophy based in a natural context, avant-garde technology and refined design choices in a jewel of elegance, functionality and environmental compatibility.

## Solution

Climaveneta provides for optimal wellness with 1 FOCS-CA/LN unit, a version unique for its excellent energy efficiency. This installation is characterized by a high-performance cooling system that translates into reduced energy consumption during the entire period of operation. Resulting from a project design systematically oriented towards minimizing noise, this unit in the LN version (low-noise) presents the best performance-silence ratio on the market.

# More than 1000 projects all over the world



## HOTEL HABANA LIBRE

Havana  
(Cuba)

Cooling capacity:  
1702 kW

Installed machines:  
2xFOCS-CA/SL D 3602,  
1xMANAGER



## MEGA EMPACK

Querétaro  
(México)

Cooling capacity:  
516 kW

Installed machines:  
1xFOCS/B/S

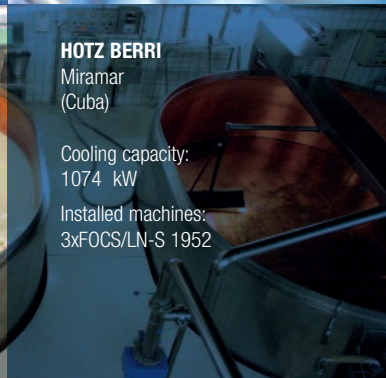


## HOTZ BERRI

Miramar  
(Cuba)

Cooling capacity:  
1074 kW

Installed machines:  
3xFOCS/LN-S 1952

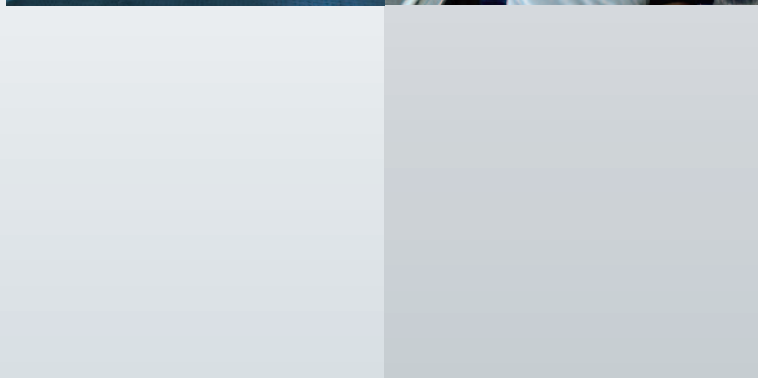
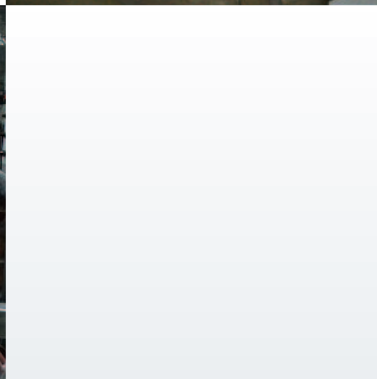


## BEPENSA

(México)

Cooling capacity:  
1080 kW

Installed machines:  
2xFOCS/B-S 2642



## FÁBRICA DE JABÓN LA CORONA

Ecatepec  
(México)

Cooling capacity:  
167 kW

Installed machines:  
1xFOCS/B-S 0851



Every project is characterised by different usage conditions and system specifications for many different latitudes. All these projects share high energy efficiency, maximum integration and total reliability resulting from Climaveneta's extensive experience in the air conditioning market.



**WACON**  
(Saudi Arabia)

Cooling capacity:  
2040 kW

Installed machines:  
3xFOCS/B-S 2742



**HOTEL VILLA CUBA**  
Varadero  
(Cuba)

Cooling capacity:  
960 kW

Installed machines:  
2xFOCS-CA/B D 2022



**ARGOL INDUSTRIAL LOGISTIC**  
Caracas  
(Venezuela)

Cooling capacity:  
617 kW

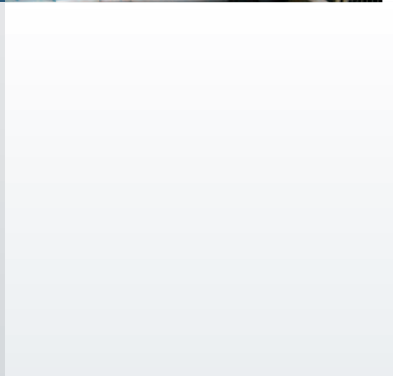
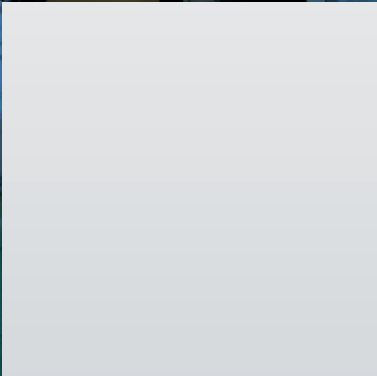
Installed machines:  
1xFOCS-CA/B-S 2602



**PAVAN GROUP**  
Buenos Aires  
(Argentina)

Cooling capacity:  
434 kW

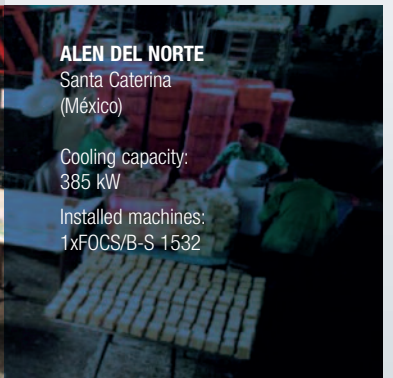
Installed machines:  
1xFOCS-K/S 1922



**ALEN DEL NORTE**  
Santa Caterina  
(México)

Cooling capacity:  
385 kW

Installed machines:  
1xFOCS/B-S 1532





A Group Company of **MITSUBISHI ELECTRIC**

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[www.climaveneta.pl](http://www.climaveneta.pl)

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