

# DX.A

## DIRECT EXPANSION CLOSE CONTROL UNIT AIR CONDENSER WITH ON/OFF COMPRESSOR

R410a



AIR



Close control air-conditioners for vertical installations and cooling only, with optional heating by means of heating element, optional humidifier and dehumidifier for precise temperature and humidity control. Particularly suitable for precision air conditioning in servers and IT rooms and all technological applications in general. Units fitted with EC Inverter fans, up flow or downflow. External air condenser. Emibyte equipment are fully designed and tested in the Emicon validation laboratories.

### Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to the galvanized sheet metal structures and panels with bevelled corner uprights to enhance its unique, clean and attractive design. The panels are lined with sound-insulating material to limit noise levels. New generation EC Inverter centrifugal fan made in high class technological material with 5 backward curved blades. Impeller with bionic 3D profile thanks to an innovative design in the form of a blade geometry with specific buckling. Special V-shaped rear edge allows a wide characteristic field. Together with the rotating diffuser that opens, exceptional performances of the impeller and the entire system are thus obtained. In combination with the undulated surface of the blade surface, a diffused sound emission takes place which guarantees a very low noise level. Standard COARSE 60% (ISO EN 16890) EU4/G4 filtering section installed, The filter is self-extinguishing. The microprocessor controls the compressor activation times thereby regulating the cooling capacity; it also controls the operating alarms with the possibility of interfacing to supervisor and remote-servicing systems. Refrigerant circuit consisting of Electronic Expansion Valve, sight glass filter dryer on liquid line, pressure transducer with indication, control and protection functions on low and high refrigerant pressure, high pressure safety switch with manual reset, liquid receiver with accessories

### Control

Semi-graphic display 132x64 pixel, programmable software, record storage of 200 alarms, general alarm, automatic reset after blackout, integral LAN system, standby management, automatic rotation, serious alarms, operating contemporaneousness, clock function modality.

### VERSIONS

- D** - Downflow air supply
- U** - Up flow air supply
- E** - Front supply (Displacement)
- B** - Up supply (Rear return)
- V** - Up supply (Down suction)

### ACCESSORIES

- Remote user terminal
- Electric Heating coil
- Humidifier
- Vibration isolation frame with rubber mountings
- Interface electronic board
- Air distribution plenum
- Condensing pump discharge
- Interface card for TCP/IP Protocol
- Longwork, motbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

### ALSO AVAILABLES

- DX.H** - Water cooled air expansion
- DX.AF** - Air cooled direct expansion with Dual-Fluid
- DX.HF** - Water cooled direct expansion with Dual-Fluid
- DX.E** - Evaporating with external condensing unit

## TECHNICAL DATA

DX.A		61	71	91	111	151	181	201	221	232
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	6,1	8,4	9,9	11,2	15,9	18,4	20,1	22,6	22,9
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	6	8	9,6	11,2	14,5	17,9	20	21,7	22,9
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	1,9	2,5	2,7	3,6	4,6	5,4	5,5	6,4	6,9
SHR		0,99	0,96	0,97	1,00	0,91	0,97	1,00	0,96	1,00
Air flow	m <sup>3</sup> /h	2700	2700	2700	3900	3900	6050	6050	6050	8150
Fan	n°	1	1	1	1	1	1	1	1	1
Max. ESP	Pa	542	521	479	506	465	655	612	612	446
Unit EER without remote condenser to max. frequency	W/W	3,2	3,3	3,7	3,1	3,5	3,4	3,7	3,5	3,3
Maximum absorbed power	Kw	3,8	4,5	5	6,2	7,6	10,5	10,5	11,8	12
Maximum absorbed current	A	12,8	16,5	18,7	10,2	12,4	17	17	19,1	19,8
Starting current	A	41,4	64,4	66,4	50,4	65,4	71	71	78	60
Power supply	V/ph/Hz	400/3/50+N+PE								
<b>Humidifier</b>										
Steam production (nominal)	kg/h	1,5	1,5	1,5	3	3	5	5	5	8
Steam production (max.)	kg/h	3	3	3	3	3	8	8	8	8
Max. absorbed power	kW	1,12	1,12	1,12	2,25	2,25	3,75	3,75	3,75	6,0
Max. absorbed current	A	5,0	5,0	5,0	10,0	10,0	5,5	5,5	5,5	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>										
Steps	n°	1	1	1	1	1	2	2	2	3
Power	kW	3,0	3,0	3,0	4,5	4,5	6,0	6,0	6,0	9,0
Absorbed current	A	4,3	4,3	4,3	6,5	6,5	8,7	8,7	8,7	13,0
<b>Oversized electrical heaters</b>										
Steps	n°	1	1	1	2	2	3	3	3	3
Power	kW	4,5	4,5	4,5	6,0	6,0	9,0	9,0	9,0	12,0
Absorbed current	A	6,5	6,5	6,5	8,7	8,7	13,0	13,0	13,0	17,3
<b>Hot water coil</b>										
Heating capacity <sup>(3)</sup>	kW	4,9	4,9	4,9	7,3	7,3	10,6	10,6	10,6	16,7
Water flow	m <sup>3</sup> /h	0,85	0,85	0,85	1,3	1,3	1,86	1,86	1,86	2,91
Pressure drop (coil + 3 way valve)	kPa	36	36	36	31	31	48	48	48	56
Coil internal volume	dm <sup>3</sup>	1,1	1,1	1,1	1,4	1,4	2,1	2,1	2,1	3,3
<b>On / Off Compressors</b>										
Circuits / Compressors	n°/n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	2/2
<b>Condensing water pump</b>										
Nominal flow	l/h	27,5	27,5	27,5	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	34	34	34	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>										
Nominal flow	l/h	-	-	-	-	-	-	-	-	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	-	900
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	-	-	-	-	-	-	-	-	6,0
<b>Dimensions and weight</b>										
Frame	n°	1	1	1	2	2	3	3	3	4
Width	mm	550	550	550	750	750	980	980	980	1160
Depth	mm	550	550	550	550	550	750	750	750	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	169	179	182	223	230	293	301	301	385
Weight (Configuration V)	Kg	171	181	185	226	232	297	305	305	390
Weight (Configuration D)	Kg	172	182	186	228	234	299	307	307	392
Weight (Configuration B)	Kg	171	181	185	226	232	297	305	305	390

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

DX.A		251	301	321	322	391	392	431	442	451
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	24,3	29,5	33,3	32,4	39,3	39,1	42,8	44	45,7
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	23,9	29,5	30,4	30,1	39,1	39	42,1	42,1	45,5
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	6,7	7,7	8,8	9	10,1	11,2	11,3	12,9	11,4
SHR		0,99	1,00	0,91	0,93	1,00	1,00	0,98	0,96	1,00
Air flow	m <sup>3</sup> /h	8150	8150	8150	8150	11500	11500	11500	11500	14500
Fan	n°	1	1	1	1	1	1	1	1	2
Max. ESP	Pa	446	446	405	405	406	406	406	406	432
Unit EER without remote condenser to max. frequency	W/W	3,6	3,8	3,8	3,6	3,9	3,5	3,8	3,4	4
Maximum absorbed power	Kw	11,7	12,3	14,2	14,8	16,6	18,4	18,3	21	20
Maximum absorbed current	A	20,2	22,4	25,8	24,2	30,6	29,6	36,6	33,8	39,4
Starting current	A	99,2	132,2	143,2	77,2	123,6	83,6	145,6	92,7	148,4
Power supply	V/ph/Hz	400/3/50+N+PE								
<b>Humidifier</b>										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8	8	8	8
Max. absorbed power	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	15,0
Absorbed current	A	13,0	13,0	13,0	13,0	13,0	13,0	13,0	13,0	21,7
<b>Oversized electrical heaters</b>										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	12,0	12,0	12,0	12,0	12,0	12,0	12,0	12,0	18,0
Absorbed current	A	17,3	17,3	17,3	17,3	17,3	17,3	17,3	17,3	26,0
<b>Hot water coil</b>										
Heating capacity <sup>(3)</sup>	kW	16,7	16,7	16,7	16,7	24,5	24,5	24,5	24,5	31,1
Water flow	m <sup>3</sup> /h	2,91	2,91	2,91	2,91	4,3	4,3	4,3	4,3	5,43
Pressure drop (coil + 3 way valve)	kPa	56	56	56	56	46	46	46	46	53
Coil internal volume	dm <sup>3</sup>	3,3	3,3	3,3	3,3	4,7	4,7	4,7	4,7	5,8
<b>On / Off Compressors</b>										
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	1/1	2/2	1/1	2/2	1/1
<b>Condensing water pump</b>										
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h )	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>										
Nominal flow	l/h	600	600	600	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max. discharge height (flow=0 m <sup>3</sup> /h )	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
<b>Dimensions and weight</b>										
Frame	n°	4	4	4	4	4,5	4,5	4,5	4,5	5
Width	mm	1160	1160	1160	1160	1505	1505	1505	1505	1860
Depth	mm	850	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	342	360	361	398	429	454	433	454	522
Weight (Configuration V)	Kg	346	365	365	403	434	459	438	459	528
Weight (Configuration D)	Kg	349	367	368	405	437	462	441	462	531
Weight (Configuration B)	Kg	346	365	365	403	434	459	438	459	528

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

DX.A		472	511	512	531	602	672	742	761
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	47,3	51	50,9	53,2	59,8	67,3	74,3	77
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	47,1	50,8	50,7	53,1	59,7	64	66,8	76,6
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	12,9	13,3	13,5	13,9	15,6	17,8	19,5	20
SHR		1,00	1,00	1,00	1,00	1,00	0,95	0,90	1,00
Air flow	m <sup>3</sup> /h	14500	14500	14500	17600	17600	17600	17600	20900
Fan	n°	2	2	2	2	2	2	2	2
Max. ESP	Pa	432	432	432	382	383	382	383	436
Unit EER without remote condenser to max. frequency	W/W	3,7	3,8	3,8	3,8	3,8	3,8	3,8	3,8
Maximum absorbed power	Kw	22,7	22,2	23,4	22,2	24,6	28,4	31,3	33,2
Maximum absorbed current	A	36,6	42,4	40,4	42,4	44,8	51,6	58,4	61,2
Starting current	A	95,5	182,4	119,4	182,4	154,6	169,0	151,4	154,2
Power supply	V/ph/Hz	400/3/50+N+PE							
<b>Humidifier</b>									
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8	8	8
Max. absorbed power	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	15,0	15,0	15,0	18,0	18,0	18,0	18,0	24,0
Absorbed current	A	21,7	21,7	21,7	26,0	26,0	26,0	26,0	34,6
<b>Oversized electrical heaters</b>									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	18,0	18,0	18,0	24,0	24,0	24,0	24,0	27,0
Absorbed current	A	26,0	26,0	26,0	34,6	34,6	34,6	34,6	39,0
<b>Hot water coil</b>									
Heating capacity <sup>(3)</sup>	kW	31,1	31,1	31,1	37,4	37,4	37,4	37,4	48,9
Water flow	m <sup>3</sup> /h	5,43	5,43	5,43	6,5	6,5	6,5	6,5	8,5
Pressure drop (coil + 3 way valve)	kPa	53	53	53	34	34	34	34	48
Coil internal volume	dm <sup>3</sup>	5,8	5,8	5,8	7,1	7,1	7,1	7,1	10,45
<b>On / Off Compressors</b>									
Circuits / Compressors	n°/n°	2/2	1/1	2/2	1/1	2/2	2/2	2/2	1/2
<b>Condensing water pump</b>									
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>									
Nominal flow	l/h	600	600	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900	900	900
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
<b>Dimensions and weight</b>									
Frame	n°	5	5	5	6	6	6	6	7
Width	mm	1860	1860	1860	2210	2210	2210	2210	2565
Depth	mm	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	543	521	544	579	616	618	647	738
Weight (Configuration V)	Kg	549	528	551	586	624	625	654	746
Weight (Configuration D)	Kg	552	531	554	590	627	629	658	750
Weight (Configuration B)	Kg	549	528	551	586	624	625	654	746

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

DX.A		762	772	841	862	982	1002	1102	1252
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	77	76,8	84	86,8	98,7	98,9	111,9	124,5
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	76,3	76,2	77,8	78,7	95,6	95,7	101,4	104,9
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	20	22	21,9	25,2	26,8	26,4	29,9	34,2
SHR		0,99	0,99	0,93	0,91	0,97	0,97	0,91	0,84
Air flow	m <sup>3</sup> /h	20900	20900	20900	20900	25700	25700	25700	25700
Fan	n°	2	2	2	2	3	3	3	3
Max. ESP	Pa	436	436	436	436	458	458	458	458
Unit EER without remote condenser to max. frequency	W/W	3,8	3,5	3,8	3,4	3,7	3,7	3,7	3,6
Maximum absorbed power	Kw	33,2	36,8	36,6	42	47,1	44,6	49,5	57,1
Maximum absorbed current	A	61,2	59,2	73,2	67,6	80,8	84,8	89,6	103,2
Starting current	A	154,2	113,2	182,2	126,5	159,8	224,8	199,4	220,6
Power supply	V/ph/Hz	400/3/50+N+PE							
<b>Humidifier</b>									
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8	8	8
Max. absorbed power	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	24,0	24,0	24,0	24,0	27,0	27,0	27,0	27,0
Absorbed current	A	34,6	34,6	34,6	34,6	39,0	39,0	39,0	39,0
<b>Oversized electrical heaters</b>									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	27,0	27,0	27,0	27,0	36,0	36,0	36,0	36,0
Absorbed current	A	39,0	39,0	39,0	39,0	52,0	52,0	52,0	52,0
<b>Hot water coil</b>									
Heating capacity <sup>(3)</sup>	kW	48,9	48,9	48,9	48,9	60,8	60,8	60,8	60,8
Water flow	m <sup>3</sup> /h	8,5	8,5	8,5	8,5	10,6	10,6	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	48	48	48	48	42	42	42	42
Coil internal volume	dm <sup>3</sup>	10,45	10,45	10,45	10,45	12,6	12,6	12,6	12,6
<b>On / Off Compressors</b>									
Circuits / Compressors	n°/n°	2/2	2/4	1/2	2/4	2/4	2/2	2/4	2/4
<b>Condensing water pump</b>									
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>									
Nominal flow	l/h	600	600	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900	900	900
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
<b>Dimensions and weight</b>									
Frame	n°	7	7	7	7	8	8	8	8
Width	mm	2565	2565	2565	2565	3100	3100	3100	3100
Depth	mm	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	743	780	745	780	937	904	969	972
Weight (Configuration V)	Kg	752	788	753	788	947	914	979	982
Weight (Configuration D)	Kg	756	792	758	792	952	920	984	988
Weight (Configuration B)	Kg	752	788	753	788	947	914	979	982

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

## TECHNICAL DATA

DX.E		61	71	91	111	151	181	221	232	321	322
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	6,67	8,76	11,6	12,9	17,6	19,6	26,7	26,8	36,9	38,0
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	6,67	8,51	10,5	12,4	15,4	19,3	23,8	25,7	32,6	33,1
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	0,3	0,3	0,3	0,5	0,5	0,6	0,7	0,7	0,8	0,8
SHR		1,00	0,97	0,90	0,93	0,87	0,98	0,89	0,96	0,88	2,87
Air flow	m <sup>3</sup> /h	2737	2737	2737	3953	3953	6132	6132	8259	8260	8260
Fan	n°	1	1	1	1	1	1	1	1	1	1
Max. ESP	Pa	574	559	522	527	494	650	615	469	435	435
Unit EER without remote condenser to max. frequency	W/W	22,2	29,2	38,7	25,8	35,2	32,7	38,1	38,3	46,1	47,5
Maximum absorbed power	Kw	1,5	1,5	1,5	1,5	1,5	3,1	3,1	2,61	2,61	2,61
Maximum absorbed current	A	2,4	2,4	2,4	2,4	2,4	5,0	5,0	4,2	4,2	4,2
Starting current	A	2,4	2,4	2,4	2,4	2,4	5,0	5,0	4,2	4,2	4,2
Power supply	V/ph/Hz	400/3/50									
<b>Humidifier</b>											
Steam production (nominal)	kg/h	1,5	1,5	1,5	3	3	5	5	8	8	8
Steam production (max.)	kg/h	3	3	3	3	3	8	8	8	8	8
Max. absorbed power	kW	1,12	1,12	1,12	2,25	2,25	3,75	3,75	6,0	6,0	6,0
Max. absorbed current	A	5,0	5,0	5,0	10,0	10,0	5,5	5,5	8,7	8,7	8,7
Specific conductivity at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>											
Steps	n°	1	1	1	1	1	2	2	3	3	3
Power	kW	3,0	3,0	3,0	4,5	4,5	6,0	6,0	9,0	9,0	9,0
Absorbed current	A	4,3	4,3	4,3	6,5	6,5	8,7	8,7	13,0	13,0	13,0
<b>Oversized electrical heaters</b>											
Steps	n°	1	1	1	2	2	3	3	3	3	3
Power	kW	4,5	4,5	4,5	6,0	6,0	9,0	9,0	12,0	12,0	12,0
Absorbed current	A	6,5	6,5	6,5	8,7	8,7	13,0	13,0	17,3	17,3	17,3
<b>Hot water coil</b>											
Heating capacity <sup>(3)</sup>	kW	4,9	4,9	4,9	7,3	7,3	10,6	10,6	16,7	16,7	16,7
Water flow	m <sup>3</sup> /h	0,85	0,85	0,85	1,3	1,3	1,86	1,86	2,91	2,91	2,91
Pressure drop (coil + 3 way valve)	kPa	36	36	36	31	31	48	48	56	56	56
Coil internal volume	dm <sup>3</sup>	1,1	1,1	1,1	1,4	1,4	2,1	2,1	3,3	3,3	3,3
<b>Condensing water pump</b>											
Nominal flow	l/h	27,5	27,5	27,5	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	34	34	34	500	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>											
Nominal flow	l/h	-	-	-	-	-	-	-	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	900	900	900
Max. discharge height (flow=0 m <sup>3</sup> /h)	m	-	-	-	-	-	-	-	6,0	6,0	6,0
<b>Dimensions and weight</b>											
Frame	n°	1	1	1	2	2	3	3	4	4	4
Width	mm	550	550	550	750	750	980	980	1160	1160	1160
Depth	mm	550	550	550	550	550	750	750	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	148	150	153	194	199	247	255	315	320	326
Weight (Configuration V)	Kg	148	150	153	194	199	247	255	315	320	326
Weight (Configuration D)	Kg	148	155	158	189	194	257	266	320	325	331
Weight (Configuration B)	Kg	148	150	153	194	199	247	255	315	320	326

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.

DX.E		431	442	511	512	531	742	841	862	1102
Cooling capacity (Total) <sup>(1)</sup> ESP 20 Pa	kW	49.6	50.5	64.3	66.1	80.1	81.7	92.4	94.3	116
Cooling capacity (Sensible) <sup>(1)</sup> ESP 20 Pa	kW	44.9	45.3	57.2	58.2	70.4	71.1	82.5	83.3	103
Tot. absorbed power <sup>(2)</sup> ESP 20 Pa	kW	1,2	1,2	1,2	1,4	1,8	1,5	1,7	1,7	1,9
SHR		0,90	0,89	0,88	0,88	0,87	0,87	0,89	0,88	0,88
Air flow	m <sup>3</sup> /h	11656	11656	14696	14696	17838	17838	21183	21183	26048
Fan	n°	1	1	2	2	2	2	2	2	3
Max. ESP	Pa	442	443	455	456	420	421	466	466	493
Unit EER without remote condenser to max. frequency	W/W	38,2	42,1	53,6	47,2	44,5	54,5	49,7	55,5	61,1
Maximum absorbed power	Kw	3,55	3,55	5,22	5,22	5,22	5,22	7,1	7,1	10,6
Maximum absorbed current	A	5,6	5,6	8,4	8,4	8,4	8,4	11,2	11,2	16,8
Starting current	A	5,6	5,6	8,4	8,4	8,4	8,4	11,2	11,2	16,8
Power supply	V/ph/Hz	400/3/50								
<b>Humidifier</b>										
Steam production (nominal)	kg/h	8	8	8	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8	8	8	8
Max. absorbed power	kW	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7	8,7
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l CaCO <sub>3</sub>	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
<b>Electrical heaters</b>										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	9,0	9,0	15,0	15,0	18,0	18,0	24,0	24,0	27,0
Absorbed current	A	13,0	13,0	21,7	21,7	26,0	26,0	34,6	34,6	39,0
<b>Oversized electrical heaters</b>										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	12,0	12,0	18,0	18,0	24,0	24,0	27,0	27,0	36,0
Absorbed current	A	17,3	17,3	26,0	26,0	34,6	34,6	39,0	39,0	52,0
<b>Hot water coil</b>										
Heating capacity <sup>(3)</sup>	kW	24,5	24,5	31,1	31,1	37,4	37,4	48,9	48,9	60,8
Water flow	m <sup>3</sup> /h	4,3	4,3	5,43	5,43	6,5	6,5	8,5	8,5	10,6
Pressure drop (coil + 3 way valve)	kPa	46	46	53	53	34	34	48	48	42
Coil internal volume	dm <sup>3</sup>	4,7	4,7	5,8	5,8	7,1	7,1	10,45	10,45	12,6
<b>Condensing water pump</b>										
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500	500	500	500
Max. discharge height (flow=0 m <sup>3</sup> /h )	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
<b>Condensing water pump + humidifier</b>										
Nominal flow	l/h	600	600	600	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900	900	900	900
Max. discharge height (flow=0 m <sup>3</sup> /h )	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
<b>Dimensions and weight</b>										
Frame	n°	4,5	4,5	5	5	6	6	7	7	8
Width	mm	1505	1505	1860	1860	2210	2210	2565	2565	3100
Depth	mm	850	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	365	375	448	454	513	519	630	638	787
Weight (Configuration V)	Kg	365	375	448	454	513	519	630	638	787
Weight (Configuration D)	Kg	370	380	478	485	539	589	642	657	800
Weight (Configuration B)	Kg	365	375	448	454	513	519	630	638	787

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C. (3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

(2) The fans electrical power has to be added to the ambient load.