DX.A

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

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 uniquae, clean and attractive design. The panels are lined with sound-insulating material to limit noise levels. New generation EC Inverter centrifugal fan made in hight 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, modbus, 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 - Evsaporating with external condensing unit

TECHNICAL DATA

DX.A		61	71	91	111	151	181	201	221	232
Cooling capacity (Total) (1) ESP 20 Pa	kW	6,1	8,4	9,9	11,2	15,9	18,4	20,1	22,6	22,9
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	6	8	9,6	11,2	14,5	17,9	20	21,7	22,9
Tot. absorbed power (2) 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^3/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								
Humidifier										
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 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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters										
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
Oversized electrical heaters										
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
Hot water coil										
Heating capacity (3)	kW	4,9	4,9	4,9	7,3	7,3	10,6	10,6	10,6	16,7
Water flow	m^3/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^3	1,1	1,1	1,1	1,4	1,4	2,1	2,1	2,1	3,3
On / Off Compressors										
Circuits / Compressors	n°/n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	2/2
Condensing water pump										
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^3/h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier										
Nominal flow	l/h	-	-	-	-	-	-	-	-	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	-	900
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-	-	-	6,0
Dimensions and weight										
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, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DX.A		251	301	321	322	391	392	431	442	451
Cooling capacity (Total) (1) ESP 20 Pa	kW	24,3	29,5	33,3	32,4	39,3	39,1	42,8	44	45,7
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	23,9	29,5	30,4	30,1	39,1	39	42,1	42,1	45,5
Tot. absorbed power (2) 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^3/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								
Humidifier										
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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters										
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
Oversized electrical heaters										
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
Hot water coil										
Heating capacity (3)	kW	16,7	16,7	16,7	16,7	24,5	24,5	24,5	24,5	31,1
Water flow	m^3/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^3	3,3	3,3	3,3	3,3	4,7	4,7	4,7	4,7	5,8
On / Off Compressors										
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	1/1	2/2	1/1	2/2	1/1
Condensing water pump										
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier										
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight										
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, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DX.A		472	511	512	531	602	672	742	761
Cooling capacity (Total) (1) ESP 20 Pa	kW	47,3	51	50,9	53,2	59,8	67,3	74,3	77
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	47,1	50,8	50,7	53,1	59,7	64	66,8	76,6
Tot. absorbed power (2) 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^3/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				
Humidifier									
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 conducibility 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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
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
Oversized electrical heaters									
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
Hot water coil									
Heating capacity (3)	kW	31,1	31,1	31,1	37,4	37,4	37,4	37,4	48,9
Water flow	m^3/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^3	5,8	5,8	5,8	7,1	7,1	7,1	7,1	10,45
On / Off Compressors									
Circuits / Compressors	n°/n°	2/2	1/1	2/2	1/1	2/2	2/2	2/2	1/2
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight									
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, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DX.A		762	772	841	862	982	1002	1102	1252
Cooling capacity (Total) (1) ESP 20 Pa	kW	77	76,8	84	86,8	98,7	98,9	111,9	124,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	76,3	76,2	77,8	78,7	95,6	95,7	101,4	104,9
Tot. absorbed power (2) 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^3/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				
Humidifier									
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 conducibility 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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
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
Oversized electrical heaters									
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
Hot water coil									
Heating capacity (3)	kW	48,9	48,9	48,9	48,9	60,8	60,8	60,8	60,8
Water flow	m^3/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^3	10,45	10,45	10,45	10,45	12,6	12,6	12,6	12,6
On / Off Compressors									
Circuits / Compressors	n°/n°	2/2	2/4	1/2	2/4	2/4	2/2	2/4	2/4
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight									
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, Evaporation temperature 9°C.

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

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

TECHNICAL DATA

DX.E		61	71	91	111	151	181	221	232	321	322
Cooling capacity (Total) (1) 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 cpacity (Sensible) (1) 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 (2) 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^3/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					
Humidifier											
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 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	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters											
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
Oversized electrical heaters											
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
Hot water coil											
Heating capacity (3)	kW	4,9	4,9	4,9	7,3	7,3	10,6	10,6	16,7	16,7	16,7
Water flow	m^3/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^3	1,1	1,1	1,1	1,4	1,4	2,1	2,1	3,3	3,3	3,3
Condensing water pump											
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^3/h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier											
Nominal flow	l/h	-	-	-	-	-	-	-	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	900	900	900
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-	-	6,0	6,0	6,0
Dimensions and weight											
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, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DX.E		431	442	511	512	531	742	841	862	1102
Cooling capacity (Total) (1) ESP 20 Pa	kW	49.6	50.5	64.3	66.1	80.1	81.7	92.4	94.3	116
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	44.9	45.3	57.2	58.2	70.4	71.1	82.5	83.3	103
Tot. absorbed power (2) 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^3/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				
Humidifier										
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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters										
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
Oversized electrical heaters										
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
Hot water coil										
Heating capacity (3)	kW	24,5	24,5	31,1	31,1	37,4	37,4	48,9	48,9	60,8
Water flow	m^3/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^3	4,7	4,7	5,8	5,8	7,1	7,1	10,45	10,45	12,6
Condensing water pump										
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier										
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight										
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, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.A

DIRECT EXPANSION CLOSE CONTROL UNIT
AIR-CONDENSED WITH INVERTER COMPRESSOR

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. The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the starting current. Electronic expansion valve and EC Inverter fans are fitted in this model as standard. 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. Last generation of BLDC INVERTER compressor designed to deliver maximum cooling efficiency when you ned it most This latest variable speed compressor technology allows CRAC system manufactures as Emicon to achieve superior performance. New generation EC Inverter centrifugal fan made in hight 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 is fitted. 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, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

TECHNICAL DATA

DXi.A		61	111	121	151	181	201	251	321
Cooling capacity (Total) (1) ESP 20 Pa	kW	7,2	10,1	11,2	16,1	18,2	20,5	25,6	33,7
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	7,2	9,3	11,2	14,5	17,6	20,5	25,5	30,7
Tot. absorbed power (2) ESP 20 Pa	kW	2,3	3,5	3,7	4,6	5,1	5,3	7,2	8,6
SHR		1,00	0,92	1,00	0,91	0,97	1,00	1,00	0,91
Air flow	m^3/h	3900	3900	3900	3900	5700	5700	8150	8150
Fan	n°	1	1	1	1	1	1	1	1
Max. ESP	Pa	559	560	479	412	568	539	451	362
Unit EER without remote condenser to max. frequency	W/W	3,23	2,87	3,01	3,49	3,57	3,84	3,53	3,91
Maximum absorbed power	Kw	4	6	6	9	11	11	12	15
Maximum absorbed current	A	14	18	18	16	21	21	21	24
Starting current	A	4	4	4	4	7	7	6	6
Power supply	V/ph/Hz				400/3/50+N+PE				
Humidifier									
Steam production (nominal)	kg/h	3	3	3	3	5	5	8	8
Steam production (max.)	kg/h	3	3	3	3	8	8	8	8
Max. absorbed power	kW	2,25	2,25	2,25	2,25	3,75	3,75	6,0	6,0
Max. absorbed current	A	10,0	10,0	10,0	10,0	5,5	5,5	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
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
Steps	n°	3	3	3	3	2	2	3	3
Power	kW	4,5	4,5	4,5	4,5	6,0	6,0	9,0	9,0
Absorbed current	A	6,5	6,5	6,5	6,5	8,7	8,7	13,0	13,0
Oversized electrical heaters									
Steps	n°	2	2	2	2	3	3	3	3
Power	kW	6,0	6,0	6,0	6,0	9,0	9,0	12,0	12,0
Absorbed current	A	8,7	8,7	8,7	8,7	13,0	13,0	17,3	17,3
Hot water coil									
Heating capacity (3)	kW	7,3	7,3	7,3	7,3	10,6	10,6	16,7	16,7
Water flow	m^3/h	1,3	1,3	1,3	1,3	1,8	1,8	2,9	2,91
Pressure drop (coil + 3 way valve)	kPa	31	31	31	31	48	48	56	56
Coil internal volume	dm^3	1,4	1,4	1,4	1,4	2,1	2,1	3,3	3,3
Compressors									
Circuits / Compressors	n°/n°	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
On / Off Compressors	n°	--	--	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	1	1	1	1	1
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
Nominal flow	l/h	-	-	-	-	-	-	600	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	900	900
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-	6,0	6,0
Dimensions and weight									
Frame	n°	2	2	2	2	3	3	4	4
Width	mm	750	750	750	750	980	980	1160	1160
Depth	mm	550	550	550	550	750	750	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	198	205	209	219	284	292	331	362
Weight (Configuration V)	Kg	201	208	212	222	288	296	336	367
Weight (Configuration D)	Kg	203	209	213	223	290	298	338	369
Weight (Configuration B)	Kg	201	208	212	222	288	296	336	367

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DX.A		381	392	472	491	531	532	631	652
Cooling capacity (Total) (1) ESP 20 Pa	kW	37,2	39,0	47,4	50,7	54,0	52,8	64,8	68,4
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	37,1	38,9	44,3	45,1	52,7	52,7	63,4	64,6
Tot. absorbed power (2) ESP 20 Pa	kW	10,1	10,5	13,4	13,9	14,1	14,6	16,7	17,5
SHR		1,00	1,00	0,93	0,89	0,97	1,00	0,98	0,95
Air flow	m^3/h	11500	11500	11500	11500	14500	14500	17600	17600
Fan	n°	1	1	1	1	2	2	2	2
Max. ESP	Pa	428	427	402	388	417	432	417	392
Unit EER without remote condenser to max. frequency	W/W	3,70	3,72	3,54	3,65	3,83	3,63	3,87	3,91
Maximum absorbed power	Kw	16	19	21	23	24	23	28	31
Maximum absorbed current	A	26	38	40	34	37	42	47	48
Starting current	A	8	24	25	8	10	27	156	30
Power supply	V/ph/Hz				400/3/50+N+PE				
Humidifier									
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 conducibility 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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	9,0	9,0	9,0	9,0	15,0	15,0	18,0	18,0
Absorbed current	A	13,0	13,0	13,0	13,0	21,7	21,7	26,0	26,0
Oversized electrical heaters									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	12,0	12,0	12,0	12,0	18,0	18,0	24,0	24,0
Absorbed current	A	17,3	17,3	17,3	17,3	26,0	26,0	34,6	34,6
Hot water coil									
Heating capacity (3)	kW	24,5	24,5	24,5	24,5	31,1	31,1	37,4	37,4
Water flow	m^3/h	4,3	4,3	4,3	4,3	5,43	5,43	6,5	6,5
Pressure drop (coil + 3 way valve)	kPa	46	46	46	46	53	53	34	34
Coil internal volume	dm^3	4,7	4,7	4,7	4,7	5,8	5,8	7,1	7,1
Compressors									
Circuits / Compressors	n°/n°	1/1	2/2	2/2	1/1	1/1	2/2	1/2	2/2
On / Off Compressors	n°	--	--	--	--	--	--	1	--
Inverter Compressors	n°	1	2	2	1	1	2	1	2
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight									
Frame	n°	4,5	4,5	4,5	4,5	5	5	6	6
Width	mm	1505	1505	1505	1505	1860	1860	2210	2210
Depth	mm	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	416	433	435	419	509	525	606	620
Weight (Configuration V)	Kg	421	439	441	425	516	531	614	627
Weight (Configuration D)	Kg	424	442	443	428	519	535	617	631
Weight (Configuration B)	Kg	421	439	441	425	516	531	614	627

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C, Evaporation temperature 9°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.A		691	742	761	861	931	952	1021	1142
Cooling capacity (Total) (1) ESP 20 Pa	kW	70,1	74,9	78,2	85,8	94,7	96,5	100,7	109,8
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	66,3	74,7	75,2	80,2	91,6	93,9	96,1	98,8
Tot. absorbed power (2) ESP 20 Pa	kW	18,8	19,9	20,2	23,7	24	25,9	27,6	30,8
SHR		0,95	1,00	0,96	0,94	0,97	0,97	0,95	0,90
Air flow	m^3/h	17600	20900	20900	20900	25700	25700	25700	25700
Fan	n°	2	2	2	2	3	3	3	3
Max. ESP	Pa	432	437	436	429	446	449	442	431
Unit EER without remote condenser to max. frequency	W/W	3,73	3,76	3,88	3,62	3,95	3,73	3,65	3,57
Maximum absorbed power	Kw	30	33	36	38	45	49	47	56
Maximum absorbed current	A	50	51	58	61	76	74	79	93
Starting current	A	167	33	168	179	185	47	219	203
Power supply	V/ph/Hz	400/3/50+N+PE							
Humidifier									
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 conducibility 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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	18,0	24,0	24,0	24,0	27,0	27,0	27,0	27,0
Absorbed current	A	26,0	34,6	34,6	34,6	39,0	39,0	39,0	39,0
Oversized electrical heaters									
Steps	n°	3	3	3	3	3	3	3	3
Power	kW	24,0	27,0	27,0	27,0	36,0	36,0	36,0	36,0
Absorbed current	A	34,6	39,0	39,0	39,0	52,0	52,0	52,0	52,0
Hot water coil									
Heating capacity (3)	kW	37,4	48,9	48,9	48,9	60,8	60,8	60,8	60,8
Water flow	m^3/h	6,5	8,5	8,5	8,5	10,6	10,6	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	34	48	48	48	42	42	42	42
Coil internal volume	dm^3	7,1	10,45	10,45	10,45	12,6	12,6	12,6	12,6
Compressors									
Circuits / Compressors	n°/n°	1/2	2/2	1/2	1/2	1/2	2/2	1/2	2/4
On / Off Compressors	n°	1	--	1	1	1	--	1	2
Inverter Compressors	n°	1	2	1	1	1	2	1	2
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight									
Frame	n°	6	7	7	7	8	8	8	8
Width	mm	2210	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	606	717	710	710	869	878	869	954
Weight (Configuration V)	Kg	614	725	719	719	880	888	880	965
Weight (Configuration D)	Kg	617	729	723	723	885	893	885	970
Weight (Configuration B)	Kg	614	725	719	719	880	888	880	965

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 48°C, Evaporation temperature 9°C.

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

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

DXi.AF

CONDIZIONATORI DI PRECISIONE AD ESPANSIONE DIRETTA
CONDENSATA AD ARIA CON BATTERIA FREE-COOLING ADDIZIONALE
E COMPRESSORE INVERTER

Condizionatori d'aria di precisione per installazioni verticali in versione solo raffreddamento, con opzione riscaldamento elettrico, umidificatore e deumidificatore per un controllo preciso della temperatura e dell'umidità dell'aria. Particolarmente indicato per la climatizzazione di precisione di Sale server , sale IT e tutte le applicazioni tecnologiche in genere.

L'unità DUAL FLUID deve essere collegata ad un chiller esterno per il circuito PRIMARIO. Il circuito ad espansione diretta con compressore INVERTER (secondario o circuito di BACK-UP) è raffreddato ad aria e deve essere collegato con un condensatore remoto. Il compressore INVERTER permette la modulazione della potenza frigorifera in funzione del reale carico interno, particolarmente efficiente ai carichi parziali, ottimizzando la potenza assorbita riducendo la corrente di avviamento. Unità dotate di valvola di espansione elettronica e ventilatori EC INVERTER Plug-Fan.

VERSIONI

D - Mandata aria verso il basso
U - Mandata aria verso l'alto
E - Mandata aria frontale (Dislocamento)
B - Mandata aria verso l'alto (ripresa Posteriore)
V - Mandata aria verso l'alto (ripresa dal basso)

ACCESSORI

- Terminale remoto
- Resistenza elettrica di post riscaldo
- Umidificatore
- Telaio/zoccolo di base
- Pannello di controllo
- Plenum di mandata
- Pompa di scarico condensa
- Scheda d'interfaccia per TCP/IP
- Longwork, modbus, bacnet
- Display a colori touch-screen
- Alimentazione elettrica speciale

Caratteristiche

Unità per installazione all'interno o all'esterno del locale da climatizzare. Massima resistenza alla corrosione grazie alle strutture in lamiera zincata e ai pannelli con montanti angolari smussati per esaltarne il design unico, pulito e accattivante. I pannelli sono rivestiti con materiale fonoisolante per limitare i livelli di rumorosità. Compressore BLDC INVERTER di ultima generazione progettato per offrire la massima efficienza di raffreddamento. Questa tecnologia di compressori a velocità variabile consente di ottenere prestazioni superiori e risparmi energetici di notevole entità. Ventilatore centrifugo EC Inverter di nuova generazione realizzato in materiale plastico ad alta resistenza con pale curve rovesce studiate per garantire un livello di rumorosità molto basso. Sezione filtrante COARSE 60% (ISO EN 16890) EU4 / G4 autoestinguente.
Il microprocessore controlla i tempi di attivazione del compressore regolando la potenza frigorifera; controlla inoltre gli allarmi di funzionamento con possibilità di interfacciarsi a sistemi di supervisione e teleassistenza.
Circuito frigorifero composto da valvola di espansione elettronica, spia filtro deidratatore su linea liquido, trasduttore di pressione con funzioni di indicazione, controllo e protezione su bassa e alta pressione refrigerante, pressostato di sicurezza alta pressione a riarmo manuale, ricevitore liquido.
Grazie alla doppia Battaria (free-cooling ad acqua ed espansione diretta) l'unità garantisce il massimo risparmio abbinato alla piena disponibilità della soluzione DX. L'utilizzo della batteria di Free Cooling e del compressore BLDC Inverter consente di massimizzare il risparmio nel funzionamento in modalità mista, quindi ogni volta che il free-cooling non è in grado di far fronte completamente al carico termico, i compressori si attivano solo per completare le esigenze di raffreddamento mancanti.
Emicon DXI-AF può fornire un risparmio energetico estremamente elevato garantendo la massima disponibilità dell'applicazione.

Controllo

Display grafico 132x64 pixel, software programmabile, memorizzazione allarmi (fino a 200 eventi), allarme generale, ripartenza automatica dopo blackout, sistema LAN integrato, gestione standby / rotazione automatica, allarmi gravi, contemporaneità di funzionamento, modalità risparmio energetico.

DATI TECNICI

DXi.AF		181	251	381	392	531	532
Potenza frigo (Totale) (1) ESP 20 Pa	kW	18,6	24,9	35,3	37,0	51,3	49,1
Potenza frigo (Sensibile) (1) ESP 20 Pa	kW	16,5	23,3	33,2	33,4	43,4	43,1
Potenza tot. assorbita (2) ESP 20 Pa	kW	5,23	7,37	10,1	10,5	14,8	14,3
SHR		0,88	0,93	0,94	0,90	0,84	0,87
Portata Aria	m^3/h	5777	8260	11656	11656	14696	14696
Ventilatori	n°	1	1	1	1	2	2
ESP max.	Pa	568	359	374	374	397	396
EER	W/W	3,56	3,38	3,50	3,52	3,47	3,43
Potenza massima assorbita	kW	10,6	11,5	16,4	18,6	24,3	23,0
Corrente massima assorbita	A	21,0	21,2	25,6	37,6	36,9	42,4
Corrente di spunto	A	17,8	17,8	21,6	34,4	32,0	39,0
Alimentazione	V/ph/Hz			400/3/50+N+PE			
Dati in free - cooling							
Potenza frigo (Totale) (1) ESP 20 Pa	kW	17,3	25,2	35,3	35,3	45,9	45,9
Potenza totale assorbita (2) ESP 20 Pa	kW	0,75	1,02	1,42	1,49	1,64	1,71
SHR		0,88	0,88	0,87	0,87	0,88	0,88
Portata acqua	m^3/h	3,08	4,48	6,28	6,28	8,14	8,14
Perdita di carico totale	kPa	21,7	38,5	29,8	29,8	41,9	41,9
Umidificatore							
Produzione vapore (nominale)	kg/h	5	8	8	8	8	8
Produzione vapore (massima)	kg/h	8	8	8	8	8	8
Potenza assorbita massima	kW	3,75	6	6	6	6	6
Corrente assorbita massima	A	5,5	8,7	8,7	8,7	8,7	8,7
Conducibilità specifica a 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Durezza totale (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Resistenze elettriche							
Gradini	n°	2	3	3	3	3	3
Potenza	kW	6	9	9	9	15	15
Corrente assorbita	A	9,12	13,7	13,7	13,7	22,8	22,8
Resistenze elettriche maggiorate							
Gradini	n°	3	3	3	3	3	3
Potenza	kW	9	12	12	12	18	18
Corrente assorbita	A	13,7	18,2	18,2	18,2	27,3	27,3
Batteria acqua calda							
Potenza termica (3)	kW	10,6	16,7	24,5	24,5	31,1	31,1
Portata acqua	m^3/h	1,8	2,9	4,3	4,3	5,43	5,43
Perdita di carico (batteria + valvola 3 vie)	kPa	48	56	46	46	53	53
Volume interno della batteria	dm^3	2,1	3,3	4,7	4,7	5,8	5,8
Pompa scarico condensa							
Portata nominale	l/h	390	390	390	390	390	390
Portata massima (prevalenza = 0 m)	l/h	500	500	500	500	500	500
Altezza di mandata max (portata = 0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Pompa scarico condensa + umidificatore							
Portata nominale	l/h	-	600	600	600	600	600
Portata massima (prevalenza = 0 m)	l/h	-	900	900	900	900	900
Altezza di mandata max (portata = 0 m^3/h)	m	-	6	6	6	6	6
Dimensioni e peso							
Frame	n°	3	4	4,5	4,5	5	5
Larghezza	mm	980	1160	1505	1505	1860	1860
Profondità	mm	750	850	850	850	850	850
Altezza	mm	1980	1980	1980	1980	1980	1980
Peso (configurazione U)	Kg	297	352	446	463	560	575
Peso (configurazione V)	Kg	301	356	452	469	566	581
Peso (configurazione D)	Kg	303	359	454	471	570	585
Peso (configurazione B)	Kg	301	356	452	469	566	581

(1) Temperatua ambiente 24°C, Umidità relativa 50%, Temperatura di condensazione 48°C, Temperatura di evaporazione 9°C.
(2) La potenza elettrica assorbita dai ventilatori deve essere aggiunta al carico in ambiente.
(3) Temperatua acqua 40/45°C, Temperatura ambiente 20°C, Umidità relativa 50%.

DXi.AF		631	652	742	761	931	952
Potenza frigo (Totale) (1) ESP 20 Pa	kW	61,3	66,8	69,2	76,2	89,0	96,8
Potenza frigo (Sensibile) (1) ESP 20 Pa	kW	52,0	53,4	61,6	63,3	78,8	81,4
Potenza tot. assorbita (2) ESP 20 Pa	kW	17,5	19,6	19,9	22,3	25,8	29,2
SHR		0,84	0,79	0,89	0,83	0,88	0,84
Portata Aria	m^3/h	17838	17838	21183	21183	26048	26048
Ventilatori	n°	2	2	2	2	3	3
ESP max.	Pa	354	355	399	400	432	433
EER	W/W	3,50	3,41	3,48	3,42	3,45	3,32
Potenza massima assorbita	kW	27,7	30,8	32,7	35,9	44,5	48,8
Corrente massima assorbita	A	46,6	48,4	51,2	57,9	76,3	73,8
Corrente di spunto	A	156	44,4	47,2	168	185	68,9
Alimentazione	V/ph/Hz			400/3/50+N+PE			
Dati in free - cooling							
Potenza frigo (Totale) (1) ESP 20 Pa	kW	54,3	54,3	65,4	65,4	80,8	80,8
Potenza totale assorbita (2) ESP 20 Pa	kW	2,17	2,17	2,49	2,49	2,89	2,89
SHR		0,88	0,88	0,88	0,88	0,88	0,88
Portata acqua	m^3/h	9,67	9,67	11,62	11,62	14,33	14,33
Perdita di carico totale	kPa	32,2	32,2	31,0	31,0	27,3	27,3
Umidificatore							
Produzione vapore (nominale)	kg/h	8	8	8	8	8	8
Produzione vapore (massima)	kg/h	8	8	8	8	8	8
Potenza assorbita massima	kW	6	6	6	6	6	6
Corrente assorbita massima	A	8,7	8,7	8,7	8,7	8,7	8,7
Conducibilità specifica a 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Durezza totale (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Resistenze elettriche							
Gradini	n°	3	3	3	3	3	3
Potenza	kW	18	18	24	24	27	27
Corrente assorbita	A	27,3	27,3	36,5	36,5	41,0	41,0
Resistenze elettriche maggiorate							
Gradini	n°	3	3	3	3	3	3
Potenza	kW	24	24	27	27	36	36
Corrente assorbita	A	36,5	36,5	41,0	41,0	54,7	54,7
Batteria acqua calda							
Potenza termica (3)	kW	37,4	37,4	48,9	48,9	60,8	60,8
Portata acqua	m^3/h	6,5	6,5	8,5	8,5	10,6	10,6
Perdita di carico (batteria + valvola 3 vie)	kPa	34	34	48	48	42	42
Volume interno della batteria	dm^3	7,1	7,1	10,45	10,45	12,6	12,6
Pompa scarico condensa							
Portata nominale	l/h	390	390	390	390	390	390
Portata massima (prevalenza = 0 m)	l/h	500	500	500	500	500	500
Altezza di mandata max (portata = 0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Pompa scarico condensa + umidificatore							
Portata nominale	l/h	600	600	600	600	600	600
Portata massima (prevalenza = 0 m)	l/h	900	900	900	900	900	900
Altezza di mandata max (portata = 0 m^3/h)	m	6	6	6	6	6	6
Dimensioni e peso							
Frame	n°	6	6	7	7	8	8
Larghezza	mm	2210	2210	2565	2565	3100	3100
Profondità	mm	850	850	850	850	850	850
Altezza	mm	1980	1980	1980	1980	1980	1980
Peso (configurazione U)	Kg	680	684	807	810	996	994
Peso (configurazione V)	Kg	687	692	815	818	1006	1004
Peso (configurazione D)	Kg	691	695	819	822	1011	1009
Peso (configurazione B)	Kg	687	692	815	818	1006	1004

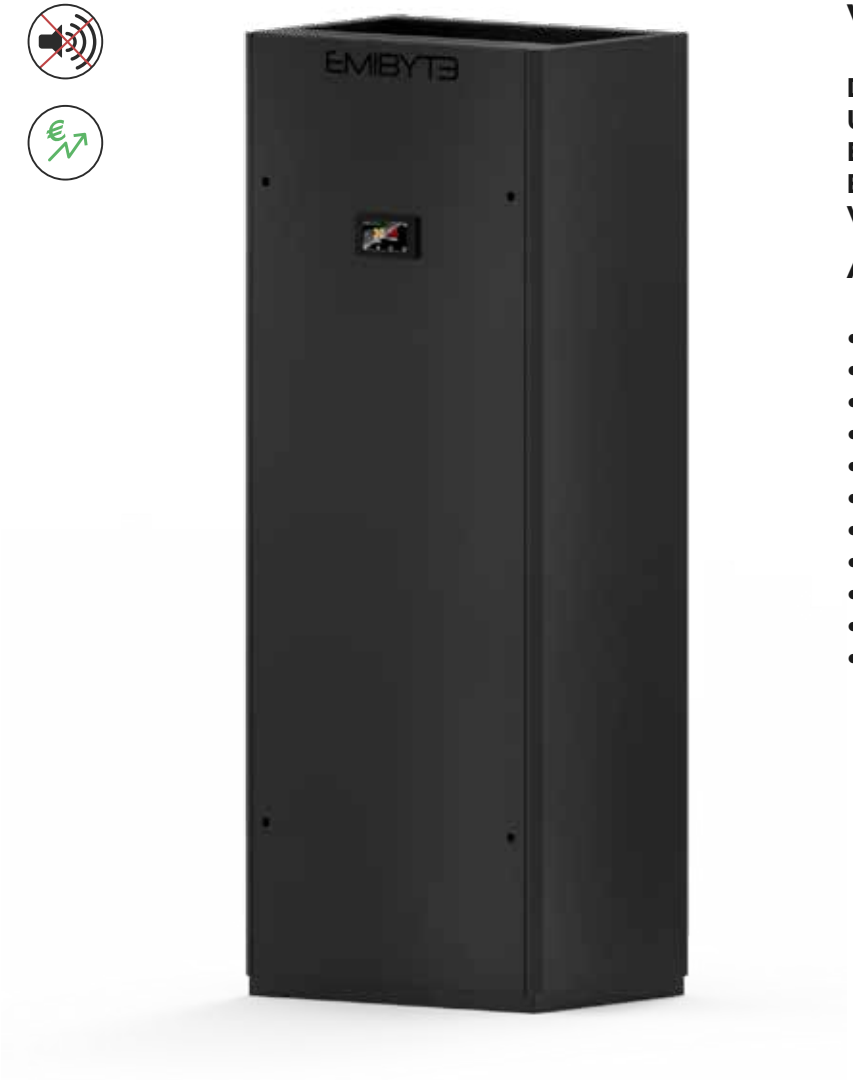
(1) Temperatua ambiente 24°C, Umidità relativa 50%, Temperatura di condensazione 48°C, Temperatura di evaporazione 9°C.
(2) La potenza elettrica assorbita dai ventilatori deve essere aggiunta al carico in ambiente.
(3) Temperatua acqua 40/45°C, Temperatura ambiente 20°C, Umidità relativa 50%.

DXi.H

DIRECT EXPANSION CLOSE CONTROL UNIT
WATER COOLED WITH INVERTER COMPRESSOR

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.

The INVERTER compressor allows the cooling capacity modulation according to the real internal load, particularly efficient at the partial loads, optimizing the power absorbed and eliminating the starting current. Electronic expansion valve and EC Inverter fans are fitted in this model as standard. Emibyte units are fully designed and tested in the Emicon validation laboratories.



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, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

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. Last generation of BLDC INVERTER compressor designed to deliver maximum cooling efficiency when you ned it most. This latest variable speed compressor technology allows CRAC system manufactures as Emicon to achieve superior performance. New generation EC Inverter centrifugal fan made in hight 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 is fitted. 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

The condensation heat is disposed of in an internal plate heat exchanger, connected in turn to a water circuit. The condensation water can derive from a well, local water network or closed circuits such as evaporative towers and / or dry coolers.

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.

TECHNICAL DATA

DXi.H		61	111	121	151	181	201
Cooling capacity (Total) (1) ESP 20 Pa	kW	7,7	10,5	12,1	17,7	20,2	21,7
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	7,7	9,5	11,8	15,4	18,5	21,7
Tot. absorbed power (2) ESP 20 Pa	kW	2,1	3,0	3,2	4,5	4,7	4,8
SHR		1,00	0,91	0,97	0,88	0,91	1,00
Water flow	m^3/h	1,7	2,3	2,6	3,8	4,3	4,6
Pressure drops	kPa	46	35	45	45	33	37
Air flow	m^3/h	3900	3900	3900	3900	5700	5700
Fan	n°	1	1	1	1	1	1
Max. ESP	Pa	535	536	512	439	622	575
EER	W/W	4,0	3,8	4,1	4,2	4,7	4,9
Maximum absorbed power	Kw	4	6	6	9	11	11
Maximum absorbed current	A	14	18	18	16	21	21
Starting current	A	4	4	4	4	7	7
Power supply	V/ph/Hz			400/3/50+N+PE			
Humidifier							
Steam production (nominal)	kg/h	3	3	3	3	5	5
Steam production (max.)	kg/h	3	3	3	3	8	8
Max. absorbed power	kW	2,25	2,25	2,25	2,25	3,75	3,75
Max. absorbed current	A	10,0	10,0	10,0	10,0	5,5	5,5
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	2	2
Power	kW	4,5	4,5	4,5	4,5	6,0	6,0
Absorbed current	A	6,5	6,5	6,5	6,5	8,7	8,7
Oversized electrical heaters							
Steps	n°	2	2	2	2	3	3
Power	kW	6,0	6,0	6,0	6,0	9,0	9,0
Absorbed current	A	8,7	8,7	8,7	8,7	13,0	13,0
Hot water coil							
Heating capacity (3)	kW	7,3	7,3	7,3	7,3	10,6	10,6
Water flow	m^3/h	1,3	1,3	1,3	1,3	1,8	1,8
Pressure drop (coil + 3 way valve)	kPa	31	31	31	31	48	48
Coil internal volume	dm^3	1,4	1,4	1,4	1,4	2,1	2,1
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	1/1	1/1	1/1
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	1	1	1
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	-	-	-	-	-	-
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-
Dimensions and weight							
Frame	n°	2	2	2	2	3	3
Width	mm	750	750	750	750	980	980
Depth	mm	550	550	550	550	750	750
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	201	209	212	223	289	297
Weight (Configuration V)	Kg	204	212	215	226	293	301
Weight (Configuration D)	Kg	205	213	217	228	295	303
Weight (Configuration B)	Kg	204	212	215	226	293	301

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		251	321	381	392	472	491
Cooling capacity (Total) (1) ESP 20 Pa	kW	25,9	35,1	36,4	39,4	48,0	50,9
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	24,8	31,6	37,5	35,0	40,7	45,4
Tot. absorbed power (2) ESP 20 Pa	kW	6,4	7,6	8,0	8,0	11,0	11,8
SHR		0,96	0,90	1,00	0,89	0,85	0,89
Water flow	m^3/h	5,6	7,3	7,6	8,2	10,1	10,8
Pressure drops	kPa	29	27	21	7	10	33
Air flow	m^3/h	8150	8150	11500	11500	11500	11500
Fan	n°	1	1	1	1	1	1
Max. ESP	Pa	399	358	344	399	370	323
EER	W/W	4,4	5,0	4,9	5,4	4,7	4,7
Maximum absorbed power	Kw	12	15	16	19	21	23
Maximum absorbed current	A	21	24	26	38	40	34
Starting current	A	6	6	8	24	25	8
Power supply	V/ph/Hz				400/3/50+N+PE		
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	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
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	9,0	9,0	9,0	9,0	9,0	9,0
Absorbed current	A	13,0	13,0	13,0	13,0	13,0	13,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	12,0	12,0	12,0	12,0	12,0	12,0
Absorbed current	A	17,3	17,3	17,3	17,3	17,3	17,3
Hot water coil							
Heating capacity (3)	kW	16,7	16,7	24,5	24,5	24,5	24,5
Water flow	m^3/h	2,9	2,91	4,3	4,3	4,3	4,3
Pressure drop (coil + 3 way valve)	kPa	56	56	46	46	46	46
Coil internal volume	dm^3	3,3	3,3	4,7	4,7	4,7	4,7
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	2/2	1/1
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	2	2	1
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	4	4	4,5	4,5	4,5	4,5
Width	mm	1160	1160	1505	1505	1505	1505
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	339	372	428	456	458	435
Weight (Configuration V)	Kg	343	376	433	462	464	440
Weight (Configuration D)	Kg	345	379	436	465	466	443
Weight (Configuration B)	Kg	343	376	433	462	464	440

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		531	532	631	652	691	742
Cooling capacity (Total) (1) ESP 20 Pa	kW	55,0	53,7	68,1	70,6	72,2	76,4
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	53,4	52,8	65,3	66,2	67,0	75,8
Tot. absorbed power (2) ESP 20 Pa	kW	12,2	13,0	14,6	15,5	15,7	16,9
SHR		0,97	0,98	0,96	0,94	0,93	0,99
Water flow	m^3/h	11,6	11,5	14,2	14,8	15,1	16,0
Pressure drops	kPa	37	12	28	10	31	11
Air flow	m^3/h	14500	14500	17600	17600	17600	20900
Fan	n°	2	2	2	2	2	2
Max. ESP	Pa	389	360	390	361	390	365
EER	W/W	4,9	4,5	5,0	4,9	5,0	4,9
Maximum absorbed power	Kw	24	23	28	31	30	33
Maximum absorbed current	A	37	42	47	48	50	51
Starting current	A	10	27	156	30	167	33
Power supply	V/ph/Hz			400/3/50+N+PE			
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	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
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	15,0	15,0	18,0	18,0	18,0	24,0
Absorbed current	A	21,7	21,7	26,0	26,0	26,0	34,6
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	18,0	18,0	24,0	24,0	24,0	27,0
Absorbed current	A	26,0	26,0	34,6	34,6	34,6	39,0
Hot water coil							
Heating capacity (3)	kW	31,1	31,1	37,4	37,4	37,4	48,9
Water flow	m^3/h	5,43	5,43	6,5	6,5	6,5	8,5
Pressure drop (coil + 3 way valve)	kPa	53	53	34	34	34	48
Coil internal volume	dm^3	5,8	5,8	7,1	7,1	7,1	10,45
Compressors							
Circuits / Compressors	n°/n°	1/1	2/2	1/2	2/2	1/2	2/2
On / Off Compressors	n°	--	--	1	--	1	--
Inverter Compressors	n°	1	2	1	2	1	1
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	5	5	6	6	6	7
Width	mm	1860	1860	2210	2210	2210	2565
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	525	548	627	652	627	749
Weight (Configuration V)	Kg	531	554	634	660	634	757
Weight (Configuration D)	Kg	535	558	638	663	638	761
Weight (Configuration B)	Kg	531	554	634	660	634	757

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.H		761	861	931	952	1021	1142
Cooling capacity (Total) (1) ESP 20 Pa	kW	85,9	87,3	100,3	104,6	107,4	118,9
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	80,1	80,7	96,5	98,0	99,4	104,5
Tot. absorbed power (2) ESP 20 Pa	kW	18,7	19,9	21,9	23,5	22,9	26,8
SHR		0,93	0,92	0,96	0,94	0,93	0,88
Water flow	m^3/h	18,0	18,4	21,0	22,0	22,4	25,1
Pressure drops	kPa	29	21	26	12	22	15
Air flow	m^3/h	20900	20900	25700	25700	25700	25700
Fan	n°	2	2	3	3	3	3
Max. ESP	Pa	394	394	414	385	414	386
EER	W/W	5,0	4,7	4,9	4,8	5,1	4,8
Maximum absorbed power	Kw	36	38	45	49	47	56
Maximum absorbed current	A	58	61	76	74	79	93
Starting current	A	168	179	185	47	219	203
Power supply	V/ph/Hz			400/3/50+N+PE			
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	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
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	24,0	24,0	27,0	27,0	27,0	27,0
Absorbed current	A	34,6	34,6	39,0	39,0	39,0	39,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	27,0	27,0	36,0	36,0	36,0	36,0
Absorbed current	A	39,0	39,0	52,0	52,0	52,0	52,0
Hot water coil							
Heating capacity (3)	kW	48,9	48,9	60,8	60,8	60,8	60,8
Water flow	m^3/h	8,5	8,5	10,6	10,6	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	48	48	42	42	42	42
Coil internal volume	dm^3	10,45	10,45	12,6	12,6	12,6	12,6
Compressors							
Circuits / Compressors	n°/n°	1/2	1/2	1/2	2/2	1/2	2/4
On / Off Compressors	n°	1	1	1	--	1	2
Inverter Compressors	n°	1	1	1	2	1	2
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	7	7	8	8	8	8
Width	mm	2565	2565	3100	3100	3100	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	735	739	900	919	904	995
Weight (Configuration V)	Kg	743	748	910	929	915	1006
Weight (Configuration D)	Kg	747	752	915	934	920	1011
Weight (Configuration B)	Kg	743	748	910	929	915	1006

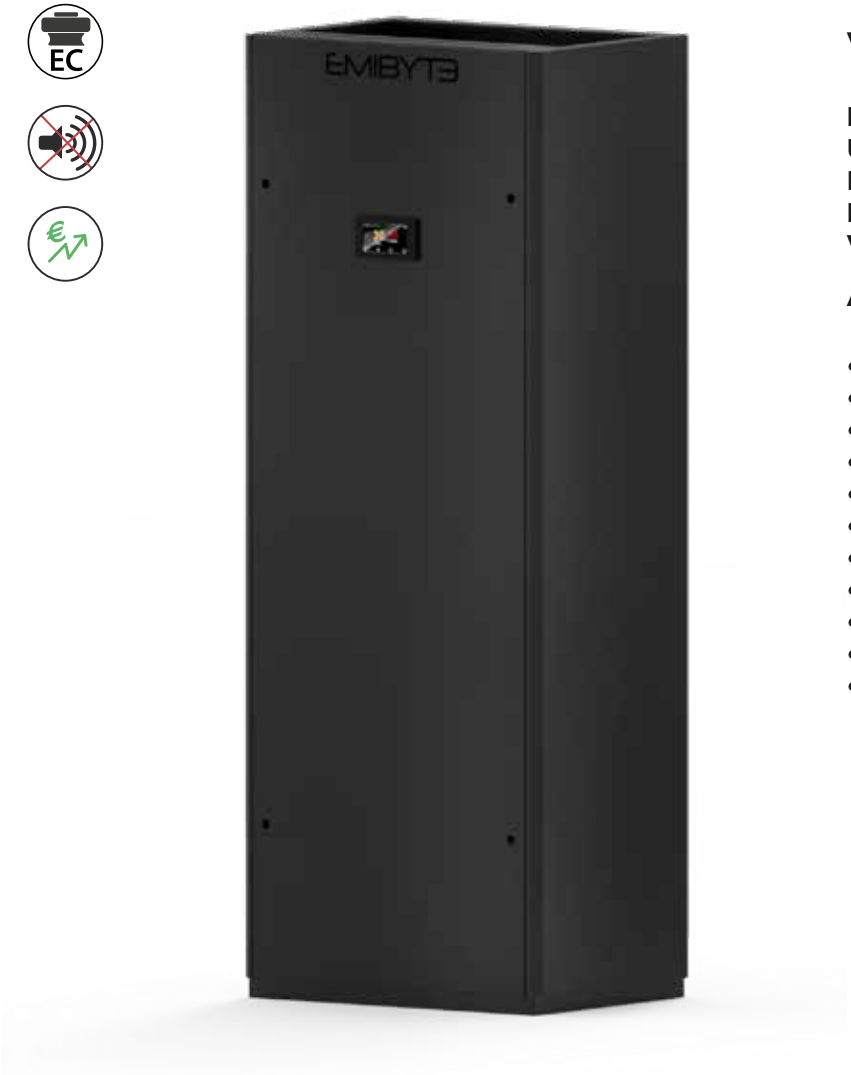
(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.HF

DIRECT EXPANSION CLOSE CONTROL UNIT
WATER COOLED WITH ADDITIONAL FREECOOLING COIL
AND INVERTER COMPRESSORS

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.

Direct expansion FREE-COOLING unit with INVERTER compressor is water cooled and it has to be connected to a remote dry cooler. INVERTER compressor allows the cooling capacity modulation according to the effective thermal load. This solution is suitable for applications with high partial loads and optimises the power input by reducing inrush current.
The unit is also equipped with electronic expansion valve, EC INVERTER fans, condenser and additional Free-cooling coil.



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, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

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. Last generation of BLDC INVERTER compressor designed to deliver maximum cooling efficiency when you ned it most. This latest variable speed compressor technology allows CRAC system manufactures as Emicon to achieve superior performance. New generation EC Inverter centrifugal fan made in hight 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 is fitted. 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. Thanks to the double coil (Free-cooling water and Direct Expansion) the unit provides the highest saving match with full availability of the DX solution. The usage of Free cooling coil and the BLDC Inverter compressor allows maximizing the saving in mixed mode operation, so whenever the free-cooling is not able to fully take the load the compressors can work just to complete the missing cooling needs. Therefore Emicon DXI-HF can provide extremely high energy saving granting the highest availability of the application.

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.

TECHNICAL DATA

DXi.HF		181	251	381	392	531	532
Cooling capacity (Total) (1) ESP 20 Pa	kW	18,9	23,1	34,7	37,9	47,8	45,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	16,5	23,0	32,8	33,5	42,7	42,6
Tot. absorbed power (2) ESP 20 Pa	kW	4,35	5,67	4,55	8,48	10,9	10,9
SHR		0,87	0,99	0,94	0,88	0,89	0,93
Water flow	m^3/h	3,99	4,96	6,88	8,01	10,11	9,73
Air flow	m^3/h	5777	8260	11656	11656	14696	14696
Fan	n°	1	1	1	1	2	2
Max. ESP	Pa	570	361	375	376	398	398
EER	W/W	4,34	4,07	7,63	4,47	4,39	4,17
Maximum absorbed power	kW	10,6	11,5	16,4	18,6	24,3	23,0
Maximum absorbed current	A	21,0	21,2	25,6	37,6	36,9	42,4
Starting current	A	17,8	17,8	21,6	34,4	32,0	39,0
Power supply	V/ph/Hz			400/3/50+N+PE			
Free-cooling data							
Cooling capacity (Total) (3) ESP 20 Pa	kW	18,8	25,9	36,3	37,9	48,9	48,7
Tot. absorbed power (2) ESP 20 Pa	kW	0,85	1,12	0,88	1,56	1,88	1,82
SHR		0,84	0,87	0,88	0,84	0,84	0,84
Water flow	m^3/h	3,98	4,94	6,85	7,98	10,07	9,69
Total pressure drops	kPa	48,3	50,5	39,3	36,0	74,3	52,6
Humidifier							
Steam production (nominal)	kg/h	5	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	3,75	6,0	6,0	6,0	6,0	6,0
Max. absorbed current	A	5,5	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
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	2	3	3	3	3	3
Power	kW	6,0	9,0	9,0	9,0	15,0	15,0
Absorbed current	A	9,12	13,7	13,7	13,7	22,8	22,8
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	9,0	12,0	12,0	12,0	18,0	18,0
Absorbed current	A	13,7	18,2	18,2	18,2	27,3	27,3
Hot water coil							
Heating capacity (4)	kW	10,6	16,7	24,5	24,5	31,1	31,1
Water flow	m^3/h	3,98	4,94	6,85	7,98	10,08	9,69
Pressure drop (coil + 3 way valve)	kPa	48	56	46	46	53	53
Coil internal volume	dm^3	2,1	3,3	4,7	4,7	5,8	5,8
Compressors							
Circuits / Compressors	n°/n°	1/1	1/1	1/1	2/2	1/1	2/2
On / Off Compressors	n°	--	--	--	--	--	--
Inverter Compressors	n°	1	1	1	2	1	2
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	-	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	-	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	3	4	4,5	4,5	5	5
Width	mm	980	1160	1505	1505	1860	1860
Depth	mm	750	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	302	357	455	484	573	596
Weight (Configuration V)	Kg	306	361	461	490	579	603
Weight (Configuration D)	Kg	308	363	464	493	583	606
Weight (Configuration B)	Kg	306	361	461	490	579	603

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Free cooling: Ambient temperature 24°C, Relative humidity 50%, water inlet temperature 7°C, constant water flow
(4) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

DXi.HF		631	652	742	761	931	952
Cooling capacity (Total) (1) ESP 20 Pa	kW	61,3	59,1	64,7	73,2	86,9	86,4
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	51,4	51,4	60,5	61,9	77,4	77,2
Tot. absorbed power (2) ESP 20 Pa	kW	13,9	13,2	14,6	16,6	19,9	19,7
SHR		0,83	0,87	0,93	0,84	0,89	0,89
Water flow	m^3/h	12,97	12,48	13,67	15,47	18,41	18,33
Air flow	m^3/h	17838	17838	21183	21183	26048	26048
Fan	n°	2	2	2	2	3	3
Max. ESP	Pa	356	356	401	401	434	434
EER	W/W	4,41	4,48	4,43	4,41	4,37	4,39
Maximum absorbed power	kW	45,7	48,8	56,7	59,9	45	49
Maximum absorbed current	A	73,9	75,7	87,7	94,4	76	74
Starting current	A	184	71,7	83,7	204	185	47
Power supply	V/ph/Hz			400/3/50+N+PE			
Free-cooling data							
Cooling capacity (Total) (3) ESP 20 Pa	kW	59,4	59,0	68,7	71,1	87,1	86,9
Tot. absorbed power (2) ESP 20 Pa	kW	2,43	2,31	2,66	2,81	3,25	3,02
SHR		0,85	0,844	0,84	0,84	0,84	0,84
Water flow	m^3/h	12,92	12,43	13,62	15,41	18,33	18,25
Total pressure drops	kPa	62,6	45,8	37,3	56,6	52,3	30,4
Humidifier							
Steam production (nominal)	kg/h	8	8	8	8	8	8
Steam production (max.)	kg/h	8	8	8	8	8	8
Max. absorbed power	kW	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
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	18,0	18,0	24,0	24,0	27,0	27,0
Absorbed current	A	27,3	27,3	36,5	34,6	39,0	39,0
Oversized electrical heaters							
Steps	n°	3	3	3	3	3	3
Power	kW	24,0	24,0	27,0	27,0	36,0	36,0
Absorbed current	A	36,5	36,5	41,0	39,0	52,0	52,0
Hot water coil							
Heating capacity (4)	kW	37,4	37,4	48,9	48,9	60,8	60,8
Water flow	m^3/h	12,92	12,43	13,62	8,5	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	34	34	48	48	42	42
Coil internal volume	dm^3	7,1	7,1	10,5	10,5	12,6	12,6
Compressors							
Circuits / Compressors	n°/n°	1/2	2/2	2/2	1/2	1/2	2/2
On / Off Compressors	n°	1	--	--	1	1	--
Inverter Compressors	n°	1	2	1	1	1	2
Condensing water pump							
Nominal flow	l/h	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
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	6	6	7	7	8	8
Width	mm	2210	2210	2565	2565	3100	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980
Weight (Configuration U)	Kg	686	711	833	819	1003	1022
Weight (Configuration V)	Kg	693	718	841	828	1014	1032
Weight (Configuration D)	Kg	696	722	845	832	1019	1037
Weight (Configuration B)	Kg	693	718	841	828	1014	1032

(1) Ambient temperature 24°C, Relative humidity 50%, Water temperature 30/35°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Free cooling: Ambient temperature 24°C, Relative humidity 50%, water inlet temperature 7°C, constant water flow
(4) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

IRDXi

DIRECT EXPANSION CLOSE CONTROL UNIT

AIR CONDENSED FOR HIGH DENSITY RACKS

30 - 60 cm

The indoor vertical air conditioning unit RACK COOLER is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack ´up and over 40 kW/m2 rack.

In the air cooled direct expansion version, the indoor unit is equipped with a hermetic inverter scroll compressor optimized for R410A refrigerant, EC fans with last generation electronically commutated brushless motors, to be matched to external condensers in standard or silenced version.

Efficiency
The unit combines the efficiency of use of last EC fans generation and a direct expansion system with inverter compressor allowing a great EER value. (Energy Efficiency Ratio). Thanks to the adoption of inverter DC brushless compressors, these units can reduce consumptions at part load, if compared to a traditional ON/OFF compressor.

Flexibility
The IR-DXi unit are both equipped with predisposition for passing refrigerant connections and power supply from both above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of access floor.

Control management
The units are supplied with a new management algorithm capable of modulating the air flow and compressor capacity according to the effective environment heating load requirements. This system provides considerable benefits in terms of system management costs.

Compartization
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

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.

SPECIAL SERIES

IRDXi HF : Free-cooling water units
IRDXi AF : Free-cooling air units
IRDXi XF : DUAL FLUID version units
(Details on request c/o Emicon Ac Spa)

TECHNICAL DATA

IRDXi		IR30.DXi 12	IR30.DXi 22	IR30.DXi 27	IR60.DXi 40	IR60.DXi 50
Net Cooling capacity (Total) (1)	kW	12,9	20,6	27,8	40,0	52,7
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	12,9	20,6	27,8	40,0	52,7
Tot. absorbed power (2) ESP 20 Pa	kW	3,88	5,21	7,59	9,65	13,10
SHR		1,00	1,00	1,00	1,00	1,00
Air flow	m^3/h	3000	4000	5000	8000	9000
Fans	n°	3	4	4	4	4
ESP max.	Pa	194	179	218	142	72
Unit EER without remote condenser to max. frequency	W/W	3,6	4,3	4,1	4,5	4,4
Maximum absorbed power	kW	5,1	8,2	10,7	14,8	21,1
Maximum absorbed current	A	21,0	22,6	25,8	30,0	38,5
Power supply	V/ph/Hz			400/3/50+N+PE		
Humidifier						
Steam production (nominal)	kg/h	3	3	3	5	5
Steam production (max.)	kg/h	3	3	3	8	8
Max. absorbed power	kW	2,25	2,25	2,25	3,75	3,75
Max. absorbed current	A	10,0	10,0	10,0	5,5	5,5
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400
Electrical heaters						
Steps	n°	1	1	1	3	3
Power	kW	3,0	3,0	3,0	9,0	9,0
Absorbed current	A	4,3	4,3	4,3	13,0	13,0
Condensing water pump						
Nominal flow	l/h	390,0	390,0	390,0	390,0	390,0
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500
Max. discharge height (flow = 0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier						
Nominal flow	l/h	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900
Max. discharge height (flow = 0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0
Dimensions and weight						
Width	mm	300	300	300	600	600
Depth (3)	mm	1100	1100	1100	1100	1100
Height	mm	2000	2000	2000	2000	2000
Weight	Kg	175	185	200	270	280

(1) Ambient temperature 24°C, Relative humidity 50%, Condensing temperature 50°C
(2) The fans electrical power has to be added to the ambient load.
(3) In the LL, LR and CL versions, the depth is 1200 mm.

IRWU

WATER COOLED CLOSE CONTROL UNIT

FOR HIGH DENSITY RACKS

30 - 60 cm

The indoor vertical air conditioning units RACK COOLER "IRUW" is an effective management system of the Hot Spots in the data center, ensuring low energy consumption and usage possibilities even under extremely high loads for HIGH DENSITY rack ´up and over 40 kW/m2 rack.
In hydronic version where the cooling is ensured by the use of an external chiller. The use of EC fan systems, featuring last-generation electronic-switching brushless motors, assures excellent performance and low consumption.
Available as standard with the dynamic management of N +1 EC fans to optimize consumption and redundancy of the cooling system. These individual units to be positioned between the racks in the row so as to act locally in order to dissipate the load of servers.

Flexibility
Air conditioners are both equipped with predisposition for passing refrigerant connections and power supply from both above and below, so as to allow a quick and easy installation in any condition, whether or not foreseen the presence of access floor.

Control management
The units are supplied with a new management algorithm capable of avoiding temperature stratification inside the rack using 4 integrated and independent sensors (2 on suction and 2 on discharge) to optimize ventilation and chilled water valve opening in order to maximize energy benefits.

Redundancy
The IR-WU cooling units are designed for maximum system reliability, provide the possibility of hot back-up fan replacement, and can be equipped with dual coils and their control valve and dual power supply, ensuring 100% system back-up.

Compartization
Perfect integration with systems that minimize the mixing hot and cold air between the aisles and that emphasize the efficiency of such systems.

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.

TECHNICAL DATA

IRWU		IR30. WU 10	IR30. WU 15	IR30. WU 20	IR30. WU 25	IR30. WU 33	IR60. WU 42	IR60. WU 47	IR60. WU 56
Net Cooling capacity (Total) (1)	kW	11,1	17,8	25,9	30,4	42,4	50,7	56,4	68,9
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	11,0	17,6	23,6	29,0	40,0	48,4	56,4	64,5
Tot. absorbed power (2) ESP 20 Pa	kW	0,15	0,33	0,33	0,47	1,02	0,49	0,73	0,84
SHR		0,99	0,99	0,91	0,95	0,94	0,95	1,00	0,94
Air flow	m^3/h	2000	3300	3300	4400	5600	7500	9000	9000
Fans	n°	2	3	3	4	4	3	4	4
ESP max.	Pa	232	139	160	115	95	90	92	66
Water flow		1,9	3,1	4,5	5,2	7,3	8,7	9,7	11,8
Maximum absorbed power	kW	0,34	0,51	0,51	0,68	1,76	1,50	2,00	2,00
Maximum absorbed current	A	3,30	4,95	4,95	6,60	8,80	7,50	10,00	10,00
Power supply	V/ph/Hz	400/3/50+N+PE							
Humidifier									
Steam production (nominal)	kg/h	1,5	2	3	3	3	5	5	5
Steam production (max.)	kg/h	3	3	3	3	3	8	8	8
Max. absorbed power	kW	2,25	2,25	2,25	2,25	2,25	3,75	3,75	3,75
Max. absorbed current	A	10,0	10,0	10,0	10,0	10,0	5,5	5,5	5,5
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
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters									
Steps	n°	1	1	1	1	1	3	3	3
Power	kW	3,0	3,0	3,0	3,0	3,0	9,0	9,0	9,0
Absorbed current	A	4,3	4,3	4,3	4,3	4,3	13,0	13,0	13,0
Condensing water pump									
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier									
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight									
Width	mm	300	300	300	300	300	600	600	600
Depth (3)	mm	1100	1100	1100	1100	1100	1100	1100	1100
Height	mm	2000	2000	2000	2000	2000	2000	2000	2000
Weight	Kg	150	160	165	170	180	245	250	260

(1) Ambient temperature 38°C, Water 7/12°C
(2) The fans electrical power has to be added to the ambient load.
(3) In the LL, LR and CL versions, the depth is 1200 mm.

WU

WATER COOLED CLOSE CONTROL UNIT

Ductable close control air-conditioners for vertical installation 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, upflow or downflow. These units are provided with 2 way modulating valve and servomotor. Unit has to be connected with an external chiller.

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector.
Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector. NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions. The fan section is contained within the machine and includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated electronic commutated system and continuous variation of the rotation speed.
Standard G4, M5 filtering section is to CEN-EN 779 with average degree of separation 90,1% ASHRAE. The filter is self-extinguishing. Switchboard to IEC 204-1 / EN60204-1.

Chilled water coil with copper tube and aluminium Blue-fins with hydrophilic coating treatment surface to reduce the pressure drops on the air side. Water circuit realized with pipes entirely coated with insulated material and bronze fittings, complete temperature probe and with 2 or 3-way modulating valve.

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, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

TECHNICAL DATA

WU		80	150	190	250	310	440	550	640	700	840
Cooling capacity (Total) (1) ESP 20 Pa	kW	6,3	10,1	13	16,7	20,9	29,6	37	42,9	48	55,3
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	5,8	8,6	10,6	14,2	16,8	24,9	29,8	35,2	38,4	47,4
Tot. absorbed power (2) ESP 20 Pa	kW	0,3	0,3	0,4	0,6	0,7	0,9	1,1	1,2	1,2	1,7
SHR		0,92	0,85	0,81	0,84	0,8	0,84	0,80	0,81	0,79	0,85
Air flow	m^3/h	2550	2550	2550	4100	4100	7200	7200	9100	9100	13400
N° Fans	n°	1	1	1	1	1	1	1	1	1	1
ESP max.	Pa	563	517	480	445	405	570	522	349	337	338
Pressure drop coil + 2 way valve (standard)	kPa	32	20	28	41	31	31	31	34	40	34
Water flow	m^3/h	1,1	1,7	2,2	2,9	3,6	5,1	6,4	7,4	8,3	9,5
Power supply	V/ph/Hz					400/3/50+N+PE					
Humidifier											
Steam production (nominal)	kg/h	1,5	1,5	1,5	3,0	3,0	5,0	5,0	8,0	8,0	8,0
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 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	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters											
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
Oversized electrical heaters											
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
Hot water coil											
Heating capacity (3)	kW	4,9	4,9	4,9	7,3	7,3	10,67	10,67	16,7	16,7	24,5
Water flow	m^3/h	0,85	0,85	0,85	1,3	1,3	1,86	1,86	2,91	2,91	4,3
Pressure drop (coil + 3 way valve)	kPa	36	36	36	31	31	48	48	56	56	46
Coil internal volume	dm^3	1,1	1,1	1,1	1,4	1,4	2,1	2,1	3,3	3,3	4,7
Condensing water pump											
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^3/h)	m	15,0	15,0	15,0	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier											
Nominal flow	l/h	-	-	-	-	-	-	-	600	600	600
Max. flow (prevalence = 0 m)	l/h	-	-	-	-	-	-	-	900	900	900
Max. discharge height (flow=0 m^3/h)	m	-	-	-	-	-	-	-	6,0	6,0	6,0
Dimensions and weight											
Frame	n°	1	1	1	2	2	3	3	4	4	4,5
Width	mm	550	550	550	750	750	980	980	1160	1160	1505
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	Kg	139	143	148	173	179	237	248	312	318	360

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

WU		960	1050	1300	1450	1600	1710	1900	2100	2300
Cooling capacity (Total) (1) ESP 20 Pa	kW	63,2	68,9	88,2	95,2	106,9	115,4	126,2	140,1	157,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	51,6	55,4	70,4	77,6	85,2	93,9	100,7	114,3	125,6
Tot. absorbed power (2) ESP 20 Pa	kW	1,9	2	2,2	2,7	2,9	3,1	3,3	3,5	3,8
SHR		0,81	0,80	0,79	0,81	0,79	0,81	0,79	0,81	0,79
Air flow	m^3/h	13400	13400	16600	20100	20100	23800	23800	29500	29500
N° Fans	n°	1	1	2	2	2	2	2	3	3
ESP max.	Pa	308	291	369	277	293	371	366	398	413
Pressure drop coil + 2 way valve (standard)	kPa	41	42	35	40	43	47	50	37	40
Water flow	m^3/h	10,9	11,9	15,2	16,4	18,4	19,8	21,7	24,1	27,1
Power supply	V/ph/Hz	400/3/50+N+PE								
Humidifier										
Steam production (nominal)	kg/h	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0
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 $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	9,0	9,0	15,0	18,0	18,0	24,0	24,0	27,0	27,0
Absorbed current	A	13,0	13,0	21,7	26,0	26,0	34,6	34,6	39,0	39,0
Oversized electrical heaters										
Steps	n°	3	3	3	3	3	3	3	3	3
Power	kW	12,0	12,0	18,0	24,0	24,0	27,0	27,0	36,0	36,0
Absorbed current	A	17,3	17,3	26,0	34,6	34,6	39,0	39,0	52,0	52,0
Hot water coil										
Heating capacity (3)	kW	24,5	24,5	31,1	37,4	37,4	48,9	48,9	60,8	60,8
Water flow	m^3/h	4,3	4,3	5,43	6,5	6,5	8,5	8,5	10,6	10,6
Pressure drop (coil + 3 way valve)	kPa	46	46	53	34	34	48	48	42	42
Coil internal volume	dm^3	4,7	4,7	5,8	7,1	7,1	10,45	10,45	12,6	12,6
Condensing water pump										
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^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier										
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^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight										
Frame	n°	4,5	4,5	5	6	6	7	7	8	8
Width	mm	1505	1505	1860	2210	2210	2565	2565	3100	3100
Depth	mm	850	850	850	850	850	850	850	850	850
Height	mm	1980	1980	1980	1980	1980	1980	1980	1980	1980
Weight	Kg	366	373	456	503	520	600	617	715	751

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.

WUL

WATER COOLED CLOSE CONTROL UNIT
(EXTENDED VERSION)

Close control air-conditioners for vertical installation 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 consist of two modules: the first housing the heat exchanger, usually placed over the floor, the second where EC inverter fans are fitted. Downflow air supply. These units are provided with modulating 2 way valve and servomotor. Unit has to be connected with an external chiller.

Features

Unit for installing inside or outside the room to be air-conditioned. Maximum resistance to rust thanks to galvanised sheet metal structures and panels with powder-coated paint finish. The panels are lined with sound-insulating material to limit noise levels. The reliability and functionality of the all parts are guaranteed by partners who are world leaders in their sector. NEW EC INVERTER fans with electronic commutation in order to maximize the energy saving and reducing the noise emissions. The fan section includes: centrifugal fans with backward curved blades with wing profile, single suction and without scroll housings (Plug-fans), directly coupled to external rotor EC electric motor brushless type with integrated
electronic commutated system and continuous variation of the rotation speed.
Standard G4, M5 filtering section, to CEN-EN 779 with average degree of separation 90.1% ASHRAE. The filter is self-extinguishing. Switchboard to IEC 204-1/EN60204-1.
Chilled water coil with copper tube and aluminium Blue-fins with hydrophilic coating treatment surface to reduce the pressure drops on the air side. Water circuit realized with pipes entirely coated with insulated material and bronze fittings, complete temperature probe and with 2 or 3-way modulating valve.

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

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, modbus, bacnet
- Touch screen graphic terminal
- Power supply different from standard

TECHNICAL DATA

WUL		900	1350	1800	2200	2500	3200
Cooling capacity (Total) (1) ESP 20 Pa	kW	59,5	85	115,3	136,9	169,1	216,5
Cooling cpacity (Sensible) (1) ESP 20 Pa	kW	48,6	69,4	95	111,6	138,6	176,5
Tot. absorbed power (2) ESP 20 Pa	kW	1,6	2,5	2,9	3,8	5,2	5,4
SHR		0,82	0,82	0,82	0,82	0,82	0,82
Air flow	m^3/h	12000	16500	22000	26000	33000	41000
N° Fans	n°	1	1	2	2	2	3
ESP max.	Pa	239	161	295	160	150	318
Pressure drop coil + 2 way valve (standard)	kPa	28	24	37	24	33	52
Water flow	m^3/h	10,2	14,6	19,8	23,5	29,1	37,2
Power supply	V/ph/Hz			400/3/50+N+PE			
Humidifier							
Steam production (nominal)	kg/h	8	8	15	15	15	15
Steam production (max.)	kg/h	8	8	15	15	15	15
Max. absorbed power	kW	6	6	11,2	11,2	11,2	11,2
Max. absorbed current	A	8,7	8,7	16,2	16,2	16,2	16,2
Specific conducibility at 20°C (min/max)	µS/cm	300/1250	300/1250	300/1250	300/1250	300/1250	300/1250
Total hardness (min/max)	mg/l $CaCO_3$	100/400	100/400	100/400	100/400	100/400	100/400
Electrical heaters							
Steps	n°	2	2	2	2	3	3
Power	kW	7,4	7,4	14,8	14,8	22,2	29,6
Absorbed current	A	10,7	10,7	21,4	21,4	32,0	42,7
Hot water coil							
Heating capacity (3)	kW	29,7	41,37	54,98	65,62	81,32	101,37
Water flow	m^3/h	5,18	7,21	9,58	11,43	14,2	17,66
Pressure drop (coil + 3 way valve)	kPa	51	50	71	73	61	86
Coil internal volume	dm^3	7,6	11,54	13,47	15,28	17,27	22,23
Condensing water pump							
Nominal flow	l/h	390	390	390	390	390	390
Max. flow (prevalence = 0 m)	l/h	500	500	500	500	500	500
Max. discharge height (flow=0 m^3/h)	m	5,4	5,4	5,4	5,4	5,4	5,4
Condensing water pump + humidifier							
Nominal flow	l/h	600	600	600	600	600	600
Max. flow (prevalence = 0 m)	l/h	900	900	900	900	900	900
Max. discharge height (flow=0 m^3/h)	m	6,0	6,0	6,0	6,0	6,0	6,0
Dimensions and weight							
Frame	n°	4	4,5	5	6	7	8
Width	mm	1160	1505	1860	2210	2565	3100
Depth	mm	850	850	850	850	850	850
Height	mm	1980 + 550	1980 + 550	1980 + 550	1980 + 550	1980 + 550	1980 + 550
Weight	Kg	383	485	577	646	775	959

(1) Ambient temperature 24°C, Relative humidity 50%, Water 7/12°C.
(2) The fans electrical power has to be added to the ambient load.
(3) Water temperature 40/45°C, Ambient temperature 20°C, Relative humidity 50%.