



UW 2000 U



Serie UW - Power

Cooling capacity from 7 to 300 kW

The range of chilled water close control units, **series UW**, is particularly indicated for use in technological centres, data processing rooms, in telecom centres and in such applications where it is important to keep the thermo-hygrometric conditions constant all over the year, so to assure the correct operation of the equipments installed in these sites.

Thanks to their technologically advanced design, these close control units are able to control the ambient temperature with remarkably high precision and, when the humidity level is required, to adapt their cooling capacity to the room requirements, all automatically managed by the microprocessor on board.

The high technology employed during their design together with the use of the best components available on the markets, make these units extremely reliable and therefore able to work for long periods, without a break.

These units are particularly easy to install also in small spaces and easily accessible on the front side for ordinary and extraordinary service operations. They are completely assembled and tested in the factory.

The units are available in different configurations, related to the air return and discharge:

UW ...U front air return, upflow air discharge

UW ...V bottom air return, upflow air discharge

UW ...D top air return, downflow air discharge

The standard range has been improved with the SLIM configuration (mod. UWL D), available in two working modes:

HP – High performance: setting of the fans, maximizing the heat exchange through the hydrophilically treated coil, which increases the total and sensible cooling capacity and ensures, on the other hand, reduced electrical absorption values, if compared to the given cooling capacity, and a low sound pressure level.

ES – Energy saving: setting of the fans, maximizing their energy saving, which ensures heat exchange ratio giving a particularly high total and sensible capacity, together with a reduction of the energy consumption and of the overall sound level.

In both cases, the increase of the fan speed rotation to get higher pressure values involves, as a consequence, an increase of the sound level of the unit, which needs to be considered in the acoustics evaluation of the installation site.

Operation limits: ambient temperature from 18 to 35°C.

Main components:

Structure realized with a framework and internal parts made of galvanized steel riveted profiles and supports, making the structure strong and suitable also for extreme transport and handling conditions. The external panels, fixed to frame with quick opening connections, are made of pre-painted steel sheet (RAL 9004), ensuring a long-term durability to the unit. They are internally insulated with class 1 sound-proofing material (except for frame 1, 2 and 3 for which this is an option), in conformity to the main European regulations in force, reducing the overall sound level of the unit and allowing a good air tightness. All the front and side panels can be dismantled so to allow an easy access to the main components. Moreover, the front of the unit is provided with double panels (not available for version U), suitably arranged to let the unit work also with open panels during technical interventions, to allow more accurate regulations and more quick timing for ordinary and extraordinary service operations.

EC centrifugal fans with backward curved blade made of high-performance composite material, directly coupled to a three-phase electrical rotor with IP54 protection grade, they have the possibility of a continuous regulation of the speed by means of 0-10V signal, sent and integrated to the control. The fans are fixed on suitable supports reducing the transmission of vibration to the frame and the impeller is statically and dynamically balanced with long-life bearings. Thanks to their technology, the EC fans ensures a lower electrical absorption and sound level, if compared to the traditional centrifugal fans. It is possible to adjust their air flow to the head pressure requested on site.

Chilled water coil, realized with copper tube and aluminium fins, it is suitably sized with a wide exchange surface and a low air crossing speed so to allow a remarkable heat exchange and reduce the pressure drops on the air side. It is provided with a hydrophilic treatment to reduce the surface tension between water and metal surface, promoting film condensation and avoiding the risk of condensing drops outside the drain tray.

Condensing **drain tray**, made in corrosion proof aluminium, placed underneath the evaporating coil, it is provided with a flexible pipe for condensing water discharge.

Washable and self-extinguishing air filters Efficiency G4 – of pleated type, they are made of synthetic fibre and are contained in a suitable metal frame. Their pleated arrangement, with a wide surface area, ensures a higher filtering efficiency and low pressure drops.

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

Water circuit realized with pipes entirely coated with insulated material and complete with 3-way valve with modulating control and temperature probe. The max pressure of the circuit is 10 bar (PN 10).

Electric board in compliance with CE norms, protected by a panel is separated by the air flow and is provided with main switch, automatic switches, remote control switches, motor protection switches, low-tension auxiliary circuits and terminal board for free contacts and remote general alarm, magnetothermic switches for humidifier and electric heaters (when installed).

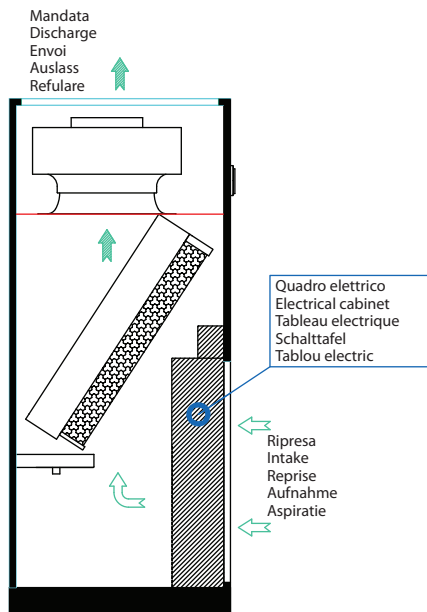
Unit management microprocessor installed on the internal safety panel of the electrical board, complete with hour counter and electronic card to program the switch-over and rotation between units, after a pre-set time. On this purpose, in case of order, the information necessary for programming must be clearly defined.

Accessories

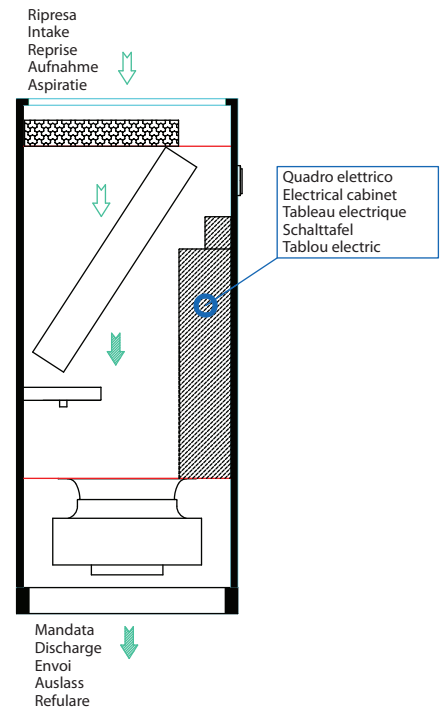
- AA** **Flooding detector:** placed in the downflow units, it is already wired and detects water in the false floor.
- AE** **Electrical power supply different from standard:** mainly, 230V three-phase, 460V three-phase. Frequency 50/60 Hz.
- AL** **Smoke alarm:** it consists of a sensor detecting smoke inside the unit and activating an alarm signal which stops the fans.
- B** **Adjustable base-frame** from 170mm to max 600mm for installation on raised floors. It is provided with adjustable feet.
- BC** **Hot water coil:** one-row or 2-row water coil, placed after the cooling coil for the re-heating and/or the heating of treated air. Provided with three-way valve and modulating actuator, it is controlled by the microprocessor on board.
- BN** **Base-frame with conveyor:** it is provided with a suitable conveyor facilitating the air flow and remarkably reducing the pressure drop in case of horizontal air flow. It is adjustable in height from min 400mm to max 800mm. (Only for D version).
- BS** **Base-frame with ON/OFF damper:** it is equipped with an ON/OFF motorized damper. This device prevents the air return from the unit when it is not working or in the case some units are working near to it. Available only for D version; for other versions, being a special execution, please contact our Sales Dept.
- DP** **Internal double panels:** for shutting off the compartments affected by the air flow, they are made from pre-painted and galvanized steel plate, ensuring reduction in the noise transmitted through the panels and a better air tightness even without the external panels so that the access is guaranteed with the doors open during service operation.
- F5-F6-F7-F9** **Higher efficiency air filters:** pleated filters, supplied as an alternative to standard G4 filters.
- FR** **Spare filter kit** as a replacement to the ones on board of the unit.
- H** **Humidifier** of immersed-electrode type for the modulating production of steam. It is made by a steam cylinder, by a steam distributor, by water inlet and outlet valves and by a maximum level probe. The microprocessor on board indicates when the steam cylinder needs to be replaced.

- IE** **Fumigated wooden crate packing:** available on request for critical transports, so to assure a suitable protection to the unit.
- IH** **RS 485 serial interface:** electronic card to be connected to microprocessor, to allow communication between the units and a Carel supervision system. It is possible to fully control the unit from remote. For connection to other supervision systems, the protocol of the controlled parameters is available on request.
- IM** **Seawood packing:** fumigated seawood case and protection bag with hygroscopic salts, suitable for long sea transports.
- IP** **Magnetothermic switches for auxiliary circuits:** when required, they replace the fuses, as a protection of the auxiliary circuits.
- IS1** **Class 1 insulating material** for frame 1, 2 and 3. Standard for other sizes.
- MF** **Phase monitor:** electronic device controlling the correct sequence and/or the eventual lack of one of the 3 phases, switching off the unit if necessary.
- PB** **Condensing water pump:** micro pump discharging the condensing water produced by the unit, it is factory installed.
- PBH** **Condensing water and humidifier discharge pump:** pump discharging the condensing water produced by the unit and the humidifier discharge water, it is factory installed.
- PL** **Distribution plenum** with front grid and a double row of adjustable fins for a better air distribution (for versions U and V).
- PQ** **Remote microprocessor:** remote terminal, allowing to display the temperature and humidity values detected by probes, the alarm digital inputs, the outputs and the remote ON/OFF of the unit, to change and program of the parameters, the sound signal and the display of the present alarms.
- PR** **Fresh air inlet:** external fresh air inlet with filter, placed on side (standard on the left side), with circular connection (Ø 100 mm).
- RE** **Electrical heaters:** made in aluminium and installed after the cooling coil, for re-heating and/or heating of the treated air. The heating capacity is split max on 3 steps, so to reduce the energy absorption. They are controlled by the microprocessor on board.
- RE M** **Oversized Electrical heaters**
- RV** **Personalized frame painting in RAL colour**
- SL** **Main switch** with external padlock
- SM** **0-10V control** for chilled water coil, only available for frame 1, 2 and 3. For the other sizes, it is standard and the type of signal can be set from the microprocessor on board or directly on the control.
- SV** **Gravity overpressure damper** for ducted units, to prevent the air return when the units are not operating, where several units are installed in the same room. Available for U and versions; for D version, being a special execution, please contact our Sales Dept.
- WG** **Electronic card** for interfacing to BMS with SNMP or TCP/IP protocols.

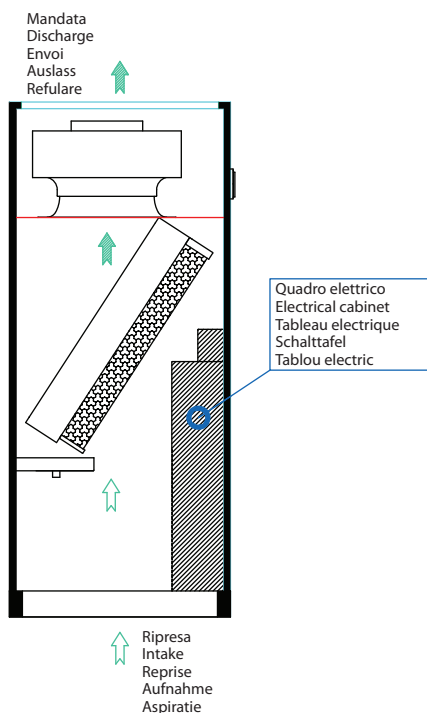
- U Ripresa dal fronte - Mandata verso l'alto
- U Frontal air intake - Upwards air discharge
- U Reprise frontale - Envoi en haut
- U Vorne luftaufnahme - Luftsauslass nach oben
- U Aspiratie prin partea frontala - Refulare prin partea superioara



- D Ripresa dall'alto - Mandata verso il basso
- D Up air intake - Downwards air discharge
- D Reprise du haut - Envoi de bas
- D Luftaufnahme von oben - Luftsauslass nach unten
- D Aspiratie prin partea superioara - Refulare prin partea inferioara



- V Ripresa dal basso - Mandata verso l'alto
- V Down air intake - Upwards air discharge
- V Reprise du bas - Envoi en haut
- V Luftaufnahme von unten - Luftsauslass nach oben
- V Aspiratie prin partea inferioara - Refulare prin partea superioara



CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

Technical data - Versions U and V

UW U-V		70	140	180	230	290	390	490	530	670	810	980	1240	1400	1610	1810	2000	2250							
Frame																									
Frame		1			2			3			4			5			6			7			8		
Cooling capacity – Water 7/12°C																									
Total cooling capacity (27°C – 50% R.H.)	kW	7,1	12,8	16,1	20,8	26,2	36,5	46,4	57,8	64,5	78,0	95,6	120,3	136,8	156,9	175,5	198,1	221,2							
Sensible cooling capacity (27°C – 50% R.H.)	kW	5,9	9,5	11,2	15,2	18,2	26,5	32,1	41,4	45,0	59,4	70,3	83,7	94,2	111,5	121,9	141,3	154,0							
SHR @ 27°C-50% R.H.	%	83	74	70	73	69	73	69	72	70	76	74	70	69	71	69	71	70							
Water flow	m³/h	1,2	2,2	2,8	3,6	4,5	6,3	8,0	9,9	11,1	13,4	16,4	20,7	23,5	27,0	30,2	34,1	38,0							
Pressure drop of chilled water coil	kPa	30	34	37	46	43	49	48	59	66	74	71	74	61	72	76	79	89							
Pressure drop of 3-way valve	kPa	37	30	21	36	21	39	33	39	48	37	56	47	61	45	57	72	90							
Total pressure drop (coil+3-way valve)	kPa	67	64	58	82	64	88	81	98	114	111	127	121	122	117	133	151	179							
Total cooling capacity (24°C – 50% R.H.)	kW	5,0	8,6	11,0	14,1	18,1	24,9	32,3	39,6	44,7	52,9	65,3	83,7	95,7	108,5	122,4	136,8	154,2							
Sensible cooling capacity (24°C – 50% R.H.)	kW	5,0	7,9	9,2	12,6	15,0	21,9	26,5	34,2	37,2	49,5	58,4	69,3	78,0	92,4	101,0	117,2	127,6							
SHR @ 24°C-50% R.H.	%	100	92	84	89	83	88	82	86	83	94	89	83	81	85	82	86	83							
Water flow	m³/h	0,9	1,5	1,9	2,4	3,1	4,3	5,5	6,8	7,7	9,1	11,2	14,4	16,5	18,7	21,0	23,5	26,5							
Pressure drop of chilled water coil	kPa	16	19	23	22	22	24	25	30	34	36	38	32	37	40	40	46	46							
Pressure drop of 3-way valve	kPa	18	14	10	16	10	19	16	18	23	17	26	23	30	22	28	35	44							
Total pressure drop (coil+3-way valve)	kPa	34	30	29	39	32	43	41	48	57	53	62	61	62	59	68	75	90							
Total cooling capacity (22°C – 50% R.H.)	kW	4,2	7,1	7,8	11,4	12,9	19,8	23,1	31,2	31,9	43,9	52,6	60,0	69,1	84,3	88,2	106,8	110,9							
Sensible cooling capacity (22°C – 50% R.H.)	kW	4,2	7,1	7,8	11,4	12,8	19,8	22,6	31,2	31,7	43,9	52,6	59,2	66,6	84,3	86,3	106,8	109,1							
SHR @ 22°C-50% R.H.	%	100	100	100	99	99	100	98	100	100	99	96	100	98	100	98	100	98							
Water flow	m³/h	0,7	1,2	1,3	2,0	2,2	3,4	4,0	5,4	5,5	7,5	9,0	10,3	11,9	14,5	15,2	18,4	19,1							
Pressure drop of chilled water coil	kPa	11	12	10	15	12	16	14	19	18	26	24	21	18	23	22	26	25							
Pressure drop of 3-way valve	kPa	13	9	5	11	5	12	8	11	12	17	12	16	13	14	21	23	23							
Total pressure drop (coil+3-way valve)	kPa	24	21	15	26	17	28	22	30	30	43	36	37	34	36	47	48	48							
Cooling capacity – Water 9/14°C																									
Total cooling capacity (27°C – 50% R.H.)	kW	5,4	10,0	12,8	16,3	20,9	28,8	37,2	45,7	51,5	61,1	75,4	96,3	109,9	124,9	140,7	157,4	177,2							
Sensible cooling capacity (27°C – 50% R.H.)	kW	5,3	8,4	9,9	13,4	16,0	23,4	28,2	36,5	39,6	52,8	62,2	73,7	82,9	98,4	107,4	124,8	135,6							
SHR @ 27°C-50% R.H.	%	98	84	77	82	77	81	76	80	77	86	83	77	75	79	76	79	77							
Water flow	m³/h	0,9	1,7	2,2	2,8	3,6	4,9	6,4	7,9	8,8	10,5	13,0	16,5	18,9	21,5	24,2	27,1	30,5							
Pressure drop of chilled water coil	kPa	18	21	24	29	28	32	38	43	47	46	48	41	47	51	51	59	59							
Pressure drop of 3-way valve	kPa	22	19	13	22	13	24	21	24	31	23	35	31	40	29	36	46	58							
Total pressure drop (coil+3-way valve)	kPa	40	40	37	51	41	56	53	62	74	70	81	79	81	76	87	97	117							
Total cooling capacity (24°C – 50% R.H.)	kW	4,2	7,1	8,5	11,4	13,8	19,8	22,5	31,2	34,2	43,9	52,6	58,4	67,4	84,3	85,8	106,8	108,0							
Sensible cooling capacity (24°C – 50% R.H.)	kW	4,2	7,1	8,5	11,4	13,8	19,8	22,4	31,2	34,2	43,9	52,6	58,2	66,1	84,3	85,6	106,8	107,3							
SHR @ 24°C-50% R.H.	%	100	100	100	100	100	100	100	100	100	99	98	98	100	99	100	99	99							
Water flow	m³/h	0,7	1,2	1,5	2,0	2,4	3,4	3,9	5,4	5,9	7,6	9,0	10,0	11,6	14,5	14,8	18,4	18,6							
Pressure drop of chilled water coil	kPa	11	12	11	15	13	16	13	19	21	26	24	20	17	23	21	25	24							
Pressure drop of 3-way valve	kPa	13	9	6	11	6	12	8	11	13	12	17	11	15	13	14	21	21							
Total pressure drop (coil+3-way valve)	kPa	24	21	17	26	19	28	21	30	34	38	41	31	32	36	35	46	45							
Total cooling capacity (22°C – 50% R.H.)	kW	3,4	5,8	7,1	9,4	11,6	16,5	20,4	26,0	28,6	36,3	43,7	53,4	60,2	70,4	77,8	89,2	98,2							
Sensible cooling capacity (22°C – 50% R.H.)	kW	3,4	5,8	7,1	9,4	11,6	16,5	20,4	26,0	28,6	36,3	43,7	53,4	60,2	70,4	77,8	89,2	98,2							
SHR @ 22°C-50% R.H.	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100							
Water flow	m³/h	0,6	1,0	1,2	1,6	2,0	2,8	3,5	4,5	4,9	6,2	7,5	9,2	10,3	12,1	13,4	15,3	16,9							
Pressure drop of chilled water coil	kPa	8	8	11	10	11	14	15	18	17	17	14	17	14	17	18	20	20							
Pressure drop of 3-way valve	kPa	9	6	4	7	4	8	6	8	9	1	12	9	12	9	11	15	18							
Total pressure drop (coil+3-way valve)	kPa	17	14	12	18	14	19	17	22	24	26	29	26	26	28	33	38	38							
EC fans – LP (low pressure)																									
Quantity	n.	–			1			2			3			4											
Fan(s) supply voltage	V	–			–			400			–			–			–								
Air flow	m³/h	–			5'450	5'700	8'050	8'200	14'500	15'000	15'200	16'700	21'500	22'050	27'500	28'000									
Available pressure	Pa	–			–			20			–			–			–								
Max available pressure (max ESP)	Pa	–			225	146	109	63	213	151	87	71	156	105	153	108									
Fan(s) speed regulation	%	–			84	91	94	97	86	91	95	97	90	94	90	94									
Rotation speed	rpm	–			1'182	1'271	1'154	1'194	1'054	1'114	1'171	1'188	1'107	1'155	1'109	1'150									
Input power	kW	–			0,72	0,90	1,23	1,37	1,86	2,23	2,63	2,66	3,32	3,79	4,50	5,05									
Input current	A	–			1,15	1,44	1,97	2,19	2,99	3,57	4,21	4,26	5,33	6,07	7,21	8,09									
Sound pressure level @ 2 m – Version U	dB(A)	–			54	55	57	58	59	59	61	60	61	61	62	62									
Sound pressure level @ 2 m – Version U (max ESP)	dB(A)	–			56	57	58	59	60	60	61	61	62	62	63	63									
Sound pressure level @ 2 m – Version V	dB(A)	–			51	52	53	54	55	57	56	57	57	58	58	58									
Sound pressure level @ 2 m – Version V (max ESP)	dB(A)	–			53	54	54	55	56	57	57	58	58	58	59	59									

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

UW U-V		70	140	180	230	290	390	490	530	670	810	980	1240	1400	1610	1810	2000	2250		
EC fans – HP (high pressure)																				
Quantity	n.	1							2				3			4				
Fan(s) supply voltage	V	400																		
Air flow	m ³ /h	2'030			3'180	3'280	5'450	5'700	8'050	8'200	14'500	15'000	15'200	16'700	21'500	22'050	27'500	28'000		
Available pressure	Pa	20																		
Max available pressure (max ESP)	Pa	746	692	651	540	479	707	628	548	503	647	586	524	513	589	540	585	541		
Fan(s) speed regulation	%	53	55	59	65	70	66	71	74	77	68	71	75	76	71	74	71	74		
Rotation speed	rpm	1'109	1'155	1'231	1'175	1'264	1'183	1'270	1'155	1'194	1'054	1'114	1'170	1'189	1'107	1'154	1'107	1'148		
Input power	kW	0,23	0,25	0,30	0,40	0,50	0,74	0,92	1,19	1,33	1,81	2,16	2,56	2,58	3,24	3,69	4,39	4,93		
Input current	A	0,36	0,40	0,48	0,65	0,81	1,19	1,48	1,91	2,13	2,90	3,47	4,11	4,14	5,19	5,93	7,04	7,91		
Sound pressure level @ 2 m – Version U	dB(A)	46		47	51	53	56	57	58		59	60	61	62	61	62		63		
Sound pressure level @ 2 m – Version U (max ESP)	dB(A)	65			63		64		62		65			66	67	69				
Sound pressure level @ 2 m – Version V	dB(A)	42	43		48	49	53	54		55	56	57		58		59				
Sound pressure level @ 2 m – Version V (max ESP)	dB(A)	61		60	59	61		59		62			64		65					
Humidifier																				
Steam production (nominal)	kg/h	1,5			3		5		8											
Steam production (max)	kg/h	3							8											
Maximum input current	kW	1,1			2,2		3,7		6,0											
Maximum input current	A	5,0			10,0		5,5		8,7			26,0		8,7						
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250																		
Total hardness (min/max)	mg/l CaCo ₃	100 / 400																		
Electrical heaters																				
Steps	n.	1			3		2		3											
Power	kW	3,0			4,5		6,0		9,0		15,0			18,0	24,0		27,0			
Input current	A	4,3			6,5		8,7		13,0		21,7			26,0	34,6		39,0			
Oversized electrical heaters																				
Steps	n.	3			2		3													
Power	kW	4,5			6,0		9,0		12,0		18,0			24,0	27,0		36,0			
Input current	A	6,5			8,7		13,0		17,3		26,0			34,6	39,0		52,0			
Hot water coil																				
Heating capacity	kW	3,9			6,0	6,1	8,5	8,7	17,7	17,9	32,4	33,1	33,3	38,7	47,9	48,6	65,0	65,7		
Water flow	m ³ /h	0,7			1,0	1,1	1,5		3,1		5,6	5,7	5,8	6,7	8,3	8,4	11,3	11,5		
Pressure drop (coil + 3-way valve)	kPa	27			28		39	41	62	63	66	69	70	56	62	64	62	63		
Internal volume of the coil	dm ³	1,1			1,4		2,1		3,8		6,4			7,7	8,7	64	15,3			
Condensing water pump																				
Nominal water flow	l/h	27,5			390															
Max water flow (pressure = 0 m)	l/h	34			500															
Max height (water flow = 0 m ³ /h)	m	15			5,4															
Condensing water pump + humidifier																				
Nominal water flow	l/h	600																		
Max water flow (pressure = 0 m)	l/h	900																		
Max height (water flow = 0 m ³ /h)	m	6,0																		
Dimensions																				
Length	mm	550			750		980		1'160		1'860			2'210	2'565		3'100			
Width	mm	550							750		850									
Height	mm	1'980																		
Weight for version U	kg	134	139	143	177	183	227	238	312	318	410	422	446	504	590	607	729	750		
Weight for version V	kg	134	139	143	177	183	232	243	307	313	420	431	456	513	600	617	729	750		
Electrical power supply																				
Electrical power supply	V / ph / Hz	400 / 3 / 50 + N + T																		

- REMARKS:
- Fluid: water (glycol 0%)
 - Filters considered for 20% dirt
 - Max pressure is referred to the nominal air flow and the max tension/regulation
 - Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa
 - The condensing / condensing + humidifier water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm (6 mm for size 70-140-180 only for condensing water pump).
 - The sound pressure level is referred to the unit with ducted air inlet and discharge (except for version U air inlet).

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

Technical data - Version D

UW D		70	140	180	230	290	390	490	530	670	810	980	1240	1400	1610	1810	2000	2250																												
Frame																																														
Frame		1			2			3			4			5			6			7			8																							
Cooling capacity – Water 7/12°C																																														
Total cooling capacity (27°C – 50% R.H.)	kW	7,1	12,8	16,1	20,8	26,2	36,5	46,4	57,8	64,5	78,0	95,6	120,3	136,8	156,9	175,5	198,1	221,2																												
Sensible cooling capacity (27°C – 50% R.H.)	kW	5,9	9,5	11,2	15,2	18,2	26,5	32,1	41,4	45,0	59,4	70,3	83,7	94,2	111,5	121,9	141,3	154,0																												
SHR @ 27°C-50% R.H.	%	83	74	70	73	69	73	69	72	70	76	74	70	69	71	69	71	70																												
Water flow	m ³ /h	1,2	2,2	2,8	3,6	4,5	6,3	8,0	9,9	11,1	13,4	16,4	20,7	23,5	27,0	30,2	34,1	38,0																												
Pressure drop of chilled water coil	kPa	30	34	37	46	43	49	48	59	66	74	71	74	61	72	76	79	89																												
Pressure drop of 3-way valve	kPa	37	30	21	36	21	39	33	39	48	37	56	47	61	45	57	72	90																												
Total pressure drop (coil+3-way valve)	kPa	67	64	58	82	64	88	81	98	114	111	127	121	122	117	133	151	179																												
Total cooling capacity (24°C – 50% R.H.)	kW	5,0	8,6	11,0	14,1	18,1	24,9	32,3	39,6	44,7	52,9	65,3	83,7	95,7	108,5	122,4	136,8	154,2																												
Sensible cooling capacity (24°C – 50% R.H.)	kW	5,0	7,9	9,2	12,6	15,0	21,9	26,5	34,2	37,2	49,5	58,4	69,3	78,0	92,4	101,0	117,2	127,6																												
SHR @ 24°C-50% R.H.	%	100	92	84	89	83	88	82	86	83	94	89	83	81	85	82	86	83																												
Water flow	m ³ /h	0,9	1,5	1,9	2,4	3,1	4,3	5,5	6,8	7,7	9,1	11,2	14,4	16,5	18,7	21,0	23,5	26,5																												
Pressure drop of chilled water coil	kPa	16	19	23	22	24	25	30	34	36	36	38	32	37	40	40	46																													
Pressure drop of 3-way valve	kPa	18	14	10	16	10	19	16	18	23	17	26	23	30	22	28	35	44																												
Total pressure drop (coil+3-way valve)	kPa	34	30	29	39	32	43	41	48	57	53	62	61	62	59	68	75	90																												
Total cooling capacity (22°C – 50% R.H.)	kW	4,2	7,1	7,8	11,4	12,9	19,8	23,1	31,2	31,9	43,9	52,6	60,0	69,1	84,3	88,2	106,8	110,9																												
Sensible cooling capacity (22°C – 50% R.H.)	kW	4,2	7,1	7,8	11,4	12,8	19,8	22,6	31,2	31,7	43,9	52,6	59,2	66,6	84,3	86,3	106,8	109,1																												
SHR @ 22°C-50% R.H.	%	100	100	100	99	99	100	98	100	100	99	96	99	96	100	98	100	98																												
Water flow	m ³ /h	0,7	1,2	1,3	2,0	2,2	3,4	4,0	5,4	5,5	7,5	9,0	10,3	11,9	14,5	15,2	18,4	19,1																												
Pressure drop of chilled water coil	kPa	11	12	10	15	12	16	14	19	18	26	24	21	18	23	22	26	25																												
Pressure drop of 3-way valve	kPa	13	9	5	11	5	12	8	11	12	17	12	16	13	14	21	23																													
Total pressure drop (coil+3-way valve)	kPa	24	21	15	26	17	28	22	30	30	43	36	37	34	36	47	48																													
Cooling capacity – Water 9/14°C																																														
Total cooling capacity (27°C – 50% R.H.)	kW	5,4	10,0	12,8	16,3	20,9	28,8	37,2	45,7	51,5	61,1	75,4	96,3	109,9	124,9	140,7	157,4	177,2																												
Sensible cooling capacity (27°C – 50% R.H.)	kW	5,3	8,4	9,9	13,4	16,0	23,4	28,2	36,5	39,6	52,8	62,2	73,7	82,9	98,4	107,4	124,8	135,6																												
SHR @ 27°C-50% R.H.	%	98	84	77	82	77	81	76	80	77	86	83	77	75	79	76	79	77																												
Water flow	m ³ /h	0,9	1,7	2,2	2,8	3,6	4,9	6,4	7,9	8,8	10,5	13,0	16,5	18,9	21,5	24,2	27,1	30,5																												
Pressure drop of chilled water coil	kPa	18	21	24	29	28	32	38	43	47	46	48	41	47	51	51	59																													
Pressure drop of 3-way valve	kPa	22	19	13	22	13	24	21	24	31	23	35	31	40	29	36	46	58																												
Total pressure drop (coil+3-way valve)	kPa	40	40	37	51	41	56	53	62	74	70	81	79	81	76	87	97	117																												
Total cooling capacity (24°C – 50% R.H.)	kW	4,2	7,1	8,5	11,4	13,8	19,8	22,5	31,2	34,2	43,9	52,6	58,4	67,4	84,3	85,8	106,8	108,0																												
Sensible cooling capacity (24°C – 50% R.H.)	kW	4,2	7,1	8,5	11,4	13,8	19,8	22,4	31,2	34,2	43,9	52,6	58,2	66,1	84,3	85,6	106,8	107,3																												
SHR @ 24°C-50% R.H.	%	100	100	100	100	100	100	100	100	100	99	98	98	100	100	100	99	99																												
Water flow	m ³ /h	0,7	1,2	1,5	2,0	2,4	3,4	3,9	5,4	5,9	7,6	9,0	10,0	11,6	14,5	14,8	18,4	18,6																												
Pressure drop of chilled water coil	kPa	11	12	11	15	13	16	13	19	21	26	24	20	17	23	21	25	24																												
Pressure drop of 3-way valve	kPa	13	9	6	11	6	12	8	11	13	12	17	11	15	13	14	21																													
Total pressure drop (coil+3-way valve)	kPa	24	21	17	26	19	28	21	30	34	38	41	31	32	36	35	46	45																												
Total cooling capacity (22°C – 50% R.H.)	kW	3,4	5,8	7,1	9,4	11,6	16,5	20,4	26,0	28,6	36,3	43,7	53,4	60,2	70,4	77,8	89,2	98,2																												
Sensible cooling capacity (22°C – 50% R.H.)	kW	3,4	5,8	7,1	9,4	11,6	16,5	20,4	26,0	28,6	36,3	43,7	53,4	60,2	70,4	77,8	89,2	98,2																												
SHR @ 22°C-50% R.H.	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100																												
Water flow	m ³ /h	0,6	1,0	1,2	1,6	2,0	2,8	3,5	4,5	4,9	6,2	7,5	9,2	10,3	12,1	13,4	15,3	16,9																												
Pressure drop of chilled water coil	kPa	8	8	11	10	11	14	15	18	17	17	14	17	14	17	18	20																													
Pressure drop of 3-way valve	kPa	9	6	4	7	4	8	6	8	9	1	12	9	12	9	11	15	18																												
Total pressure drop (coil+3-way valve)	kPa	17	14	12	18	14	19	17	22	24	26	29	26	26	28	33	38																													
EC fans – HP (high pressure)																																														
Quantity	n.	1			2			3			4																																			
Fan(s) supply voltage	V	400																																												
Air flow	m ³ /h	2'030			3'180			3'280			5'450			5'700			8'050			8'200			14'500			15'000			15'200			16'700			21'500			22'050			27'500			28'000		
Available pressure	Pa	20																																												
Max available pressure (max ESP)	Pa	706	652	611	496	433	662	580	447	400	542	475	410	415	467	412	459	411																												
Fan(s) speed regulation	%	56	58	62	69	74	68	73	79	82	74	78	81	78	81	78	81																													
Rotation speed	rpm	1'185	1'128	1'301	1'239	1'327	1'230	1'318	1'238	1'278	1'149	1'210	1'266	1'268	1'215	1'263	1'219	1'261																												
Input power	kW	0,27	0,30	0,35	0,48	0,58	0,85	1,04	1,53	1,69	2,46	2,89	3,34	3,26	4,44	5,01	6,04	6,69																												
Input current	A	0,43	0,48	0,55	0,76	0,94	1,36	1,67	2,45	2,72	3,94	4,64	5,36	5,24	7,12	8,03	9,68	10,73																												
Sound pressure level @ 2 m – Version D	dB(A)	45			47			51			52			55			56			57			58			59			60			61			62			63								
Sound pressure level @ 2 m – Version D (max ESP)	dB(A)	63	62	63	62	61	63	61	61	64	66	67																																		
Humidifier																																														
Steam production (nominal)	kg/h	1,5			3			5			8																																			
Steam production (max)	kg/h	3									8																																			
Maximum input current	kW	1,1			2,2			3,7			6,0																																			
Maximum input current	A	5,0			10,0			5,5			8,7			26,0			8,7																													
Specific conductivity at 20°C (min/max)	µS/cm	300 / 1'250																																												
Total hardness (min/max)	mg/l CaCO ₃	100 / 400																																												

UW D		70	140	180	230	290	390	490	530	670	810	980	1240	1400	1610	1810	2000	2250		
Electrical heaters																				
Steps	n.	1			3			2			3									
Power	kW	3,0			4,5			6,0			9,0			15,0		18,0		24,0		27,0
Input current	A	4,3			6,5			8,7			13,0			21,7		26,0		34,6		39,0
Oversized electrical heaters																				
Steps	n.	3			2			3												
Power	kW	4,5			6,0			9,0			12,0			18,0		24,0		27,0		36,0
Input current	A	6,5			8,7			13,0			17,3			26,0		34,6		39,0		52,0
Hot water coil																				
Heating capacity	kW	3,9			6,0		6,1	8,5	8,7	17,7	17,9	32,4	33,1	33,3	38,7	47,9	48,6	65,0	65,7	
Water flow	m ³ /h	0,7			1,0	1,1	1,5		3,1			5,6	5,7	5,8	6,7	8,3	8,4	11,3	11,5	
Pressure drop (coil + 3-way valve)	kPa	27			28			39	41	62	63	66	69	70	56	62	64	62	63	
Internal volume of the coil	dm ³	1,1			1,4			2,1		3,8			6,4		7,7	8,7	64	15,3		
Condensing water pump																				
Nominal water flow	l/h	27,5			390															
Max water flow (pressure = 0 m)	l/h	34			500															
Max height (water flow = 0 m ³ /h)	m	15			5,4															
Condensing water pump + humidifier																				
Nominal water flow	l/h	-													600					
Max water flow (pressure = 0 m)	l/h	-													900					
Max height (water flow = 0 m ³ /h)	m	-													6,0					
Dimensions																				
Length	mm	550			750			980			1'160			1'860		2'210		2'565		3'100
Width	mm	550						750			850									
Height	mm	1'980																		
Weight for version D	kg	139	143	148	173	179	237	248	312	318	439	451	475	528	605	622	758	779		
Electrical power supply																				
Electrical power supply	V / ph / Hz	400 / 3 / 50 + N + T																		

REMARKS:

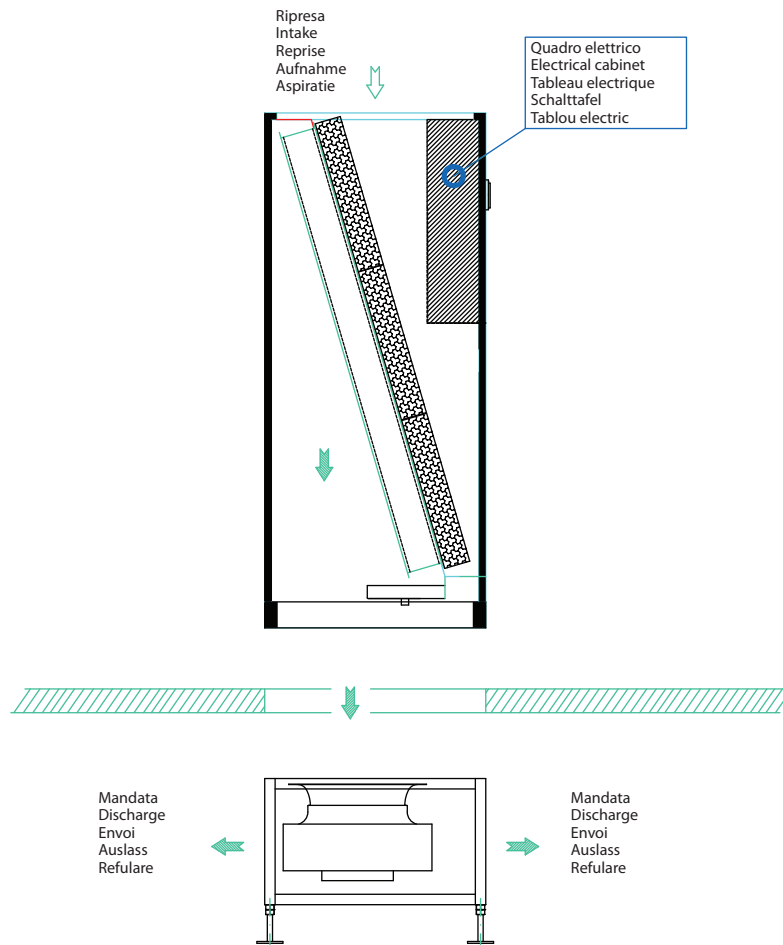
- Fluid: water (glycol 0%)
- Filters considered for 20% dirt
- Max pressure is referred to the nominal air flow and the max tension/regulation
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa
- The condensing / condensing + humidifier water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm (6 mm for size 70-140-180 only for condensing water pump).
- The sound pressure level is referred to the unit with ducted air inlet and discharge.

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

POWER SLIM - UWL

Ripresa dall'alto - Mandata verso il basso
Up air intake - Downwards air discharge
Reprise du haut - Envoi de bas
Luftaufnahme von oben - Luftauslass nach unten
Aspiratie prin partea superioara - Refulare prin partea inferioara



Technical data - Version UWL D HP (High Performance)

UWL D HP		860	1700	1900	2400	3000
Frame						
Frame		4	5	6	7	8
Cooling capacity – Water 7/12°C						
Total cooling capacity (27°C – 50% R.H.)	kW	87,1	160,6	186,3	241,4	300,7
Sensible cooling capacity (27°C – 50% R.H.)	kW	60,3	110,6	128,1	167,9	208,1
SHR @ 27°C-50% R.H.	%		69		70	69
Water flow	m ³ /h	15,0	27,6	32,0	41,5	51,7
Pressure drop of chilled water coil	kPa	72	73	52	65	87
Pressure drop of 3-way valve	kPa	46	48	64	43	68
Total pressure drop (coil+3-way valve)	kPa	119	121	116	108	155
Total cooling capacity (24°C – 50% R.H.)	kW	60,8	112,3	130,3	168,1	210,5
Sensible cooling capacity (24°C – 50% R.H.)	kW	49,9	91,6	106,0	139,1	172,4
SHR @ 24°C-50% R.H.	%		82	81	83	82
Water flow	m ³ /h	10,4	19,3	22,4	28,9	36,2
Pressure drop of chilled water coil	kPa		38	27	34	46
Pressure drop of 3-way valve	kPa	22	23	32	21	33
Total pressure drop (coil+3-way valve)	kPa	60	62	59	55	79
Total cooling capacity (22°C – 50% R.H.)	kW	43,7	81,1	94,1	120,7	152,2
Sensible cooling capacity (22°C – 50% R.H.)	kW	42,6	78,2	90,4	118,7	147,5
SHR @ 22°C-50% R.H.	%	97		96	98	97
Water flow	m ³ /h	7,5	13,9	16,2	20,8	26,2
Pressure drop of chilled water coil	kPa		21	15	18	25
Pressure drop of 3-way valve	kPa		12	16	11	18
Total pressure drop (coil+3-way valve)	kPa		33	31	29	43
Cooling capacity – Water 9/14°C						
Total cooling capacity (27°C – 50% R.H.)	kW	69,8	129,0	149,8	193,3	241,7
Sensible cooling capacity (27°C – 50% R.H.)	kW	53,1	97,4	112,7	147,9	183,2
SHR @ 27°C-50% R.H.	%	76		75	77	76
Water flow	m ³ /h	12,0	22,2	25,7	33,2	41,5
Pressure drop of chilled water coil	kPa	48	49	35	43	58
Pressure drop of 3-way valve	kPa	30	31	41	28	44
Total pressure drop (coil+3-way valve)	kPa	78	80	76	71	102
Total cooling capacity (24°C – 50% R.H.)	kW	42,6	79,0	91,7	117,5	148,3
Sensible cooling capacity (24°C – 50% R.H.)	kW	42,3	77,6	89,7	116,8	146,3
SHR @ 24°C-50% R.H.	%	99		98		99
Water flow	m ³ /h	7,3	13,6	15,8	20,2	25,5
Pressure drop of chilled water coil	kPa		20	14	18	24
Pressure drop of 3-way valve	kPa		11	16	10	16
Total pressure drop (coil+3-way valve)	kPa		31	30	28	40
Total cooling capacity (22°C – 50% R.H.)	kW	38,4	70,7	81,8	107,0	132,9
Sensible cooling capacity (22°C – 50% R.H.)	kW	38,4	70,7	81,8	107,0	132,9
SHR @ 22°C-50% R.H.	%			100		
Water flow	m ³ /h	6,6	12,1	14,1	18,4	22,9
Pressure drop of chilled water coil	kPa		16	12	15	20
Pressure drop of 3-way valve	kPa		9	12	8	13
Total pressure drop (coil+3-way valve)	kPa		25	24	23	33
EC fans – HP (high pressure)						
Quantity	n.	1	2	3	4	
Fan(s) supply voltage	V			400		
Air flow	m ³ /h	11'000	20'000	23'000	31'000	38'000
Available pressure	Pa			20		
Max available pressure (max ESP)	Pa	207	347	163	266	364
Fan(s) speed regulation	%	92	86	94	90	85
Rotation speed	rpm	1'440	1'336	1'470	1'397	1'318
Input power	kW	2,17	3,53	4,48	6,12	7,01
Input current	A	3,48	5,66	7,19	9,81	11,24
Sound pressure level @ 2 m – Version D	dB(A)	62	63		66	65
Sound pressure level @ 2 m – Version D (max ESP)	dB(A)	63	65		67	
Humidifier						
Steam production (nominal)	kg/h	8			15	
Steam production (max)	kg/h	8			15	
Maximum input current	kW	6			11,2	
Maximum input current	A	8,7			16,2	
Specific conductivity at 20°C (min/max)	µS/cm			300 / 1'250		
Total hardness (min/max)	mg/l CaCo3			100 / 400		

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

UWL D HP		860	1700	1900	2400	3000
Electrical heaters						
Steps	n.	2			3	
Power	kW	7,4	14,8		22,2	29,6
Input current	A	10,7	21,4		32,0	42,7
Hot water coil						
Heating capacity	kW	31,0	57,5	67,0	85,9	106,2
Water flow	m ³ /h	5,4	9,9	11,6	14,9	21,8
Pressure drop (coil + 3-way valve)	kPa	67	60	61	92	91
Internal volume of the coil	dm ³	8,2	14,6	16,6	18,6	21,8
Condensing water pump						
Nominal water flow	l/h	390				
Max water flow (pressure = 0 m)	l/h	500				
Max height (water flow = 0 m ³ /h)	m	5,4				
Condensing water pump + humidifier						
Nominal water flow	l/h	600				
Max water flow (pressure = 0 m)	l/h	900				
Max height (water flow = 0 m ³ /h)	m	6,0				
Dimensions						
Length	mm	1'160	1'860	2'210	2'565	3'100
Width	mm	850				
Height (unit + fans base-frame)	mm	1'980 + 570				
Weight	kg	383	577	646	775	959
Electrical power supply						
Electrical power supply	V / ph / Hz	400 / 3 / 50 + N + T				

REMARKS:

- Fluid: water (glycol 0%)
- Filters considered for 20% dirt
- Max pressure is referred to the nominal air flow and the max tension/regulation
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa
- The condensing / condensing + humidifier water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.
- The sound pressure level is referred to the unit with ducted air inlet and discharge.
- Adjustable fans base-frame up to 950 mm max.

Technical data - Version UWL D ES (Energy Saving)

UWL D ES		860	1700	1900	2400	3000
Frame						
Frame		4	5	6	7	
Cooling capacity – Water 7/12°C						
Total cooling capacity (27°C – 50% R.H.)	kW	75,1	142,3	161,4	193,8	252,6
Sensible cooling capacity (27°C – 50% R.H.)	kW	51,2	96,9	109,4	131,7	171,6
SHR @ 27°C-50% R.H.	%				68	
Water flow	m ³ /h	12,9	24,5	27,8	33,3	43,4
Pressure drop of chilled water coil	kPa	55	59	40	44	64
Pressure drop of 3-way valve	kPa	35	37	48	28	47
Total pressure drop (coil+3-way valve)	kPa	90	96	88	71	111
Total cooling capacity (24°C – 50% R.H.)	kW	52,7	100,1	113,6	136,2	178,1
Sensible cooling capacity (24°C – 50% R.H.)	kW	42,3	80,2	90,5	108,9	142,2
SHR @ 24°C-50% R.H.	%				80	
Water flow	m ³ /h	9,1	17,2	19,5	23,4	30,6
Pressure drop of chilled water coil	kPa	29	32	21	23	34
Pressure drop of 3-way valve	kPa	17	18	24	14	24
Total pressure drop (coil+3-way valve)	kPa	46	50	45	37	58
Total cooling capacity (22°C – 50% R.H.)	kW	38,2	72,6	82,5	98,8	129,7
Sensible cooling capacity (22°C – 50% R.H.)	kW	36,1	68,4	77,1	92,9	121,4
SHR @ 22°C-50% R.H.	%				94	
Water flow	m ³ /h	6,6	12,5	14,2	17,0	22,3
Pressure drop of chilled water coil	kPa	16	17	12	13	19
Pressure drop of 3-way valve	kPa	9	10	13	7	13
Total pressure drop (coil+3-way valve)	kPa	25	27	25	20	32
Cooling capacity – Water 9/14°C						
Total cooling capacity (27°C – 50% R.H.)	kW	60,6	114,9	130,5	156,5	204,3
Sensible cooling capacity (27°C – 50% R.H.)	kW	45,0	85,2	96,2	115,8	151,0
SHR @ 27°C-50% R.H.	%				74	
Water flow	m ³ /h	10,4	19,8	22,4	26,9	35,1
Pressure drop of chilled water coil	kPa	37	39	27	29	43
Pressure drop of 3-way valve	kPa	23	25	31	18	31
Total pressure drop (coil+3-way valve)	kPa	60	64	54	47	74
Total cooling capacity (24°C – 50% R.H.)	kW	37,3	70,9	80,6	96,5	126,8
Sensible cooling capacity (24°C – 50% R.H.)	kW	35,8	67,8	76,5	92,1	120,4
SHR @ 24°C-50% R.H.	%	96			95	
Water flow	m ³ /h	6,4	12,2	13,9	16,6	21,8
Pressure drop of chilled water coil	kPa	15	16	11	12	18
Pressure drop of 3-way valve	kPa	9	10	12	7	12
Total pressure drop (coil+3-way valve)	kPa	24	26	23	19	30
Total cooling capacity (22°C – 50% R.H.)	kW	32,7	62,0	70,0	84,2	109,9
Sensible cooling capacity (22°C – 50% R.H.)	kW	32,7	62,0	70,0	84,2	109,9
SHR @ 22°C-50% R.H.	%				100	
Water flow	m ³ /h	5,6	10,7	12,0	14,5	18,9
Pressure drop of chilled water coil	kPa	12	13	9	10	14
Pressure drop of 3-way valve	kPa	7		9	5	9
Total pressure drop (coil+3-way valve)	kPa	19	20	18	15	23
EC fans – HP (high pressure)						
Quantity	n.	1	2		3	
Fan(s) supply voltage	V				400	
Air flow	m ³ /h	9'000	17'000	19'000	23'000	30'000
Available pressure	Pa				20	
Max available pressure (max ESP)	Pa	512	557	480	637	633
Fan(s) speed regulation	%	77	74	79	68	
Rotation speed	rpm	1'198	1'153	1'232	1'067	
Input power	kW	1,27	2,29	2,67	2,79	3,79
Input current	A	2,03	3,68	4,29	4,8	6,07
Sound pressure level @ 2 m – Version D	dB(A)	57	59	61	59	60
Sound pressure level @ 2 m – Version D (max ESP)	dB(A)	61	63	64	65	66
Humidifier						
Steam production (nominal)	kg/h				15	
Steam production (max)	kg/h				15	
Maximum input current	kW				11,2	
Maximum input current	A				16,2	
Specific conductivity at 20°C (min/max)	µS/cm				300 / 1'250	
Total hardness (min/max)	mg/l CaCo3				100 / 400	

CLOSE CONTROL UNITS

WITH CHILLED WATER COIL

UWL D ES		860	1700	1900	2400	3000
Electrical heaters						
Steps	n.	2			3	
Power	kW	7,4	14,8		22,2	
Input current	A	10,7	21,4		32,0	
Hot water coil						
Heating capacity	kW	27,3	51,8	59,3	71,2	91,5
Water flow	m ³ /h	4,7	9,0	10,3	12,3	15,8
Pressure drop (coil + 3-way valve)	kPa	53	49	48	64	69
Internal volume of the coil	dm ³	8,2	14,6	16,6	18,6	
Condensing water pump						
Nominal water flow	l/h	390				
Max water flow (pressure = 0 m)	l/h	500				
Max height (water flow = 0 m ³ /h)	m	5,4				
Condensing water pump + humidifier						
Nominal water flow	l/h	600				
Max water flow (pressure = 0 m)	l/h	900				
Max height (water flow = 0 m ³ /h)	m	6,0				
Dimensions						
Length	mm	1'160	1'860	2'210	2'565	
Width	mm	850				
Height (unit + fans base-frame)	mm	1'980 + 570				
Weight	kg	383	577	646	775	
Electrical power supply						
Electrical power supply	V / ph / Hz	400 / 3 / 50 + N + T				

REMARKS:

- Fluid: water (glycol 0%)
- Filters considered for 20% dirt
- Max pressure is referred to the nominal air flow and the max tension/regulation
- Hot water coil calculated for: water 40/45°C, ambient temperature 20°C and available pressure of 20 Pa
- The condensing / condensing + humidifier water pump is calculated for a 2 m vertical difference in height respect to the pump; total length of the discharge pipe of 5 m, internal diameter of the flexible pipe of 12 mm.
- The sound pressure level is referred to the unit with ducted air inlet and discharge.
- Adjustable fans base-frame up to 950 mm max.