

TECHNICAL DATA SHEET - CW-X & CW-XR

GENERAL

Climate Wizard coolers are characterised by the supply of fresh, cool, outside air with NO additional moisture added (single pass configuration slightly humidifies), with greatly reduced energy consumption relative to an equivalent refrigerated system performing the same duty. The cooler modules each comprise of a supply air fan, an exhaust air fan, an indirect heat exchanger pack (direct stage included for single pass), integrated water reservoir, pumps, and chlorinator system.

CABINET

The cabinet is constructed from Stainless Steel incorporating the IDEC modules motor/fan assemblies, non-corrodible heat exchange core and other ancillary equipment mounted on a heavy gauge base frame for structural stability. Forklift tine channels are provided within the frame to facilitate transport and lifting. Components are effectively treated to ensure corrosion resistance and mechanical fasteners are zinc coated, stainless steel or aluminium. Connection surfaces are provided for outlet supply air and exhaust ductwork to be fitted using established industry practices.

FANS & MOTORS

The supply fans are statically and dynamically balanced multi-blade, aerofoil shaped axial assembly. The exhaust fans are multi-blade, centrifugal type with backward curved blades. All fans are constructed from glass reinforced polypropylene and are mounted to their electric motor shaft by means of an axial co-moulded hub. The electric motors are high efficiency, inverter driven and responsive to pulse width modulation to implement speed control that delivers optimum efficiency at lower speed operation.

RETURN AIR CONFIGURATION

CW-X offers a Climate Wizard first return air feature. Return air (70%) is mixed with outside air (30%) prior to passing through the indirect heat exchanger pack. This method reduces water consumption, reduces humidity input, filters the air and is ideal for synergising with existing reverse cycle units. The supply/return air ratio is maintained using a pressure sensor feature in the unit

HEAT EXCHANGE CORE

The cooler uses a series of Seeley International's patented Micro-Core® heat exchangers. The Micro-Core® is characterised by its compact and efficient designed indirect cooling stage.

AIR FILTER

Intake air is filtered through pleated filters. Can be accessed via removing the side panels of the unit and lifting the fastening hinge.

WATER MANAGEMENT SYSTEM

The water supply connection is with a 3/4" BSP male thread.

Water is held internally in individual IDEC module reservoirs. Heat exchange core saturation is achieved through internally mounted pumps delivering water to a specially designed non-clog water distribution system guaranteeing continuous uniform flow.

The pumps are manufactured from engineering plastics, with stainless steel shafts and fully encapsulated synchronous motors with thermal overload protection. They are provided with an easily cleanable strainer within the reservoir section.

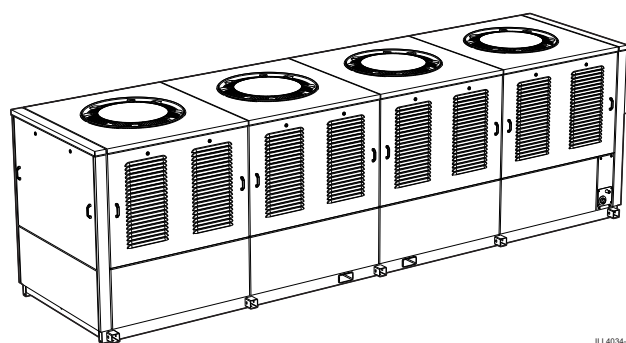
An electronic water management system controls the maximum salinity level and chlorination of the reservoirs water through continuous monitoring and replenishment.

Each reservoir is drained by an electric drain valve which responds to the water management control system. The design of the reservoir ensures that no water remains after draining.

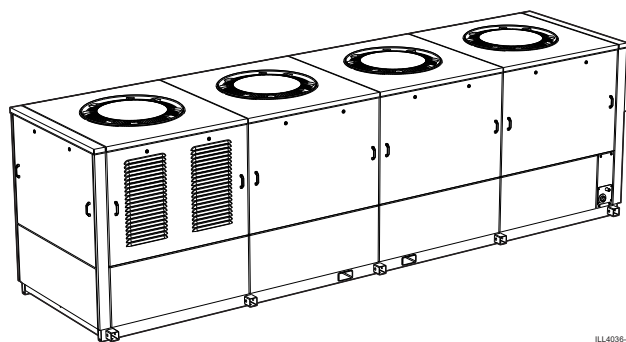
ELECTRICAL CABINET AND CONTROLS

All electrical control equipment including module connection terminals, fan speed hardware and BMS interface electronics is pre-wired, and factory mounted on the IDEC modules and in the main electrical box.

BMS remote control of the cooler is possible via dedicated connection within the main electrical box.



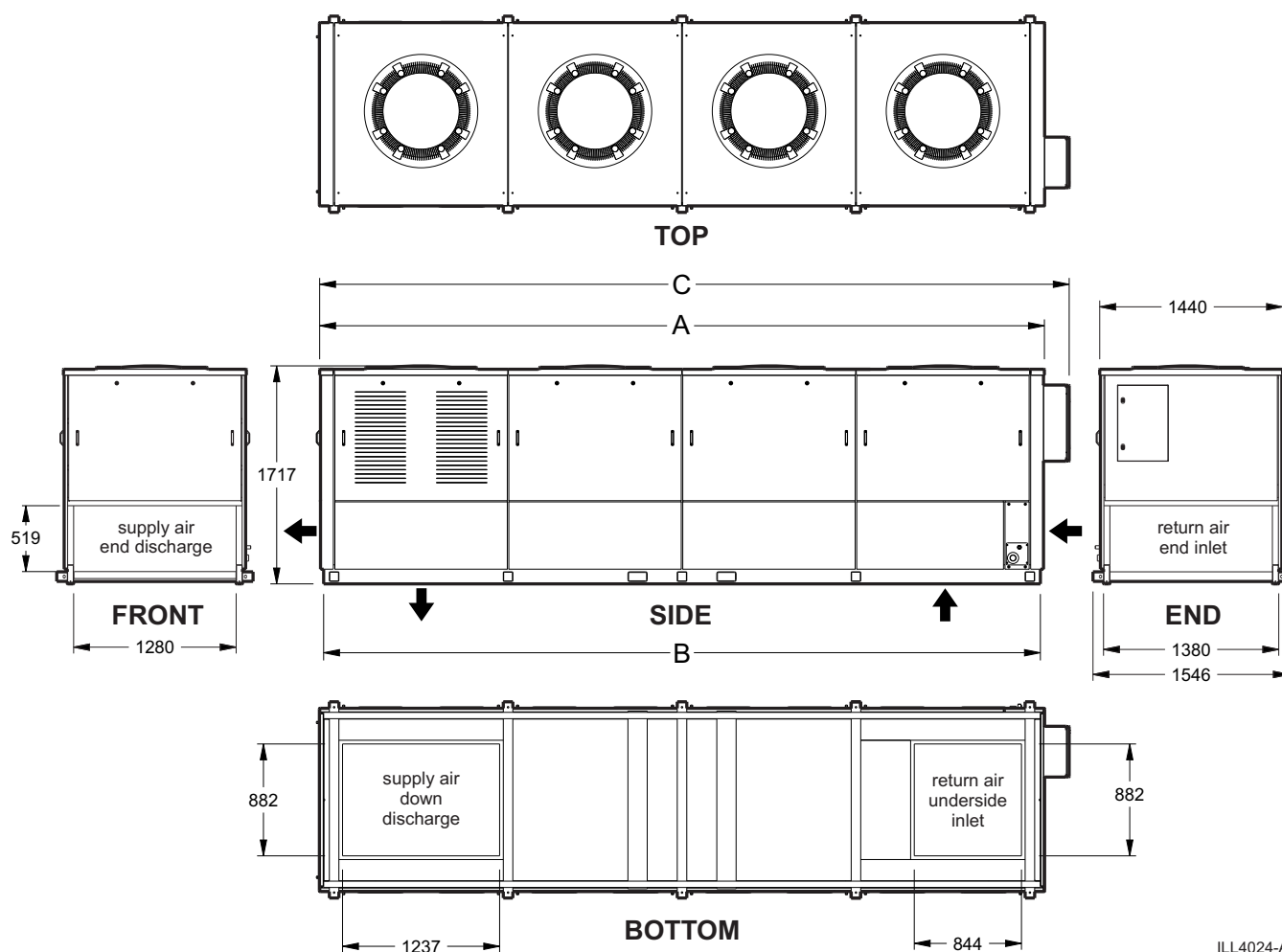
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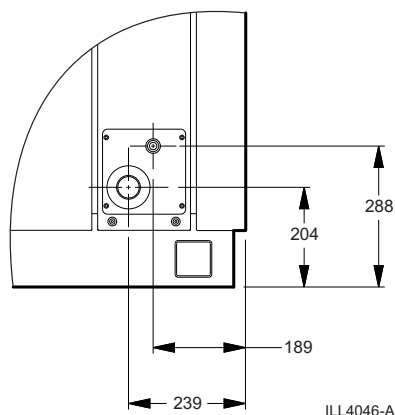
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TECHNICAL DATA SHEET - CW-X & CW-XR

MODEL	CW-X2	CW-X3	CW-X4	CW-X4 TWIN	CW-X2R	CW-X3R	CW-X4R	CW-X4R TWIN
Length A (mm)	2965	4335	5705	11185	2965	4335	5705	11185
Length B (mm)	2905	4275	5645	11125	2905	4275	5645	11125
Length C (mm)	3165	4535	5905	11585	3165	4535	5905	11585

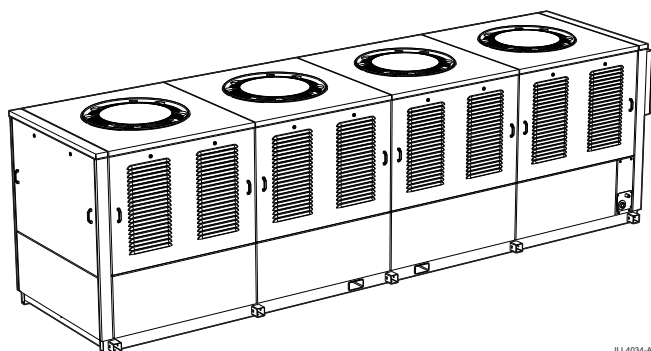


DRAIN AND WATER CONNECTIONS



NOTE: Installers must allow adequate access to and around the cooler for Maintenance. Provision must be made for access to power, control, water supplies and drains. Refer to the Installation Manual for full details.

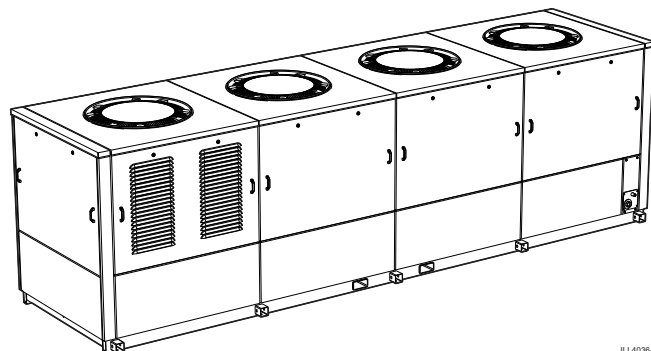
TECHNICAL DATA SHEET - CW-X & CW-XR



ILL4034-A

CW-X (Single Pass)

- Primary Indirect Evaporative Cooling Stage
- Secondary Direct Evaporative Cooling Stage
- Highest Cooling Capacity
- 100% Fresh Air



ILL4036-A

CW-XR (Return Air)

- Primary Indirect Evaporative Cooling Stage
- No Added Moisture
- Lower water consumption
- Recirculated the air (70%), Fresh Air (30%)

TECHNICAL DATA SHEET - CW-X

FREQUENCY (Hz)	RADIATED SOUND POWER LEVEL (db re 1 pW) OCTAVE BAND CENTRE FREQUENCY								TOTAL SOUND POWER LEVEL dB(A) re 1pW
	63	125	250	500	1k	2k	4k	8k	
CW-X4 TWIN	63	68	71	74	80	78	76	72	84
CW-X4	58	65	70	73	75	73	70	64	80
CW-X3	51	62	68	73	71	68	62	54	77
CW-X2	45	59	66	72	68	62	55	43	75

CW-X2 SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
SUPPLY AIRFLOW (L/s)	3140	2950	2760	2570	2360	2030
SUPPLY AIRFLOW (m3/hr)	11300	10620	9940	9250	8500	7310
TEMPERATURE (°C)	20.2	19.7	19.4	19.3	19.1	18.7
STANDALONE COOLING CAPACITY (kW)	28	28	27	25	24	22
PRE COOLING CAPACITY (kW)	68	66	63	59	55	48
INPUT POWER (kW)	3.1	3.1	3.1	3.1	3.2	3.2
STANDALONE COP	8.6	8.4	8.3	8.0	7.3	6.4
PRE-COOLING COP	21.9	20.7	19.7	18.5	16.9	14.6
WATER CONSUMPTION (L/hr)	98	101	105	109	112	115

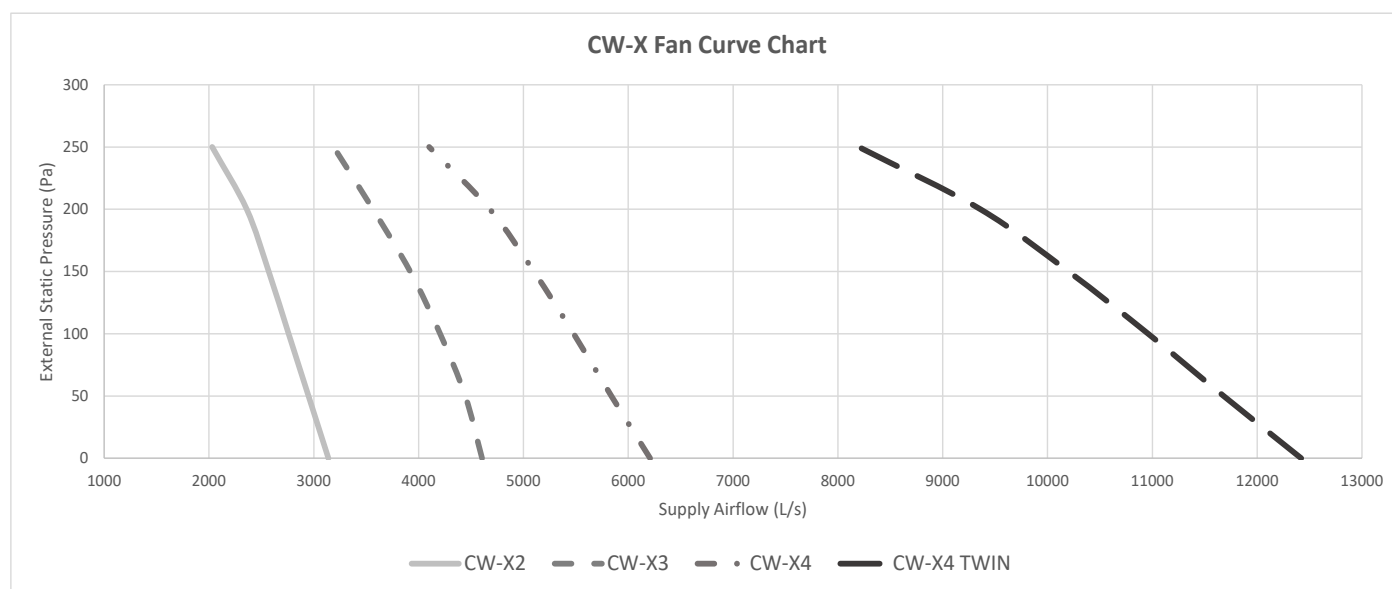
CW-X3 SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
SUPPLY AIRFLOW (L/s)	4605	4445	4205	3920	3565	3190
SUPPLY AIRFLOW (m3/hr)	16580	16000	15140	14110	12830	11490
TEMPERATURE (°C)	20.2	19.7	19.4	19.3	19.1	18.7
STANDALONE COOLING CAPACITY (kW)	41	42	41	39	36	34
PRE COOLING CAPACITY (kW)	100	100	96	90	82	75
INPUT POWER (kW)	4.6	4.6	4.7	4.7	4.8	4.8
STANDALONE COP	8.4	8.4	8.4	8.1	7.4	6.7
PRE-COOLING COP	21.4	20.8	20.0	18.8	17.0	15.3
WATER CONSUMPTION (L/hr)	138	142	148	154	158	162

TECHNICAL DATA SHEET - CW-X

CW-X4 SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
SUPPLY AIRFLOW (L/s)	6210	5840	5480	5100	4680	4100
SUPPLY AIRFLOW (m ³ /hr)	22356	21024	19728	18360	16848	14760
TEMPERATURE (°C)	20.2	19.7	19.4	19.3	19.1	18.7
STANDALONE COOLING CAPACITY (kW)	55	55	54	51	48	44
PRE COOLING CAPACITY (kW)	135	131	125	117	108	97
INPUT POWER (kW)	6.2	6.2	6.3	6.3	6.4	6.5
STANDALONE COP	8.5	8.3	8.2	7.9	7.2	6.5
PRE-COOLING COP	21.6	20.5	19.6	18.3	16.6	14.7
WATER CONSUMPTION (L/hr)	182	188	195	202	208	214

CW-X4 TWIN SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
SUPPLY AIRFLOW (L/s)	12420	11680	10960	10200	9360	8200
SUPPLY AIRFLOW (m ³ /hr)	44712	42048	39456	36720	33696	29520
TEMPERATURE (°C)	20.2	19.7	19.4	19.3	19.1	18.7
STANDALONE COOLING CAPACITY (kW)	109	110	107	101	95	87
PRE COOLING CAPACITY (kW)	271	262	250	233	217	194
INPUT POWER (kW)	12.3	12.4	12.5	12.7	12.8	12.9
STANDALONE COP	8.5	8.3	8.2	7.9	7.2	6.5
PRE-COOLING COP	21.6	20.5	19.6	18.3	16.6	14.7
WATER CONSUMPTION (L/hr)	364	375	390	405	416	427

* Leaving Air Temperatures, Cooling Capacities and Water Consumption valid at design condition of:
38°C dry-bulb, 21°C wet-bulb, 27.4°C relief temperatures



TECHNICAL DATA SHEET - CW-X

Model (SINGLE PASS)			CW-X2	CW-X3	CW-X4	CW-X4 TWIN
SERVICES	Electrical Supply		3 Phase N+E,380-415V 50Hz (L1=11.8A, L2=10A)	3 Phase N+E,380-415V 50Hz (L1=11.8A, L2=10A, L3=10A)	3 Phase N+E,380-415V 50Hz (L1=21.8A, L2=10A, L3=10A)	3 Phase N+E,380-415V 50Hz (L1=20A, L2=30A, L3=30A)
	Water	Supply	20L/min@100kPa-800kPa	26L/min@100kPa-800kPa	35L/min@100kPa-800kPa	35L/min@100kPa-800kPa
		Max Temperature	40°C			
		Inlet	3/4" Male BSP	3/4" Male BSP	3/4" Male BSP	3/4" Male BSP
		Drain	40mm PVC			
		Drain Flow Rate	30L/min	45L/min	60L/min	120L/min
ENVIRONMENT	Maximum Inlet Air Temperature		50°C			
AIR SYSTEMS	Supply Air Fan/Motor	Fan	2x 400mm Axial Forward Curve	3x 400mm Axial Forward Curve	4x 400mm Axial Forward Curve	8x 400mm Axial Forward Curve
		Motor	750W			
		Control	Variable Speed, PWM Control			
		Max Speed	2400rpm			
	Exhaust Air Fan/Motor	Fan	2x 380mm Centrifugal Backward Curve	3x 380mm Centrifugal Backward Curve	4x 380mm Centrifugal Backward Curve	8x 380mm Centrifugal Backward Curve
		Motor	950W			
		Control	Variable Speed, PWM Control			
		Max Speed	1100rpm			
	Air Filters		8x Pleated 24 x 24 x 2", G4	12x Pleated 24 x 24 x 2", G4	16x Pleated 24 x 24 x 2", G4	32x Pleated 24 x 24 x 2", G4
HEAT EXCHANGERS	Indirect Evaporative		16x Micro-Core®	24x Micro-Core®	32x Micro-Core®	64x Micro-Core®
	Direct Evaporative		16x Chilcel®	24x Chilcel®	32x Chilcel®	64x Chillcel®
WATER SYSTEMS	Tank Reservoir Capacity		2x 30L	3x 30L	4x 30L	8x 30L
	Inlet Valve		2x 12 VDC Solenoid Valve	3x 12 VDC Solenoid Valve	4x 12 VDC Solenoid Valve	8x 12 VDC Solenoid Valve
	Pump Indirect Heat Exchangers		2x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	3x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	4x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	8x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W
	Pump Direct Stage		2x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	3x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	4x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	8x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W
	Salinity Management		2x Conductivity Probe	3x Conductivity Probe	4x Conductivity Probe	8x Conductivity Probe
	Chlorinator		2x 12 VDC	3x 12 VDC	4x 12 VDC	8x 12 VDC
	Drain Valve		2x 12 VDC Vertical	3x 12 VDC Vertical	4x 12 VDC Vertical	8x 12 VDC Vertical
DIMENSIONS	Shipping		3160mm x 1550mm x 1710mm	4530mm x 1550mm x 1710mm	5900mm x 1550mm x 1710mm	11190mm x 1550mm x 1710mm
WEIGHT	Shipping		900kg	1240kg	1560kg	3080kg
	Operating	inc. water & Accessories	980kg	1360kg	1720kg	3510kg

TECHNICAL DATA SHEET - CW-XR

FREQUENCY (Hz)	RADIATED SOUND POWER LEVEL (db re 1 pW) OCTAVE BAND CENTRE FREQUENCY								TOTAL SOUND POWER LEVEL dB(A) re 1pW
	63	125	250	500	1k	2k	4k	8k	
CW-X4R TWIN	63	68	71	74	80	78	76	72	84
CW-X4R	58	65	70	73	75	73	70	64	80
CW-X3R	51	62	68	73	71	68	62	54	77
CW-X2R	45	59	66	72	68	62	55	43	75

CW-X2R SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
FRESH AIR (L/s)	910	850	790	730	660	560
TOTAL SUPPLY AIRFLOW (L/s)	3020	2830	2630	2430	2200	1850
AIRFLOW (m3/hr)	10870	10190	9470	8750	7920	6660
TEMPERATURE (°C)	21	20.8	20.3	20	19.9	19.7
STANDALONE COOLING CAPACITY (kW)	24	23	23	22	20	17
INPUT POWER (kW)	3.3	3.4	3.4	3.5	3.5	3.5
STANDALONE COP	7.3	7.2	6.9	6.4	5.9	5.2
WATER CONSUMPTION (L/hr)	63	64	67	70	71	73

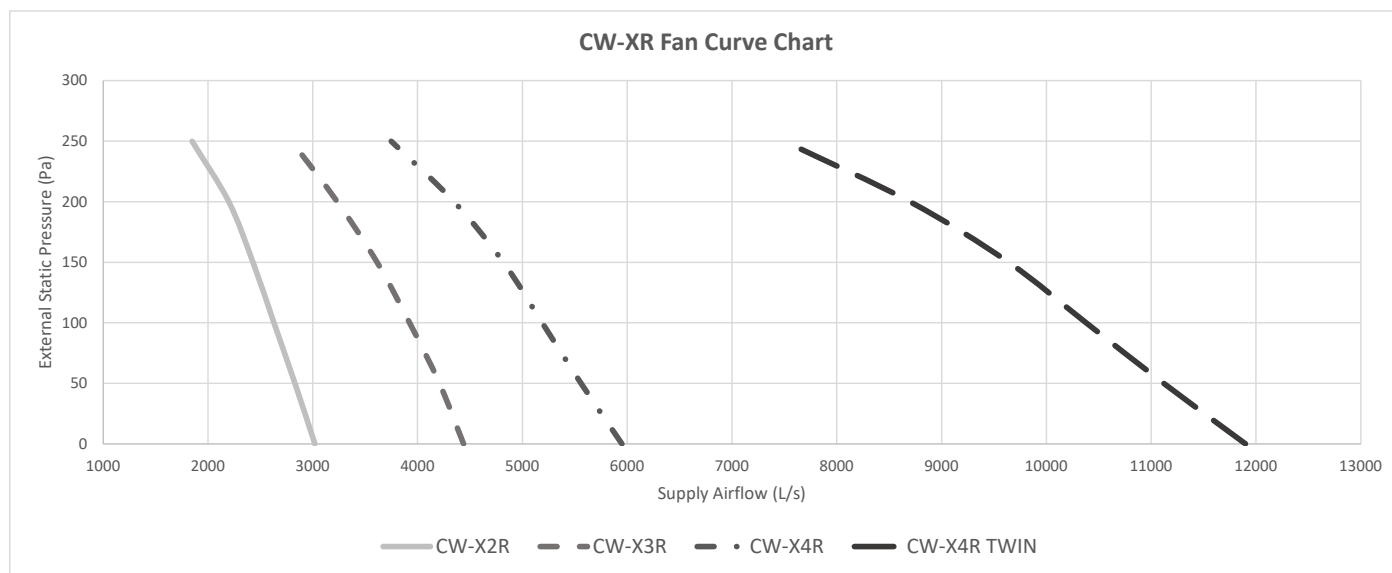
CW-X3R SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
FRESH AIR (L/s)	1330	1260	1180	1090	970	840
TOTAL SUPPLY AIRFLOW (L/s)	4440	4210	3925	3615	3235	2800
AIRFLOW (m3/hr)	15980	15160	14130	13010	11650	10080
TEMPERATURE (°C)	21	20.8	20.3	20	19.9	19.7
STANDALONE COOLING CAPACITY (kW)	35	34	34	33	30	26
INPUT POWER (kW)	5.0	5.1	5.2	5.3	5.3	5.3
STANDALONE COP	7.1	7.1	6.8	6.3	5.8	5.2
WATER CONSUMPTION (L/hr)	73	75	78	81	83	85

TECHNICAL DATA SHEET - CW-XR

CW-X4R SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE (Pa)	0	50	100	150	200	250
FRESH AIR (L/s)	1790	1670	1560	1450	1310	1130
TOTAL SUPPLY AIRFLOW (L/s)	5950	5560	5190	4820	4350	3750
TOTAL AIRFLOW (m3/hr)	21420	20020	18680	17350	15660	13500
TEMPERATURE (°C)	21	20.8	20.3	20	19.9	19.7
STANDALONE COOLING CAPACITY (kW)	47	45	45	44	40	35
Input Power (kW)	7.2	7.3	7.4	7.5	7.5	7.5
Standalone COP	6.6	6.6	6.3	5.9	5.4	4.9
WATER CONSUMPTION (L/hr)	83	86	89	92	95	97

CW-X4R TWIN SPEED 10 PERFORMANCE SUMMARY*						
STATIC PRESSURE	0	50	100	150	200	250
FRESH AIR (L/s)	3570	3340	3110	2890	2610	2250
TOTAL SUPPLY AIRFLOW (L/s)	11900	11120	10380	9640	8700	7500
TOTAL AIRFLOW (m3/hr)	42840	40030	37370	34700	31320	27000
TEMPERATURE (°C)	21	20.8	20.3	20	19.9	19.7
STANDALONE COOLING CAPACITY (kW)	96	97	94	88	82	74
Input Power (kW)	7.2	7.3	7.4	7.5	7.5	7.5
Standalone COP	6.6	6.6	6.3	5.9	5.4	4.9
WATER CONSUMPTION (L/hr)	166	171	178	185	190	195

* Leaving Air Temperatures, Cooling Capacities and Water Consumption valid at design condition of:
38 °C dry-bulb, 21 °C wet-bulb, 27.4 °C return temperatures



TECHNICAL DATA SHEET - CW-XR

Model (RETURN AIR)			CW-X2R	CW-X3R	CW-X4R	CW-X4R TWIN
SERVICES	Electrical Supply		3 Phase N+E,380-415V 50Hz (L1=11.8A, L2=10A)	3 Phase N+E,380-415V 50Hz (L1=11.8A,L2=10A,L3=10A)	3 Phase N+E,380-415V 50Hz (L1=21.8A, L2=10A, L3=10A)	3 Phase N+E,380-415V 50Hz (L1=20A, L2=30A, L3=30A)
	Water	Supply	20L/min@100Kpa-800Kpa	26L/min@100Kpa-800Kpa	35L/min@100Kpa-800Kpa	35L/min@100Kpa-800Kpa
		Max Temperature	40°C			
		Inlet	3/4" Male BSP	3/4" Male BSP	3/4" Male BSP	3/4" Male BSP
		Drain	40mm PVC			
		Drain Flow Rate	30L/min	45L/min	60L/min	120L/min
ENVIRONMENT	Maximum Inlet Air Temperature		50°C			
AIR SYSTEMS	Supply Air Fan/ Motor	Fan	2x 400mm Axial Forward Curve	3x 400mm Axial Forward Curve	4x 400mm Axial Forward Curve	8x 400mm Axial Forward Curve
		Motor	750W			
		Control	Variable Speed, PWM Control			
		Max Speed	2400rpm			
	Exhaust Air Fan/Motor	Fan	2x 380mm Centrifugal Backward Curve	3x 380mm Centrifugal Backward Curve	4x 380mm Centrifugal Backward Curve	8x 380mm Centrifugal Backward Curve
		Motor	950W			
		Control	Variable Speed, PWM Control			
		Max Speed	1100rpm			
	Air Filters		8x Pleated 24 x 24 x 2", G4	12x Pleated 24 x 24 x 2", G4	16x Pleated 24 x 24 x 2", G4	32x Pleated 24 x 24 x 2", G4
HEAT EXCHANGERS	Indirect Evaporative		16x Micro-Core®	24x Micro-Core®	32x Micro-Core®	64x Micro-Core®
	Direct Evaporative		16x Chillcel®	24x Chillcel®	32x Chillcel®	64x Chillcel®
WATER SYSTEMS	Tank Reservoir Capacity		2x 30L	3x 30L	4x 30L	8x 30L
	Inlet Valve		2x 12 VDC Solenoid Valve	3x 12 VDC Solenoid Valve	4x 12 VDC Solenoid Valve	8x 12 VDC Solenoid Valve
	Pump Indirect Heat Exchangers		2x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	3x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	4x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	8x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W
	Pump Direct Stage		2x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	3x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	4x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W	8x Pump 13 LPM @ 1.5m Head 230V 50Hz 30W
	Salinity Management		2x Conductivity Probe	3x Conductivity Probe	4x Conductivity Probe	8x Conductivity Probe
	Chlorinator		2x 12 VDC	3x 12 VDC	4x 12 VDC	8x 12 VDC
	Drain Valve		2x 12 VDC Vertical	3x 12 VDC Vertical	4x 12 VDC Vertical	8x 12 VDC Vertical
DIMENSIONS	Shipping		3157mm x 1546mm x 1705mm	4527mm x 1546mm x 1705mm	5897mm x 1546mm x 1705mm	11186mm x 1546mm x 1705mm
WEIGHT	Shipping		900kg	1240kg	1560kg	3080kg
	Operating	inc. water & Accessories	980kg	1360kg	1720kg	3510kg

TECHNICAL DATA SHEET - CW-X & CW-XR

OPTIONS, FEATURES & ACCESSORIES

Multi-Magic coolers are supplied with a series of interface terminals inside the electrical enclosure for use with additional accessories.

ITEM	ID	TYPE
MODBUS	+	RS-485 MODBUS Communication for Wall Controller
	-	
	GND	
POWER SUPPLY	24Vdc	DC Power Supply for Wall Controller, Sensors or BMS
	0Vdc	
MULTI-MAGIC SENSORS (Sold separately)	RM TEMP	Room Temperature 0-10V
	RM RH	Room Humidity 0-10V
	AMB TEMP	Ambient Temperature 0-10V
	AMB RH	Ambient Humidity 0-10V
SUPPLY TEMP SENSOR	SUP TEMP	Duct Temperature 0-10V
FAN STATUS	FAN STS	Fan Run Output. Relay Output Dry Contact, Adjustable Timer
	FAN COM	

OPTION 2: MULTI-MAGIC WALL CONTROLLER

(sold separately)

- MODBUS RS-485 to control up to 15 Devices
- Inbuilt Temperature & RH Sensors
- Manual or Automatic Speed Control
- Thermostatic Speed Control
- Supercool Humidity Setpoint
- 7-Day Program
- Room Sensor Averaging
- Ambient Temperature Monitoring
- Min & Max Fan Speed Limits
- Screen Security Lock
- Auto-Restart Function
- Device Fault History
- English, Spanish, French, Italian, Portuguese

Multi-Magic CW-X coolers can be controlled via 2 different methods.

OPTION 1: BUILDING MANAGEMENT SYSTEM (BMS)

Multi-Magic coolers are supplied with a series of low voltage BMS Interface Terminals to allow external devices, such as 3rd party controllers, to control the basic functions of the cooler.

ITEM	ID	TYPE
BMS	IEC	Digital Input Dry Contact
	DEC	Digital Input Dry Contact
	SPD	Speed: Analogue Input 0-10Vdc
	ERR	Error: Relay Output Dry Contact. Configurable NO/NC
	GND	GND

TECHNICAL DATA SHEET - CW-X & CW-XR

TEMPERATURE & RELATIVE HUMIDITY SENSORS

(sold separately)

For all sensors:

Operating Voltage DC 24V

Signal Output DC 0...10 V

Accuracy at 23°C and 50% r.h.

Temperature: $\pm 0.3K$

Relative Humidity: $\pm 3\%$ r.h.

Each CW-X cooler had dedicated inputs for one each of the following optional sensors.

ROOM SENSOR

Temperature Range
0...+50°C

Relative Humidity Range
0...100% r.h.

IP30



When used in conjunction with
the Multi-Magic® Wall Controller:

- Allows the Wall Controller to be located safely away from the conditioned space. Wall Controller sensor values are disabled and only Room Sensor used for setpoint control.
- Multiple Room Sensor values from multiple coolers be average together to provide an overall temperature and relative humidity ales for larger spaces.

AMBIENT SENSOR

Temperature Range
-40...+70°C

Relative Humidity Range
0...100% r.h.

Radiation Shield
IP65



When used in conjunction with
the Multi-Magic® Wall Controller:

- Used for monitoring outside ambient temperature conditions relative to indoor conditions.