

SWIMMING POOL
DEHUMIDIFIERS
SP ST





- Private pool
- Hotel pool
- Public pool
- Therapeutic pool
- SPA



SP-ST: CONDENSING DEHUMIDIFIER

HiDew always aims to design technologically advanced solutions, with the least environmental impact: the SP and ST series are available in a really wide range of models.

SP Single flow ductable dehumidifier, designed for dehumidification and heating of indoor pools and aggressive ambients.

- Installation in the room where dehumidification is needed (fixed or movable with pivoting wheels, optional) or in a technical room.
- Galvanized steel panels, inside and outside painted.
- Pre-coated finned coils suitable for aggressive environment.
- Electronical components protected against chlorine.
- Stainless steel condensate tray.
- Double inlet centrifugal fan (EC radial fan, opt.) top or in-line supply.
- Desuperheater for chlorinated water
- Dehumidification capacity from 100 l/day to 4650 l/day.
- Air flow from 900 m³/h to 35000 m³/h.

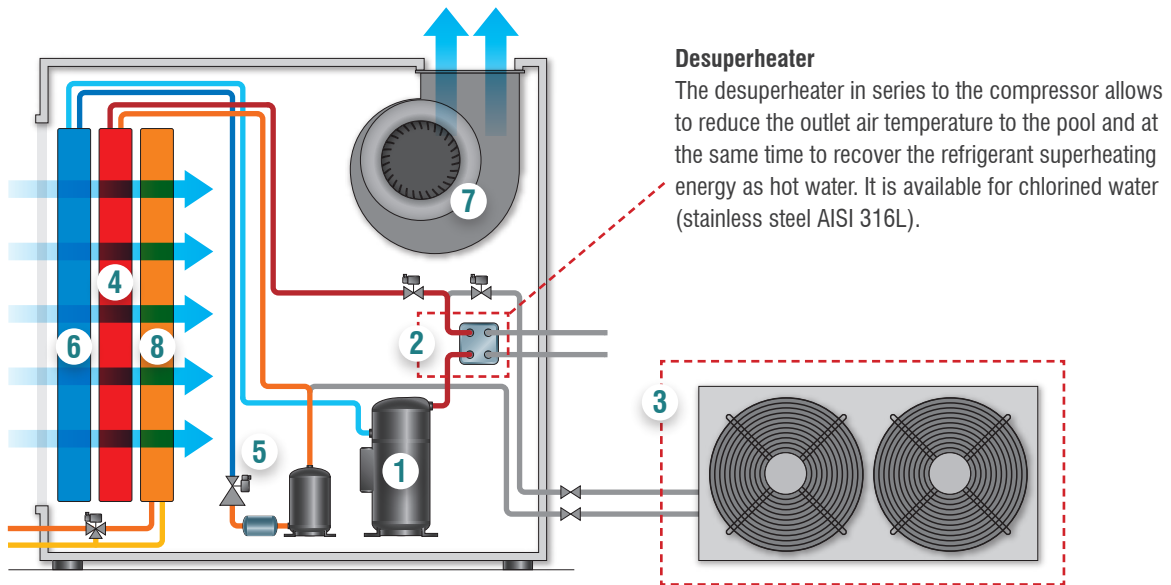


ST Further the features of **SP** models, the **ST** version has a remote air condenser, in addition to the internal one, that allows to dissipate outside the excessive condensation heat during summertime.

- **ST** model is particularly suitable for indoor pools where high temperature could be reached during summertime.



PRINCIPLE SCHEME



Desuperheater

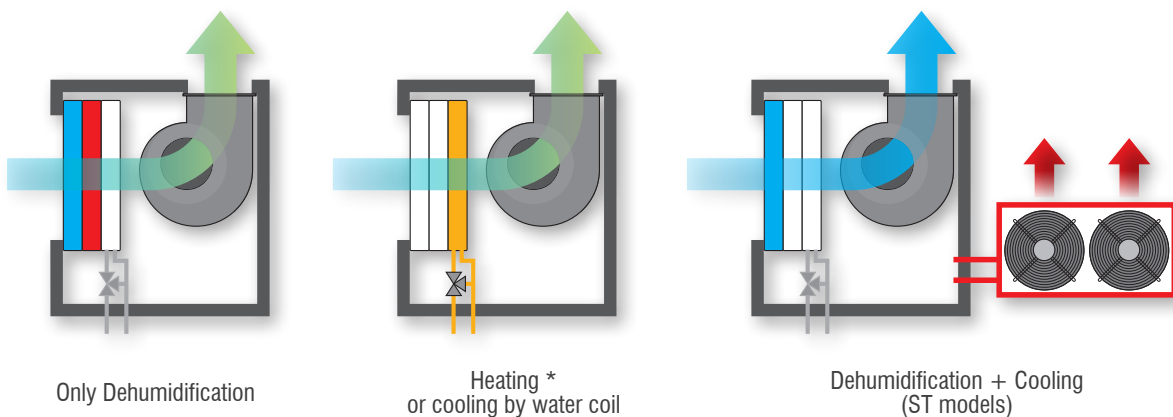
The desuperheater in series to the compressor allows to reduce the outlet air temperature to the pool and at the same time to recover the refrigerant superheating energy as hot water. It is available for chlorinated water (stainless steel AISI 316L).

Remote air condenser

(for ST models, maximum distance 30 m)
The condenser dissipates outside the heat produced by the dehumidification process avoiding possible overheating of the environment. The unit is used as an air conditioner.

- 1 Compressor, R410A refrigerant gas
- 2 Desuperheater (optional)
- 3 Remote condenser (ST models)
- 4 Condenser
- 5 Thermostatic valve
- 6 Evaporator
- 7 Fan: directly coupled up to 0950, belt transmission from 1100, radial EC optional
- 8 Post-heating or post-cooling water coil with 3 ways valve

OPERATING MODE



Only Dehumidification

Heating *
or cooling by water coil

Dehumidification + Cooling
(ST models)

* Electrical heater available, contact our commercial office.

BASIC CONTROL

It allows humidity control through a hygrostat (dry contact) on board or remote installation.
The fan speed is fixed or controlled by a potentiometer.
For three-phase units a phase monitor is included.

Available inputs/outputs

- Remote on / off (Hygrostat)



ADVANCED CONTROL

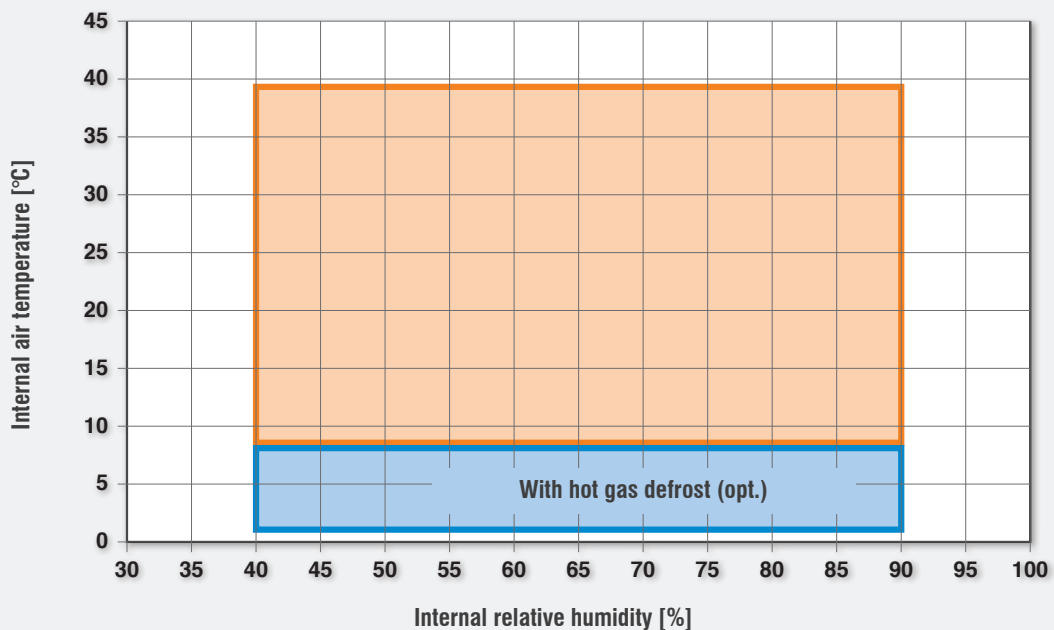
It allows the control through a temperature and humidity on board probe (included).
The probe is available for duct or wall installation (opt.)
It allows to manage many additional functions as: ACF (see page 11), clock card with time scheduling, dirty filters sensor, BMS serial board, alarm management, additional remote terminal.
For three-phase units a phase monitor is included.

Available inputs/outputs:

- 2 digital input (NO or NC)
 - On / Off
 - Summer / Winter mode
 - On / Off air treatment
- 2 digital output
 - Alarms
 - Pump or water coil three-ways valve

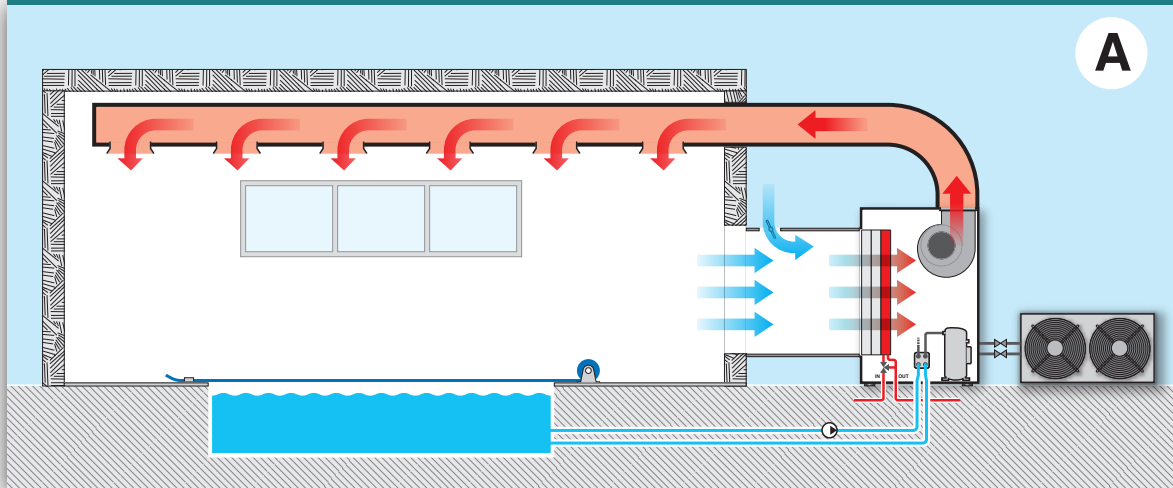


OPERATING LIMITS



SEASONAL OPERATING MODE

WINTER



WINTER: start up, no occupants, covered pool, heating with hot water coil.

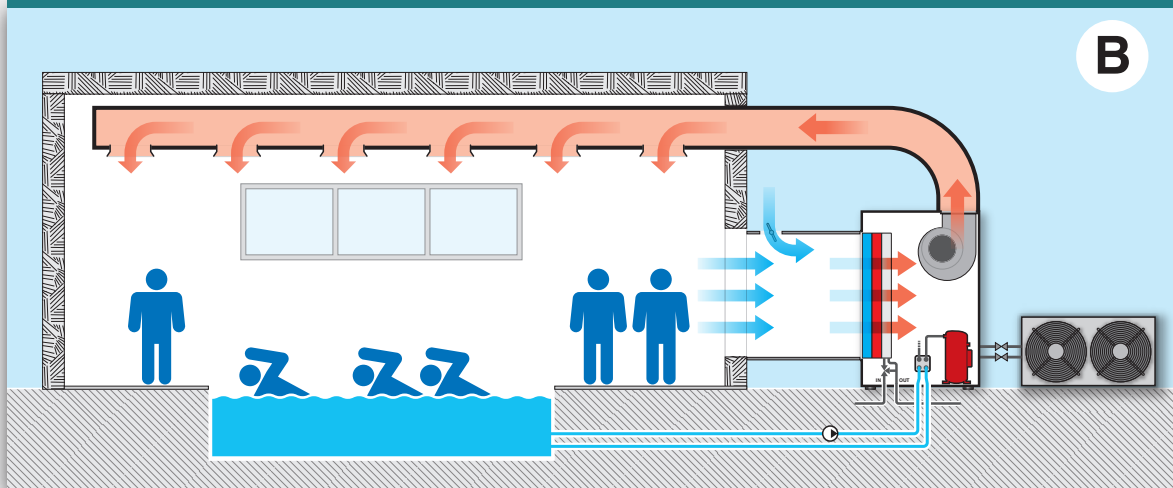
Compressor: OFF

Hot water coil: ON (optional)

Desuperheater: OFF (optional)

Remote condenser: OFF (ST models)

WINTER



WINTER: normal operation, pool open, dehumidification.

Compressor: ON

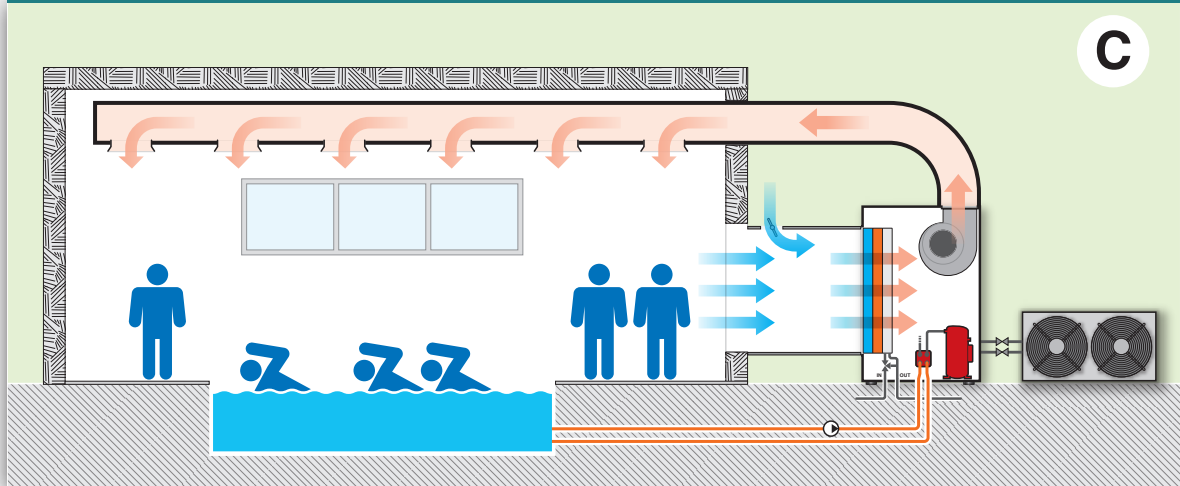
Hot water coil: OFF (optional)

Desuperheater: OFF (optional)

Remote condenser: OFF (ST models)

SEASONAL OPERATING MODE

SPRING, AUTUMN



SPRING, AUTUMN: normal operation, pool open, dehumidification with heat recovery (desuperheater)

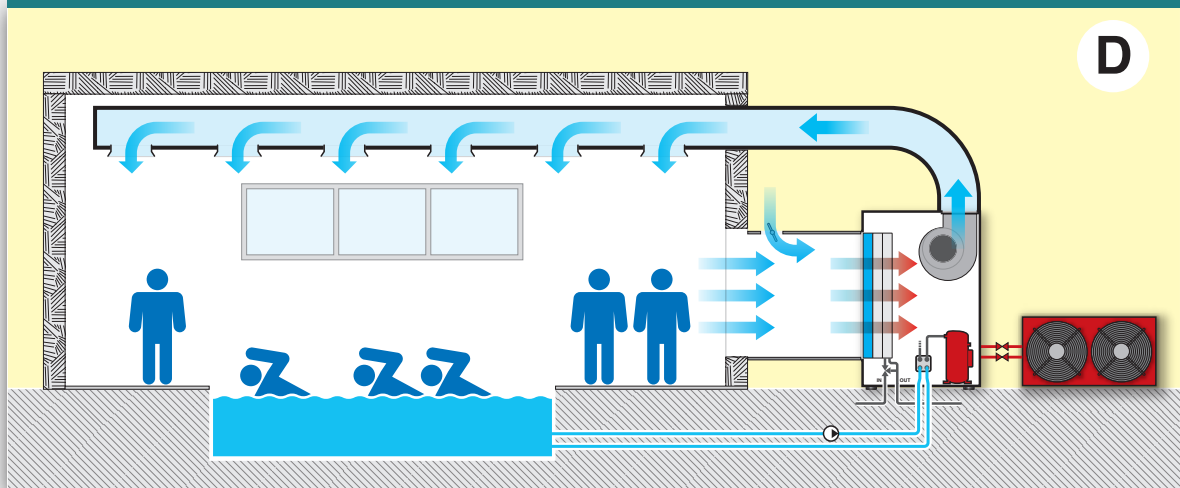
Compressor: ON

Hot water coil: OFF (optional)

Desuperheater: ON (optional)

Remote condenser: OFF (ST models)

SUMMER



SUMMER: normal operation, pool open, dehumidification and cooling (remote condenser)

Compressor: ON

Hot water coil: OFF (optional)

Desuperheater: OFF (optional)

Remote condenser: ON (ST models)

MODELS

SP-ST 0100
SP-ST 0130
SP-ST 0160
SP-ST 0190



SP-ST 0210
SP-ST 0260
SP-ST 0300



SP-ST 0350
SP-ST 0450
SP-ST 0580



SP-ST 0750
SP-ST 0950



SP-ST 1100
SP-ST 1400



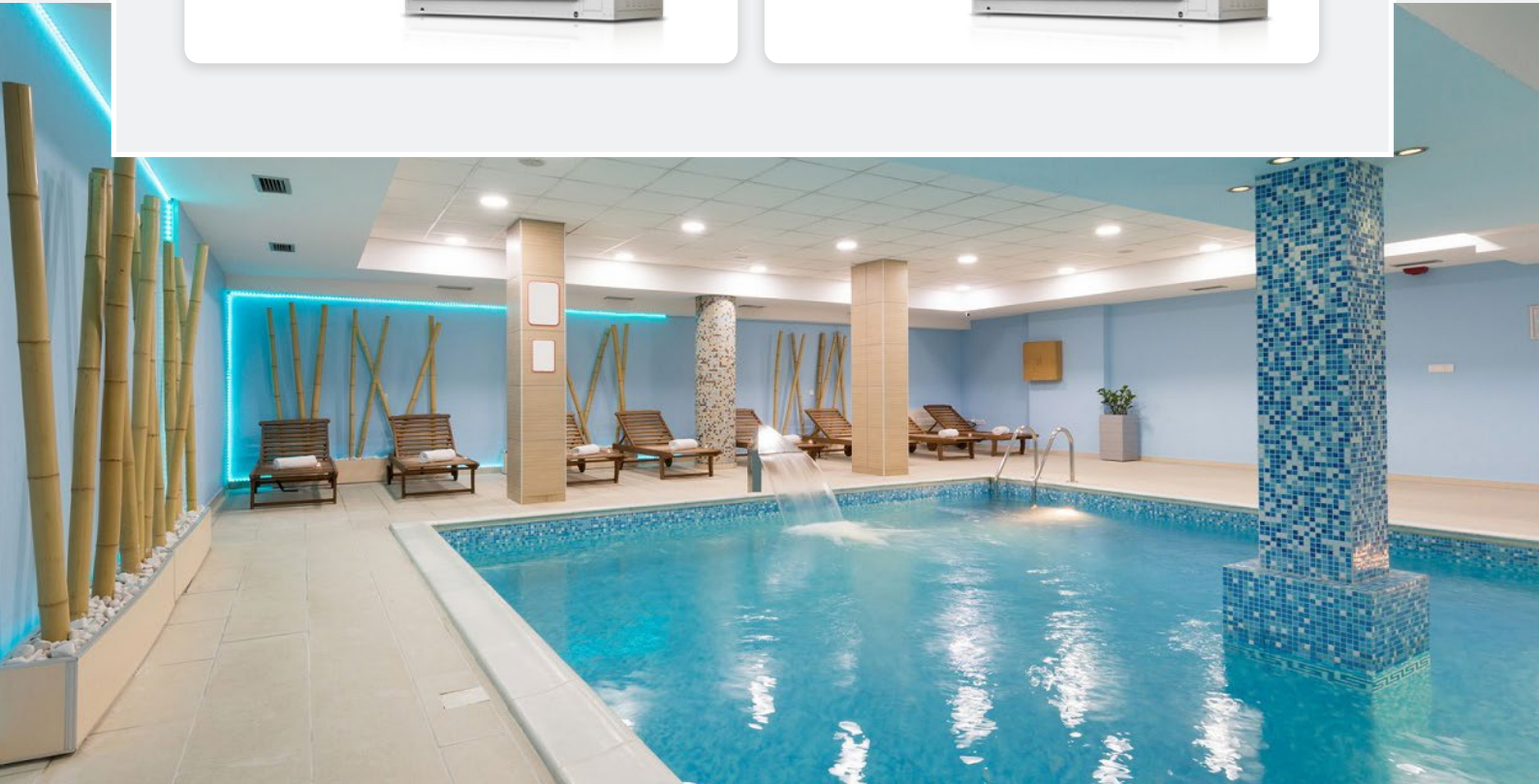
SP-ST 1500
SP-ST 1700
SP-ST 1900
SP-ST 2200



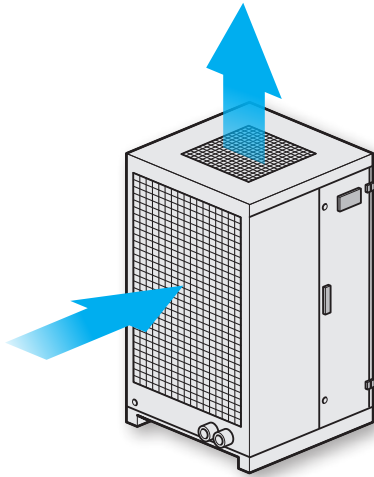
SP-ST 3000



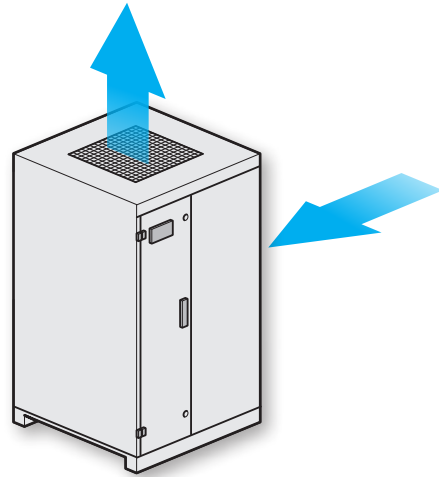
SP-ST 4500



TYPE OF ACCESSES



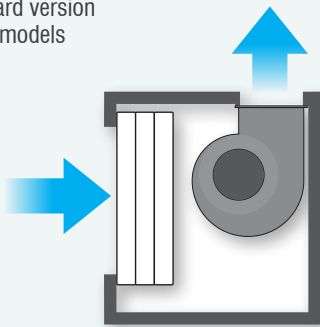
UNIT WITH ACCESSES ON THE RIGHT
(Standard)



MIRROR VERSION, UNIT WITH ACCESSES ON THE LEFT
(Optional)

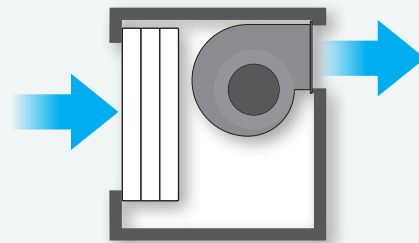
TYPE OF FANS

Standard version
for all models



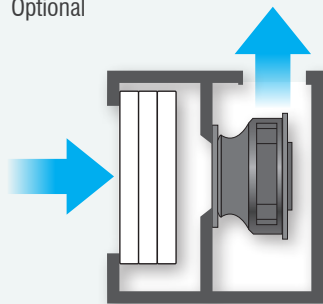
Centrifugal fan with top supply
(High prevalence fan optional)

Optional



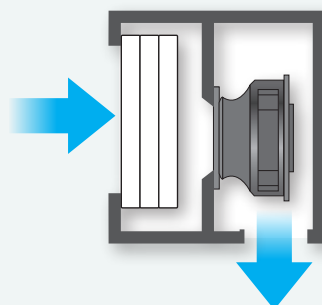
Centrifugal fan with in-line supply
(High prevalence fan optional)

Optional



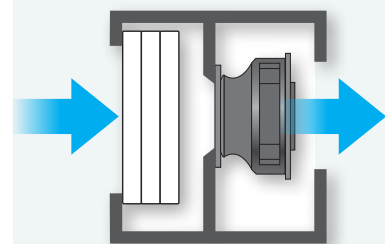
EC radial fan with
top supply

Optional



EC radial fan with down supply
(Only for single compressor sizes)

Optional



EC radial fan
with in-line supply

OPTIONS

(1)



(2)



(3)



(4)



(5)



(6)



(7)



(8)



(9)



(10)



(11)



(12)



OPTIONS

OPTIONS

- Filter holder frame for suction ducting with G2 or G4 filters **(1)**
- Mechanical hygrostat for wall installation **(2)**
- Electronic chrono – hygrostat **(3)**
- Water coil with modulating three-ways valve * **(4)**
 - Only heating
 - Only heating, oversized
 - Cooling/Heating
 - Cooling/Heating, oversized

} Including condensate tray and insulation

* It is possible to install only one water coil; for size up to 0300, on/off three-ways valve.
- Silent version **(5)**
- Soft-start
- Manometers **(6)**
- Hot gas defrost (mandatory in case of air temperature below 8°C)
- Desuperheater for technical water
- Desuperheater for pool water
- High prevalence centrifugal fan
- Electronic radial fan **(7)**
- ACF: Automatic Control Flow; it allows to choose the air flow directly on the display and to keep it also in case of variable pressure drops due to the filters.
- Advanced control
- Clock card with time scheduling: 2 operating mode (weekday or holiday), 6 time slots per operating mode.
Settable parameters: on/off, indoor temperature, indoor relative humidity.
- Dirty filters sensor **(8)**
- Temperature and humidity probe for duct installation **(9)**
- Remote user terminal including 20 m cable **(10)**
- Additional thermal insulation, thickness 20 mm or 40 mm
- Pivoting wheels **(11)**
- Serial board for BMS **(12)**
 - Modbus
 - LonWorks
 - BACnet
 - KNX
- Ethernet™ interface card, protocols available: SNMP v1 & v2c, BACnet / IP, BACnet Ethernet and Modbus TCP / IP
- Contact for 0-10 V humidifier control (Humidifier not supplied by HiDew)
- Version for outdoor installation

OPTIONS FOR SPECIAL APPLICATIONS

- Special coils for aggressive ambient
- Stainless steel AISI 316L panels
- Power supply 60 Hz
- Technical water condenser
- Electric heaters
- Pool water condenser

TECHNICAL DATA

Model size: ▶		0100	0130	0160	0190	0210	0260	0300	0350	0450	0580
Dehumidification capacity ¹	l/24h	100	128	157	190	210	268	302	358	452	581
Circuits/Compressors		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
Type of compressor		Rotary			Scroll	Scroll			Scroll		
Nominal air flow	m ³ /h	900	1.200	1.600	1.600	2.000	2.800	2.800	3.800	4.000	4.800
Cooling capacity ²	kW	4,9	6,5	8,0	10,0	11,0	15,0	16,0	19,0	23,0	30,0
Standard centrifugal fan available static pressure	Pa	50	50	50	50	50	50	50	50	50	50
High prevalence centrifugal fan available static pressure	Pa	100	100	130	130	100	100	100	130	110	130
EC Radial fan available static pressure	Pa	450	450	400	400	550	350	350	550	540	450
Hot water coil nominal heating capacity ³	kW	5,5	9,8	9,8	9,8	16,5	17,0	17,0	26,5	26,5	27,0
Nominal water flow	m ³ /h	0,47	0,84	0,84	0,84	1,42	1,46	1,46	2,28	2,28	2,32
Water pressure drop including valve	kPa	29	38	38	38	30	31	31	40	40	40
Oversized hot water coil nominal heating power ⁴	kW	4,1	5,2	7,0	7,0	8,6	12,1	12,1	16,1	17,6	20,2
Nominal water flow	m ³ /h	0,72	0,90	1,21	1,21	1,51	2,11	2,11	2,81	3,07	3,52
Water pressure drop including valve	kPa	56	82	184	184	40	96	96	16	24	32
Desuperheater heating power	kW	1,7	2,0	2,5	2,8	3,5	4,6	4,8	4,8	5,8	8,1
Nominal water flow	m ³ /h	0,30	0,35	0,43	0,48	0,60	0,80	0,80	0,70	1,00	1,40
Water pressure drop	kPa	15	20	21	22	24	26	27	27	29	35
Maximum absorbed electrical power ⁵	kW	2,2	2,6	3,7	5,4	5,5	6,8	7,0	8,6	10,2	13,4
Power supply	V/ph/Hz	230 / 1 + N / 50				400 / 3 + N / 50			400 / 3 + N / 50		
Sound pressure ⁶	dB(A)	56	56	60	61	62	62	63	64	65	65
Weight	kg	100	100	105	110	120	130	140	220	230	240
		REMOTE CONDENSER									
Number of fans		1	1	1	1	2	2	2	2	3	3
Nominal electrical power	kW	0,18	0,18	0,18	0,18	0,36	0,36	0,36	0,36	0,54	0,54
Power supply	V/ph/Hz	230 / 1 + N / 50				230 / 1 + N / 50			230 / 1 + N / 50		
Sound pressure ⁶	dB(A)	49	49	49	49	52	52	52	52	54	54
Weight	kg	24	24	24	24	34	34	34	42	58	64

1 - Dehumidification capacity is declared with ambient air at 30°C / 80% RH.

2 - Only ST models. Cooling capacity is declared with ambient air at 30°C / 80% RH and outdoor air at 30°C / 50% RH.

3 - Hot water coil capacity is declared with ambient air at 30°C, water inlet 80°C and outlet 70°C.

4 - Hot water oversized coil capacity is declared with ambient air at 30°C, water inlet 45°C and outlet 40°C.

5 - Absorbed electrical power is declared with ambient air at 30°C / 80% RH and nominal air flow.

6 - Pressure sound level measured in free field at 1 m from the unit.

7 - ST 4500: two single-circuit remote condensers; data referring to one piece.

TECHNICAL DATA

Model size: ▶		0750	0950	1100	1400	1500	1700	1900	2200	3000	4500
Dehumidification capacity ¹	l/24h	760	955	1.120	1.350	1.480	1.710	1.870	2.180	2.960	4.650
Circuits/Compressors		1/1	1/1	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2
Type of compressor		Scroll		Scroll		Scroll				Scroll	Scroll
Nominal air flow	m ³ /h	7.000	8.200	11.000	12.500	13.000	15.000	15.000	17.000	25.000	35.000
Cooling capacity ²	kW	38,0	50,0	56,0	66,0	75,0	86,0	96,0	110,0	148,0	226,0
Standard centrifugal fan available static pressure	Pa	130	130	200	200	200	200	200	200	200	200
High prevalence centrifugal fan available static pressure	Pa	250	250	300	300	300	300	300	300	300	300
EC Radial fan available static pressure	Pa	450	400	480	450	450	480	480	450	400	280
Hot water coil nominal heating capacity ³	kW	48,0	55,0	76,0	83,0	98,0	107,0	107,0	118,0	168,0	235,0
Nominal water flow	m ³ /h	4,13	4,73	6,54	7,14	8,43	9,20	9,20	10,15	14,45	20,00
Water pressure drop including valve	kPa	36	38	55	58	60	63	63	68	60	80
Oversized hot water coil nominal heating power ⁴	kW	36,3	41,2	50,3	55,5	61,5	68,8	68,8	75,8	113,0	158,2
Nominal water flow	m ³ /h	6,33	7,19	8,78	9,68	10,73	12,00	12,00	13,23	19,72	27,61
Water pressure drop including valve	kPa	142	176	30	36	18	22	22	26	72	100
Desuperheater heating power	kW	11,5	14,5	14,0	18,0	19,0	22,0	25,0	29,0	37,0	55,0
Nominal water flow	m ³ /h	2,00	2,50	2,40	3,10	3,20	3,80	4,30	5,00	6,40	9,50
Water pressure drop	kPa	43	50	32	37	38	42	46	50	60	87
Maximum absorbed electrical power ⁵	kW	16,3	20,0	23,3	26,6	29,0	35,2	38,6	42,6	62,4	90,0
Power supply	V/ph/Hz	400 / 3 + N / 50		400 / 3 + N / 50		400 / 3 + N / 50				400 / 3 + N / 50	
Sound pressure ⁶	dB(A)	66	66	68	69	70	71	71	72	73	74
Weight	kg	410	430	650	720	780	840	900	950	1.250	1.550

REMOTE CONDENSER

Fans number		6	6	8	8	2	2	2	2	3	2 ⁷
Nominal electrical power	kW	1,08	1,08	1,44	1,44	3,88	3,88	3,88	3,88	5,82	3,88 ⁷
Power supply	V/ph/Hz	230 / 1 + N / 50		230 / 1 + N / 50		400 / 3 + N / 50				400 / 3 + N / 50	
Sound pressure ⁶	dB(A)	57	57	59	59	61	61	61	61	63	61 ⁷
Weight	kg	102	128	147	147	332	332	332	332	535	332 ⁷

1 - Dehumidification capacity is declared with ambient air at 30°C / 80% RH.

2 - Only ST models. Cooling capacity is declared with ambient air at 30°C / 80% RH and outdoor air at 30°C / 50% RH.

3 - Hot water coil capacity is declared with ambient air at 30°C, water inlet 80°C and outlet 70°C.

4 - Hot water oversized coil capacity is declared with ambient air at 30°C, water inlet 45°C and outlet 40°C.

5 - Absorbed electrical power is declared with ambient air at 30°C / 80% RH and nominal air flow.

6 - Pressure sound level measured in free field at 1 m from the unit.

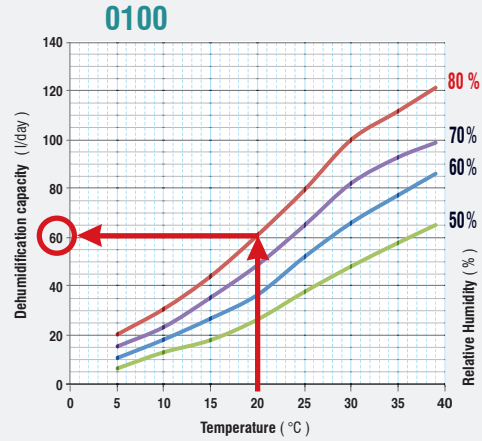
7 - ST 4500: two single-circuit remote condensers; data referring to one piece.

EXAMPLE OF PERFORMANCE GRAPH READING

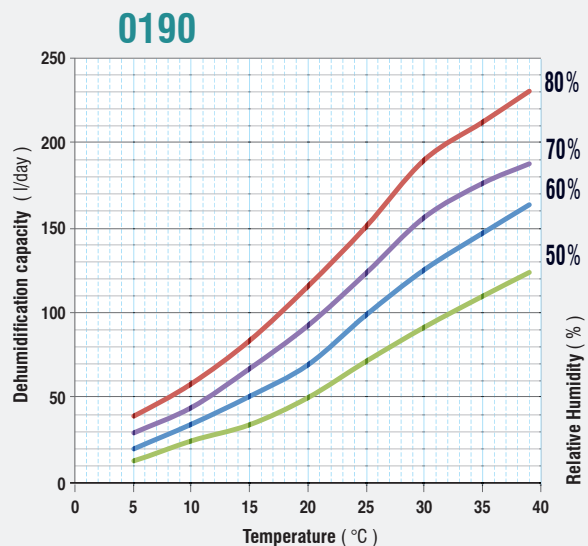
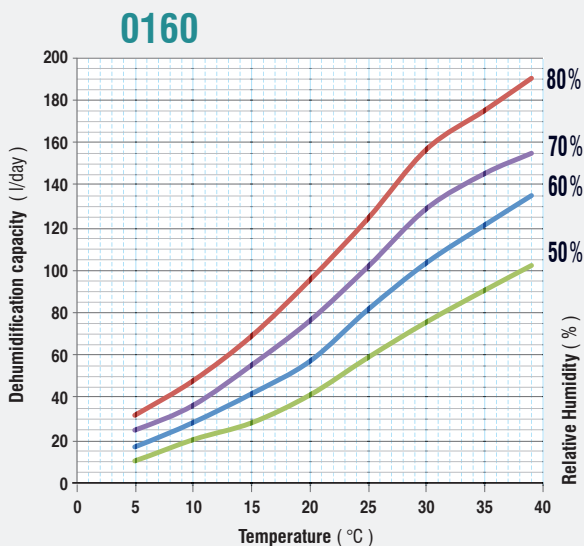
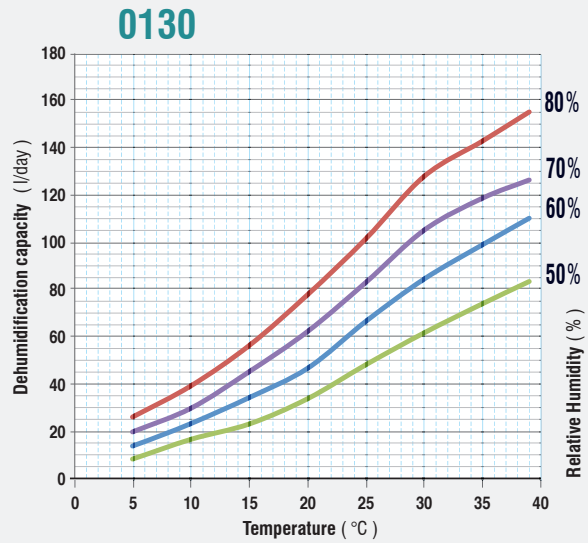
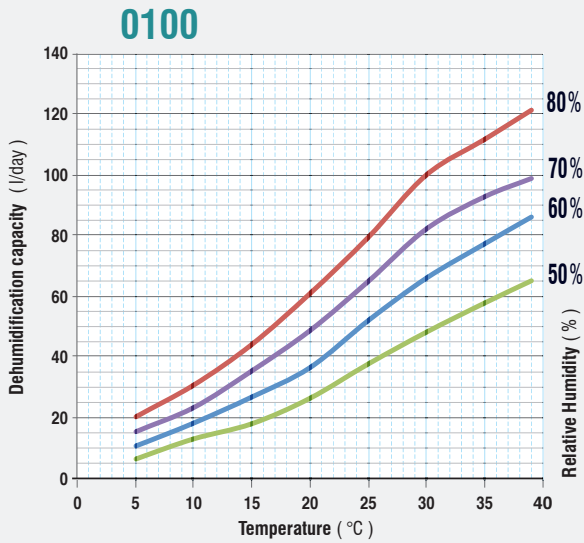
Example of reading the performance graph

Air temperature 20 °C
Air relative humidity 80 %

The graph allows to determine the dehumidification capacity, in this case equal to 60 l/day.

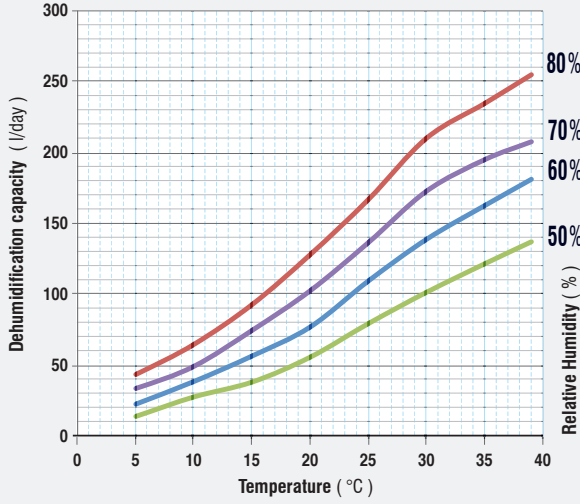


PERFORMANCE GRAPH

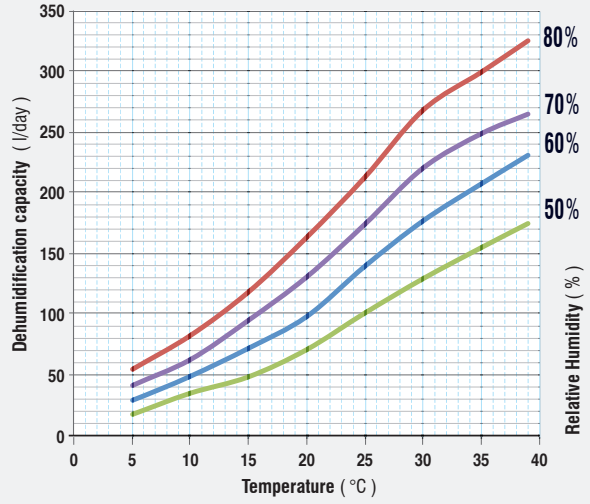


PERFORMANCE GRAPH

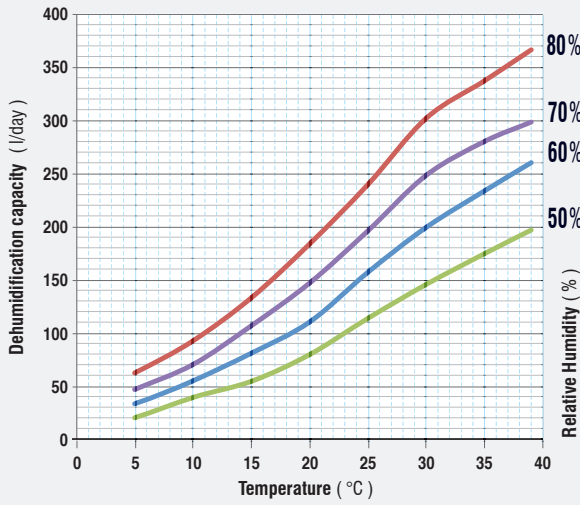
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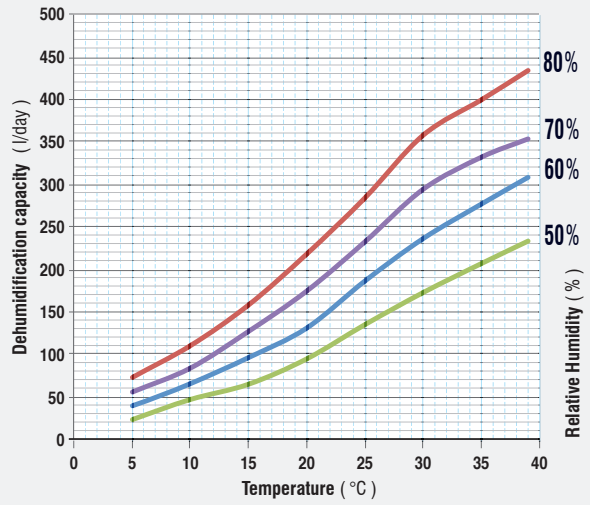
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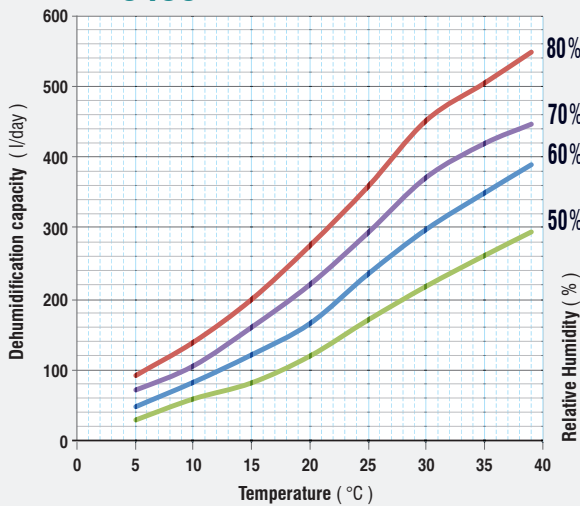
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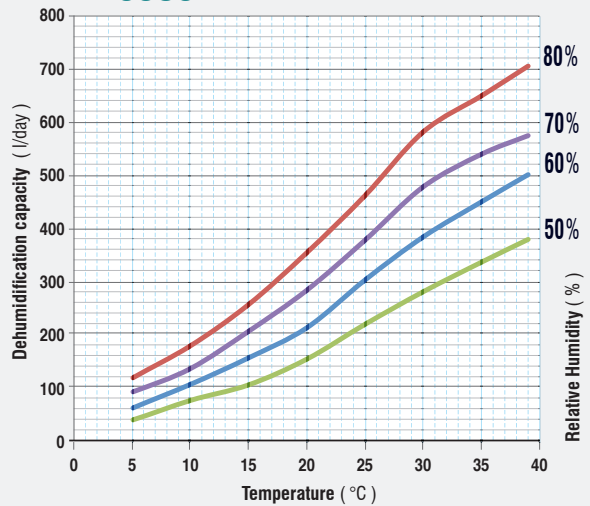
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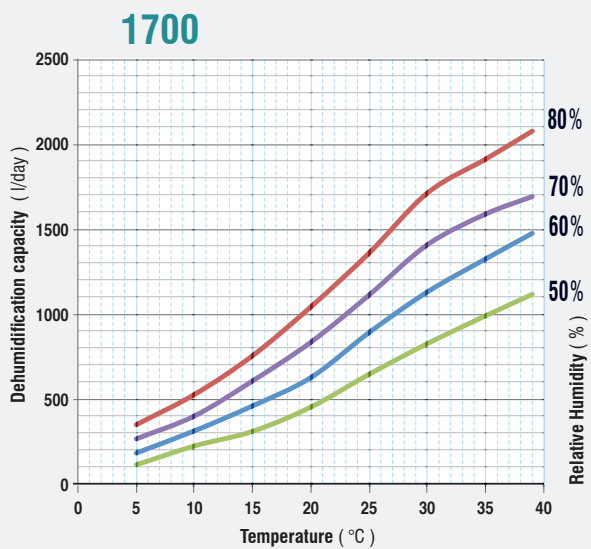
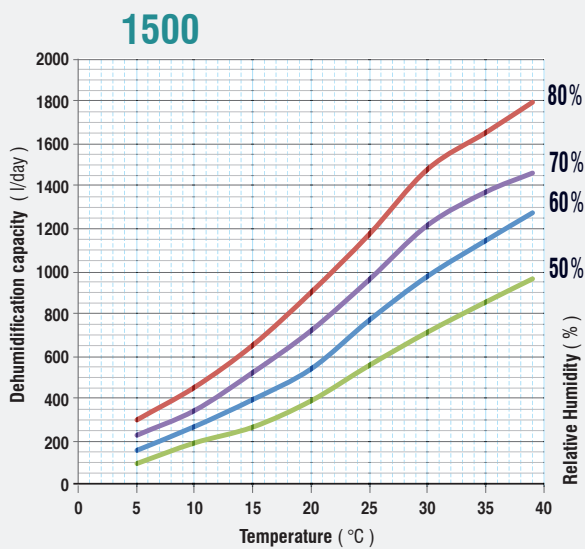
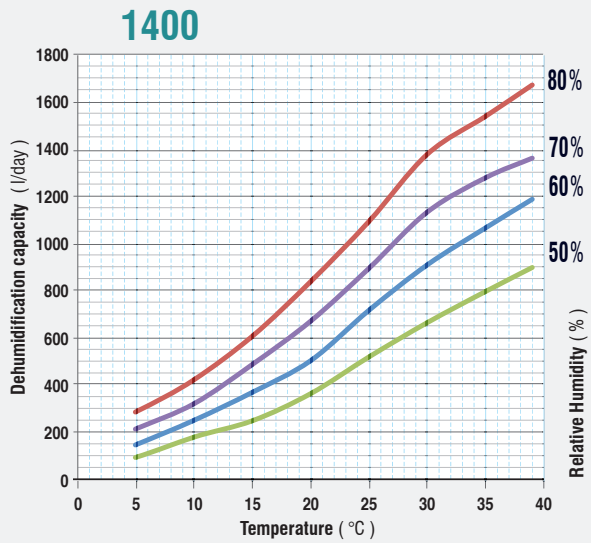
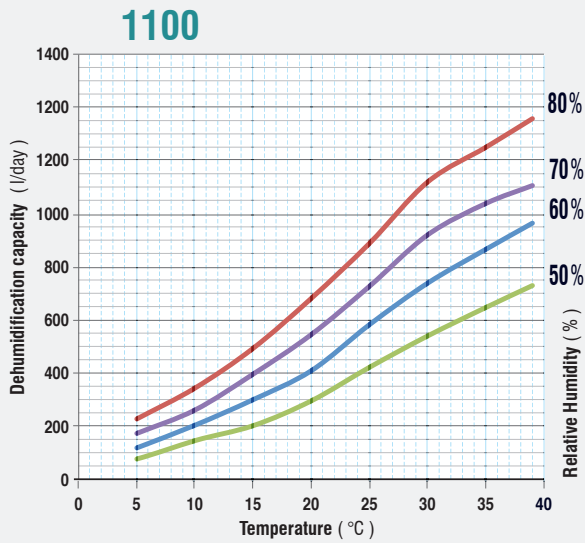
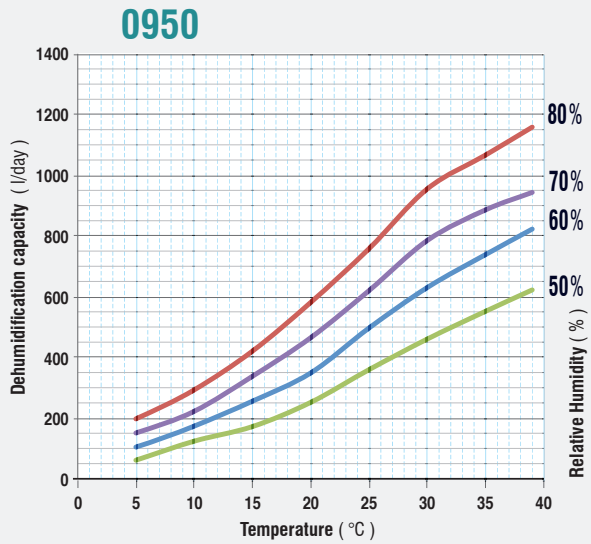
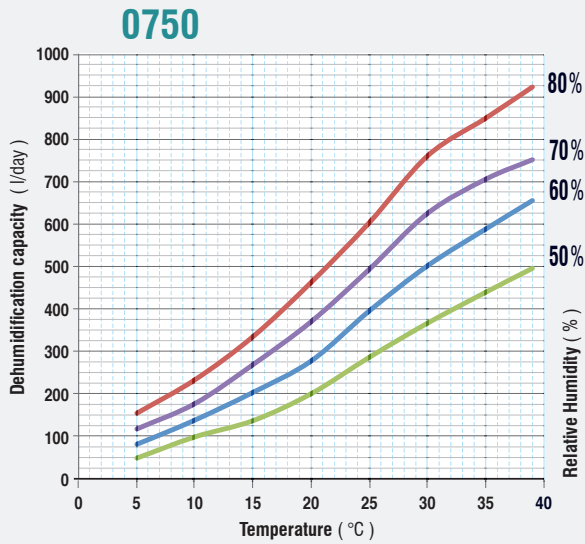
0450



0580

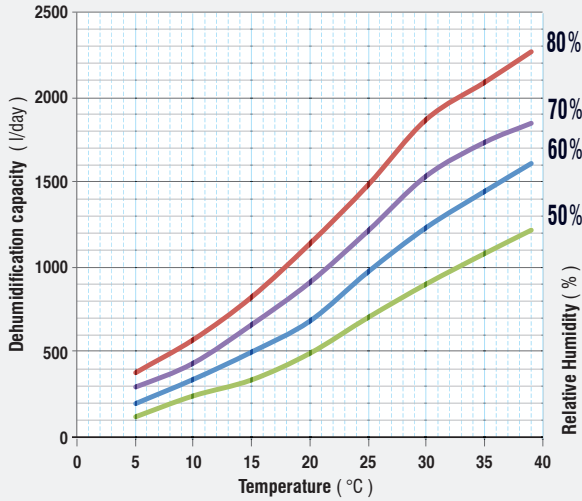


PERFORMANCE GRAPH

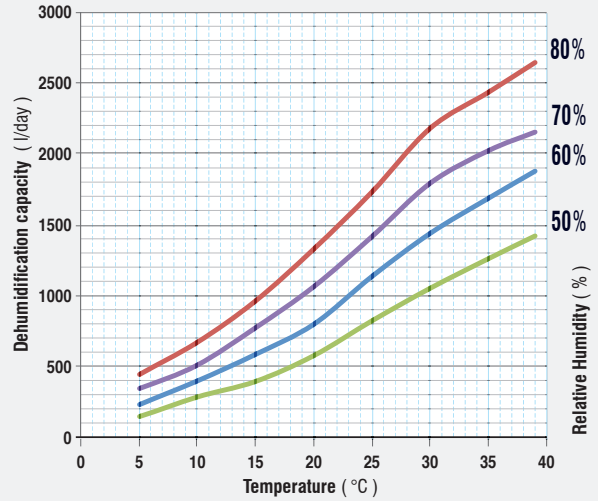


PERFORMANCE GRAPH

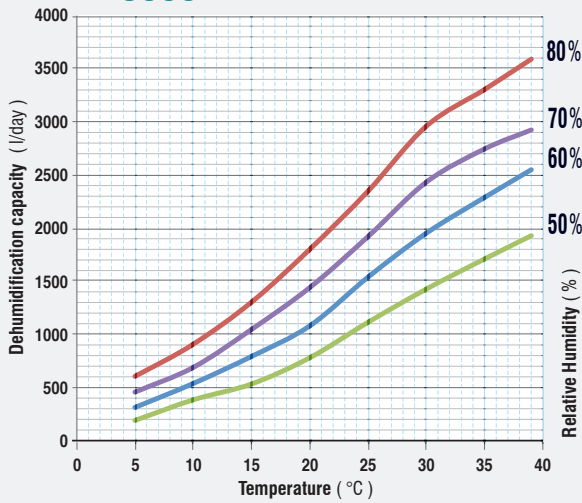
1900



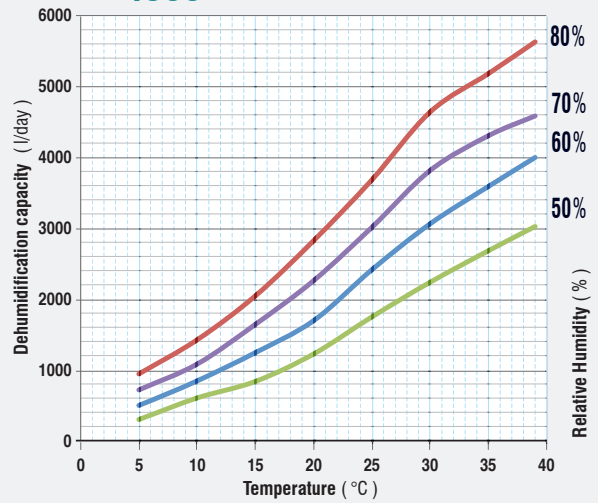
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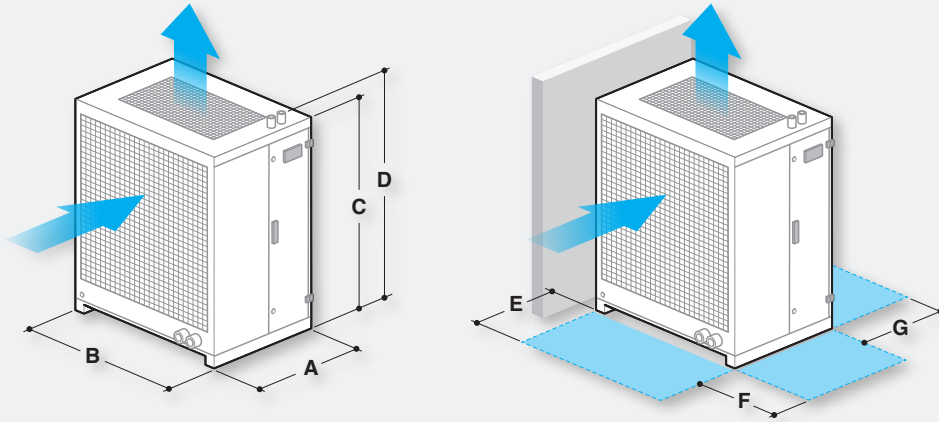
3000



4500



DIMENSIONS AND CLEARANCES

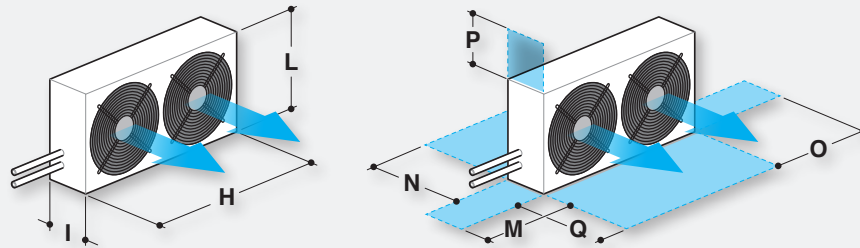


SP - ST	DIMENSIONS				CLEARANCES		
	A ¹ [mm]	B [mm]	C [mm]	D (only ST) [mm]	E [mm]	F [mm]	G ² [mm]
0100	700	550	900	1100	600	700	600
0130	700	550	900	1100	600	700	600
0160	700	550	900	1100	600	700	600
0190	700	550	900	1100	600	700	600
0210	700	850	900	1100	600	1000	600
0260	700	850	900	1100	600	1000	600
0300	700	850	900	1100	600	1000	600
0350	830	850	1350	1600	600	1000	600
0450	830	850	1350	1600	600	1000	600
0580	830	850	1350	1600	600	1000	600
0750	1000	1400	1350	1600	600	1500	600
0950	1000	1400	1350	1600	600	1500	600
1100	1000	1950	1640	1900	600	1000	800
1400	1000	1950	1640	1900	600	1000	800
1500	1000	2500	1640	1900	600	1500	800
1700	1000	2500	1640	1900	600	1500	800
1900	1000	2500	1640	1900	600	1500	800
2200	1000	2500	1640	1900	600	1500	800
3000	1000	3395	1640	1900	600	1500	800
4500	1000	4430	1640	1900	600	1500	800

1 - With filter holder frame for ductable suction, add 120 mm.

2 - In case of in-line supply G clearance has to be referred to the height over the unit.

DIMENSIONS AND CLEARANCES



REMOTE CONDENSER	DIMENSIONS			CLEARANCES				
	H [mm]	I [mm]	L [mm]	M [mm]	N [mm]	O [mm]	P [mm]	Q [mm]
0100	748	404	575	700	600	800	800	free side
0130	748	404	575	700	600	800	800	free side
0160	748	404	575	700	600	800	800	free side
0190	748	404	575	700	600	800	800	free side
0210	1303	404	575	700	600	800	800	free side
0260	1303	404	575	700	600	800	800	free side
0300	1303	404	575	700	600	800	800	free side
0350	1303	404	575	700	600	800	800	free side
0450	1858	404	575	700	1200	800	800	free side
0580	1858	404	575	700	1200	800	800	free side
0750	1858	404	1130	700	1200	800	800	free side
0950	1858	404	1130	700	1200	800	800	free side
1100	2413	404	1130	700	1200	800	800	free side
1400	2413	404	1130	700	1200	800	800	free side
1500	3800	1095	1144	800	1200	800	800	free side
1700	3800	1095	1144	800	1200	800	800	free side
1900	3800	1095	1144	800	1200	800	800	free side
2200	3800	1095	1144	800	1200	800	800	free side
3000	5550	1095	1144	800	1200	800	800	free side
4500³	3800	1095	1144	800	1200	800	800	free side

3 - ST 4500 size: two single-circuit remote condenser; data referring to one piece.
 Dimensions and clearances referred to standard unit, with options or special applications ask for executive drawings.