



SPR STR

**SWIMMING POOL DEHUMIDIFIERS
WITH AIR RENEWAL**



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

SPR - STR: SWIMMING POOL DEHUMIDIFIERS

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

SPR Double flow ductable dehumidifier, designed for dehumidification, heating and air renewal with heat recovery for indoor pools and aggressive ambients.

- Installation in technical room
- Galvanized steel panels, inside and outside painted
- Pre-coated finned coils suitable for aggressive environment
- Crossflow heat recovery unit with aluminum precoated fins
- Electronical components protected against chlorine
- Stainless steel condensate tray
- Electronic radial fan with inverter
- Desuperheater for chlorinated water
- Dehumidification capacity from 100 l/day to 4650 l/day
- Air flow from 900 m³/h to 35000 m³/h

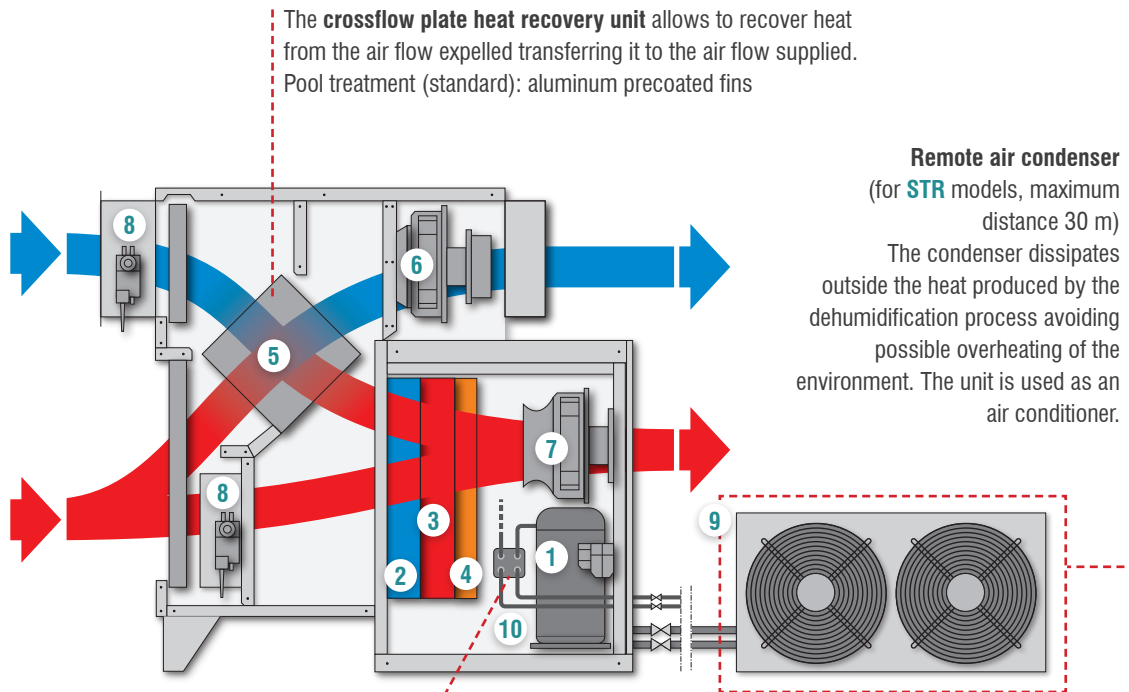


STR Further the features of **SPR** models, the **STR** version has a remote air condenser, in addition to the internal one, that allows to dissipate outside the excessive condensation heat during summertime.

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



PRINCIPLE SCHEME



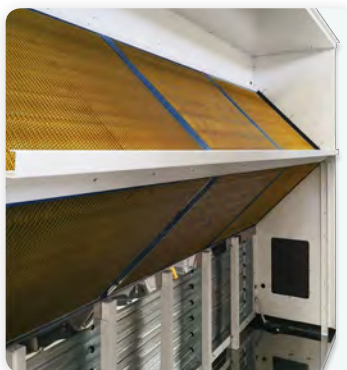
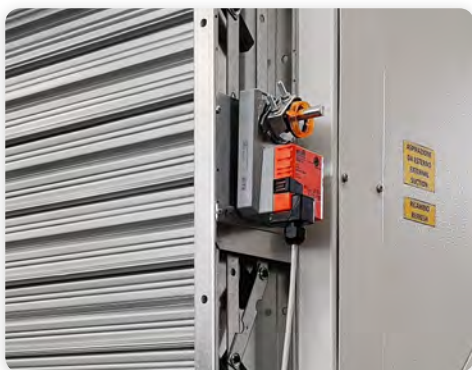
The **crossflow plate heat recovery unit** allows to recover heat from the air flow expelled transferring it to the air flow supplied.
Pool treatment (standard): aluminum precoated fins

Remote air condenser
(for **STR** 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.

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).

- 1 Compressor
- 2 Evaporator
- 3 Condenser
- 4 Post-heating/cooling water coil (optional)
- 5 Crossflow plate heat recovery unit
- 6 EC fan extraction
- 7 EC fan supply
- 8 Motorized damper
- 9 Remote condenser (STR models)
- 10 Desuperheater (optional)



ADVANCED CONTROL

Unit allows temperature and humidity control through an on-board probe; depending on the operation temperature, humidity or both requests will be satisfied.

Renewal air percentage, free cooling/heating automatic activation and alarms management are available.

It is possible to combine with advanced control (see page 11):

- Duct or ambience probe
- ACF (Automatic Control Flow)
- Dirty filters sensor
- BMS serial board
- Additional remote terminal

For three-phase units a phase monitor is included.



In order to save energy, the unit reduces fan speed when no air treatments are required.



Clock card with time bands included with the advanced control:

- 2 operation mode (weekday and holiday)
- 6 time bands per operation mode

Settable parameters (per time bands)

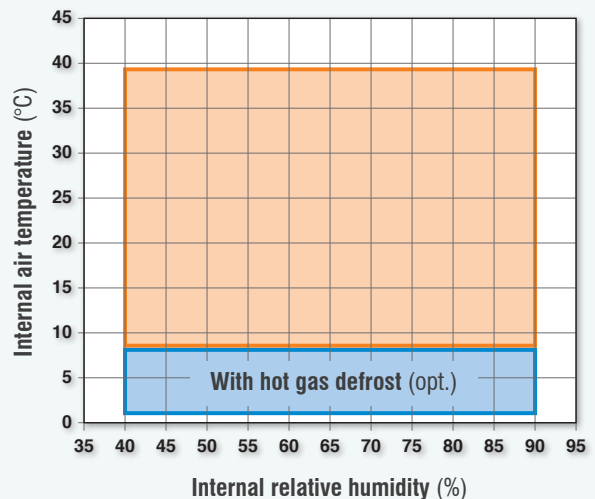
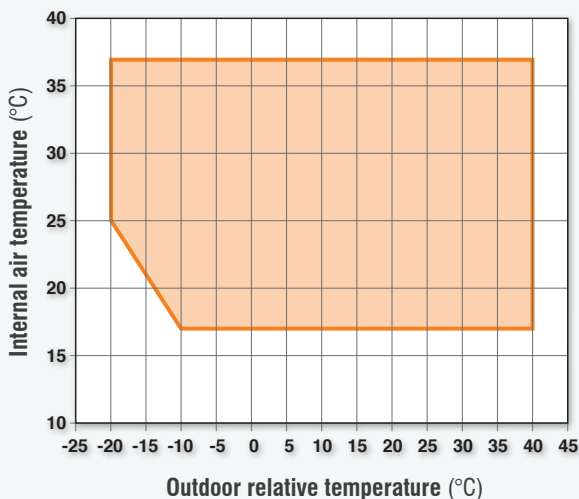
- On / Off
- Air treatment on / off
- Indoor air temperature
- Indoor air relative humidity
- Renewal / recirculation air
- Fresh air percentage

Available inputs:

- Two digital inputs (NO or NC)
 - On / Off
 - Summer / winter mode
 - Renewal / recirculation air
 - Air renewal enabling
 - Renewal air forcing
- Two digital outputs
 - Alarm
 - Heating pump

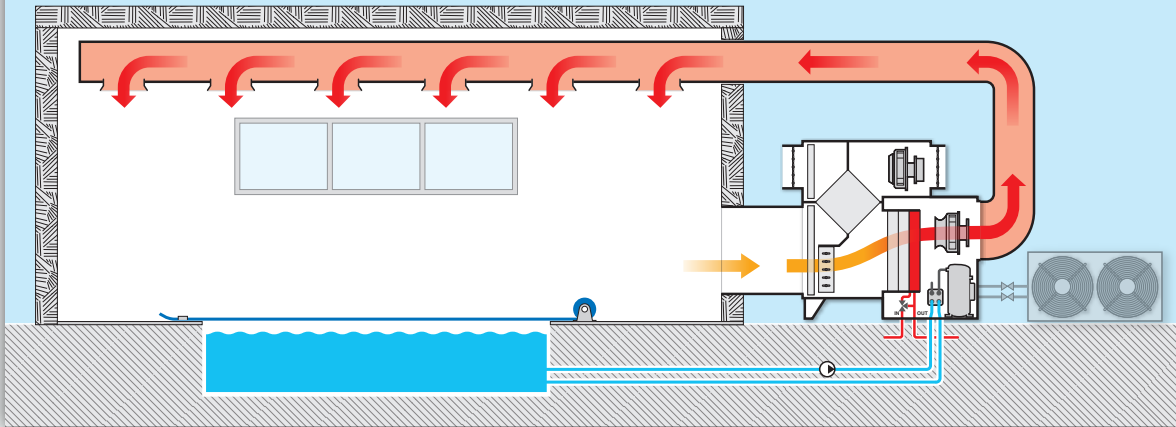


OPERATING LIMITS



SEASONAL OPERATING MODE

WINTER



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

Compressor: OFF

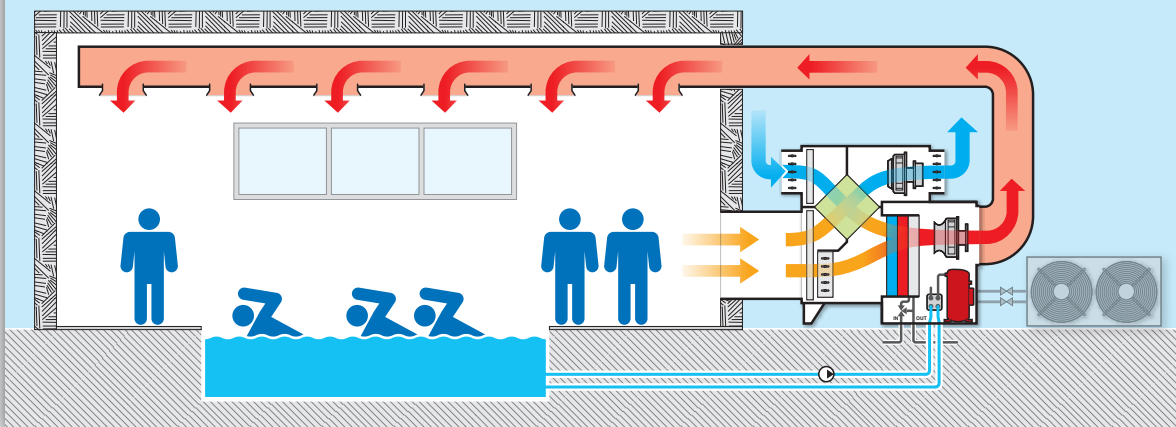
Hot water coil: ON (optional)

Desuperheater: OFF (optional)

Remote condenser: OFF (ST models)

External air: OFF

WINTER



WINTER: normal operation, pool open, dehumidification.

Compressor: ON

Hot water coil: OFF (optional)

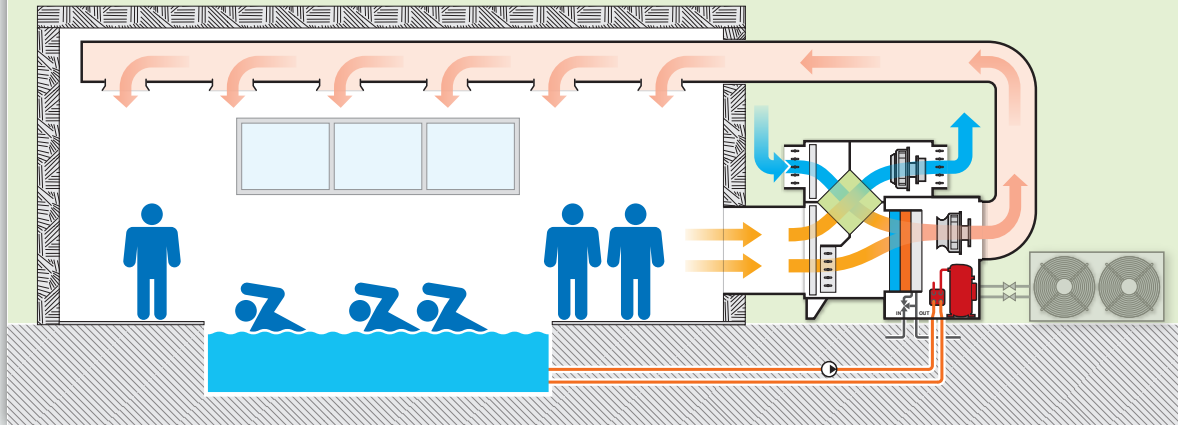
Desuperheater: OFF (optional)

Remote condenser: OFF (ST models)

External air: ON

SEASONAL OPERATING MODE

SPRING, AUTUMN



SPRING, AUTUMN: normal operation, pool open, dehumidification with heat recovery (desuperheater)
Free cooling operation mode available (optional).

Compressor: ON

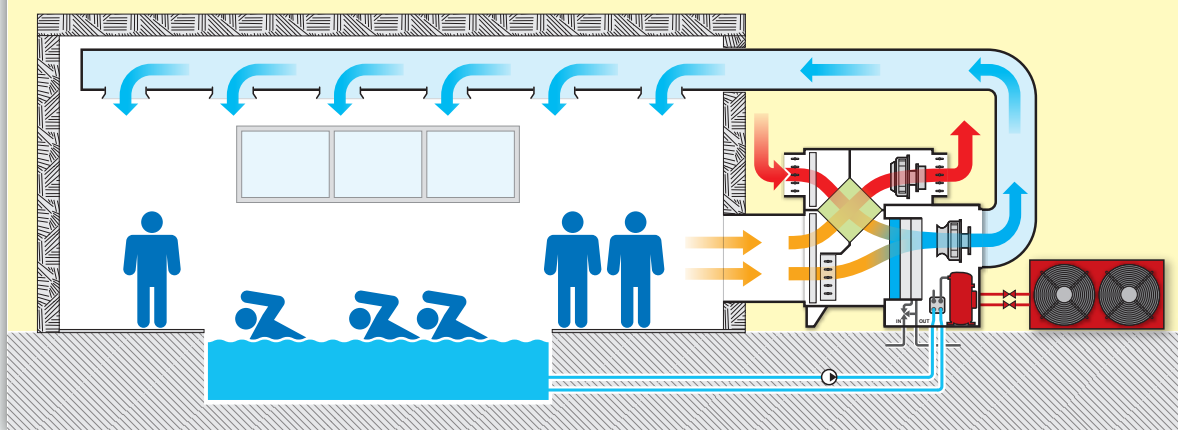
Hot water coil: OFF (optional)

Desuperheater: ON (optional)

Remote condenser: OFF (ST models)

External air: ON

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)

External air: ON

RANGE

SPR - STR 100
SPR - STR 130
SPR - STR 160
SPR - STR 190

SPR - STR 210
SPR - STR 260
SPR - STR 300

1

SPR - STR 350
SPR - STR 450
SPR - STR 580

SPR - STR 750
SPR - STR 950

2

SPR - STR 1100
SPR - STR 1400

3

SPR - STR 1500
SPR - STR 1700
SPR - STR 1900
SPR - STR 2200

SPR - STR 3000

SPR - STR 4500

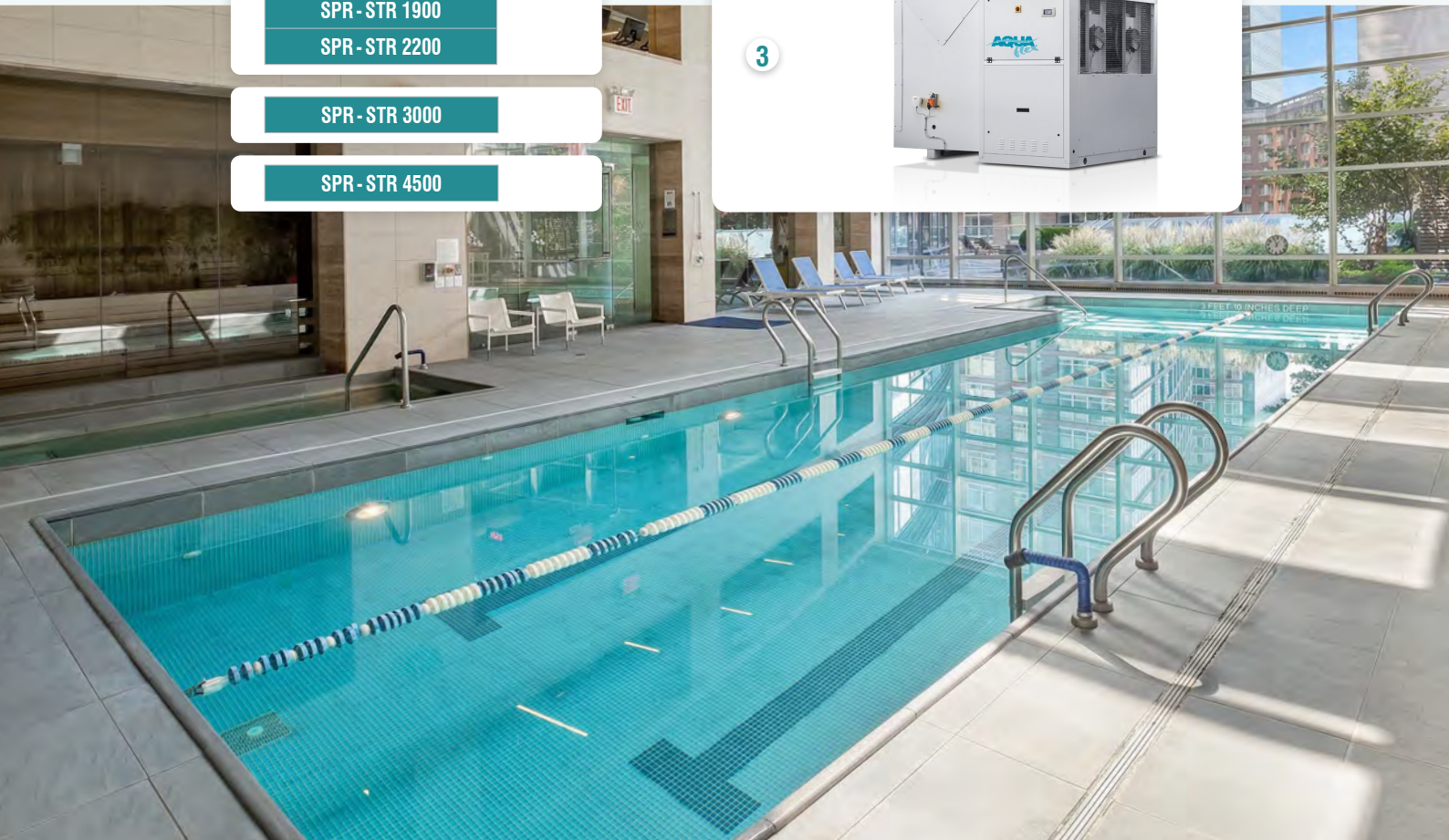
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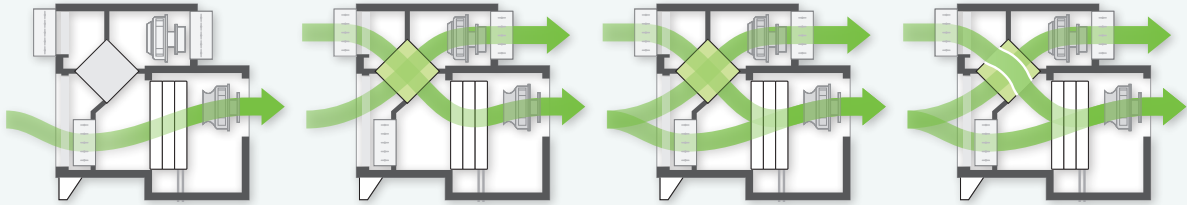
2



3



AIR FLOWS



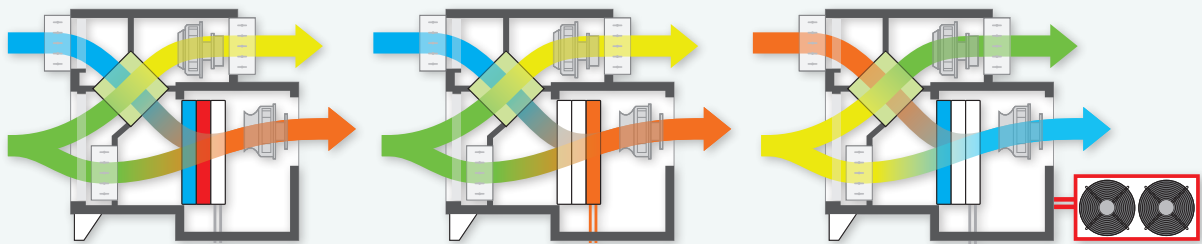
1) Recirculation

2) Renewal

3) Recirculation and renewal

4) Free cooling / Heating

OPERATING MODE



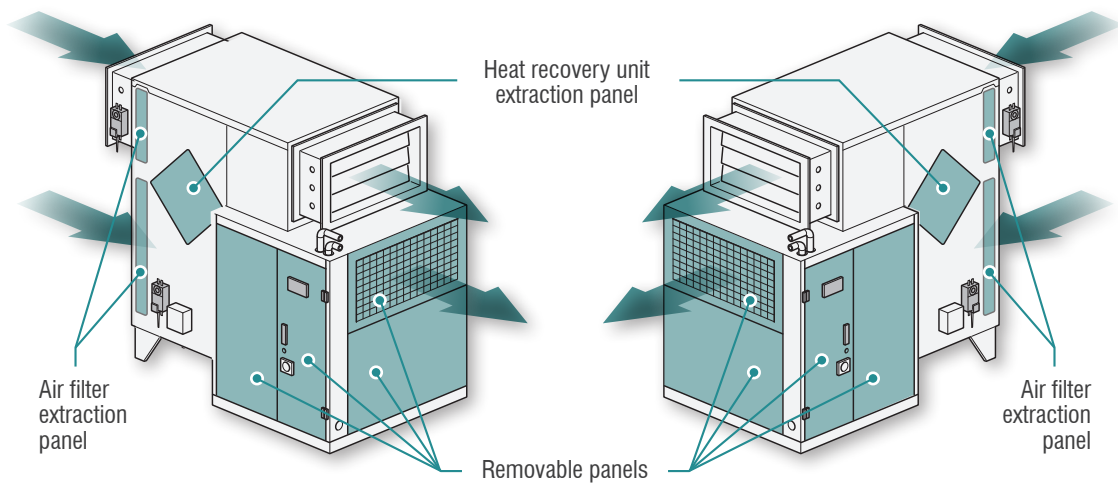
1) Only dehumidification

2) Heating* or cooling with water coil

3) Dehumidification and cooling (STR models)

* Electrical heater available, contact our commercial office.

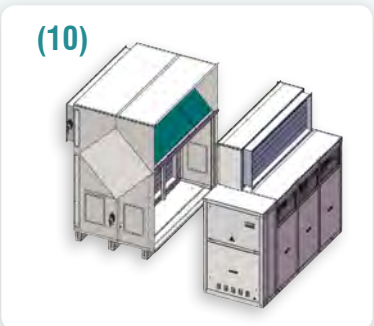
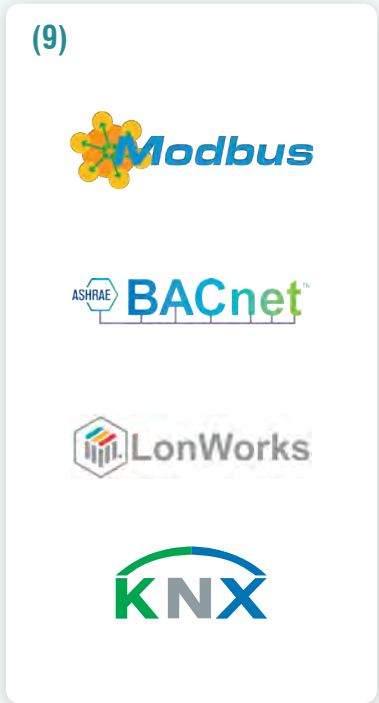
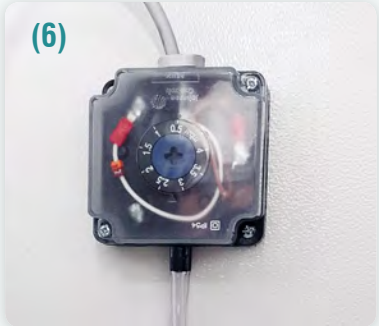
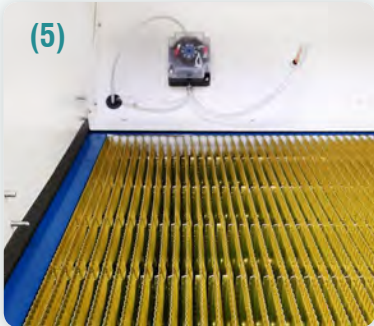
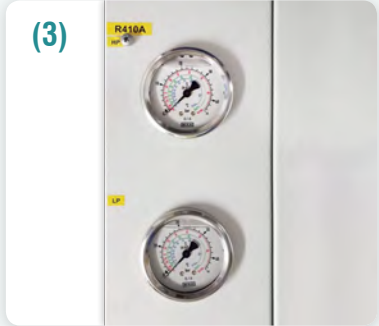
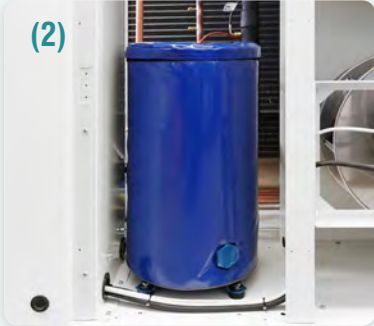
TYPE OF ACCESSES



UNIT WITH ACCESSES ON THE RIGHT
(Standard)

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

OPTIONS



OPTIONS

OPTIONS

- G4 or F7 filters
- Water coil with modulating three-ways valve * **(1)**
 - 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.
- Free cooling kit: it allows to cool using external air when its temperature is lower than internal air
- Silent version **(2)**
- Soft-start
- Manometers **(3)**
- Hot gas defrost (mandatory in case of air temperature below 8°C)
- Desuperheater for technical water **(4)**
- Desuperheater for pool water
- 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. **(5)**
- Dirty filters sensor **(6)**
- Temperature and humidity probe for duct installation **(7)**
- Remote user terminal including 20 m cable **(8)**
- Additional thermal insulation, thickness 20 mm or 40 mm
- Serial board for BMS **(9)**
 - Modbus
 - LonWorks
 - BACnet
 - KNX
- Ethernet™ interface card, protocols available: SNMP v1 & v2c, BACnet / IP, BACnet Ethernet and Modbus TCP / IP
- Version in two pieces **(10)**
- Version for outdoor installation **(11)**
- Contact for 0-10 V humidifier control (Humidifier not supplied by HiDew)

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
Renewal air flow	m ³ /h	0-900	0 - 1200	0 - 1200	0 - 1200	0 - 2000	0 - 2000	0 - 2000	0 - 2000	0 - 2000	0 - 2000
Cooling capacity ²	kW	4,9	6,5	8,0	10,0	11,0	15,0	16,0	19,0	23,0	30,0
Heat recovery efficiency in winter ³	%	70	70	70	70	70	70	70	70	70	70
Recovered thermal power in winter ³	kW	6,6	8,7	8,7	8,7	14,5	14,5	14,5	14,5	14,5	14,5
N° expulsion fan		1	1	1	1	1	1	1	1	1	1
Available static pressure supply fans	Pa	400	400	350	350	400	200	200	460	440	400
Expulsion fans		1	1	1	1	1	1	1	1	1	1
Available static pressure expulsion fans	Pa	400	400	400	400	430	400	400	500	480	420
Hot water coil nominal heating capacity ⁴	kW	5,5	9,8	9,8	9,8	16,5	17	17	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	12	38	38	38	30	31	31	40	40	40
Oversized hot water coil nominal heating power ⁵	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	28	41	92	92	20	48	48	8	12	16
Desuperheater heating power	kW	1,7	2,0	2,5	2,8	2,9	4,6	4,8	4,3	5,8	8,1
Nominal water flow	m ³ /h	0,30	0,35	0,43	0,48	0,50	0,80	0,80	0,70	1,00	1,40
Water pressure drop	kPa	15,0	20,0	21,2	21,9	23,7	26,3	26,8	26,8	29,2	34,8
Maximum absorbed electrical power ⁵	kW	3,2	3,3	4,4	6,1	6,5	7,8	8	9,6	11,2	14,4
Power supply	V/ph/Hz	230 / 1 + N / 50				400 / 3 + N / 50			400 / 3 + N / 50		
Sound pressure ⁶	dB(A)	57	57	61	62	63	63	64	65	66	66
Weight	kg	155	155	160	165	200	210	220	250	270	300
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 STR models. Cooling capacity is declared with ambient air at 30°C / 80% RH and outdoor air at 30°C / 50% RH.

3 - Heat recovery efficiency and recovered thermal power are declared in winter conditions: outdoor air -5°C 80% RH, indoor air 26°C 60% RH, maximum renewal.

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

5 - Hot water oversized coil capacity is declared with ambient air at 25°C, water inlet 45°C and outlet 40°C.

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

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

8 - STR 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
Renewal air flow	m ³ /h	0-6000	0-6000	0-11000	0-12500	0-13000	0-13000	0-13000	0-13000	0-20000	0-28000
Cooling capacity ²	kW	38,0	50,0	56,0	66,0	75,0	86,0	96,0	110,0	148,0	226,0
Heat recovery efficiency in winter ³	%	70	70	70	70	70	70	70	70	70	70
Recovered thermal power in winter ³	kW	43,4	43,4	80,0	90,8	94,5	94,5	94,5	94,5	141,2	202,5
N° expulsion fan		1	1	2	2	2	3	3	3	4	5
Available static pressure supply fans	Pa	650	600	750	600	500	480	480	400	300	280
Expulsion fans		1	1	2	2	2	2	2	2	3	4
Available static pressure expulsion fans	Pa	480	450	1050	950	700	650	650	600	480	450
Hot water coil nominal heating capacity ⁴	kW	48	55	76	83	98	107	107	118	168	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 ⁵	kW	36,3	41,2	50,3	55,5	61,5	68,8	68,8	75,8	113	158,2
Nominal water flow	m ³ /h	6,33	7,19	8,78	9,68	10,73	12,00	12	13,23	19,72	27,61
Water pressure drop including valve	kPa	71	88	15	18	9	11	11	13	36	100
Desuperheater heating power	kW	11,5	14,5	14	18	19	22	25	29	38	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	43,0	50,3	32,1	37,0	38,2	41,8	45,5	50,3	60,0	87
Maximum absorbed electrical power ⁵	kW	18,9	22,6	28,5	31,8	34,2	40,4	43,8	47,8	68,0	96,0
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)	67	67	69	70	71	72	72	73	74	75
Weight	kg	515	540	870	1060	1280	1280	1290	1290	1680	2825
REMOTE CONDENSER											
Number of fans		6	6	8	8	2	2	2	2	3	2 ⁸
Nominal electrical power	kW	1,08	1,08	1,44	1,44	3,88	3,88	3,88	3,88	5,82	3,88
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 ⁸
Weight	kg	102	128	147	147	332	332	332	332	535	332 ⁸

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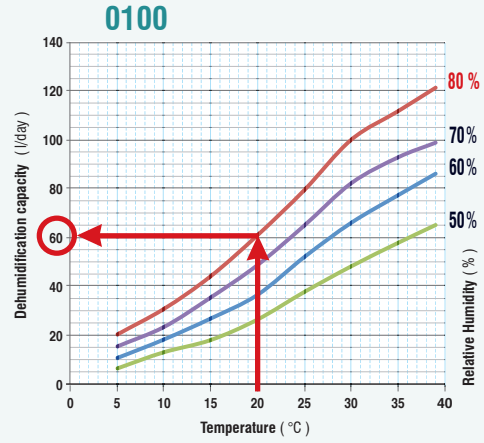
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EXAMPLE OF PERFORMANCE GRAPH READING

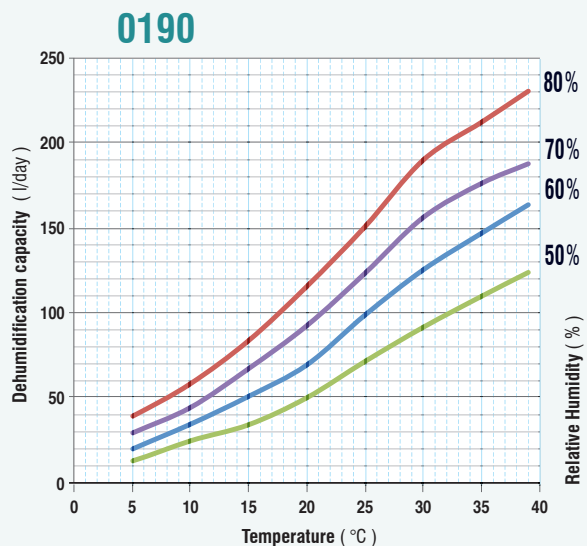
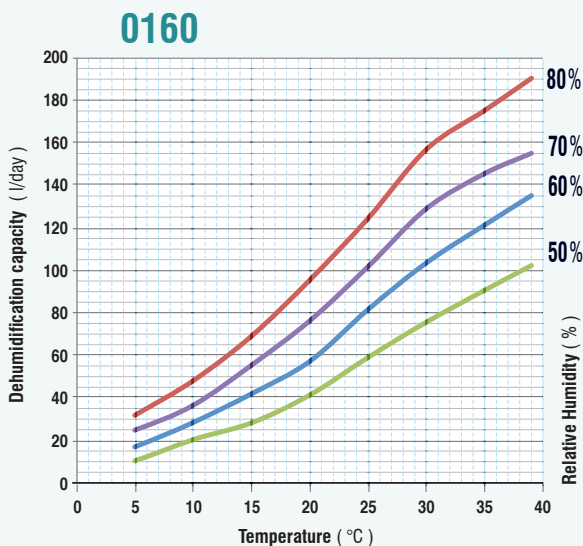
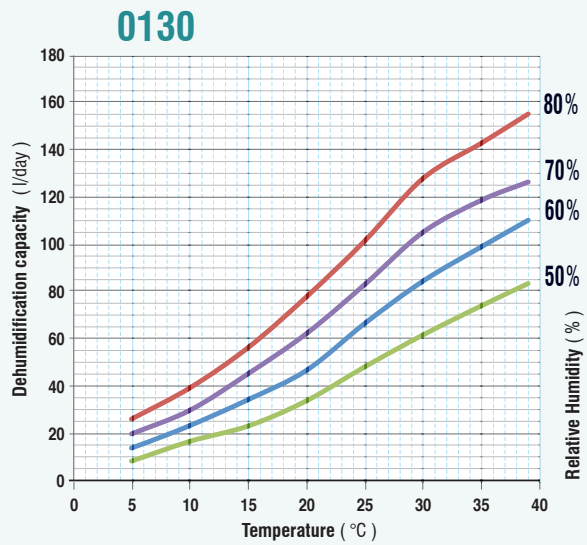
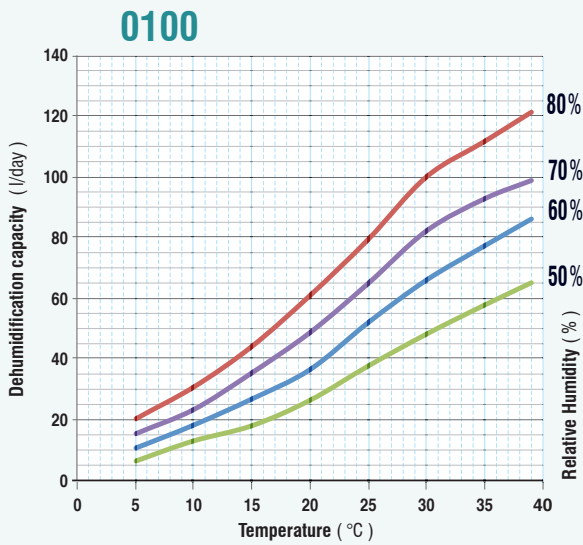
Example of reading the performance graph

Air temperature 20 °C
Air relative humidity 80 %

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

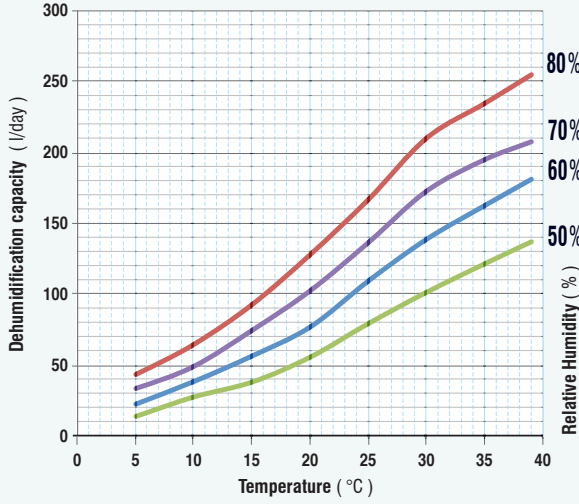


PERFORMANCE GRAPH

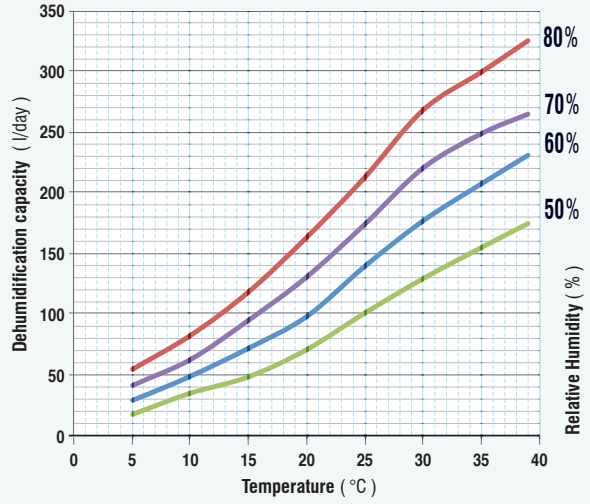


PERFORMANCE GRAPH

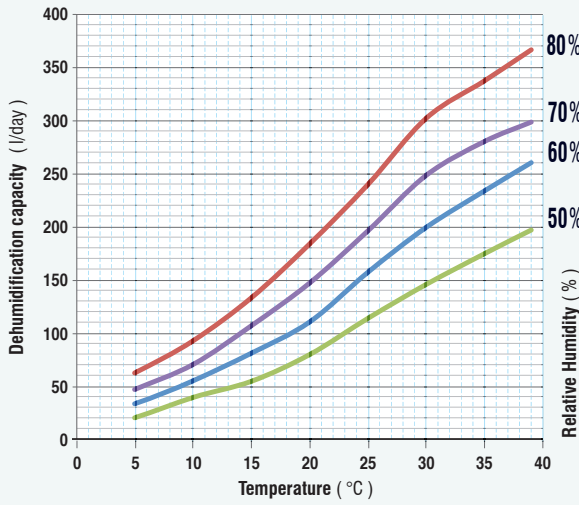
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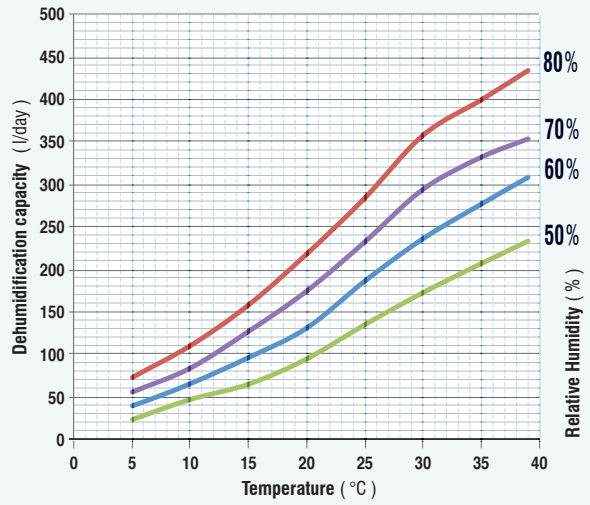
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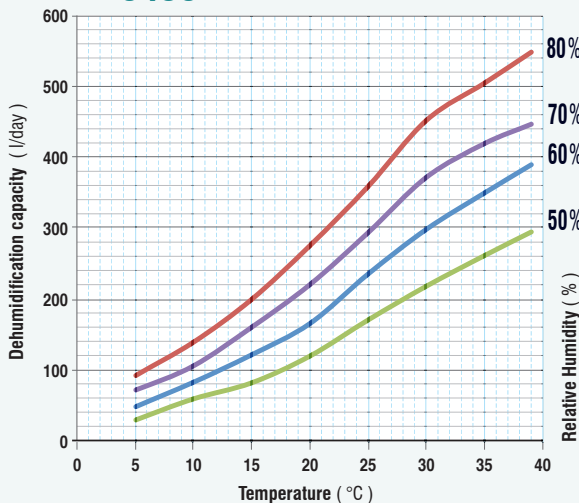
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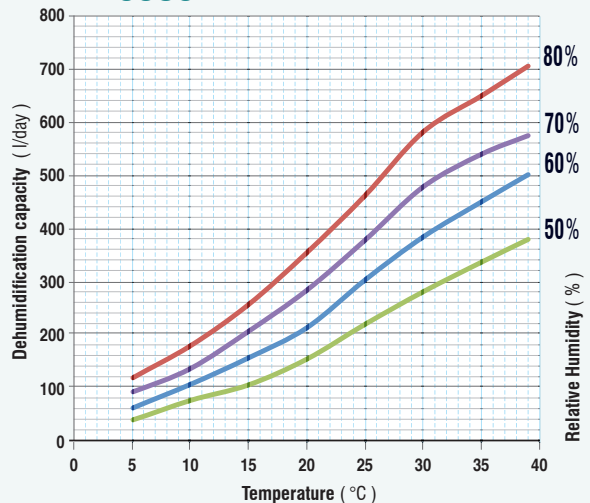
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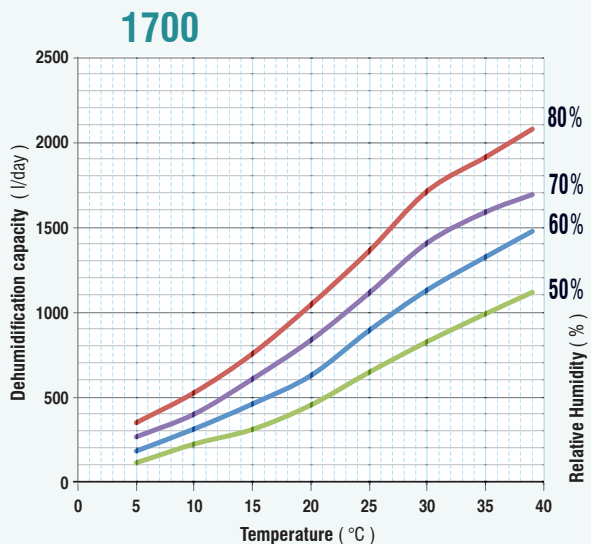
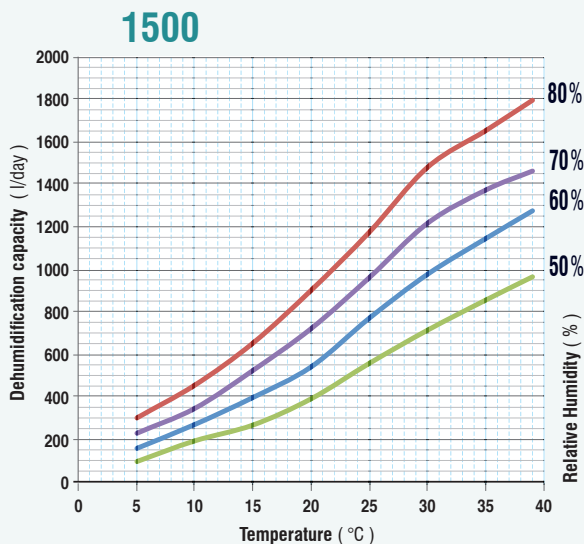
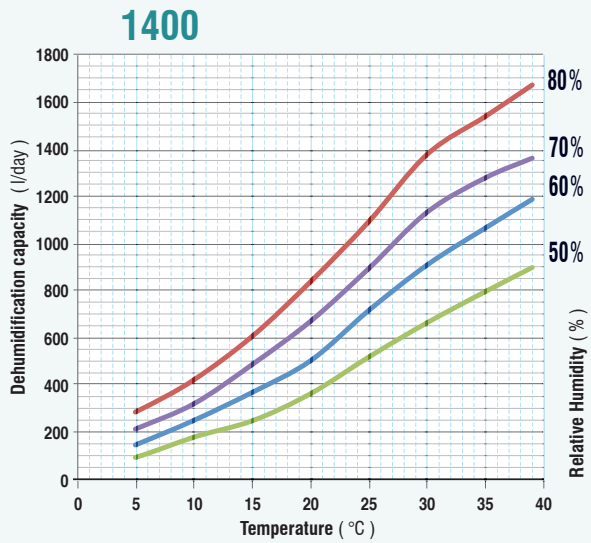
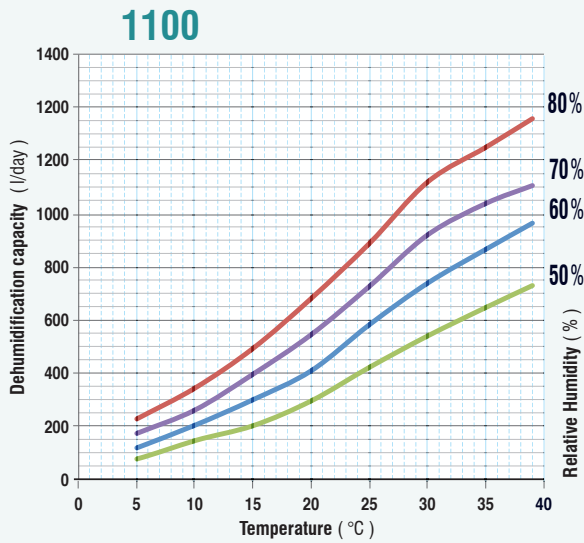
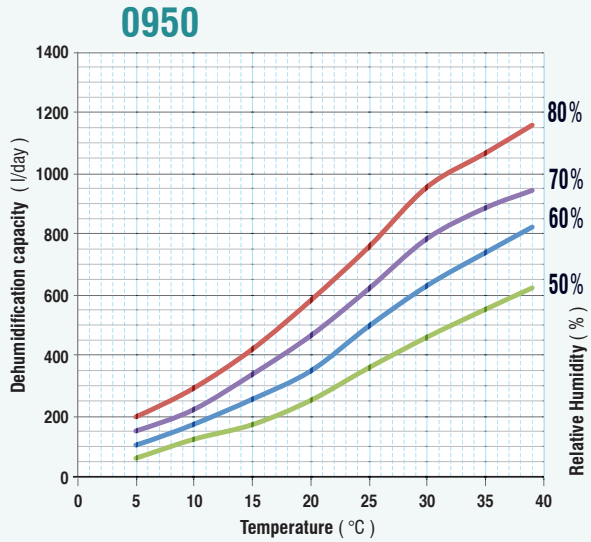
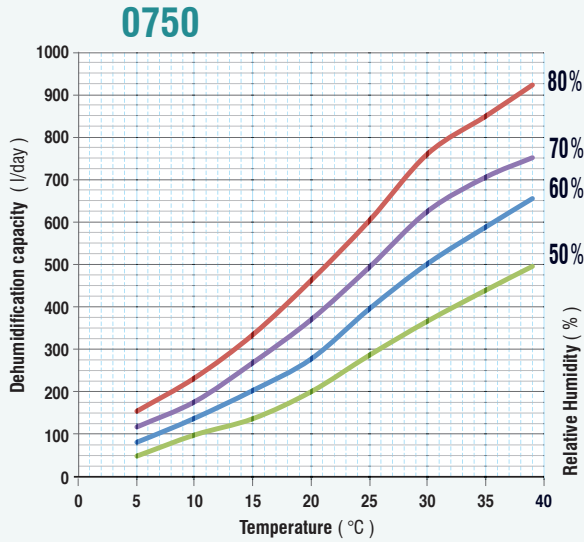
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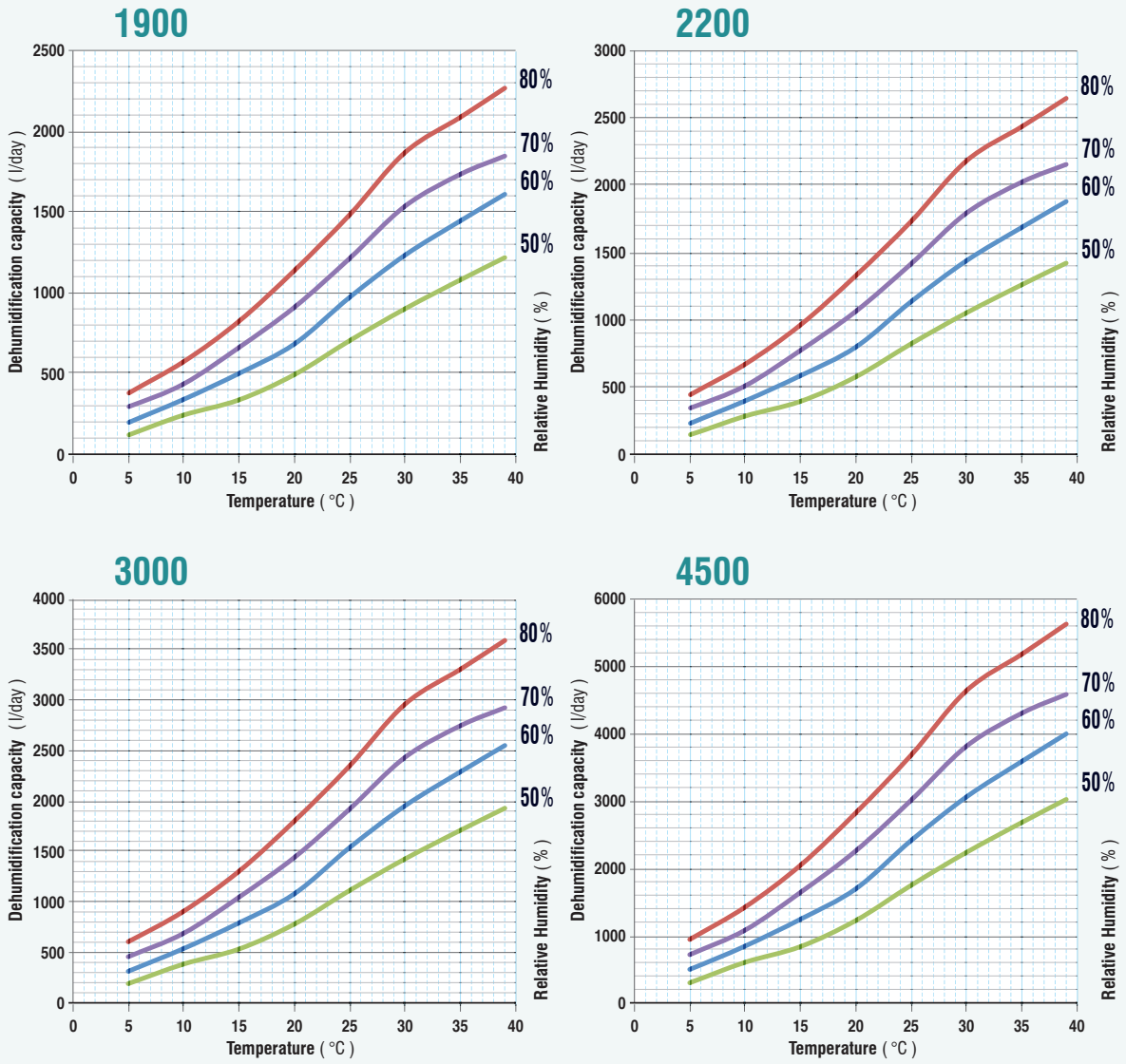
0580



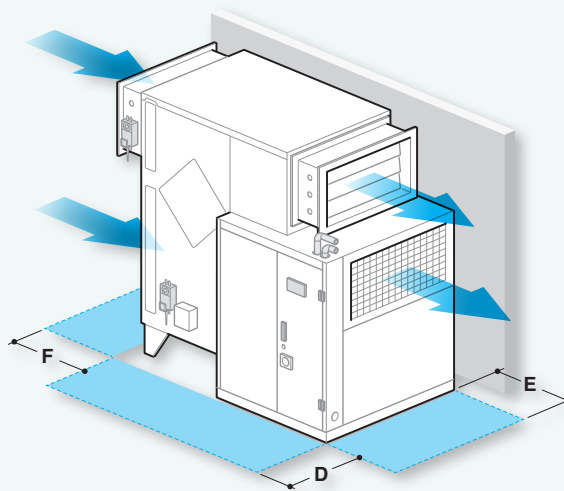
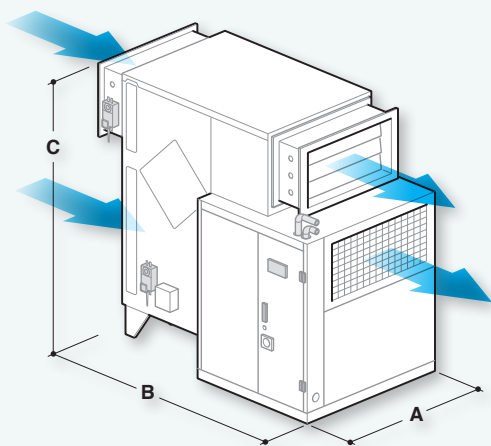
PERFORMANCE GRAPH



PERFORMANCE GRAPH



DIMENSIONS AND CLEARANCES

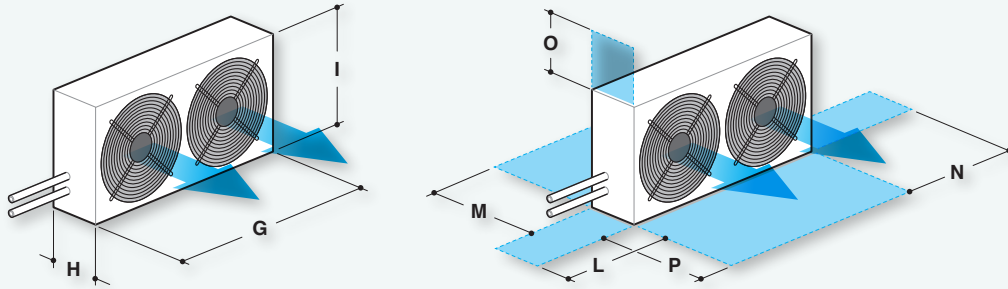


SPR - STR	DIMENSIONS			CLEARANCES		
	A [mm]	B 1 [mm]	C [mm]	D [mm]	E [mm]	F [mm]
0100	550	1452	1320	500	500	500
0130	550	1452	1320	500	500	500
0160	550	1452	1320	500	500	500
0190	550	1452	1320	500	500	500
0210	850	1452	1320	800	500	500
0260	850	1452	1320	800	500	500
0300	850	1452	1320	800	500	500
0350	850	1682	1769	800	500	500
0450	850	1682	1769	800	500	500
0580	850	1682	1769	800	500	500
0750	1400	2331	1950	1300	500	500
0950	1400	2331	1950	1300	500	500
1100	1950	2510	2385	1500	1000	1000
1400	1950	2510	2385	1500	1000	1000
1500	2500	2510	2385	1500	1000	1000
1700	2500	2510	2385	1500	1000	1000
1900	2500	2510	2385	1500	1000	1000
2200	2500	2510	2385	1500	1000	1000
3000	3390	2510	2385	1500	1000	1000
4500	4430	2510	2385	1500	1000	1000

1 - Aeratic duct flange included.

Dimensions and clearances referred to standard unit, with options or special applications ask for executive drawings.

DIMENSIONS AND CLEARANCES



REMOTE CONDENSER	DIMENSIONS			CLEARANCES				
	G [mm]	H [mm]	I [mm]	L [mm]	M [mm]	N [mm]	O [mm]	P [mm]
0100	748	404	575	700	633	800	800	free side
0130	748	404	575	700	633	800	800	free side
0160	748	404	575	700	633	800	800	free side
0190	748	404	575	700	633	800	800	free side
0210	1303	404	575	700	633	800	800	free side
0260	1303	404	575	700	633	800	800	free side
0300	1303	404	575	700	633	800	800	free side
0350	1303	404	575	700	633	800	800	free side
0450	1858	404	575	700	1243	800	800	free side
0580	1858	404	575	700	1243	800	800	free side
0750	1858	404	1130	700	1243	800	800	free side
0950	1858	404	1130	700	1243	800	800	free side
1100	2413	404	1130	700	1243	800	800	free side
1400	2413	404	1130	700	1243	800	800	free side
1500	3800	900	1144	800	1259	800	800	free side
1700	3800	900	1144	800	1259	800	800	free side
1900	3800	900	1144	800	1259	800	800	free side
2200	3800	900	1144	800	1259	800	800	free side
3000	5550	900	1144	800	1259	800	800	free side
4500 ²	3800	900	1144	800	1259	800	800	free side

2 - STR 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.