



**SPR STR**

**SWIMMING POOL DEHUMIDIFIERS  
WITH AIR RENEWAL**

MADE IN ITALY







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



## SPR - STR: SWIMMING POOL DEHUMIDIFIERS

HiDew is 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 pre-coated fins
- Electronical components protected against chlorine
- Stainless steel condensate tray
- Electronic radial fan with inverter
- Desuperheater for technical or chlorined water
- Dehumidification capacity from 100 l/day to 4650 l/day
- Air flow from 900 m<sup>3</sup>/h to 35000 m<sup>3</sup>/h



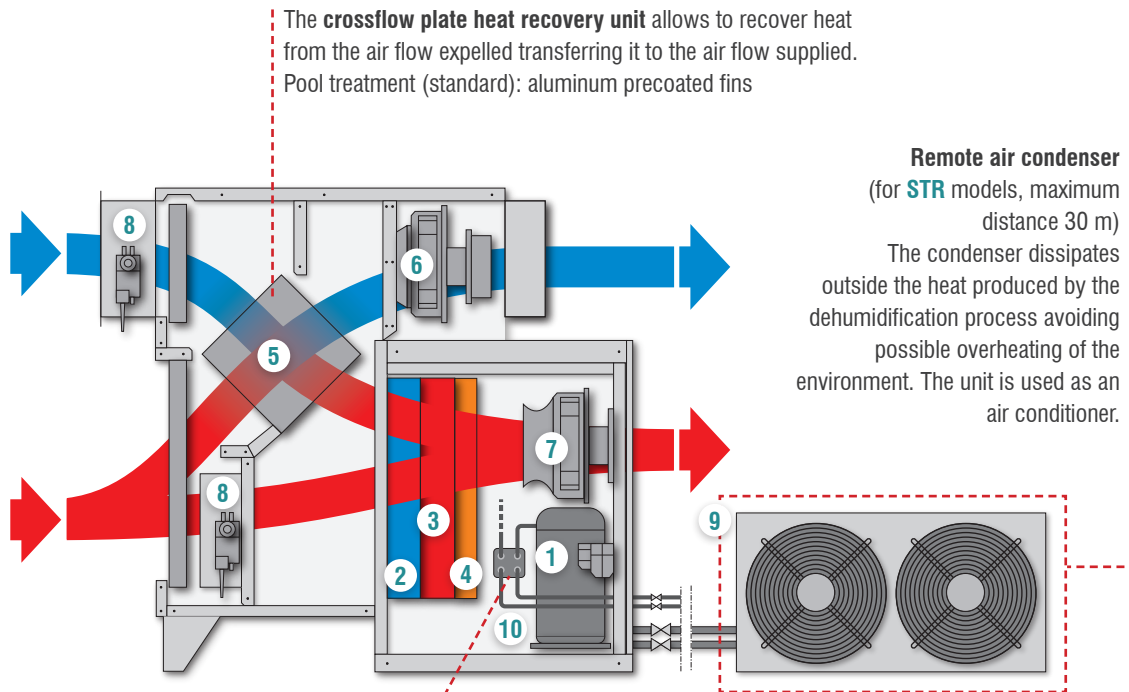
**STR** Further the features of **SPR** models, the **STR** version has a remote air condenser, in addition to the internal one, that allows to dissipate outside the excessive condensation heat during summertime.

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





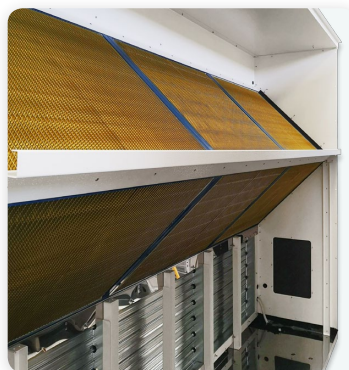
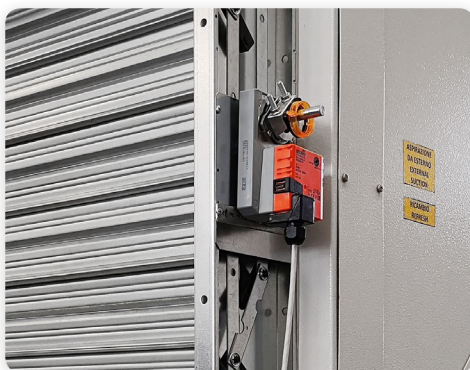
PRINCIPLE SCHEME



**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 technical water or 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)
- Clock card with time bands
- 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:

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

Settable parameters (per time bands)

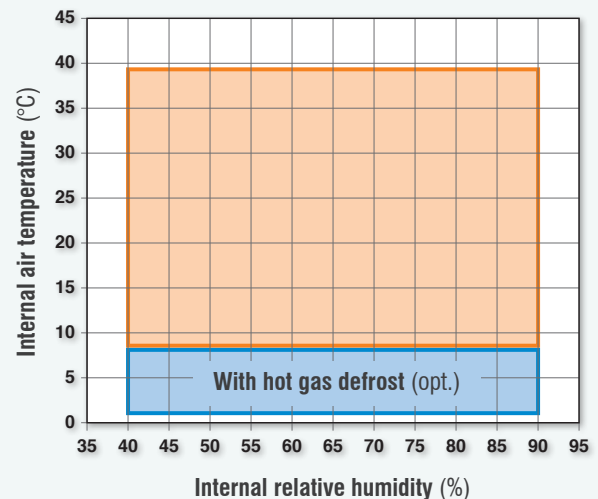
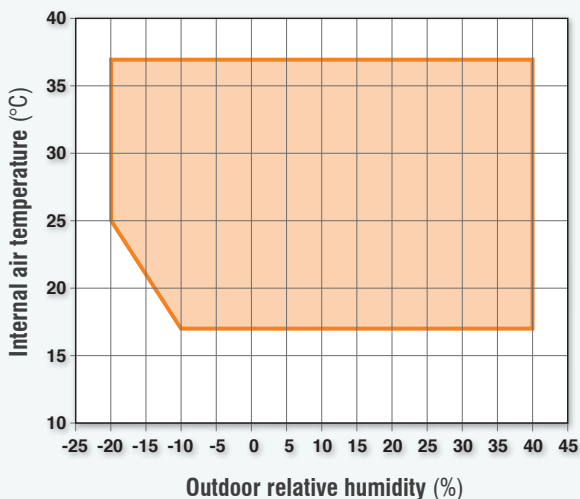
- On / Off
- Air treatment on / off
- Indoor air temperature
- Indoor air relative humidity
- Renewal / recirculation air

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

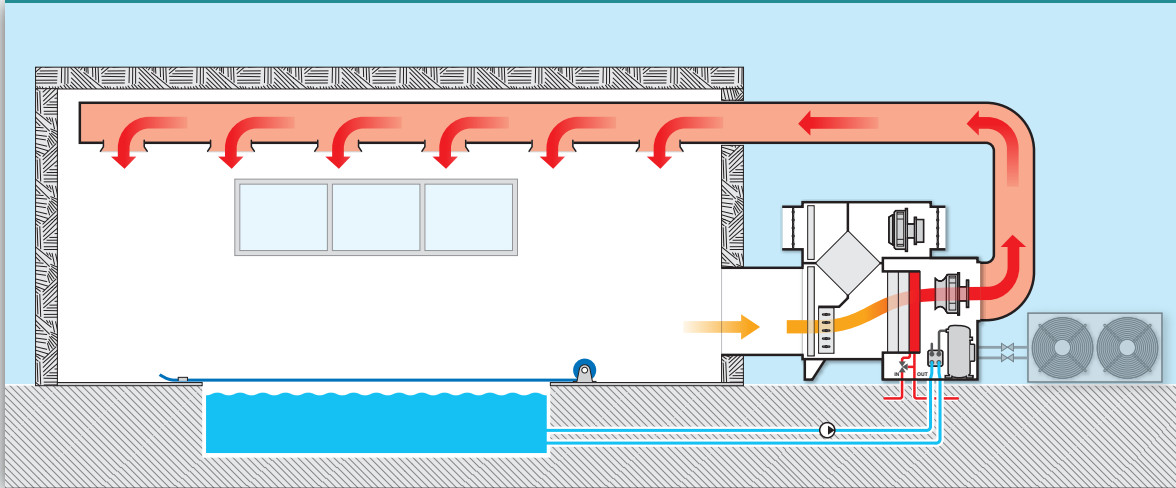


## OPERATING LIMITS



SEASONAL OPERATING MODE

WINTER



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

Compressor: OFF

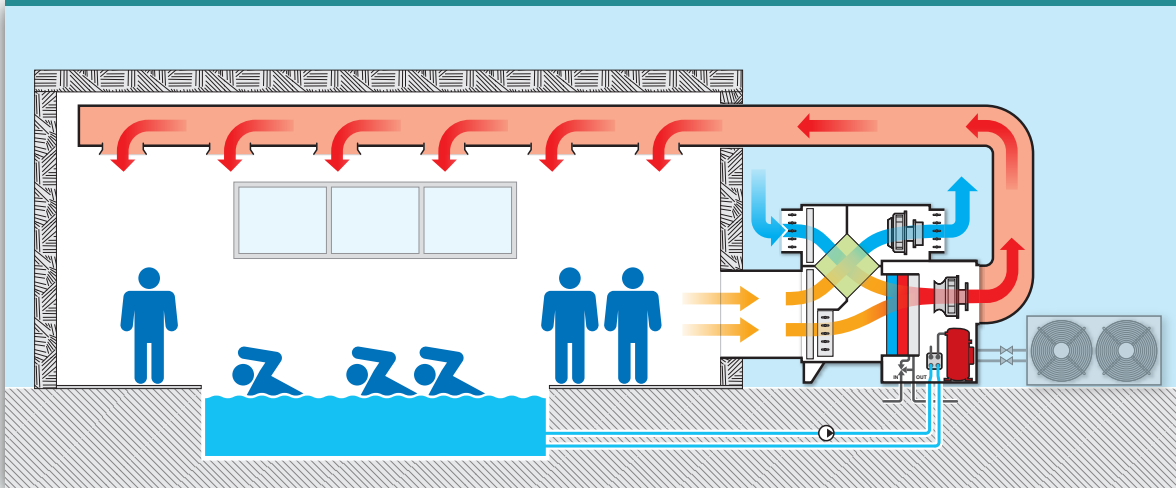
**Hot water coil: ON** (optional)

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)

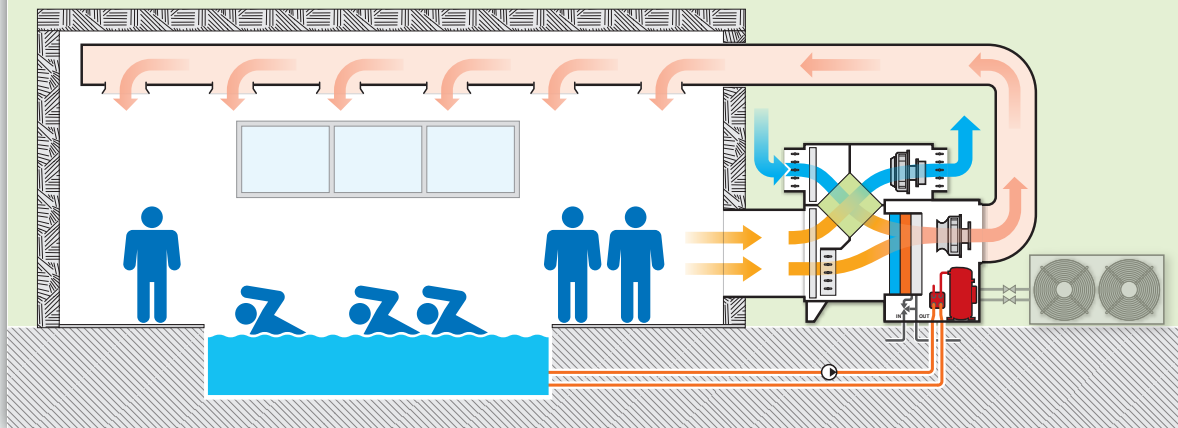
Desuperheater: OFF (optional)

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

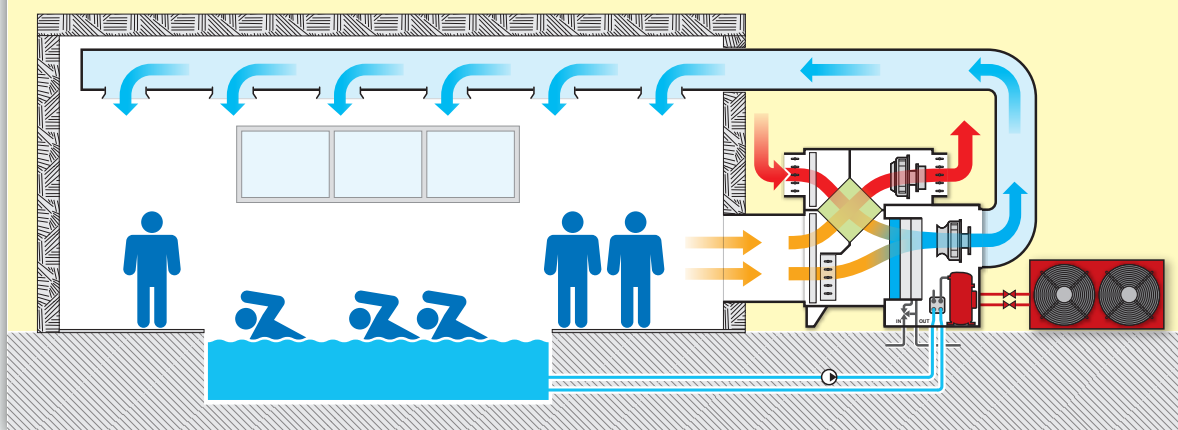
**Hot water coil: OFF** (optional)

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

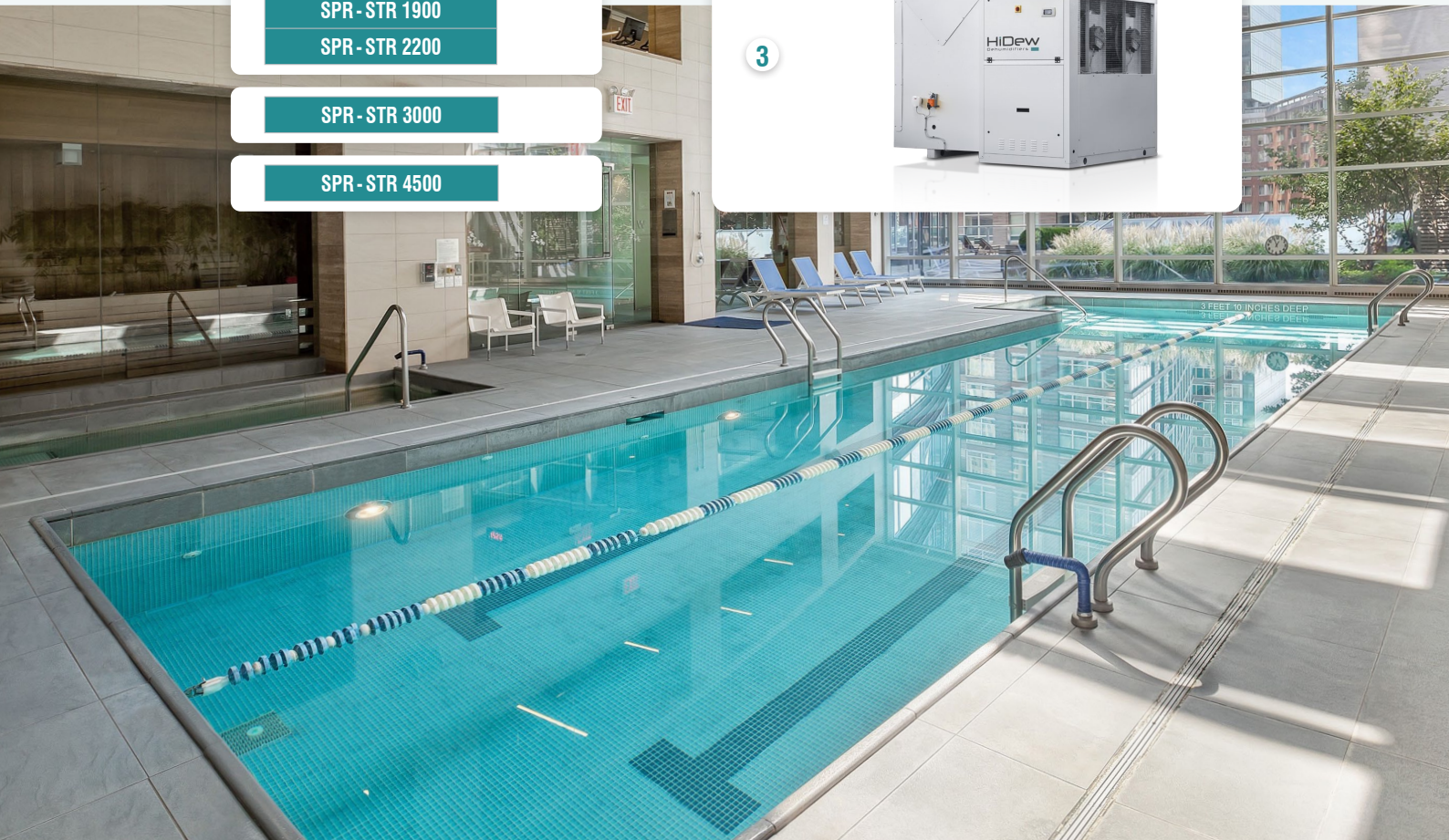
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2

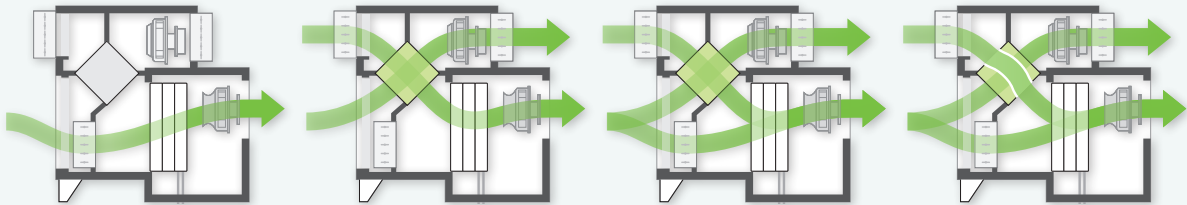


3





## AIR FLOWS



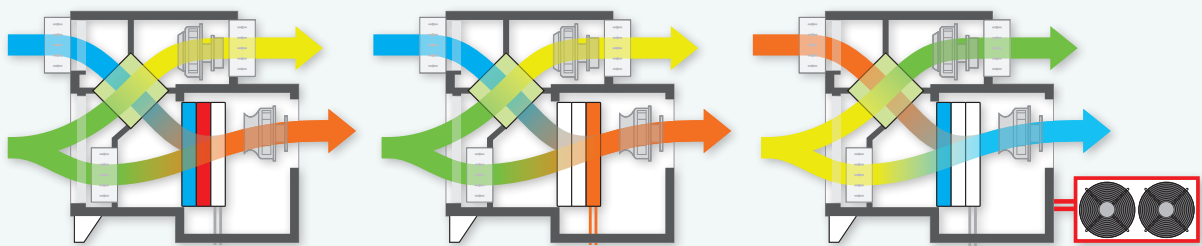
1) Recirculation

2) Renewal

3) Recirculation and renewal

4) Free cooling / Heating

## OPERATING MODE



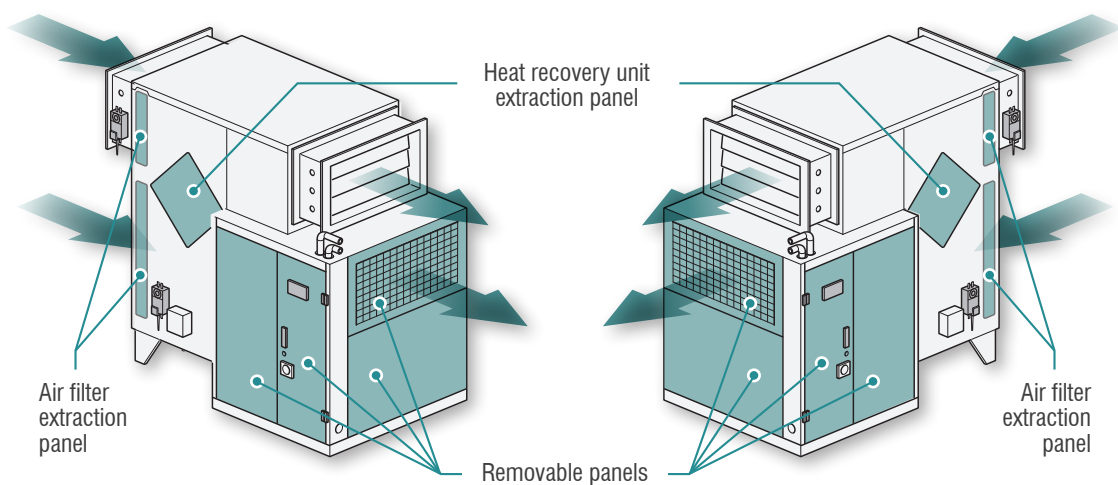
1) Only dehumidification

2) Heating\* or cooling with water coil

3) Dehumidification and cooling (STR models)

\* Electrical heater available, contact our commercial office.

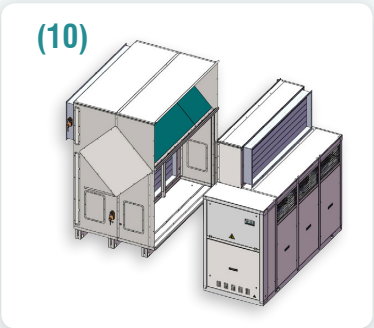
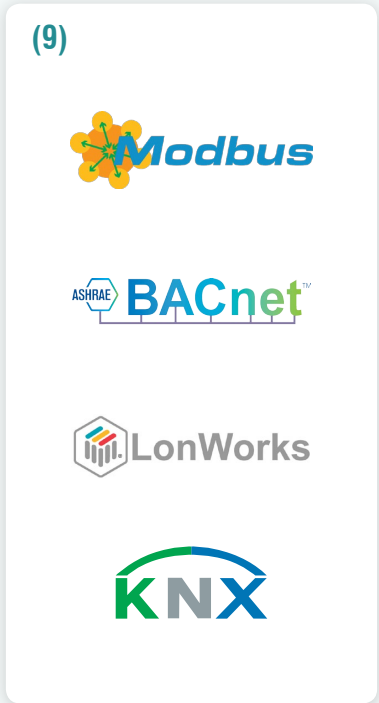
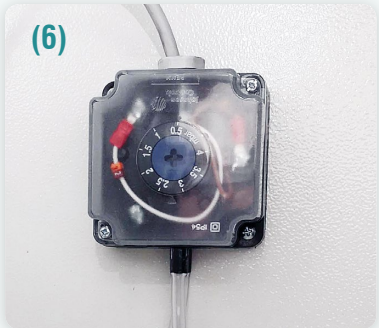
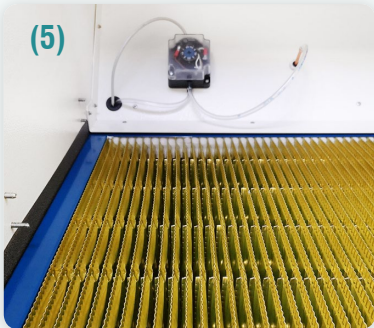
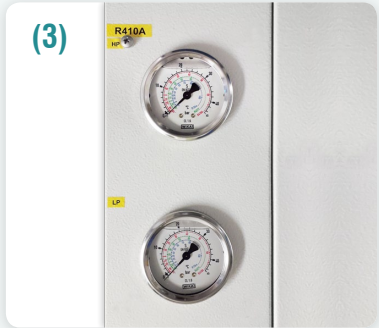
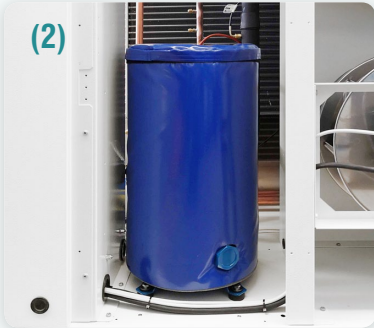
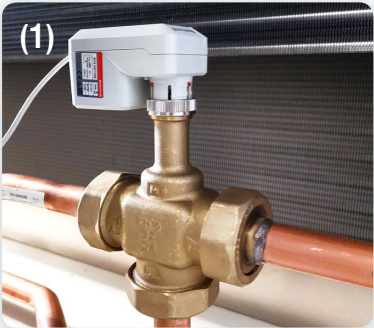
## TYPE OF ACCESSES



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)**
  - Clock card with time scheduling: 2 operating mode (weekday or holiday), 6 time slots per operating mode.  
Settable parameters: On / Off, On / Off air treatment, indoor temperature, indoor relative humidity, renewal or recirculation
  - 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
  - Serial board for BMS **(9)**
    - Modbus
    - LonWorks
    - BACnet
    - KNX
  - Version in two pieces **(10)**
  - Version for outdoor installation **(11)**

### OPTIONS FOR SPECIAL APPLICATIONS

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



## TECHNICAL DATA

Model size: ▶		0100	0130	0160	0190	0210	0260	0300	0350	0450	0580
Dehumidification capacity <sup>1</sup>	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 <sup>3</sup> /h	900	1.200	1.600	1.600	2.000	2.800	2.800	3.800	4.000	4.800
Renewal air flow	m <sup>3</sup> /h	0-900	0 - 1200	0 - 1200	0 - 1200	0 - 2000	0 - 2000	0 - 2000	0 - 2000	0 - 2000	0 - 2000
Cooling capacity <sup>2</sup>	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 <sup>3</sup>	%	70	70	70	70	70	70	70	70	70	70
Recovered thermal power in winter <sup>3</sup>	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 <sup>4</sup>	kW	5,5	9,8	9,8	9,8	16,5	17	17	26,5	26,5	27,0
Nominal water flow	m <sup>3</sup> /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 <sup>5</sup>	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 <sup>3</sup> /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 <sup>3</sup> /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 <sup>5</sup>	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 <sup>6</sup>	dB(A)	57	57	61	62	63	63	64	65	66	66
Weight	kg	155	155	160	165	200	210	220	250	270	300
<b>REMOTE CONDENSER</b>											
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 <sup>6</sup>	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 <sup>1</sup>	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 <sup>3</sup> /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 <sup>3</sup> /h	0-6000	0-6000	0-11000	0-12500	0-13000	0-13000	0-13000	0-13000	0-20000	0-28000
Cooling capacity <sup>2</sup>	kW	38,0	50,0	56,0	66,0	75,0	86,0	96,0	110,0	148,0	277,0
Heat recovery efficiency in winter <sup>3</sup>	%	70	70	70	70	70	70	70	70	70	70
Recovered thermal power in winter <sup>3</sup>	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 <sup>4</sup>	kW	48	55	76	83	98	107	107	118	168	235,0
Nominal water flow	m <sup>3</sup> /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 <sup>5</sup>	kW	36,3	41,2	50,3	55,5	61,5	68,8	68,8	75,8	113	158,2
Nominal water flow	m <sup>3</sup> /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 <sup>3</sup> /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 <sup>5</sup>	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 <sup>6</sup>	dB(A)	67	67	69	70	71	72	72	73	74	75
Weight	kg	515	540	870	1060	1280	1280	1290	1290	1680	2825
<b>REMOTE CONDENSER</b>											
Number of fans		6	6	8	8	2	2	2	2	3	2 <sup>8</sup>
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 <sup>6</sup>	dB(A)	57	57	59	59	61	61	61	61	63	61 <sup>8</sup>
Weight	kg	102	128	147	147	332	332	332	332	535	332 <sup>8</sup>

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

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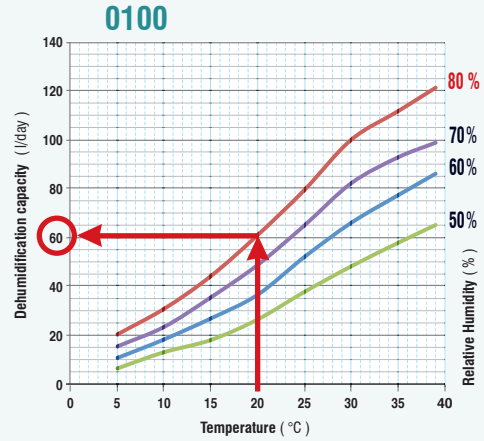
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EXAMPLE OF PERFORMANCE GRAPH READING

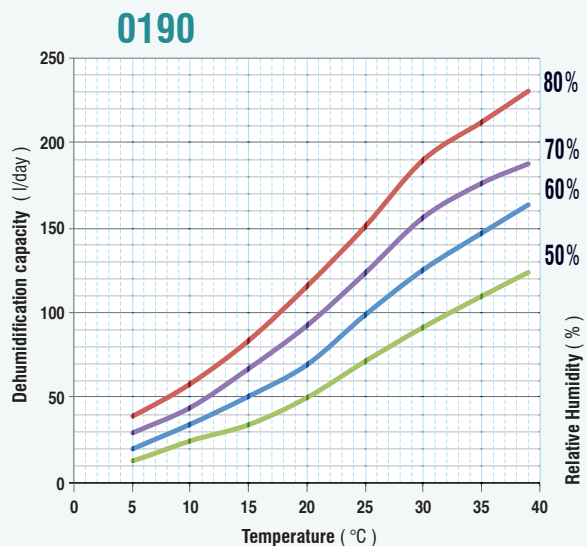
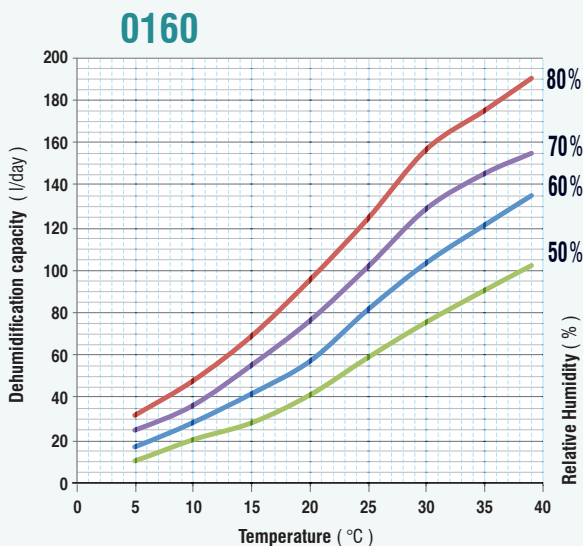
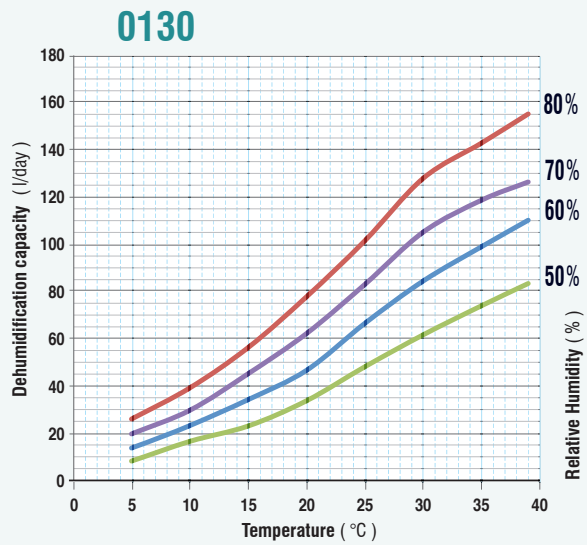
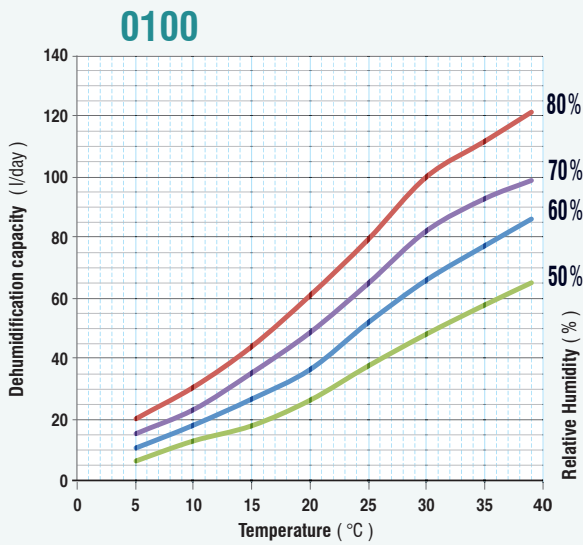
Example of reading the performance graph

Air temperature 20 °C  
Air relative humidity 80 %

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



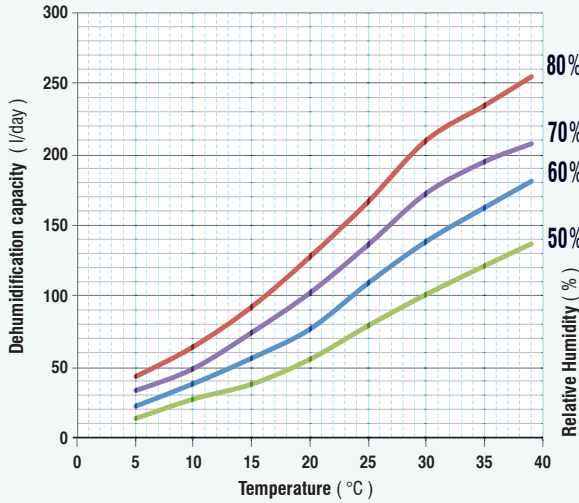
PERFORMANCE GRAPH



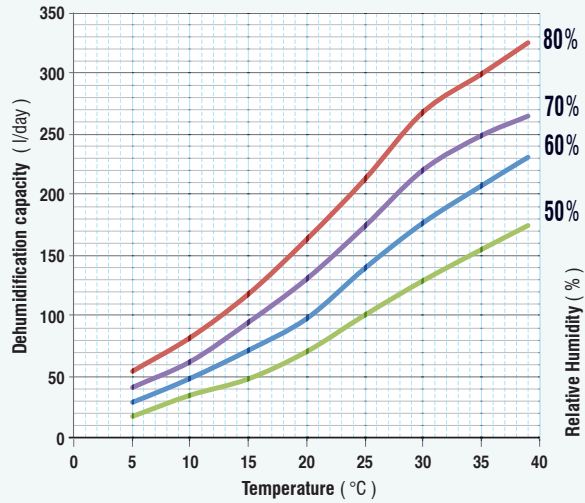


**PERFORMANCE GRAPH**

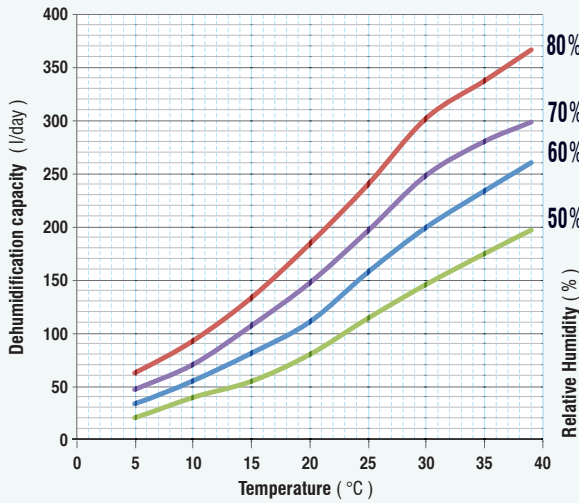
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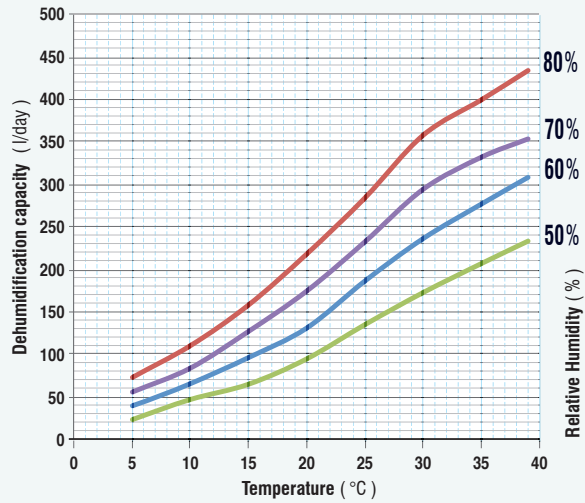
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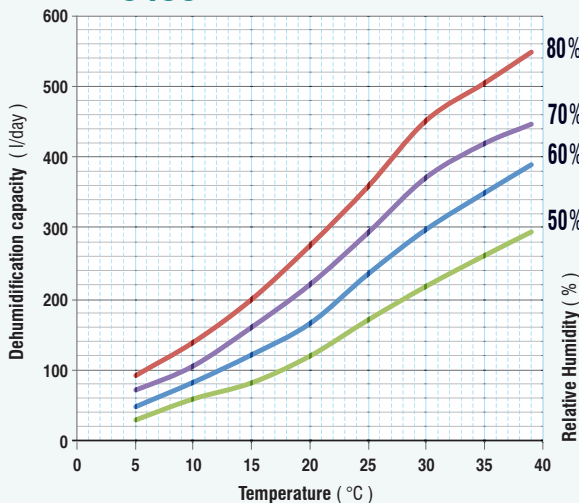
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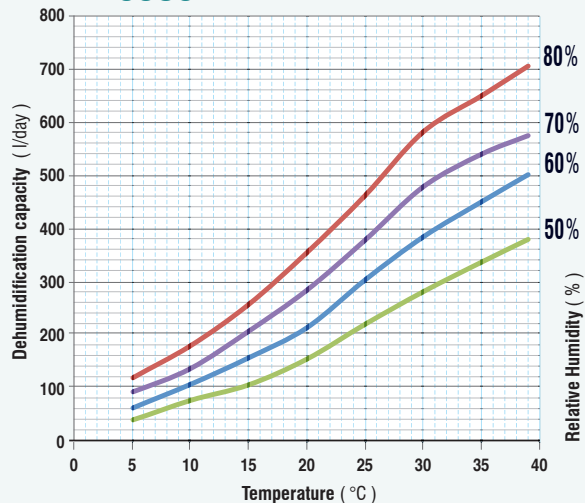
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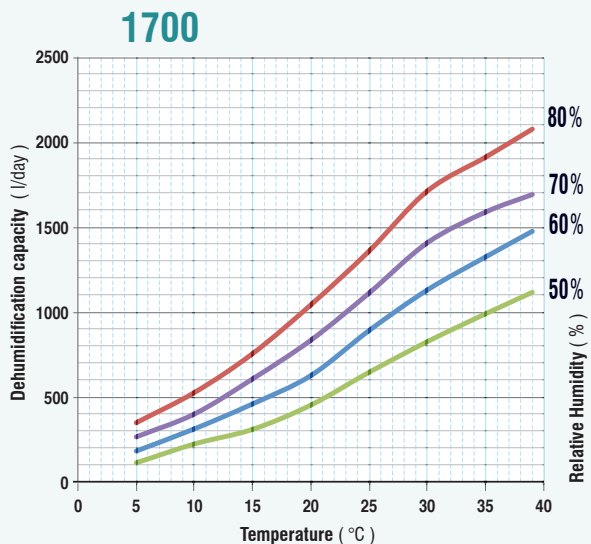
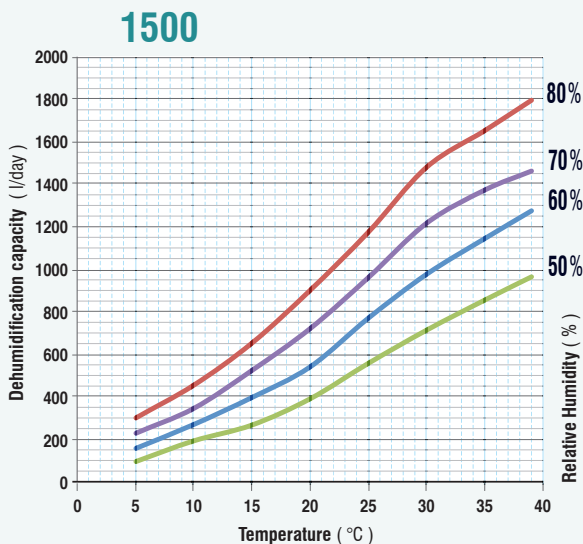
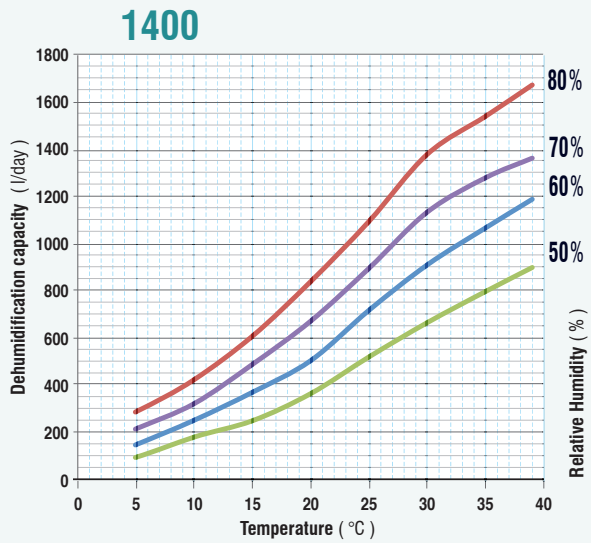
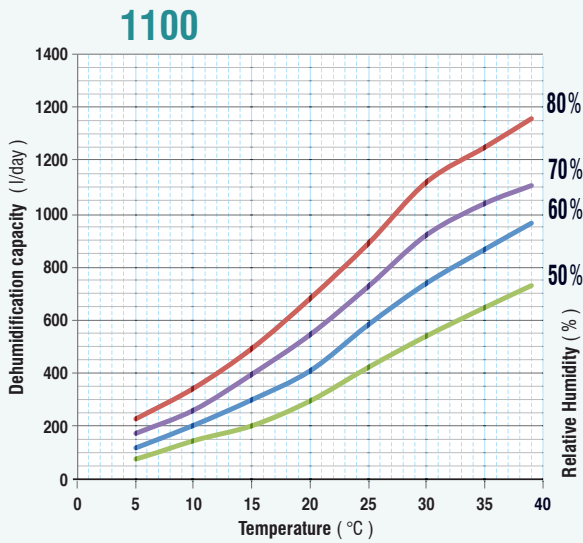
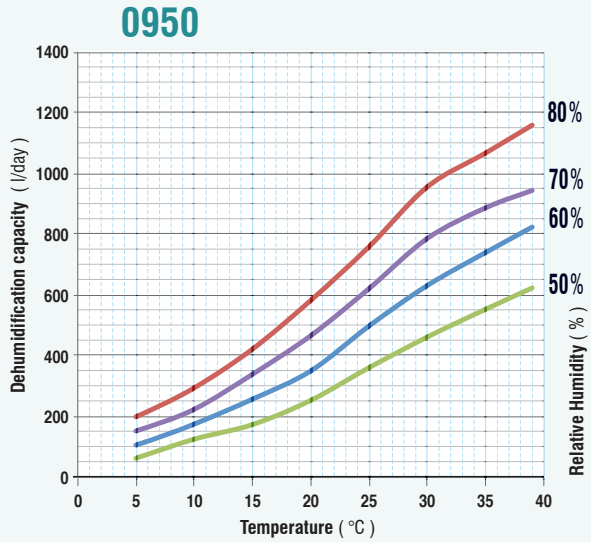
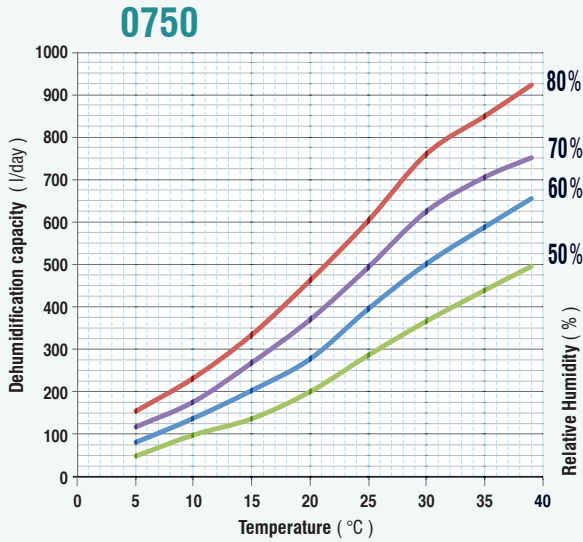
**0450**



**0580**

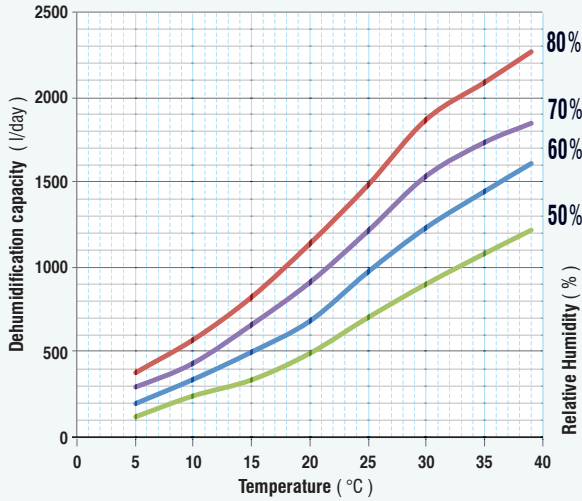


PERFORMANCE GRAPH

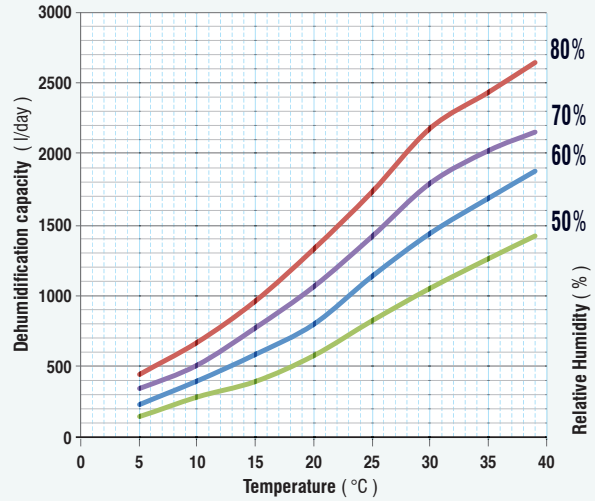


**PERFORMANCE GRAPH**

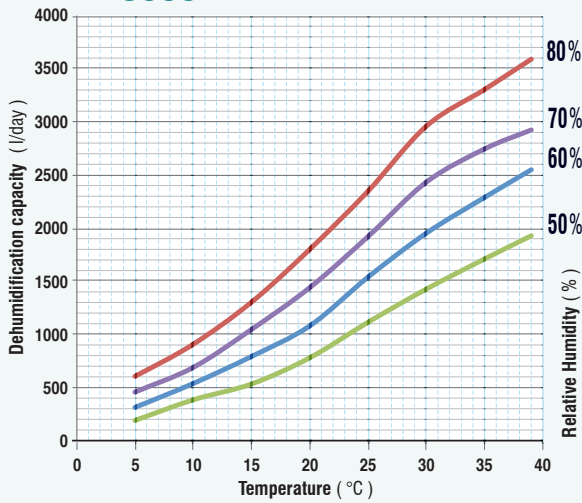
**1900**



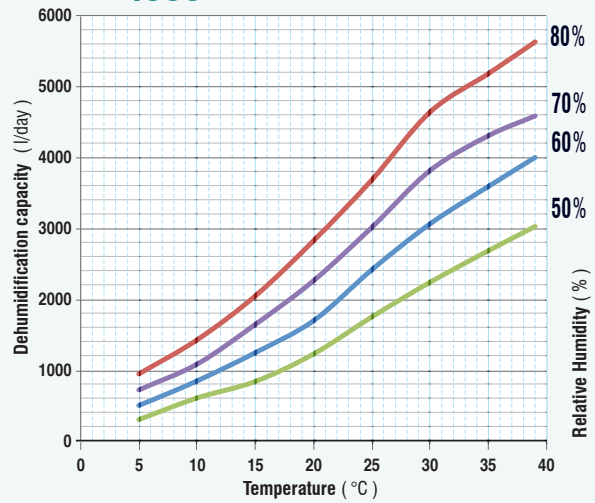
**2200**



**3000**

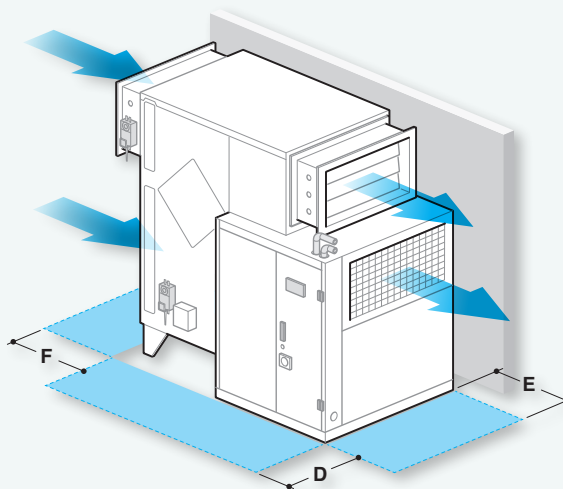
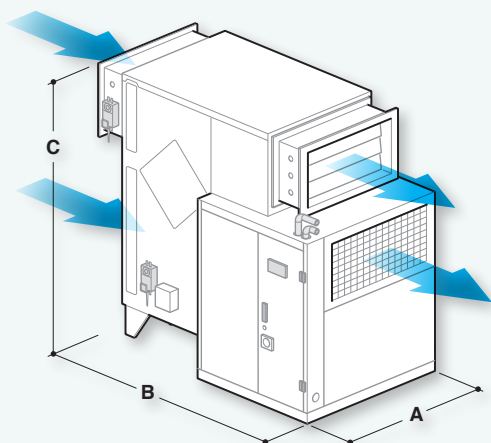


**4500**





### DIMENSIONS AND CLEARANCES

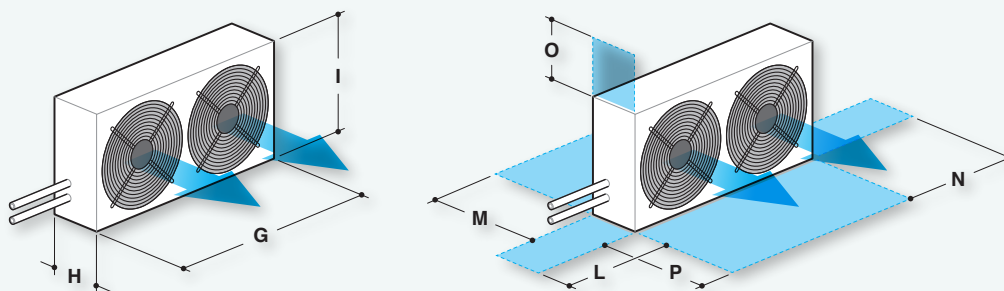


SPR - STR	DIMENSIONS			CLEARANCES		
	A [mm]	B 1 [mm]	C [mm]	D [mm]	E [mm]	F [mm]
0100	550	1452	1320	500	500	500
0130	550	1452	1320	500	500	500
0160	550	1452	1320	500	500	500
0190	550	1452	1320	500	500	500
0210	850	1452	1320	800	500	500
0260	850	1452	1320	800	500	500
0300	850	1452	1320	800	500	500
0350	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]
<b>0100</b>	748	404	575	700	633	800	800	free side
<b>0130</b>	748	404	575	700	633	800	800	free side
<b>0160</b>	748	404	575	700	633	800	800	free side
<b>0190</b>	748	404	575	700	633	800	800	free side
<b>0210</b>	1303	404	575	700	633	800	800	free side
<b>0260</b>	1303	404	575	700	633	800	800	free side
<b>0300</b>	1303	404	575	700	633	800	800	free side
<b>0350</b>	1303	404	575	700	633	800	800	free side
<b>0450</b>	1858	404	575	700	1243	800	800	free side
<b>0580</b>	1858	404	575	700	1243	800	800	free side
<b>0750</b>	1858	404	1130	700	1243	800	800	free side
<b>0950</b>	1858	404	1130	700	1243	800	800	free side
<b>1100</b>	2413	404	1130	700	1243	800	800	free side
<b>1400</b>	2413	404	1130	700	1243	800	800	free side
<b>1500</b>	3800	900	1144	800	1259	800	800	free side
<b>1700</b>	3800	900	1144	800	1259	800	800	free side
<b>1900</b>	3800	900	1144	800	1259	800	800	free side
<b>2200</b>	3800	900	1144	800	1259	800	800	free side
<b>3000</b>	5550	900	1144	800	1259	800	800	free side
<b>4500<sup>2</sup></b>	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.



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MADE IN ITALY

