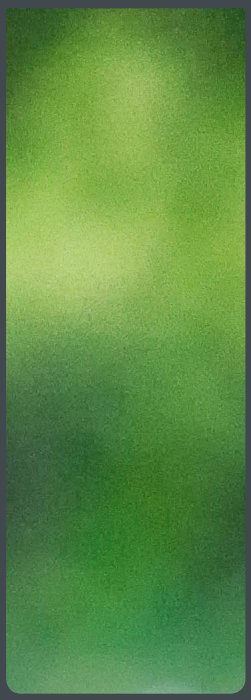
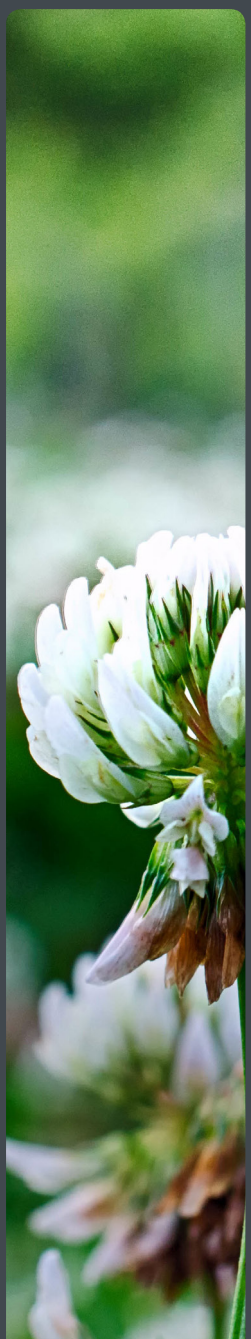


RRI - EC

VENTILATOR UNIT



SOLUZIONI AEROMECCANICHE S.p.A.

RRI-EC
Non-residential ventilator unit with dual flow and high yield heat recovery.

PERFORMANCE
Equipped with counter current heat exchanger in aluminum (Eurovent certified) and electronic backward blade ventilators. The total bypass as standard allows favorable climatic conditions to be taken advantage of outside the building for free cooling (or free heating) in automatic mode.

STRUTTURA
RRI-EC is manufactured using a profiled extruded aluminum frame and 36 mm thick sandwich panels, insulated in polyurethane foam. The panels and inner parts are manufactured in Aluzinc®, material that ensures high strength against corrosion and oxidation. A pair of panels with hinged opening eases access to the filters (F7 for the renewed air flow and M5 for the extraction air flow). RRI-EC is prepared for installation outdoors (with an optional, specific protective roof) and indoors; it is supplied with 100 mm high aluminum bases for installation on the floor. Available in 5 sizes, it can be equipped with air post-treatment systems (inside the unit) such as: hot/cold water battery, electrical heater or direct expan- sion battery.

CONTROLS
RRI-EC was supplied with an electric box and control system; it is available in a version equipped with CM-EVO control and a version equipped with CM-EVO-IP control prepared for complete integra- tion in home automation systems (Modbus protocol with Ethernet connection or, on request, with the addition of connection RS485). The new version of our control systems enables extremely easy and rapid passage from a control system to another, even after installa- tion with the single replacement of the remote panel.

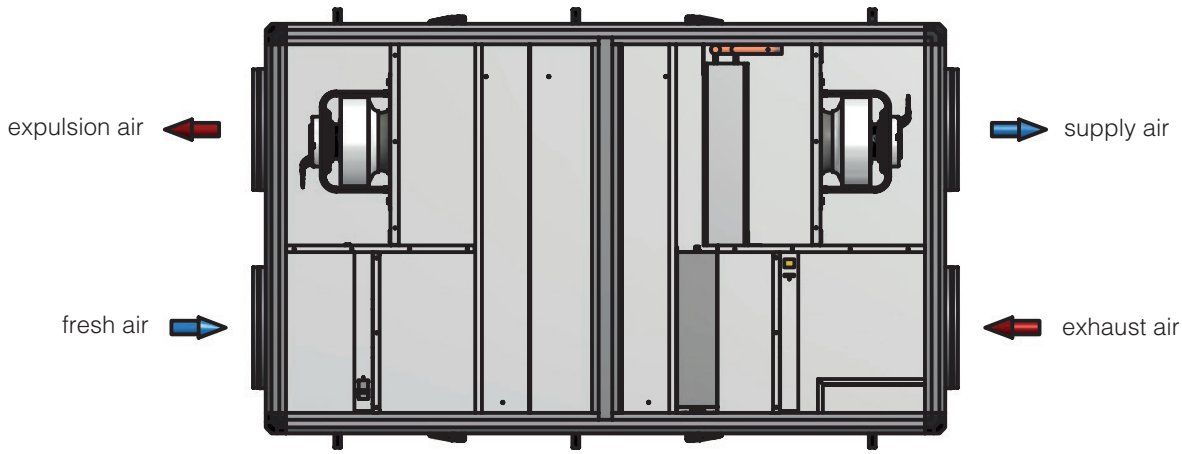
The CM-EVO control has a coloured, backlit touch screen interface with intuitive viewing of the working status of the machine. It enables precise adjustment of ventilator speed and has a weekly , time schedule for automatic management of the ventilators. It can be controlled by an external switch to activate the booster function, it can automatically adjust the air flow rate if connected to an air quality probe, it can manage any air post treatment accessories, it automatically manages the bypass and prevents heat exchanger freezing by managing the speed of the ventilators or, if installed, an electrical pre-heating resistor (optional accessory outside the machine); it signals to the user the need to replace the filters (the clogging status of the filters is monitored by a pair of different pressu- re switches, supplied as standard) or an anomaly, indicating the origin. With the addition of optional accessories (COP kit and CAV kit installed on the channel) you can manage the ventilation machi- ne in constant pressure or constant flow rate mode.

The CM-EVO-IP control has the same characteristics as the CM-EVO version with the addition of Modbus communication protocol which allows full control of the machine by the supervision software of the home automation system. The implemented webserver allows interaction with the machine, even with an internet browser of a device connected (even from remote) to the home automation system in which the machine is inserted.

ACCESSORIES
RRI-EC can be equipped with other accessories such as:
. R.H. of probe, CO2 or CO2 / VOC
. Operating kit pressure or constant flow
. protection roof for outside installation
. grilles and damper

For a more complete view of the characteristics of the control panels, please read the specific manuals.

TOP VIEW

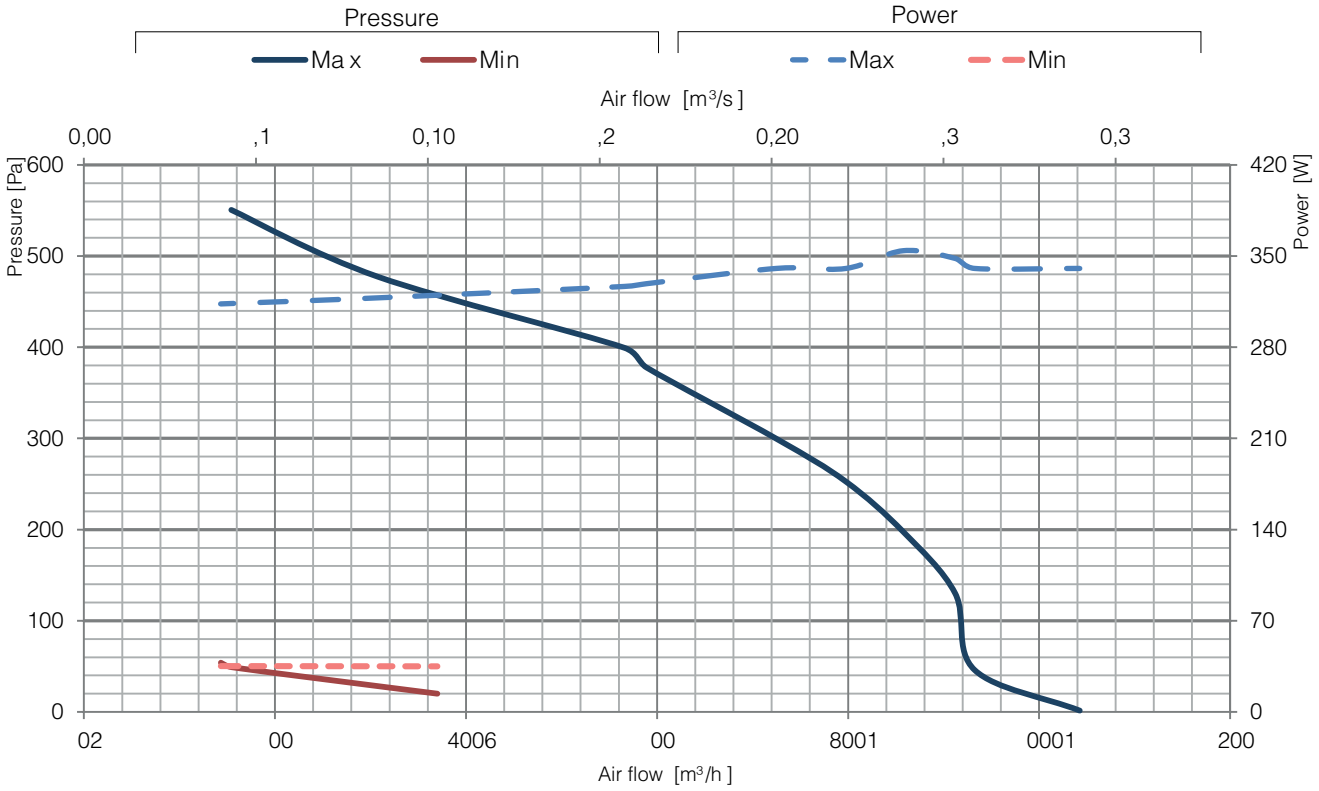


Counterflow heat exchanger made of aluminum manufactured by RECUTECH
RECUTECH participates in the Eurovent Certification Program

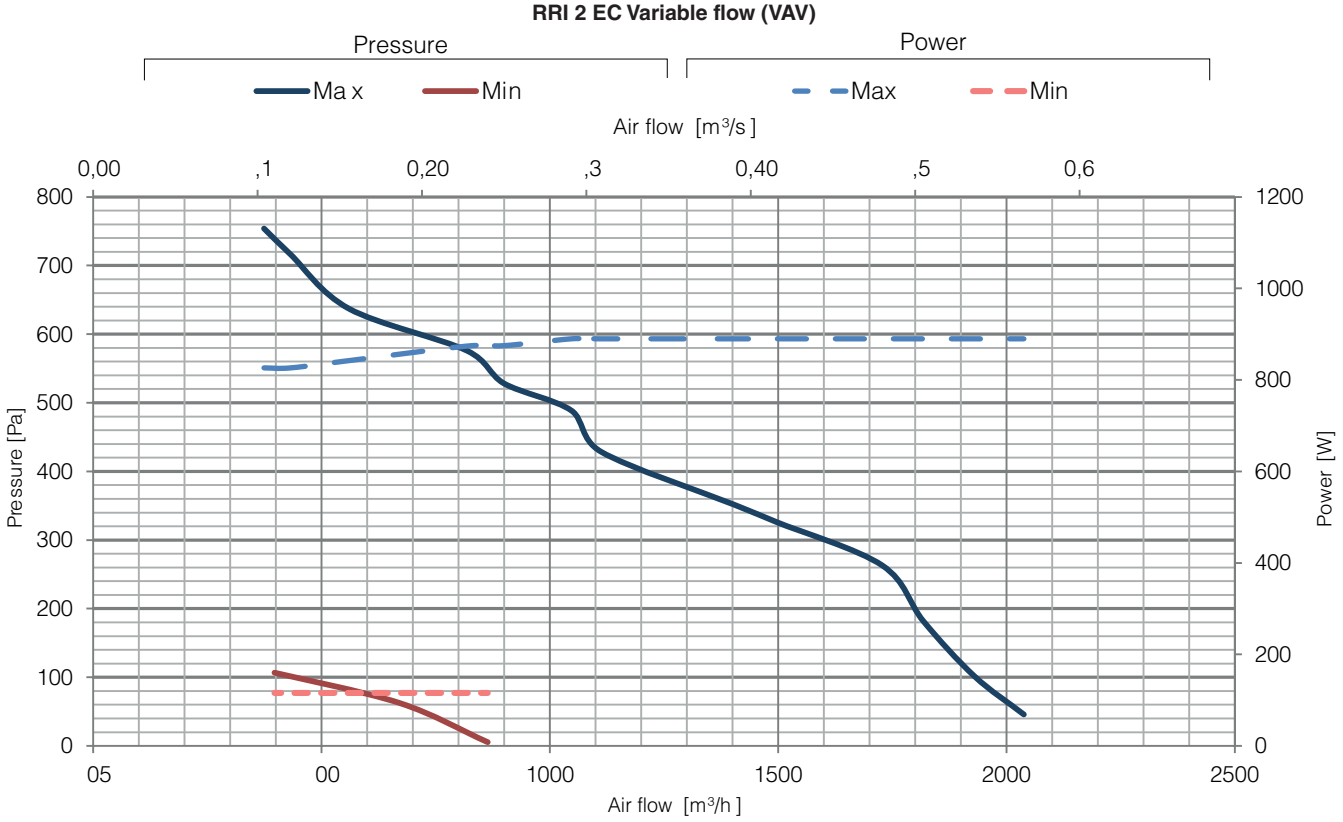
PERFORMANCE (UNI EN 13141-7)

The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

RRI 1 EC Variable flow (VAV)



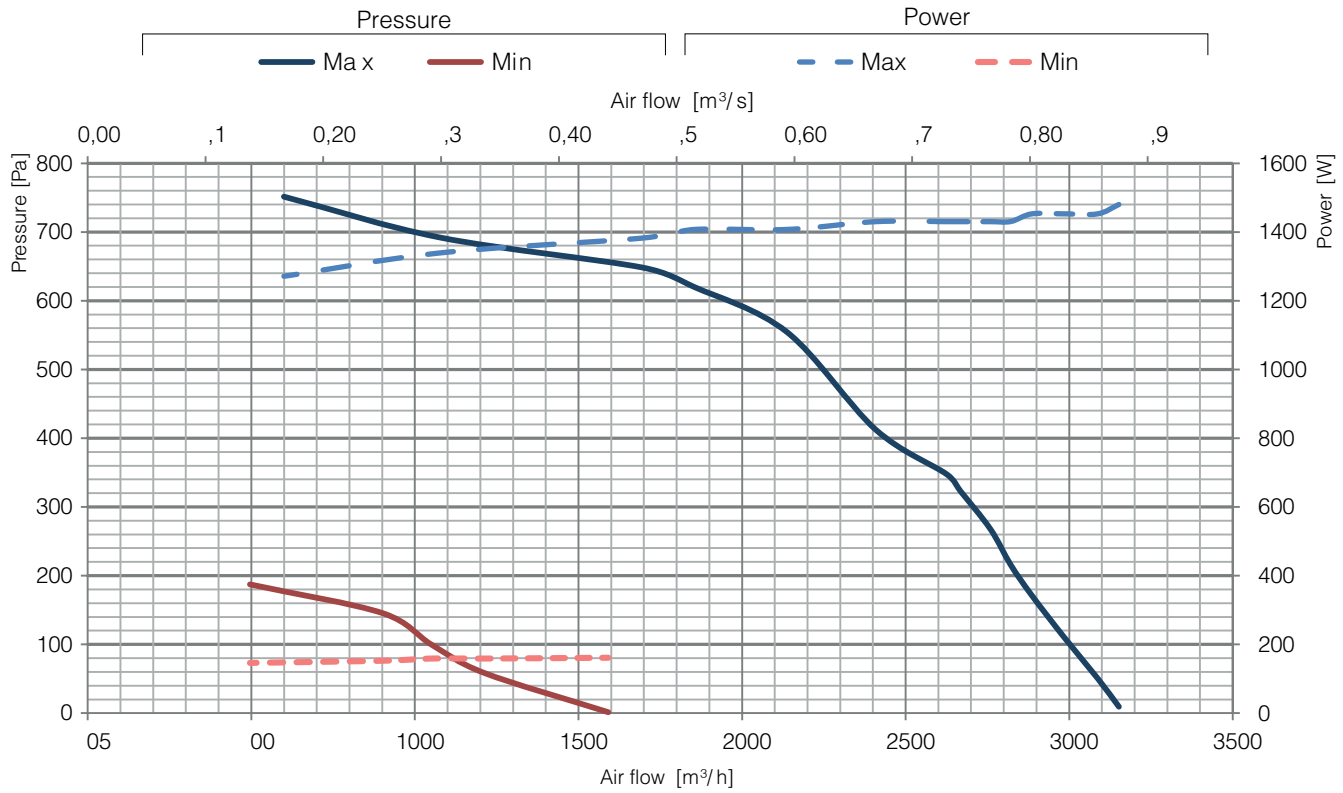
RRI 2 EC Variable flow (VAV)



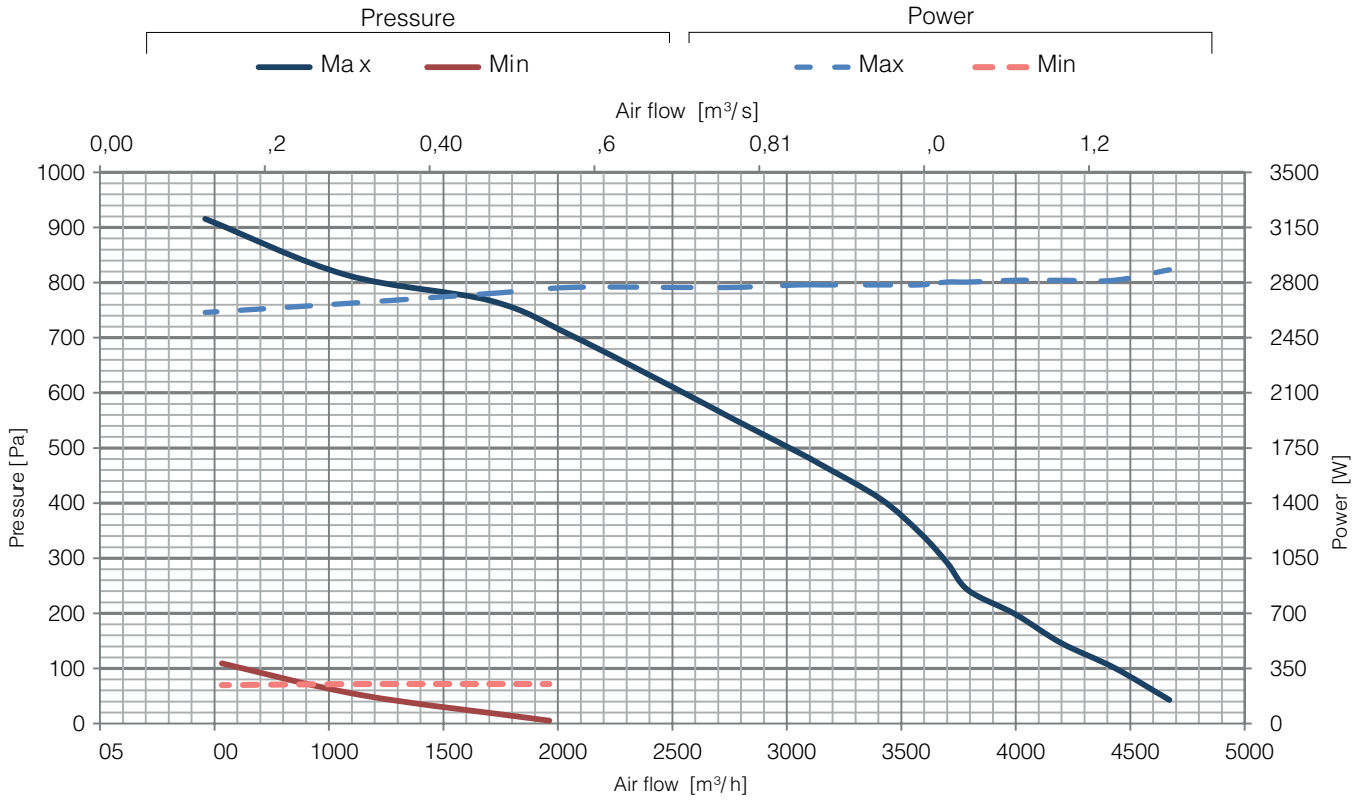
PERFORMANCE (UNI EN 13141-7)

The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

RRI 3 EC Variable flow (VAV)



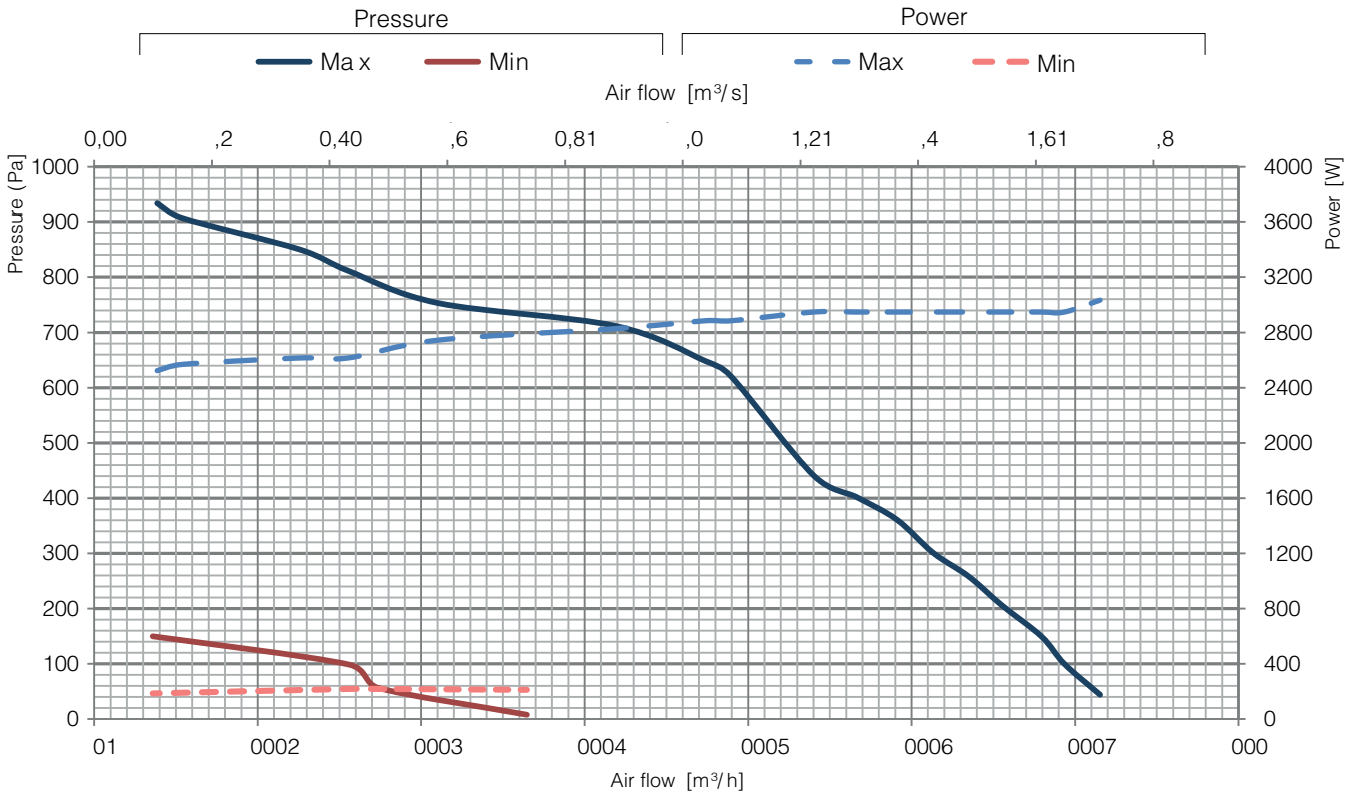
RRI 4 EC Variable flow (VAV)



PERFORMANCE (UNI EN 13141-7)

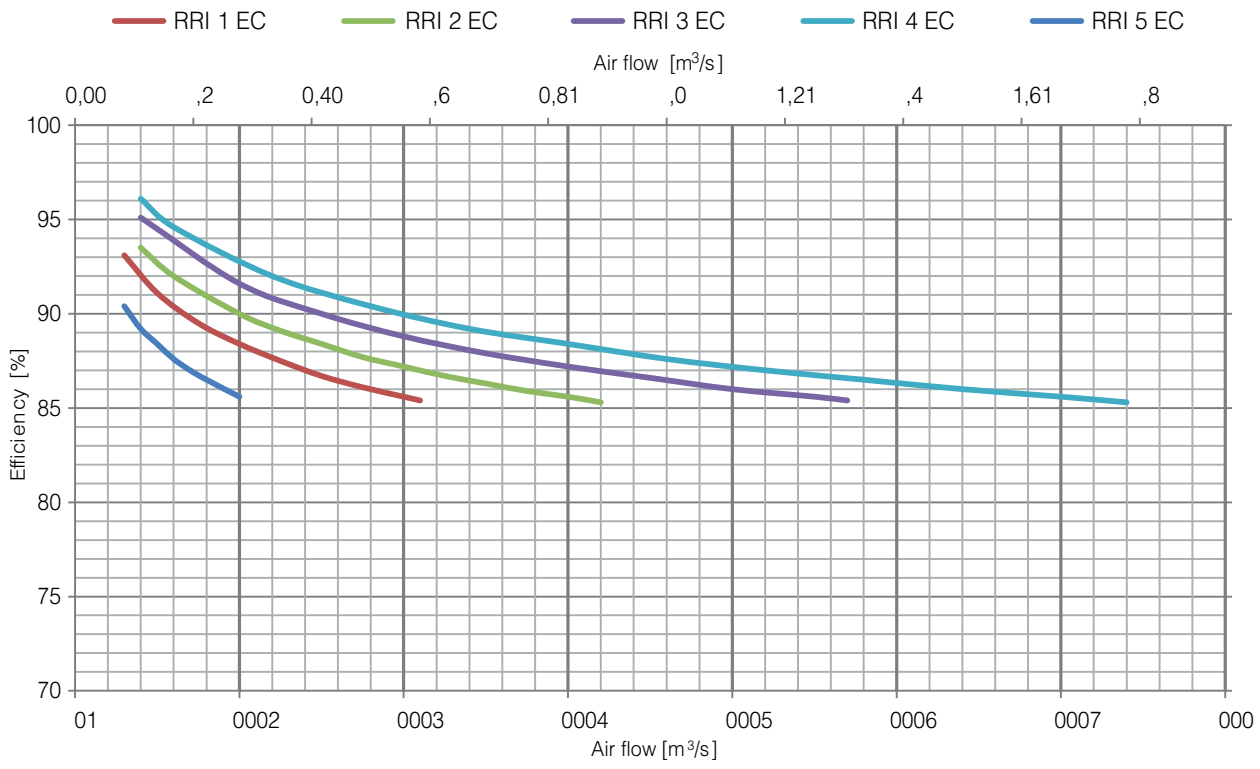
The unit must be ducted properly: SAMP authorizes the use only according to its performance diagram shown into this catalogue.
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

RRI 5 EC Variable flow (VAV)



HEAT RECOVERY PERFORMANCE (sensible efficiency)

Values refered to the following conditions (UNI EN 13141-7): Tbs external air 5°C; U.R. esternal 72%; Tbs enviorment 25°C; U.R. environment 28%



ECODESIGN

MOD.	η_{t_nvru} [%	$\dot{V}_{nom}$ [m³/s	$\Delta p_{s,ext}$ [Pa]	P [kW]	SFPint [W/(m³/s)]	SFPint_lim 2016 [W/(m³/s)]	SFPint_lim 2018 [W/(m³/s)]	FRONT VELOCITY[m/s]	$\Delta p_{s,int}$ [Pa]	η_{Fan} [%	*internal LEAKAGE [%]	*external LEAKAGE [%]
RRI 1 EC	81,3	0,24	200	0,35	606	1594	1314	2,38	347	59,8	5,8	3,7
RRI 2 EC	81,0	0,50	200	0,89	989	1545	1265	2,00	628	62,7	5,2	4,3
RRI 3 EC	80,6	0,79	200	1,44	853	1490	1210	2,53	422	52,0	4,7	2,9
RRI 4 EC	81,8	0,99	350	2,79	1490	1496	1216	1,98	935	62,4	4,9	2,7
RRI 5 EC	80,8	1,55	200	2,95	1256	1381	1101	2,48	982	65,1	3,8	2,5

* Percentage of the nominal flow

TEST LEAKAGE (UNI EN 13141-7)

		LEAKAGE CLASSIFICATION				
LEAKAGE	TEST CONDITIONS	RRI 1 EC	RRI 2 EC	RRI 3 EC	RRI 4 EC	RRI 5 EC
OUTDOOR	Positive pressure 250 Pa	A2	A2	A2	A2	A2
OUTDOOR	Negative pressure 250 Pa	A2	A2	A1	A1	A1
INDOOR	Pressure difference 100 Pa	A3	A2	A2	A2	A2

NOISE LEVEL

Lw Sound power level taken in accordance to UNI EN ISO 3747 - CLASS 3

	NOISE FROM THE CASE (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 1 EC	65	59,8	47,7	46,3	42,8	30,9	24,2	54,9

	NOISE IN THE DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 1 EC	72,1	66,2	56,4	54,8	53,2	44	39,2	62,6

	NOISE FROM THE CASE (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 2 EC	74,3	68,9	49,1	47	43	37,7	33,3	62,7

	NOISE IN THE DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 2 EC	76,5	69	58,7	62,5	57,7	50,3	38,8	67,2

	NOISE FROM THE CASE (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 3 EC	74,9	72	56,1	53,7	46,5	41,1	35,7	65,4

	NOISE IN THE DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 3 EC	79,9	74,9	72,9	68,7	62,2	57,4	49,2	74,2

	NOISE FROM THE CASE (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 4 EC	77,3	77,8	65,4	63,9	56,2	48,3	42,5	71,6

	NOISE IN THE DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 4 EC	79,3	78,1	73,8	73,5	70,1	66	56,2	78

	NOISE FROM THE CASE (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 5 EC	82,6	77,1	62,4	59	50	41,8	34,9	71,3

	NOISE IN THE DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
RRI 5 EC	82,8	82,2	71,4	72,4	63,5	54,7	46	77,4

VALUES ACCORDING UNI EN 1886: 2008

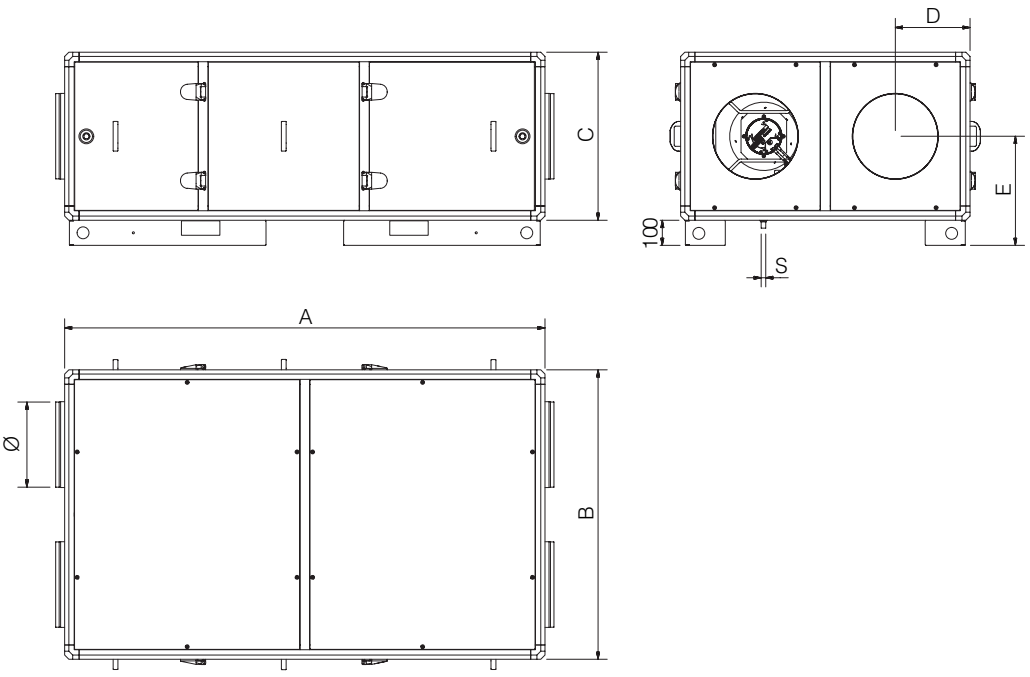
MOD.	CASING STRENGTH	CASING LEAKAGE	FILTER CLASS	THERMAL TRANSMITTANCE	THERMAL BRIDGE
RRI 1 EC	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB3 (M)
RRI 2 EC	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB3 (M)
RRI 3 EC	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB3 (M)
RRI 4 EC	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB3 (M)
RRI 5 EC	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB3 (M)

ELECTRICAL DATA

MATCHING	FANS				UNIT RRI-EC		
	Power [W]	Supply	Current max.[A]	Insulation class	Supply	Current max.[A]	Insulation class
RRI 1 EC	2 x 170 W	230V 50/60 Hz 1F	2 x 1,4 A	IP54 CLASSE B	230V 50 Hz 1F	3,0	IP 20
RRI 2 EC	2 x 448 W	230V 50/60 Hz 1F	2 x 2,8 A	IP54 CLASSE B	230V 50 Hz 1F	6,0	IP 20
RRI 3 EC	2 x 715 W	230V 50/60 Hz 1F	2 x 3,1 A	IP54 CLASSE B	230V 50 Hz 1F	6,8	IP 20
RRI 4 EC	2 x 1400 W	230V 50/60 Hz 1F	2 x 6,0 A	IP54 CLASSE B	230V 50 Hz 1F	12,6	IP 20
RRI 5 EC	2 x 1850 W	400V 50/60 Hz 3F	2 x 2,9 A	IP54 CLASSE B	400V 50 Hz 3F	6,4	IP 20

DIMENSIONS (mm) and WEIGHT (kg)

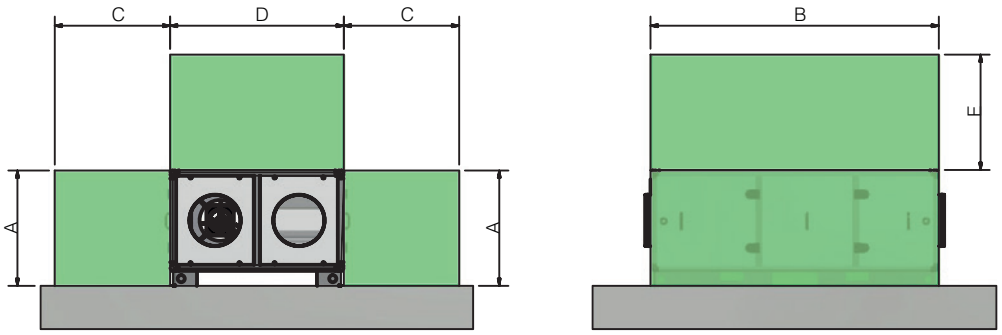
UNIT	Dimensions [mm]							
	A	B	C	D	E	S	Ø	Weight[kg]
RRI 1 EC	2000	1080	500	280	350	1/2"	315	195
RRI 2 EC	2000	1205	700	311	455	1/2"	355	254
RRI 3 EC	2000	1205	980	311	594	1/2"	400	320
RRI 4 EC	2385	1584	980	406	594	1/2"	500	530
RRI 5 EC	2385	1584	1210	406	6051	/2"5	60	600



INSTALLATION

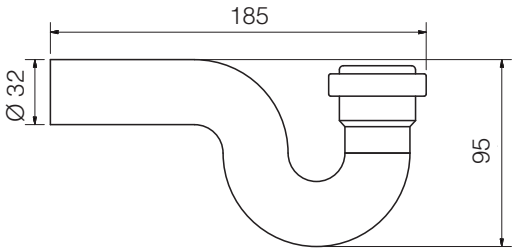
FLOOR INSTALLATION

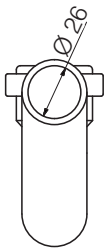
Minimum required space for maintenance (mm)



UNITD	imensions [mm]				
	A	B	C	D	E
RRI 1 EC	600	2000	800	1080	800
RRI 2 EC	800	2000	800	1205	800
RRI 3 EC	1080	2000	800	1205	800
RRI 4 EC	1080	2385	1000	1584	1000
RRI 5 EC	1310	2385	1000	1584	1000

STANDARD SIPHON (MM)

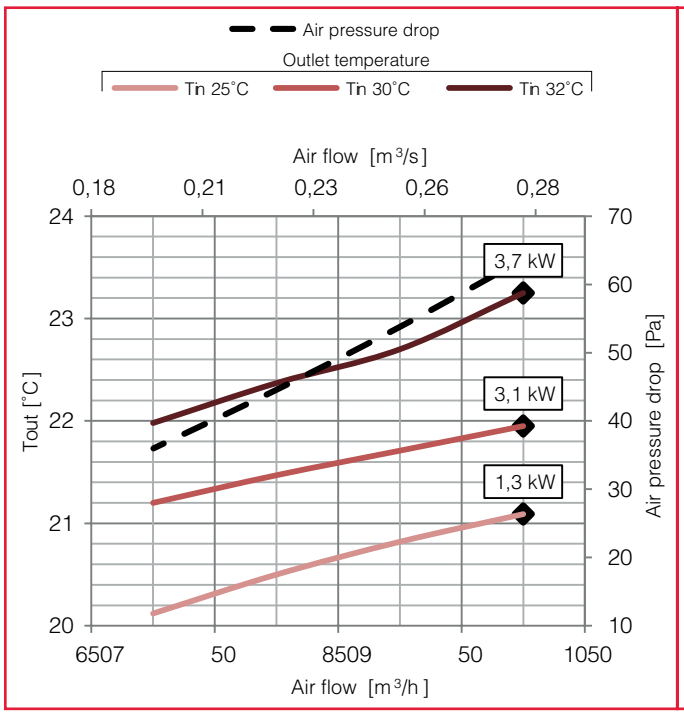


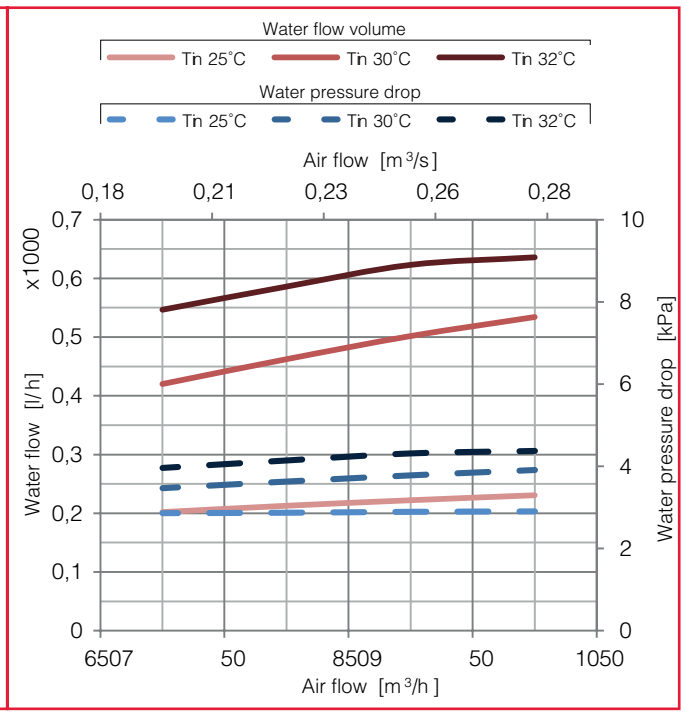


COILS RRI 1 EC

Cooling water coil (7°C/12°C)

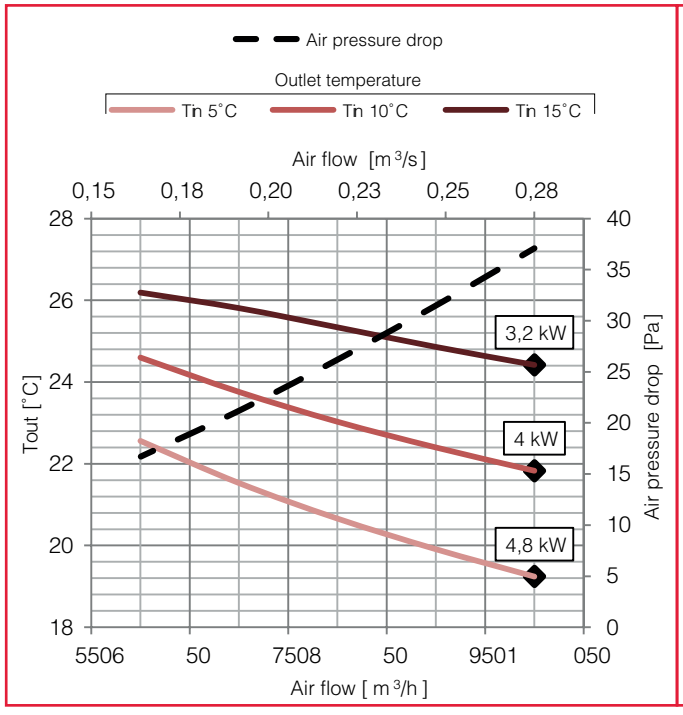
				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
3/4"	3	2,5	2	Cu	Al	Fe Zn

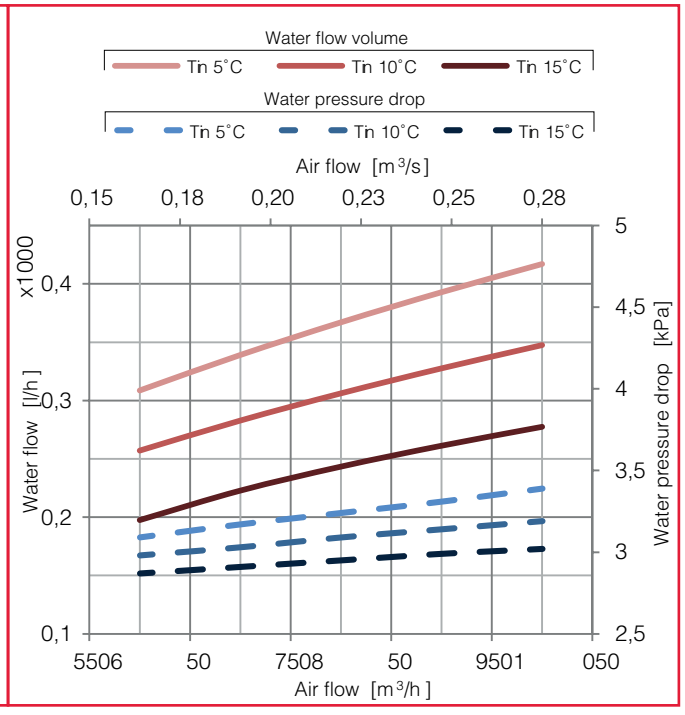




Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]	TUBES	FINS	FRAME
3/4"	3	2,5	2	Cu	Al	Fe Zn

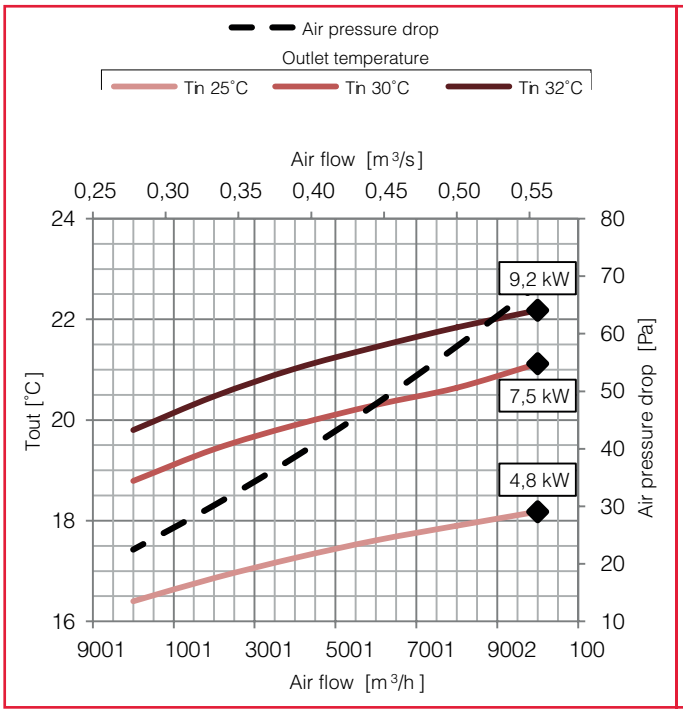


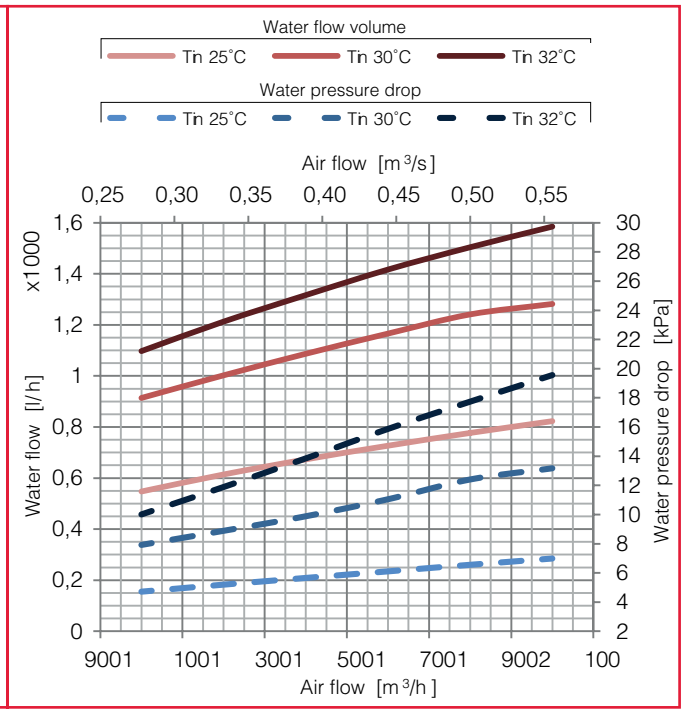


COILS RRI 2 EC

Cooling water coil (7°C/12°C)

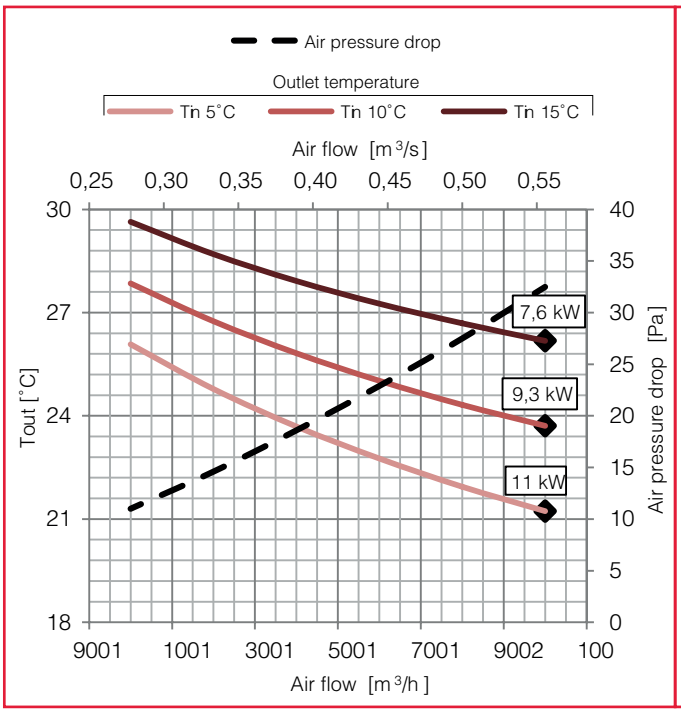
				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
3/4"	3	2,5	4	Cu	Al	Fe Zn

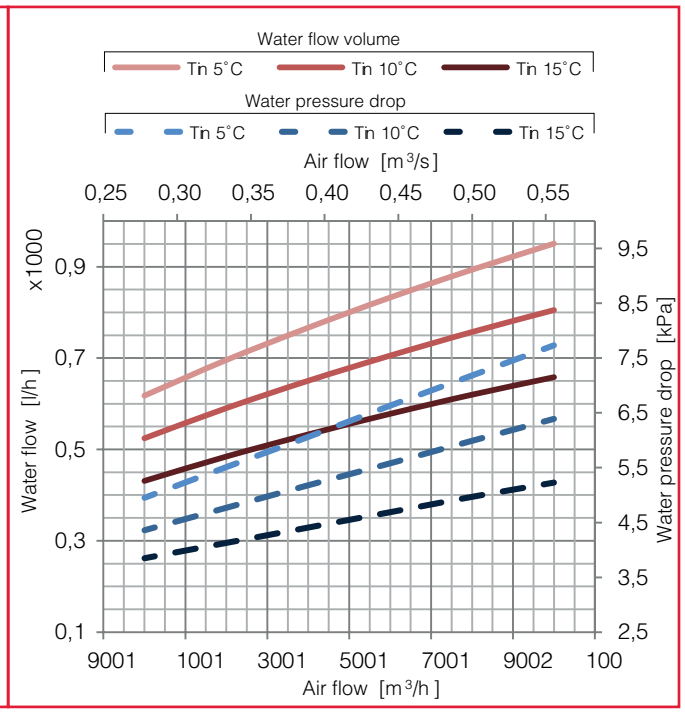




Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
3/4"	3	2,5	4	Cu	Al	Fe Zn

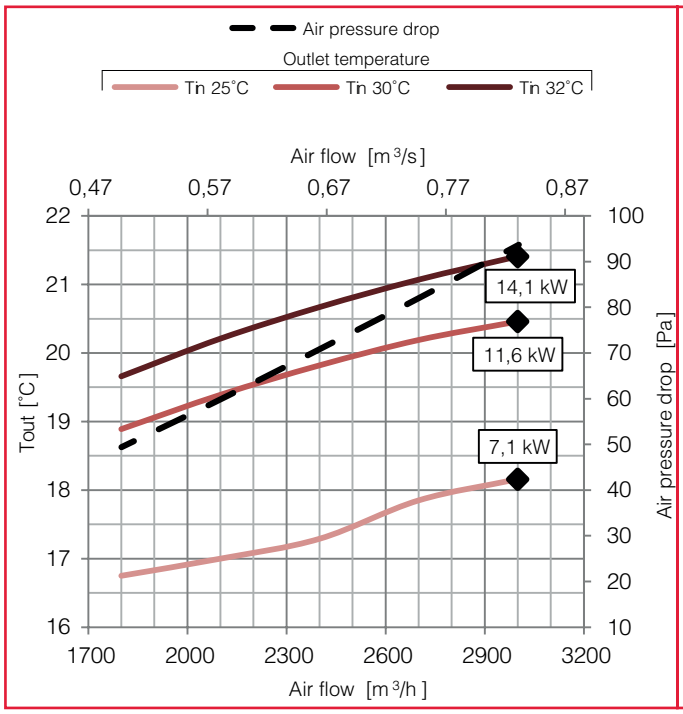


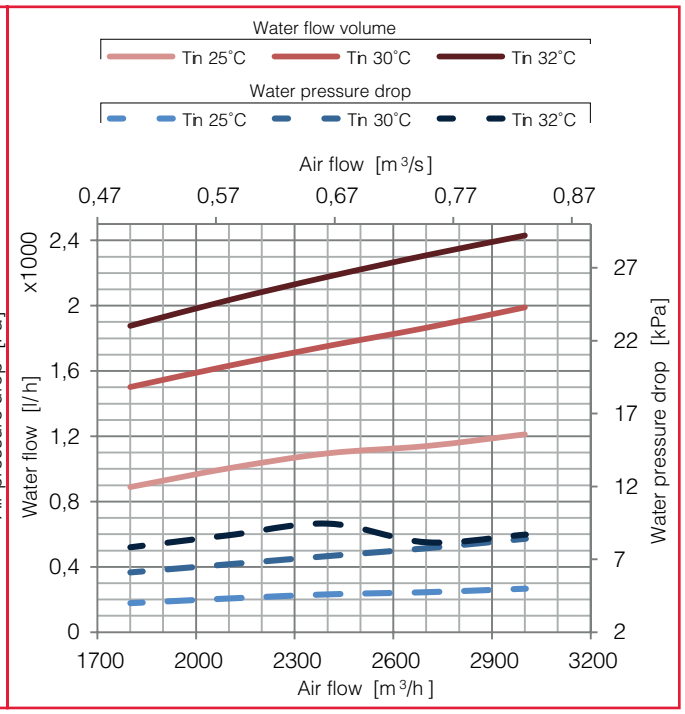


COILS RRI 3 EC

Cooling water coil (7°C/12°C)

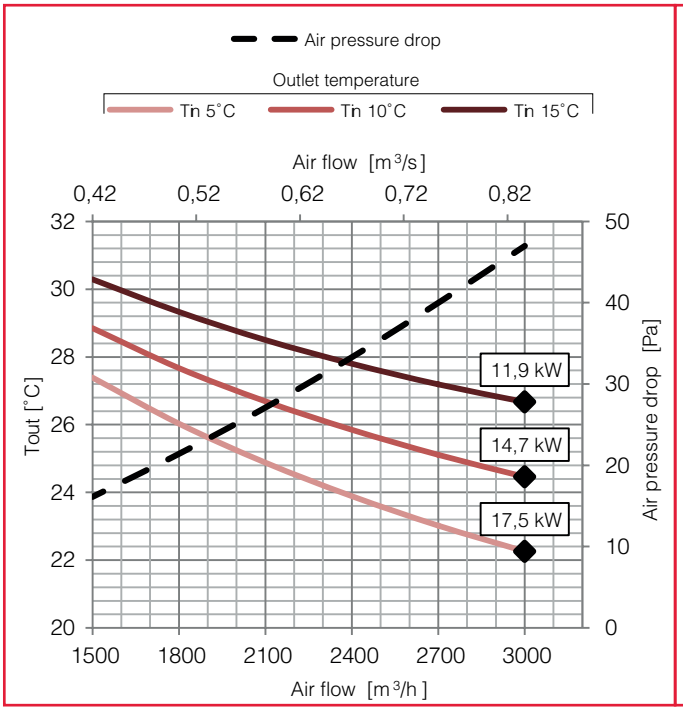
				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
3/4"	3	2,5	5	Cu	Al	Fe Zn

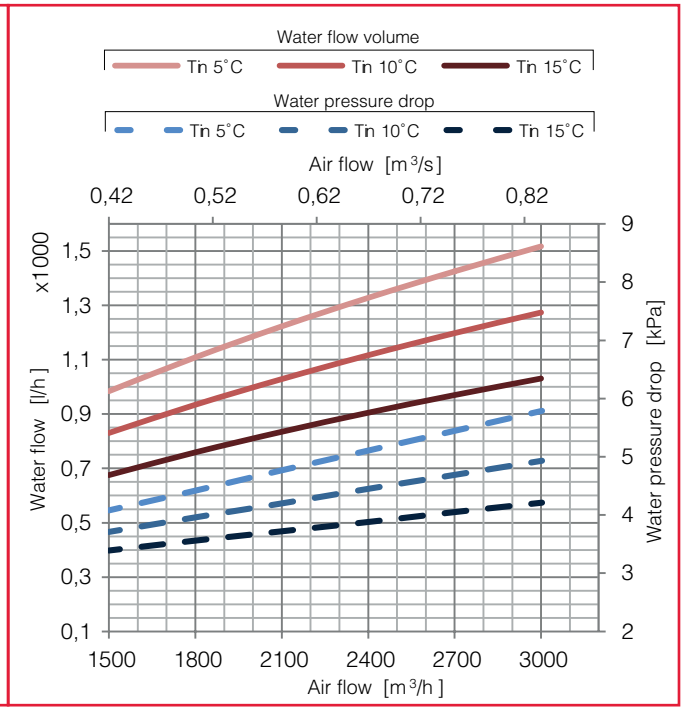




Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]	TUBES	FINS	FRAME
3/4"	3	2,5	5	Cu	Al	Fe Zn

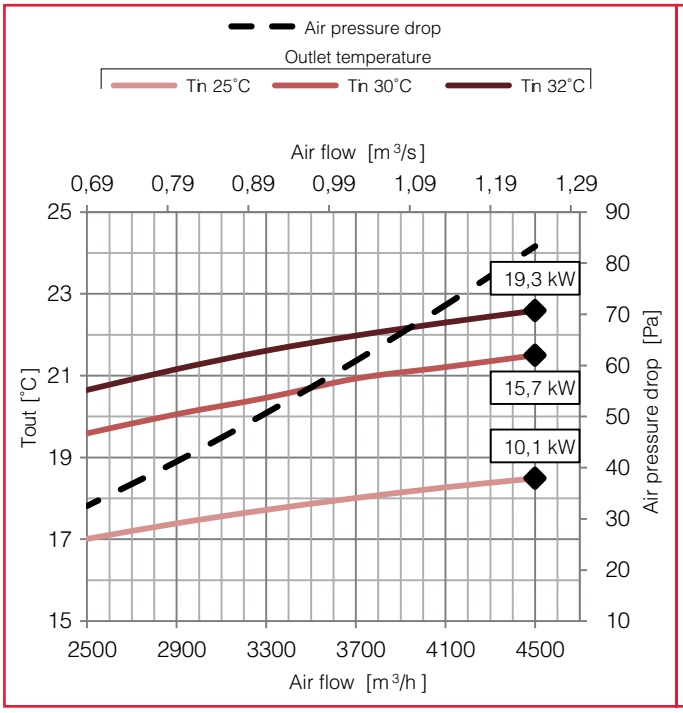


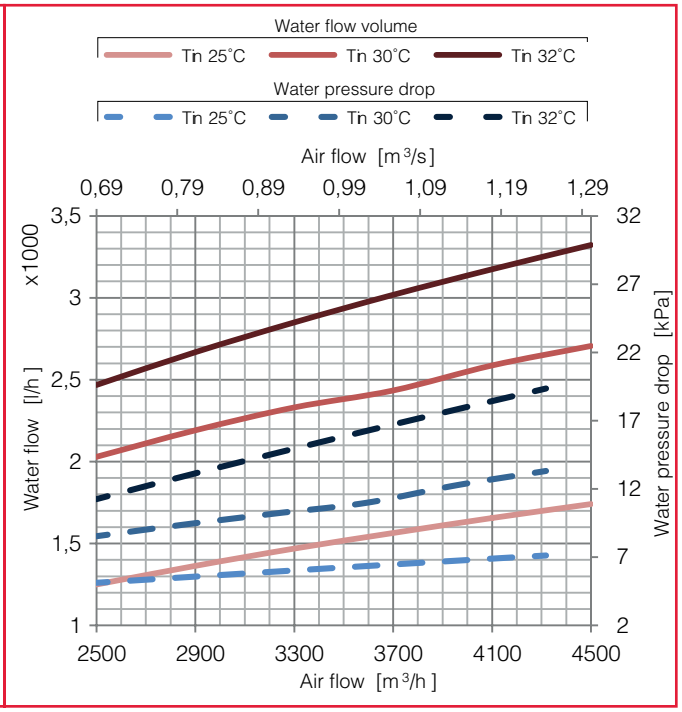


COILS RRI 4 EC

Cooling water coil (7°C/12°C)

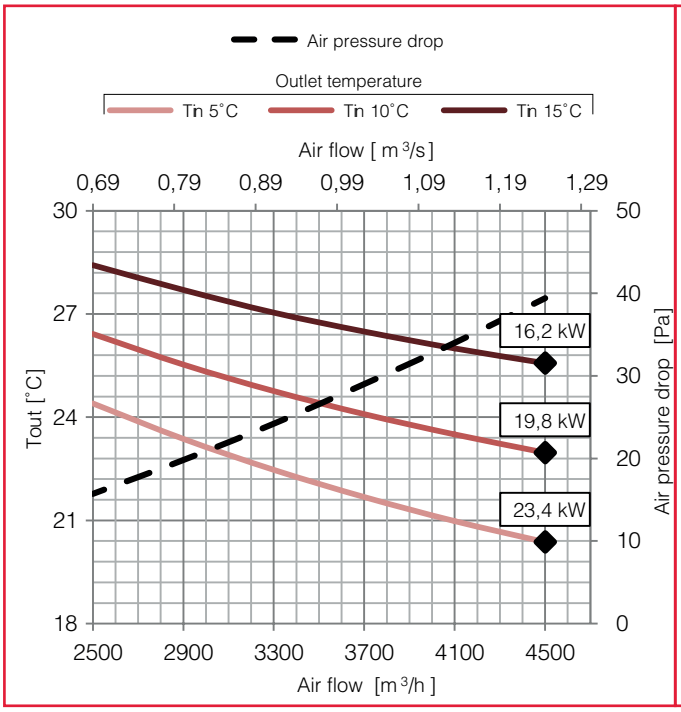
				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
1"	3	2,5	8	Cu	Al	Fe Zn

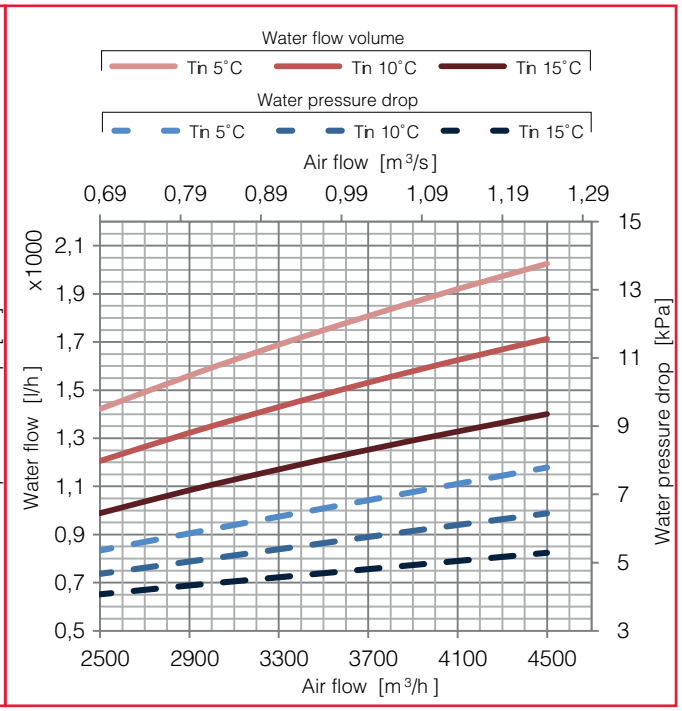




Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
1"	3	2,5	8	Cu	Al	Fe Zn

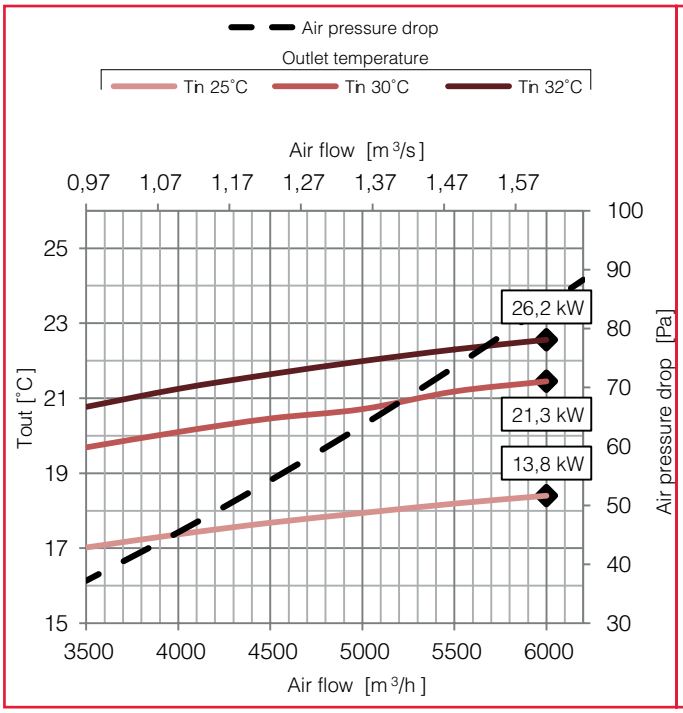


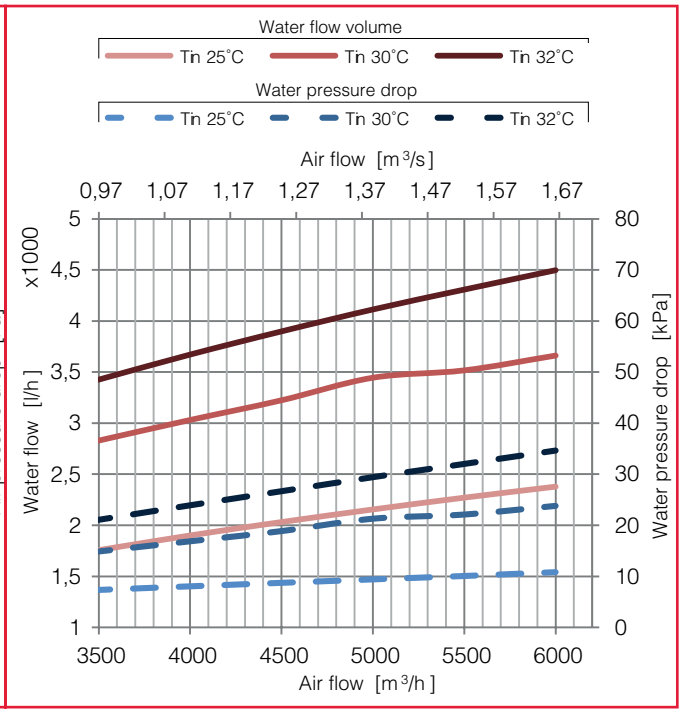


COILS RRI 5 EC

Cooling water coil (7°C/12°C)

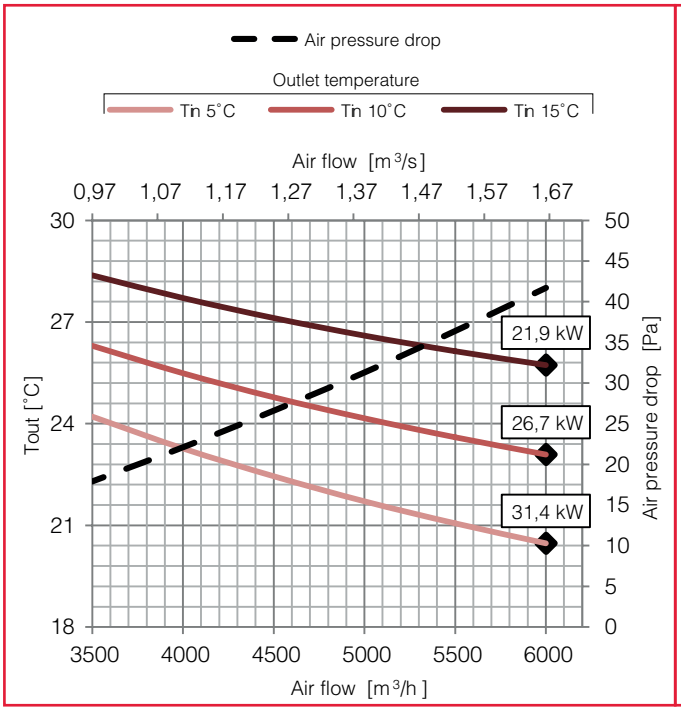
				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]T	UBES	FINS	FRAME
1"1/4	3	2,5	11	Cu	Al	Fe Zn

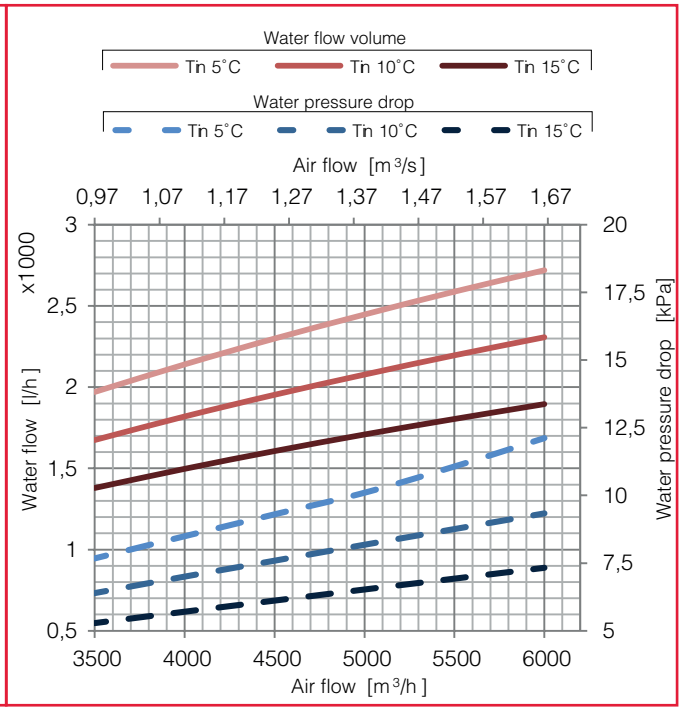




Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]	TUBES	FINS	FRAME
1"1/4	3	2,5	11	Cu	Al	Fe Zn





DX coil RRI 1 EC

DIRECT EXPANSION COIL (R410A) TECHNICAL DATA						
Air flow [m³/h]	Tin [C°]	R.H in [%]	Power [kW]	Tout [°C]	R.H: out [%]	Air pressure drop [Pa]
900	28	70	5,2	19	92	120

Ø Connection [mm]	Fin pitch [mm]	N. Rows	Vol.Int [dm³]	T evap [°C]	T cond [°C]
22-16	2,5	3	2	5	50

DX coil RRI 2 EC

DIRECT EXPANSION COIL (R410A) TECHNICAL DATA						
Air flow [m³/h]	Tin [C°]	R.H in [%]	Power [kW]	Tout [°C]	R.H: out [%]	Air pressure drop [Pa]
2000	28	70	11,95	20	92	110

Ø Connection [mm]	Fin pitch [mm]	N. Rows	Int.Vol. [dm³]	T evap [°C]	T cond [°C]
28-16	2,5	3	3	5	50

DX coil RRI 3 EC

DIRECT EXPANSION COIL (R410A) TECHNICAL DATA						
Air flow [m³/h]	Tin [C°]	R.H in [%]	Power [kW]	Tout [°C]	R.H: out [%]	Air pressure drop [Pa]
3000	28	50	17,75	19	92	117

Ø Connection [mm]	Fin pitch [mm]	N. Rows	Int.Vol. [dm³]	T evap [°C]	T cond [°C]
28-16	2,5	3	5	5	50

DX coil RRI 4 EC

DIRECT EXPANSION COIL (R410A) TECHNICAL DATA						
Air flow [m³/h]	Tin [C°]	R.H in [%]	Power [kW]	Tout [°C]	R.H: out [%]	Air pressure drop [Pa]
4400	29	65	25	20	90	131

Ø Connection [mm]	Fin pitch [mm]	N. Rows	Int.Vol. [dm³]	T evap [°C]	T cond [°C]
35-22	2,5	3	6	5	50

DX coil RRI 5 EC

DIRECT EXPANSION COIL (R410A) TECHNICAL DATA						
Air flow [m³/h]	Tin [C°]	R.H in [%]	Power [kW]	Tout [°C]	R.H: out [%]	Air pressure drop [Pa]
5900	29	65	33,82	1	90	132

Ø Connection [mm]	Fin pitch [mm]	N. Rows	Int.Vol. [dm³]	T evap [°C]	T cond [°C]
35-28	2,5	3	9	5	50

Electrical heater

PRE-POST ELECTRICAL HEATER TECHNICAL DATA				
Unit	Power supply	Power [kW]	Current [A]	N. stages
RRI 1 EC	230V, 50Hz,1F	4	17,4	1
RRI 2 EC	230V, 50Hz,1F	6	26,1	1
RRI 3 EC	400V, 50Hz,3F	8	11,6	1
RRI 4 EC	400V, 50Hz,3F	12	17,4	1
RRI 5 EC	400V, 50Hz,3F	16	23,2	1

N.B. – for other batteries PRE or POST treatment see the Techno-list of ACCESSORIES

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