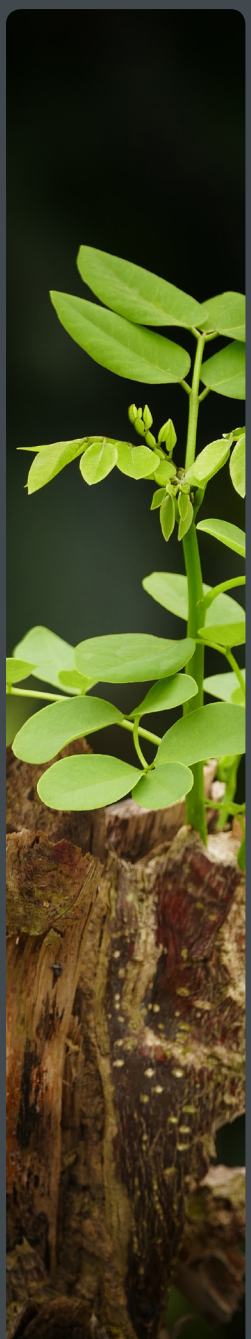
SUR - ED

VENTILATOR UNIT



SOLUZIONI AEROMECCANICHE S.p.A.

SUR-ED
Is a Non Residential Ventilation Unit (NRVU).

PERFORMANCE
Equipped with medium efficiency counterflow heat exchanger (Eurovent certified) and centrifugal forward blades multi speed fans.

STRUCTURE
SUR-ED is made of extruded aluminum profiles and double skin Aluzinc panels, sandwiched on injected polyurethane foam insula- tion, thickness 25 mm and density 42 Kg/m^3. The position of the ducting connections, made with circular spigots, are easily configu- rable simply by moving the ducting connection panels. Five sizes are available in horizontal configuration, ceiling installation (only for size 1 and 2) and floor installation, or vertical configuration (floor installa- tion), all equipped with automatic total bypass and medium efficiency heat exchanger.

Post heating devices (electric or water) and electrical pre heater device are integrated into the unit, post cooling/heating water coil and direct expansion coil, are available as additional external module. The filtering sections are: F7 filters for the fresh air flow and M5 filters for the extraction air flow.

CONTROLS
SUR-ED is supplied with control system and easy connection to the power supply. It's also available the versions with simplified CM-2 control, the version with CM-EVO control and the version with CM-EVO-IP control ready for integration in home automation systems (Modbus protocol with Ethernet connection or, upon request, with the addition of the RS485 connection). The new version of our control systems allows the user to shift from one control system to another very quickly and easily by replacing the remote panel even after the installation.

The CM-2 control allows the user to select three levels of fan speed or the possibility to stop them. It automatically manages the By-pass and prevents the heat exchanger freezing by programming the fan speed or, if specifically required, the electric pre-heater resistance (optional item to install inside the unit).The control advises the user if filters needs to be replaced (the filter clogging is monitored by a pair of differential pressure sensors) or any other fault.

The CM-EVO control has a colored backlit touch screen interface, it gives an intuitive operating status of the unit and it allows program- ming the fan speed. This control has a weekly time schedule for automatic unit control, it can be controlled by an external switch to activate the booster and it can automatically adjust the air flow when connected to an air quality sensor. It supports post-air treatment accessories and it advises the user if filters needs to be replaced (the filter clogging is monitored by a pair of differential pressure sensors) or if there is any other fault showing where it comes from.

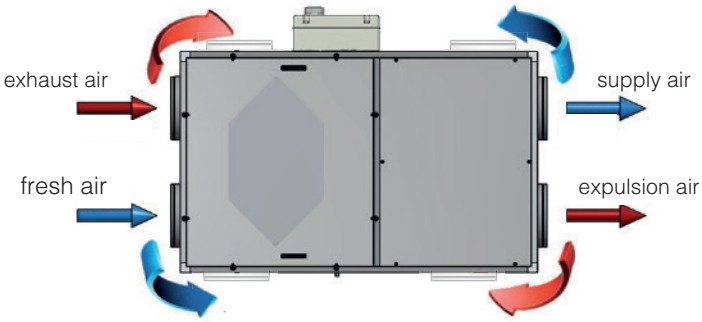
The CM-EVO-IP control has the same characteristics of the CM-EVO version with the addition of the Modbus communication protocol and it allows full control of the unit by the Home Automation software system. If the unit is in a Home Automation network, the webserver lets the user interact with it throughout a device connected to an Internet browser.

On request it's also available the version without control system and without electrical cabinet (adjustable pressure switches for filter status and bypass actuator are installed).

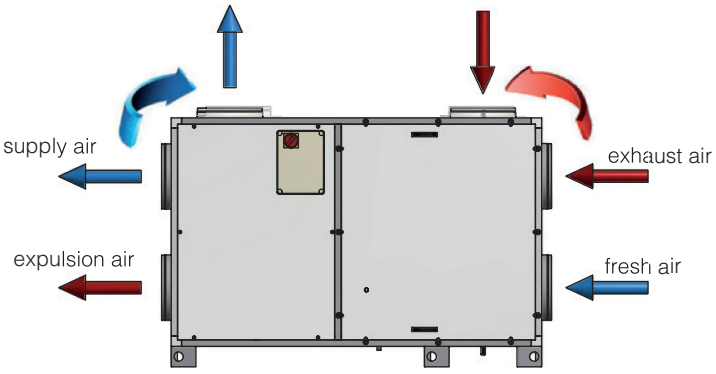
ACCESSORIES
SUR-ED can be equipped with other accessories such as:
. R.H. of probe, CO2 or CO2 / VOC
. protection roof for outside installation
. switch speed

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

SUR-ED H (horizontal) – TOP VIEW



SUR-ED V (vertical) – SIDE VIEW

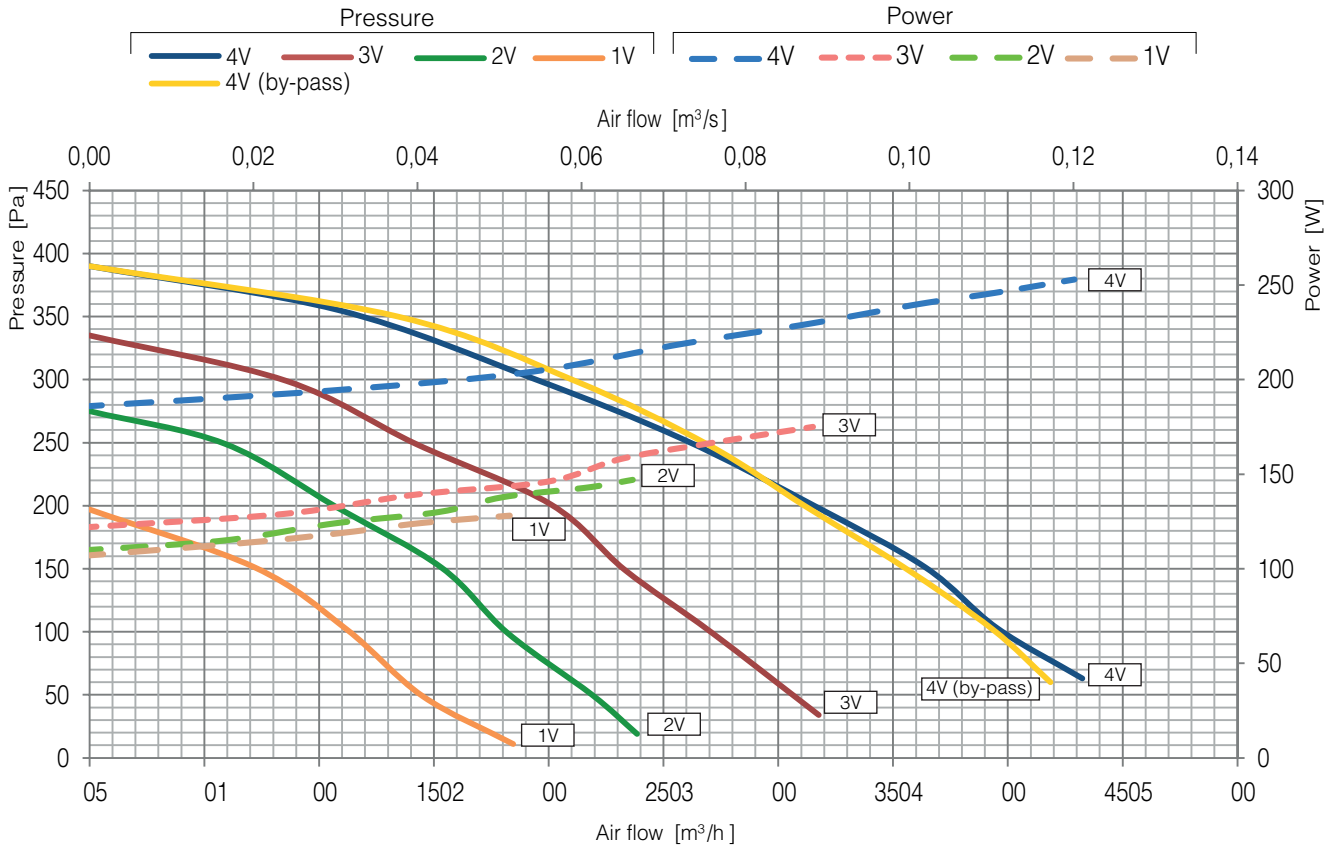


Counterflow heat exchanger made of aluminum manufactured by RECUTECH
RECUTECH participates in the Eurovent Certification Program

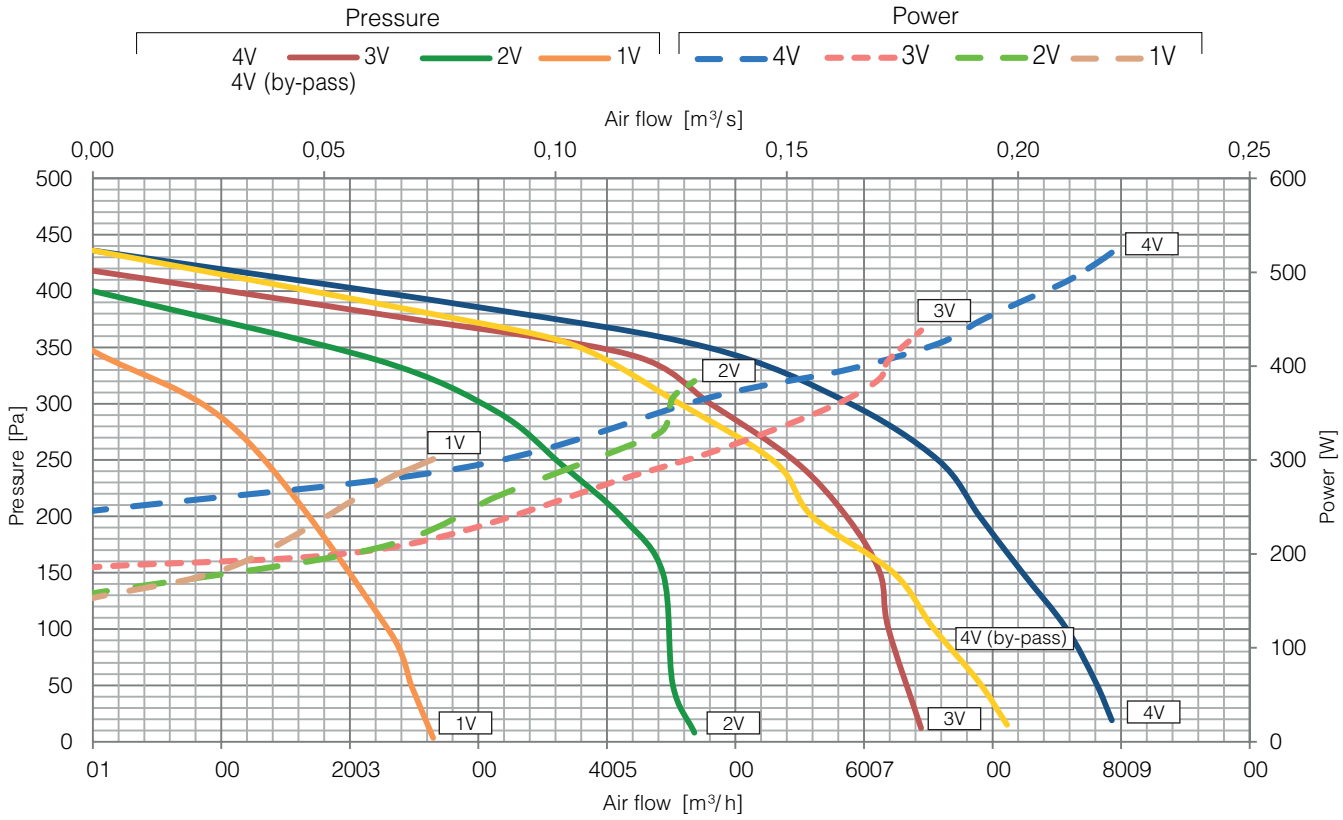
PERFORMANCES (UNI EN 13141-7)

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.

SUR-ED 1



SUR-ED 2



PERFORMANCES (UNI EN 13141-7)

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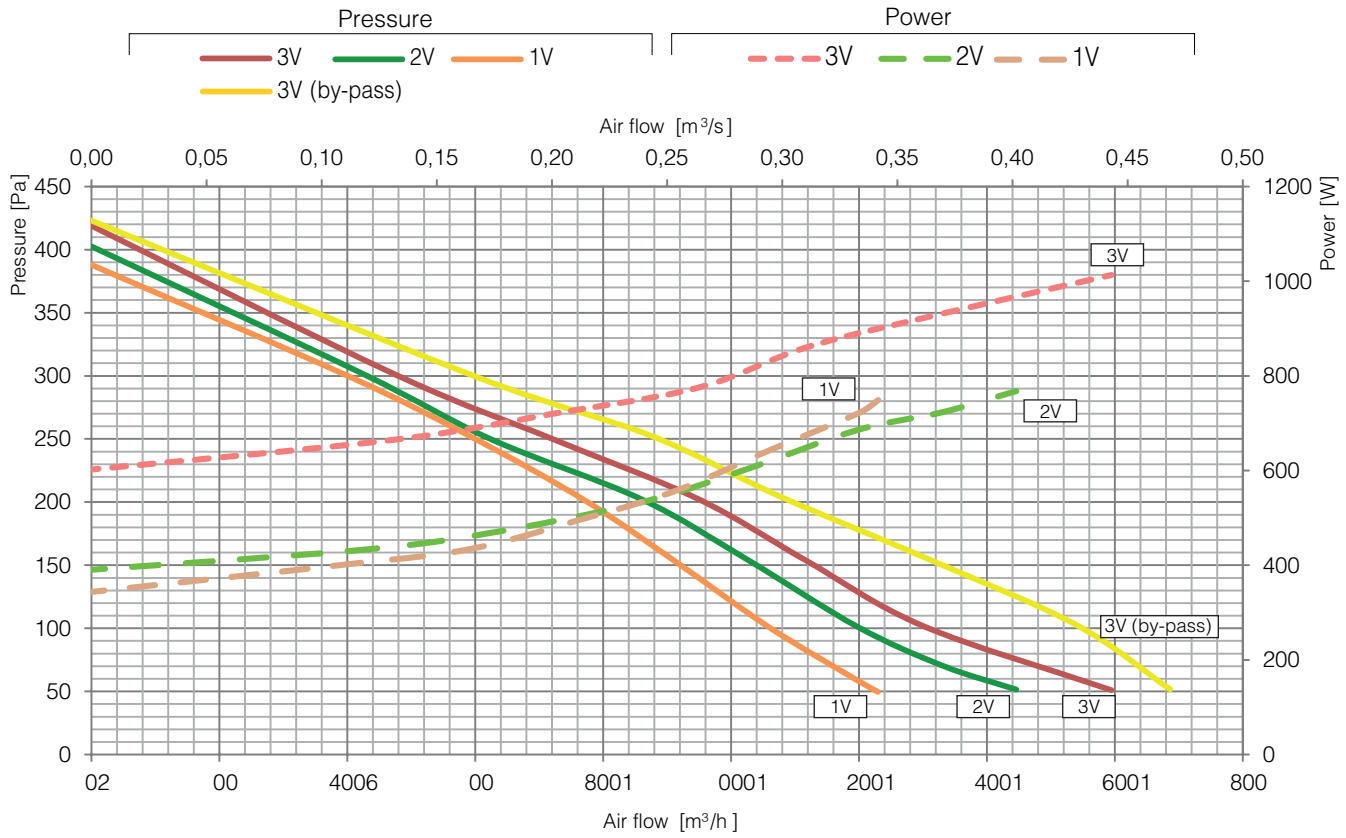
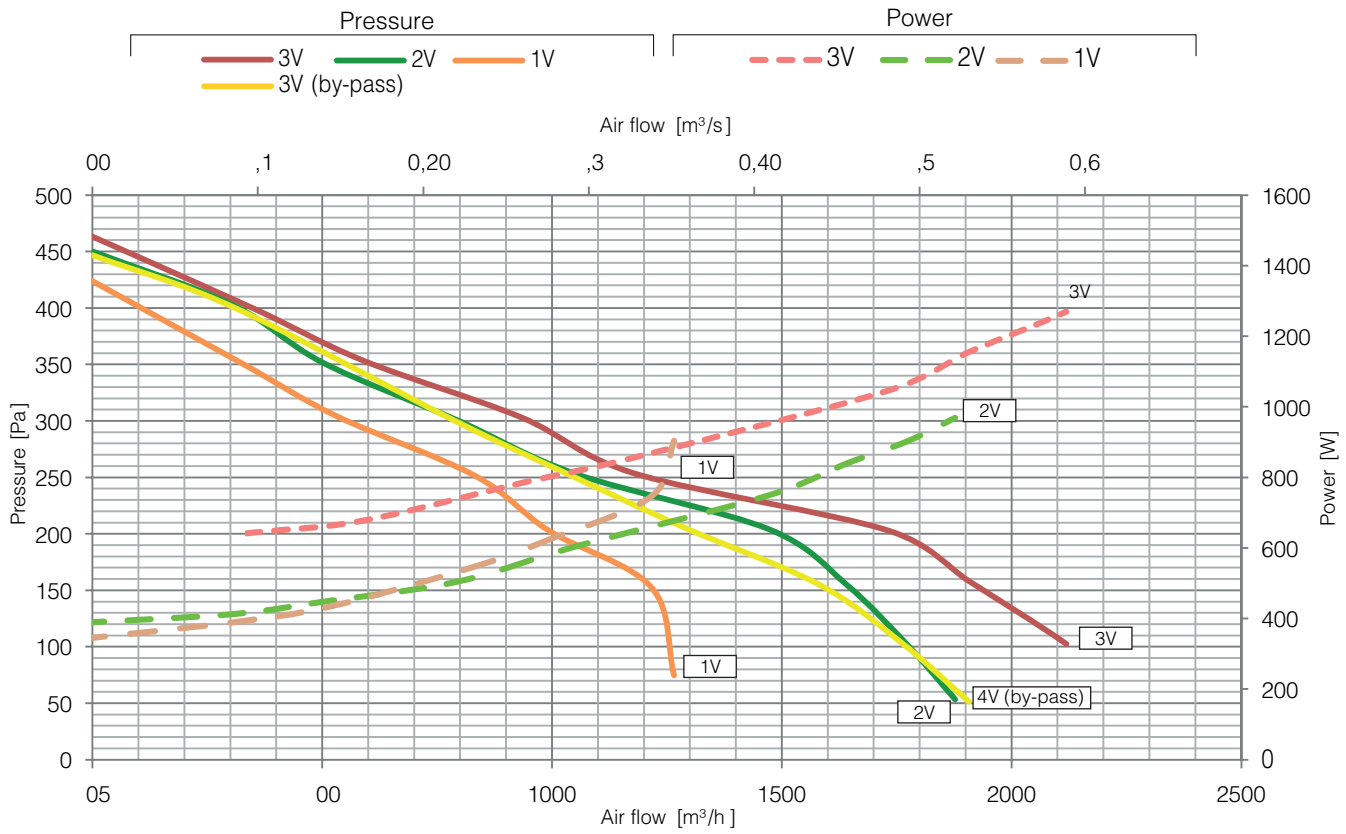
SUR-ED 2+



SUR-ED 3



PERFORMANCES (UNI EN 13141-7)

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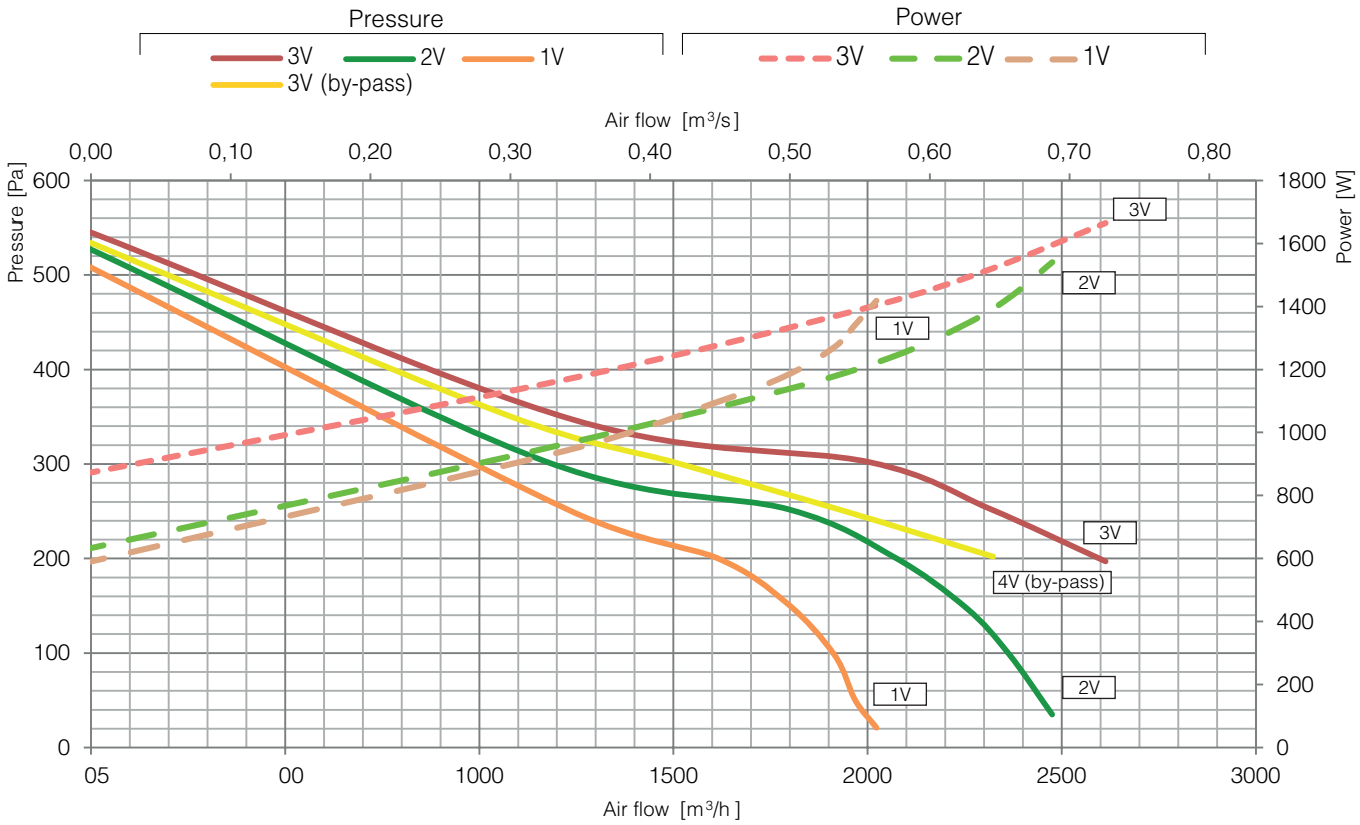
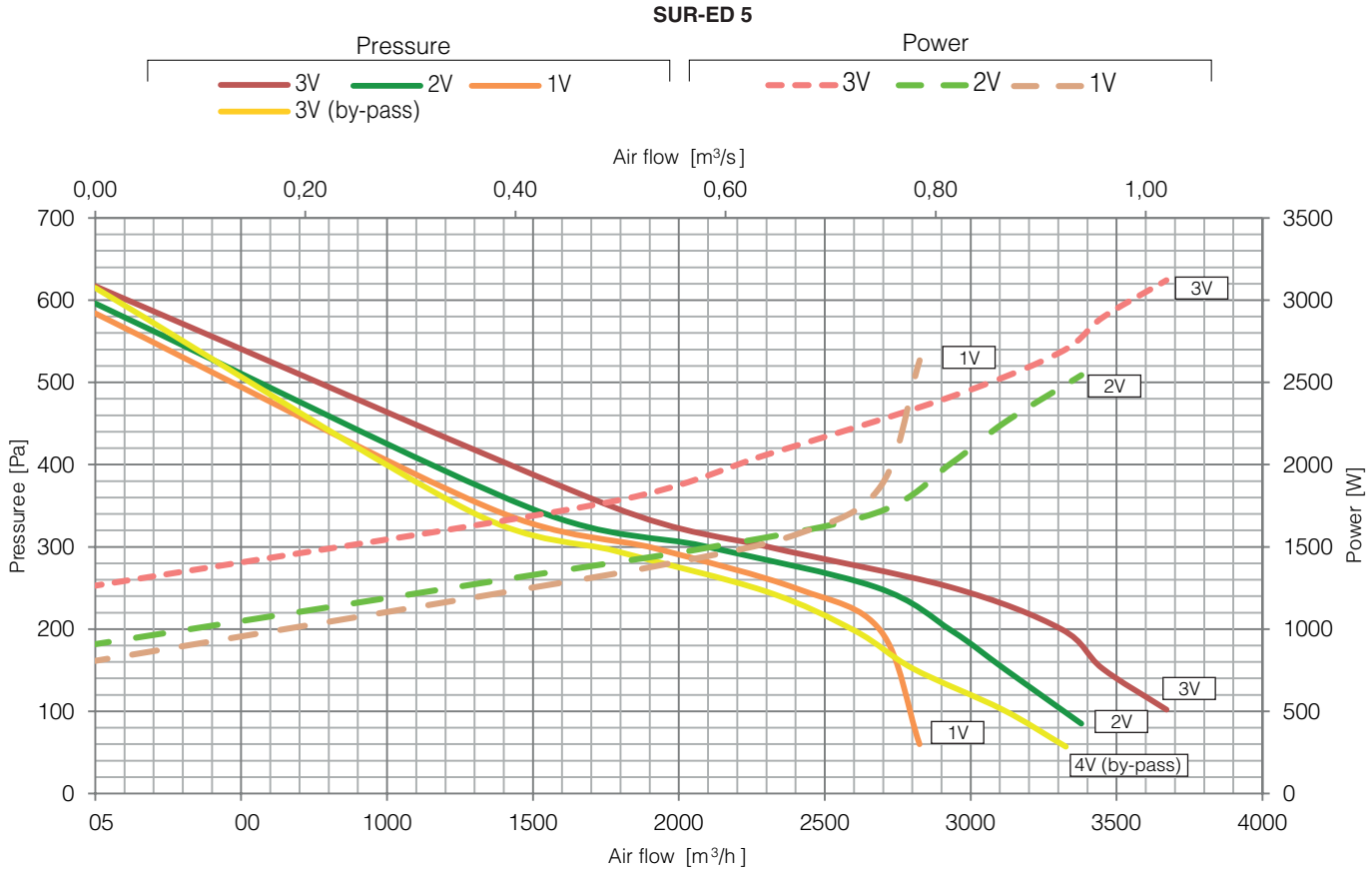
The declared performances are with CLEAN filters, and guaranteed ONLY with the original filters SAMP low pressure drop.

SUR-ED 4

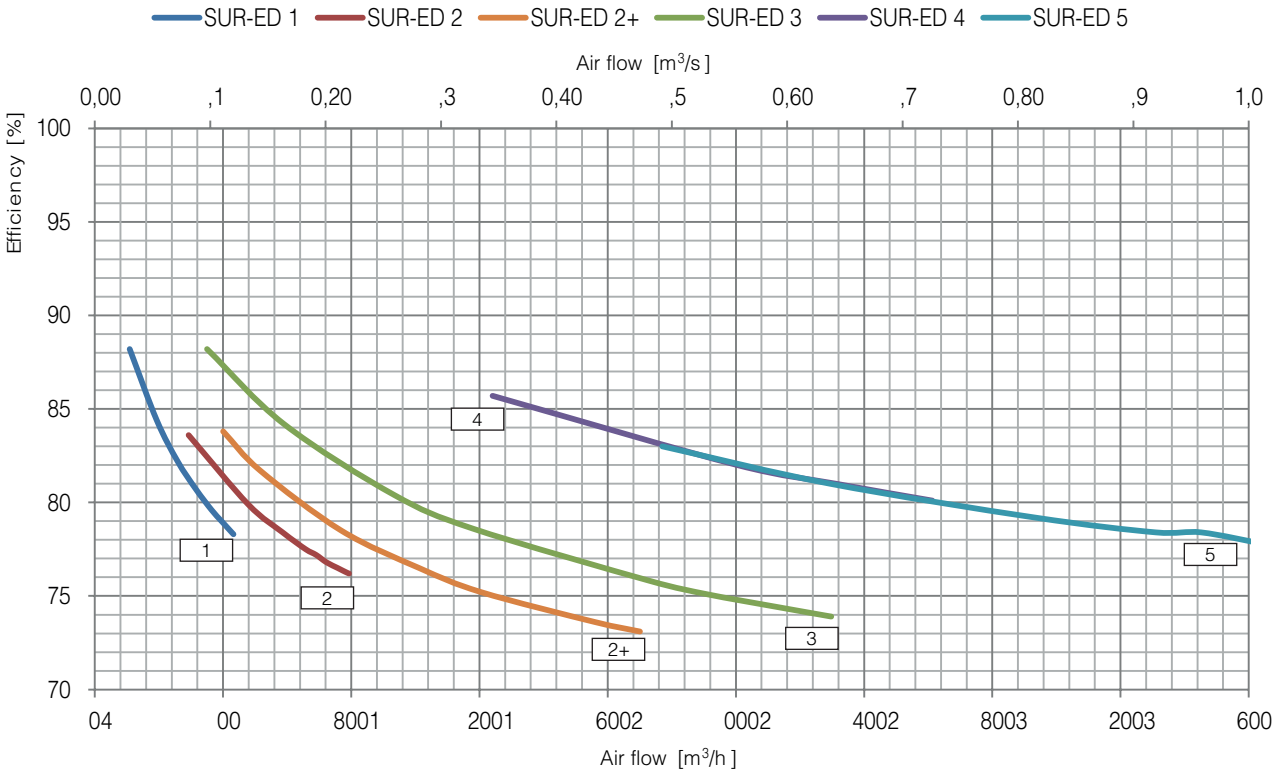


SUR-ED 5



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

UNIT	η_{t_nvru} [%]	q_{nom} [m ³/s]	$\Delta p_{s,ext}$ [Pa]	P [kW]	SFPint [W/(m³/s)]	SFPint_lim 2016 [W/(m³/s)]	SFPint_lim 2018 [W/(m³/s)]	FACE VELOCITY[m/s]	$\Delta p_{s,int}$ [Pa]	η_{Fan} [%]	* Internal LEAKAGE [%]	* External LEAKAGE [%]
SUR-ED 1	78,9	0,1	100	0,25	1099	1542	1262	1,30	234	19,4%	9,8%	6,5%
SUR-ED 2	76,8	0,2	150	0,47	986	1464	1184	1,34	270	27,7%	6,8%	3,5%
SUR-ED 2+	76,4	0,2	200	0,78	1280	1439	1159	1,14	342	26,9%	8,2%	3,9%
SUR-ED 3	75,8	0,4	200	1,05	1067	1390	1110	1,27	360	34,6%	5,2%	2,8%
SUR-ED 4	80,1	0,7	200	1,66	1046	1486	1206	1,15	379	36,2%	5,0%	2,7%
SUR-ED 5	79,2	0,8	250	2,42	1134	1443	1163	1,31	390	34,4%	4,4%	2,4%

* Percentage of the nominal flow

VALUES ACCORDING UNI EN 1886: 2008

MOD.	CASING STRENGTH	CASING LEAKAGE	FILTER CLASS	THERMAL TRANSMITTANCE	THERMAL BRIDGE
SUR-ED 1	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)
SUR-ED 2	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)
SUR-ED 2+	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)
SUR-ED 3	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)
SUR-ED 4	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)
SUR-ED 5	D1 (M)	L3 (M)	F7 (M)	T4 (M)	TB4 (M)

TEST LEAKAGE (UNI EN 13141-7)

LEAKAGE	TEST CONDITIONS	SUR-ED 1	SUR-ED 2	SUR-ED 2+	SUR-ED 3	SUR-ED 4	SUR-ED 5
OUTDOOR	Positive pressure 400 Pa	A3	A2	A2	A2	A2	A1
OUTDOOR	Negative pressure 400 Pa	A2	A2	A1	A1	A1	A1
INDOOR	Pressure difference 250 Pa	A3	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)
SUR-ED 1	4V	59,0	62,5	53,5	47,4	39,9	35,7	39,6	56,6
SUR-ED 2	4V	59,5	65,4	58,5	53,2	47,0	39,1	41,1	60,6
SUR-ED 2+	3V	71,7	71,2	64,3	59,9	52,7	46,8	48,9	66,8
SUR-ED 3	3V	74,1	71,7	65,1	61,6	52,4	46,4	46,0	67,7
SUR-ED 4	3V	72,0	69,0	60,3	63,0	56,6	49,3	49,9	66,8
SUR-ED 5	3V	75,6	73,6	69,7	66,1	59,4	52,3	53,9	71,5

		NOISE IN THE SUPPLY AIR DUCTS (dB)							
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 1	4V	56,8	61,6	59,3	52,9	49,7	48,7	52,3	60,7
	3V	53,3	57,0	53,0	46,8	42,2	37,3	40,8	54,1
	2V	52,3	54,9	52,1	46,3	37,9	31,3	37,8	52,6

		NOISE IN THE SUPPLY AIR DUCTS (dB)							
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 2	4V	62,9	72,3	68,8	62,7	62,8	60,6	65,8	71,7
	3V	61,6	68,6	64,9	60,2	57,9	57,0	62,3	68,0
	2V	58,3	61,6	58,9	56,2	51,2	50,1	53,5	61,7

	NOISE IN THE SUPPLY AIR DUCTS (dB)							
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 2+	70,9	79,6	74,1	71,0	68,0	66,3	69,0	77,6
	69,4	77,5	72,4	69,7	66,4	64,6	66,9	75,9
	68,0	75,7	71,7	66,7	64,5	61,9	63,9	73,9

		NOISE IN THE SUPPLY AIR DUCTS (dB)							
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 3	3V	73,0	77,4	72,6	76,4	68,4	67,0	69,6	79,2
	2V	69,8	72,8	70,4	73,1	66,1	65,0	66,5	76,2
	1V	64,7	70,8	65,5	66,2	58,7	56,9	56,3	69,8

		NOISE IN THE SUPPLY AIR DUCTS (dB)							
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 4	3V	74,4	74,7	74,7	74,2	69,3	67,0	70,1	78,5
	2V	72,5	71,9	74,3	70,3	63,7	63,2	66,2	75,5
	1V	72,0	79,6	72,2	67,2	60,4	58,9	61,2	74,7

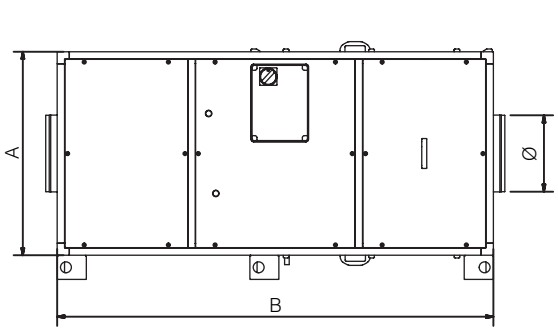
		NOISE IN THE SUPPLY AIR DUCTS (dB)							
		125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
SUR-ED 5	3V	78,7	80,9	79,9	80,3	76,1	75,5	79,6	85,4
	2V	77,5	79,0	78,3	77,9	73,9	73,7	77,5	83,3
	1V	74,7	75,7	76,2	74,5	69,9	68,9	71,4	79,4

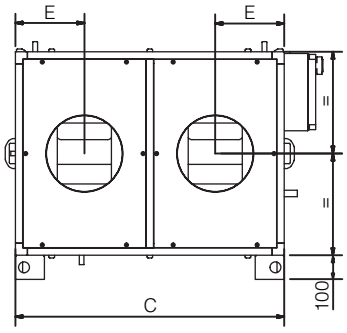
ELECTRICAL DATA

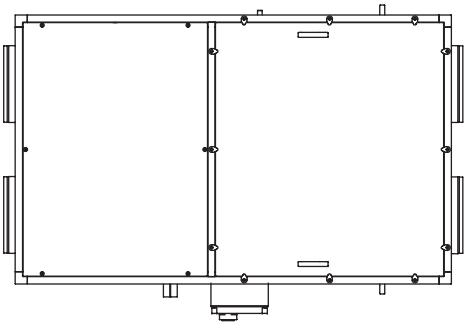
MATCHING	FANS				UNIT SUR-ED		
	Power [W]	Supply	Current max.[A]	Insulation class	Supply	Current max.[A]	Insulation class
SUR-ED 1	2 x 150	230V 50 Hz 1F2	x 0,6	IP20 CLASS F	230V 50 Hz 1F1	,4	IP20
SUR-ED 2	2 x 290	230V 50 Hz 1F2	x 1,2	IP20 CLASS F	230V 50 Hz 1F2	,7	IP20
SUR-ED 2+	2 x 373	230V 50 Hz 1F2	x 2,7	IP20 CLASS F	230V 50 Hz 1F	5,6	IP20
SUR-ED 3	2 x 373	230V 50 Hz 1F2	x 2,7	IP20 CLASS F	230V 50 Hz 1F5	,6	IP20
SUR-ED 4	2 x 550	230V 50 Hz 1F2	x 3,9	IP20 CLASS F	230V 50 Hz 1F7	,9	IP20
SUR-ED 5	2 x 750	230V 50 Hz 1F2	x 7,8	IP20 CLASS F	230V 50 Hz 1F	15,7	IP20

SUR-ED H

DIMENSIONS (mm) and WEIGHT (kg)





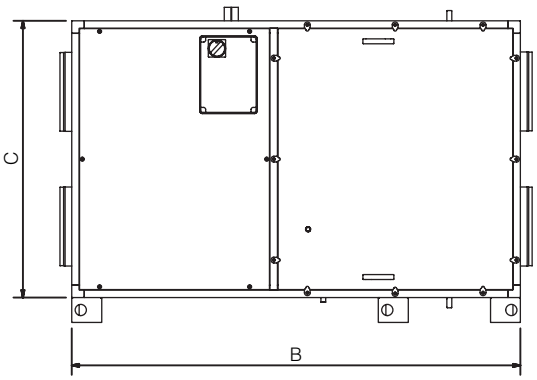


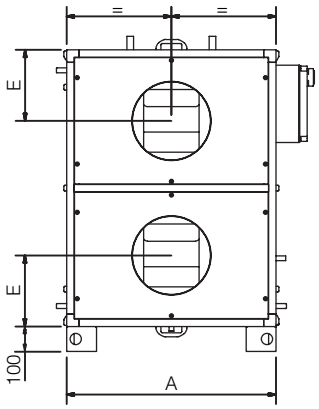
NOTE: for SUR-ED 1 and 2 there are no the feet but the brackets

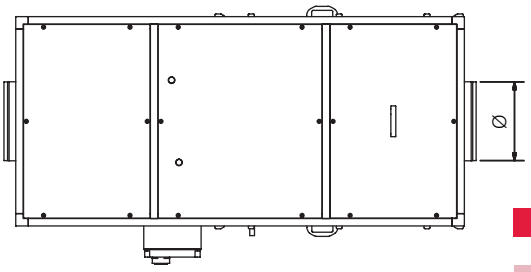
UNITD	imensions [mm]					
	A	B	C	Ø	E	Weight[kg]
SUR-ED H 1	450	1420	900	200	232	99
SUR-ED H 2	550	1420	900	250	232	115
SUR-ED H 2+	640	1800	1110	315	290	152
SUR-ED H 3	840	1800	1100	315	385	276
SUR-ED H 4/5	1050	2180	1340	400	342	363/379

SUR-ED V

DIMENSIONS (mm) and WEIGHT (kg)





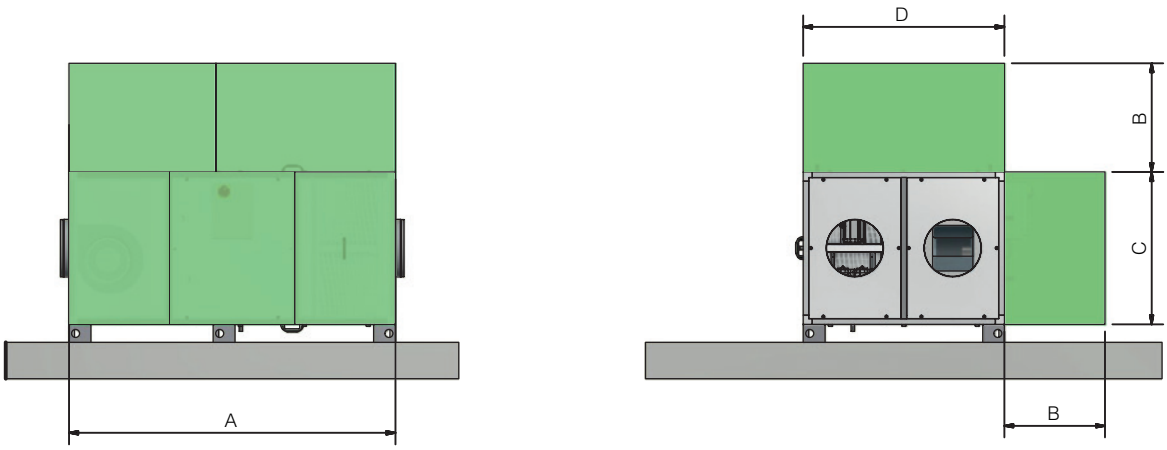


UNITD	imensions [mm]					
	A	B	C	Ø	E	Weight[kg]
SUR-ED V 1	450	1420	900	200	232	99
SUR-ED V 2	550	1420	900	250	232	115
SUR-ED V 2+	640	1800	1101	315	290	152
SUR-ED V 3	840	1800	1100	315	285	276
SUR-ED V 4/5	1050	2180	1340	400	342	363/379

INSTALLATION SUR-ED H

FLOOR INSTALLATION

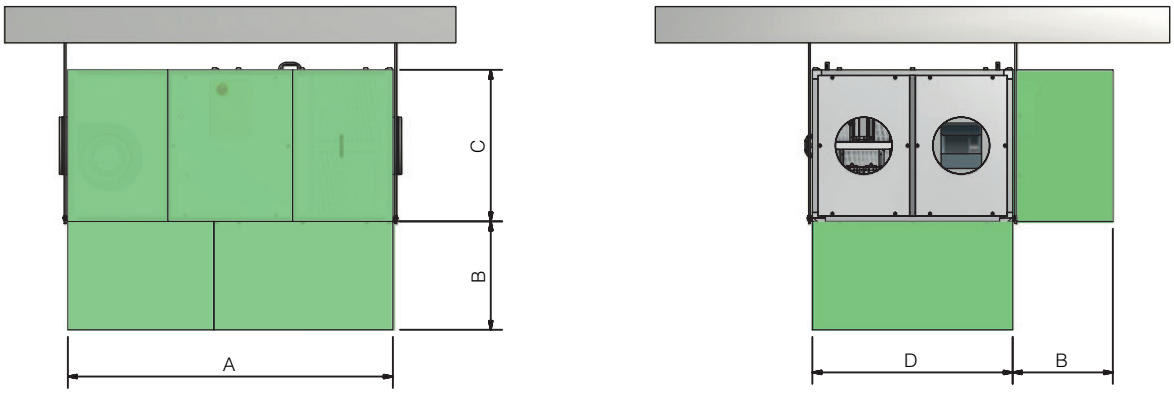
Minimum required space for maintenance (mm)



UNIT	Dimensions [mm]			
	A	B	C	D
SUR-ED H 1	1420	600	450	900
SUR-ED H 2	1420	600	550	900
SUR-ED H 2+	1800	800	640	1100
SUR-ED H 3	1800	800	840	1100
SUR-ED H 4/5	2180	800	1050	1340

CEILING INSTALLATION

Minimum required space for maintenance (mm)



UNIT	Dimensions [mm]			
	A	B	C	D
SUR-ED H 1	1420	600	450	900
SUR-ED H 2	1420	600	550	900

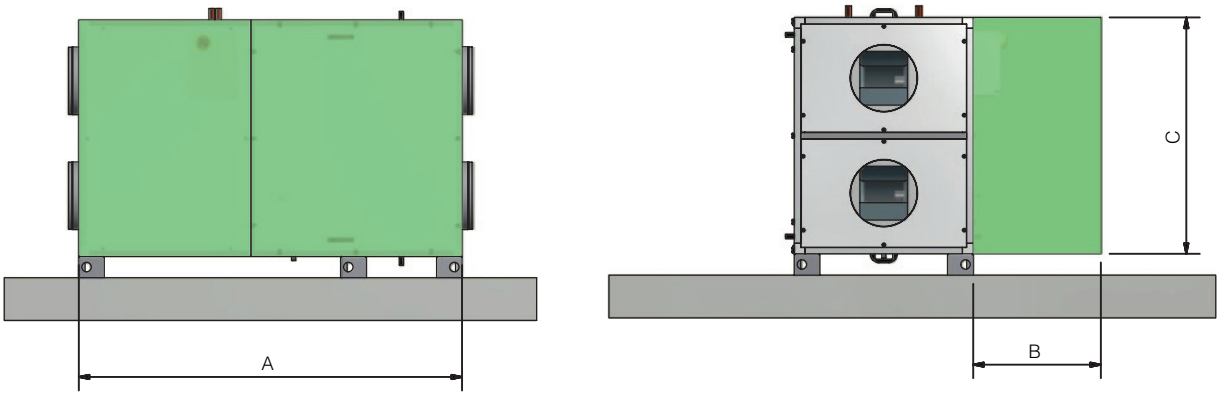
The ceiling installation for 3-4-5 size of SUR-ED H it is not recommended. The manufacturer is not responsible for injury to persons or damages to things in case of this type of installation.

CAUTION: The operations of inspection of the heat exchanger for these sizes can not be made manually for the high weight of the same which would result in an unacceptable level of risk.

INSTALLATION SUR-ED V

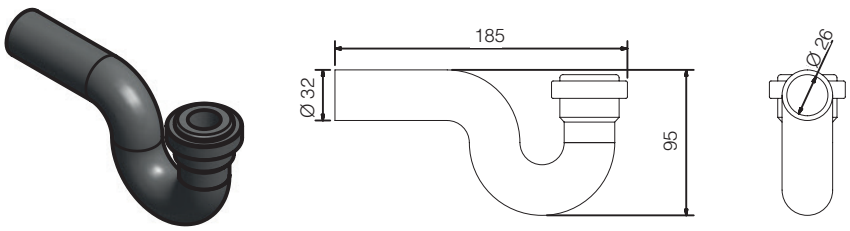
FLOOR INSTALLATION

Minimum required space for maintenance (mm)



UNIT	Dimensions [mm]		
	A	B	D
SUR-ED V 1	1420	600	900
SUR-ED V 2	1420	600	900
SUR-ED V 2+	1800	800	1110
SUR-ED V 3	1800	800	1110
SUR-ED V 4/5	2180	800	1340

STANDARD SIPHON (MM)

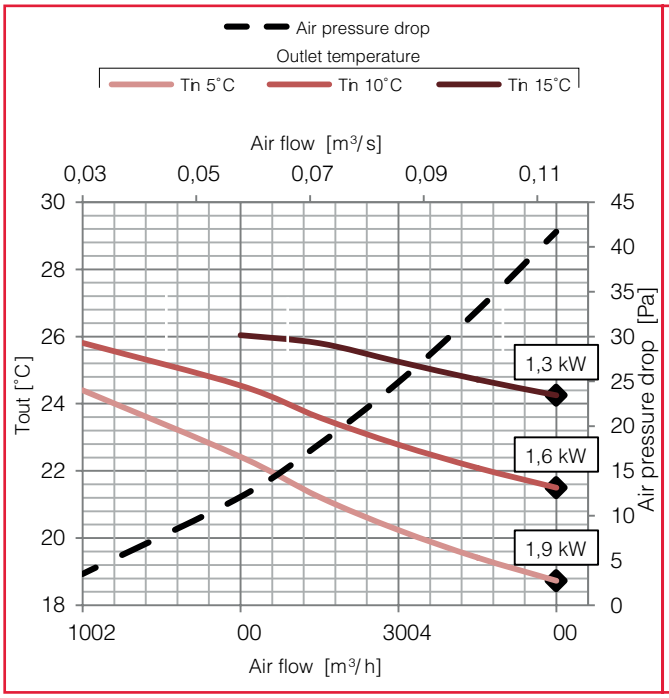


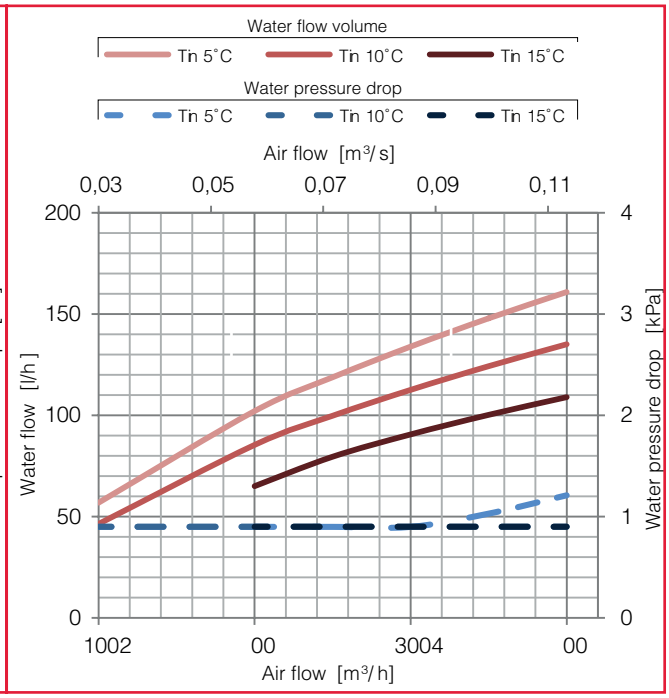
N.B. : predict 1 additional siphon if there is the cold water coil BA-AF / AC or DX gas (duct)

COILS SUR-ED 1

Heating water coil (45°C/35°C)

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

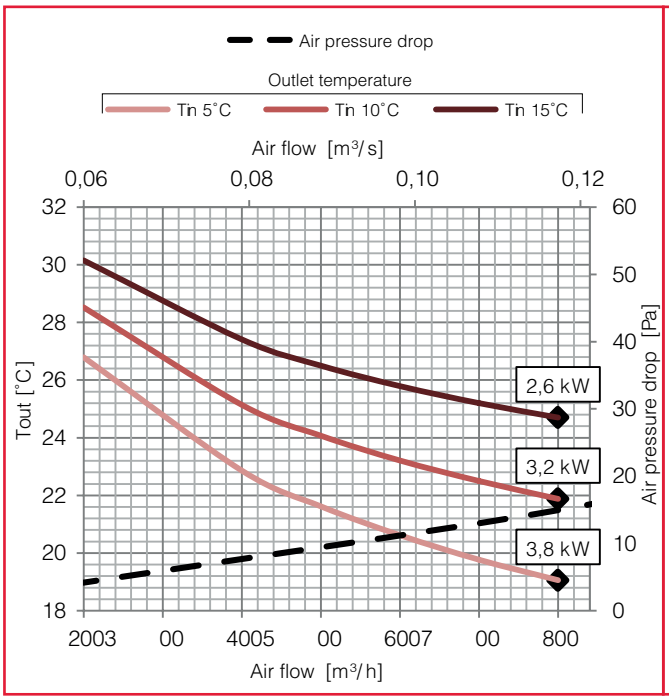


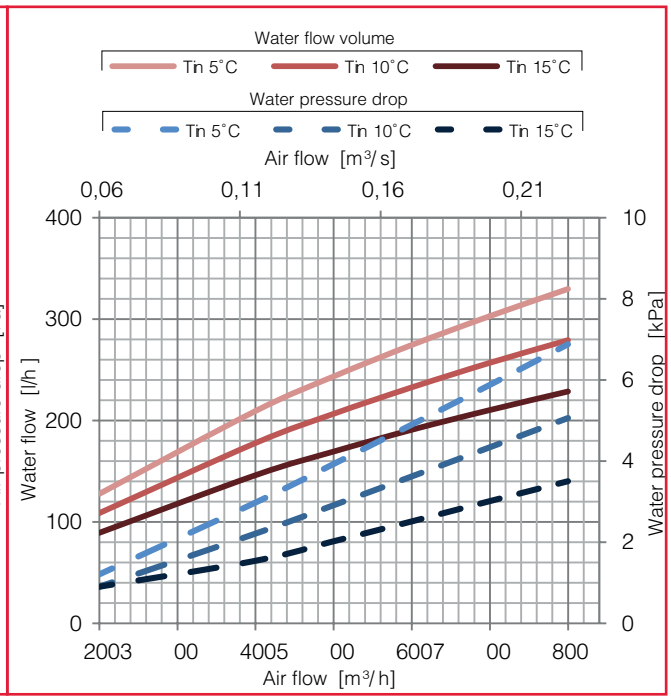


COILS SUR-ED 2

Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]	TUBES	FINSF	RAME
1/2"	2	2,5	1	Cu	Al	Fe Zn

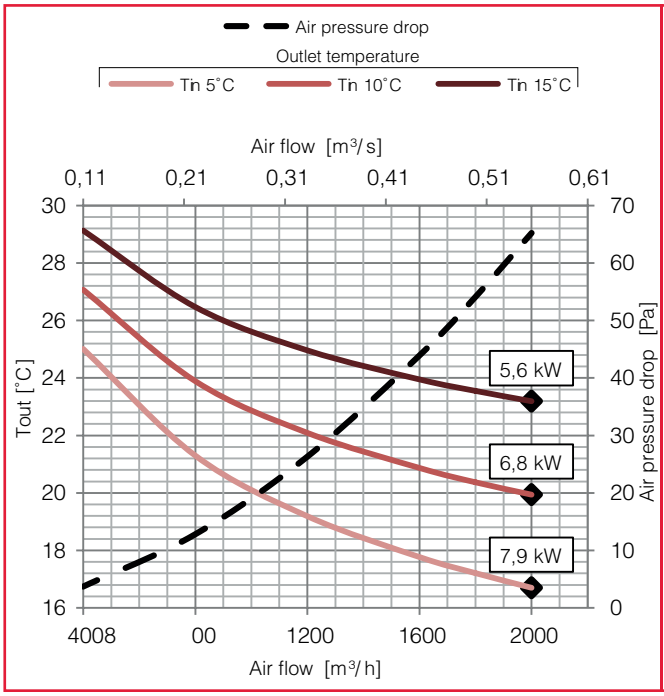


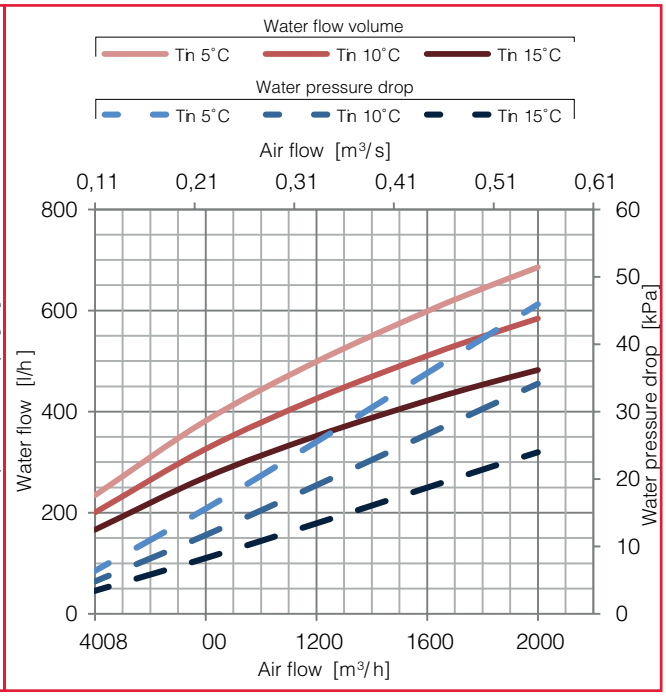


COILS SUR-ED 2+/3

Heating water coil (45°C/35°C)

				MATERIALS		
Ø WATER ["gas]	N. ROWS	FIN PITCH [mm]	INT.VOL. [dm³]	TUBES	FINSF	RAME
1/2"	2	3,0	2	Cu	Al	Fe Zn

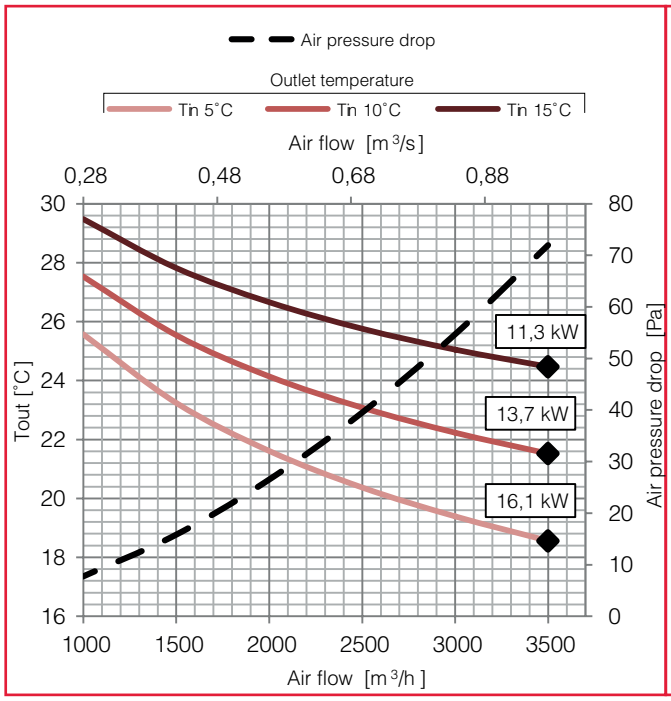


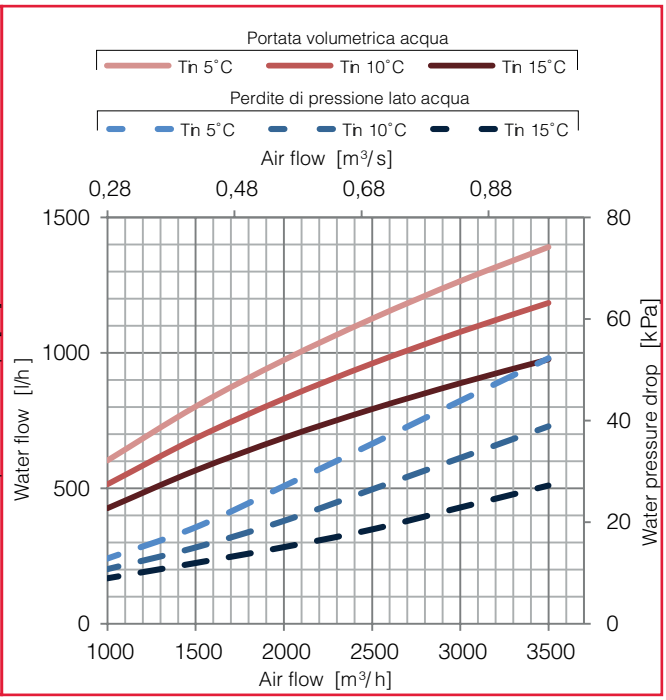


COILS SUR-ED 4/5

Heating water coil (45°C/35°C)

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



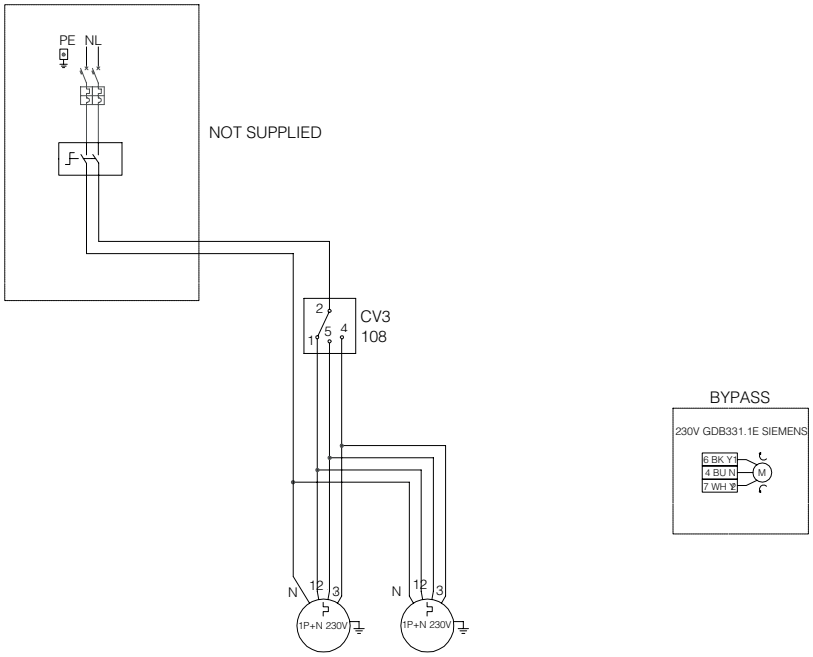


ELECTRICAL HEATER

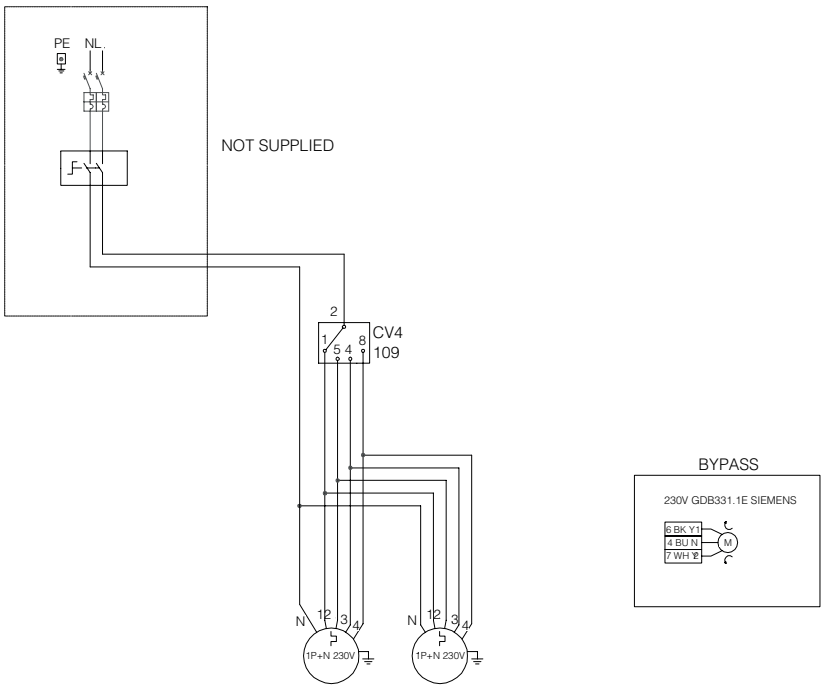
ELECTRICAL DATA RESISTANCE OF PRE / POST HEATING				
Unit	Power Supply	Power [kW]	Current [A]	N. stages
SUR-ED 1	230V, 50Hz,1F	2	8,7	1
SUR-ED 2	230V, 50Hz,1F	4	17,4	1
SUR-ED 2+ (PRE)	230V, 50Hz,1F	4	17,4	1
SUR-ED 2+ (POST)	230V, 50Hz,1F	6	26,1	1
SUR-ED 3	230V, 50Hz,1F	6	26,1	1
SUR-ED 4	230V, 50Hz,1F	8	34,8	1
SUR-ED 4	400V, 50Hz,3F	8	11,6	1
SUR-ED 5	400V, 50Hz,3F	12	17,4	1

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

CV3



CV4



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