Utek

indoor air quality and energy saving

TECHNICAL DATA

UNIT	ENERGETIC CLASS
DEH-V 1 DEH-V 1- HYDRONIC	B
DEH-V 2 DEH -V 2- HYDRONIC	A

UNIT	ENERGETIC CLASS
DEH-V 1- ENT. DEH-V 1- ENT.- HYDRONIC	B
DEH-V 2- ENT. DEH-V 2- ENT.- HYDRONIC	B

DEH-V

HEAT RECOVERY VENTILATION UNITS of CLIMATIZATION and DEHUMIDIFICATION

DEH-V

Residential heat recovery ventilation unit with dehumidification in combination with radiant cooling systems. The unit is able to perform the dehumidification function of both the air contained in the volumes on which the machine is installed and the new air. DEH-V has been designed to be used in combination with radiant cooling systems, but, it can also be used independently. The relative humidity probe integrated into the unit allows DEH-V to activate the dehumidification function autonomously or at the request of the external control system. Thanks to the water coil, DEH-V, it can regulate the supply air temperature thus avoiding the main heating / cooling system having to deal with the renewal air.

- 70% (F7) ePM1 filter on supply air flow, 65% Coarse filters (G4) on extraction and 40% Coarse filters (G2) on recirculation air flow
- Vertical configuration for floor or wall installation

PERFORMANCES

Range: nr. 2 models:

- DEH-V 1 with air flow 300-150 m³/h
- DEH-V 2 with air flow 500-250 m³/h

Range: nr. 2 models with enthalpy heat exchanger:

- DEH-ENTHALPIC 1 with air flow 300-150 m³/h
- DEH-ENTHALPIC 2 with air flow 500-250 m³/h

Both versions (with sensitive or enthalpy exchanger) are available with a water coil only, without refrigeration circuit (DEH-HYDRONIC).

STRUCTURE

- External double-paneled plastofilmed structure insulated sandwich with polyurethane foam (25 mm thick)
- Aluzinc® for the inside (internally isolated)
- Condensate collection tanks in Aluzinc® and condensate drains in the lower part
- Basic configuration: microprocessor control electronic and electrical panel pre-wired on board of the unit (plug & play)
- Configuration with CO2 probe for automatic management of the renewal air flow
- Refrigerant circuit with hermetic compressor (alternative piston)
- Internal recirculation damper

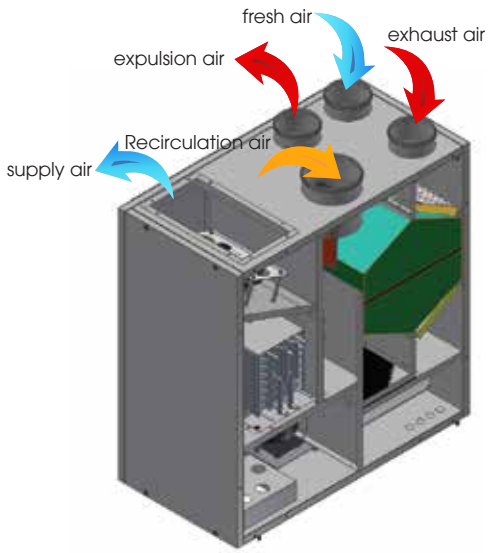
CONTROLS

DEH-V dehumidifiers are delivered in the plug & play version, with LCD remote terminal. The control allows:

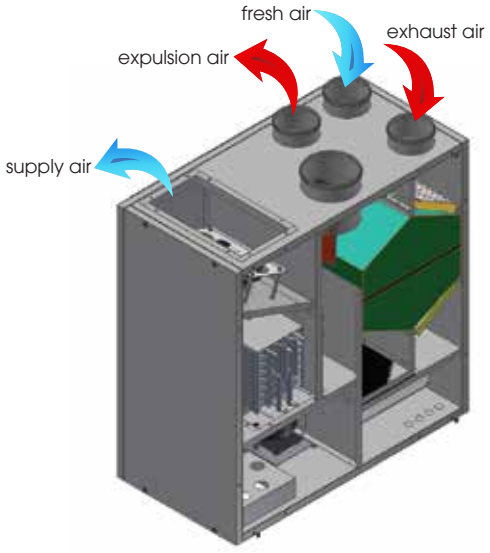
- select the fan speed manually or in automatic through chrono weekly program or CO2 probe (optional);
- enable or disable the relative humidity probe present as standard for the management of dehumidification;
- configure a digital input for start and stop dehumidification (management of dehumidification by remote system, for example from the control unit of the radiant system);
- manage summer and winter thermal integration (through the use of an optional 3-way valve);
- configure the defrost management of the exchanger heat. Possibility of home automation interface Modbus.

For a more complete view of the characteristics of the control systems, refer to the respective manuals.

DEHUMIDIFICATION CONFIGURATION top view



VMC CONFIGURATION top view

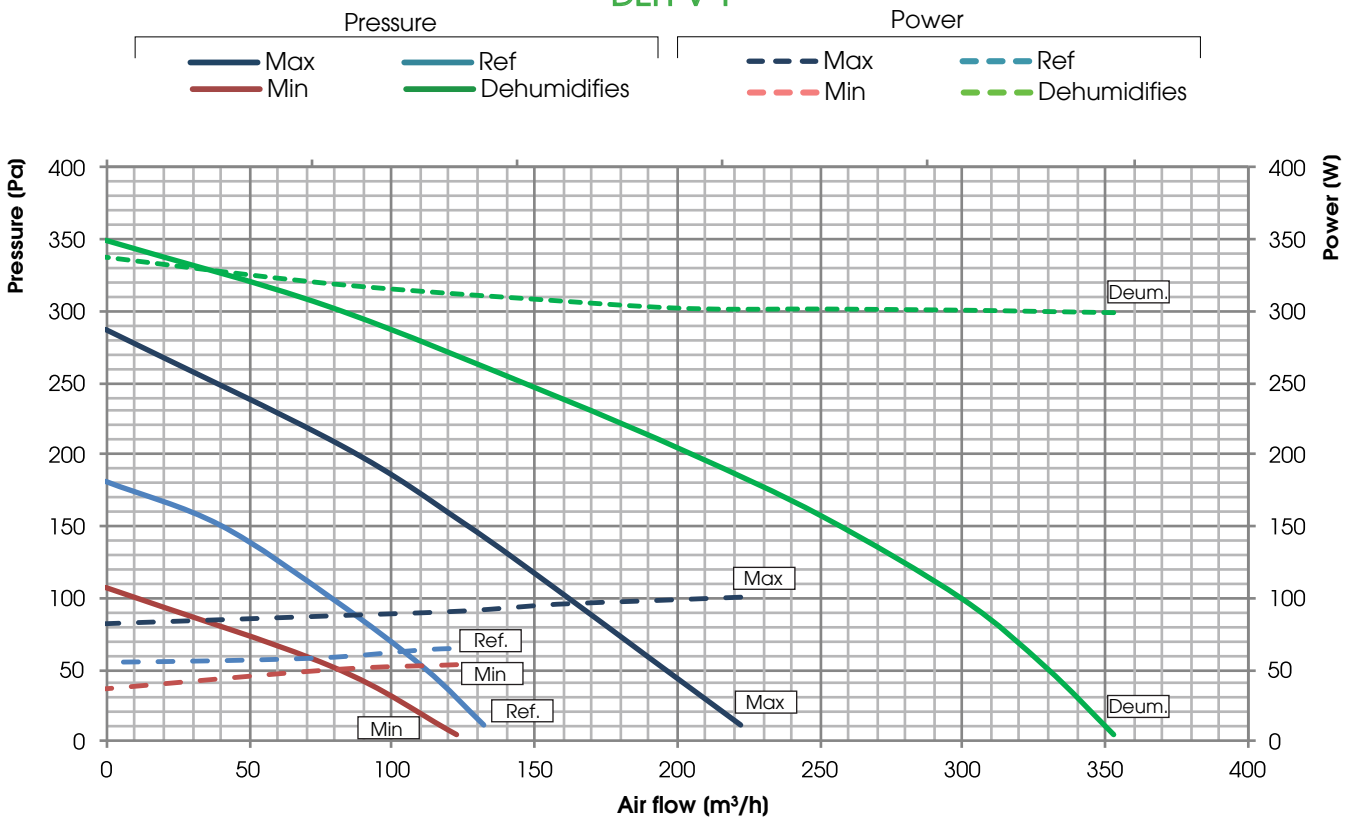


PERFORMANCES (UNI EN 13141-7)

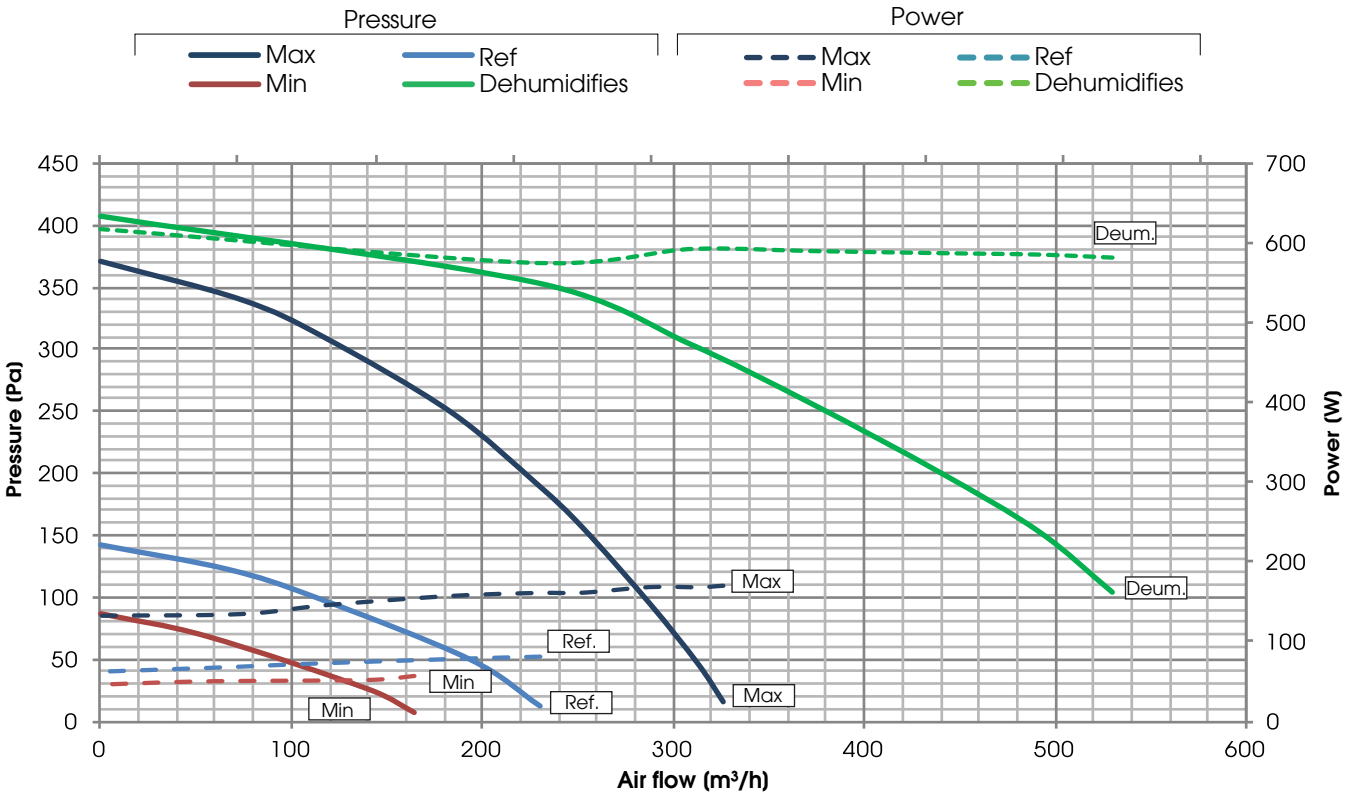
The unit must be ducted properly: UTEK authorizes the use only according to its performance diagram shown into this catalogue

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

DEH-V 1



DEH-V 2



PERFORMANCES (UNI EN 13141-7)

The unit must be ducted properly: UTEK authorizes the use only according to its performance diagram shown into this catalogue

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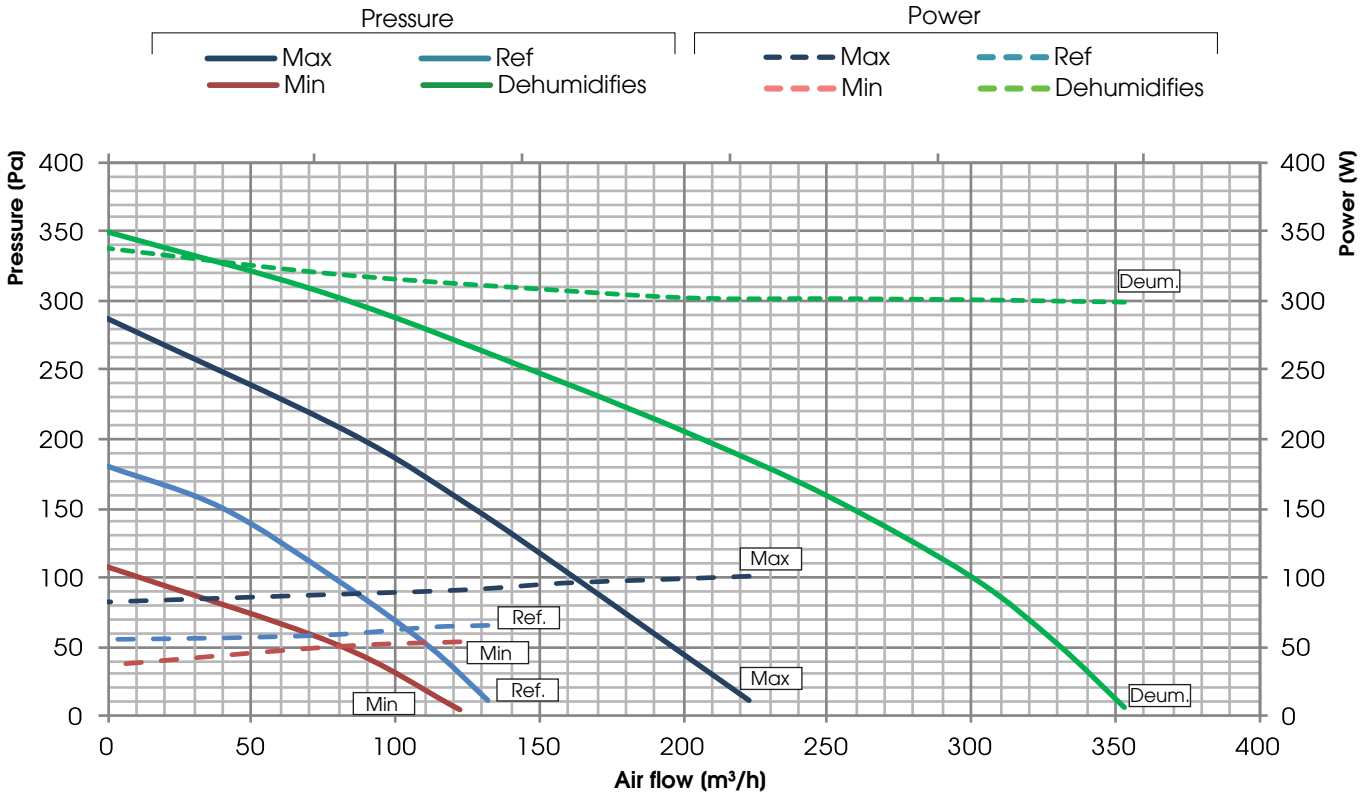
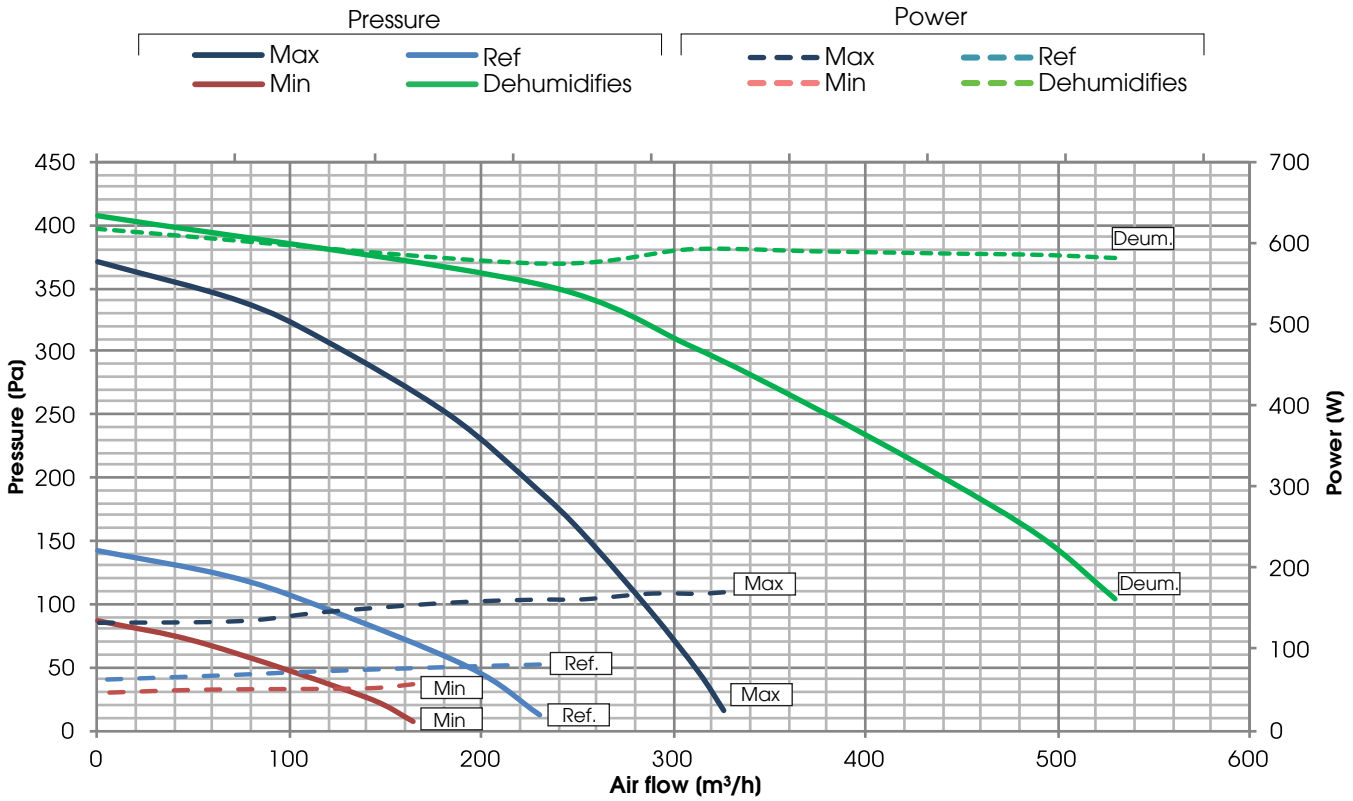
DEH-V ENTHALPIC 1



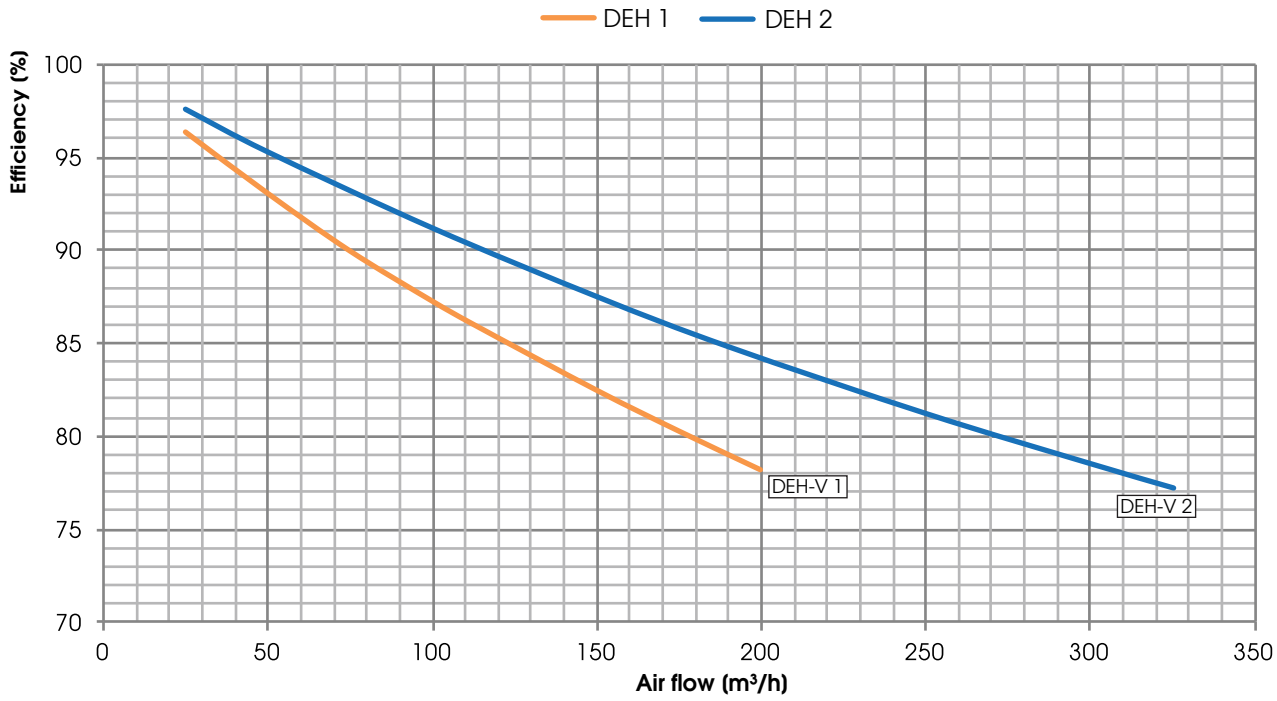
DEH-V ENTHALPIC 2



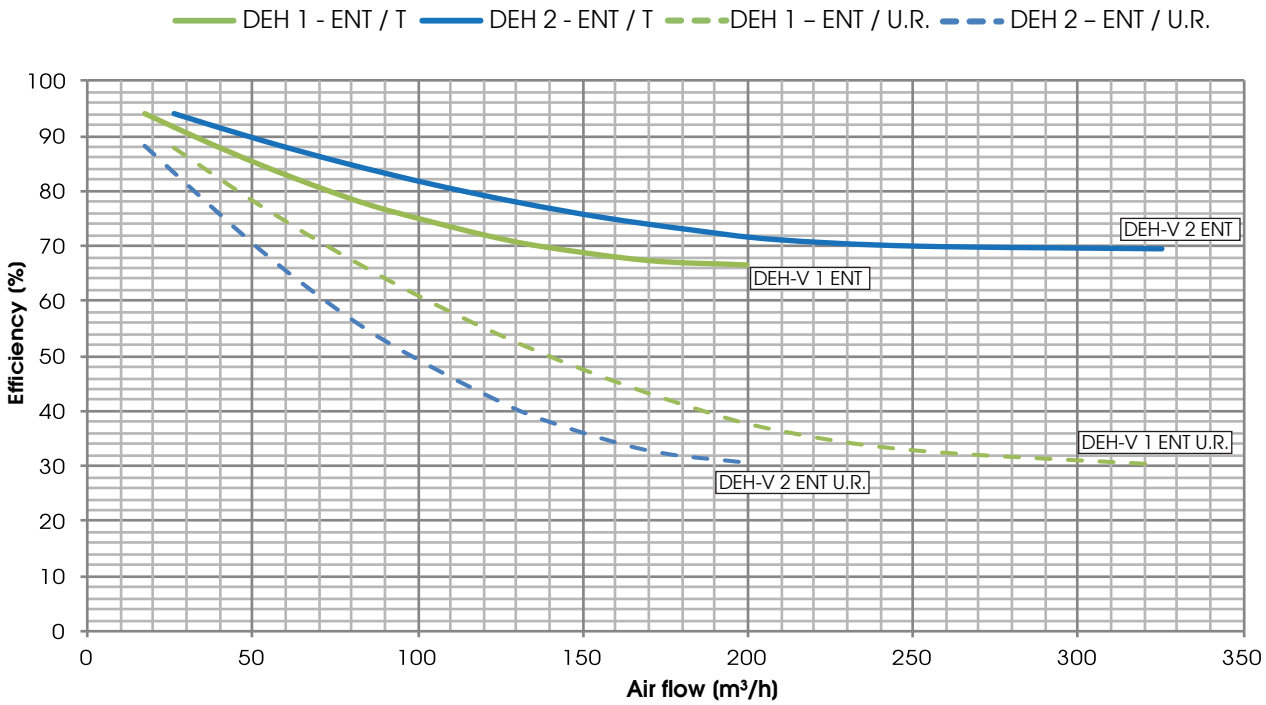
HEAT RECOVERY PERFORMANCE (sensible efficiency)

Values refered to the following conditions (UNI EN 13141-7): Tbs external air 7°C; U.R. esternal 72%; Tbs enviorment 20°C; U.R. enviorment 28%

DEH-V



DEH-V ENTHALPIC



T = temperature, sensible heat recovery / U.R = relative humidity

DEH 1 (all)

TEST LEAKAGE according UNI EN 13141-7

LEAKAGE	TEST CONDITIONS	CLASS
OUTDOOR	Positive pression 250 Pa	A2
OUTDOOR	Negative pression 250 Pa	A2
INDOOR	Pressure difference100 Pa	A2

DEH 2 (all)

TEST LEAKAGE according UNI EN 13141-7

LEAKAGE	TEST CONDITIONS	CLASSE
OUTDOOR	Positive pression 250 Pa	A2
OUTDOOR	Negative pression 250 Pa	A2
INDOOR	Pressure difference100 Pa	A2

NOISE LEVEL

Lw Sound power level taken in accordance to UNI EN ISO 3741 CLASS 1

	NOISE FROM THE CASE (dB)							
Unit DEH-V 1 NO Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	54,0	61,8	59,9	51,7	48,2	38,7	30,2	59,6
REF	49,7	55,8	51,5	45,1	42,4	31,9	23,1	52,3

	NOISE IN THE SUPPLY AIR DUCTS (dB)							
Unit DEH-V 1 NO Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	71,7	63,3	54,4	43,2	29,5	29,8	24,2	58,4
REF	65,3	55,0	47,3	38,4	23,7	25,3	21,1	51,3

	NOIS E I N THE EXHAUST AIR DUCTS (Hz)							
Unit DEH-V 1 NO Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	63,1	68,1	67,1	41,9	40,3	48,4	39,1	65,6
REF	54,1	61,6	56,8	35,5	33,6	41,0	28,7	56,5

	NOISE FROM THE CASE (dB)							
Unit DEH-V 1 Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	53,7	61,7	60,5	50,6	47,7	37,3	26,8	59,8
REF	49,7	56,4	51,9	44,2	42,2	30,8	21,4	58,6

	NOISE IN THE SUPPLY AIR DUCTS (dB)							
Unit DEH-V 1 Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	72,3	63,7	57,0	44,6	35,0	38,6	31,3	59,6
REF	64,3	55,1	50,3	39,2	28,5	30,8	22,7	51,9

	NOISE FROM THE CASE (dB)							
Unit DEH-V 2 NO Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	54,4	58,4	52,8	46,1	51,4	38,9	30,5	56,3
REF	45,9	52,8	45,4	43,2	39,5	30,0	22,0	48,9

	NOISE IN THE SUPPLY AIR DUCTS (dB)							
Unit DEH-V 2 NO DEUMIDIFICA	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	76,8	51,8	55,8	47,4	37,2	36,8	30,6	61,6
REF	65,8	49,5	49,1	39,0	30,1	28,0	24,9	51,9

	NOIS E I N THE EXHAUST AIR DUCTS (Hz)							
Unit DEH-V 2 NO Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	66,0	58,8	59,8	40,9	45,2	47,3	42,1	59,0
REF	52,8	50,6	50,8	36,2	39,2	39,5	28,6	50,2

	NOISE FROM THE CASE (dB)							
Unit DEH-V 2 Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	56,2	58,8	58,9	50,9	51,2	43,0	30,9	59,1
REF	51,4	56,8	45,9	45,5	44,4	33,0	23,0	52,1

	NOISE IN THE SUPPLY AIR DUCTS (dB)							
Unit DEH-V 2 Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L_w dB(A)
MAX	78,8	50,9	64,7	47,6	44,3	47,1	37,6	65,4
REF	69,8	50,8	53,5	46,0	35,1	37,3	24,7	56,1

ELECTRICAL DATA

	FAN			UNIT		
		Supply	Current max	Supply	Current max	Insulation class
DEH-V 1	Expulsion Supply	230 V, 50/60 Hz 1F	2,10 A	230V, 50 Hz, 1F	3,5 A	IP 44 IP 54
DEH-V 2	Expulsion Supply	230 V, 50/60 Hz 1F	4,90 A	230V, 50 Hz, 1F	7,5 A	IP 54 IP 54

maximum compressor current; for actual consumption see the graphs, where:
. dotted curves MAX, REF and MIN = consumption in VMC phase (total 2 fans)
. dotted curve DEUM = consumption during the dehumidification phase (total 2 fans + compressor)

VERSION WITH COMPRESSOR

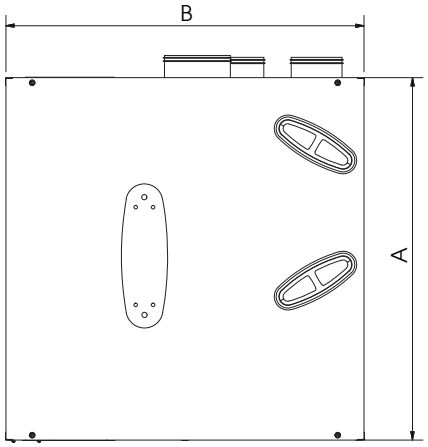
UNIT	Indoor air			Outdoor air			Water					Cooling capacity			
	Air flow (m³/h)	Temp (°C)	Umidity (%)	Air flow (m³/h)	Temp (°C)	Umidity (%)	Water flow H_2O (l/h)	Input (°C)	Output (°C)	ΔT (°C)	ΔP (kPa)	Coil H_2O (W)	Compressor (W)	Tot. (W)	Condensate l/day
DEH-V 1	150	26	55	150	33	55	200	15 18 21	19,4 21,2 23,4	4,4 3,2 2,4	4	990 730 560	988 987 1017	1978 1717 1577	26,8 20,7 17,3
DEH-V 2	250	26	55	250	33	55	350	15 18 21	19,8 21,9 23,9	4,8 3,9 2,9	3	1950 1610 1190	1542 1607 1608	3492 3217 2798	46,0 33,1 30,0

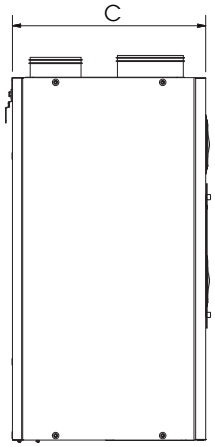
HYDRONIC VERSION (dehumidifies only with H_2O battery)

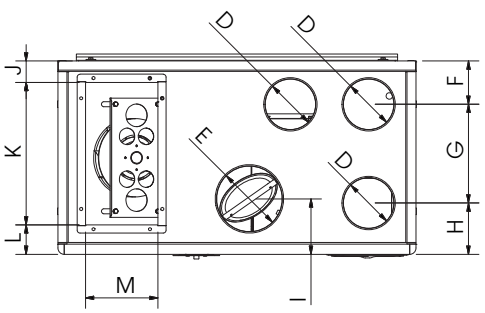
UNIT	Indoor air			Outdoor air			Water					Cooling capacity			
	Air flow (m³/h)	Temp (°C)	Umidity (%)	Air flow (m³/h)	Temp (°C)	Umidity (%)	Water flow H_2O (l/h)	Input (°C)	Output (°C)	ΔT (°C)	ΔP (kPa)	Coil H_2O (W)	Compressor (W)	Tot. (W)	Condensate l/day
DEH-V HYD. 1	150	26	55	150	33	55	200 300 400	7,0	16,3 14,8 13,9	9,3 7,9 6,9	8 17 28	1970 2370 2610	- - -	1970 2370 2610	26,3 33,8 38,3
DEH-V HYD. 2	250	26	55	250	33	55	350 525 700	7,0	15,3 13,7 12,6	8,3 6,7 5,6	5 11 18	3360 4110 4530	- - -	3360 4110 4530	44,8 57,9 66,4

DIMENSIONS (mm) WEIGHT (kg)

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M
DEH-V 1	880	870	470	125	160	105	240	125	135	52	346	72	176
DEH-V 2	980	970	695	160	200	175	345	175	225	62	512	121	246



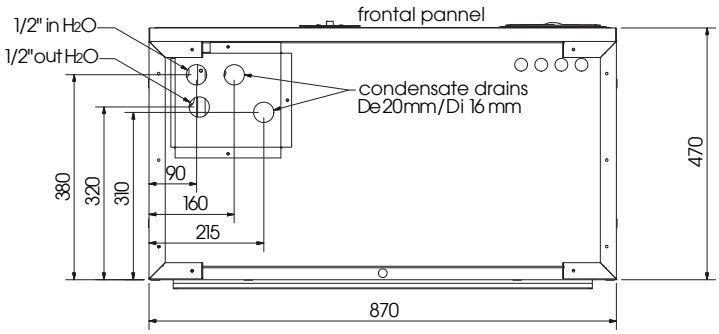


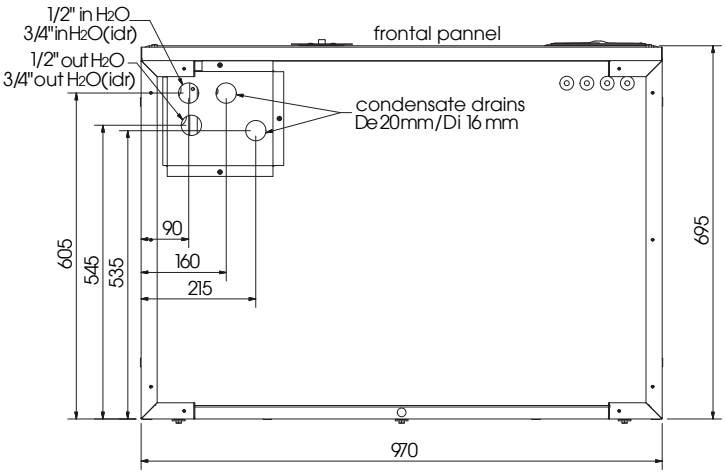


Weight:

DEH-V 1:	82 kg
DEH-V 2:	111,5 kg
DEH-V 1 - ENT:	85 kg
DEH-V 2 - ENT:	114,5 kg
DEH-V 1 HIDRONYC:	72 kg
DEH-V 2 HIDRONYC:	82 kg
DEH-V 1 - ENT - HIDRONYC:	76 kg
DEH-V 2 - ENT - HIDRONYC:	85 kg

Position of condensate drain connections

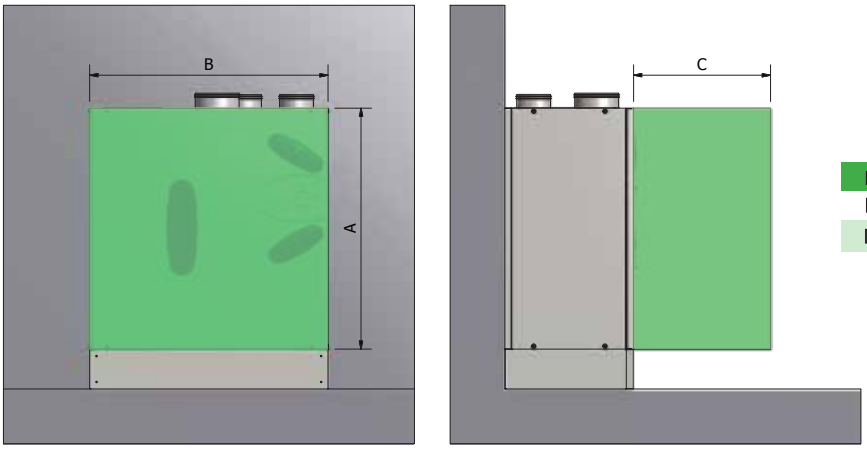




DEH-V INSTALLATION

FLOOR INSTALLATION

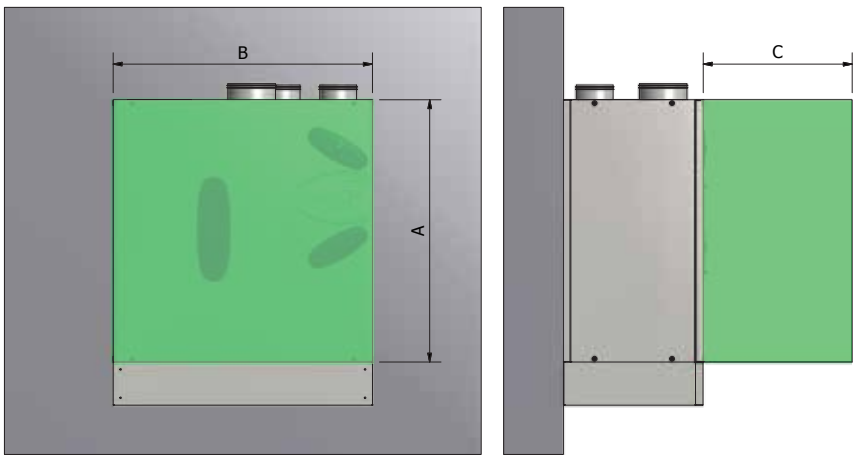
Minimum required space for maintenance (mm)



MODEL	A	B	C
DEH-V 1	880	870	470
DEH-V 2	980	970	700

WALL INSTALLATION

Minimum required space for maintenance (mm)

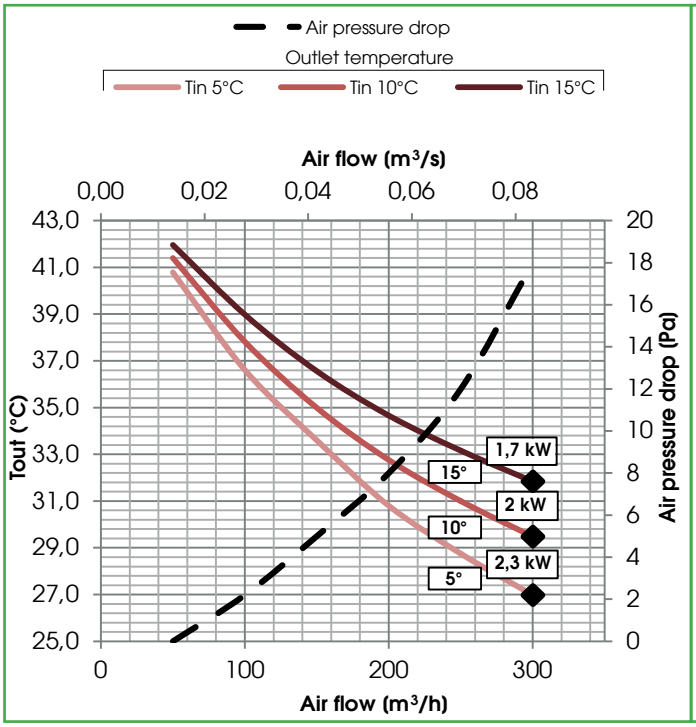


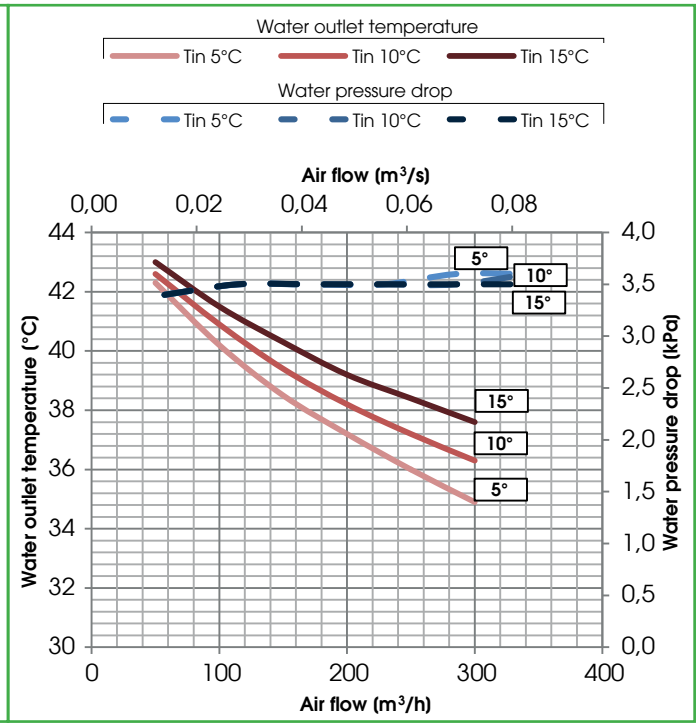
MODEL	A	B	C
DEH-V 1	880	870	470
DEH-V 2	980	970	700

The way to read the graphs is specified within the accessories techno-list.

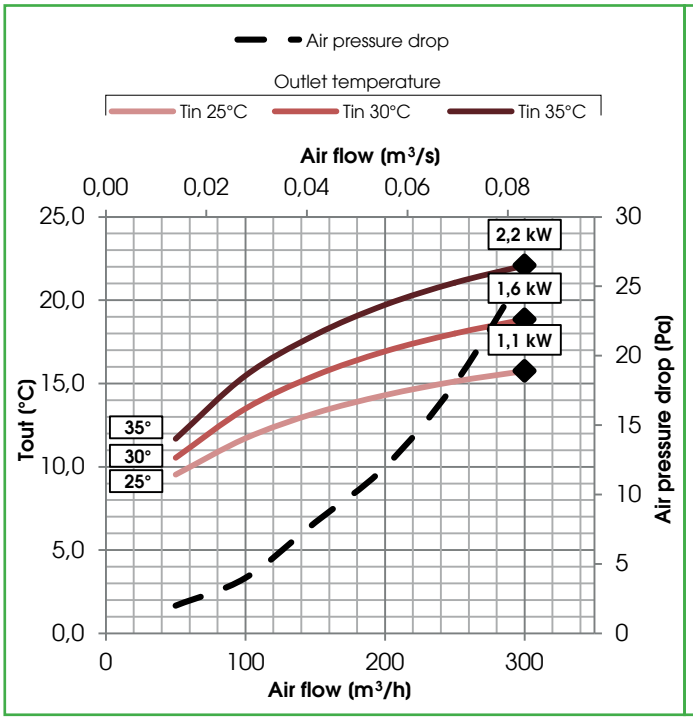
COILS DEH-V 1 / DEH-V 1 ENTHALPIC

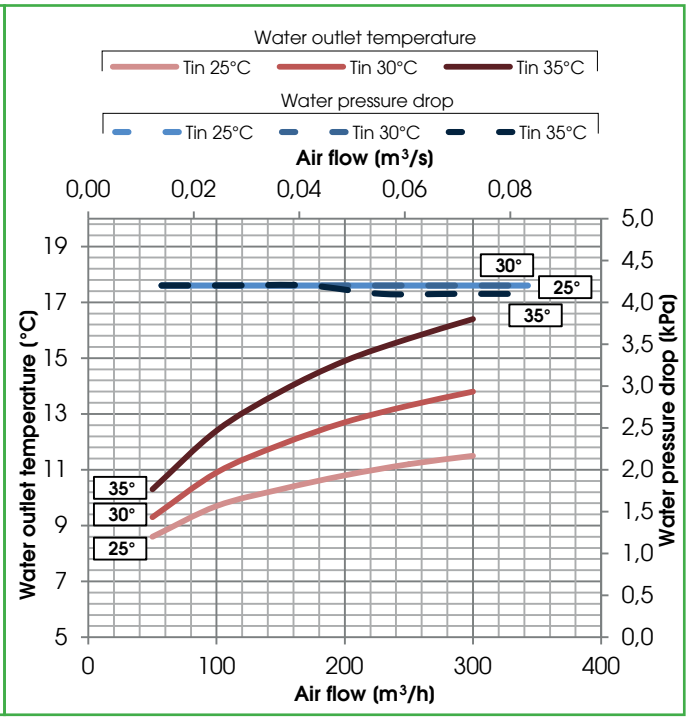
COIL (+45°C/+35°C)





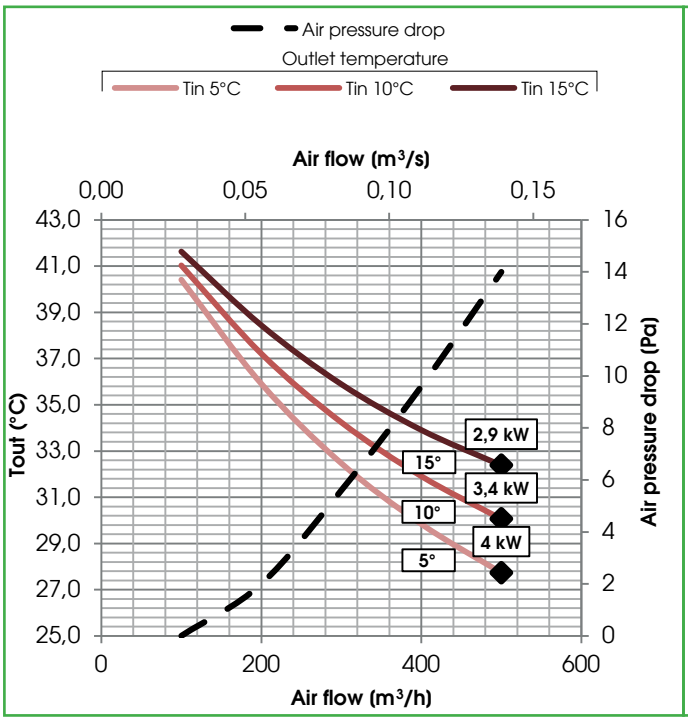
COIL (+7°C/+12°C)

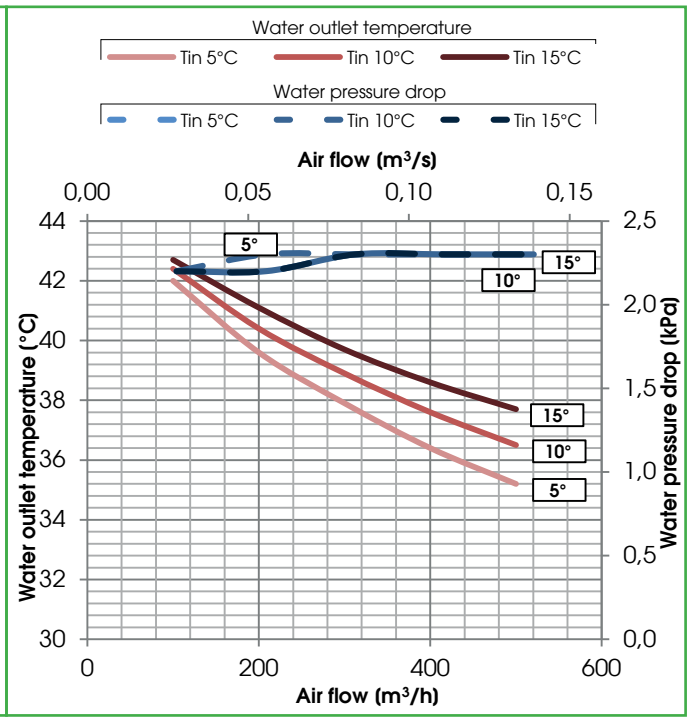




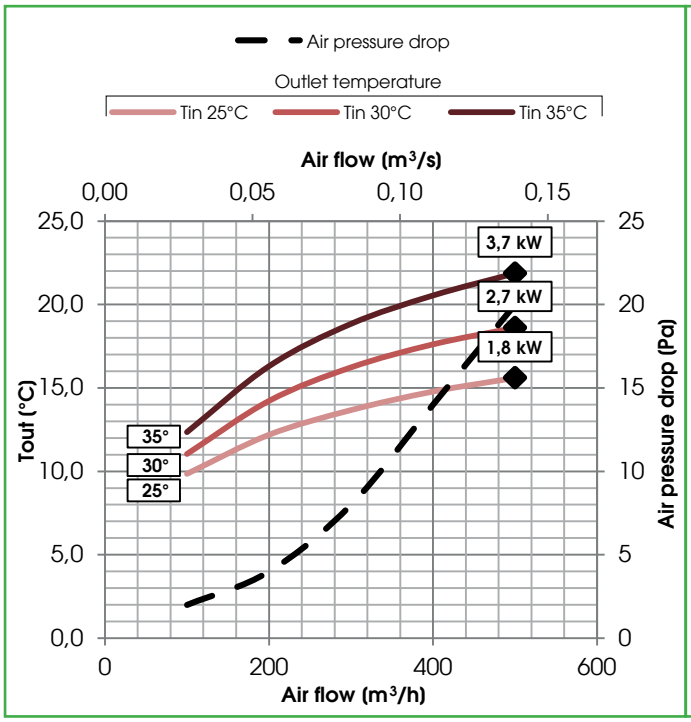
COILS DEH-V 2 / DEH-V 2 ENTHALPIC

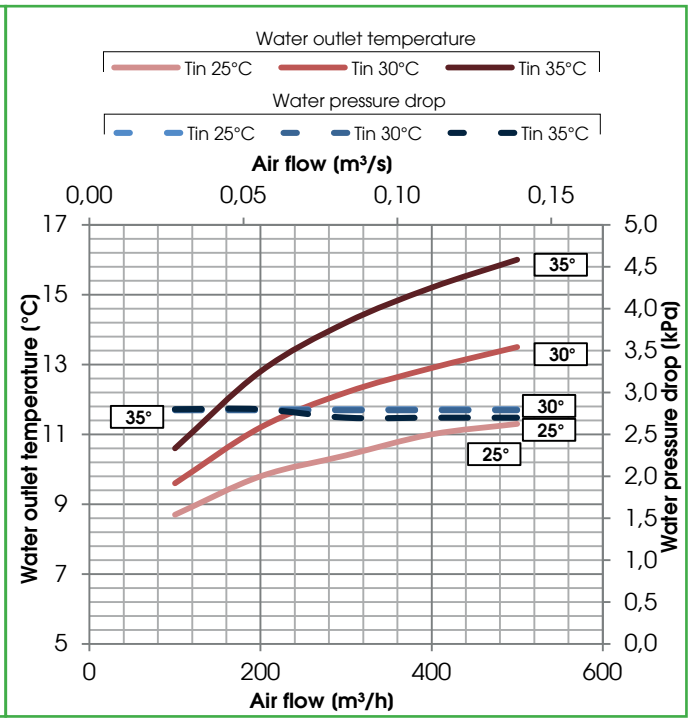
COIL (+45°C/+35°C)





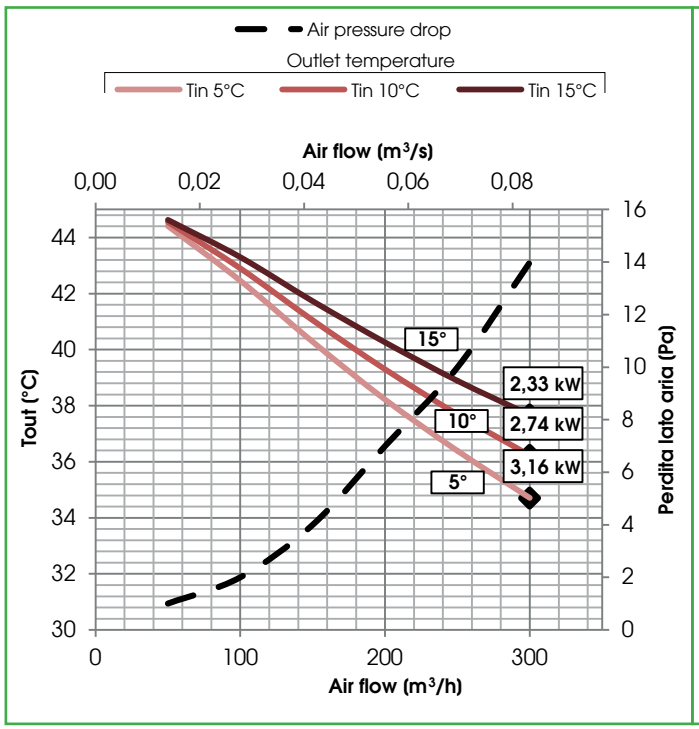
COIL (+7°C/+12°C)

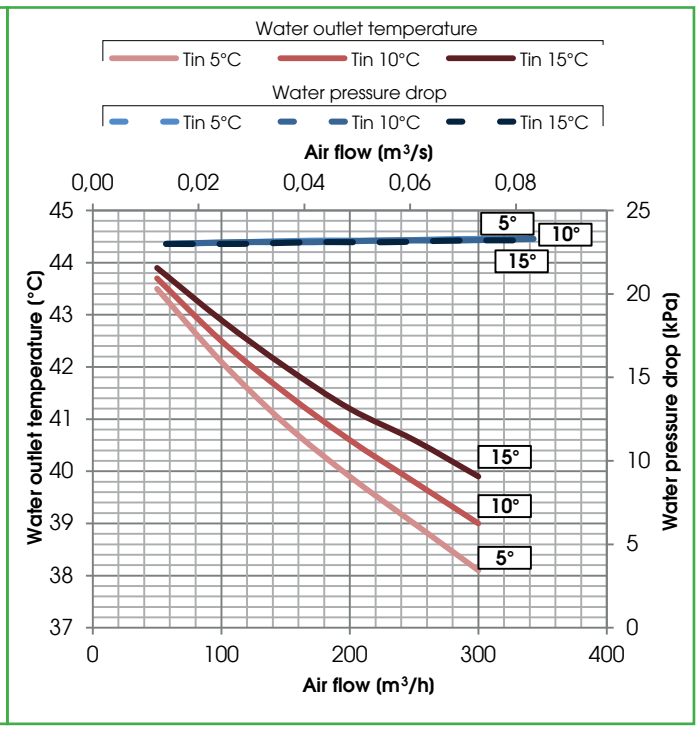




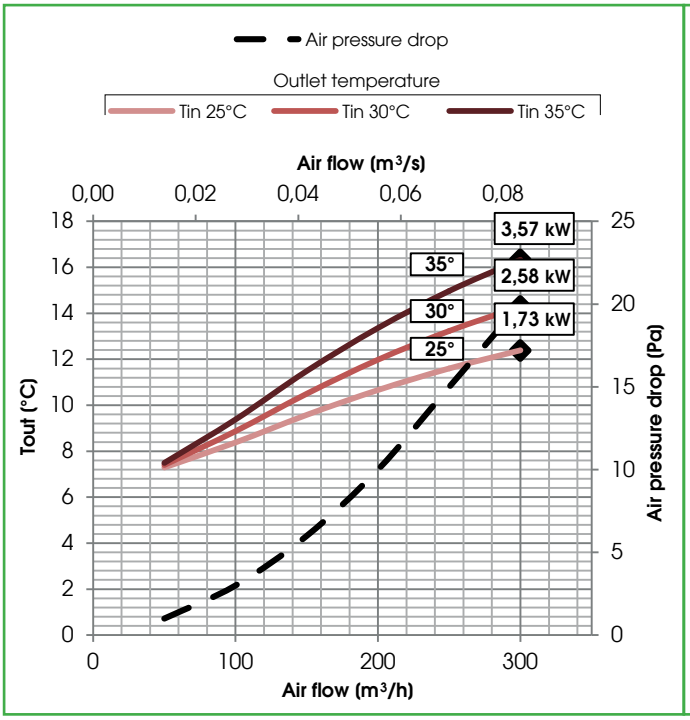
COILS DEH-V 1 HYDRONIC/ DEH-V 1 HYDRONIC ENTHALPIC

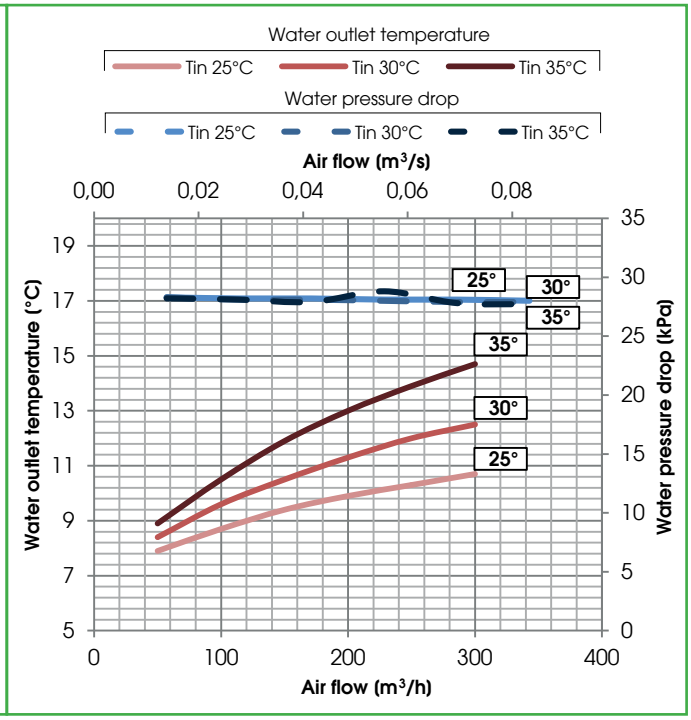
COIL (+45°C/+35°C)





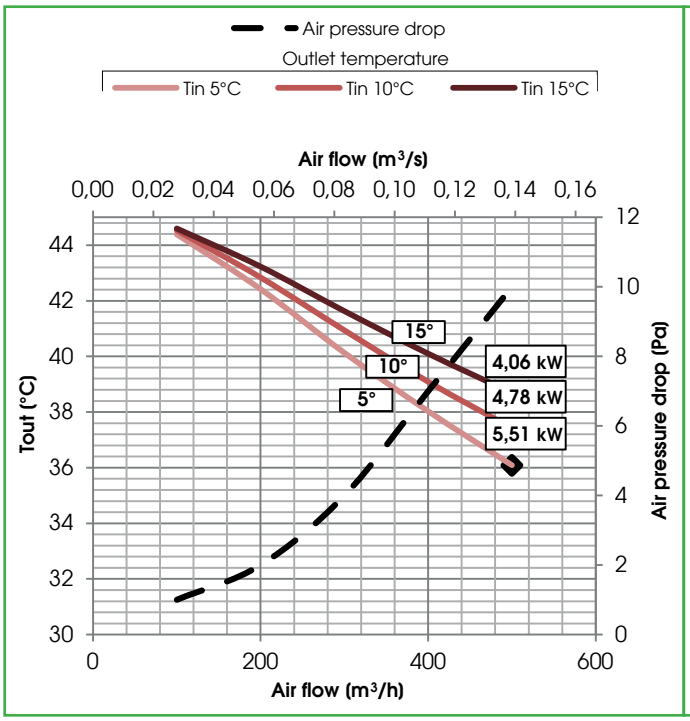
COIL (+7°C/+12°C)

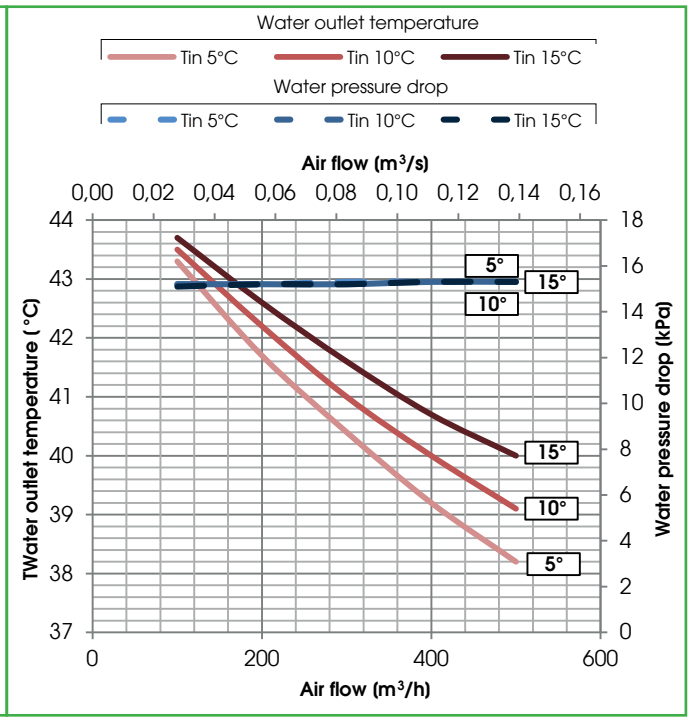




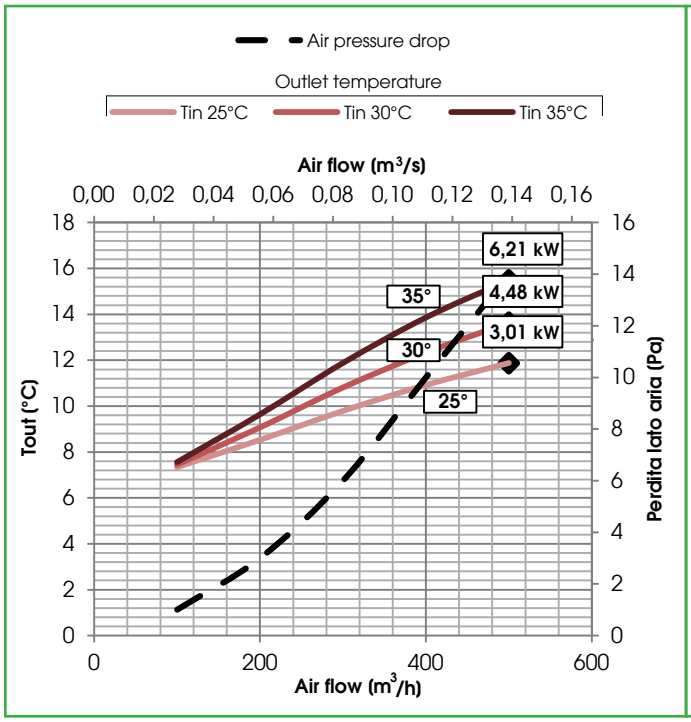
COILS DEH-V 2 HYDRONIC/ DEH-V 2 HYDRONIC ENTHALPIC

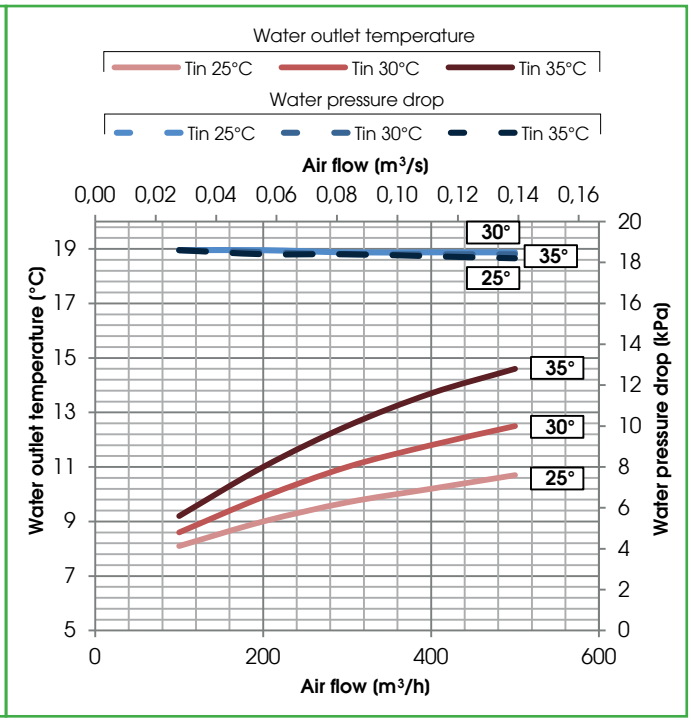
COIL (+45°C/+35°C)





COIL (+7°C/+12°C)





A	Manufacturer's name C.L.A. S.r.l.					
B	Manufacturer's model identifier		DEH-V 1	DEH-V 2	DEH-V 1 ENTHALPIC	DEH-V 2 ENTHALPIC
C	Specific energy consumption (SEC) (kWh/m².a)	COLD	-69,9	-72,7	- 63,1	- 69,4
		AVERAGE	-32,0	-35,2	- 28,5	- 32,4
		WARM	-7,6	-11,1	- 6,1	- 8,6
	SEC class		B	A	B	B
D	Declared typology		UVR - UVB	UVR - UVB	UVR - UVB	UVR - UVB
E	Type of drive installed		Variable speed	Variable speed	Variable speed	Variable speed
F	Type of heat recovery system		Recuperative	Recuperative	Recuperative	Recuperative
G	Thermal efficiency of heat recovery (%)		86,1	84,6	73,4	84,6
H	Maximum flow rate (m³/s)		0,045	0,075	0,045	0,079
I	Electrical power input at maximum flow rate (W)		128	255	128	255
I	Sound power level (Lwa) (dB)		52	49	52	49
K	Reference flow rate (m³/s)		0,031	0,053	0,031	0,054
L	Reference pressure difference (Pa)		50	50	50	50
M	SPI (W/m³/h)		0,567	0,406	0,567	0,406
N	Control factor CLTR		0,85	0,85	0,85	0,85
	Control typology		Clock control (no DCV)	Clock control (no DCV)	Clock control (no DCV)	Clock control (no DCV)
O	Declared maximum internal / external leakage rates (%)		6.3 / 7.2	6.3 / 4.7	6.3 / 7.2	6.2 / 4.6
P	Mixing rate of non-ducted bidirectional ventilation units (%)		-	-	-	-
Q	PPosition and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit		Filter warning is signaled on the display of the control system: the flashing writing "DirtyFilters" will appear. "To preserve the energy efficiency of the NRVU, it's recommended to replace the filters when signaled." Positioned near the filters inspection			
R	For unidirectional ventilation systems, instructions to install regulated supply/exhaust grilles in the façade for natural air supply/extraction		-			
S	Internet address for pre-/dis-assembly instructions		www.utek-air.it			
T	For non-ducted units only: the airflow sensitivity to pressure variations at + 20 Pa and – 20 Pa		-			
U	For non-ducted units only: the indoor/outdoor air tightness		-			
V	The annual electricity consumption (AEC) (kWh/a)		558	413	558	504
W	The annual heating saved (AHS) for each type of climate (kWh/a)		2046 (WARM)	2027 (WARM)	1890 (WARM)	2000 (WARM)
			8851 (COLD)	8769 (COLD)	8670 (COLD)	8080 (COLD)
			4525 (AVERAGE)	4483 (AVERAGE)	4180 (AVERAGE)	4430 (AVERAGE)

A	Manufacturer's name C.L.A. S.r.l.					
B	Manufacturer's model identifier		DEH-V 1 HYDRONIC	DEH-V 2 HYDRONIC	DEH-V 1 HYDRONIC HENTALPIC	DEH-V 2 HYDRONIC HENTALPIC
C	Specific energy consumption (SEC) (kWh/m².a)	COLD	-69,9	-72,7	- 63,1	- 69,4
		AVERAGE	-32,0	-35,2	- 28,5	- 32,4
		WARM	-7,6	-11,1	- 6,1	- 8,6
	SEC class		B	A	B	B
D	Declared typology		UVR - UVB	UVR - UVB	UVR - UVB	UVR - UVB
E	Type of drive installed		Variable speed	Variable speed	Variable speed	Variable speed
F	Type of heat recovery system		Recuperative	Recuperative	Recuperative	Recuperative
G	Thermal efficiency of heat recovery (%)		86,1	84,6	73,4	84,6
H	Maximum flow rate (m³/s)		0,045	0,075	0,045	0,079
I	Electrical power input at maximum flow rate (W)		128	255	128	255
I	Sound power level (Lwa)(dB)		52	49	52	49
K	Reference flow rate (m³/s)		0,031	0,053	0,031	0,054
L	Reference pressure difference (Pa)		50	50	50	50
M	SPI (W/m³/h)		0,567	0,406	0,567	0,406
N	Control factor CLTR		0,85	0,85	0,85	0,85
	Control typology		Clock control (no DCV)	Clock control (no DCV)	Clock control (no DCV)	Clock control (no DCV)
O			6.3 / 7.2	6.3 / 4.7	6.3 / 7.2	6.2 / 4.6
P	Mixing rate of non-ducted bidirectional ventilation units (%)		-	-	-	-
Q	PPosition and description of visual filter warning for RVUs intended for use with filters, including text pointing out the importance of regular filter changes for performance and energy efficiency of the unit		Filter warning is signaled on the display of the control system: the flashing writing "DirtyFilters" will appear. "To preserve the energy efficiency of the NRVU, it's recommended to replace the filters when signaled." Positioned near the filters inspection			
R	For unidirectional ventilation systems, instructions to install regulated supply/exhaust grilles in the façade for natural air supply/extraction		-			
S	Internet address for pre-/dis-assembly instructions		www.utek-air.it			
T	For non-ducted units only: the airflow sensitivity to pressure variations at + 20 Pa and – 20 Pa		-			
U	For non-ducted units only: the indoor/outdoor air tightness		-			
V	The annual electricity consumption (AEC) (kWh/a)		558	413	558	504
W	The annual heating saved (AHS) for each type of climate (kWh/a)		2046 (WARM)	2027 (WARM)	1890 (WARM)	2000 (WARM)
			8851 (COLD)	8769 (COLD)	8670 (COLD)	8080 (COLD)
			4525 (AVERAGE)	4483 (AVERAGE)	4180 (AVERAGE)	4430 (AVERAGE)

Dear Customer

Thanks for your attention to the product UTEK , designed and manufactured to ensure the real values to the User : Quality, Safety and Savings on working.

Made in Italy

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ISO 9001

CLA & UTEK reserves the right to at any time the necessary changes to improve products without prior notice .

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