




UNIT	CLASS
DEH 1	B
DEH 1-HIDRONIC	
DEH 2	B
DEH 2-HIDRONIC	
UNIT	CLASS
DEH 1-ENT.	B
DEH 1-ENT.-HIDRONIC	
DEH 2-ENT.	B
DEH 2-ENT.-HIDRONIC	



# DEH e DEH-HIDRONIC DEH-ENT. e DEH-ENT.-HIDRONIC



HEAT RECOVERY VENTILATION UNITS with INTEGRATED  
AIR/AIR HEAT PUMP (CLIMATIZATION and DEHUMIDIFICATION)



## DEH

Dehumidification unit and air change with heat recovery residential ventilation unit with heat recovery and dehumidification in combination with radiant cooling systems

- Ceiling installation
- Horizontal configuration

Range: n. 3 models:

- DEH-DEP with air flow rate 80-160 m<sup>3</sup>/h
- DEH-1 with air flow rate from 300 to 150 m<sup>3</sup> / h
- DEH-2 with air flow rate from 500 to 250 m<sup>3</sup> / h

## DESCRIPTION

zinc magnesium self-supporting panels, sides in double panels insulated with foam polyurethane, 23 mm thick, top and bottom sheet single (insulated), zinc magnesium drip tray condensation

- Electronically controlled EC motors
- Basic configuration: electronic microprocessor and electrical cabinet pre-wired on the machine (plug-n-play)
- Configuration with CO<sub>2</sub> probe for automatic control of the flow of fresh air (optional)
- Refrigerant circuit with hermetic compressor that uses refrigerant R134A
- **Installation inside buildings, with temperatures between + 0 ° and + 45 ° C**

## ELECTRIC FANS

- Electronic motors Fan EC plug fans 230V-1-50 / 60Hz high efficiency (ErP-2015)

## HEAT EXCHANGER

- Polypropylene exchanger counterflow high efficiency. **DEH is also available in enthalpy version to recover the latent heat (humidity) in addition to the sensible heat (temperature).**

## FILTERS

- Filters: air extraction / renewal / recirculation: class Coarse 65% (G4) / ePM1 70% (F7) / Coarse 65% (G4) (EN 779)

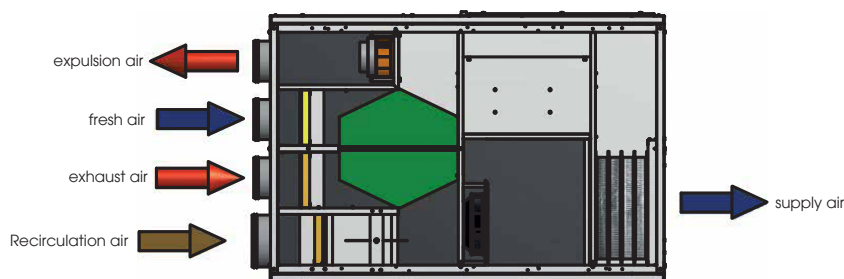
## CONTROL

DEH dehumidifiers are delivered in the plug & play version, with EVO remote terminal. The control allows you to:

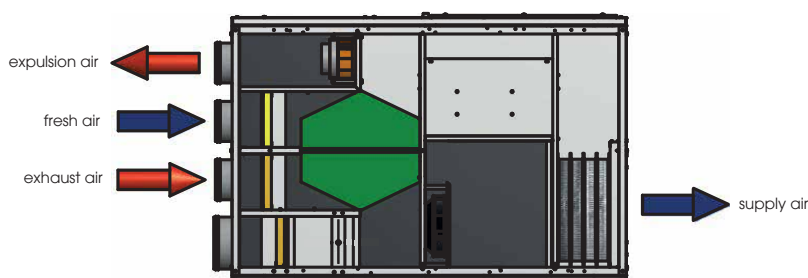
- Manual or automatic selection of fan speed via CO<sub>2</sub> probe (optional)
- One digital input for dehumidification start and stop (via remote system, for example from the control unit of the radiant system)
- Summer and winter thermal integration management (via 3-way valve, optional)
- Automatic heat exchanger frost prevention by unbalancing fans or electrical resistance
- Possibility of interfacing in home automation protocols via MOD-BUS RS485 (on request)
- Weekly chrono-thermostat
- Digital inputs with dedicated function; inputs = STOP EXTRACTION, remote ON-OFF; change of season; enabling integration / dehumidification; output = alarm generic, booster
- Total circulation activation, instead of partial (standard) acting on the fresh air damper with the motor modulating (optional)
- Manual season change from panel or entrance digital, or automatic from external T (T < 16 ° C = winter, T > 24 ° C summer, change to reaching set-point 1st time; T = 16 ÷ 24 ° C = the "origin" season follows)
- Remote viewing of all alarms via display EVO (on request)

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

DEHUMIDIFY CONFIGURATION view from above



VMC CONFIGURATION view from above

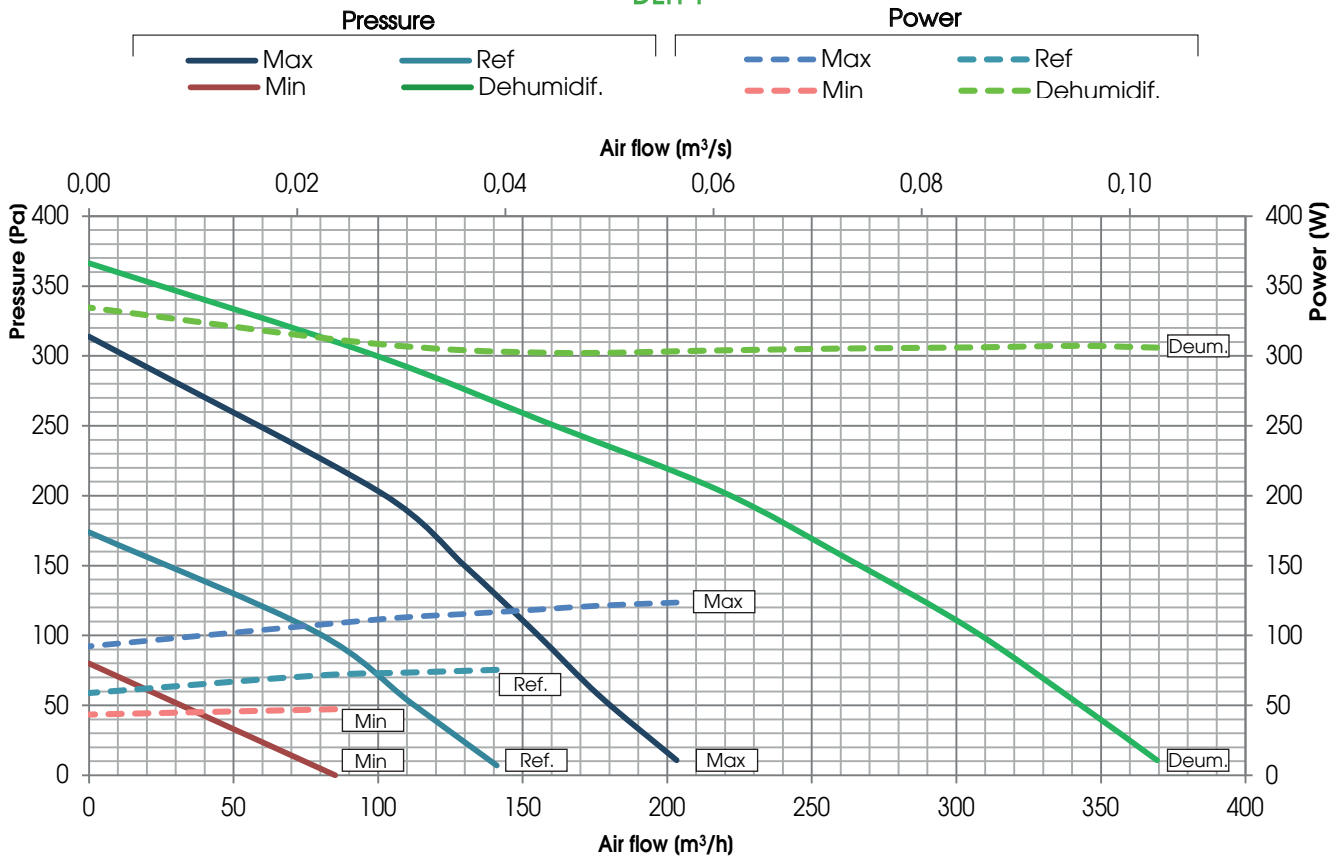




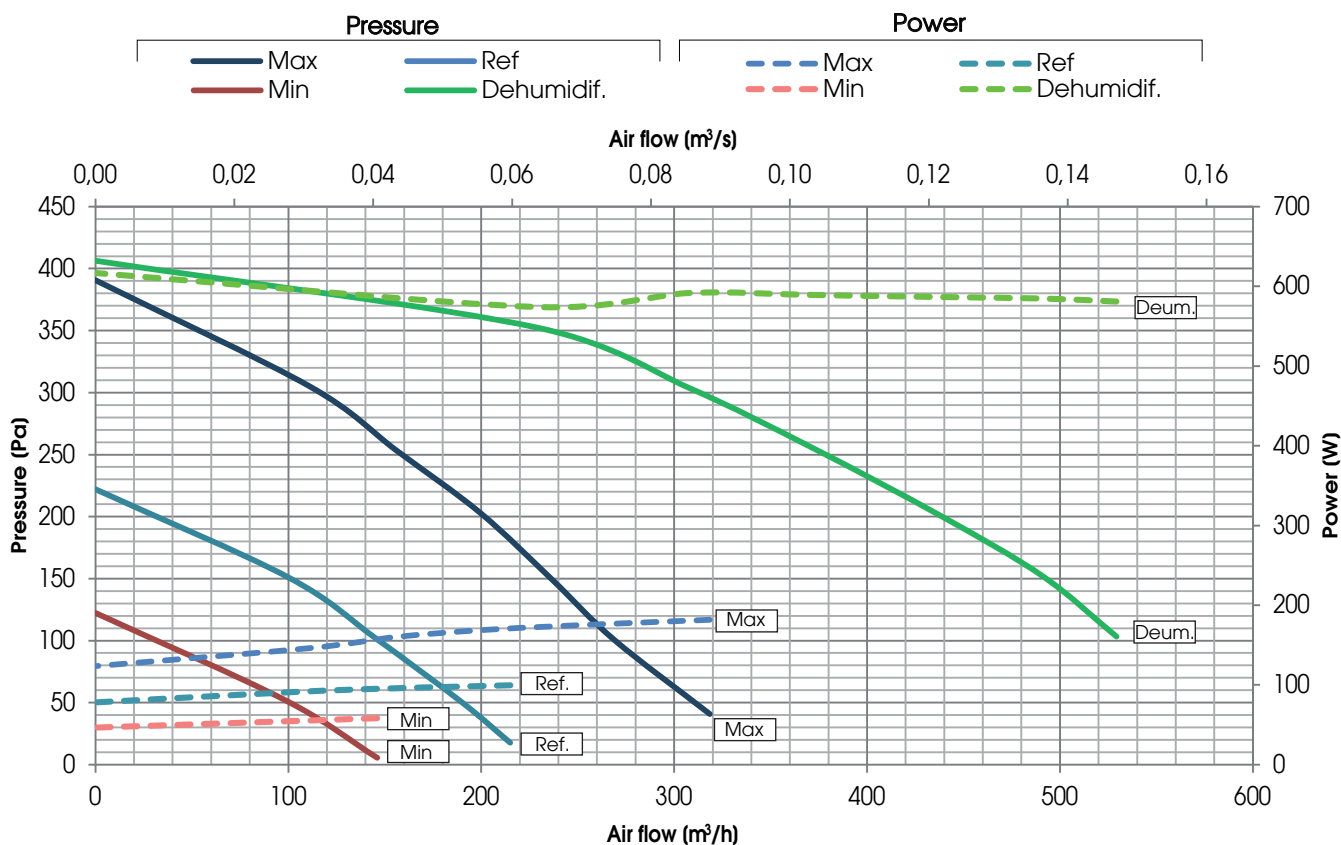
PERFORMANCES (UNI EN 13141-7)

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 1



DEH 2

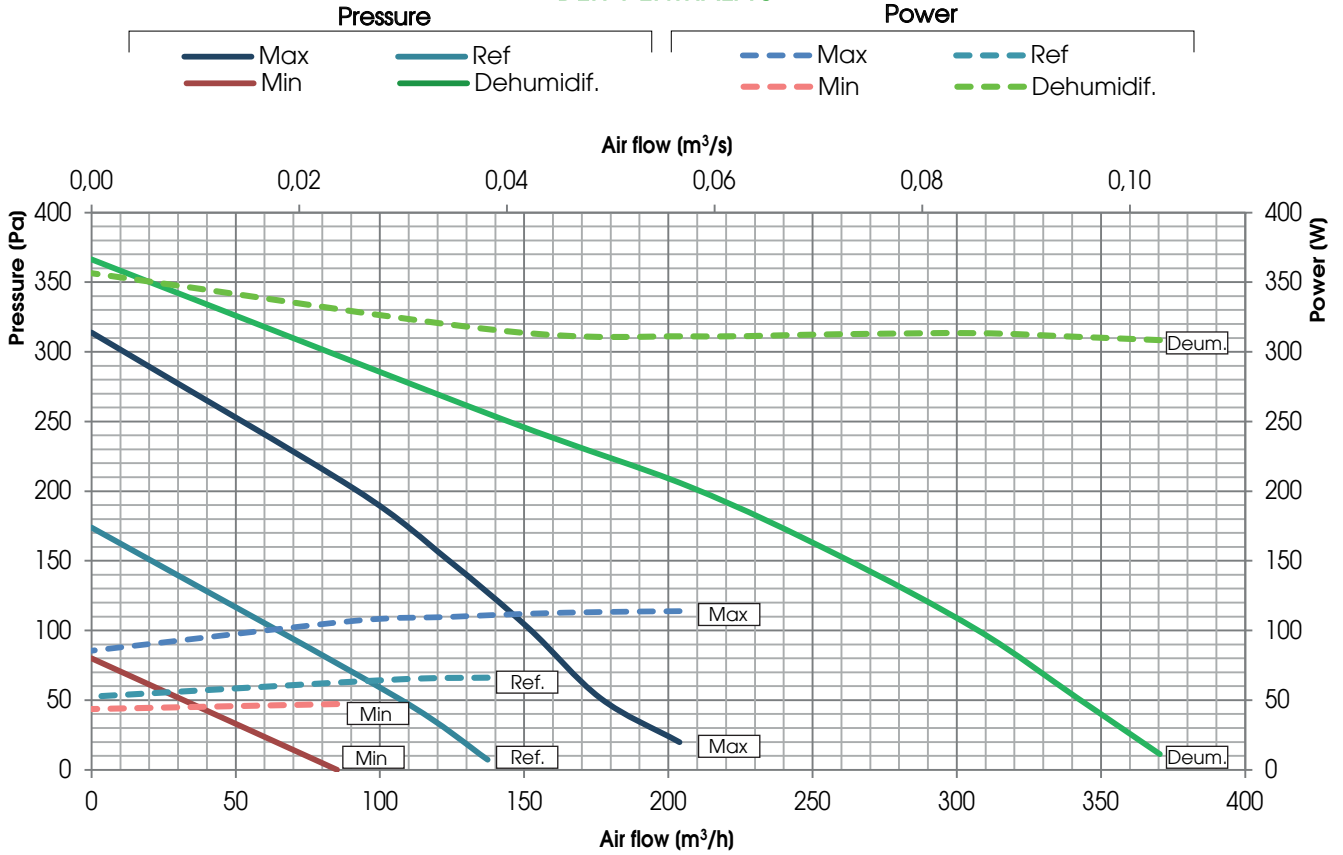




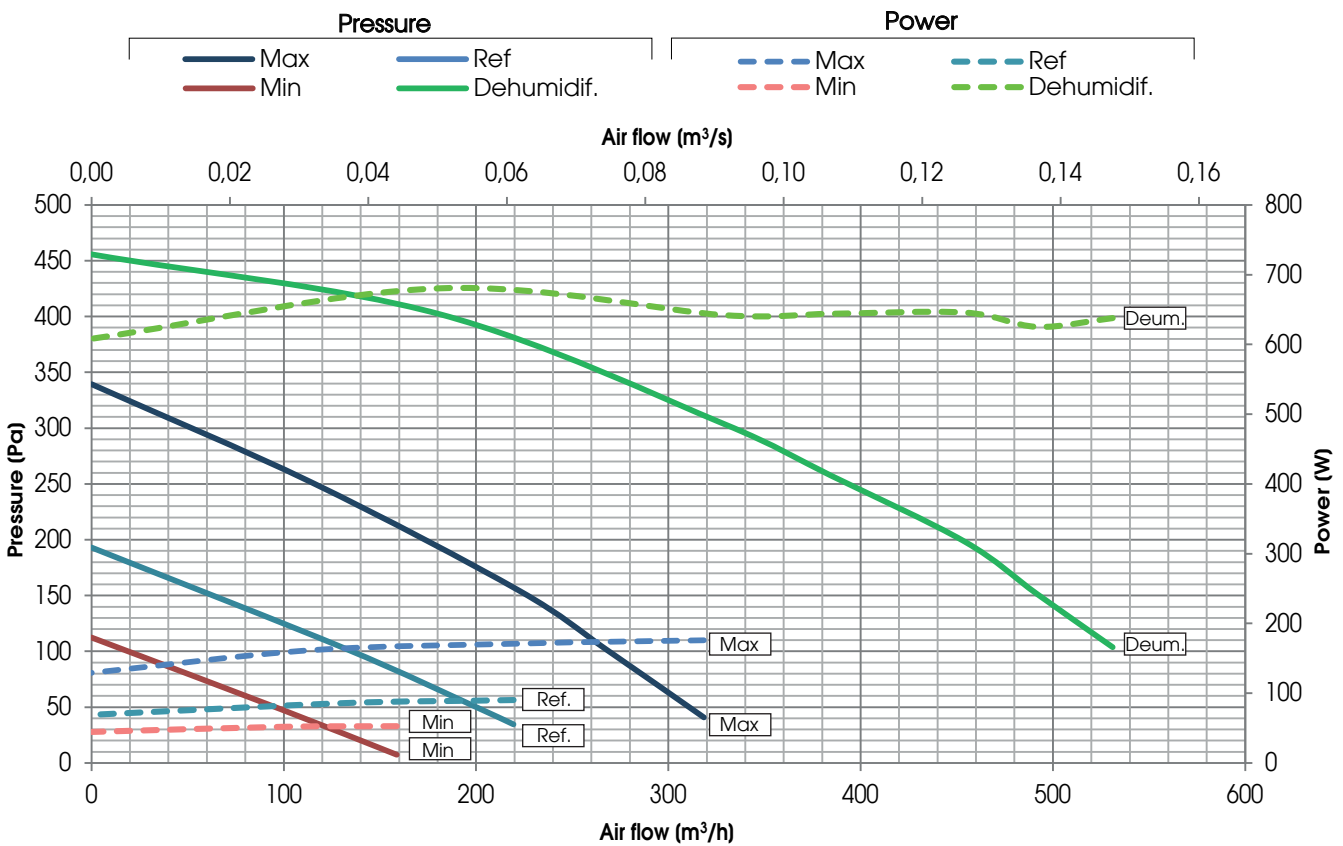
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DEH 1 ENTHALPIC



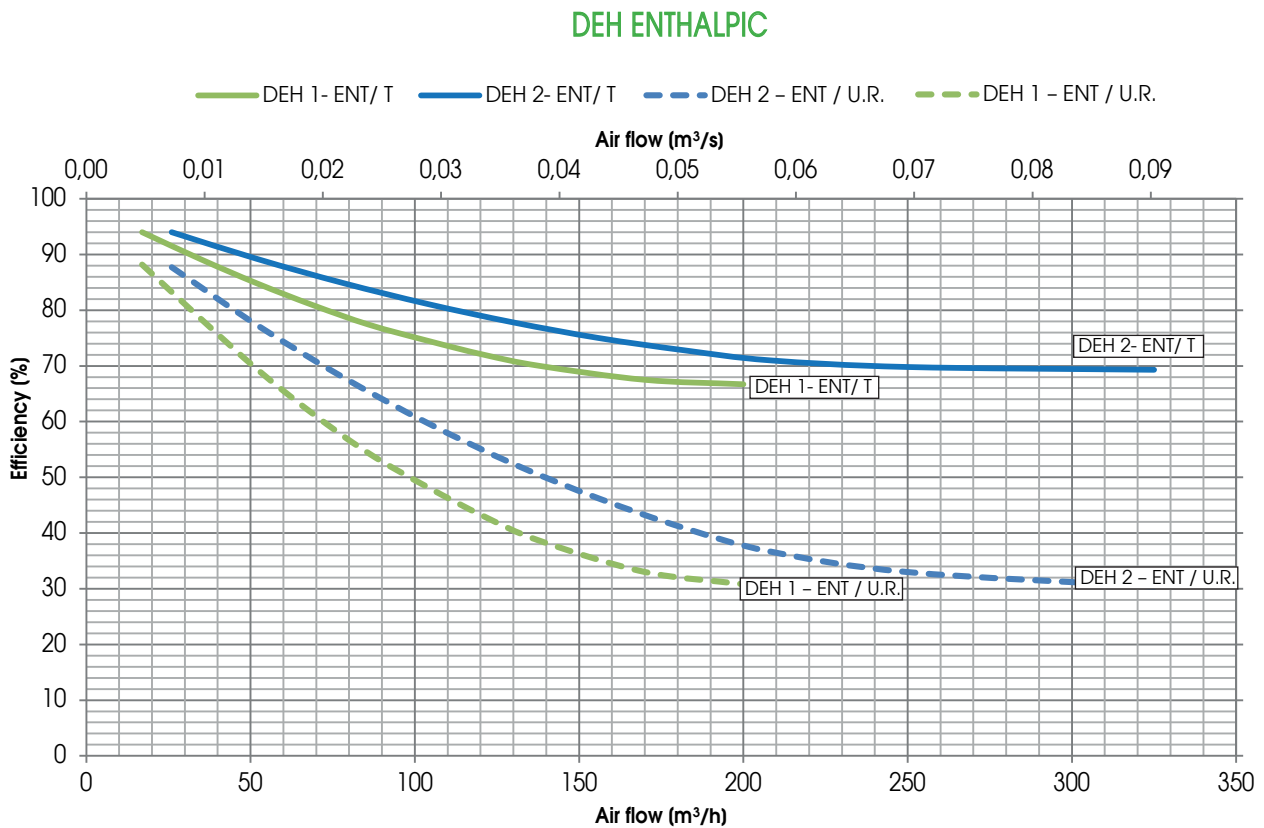
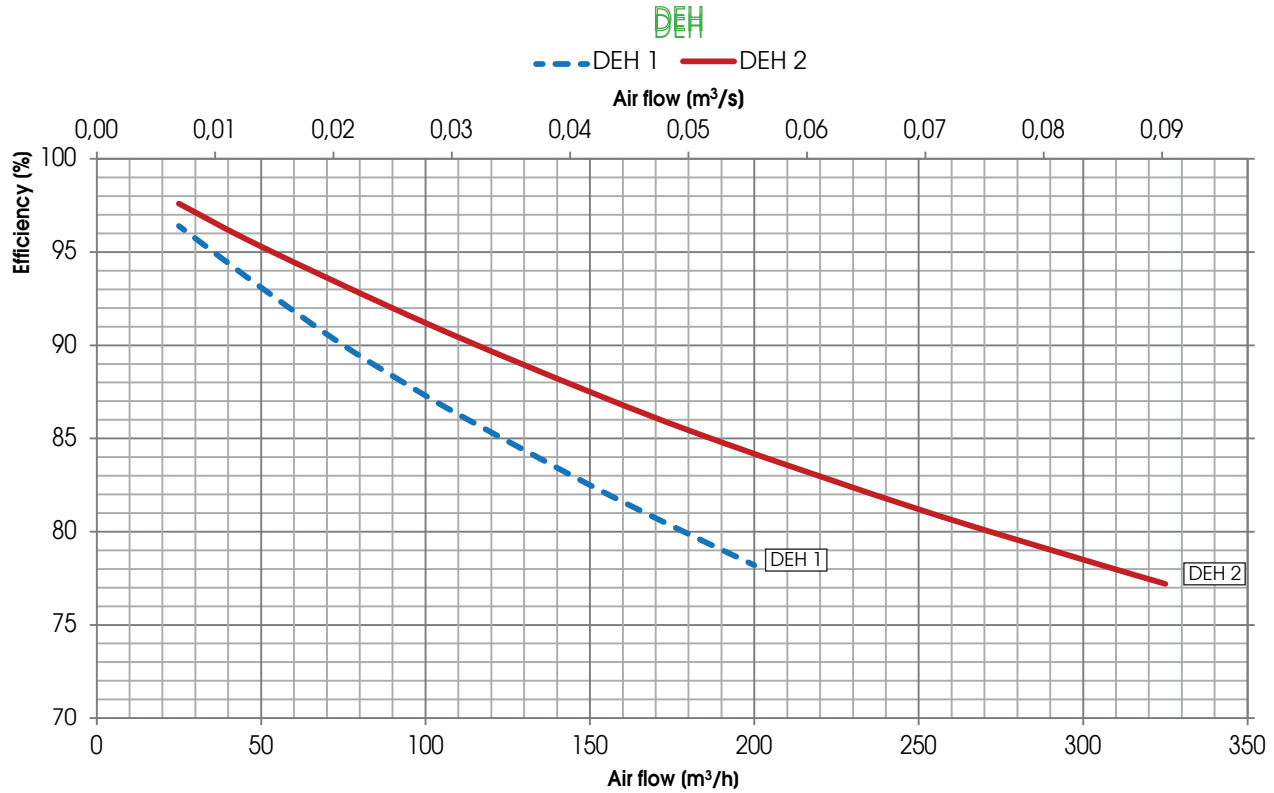
DEH 2 ENTHALPIC





### HEAT RECOVERY PERFORMANCE (sensible and latent efficiency)

Values referred to the following conditions(UNI EN 13141-7): Tbs external air 7°C; U.R. external 72%; Tbs environment 20°C; U.R. environment 38%



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 difference 100 Pa	A2

## DEH 2 (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 difference 100 Pa	A2

## NOISE LEVEL

L<sub>w</sub> Sound power level taken in accordance to UNI EN ISO 3741 - CLASSE 3

### NOISE FROM THE CASE (dB)

Unit DEH 1 (all)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	63,6	64,7	62,3	49,9	46,2	42,8	45,8	61,7
REF	58,5	63,2	54,6	49,2	41,4	37,8	44,4	57,6

### NOISE IN THE SUPPLY AIR DUCTS (dB)

Unit DEH 1 (all)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	63,7	63,2	66,9	58,6	54,6	49,7	50,8	66,0
REF	58,5	60,6	59,9	51,1	47,3	41,4	44,0	59,4

### NOISE IN THE EXHAUST AIR DUCTS (Hz)

Unit DEH 1 (all)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	63,6	62,1	63,7	54,0	53,0	51,2	55,7	63,8
REF	57,6	60,5	58,1	53,7	47,7	43,6	45,6	59,3

### NOISE FROM THE CASE (dB)

Unit DEH 1 (all) Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	64,4	66,9	63,8	55,2	51,2	46,9	50,3	64,1
REF	60,4	64,0	55,4	50,5	44,4	41,1	46,3	58,7

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Unit DEH 1 (all) Dehumidification	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	65,1	63,8	70,0	58,0	55,6	50,2	50,9	68,2
REF	59,3	60,2	59,8	52,8	47,4	41,4	43,4	59,6

### NOISE FROM THE CASE (dB)

Unit DEH 2 (all)	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	L <sub>w</sub> dB(A)
MAX	63,6	64,7	62,3	49,9	46,2	42,8	45,8	61,7
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REF	59,3	60,2	59,8	52,8	47,4	41,4	43,4	59,6



## ELECTRICAL DATA

UNIT		FAN			
		Power	Supply	Current max	Insulation class
DEH 1 (all)	Expulsion	43 W	230 V, 50/60 Hz 1F	0,32 A	IP 44
	Supply	85 W	230 V, 50/60 Hz 1F	0,75 A	IP 54
DEH 2 (all)	Expulsion	85 W	230 V, 50/60 Hz 1F	0,75 A	IP 54
	Supply	170 W	230 V, 50/60 Hz 1F	1,65 A	IP 54

UNIT	version with COMPRESSOR - data (only compressor)		UNIT	version with COMPRESSOR - unit data	
	Supply	Max current		Supply	Max current
DEH 1 / DEH 1 - ENT.	230 V, 50 Hz 1F	2,1 A	DEH 1 / DEH 1 - ENT.	230 V, 50 Hz 1F	3,5 A
DEH 2 / DEH 2 - ENT.	230 V, 50 Hz 1F	4,9 A	DEH 2 / DEH 2 - ENT.	230 V, 50 Hz 1F	7,5 A

## GAS

UNIT	Gas	GWP	Kg of Gas	Ton of CO2
DEH 1 / DEH 1 - ENT.	R134A	1430	0,37	0,52
DEH 2 / DEH 2 - ENT.	R134A	1430	0,48	0,68

Contains fluorinated greenhouse gases governed by the Kyoto protocol

## 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 (l/h)	Input (°C)	Output (°C)	ΔT (°C)	ΔP (kPa)	Water battery (W)	Compressor (W)	Tot. (W)	Condensate l/day
DEH 1	150	26	55	150	33	55	200	15	19,4	4,4	4	990	988	1978	26,8
								18	21,2	3,2		730	987	1717	20,7
								21	23,4	2,4		560	1017	1577	17,3
DEH 2	250	26	55	250	33	55	350	15	19,8	4,8	3	1950	1542	3492	46,0
								18	21,9	3,9		1610	1607	3217	33,1
								21	23,9	2,9		1190	1608	2798	30,0

\* Only dehumidifies

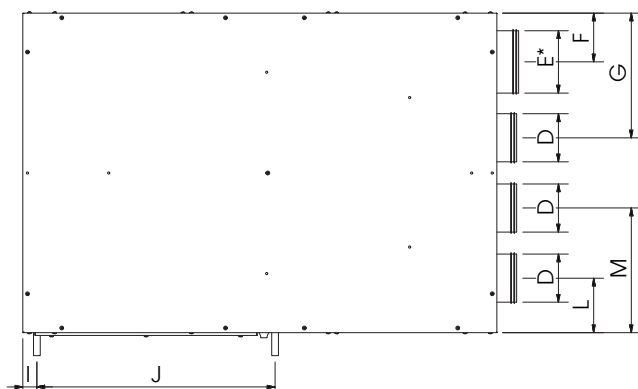
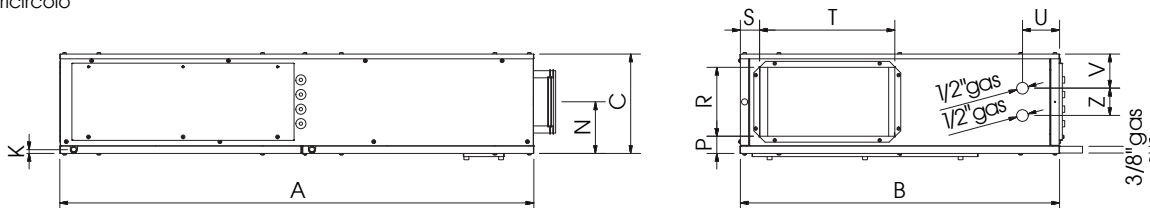
## HYDRONIC VERSION (dehumidification only with H2O battery)

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

## DIMENSIONS (mm) WEIGHT (kg)

UNIT	A	B	C	D	E*	F	G	K	L	M	N	P	R	S	T	U	V	Z
DEH 1/ENT	1216	827	263	125	160	125	320	10	140	320	123	44	177	50	385	94	88	70
DEH 2/ENT	1216	960	328	160	200	164	381	10	150	380	170	44	252	60	487	94	125	76

\*ricircolo



Weight : DEH 1:	85 kg
DEH 2:	100 kg
DEH 1 - ENT:	88 kg
DEH 2 - ENT:	103 kg
DEH 1 HYDRONIC:	75 kg
DEH 2 HYDRONIC:	85 kg
DEH 1 - ENT - HYDRONIC:	78 kg
DEH 2 - ENT - HYDRONIC:	88 kg

CONDENSATE DRAIN = 3/8 "

ATTACKS H2O battery

. version with Compressor = 1/2 "

. HYDRONIC version - DEH 1 = 1/2 "

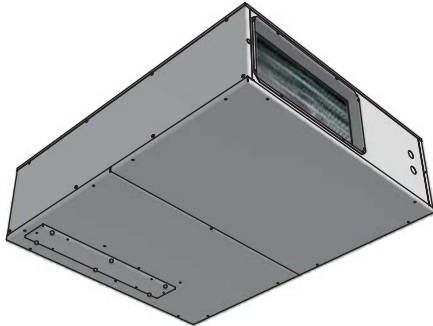
. HYDRONIC version - DEH 2 = 3/4 "



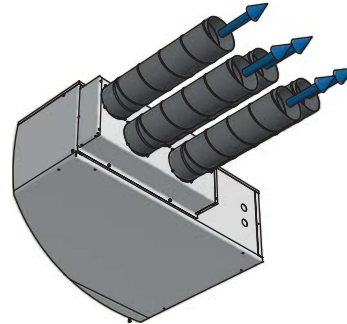
## DISTRIBUTION PLENUM - POSSIBLE ALTERNATIVES

DELIVERY Plenum: standard or X-AIR

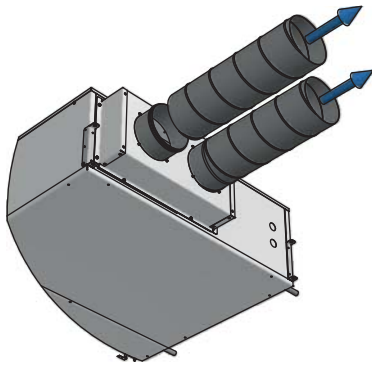
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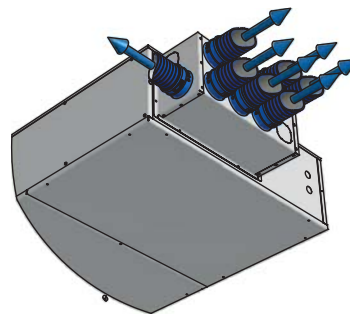
Rectangular outlet



Standard plenum DEH 2: 5 attacks  $\varnothing$  125 mm  
(for DEH 1: 3 attacks  $\varnothing$  125 mm)



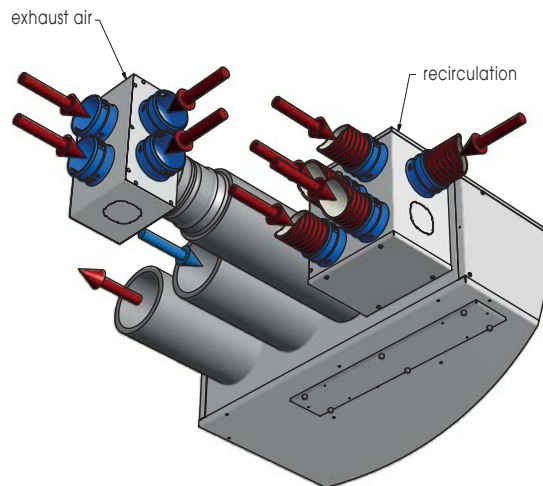
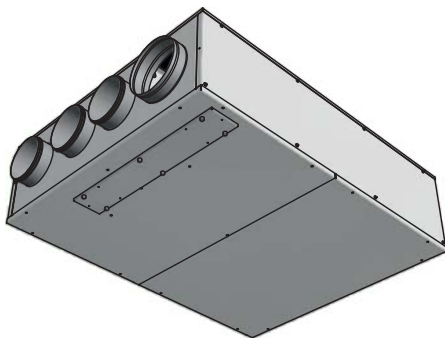
Standard plenum DEH 2: 2 attacks  $\varnothing$  160 mm  
(for DEH 1: 1 attack  $\varnothing$  160 mm)



Plenum X-AIR for circular duct  
(DEH 1: 8 attacks, DEH 2: 12 attacks)

## EXHAUST AIR and RECIRCULATION plenum, version X-AIR

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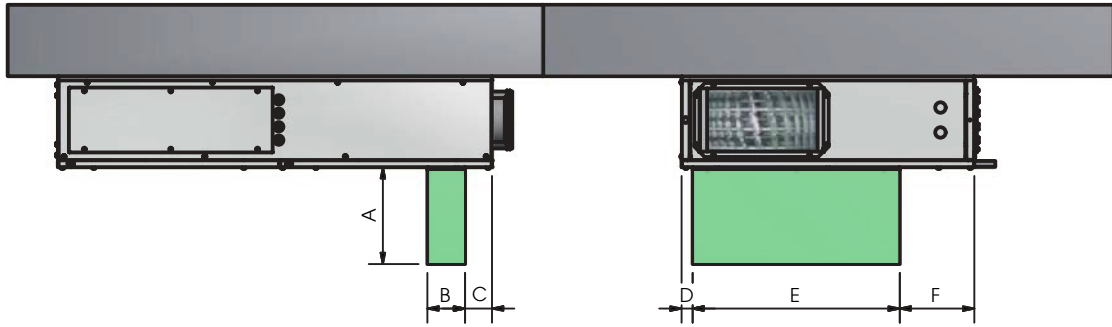




## INSTALLATION DEH (all)

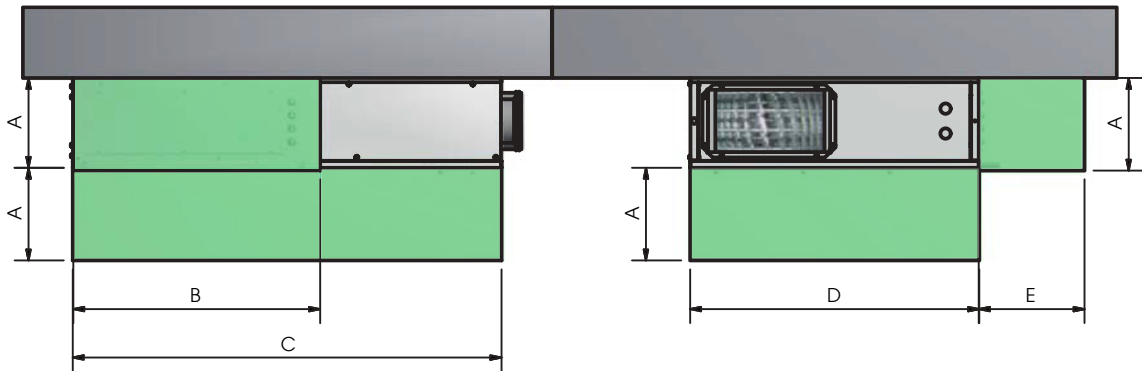
### CEILING INSTALLATION

Minimum required space for maintenance FILTERS (mm)



UNIT	A	B	C	D	E	F
DEH 1 (all)	270	110	76	30	580	210
DEH 2 (all)	330	110	73	30	650	275

Minimum required space for maintenance -(mm)

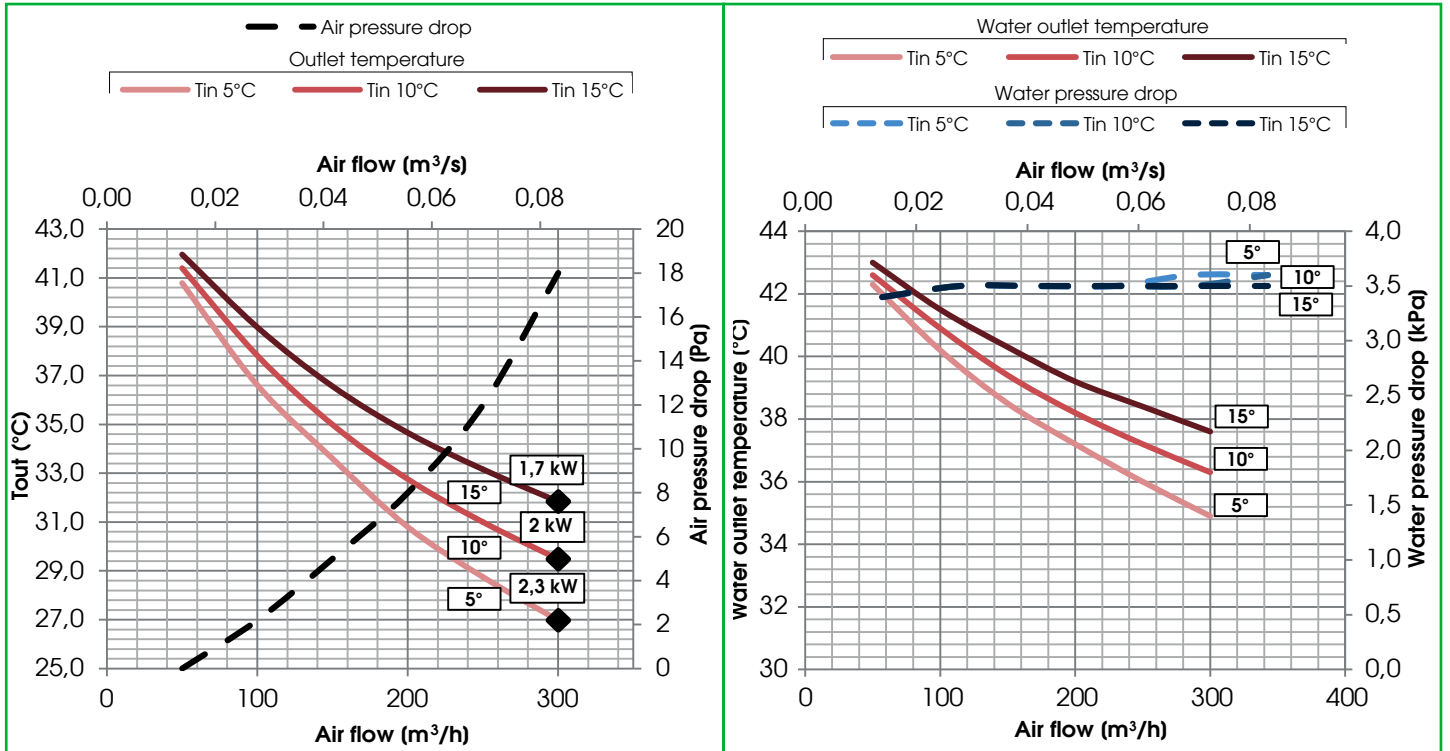


UNIT	A	B	C	D	E
DEH 1 (all)	260	700	1220	820	300
DEH 2 (all)	330	700	1220	960	300

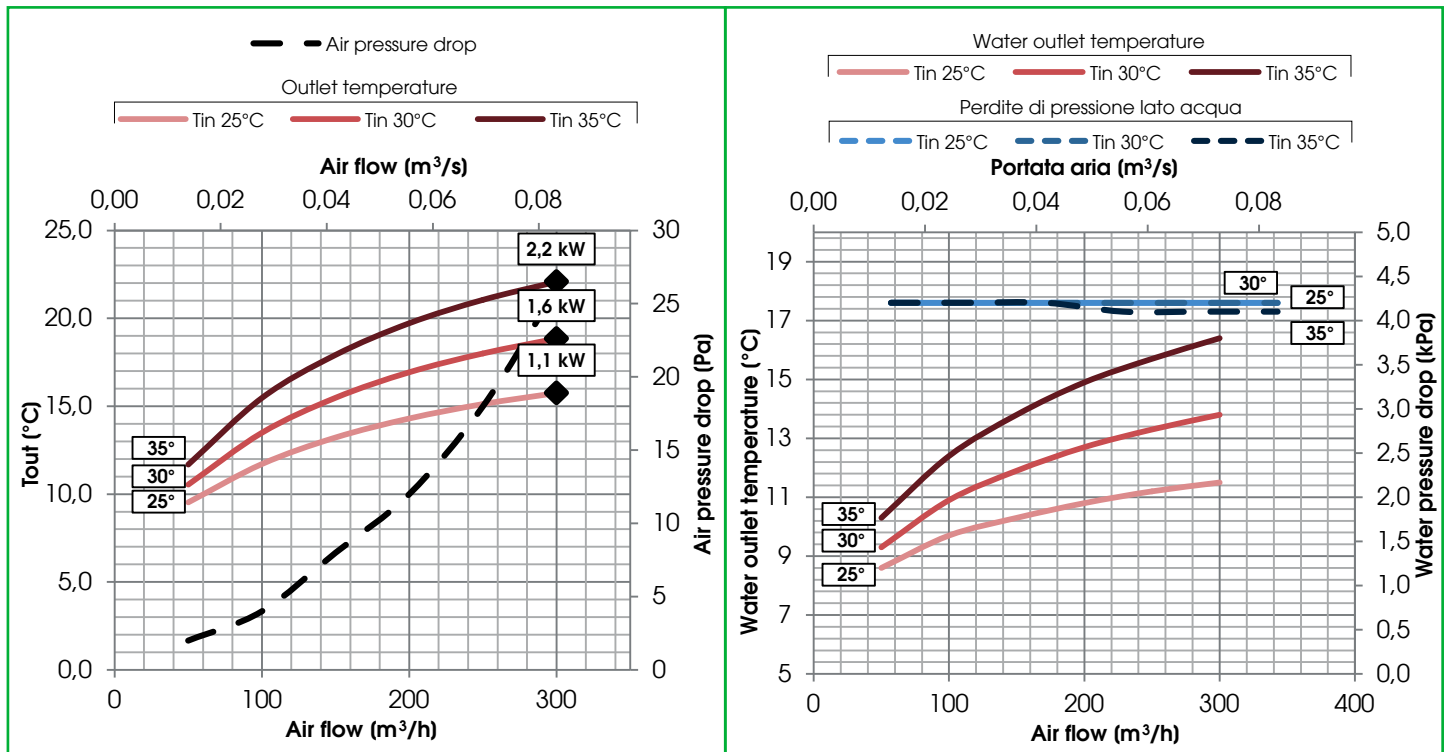


The way to read the graphs is specified within the accessories techno-list.

COILS DEH / DEH-ENTHALPIC  
 Coils DEH 1 / DEH 1 ENTHALPIC (+45°C/+35°C)



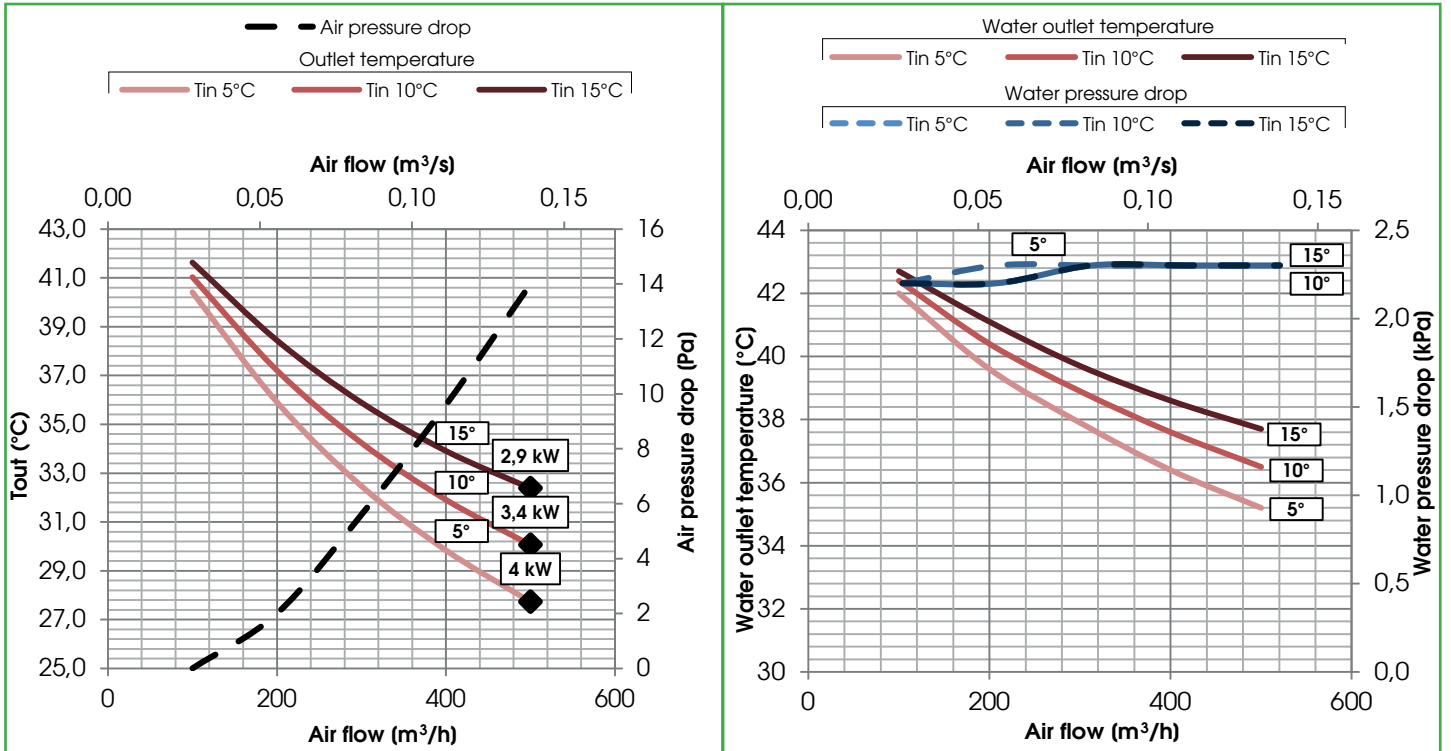
Coils DEH 1 / DEH 1 ENTHALPIC (+7°C/+12°C)



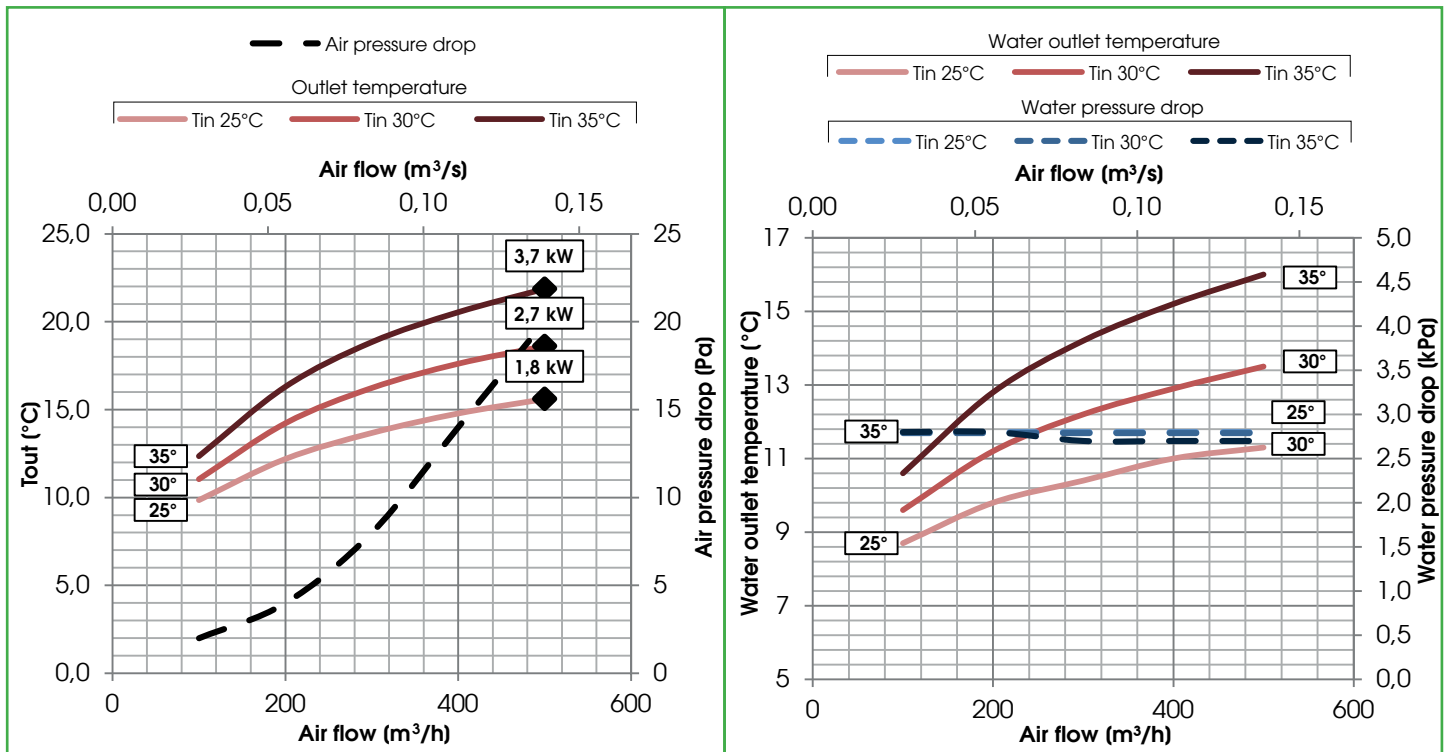


COILS DEH / DEH-ENTHALPIC

Coils DEH 2 / DEH 2 ENTHALPIC (+45°C/+35°C)



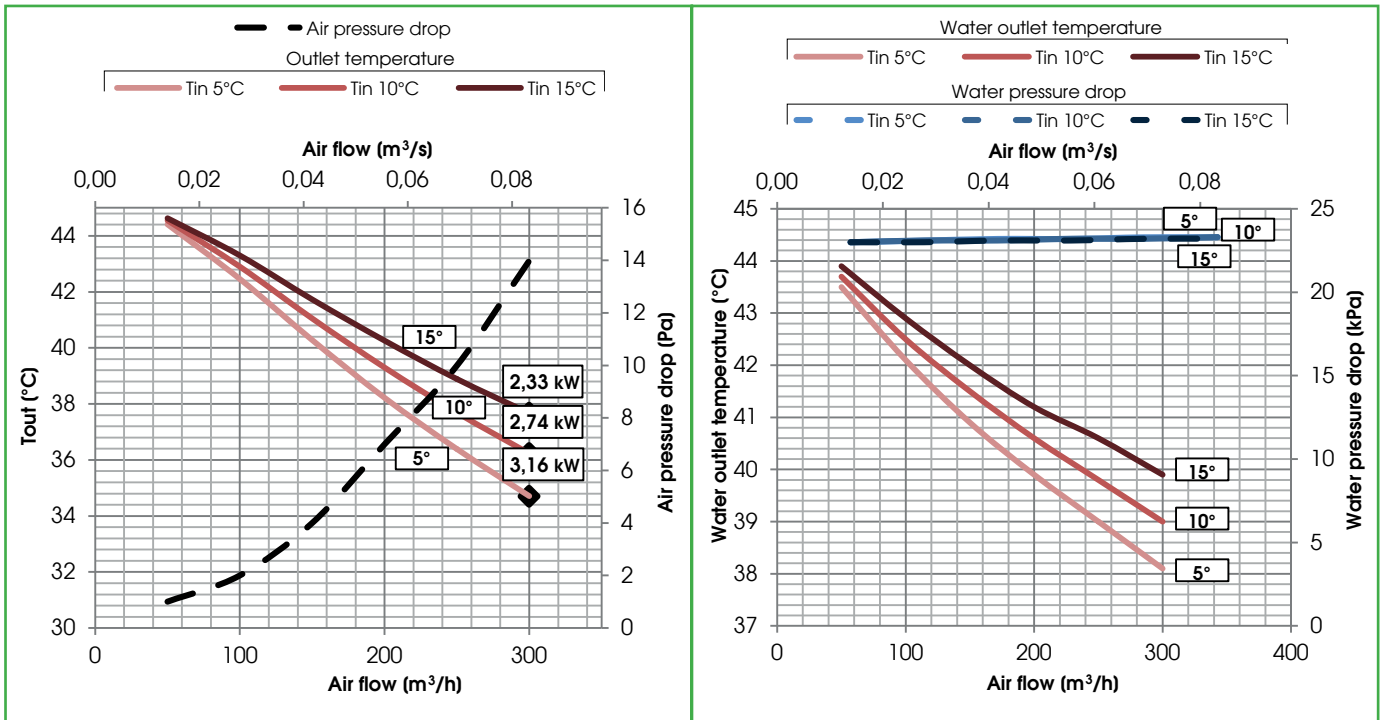
Coils DEH 2 / DEH 2 ENTHALPIC (+7°C/+12°C)



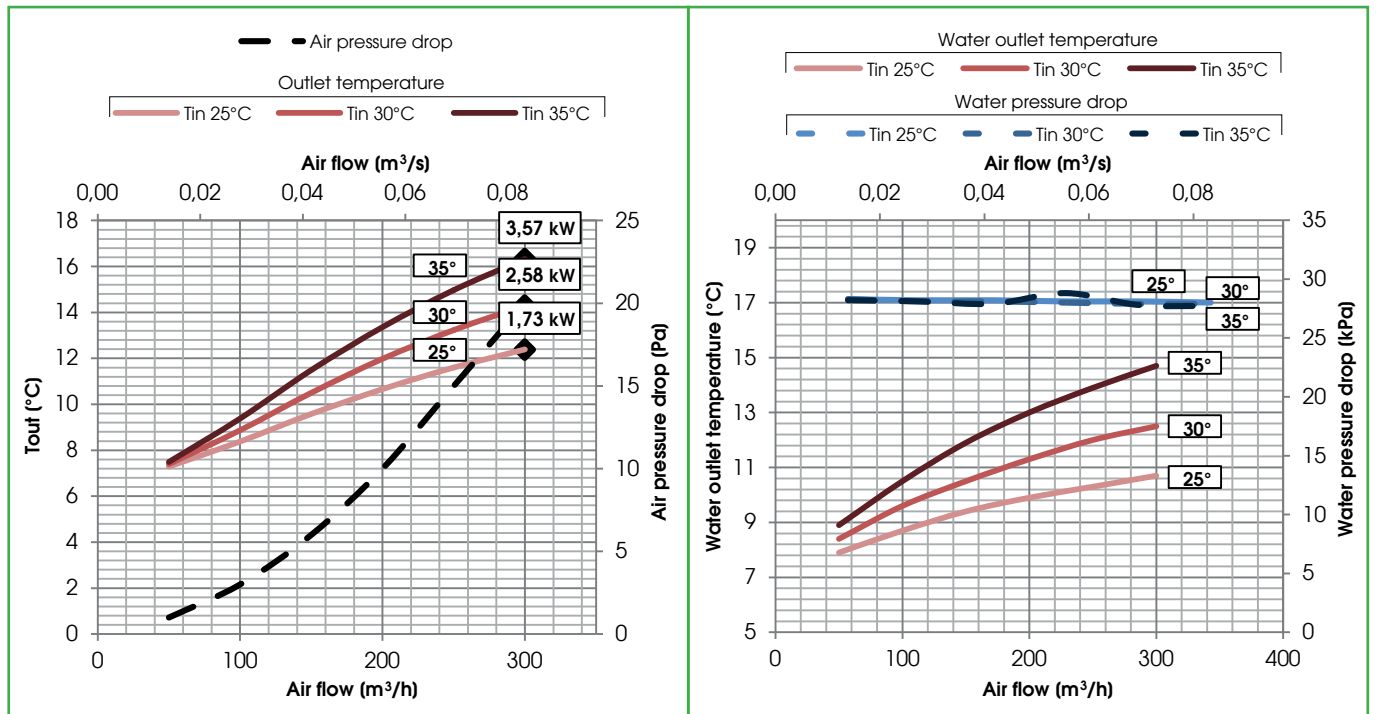


COILS DEH-HIDRONIC / DEH-HIDRONIC ENTHALPIC

Coil DEH 1 HIDRONIC / DEH 1 HIDRONIC ENTHALPIC (+45°C/+35°C)



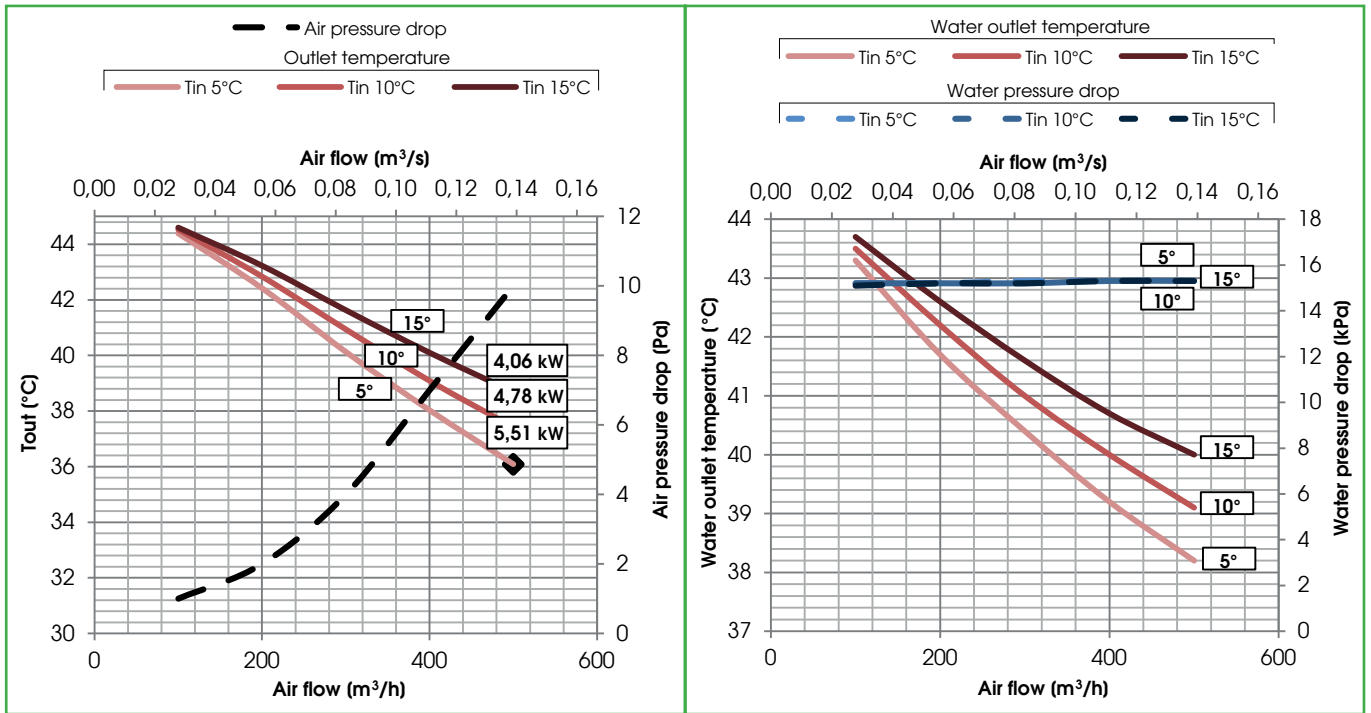
Coil DEH 1 HIDRONIC / DEH 1 HIDRONIC ENTHALPIC (+7°C/+12°C)



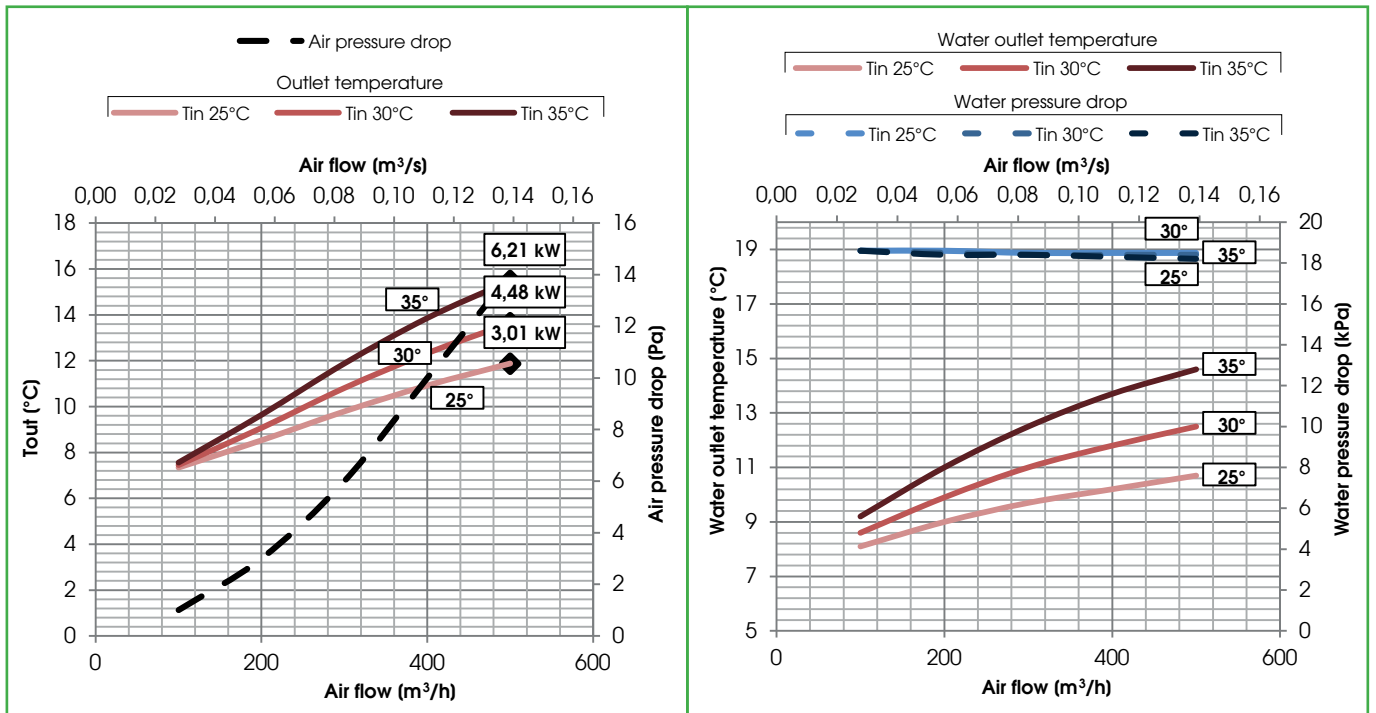


COILS DEH-HIDRONIC / DEH-HIDRONIC ENTHALPIC

Coil DEH 2 HIDRONIC / DEH 2 HIDRONIC ENTHALPIC (+45°C/+35°C)



Coil DEH 2 HIDRONIC / DEH 2 HIDRONIC ENTHALPIC (+7°C/+12°C)



A	Manufacturer's name	C.L.A. S.r.l			
B	Manufacturer's model identifier	DEH 1 DEH 2 DEH 1 ENTALPICO DEH 2 ENTALPICO			
C	Specific energy consumption (SEC) (kWh/m <sup>2</sup> .a)	COLD	-70,3	-62,7	-64,9
		AVERAGE	-32,8	-27,9	-30,8
	SEC class	WARM	-8,6	-5,3	-8,6
		B	B	B	
D	Declared typology	UVR - UVB UVR - UVB UVR - UVB UVR - UVB			
E	Type of drive installed	Variable speed drive Variable speed drive Variable speed drive Variable speed drive			
F	Type of heat recovery system	Recuperative Recuperative Recuperative Recuperative			
G	Thermal efficiency of heat recovery (%)	86,0 84,8 74,1 71,6			
H	Maximum flow rate (m <sup>3</sup> /s)	0,042 0,074 0,042 0,074			
I	Electrical power input at maximum flow rate (W)	119 177 112 174			
J	Sound power level (Lwa)(dB)	62 58 62 58			
K	Reference flow rate (m <sup>3</sup> /s)	0,031 0,053 0,030 0,056			
L	Reference pressure difference (Pa)	50 50 50 50			
M	SPI (W/m <sup>3</sup> /h)	0,653 0,516 0,604 0,447			
	Control factor CLTR	0,85 0,85 0,85 0,85			
N	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 (%)	6.2 / 7.1 6.3 / 4.7 6.5 / 7.5 6.0 / 4.5			
P	Mixing rate of non-ducted bidirectional ventilation units (%)	- - - -			
Q	Position 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.ufek.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)	631	512	591	449
W	The annual heating saved (AHS) for each type of climate (kWh/a)	2045 (WARM)	2030 (WARM)	1900 (WARM)	1870 (WARM)
		8845 (COLD)	8782 (COLD)	8210 (COLD)	8080 (COLD)
		4521 (AVERAGE)	4489 (AVERAGE)	4200 (AVERAGE)	4130 (AVERAGE)

A	Manufacturer's name C.L.A. S.r.l									
B	Manufacturer's model identifier		DEH 1 HYDRONIC	DEH 2 HYDRONIC	DEH 1 HYDRONIC ENTALPIC	DEH 2 HYDRONIC ENTALPIC				
C	Specific energy consumption (SEC) (kWh/m <sup>2</sup> .a)	COLD	-67,8	-70,3	-62,7	-64,9				
	AVERAGE		-30,0	-32,8	-27,9	-30,8				
	WARM		-5,7	-8,6	-5,3	-8,6				
	SEC Class		B	B	B	B				
D	Declared typology		UVR - UVB	UVR - UVB	UVR - UVB	UVR - UVB				
E	Type of drive installed		Variable speed drive	Variable speed drive	Variable speed drive	Variable speed drive				
F	Type of heat recovery system		Recuperative	Recuperative	Recuperative	Recuperative				
G	Thermal efficiency of heat recovery (%)		86,0	84,8	74,1	71,6				
H	Maximum flow rate (m <sup>3</sup> /s)		0,042	0,074	0,042	0,074				
I	Electrical power input at maximum flow rate (W)		119	177	112	174				
I	Sound power level (L <sub>w</sub> )(dB)		62	58	62	58				
K	Reference flow rate (m <sup>3</sup> /s)		0,031	0,053	0,030	0,056				
L	Reference pressure difference (Pa)		50	50	50	50				
M	SPI (W/m <sup>3</sup> /h)		0,653	0,516	0,604	0,447				
	Control factor CLTR		0,95	0,95	0,95	0,95				
N	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 (%)		6,2 / 7,1	6,3 / 4,7	6,5 / 7,5	6,0 / 4,5				
P	Mixing rate of non-ducted bidirectional ventilation units (%)		-	-	-	-				
Q	Position 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.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)		631	512	591	449				
W	The annual heating saved (AHS) for each type of climate (kWh/a)		2045 (WARM)	2030 (WARM)	1900 (WARM)	1870 (WARM)				
			8845 (COLD)	8782 (COLD)	8210 (COLD)	8080 (COLD)				
			4521 (AVERAGE)	4489 (AVERAGE)	4200 (AVERAGE)	4130 (AVERAGE)				

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

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

**AZIENDA CON SISTEMA  
DI GESTIONE QUALITÀ  
CERTIFICATO DA DNV GL  
ISO 9001**

AZIENDA CON  
SISTEMA DI GESTIONE  
AMBIENTALE CERTIFICATO  
DA DNV  
ISO 14001



il Concessionario

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HEAT RECOVERY VENTILATION UNITS with INTEGRATED  
AIR/AIR HEAT PUMP (CLIMATIZATION and DEHUMIDIFICATION)