



## CENTRALISED ENERGY RECOVERY UNIT WITH ENTHALPIC HEAT EXCHANGER

### APPLICATION

Whole-house heat recovery unit, suitable for ceiling or false-ceiling installation, for horizontal mounting.

### SPECIFICATION

**Outer fan casing** manufactured from powder coated galvanised sheet steel providing long lasting and robust construction. The unit is finished in white RAL 9010.

**Internal structure** manufactured from EPP (expanded polypropylene) providing reduced sound emissions and maximised air tightness and thermal insulation.

**EC external rotor motors** fitted as standard for energy saving. Provided with integral thermal protection, mounted on sealed for life ball bearings.

**Backward curved centrifugal impeller** dynamically balanced and directly driven by the motor to provide a smooth airflow through the unit.

**Enthalpic heat exchanger** with high thermal and latent efficiency. Made of antimicrobial technology, the built-in polymer membrane is mould and bacteria resistant: it also prevents the air flows contamination and block the odours. The special configuration generates low pressure drop. Very easy to be cleaned.

### FEATURES & BENEFITS

**Ease of installation:** 290mm height (315mm max., including fixing brackets and drain connection) to overcome shallow ceiling voids.

**Simplified connection:** the product is supplied pre-cabled.

**Enthalpic heat exchanger** suitable to transfer thermal energy and humidity from one airflow to the other, keeping the correct indoor humidity level (40-60%). During winter time, for example, it prevent that indoor air becomes too dry: in summer, instead, the humidity of the outdoor warm air is not transferred to the indoor cool air.

**ISO Coarse 60% (G4) filters** easy removable for cleaning from the outside: no need to remove the access panel.  
**ISO ePM1 60% (F7) filter** on request.

**Integral automatic bypass** for free cooling during the summer season.

**Automatic anti-frost protection** to prevent frost building up on the exhaust side of the heat exchanger.

**Double drain connections** to meet climate requirement.

**Tested to the latest standards:** units are tested in the TÜV Rheinland recognised laboratory at Aerauliqa, meaning accurate, up to date information on electrical safety, performance and noise level that can be relied upon. Designed and manufactured in accordance with EN60335-2-80 (Low Voltage Directive) and the EMC Directive (Electromagnetic Compatibility).

### OPERATION

The unit is supplied with a multi-function LCD display (CTRL-DSP) for automatic control and convenience, providing:

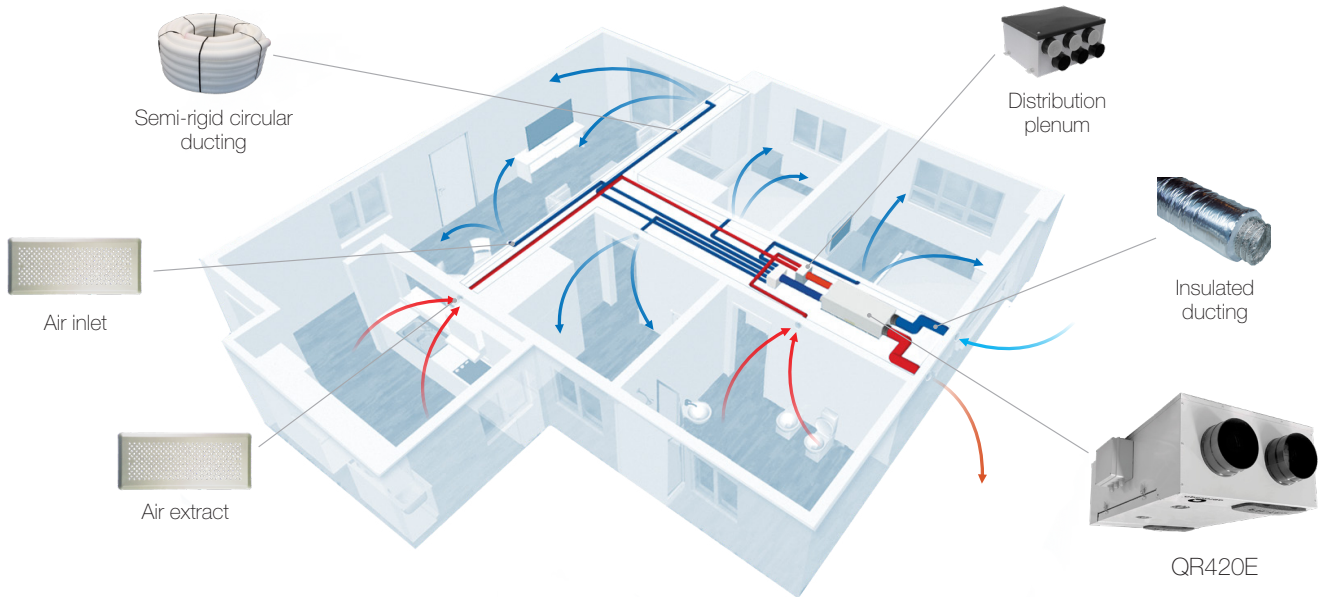
- 3 speed settings (adjustable).
- Boost option.
- Holiday mode.
- Night mode.
- Weekly timer.
- Bypass setting.
- Airflow balancing.
- Filter replacement and fan failure indicator.
- Working hour counter.
- Setting saving and loading.
- Suitable for remote ambient sensors (SEN-HY, SEN-CO2 or SEN-PIR).
- ModBus interface.
- Connection to remote pre/post heating element.
- Connection to remote water coil for heating.



**CTRL-DSP**  
(supplied as standard)

# QR420E

## Example of a complete ventilation system

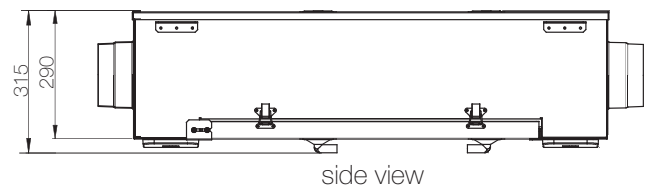
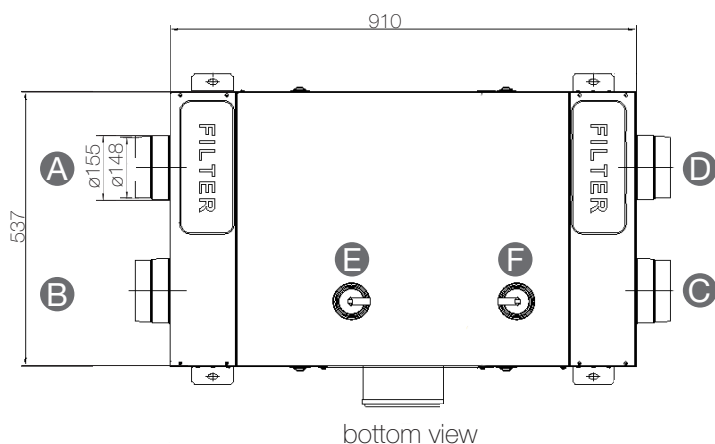


**How it works:** a continuous running heat recovery unit (QR420E) transfers heat from humid air extracted from wet rooms to warm incoming fresh air which is ducted to habitable rooms. Thanks to the easy-to-fit air distribution system each single ambient can be properly ventilate: the boost function enables rapid extract of increased moisture or pollutant levels. It also provides discrete installation and very quite operation.

**Energy saving:** the preheated/precooled fresh air and continuous air changes reduce the demand for additional heating/air-conditioning. The EC brushless motors significantly reduce the electricity consumption.

**Indoor Air Quality:** a correctly specified mechanical ventilation system can ensure the quality of the indoor air is constantly maintained for the health and well-being of the occupants as well as of the building. Duly maintained filters ensure that incoming air is suitably filtered of dust and pollen before it enters the home.

## Dimensions (mm) and Weight (kg)

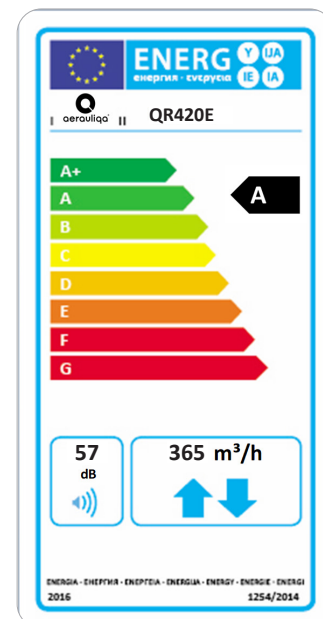


Modello	QR420E
Peso	
A	Intake air from outside
B	Exhaust air to outside
C	Supply air to inside
D	Extract air from inside
E	Winter condensation drainage
F	Summer condensation drainage

# QR420E

## Product fiche - ErP Directive, Regulations 1253/2014 - 1254/2014

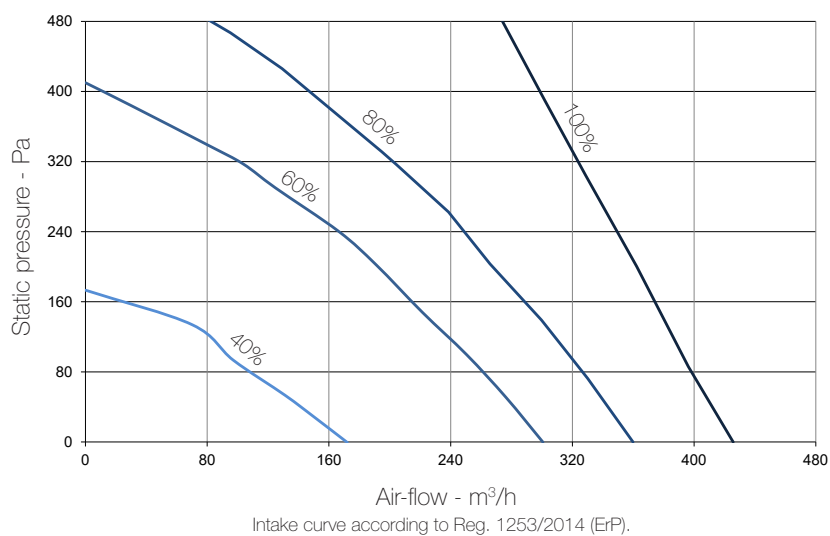
a)	Mark	-	AERAULIQA		
b)	Model	-	QR420E		
c)	SEC class	-	A	B	B
c1)	SEC warm climates	kWh/m <sup>2</sup> .a	-14,0	-9,1	-4,7
c2)	SEC average climates	kWh/m <sup>2</sup> .a	-37,5	-31,8	-26,7
c3)	SEC cold climates	kWh/m <sup>2</sup> .a	-74,1	-66,8	-60,6
	Energy label	-	Yes		
d)	Unit typology	-	Residential - bidirectional		
e)	Type of drive	-	Variable speed drive		
f)	Type of Heat Recovery System	-	Heat recovery		
g)	Thermal efficiency of heat recovery	%	75		
h)	Maximum flow rate @ 100 Pa	m <sup>3</sup> /h	365		
i)	Electric power input (maximum flow rate)	W	337		
j)	Sound power level (L <sub>WA</sub> )	dBA	57		
k)	Reference flow rate	m <sup>3</sup> /h	255		
l)	Reference pressure difference	Pa	50		
m)	Specific power input (SPI)	W/m <sup>3</sup> /h	0,442		
n1)	Control factor	-	0,65	0,85	1
n2)	Control typology	-	Local demand control	Central demand control	Manual control (no DCV)
o1)	Maximum internal leakage rate	%	2		
o2)	Maximum external leakage rate	%	1		
p1)	Internal mixing rate	%	N/A		
p2)	External mixing rate	%	N/A		
q)	Visual filter warning	-	Warning on display "FILTER"		
r)	Instructions to install regulated grilles	-	N/A		
s)	Internet address for pre/disassembly instructions	-	www.aerauliqa.com		
t)	Airflow sensitivity to pressure variations	%	N/A		
u)	Indoor/outdoor air tightness	m <sup>3</sup> /h	N/A		
v1)	AEC - Annual electricity consumption - warm climates	kWh	2,3	4,0	5,5
v2)	AEC - Annual electricity consumption - average climates	kWh	2,8	4,5	6,0
v3)	AEC - Annual electricity consumption - cold climates	kWh	8,2	9,8	11,4
w1)	AHS - Annual heating saved - warm climates	kWh	19,8	19,1	18,6
w2)	AHS - Annual heating saved - average climates	kWh	43,8	42,2	41,0
w3)	AHS - Annual heating saved - cold climates	kWh	85,7	82,6	80,3
	Sound pressure @ 3m <sup>(1)</sup>	dB(A)	28		
	Ambient temperature max	°C	+40		
	Degree of protection IP	-	X4		
	Marking	-	CE		



- 220-240V ~ 50/60Hz
  - air performance measured according to ISO 5801 a 230V 50Hz, air density 1,2Kg/m<sup>3</sup>
  - data measured in the TÜV Rheinland accredited internal laboratory according to the operating document IEC OD 2048 (level CTF1) for the IEC 60335-1 and IEC 60335-2-80 Standards
  - prestazioni termiche secondo EN 13141-7
- (1) sound pressure level @ 3m in free field, breakout, speed 40%, for comparative purposes only.

# QR420E

## Performance curve



Speed %	W max	m³/h max
40	47	172
60	139	301
80	213	360
100	337	426

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Speed 100%	Lw dB - SOUND POWER OCTAVE BAND								Lp dB(A)
	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
	61	66	66	64	63	56	43	71	48

Speed 80%	Lw dB - SOUND POWER OCTAVE BAND								Lp dB(A)
	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
	58	63	62	57	58	51	37	67	43

Speed 60%	Lw dB - SOUND POWER OCTAVE BAND								Lp dB(A)
	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
	54	60	58	53	53	45	32	63	39

Speed 60%	Lw dB - SOUND POWER OCTAVE BAND								Lp dB(A)
	125	250	500	1 K	2 K	4 K	8K	Tot	@3m
	47	52	47	42	40	32	18	55	28

Lp dB(A) @3m, breakout, for comparative purposes only.