

QR220DE



DECENTRALISED ENERGY RECOVERY UNIT WITH ENTHALPIC HEAT EXCHANGER

APPLICATION

Decentralised energy recovery unit, ideal for ceiling installation in public places, such as schoolrooms, offices, shops, waiting rooms...

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.

Horizontal single row **air supply grille** with individually adjustable blades, made from anodised aluminum, with 20mm pitch.

Extract perforated grille, integrated in the external steel casing.

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.

Average efficiency:

85% thermal;

65% humidity.

FEATURES & BENEFITS

Ease of installation and cost saving: no air distribution system is needed.

Simplified electric wiring: the unit 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 prevents 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% filter (G4) supplied as standard. ISO ePM1 65% filter (F7) on request.

Integral automatic bypass for free cooling during the summer season.

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

No condensation drainage is required.

Tested to the latest standards: units are tested in the TÜV Rheinland accredited internal laboratory at Aerauliqa according to the operating document IEC OD 2048 (level CTF1) for the IEC 60335-1 and IEC 60335-2-80 Standards, 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:

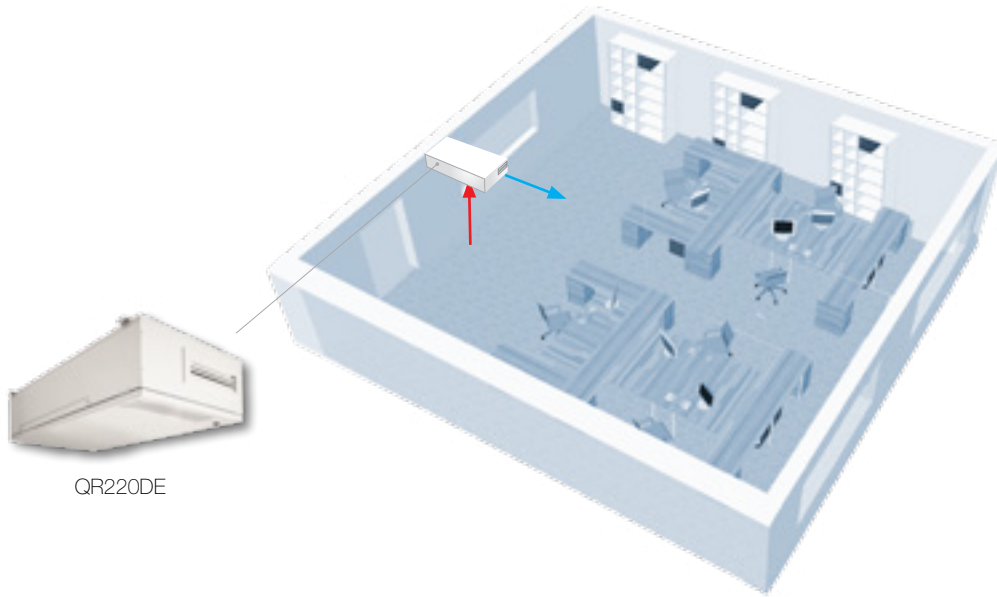
- 3 speed settings (adjustable).
- Boost option.
- Holiday mode.
- Night mode.
- Weekly timer.
- Bypass setting.
- Airflow balancing.
- Filter replacement and fan failure indicator.
- Working hour counter.
- Setting saving and loading.
- Suitable for remote ambient sensors (SEN-HY, SEN-PIR).
- Modbus interface.



CTRL-DSP
(supplied as standard)

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Example of a complete ventilation system



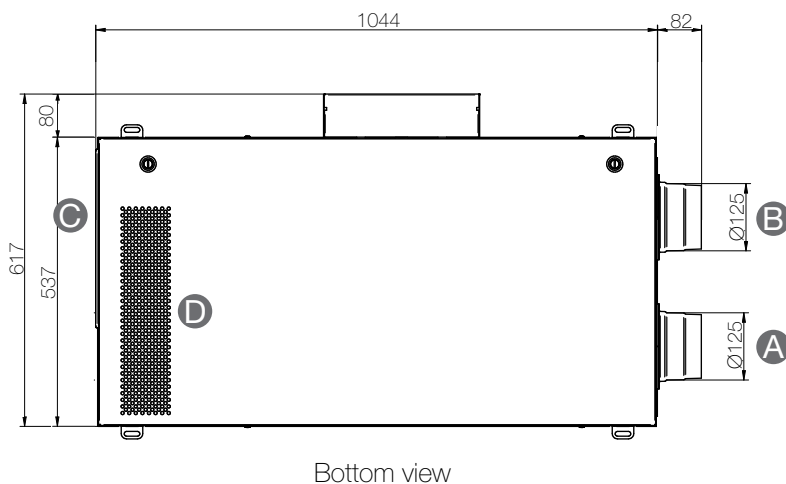
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How it works: a continuous running decentralised heat recovery unit (QR220DE) transfers thermal energy and humidity from extracted humid air to warm incoming fresh air, with top acoustic comfort. No need of any condensation drainage or air distribution system.

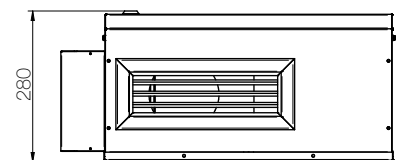
Energy saving: the preheated/precooled fresh air and continuous air changes reduce the demand for additional heating/airconditioning. The EC brushless motors significantly reduce the electricity consumption.

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)



Bottom view

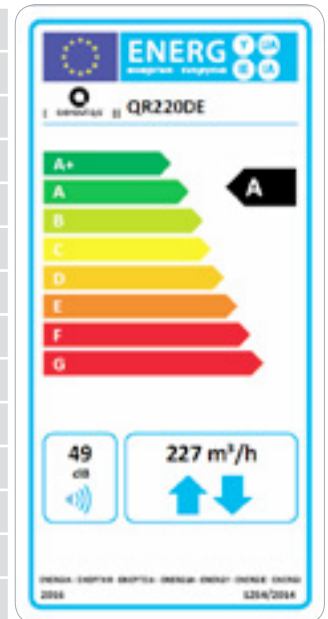


Front view

Model	QR220DE
Weight	25
A	Intake air from outside
B	Exhaust air to outside
C	Supply air to inside
D	Extract air from inside

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

a)	Mark	-	AERAULIQA	
b)	Model	-	QR220DE	
c)	SEC class	-	A	B
c1)	SEC warm climates	kWh/m ² .a	-14,3	-6,3
c2)	SEC average climates	kWh/m ² .a	-36,6	-26,4
c3)	SEC cold climates	kWh/m ² .a	-70,8	-56,8
	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	%	67	
h)	Maximum flow rate @ 0 Pa	m ³ /h	227	
i)	Electric power input (maximum flow rate)	W	109	
j)	Sound power level (L _{VWA})	dBA	49	
k)	Reference flow rate	m ³ /h	159	
l)	Reference pressure difference	Pa	10	
m)	Specific power input (SPI)	W/m ³ /h	0,308	
n1)	Control factor	-	0,65	1
n2)	Control typology	-	Local demand control	Manual control (no DCV)
o1)	Maximum internal leakage rate	%	2,5	
o2)	Maximum external leakage rate	%	1	
p1)	Internal mixing rate	%	1	
p2)	External mixing rate	%	2	
q)	Visual filter warning	-	Visual warning	
r)	Instructions to install regulated grilles	-	N/A	
s)	Internet address for pre/disassembly instructions	-	www.aerauliqa.com	
t)	Airflow sensitivity to pressure variations	%	1	
u)	Indoor/outdoor air tightness	m ³ /h	25	
v1)	AEC - Annual electricity consumption - warm climates	kWh	1,8	4,2
v2)	AEC - Annual electricity consumption - average climates	kWh	2,2	4,7
v3)	AEC - Annual electricity consumption - cold climates	kWh	7,6	10,1
w1)	AHS - Annual heating saved - warm climates	kWh	18,8	16,9
w2)	AHS - Annual heating saved - average climates	kWh	41,5	37,4
w3)	AHS - Annual heating saved - cold climates	kWh	81,2	73,2
	Sound pressure @ 3m ⁽¹⁾	dB(A)	19	
	Ambient temperature max	°C	+40	
	Degree of protection IP	-	X4	
	Marking	-	CE	



- 220-240V ~ 50/60Hz.

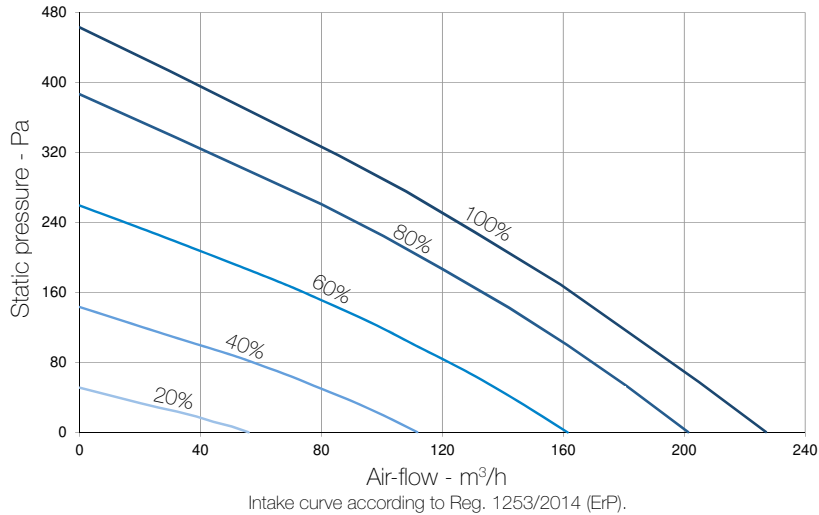
- air performance measured according to ISO 5801 a 230V 50Hz, air density 1,2Kg/m³.

- data measured in the TÜV Rheinland accredited internal laboratory at Aerauliqa according to the operating document IEC OD 2048 (level CTF1) for the IEC 60335-1 and IEC 60335-2-80 Standards.

(1) sound pressure level @ 3m in free field, breakout, speed 40%, for comparative purposes only.

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Performance curve



Speed %	W max	m ³ /h max
20	11	56
40	24	112
60	48	161
80	77	201
100	109	227

Sound level

Speed 100%	Lw dB - SOUND POWER OCTAVE BAND								LwA dB(A)	Lp dB(A) @3m
	125	250	500	1 K	2 K	4 K	8K	Tot		
	67	64	61	53	51	45	34	70	62	41

Speed 80%	Lw dB - SOUND POWER OCTAVE BAND								LwA dB(A)	Lp dB(A) @3m
	125	250	500	1 K	2 K	4 K	8K	Tot		
	62	60	57	48	45	37	26	65	57	36

Speed 60%	Lw dB - SOUND POWER OCTAVE BAND								LwA dB(A)	Lp dB(A) @3m
	125	250	500	1 K	2 K	4 K	8K	Tot		
	56	55	5	39	36	26	18	59	49	28

Speed 40%	Lw dB - SOUND POWER OCTAVE BAND								LwA dB(A)	Lp dB(A) @3m
	125	250	500	1 K	2 K	4 K	8K	Tot		
	50	45	36	28	23	15	16	51	39	19

Speed 20%*	Lw dB - SOUND POWER OCTAVE BAND								LwA dB(A)	Lp dB(A) @3m
	125	250	500	1 K	2 K	4 K	8K	Tot		
	-	-	-	-	-	-	-	-	-	-

Lp dB(A) @3m, breakout, for comparative purposes only.
* measurements comparable with test chamber background noise.