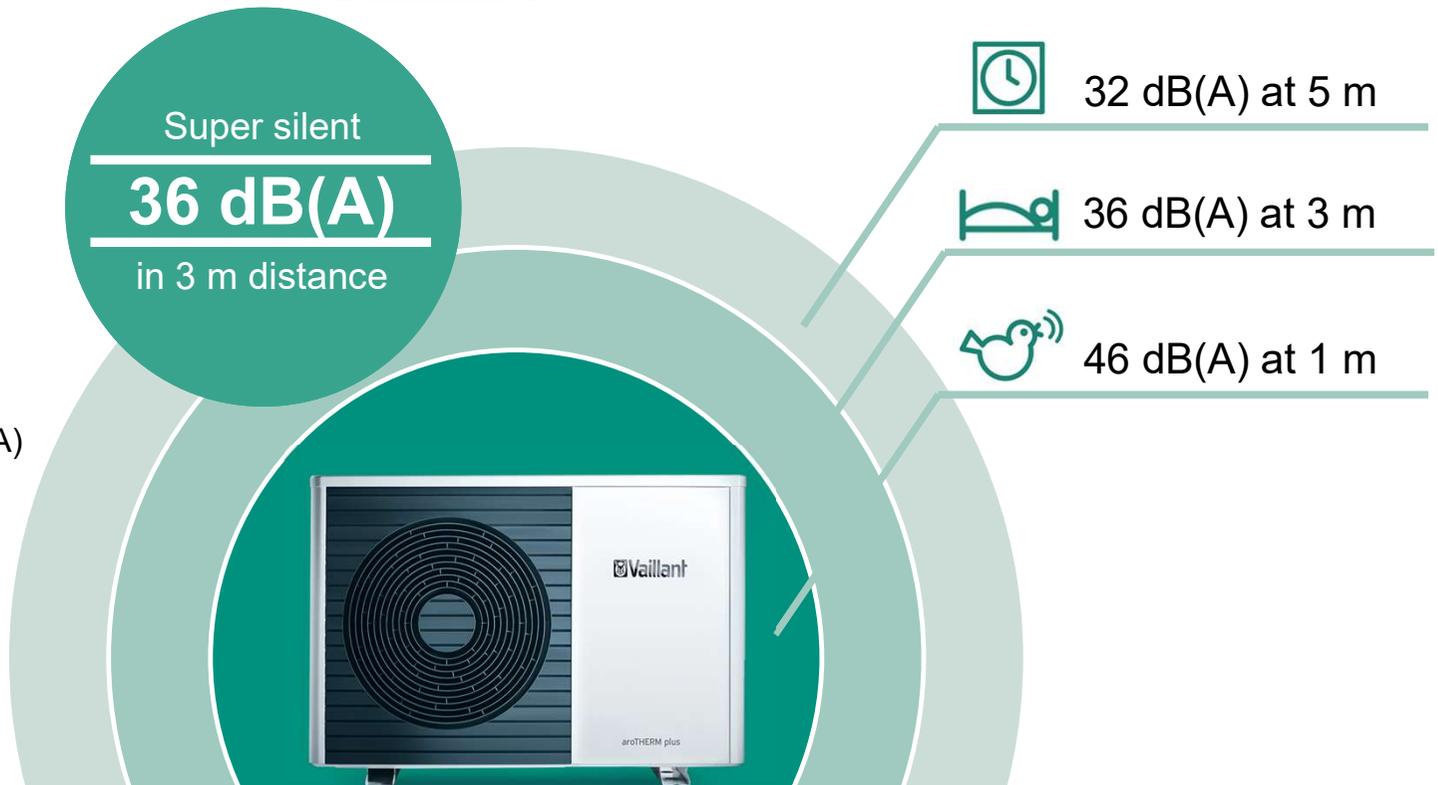


Super silent

With noise levels as low as 54dB

- One of our quietest outdoor heat pumps available
- Total flexibility for locating the heat pump outside
- Suitable for dense terraced housing estates
- Fulfils national legislation of 42 dB(A)
- New air flow conception and SoundSafeSystem to minimise sound emissions



54 dB

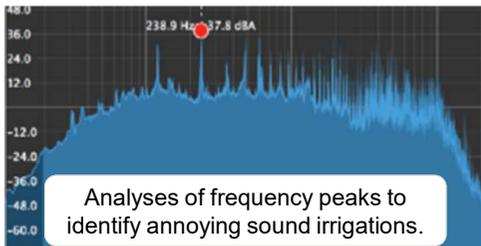
at 0 m with noise reduction mode

Silent operation – How did we do it?

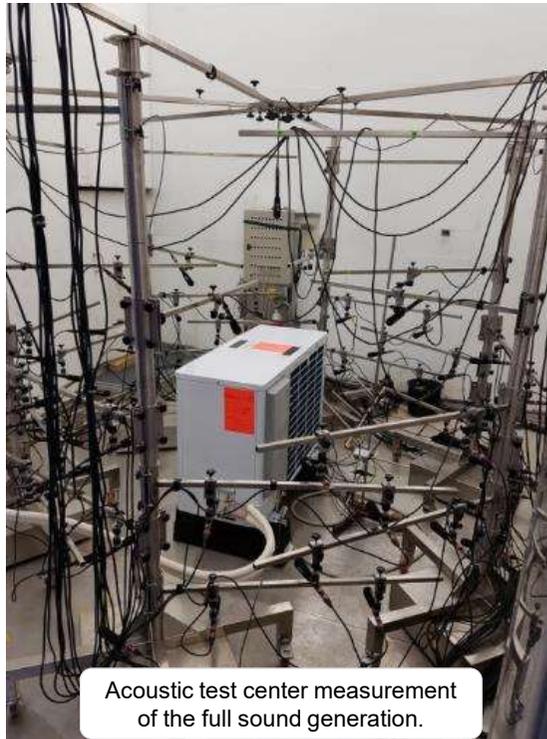
Super silent



Acoustic camera for sound images.



Analyses of frequency peaks to identify annoying sound irritations.



Acoustic test center measurement of the full sound generation.

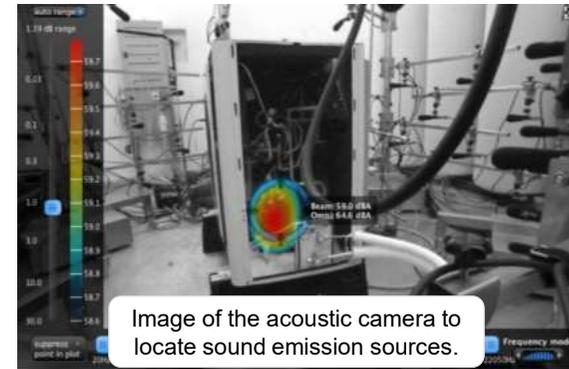
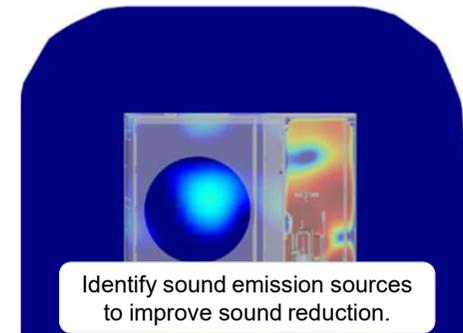


Image of the acoustic camera to locate sound emission sources.



Identify sound emission sources to improve sound reduction.

SoundSafeSystem

Measurement to avoid emissions of sound and vibrations:



SoundSafeSystem

- 1 Optimised fan and air routing
- 2 Vibration dampers in the refrigerant circuit
- 3 Acoustically optimised pipe connection in the refrigerant circuit
- 4 Refrigerant circuit packed in a sound-insulating box
- 5 Refrigerant circuit decoupled twofold
- 6 Vibration damper for mechanical vibration reduction

Improved air flow conception

Minimising sound emissions by moving air

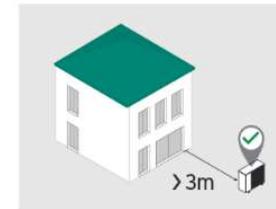
Air Flow Conception

- 1 Larger flat evaporator to reduce air speed while constant energy extraction
- 2 Flat evaporator (not curved as competition) for optimal energy transfer
- 3 Silent and high efficient fan motor
- 4 Specific fan blades design to optimise the air flow
- 5 Fan fixed onto specific EPP structure to reduce vibrations transfer
- 6 Optimised air flow of front air grid



Sound – The Figures

Super silent



half ball sound expansion

	Sound Power Level A7/W55	Sound Pressure Level (half ball sound expansion) A7/W55			Sound Pressure Level with noise reduction 40% (half ball sound expansion)			
		1 m distance	3 m distance	5 m distance	1 m distance	3 m distance	5 m distance	Sound Distance 35 dB(A)
aroTHERM plus 3 kW	54 dB	46 dB(A)	36 dB(A)	32 dB(A)	38 dB(A)	28 dB(A)	24 dB(A)	1,6 m
aroTHERM plus 5 kW	54 dB	46 dB(A)	36 dB(A)	32 dB(A)	38 dB(A)	28 dB(A)	24 dB(A)	1,6 m
aroTHERM plus 7 kW	55 dB	47 dB(A)	37 dB(A)	33 dB(A)	38 dB(A)	28 dB(A)	24 dB(A)	1,6 m
aroTHERM plus 10 kW	60 dB	52 dB(A)	42 dB(A)	38 dB(A)	43 dB(A)	33 dB(A)	29 dB(A)	4,0 m
aroTHERM plus 12 kW	60 dB	52 dB(A)	42 dB(A)	38 dB(A)	43 dB(A)	33 dB(A)	29 dB(A)	4,0 m



on ErP label

↑
Competitors focus
on 1m distance
values for communication