

Air source heat pumps

The numbers shown are examples and are not associated with any particular installation

Forward Calculation

Step 1	SWL dBA	57	
Step 2	Directivity (Q)	8	in corner of two walls and ground
Step 3	Distance from heat pump to assessment position (m)	7	
Step 4	dB distance reduction	-19	*note using formulae not table
Step 5	Barrier correction (-10dB, -5dB, 0dB)	-10	Completely obscured
Step X	Character adjustment dB	6	
Step 6	Calculate SPL	34	

Reverse Calculation

SPL limit (dBA)	42	
Directivity (Q)	8	in corner of two walls and ground
Distance from heat pump to assessment position (m)	7	
dB distance reduction	-19	*note using formulae not table
Barrier correction (-10dB, -5dB, 0dB)	-10	Completely obscured
Character adjustment dB	6	
SWL limit (dBA)	65	

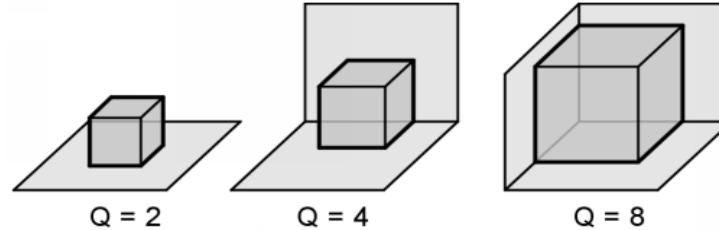
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Note:

Neither the Institute of Acoustics nor the Chartered Institute of Environmental Health will be held responsible for any issues arising from the use of this spreadsheet.

The user must satisfy themselves that the results generated are applicable to the installation being investigated





The following examples may be used as a guide:

- Q2 = an air source heat pump with one reflecting surface (i.e. the ground or a single wall if mounted on a wall off the ground).
- Q4 = an air source heat pump with two reflecting surfaces (i.e. ground mounted and against a wall or mounted off ground level against two walls)
- Q8 = an air source heat pump with three reflecting surfaces (i.e. ground mounted and against two walls or mounted off ground level between three walls).
- **NOTE – an air source heat pump with more than three reflective surfaces (for example those within small lightwells) will not meet the MCS planning standards.**

Note 5: Barriers between the heat pump and the assessment position (STEP 5)

A correction should be made for attenuation due to barriers between the air source heat pump and an assessment position. A correction will be necessary if an MCS Contractor is unable to see an assessment position from the top edge of the air source heat pump. Use the following instructions to determine whether a correction is appropriate:

- For a solid barrier (e.g. a brick wall or a fence) that completely obscures an MCS Contractor's vision of an assessment position from the top edge of the air source heat pump attenuation of -10 dB may be assumed.
- Where a solid barrier completely obscures an MCS Contractor's vision of an assessment position from the top or side edges of the air source heat pump.

assessment position from the top or side edges of the air source heat pump, but moving a maximum distance of 25 cm in any direction to the air source heat pump allows an assessment position to be seen, attenuation of -5 dB may be assumed.

- If it is possible for an MCS Contractor to see any part of an assessment position from the top or side edges of the air source heat pump no attenuation may be assumed.

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