Air source heat pumps

Revised assessment for Option 2 Proposed Location of ASHP at 67D, High Street, Codford, using:
Step 3 - Distance of 26.5m to closest window of sleeping accomodation of neighbouring property
Step 5 - -10dB attenuation assumed as ASHP not visible from receiver with brick wall of 67D barrier.
Step X - Character adjustment - set to 6 for reference purposes (note frequency Spectrum data provided).

Forward Calculation

Step 1	SWL dBA	60	
Step 2	Directivity (Q)	4	Near wall and on ground
Step 3	Distance from heat pump to assessment position (m)	26.5	
Step 4	dB distance reduction	-33	*note using formulae not table
Step 5	Barrier correction (-10dB, -5dB, 0dB)	-10	Not visible from receiver. Brick wall of 67D barrier.
Step X	Character adjustment dB	6	Provided for reference purposes.
Step 6	Calculate SPL	23	

Step 6 Calculate SPL falls to 20dB if Q = 2 as reflection is away from receiver.

Reverse Calculation

SPL limit (dBA)	35	
Directivity (Q)	4	Near wall and on ground
Distance from heat pump to assessment position (m)	26.5	
dB distance reduction	-33	*note using formulae not table
Barrier correction (-10dB, -5dB, 0dB)	-10	Completely obscured
Character adjustment dB	6	
SWL limit (dBA)	72	Maximum SWL at Option 2 Location.

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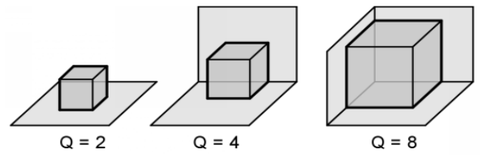
Note:
Neither the Institute of Acoustics nor the Chartered Institute of Environmental Health will be held responsible for any issues arising from the use of this spreadsheet.

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

Institute of Acoustics

Chartered Institute of Environmental Health



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, 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.