

Ref: 5081GH

Date: 23/09/2020

Client: Mr Gary Hadley

Site Address: Cat Hill Foot farm, Cat Hill Lane, Penistone, Sheffield, South Yorkshire, S36 7GD

NOVA Acoustics Ltd has been commissioned to prepare a desktop noise assessment for the installation of 1 No. Samsung Air Source Heat Pump (Model: AE16ORXYDGG) (the Proposed Development') at Cat Hill Foot farm, Cat Hill Lane, Penistone, Sheffield, South Yorkshire, S36 7GD.

The applicant has submitted a planning application to the council and the council have requested additional supporting information to ensure the noise emissions from the proposed air source heat pump (ASHP) do not affect the amenity of the neighbours. We have liaised with James Gardham, the local Environmental Health Officer, who accepted that a desktop assessment of the noise emissions would be sufficient.

The ASHP will be installed to the right of the door shown in the image below. The other photo shows the closest noise sensitive receptor. The distance to the NSR is 80m and the ASHP will be partially shielded from view.



The ASHP produces 54dBA sound pressure level at 1m during cooling, which is the highest noise emissions. The datasheet is attached below. Based on a propagation attenuation calculation of $20\log(r1/r2)$ and -5dB for partial shielding. The predicted specific noise level from the ASHP at the NSR would be 11dBA. The noise generated by the ASHP is expected to be inaudible at the closest NSR and can be considered to have 'No Observed Effect Level' in accordance with the National Planning and Policy Framework 2019.

Authored By: Mr A Martin, MSc, MIOA, MCIEH, MIET, MInstSCE

2. Outdoor Units

2-5. Sound data

Summary

Capacity (kW)	Model	Sound Pressure dB(A)		Sound Power dB(A)
		Cooling	Heating	Heating
5.0	AE050RXYDEG/EU	45	45	61
8.0	AE080RXYDEG/EU	48	48	63
12.0	AE120RXYDEG/EU	50	50	64
16.0	AE160RXYDEG/EU	54	52	66
8.0	AE080RXYDGG/EU	48	48	63
12.0	AE120RXYDGG/EU	50	50	64
16.0	AE160RXYDGG/EU	54	52	66

NOTE

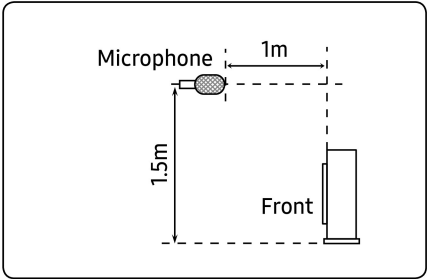
- Specifications may be subject to change without prior notice.
- Sound Pressure Level
 - Sound pressure level is obtained in an anechoic room.
 - Sound pressure level is a relative value, depending on the distance and acoustic environment.
 - Sound pressure level may differ depending on operation condition.
 - dBA = A-weighted sound pressure level
 - Reference acoustic pressure 0 dB = 20μPa
- Sound Power Level
 - Sound power level is an absolute value that a sound source generates.
 - dBA = A-weighted sound power level.
 - Reference power : 1pW.
 - Measured according to ISO 3741.

2. Outdoor Units

2-5. Sound data

Sound Pressure level

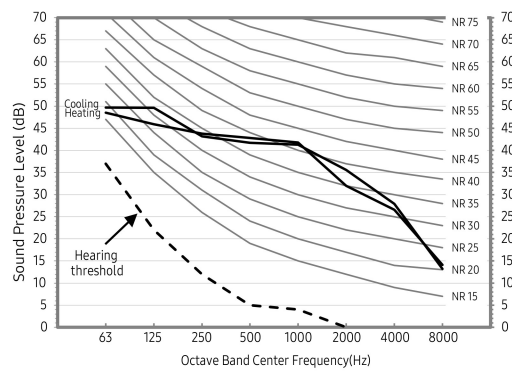
Unit: dB(A)



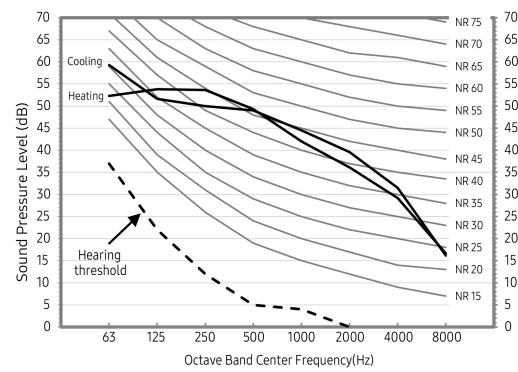
Model	Cooling	Heating
AE050RXYDEG/EU	45	45
AE080RXYDEG/EU	48	48
AE120RXYDEG/EU	50	50
AE160RXYDEG/EU	54	52

- NR Curve

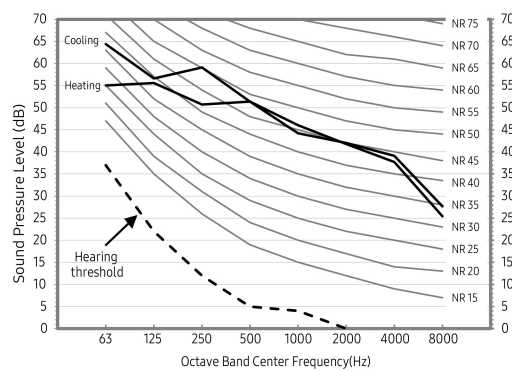
1) AE050RXYDEG/EU



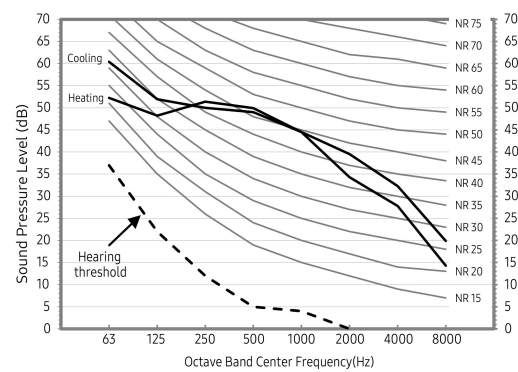
2) AE080RXYDEG/EU



3) AE120RXYDEG/EU



4) AE160RXYDEG/EU

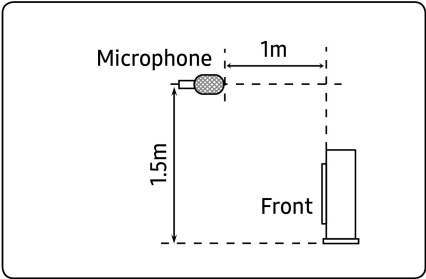


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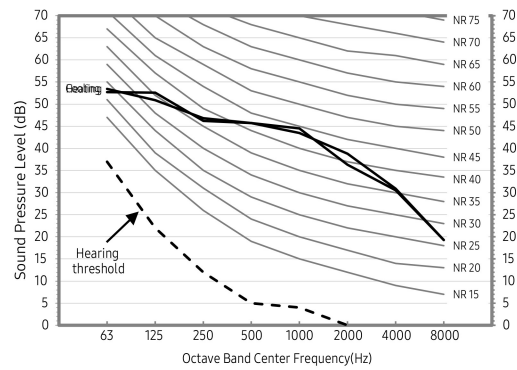
Sound Pressure level

Unit: dB(A)

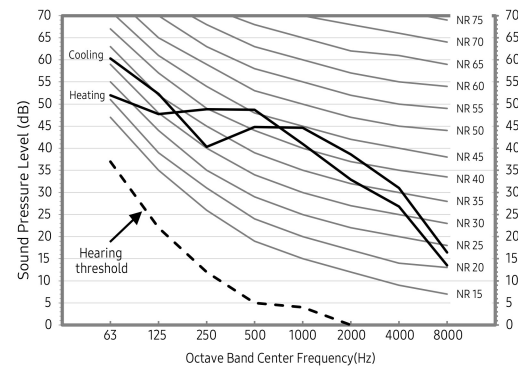


Model	Cooling	Heating
AE080RXYDGG/EU	48	48
AE120RXYDGG/EU	50	50
AE160RXYDGG/EU	54	52

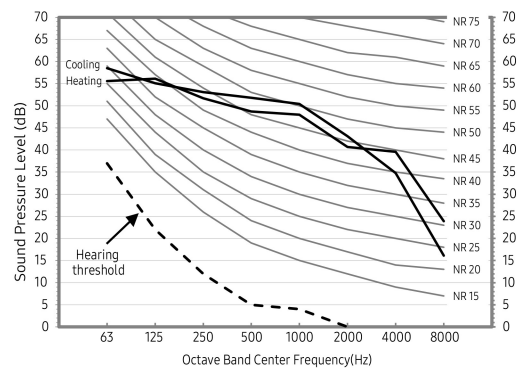
- NR Curve
- 5) AE080RXYDGG/EU



- 6) AE120RXYDGG/EU



- 7) AE160RXYDGG/EU



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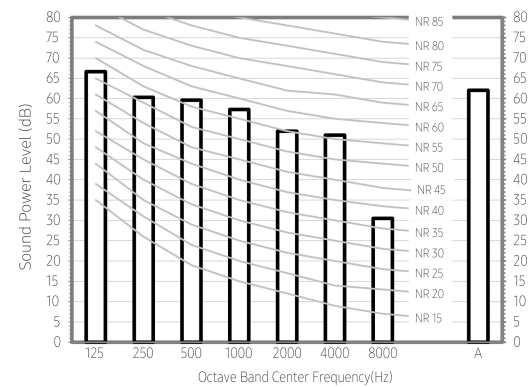
Sound Power level

NOTE

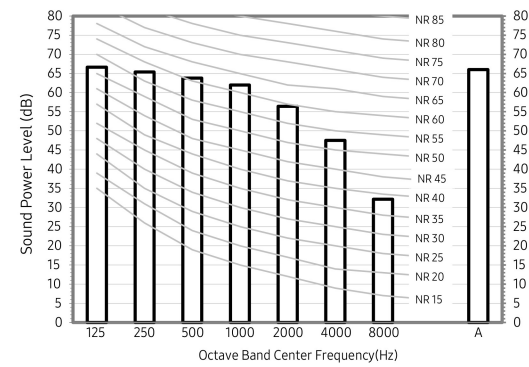
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AE050RXYDEG/EU	61
AE080RXYDEG/EU	63
AE120RXYDEG/EU	64
AE160RXYDEG/EU	66

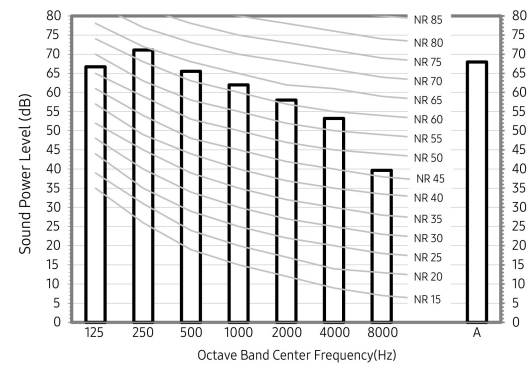
1) AE050RXYDEG/EU



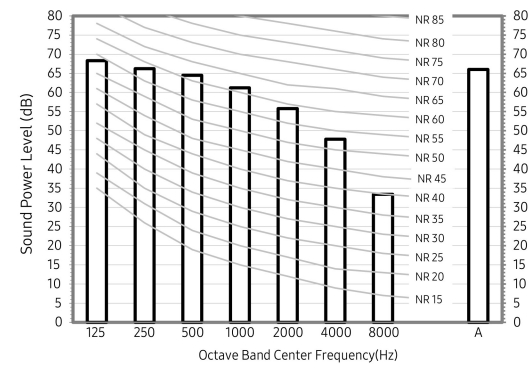
2) AE080RXYDEG/EU



3) AE120RXYDEG/EU



4) AE160RXYDEG/EU



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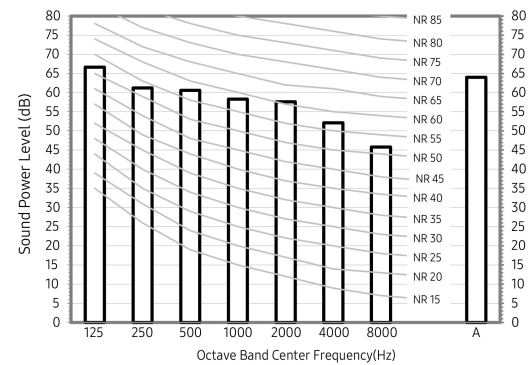
Sound Power level

NOTE

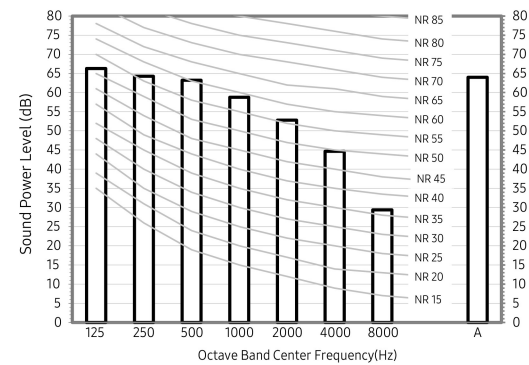
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AE080RXYDGG/EU	63
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5) AE080RXYDGG/EU



6) AE120RXYDGG/EU



7) AE160RXYDGG/EU

