

Sound: Pressure vs Power

Sound power level is the acoustic energy emitted by a source which produces a sound pressure level at some distance. Whilst the sound power level of a source is fixed, the sound pressure level depends upon the distance from the source and the acoustic characteristics of the area in which it is located.

The sound power is what is used in the acoustic calculation. Sound power is the sound generated at the source. Sound pressure is the airborne sound energy received by a receptor. The dBA level is a function of the 1/1 octave band noise levels

The standard is to limit the noise at the receptor to 5dBA below the surrounding sound (referred to often as LA90- It is used to express the background noise level. The background noise is the level which is exceeded for 90% of the time, or put another way, the sound level is only lower than the LA90 for 10% of the time. You could think of the LA90 as a backstop noise level below which the sound rarely goes.). The receptor being the sensitive neighbouring areas such as BR windows. The assessment is based on the day time background noise levels.

If you need to calculate the sound power at a given receptor you should contact an acoustician. To get the final level at the receptor, the radiation directivity factor is first applied to the sound power, the calculation then applies the distance loss in each 1/1 octave band and the louvre losses (of an acoustic enclosure if used). The 1/1 octave band levels at the receptor are then combined via the A-weighting corrections, to give the dBA level at the receptor.

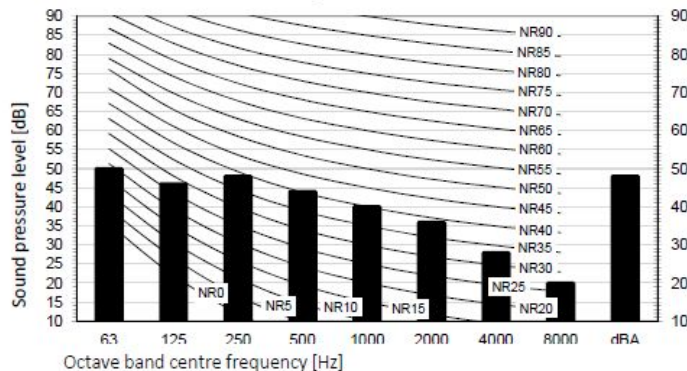
Sound: Pressure vs Power

	RXP35	RXM35	RXA35
Sound Pressure level: Cooling - High dBA	48		
Sound Pressure level: Cooling - Nom dBA		49	49
Sound Pressure level: Heating- High dBA	48		
Sound Pressure level: Heating- Nom dBA		49	49
Sound power level Cooling - Max		61	61
Sound power level Cooling - Night quiet mode		57	
Sound power level Heating - Max		60	61
Sound power level Heating - Nom		61	61
Sound power level Heating - Night quiet mode		57	
Sound power level - low sound mode - Cooling - Max		60	
Sound power level - low sound mode -Cooling - Night quiet mode		55	
Sound power level - low sound mode - Heating Max		60	
Sound power level - low sound mode - Heating -Night quiet mode		55	

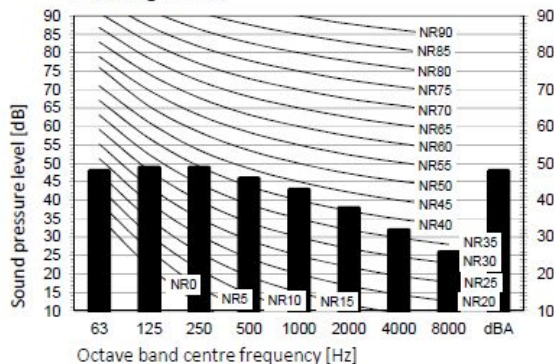
RXP35: Sound Pressure Spectrum

RXP35M

Cooling mode



Heating mode



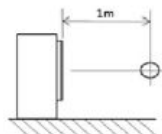
Legend

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale

B High Fan speed

Location of microphone



Cooling Total dB

A	B
dBA	48

Heating Total dB

A	B
dBA	48

Notes

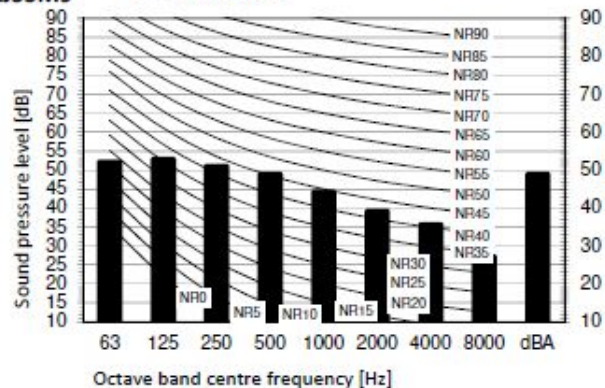
1. Operating conditions: power source 220-240 V/220 V 50/60 Hz; JIS standard
2. Background noise already taken into account.
3. Operating noise varies depending on operation and ambient conditions.
4. The operation noise measuring method is in accordance with JISC9612.
5. Measuring location: anechoic chamber

The sound pressure data is carried out in an anechoic chamber with a microphone at 1m distance from the fan.

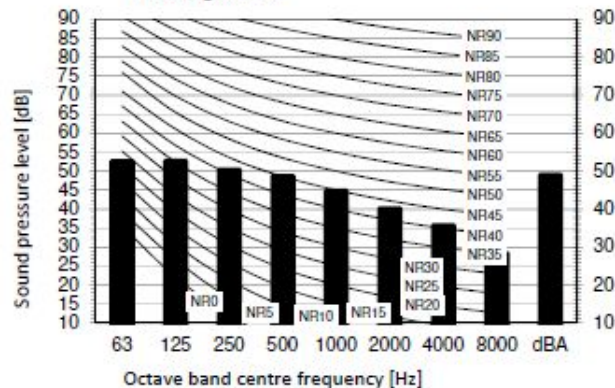
RXM35: Sound Pressure Spectrum

ARXM35R9
RXM35R9
RXA35A9
RXJ35M9

Cooling mode



Heating mode



Legend

dBA = A-weighted sound pressure level (A scale according to IEC).

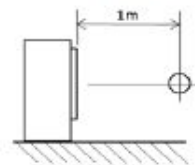
A Scale

B  Fan speed: High

Notes

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- 3 Operating noise varies depending on operation and ambient conditions.
- 4 The operation noise measuring method is in accordance with JISC9612.
- 5 Measuring location: anechoic chamber

Location of microphone



Cooling

Total dB

A	B
dBA	49

Heating

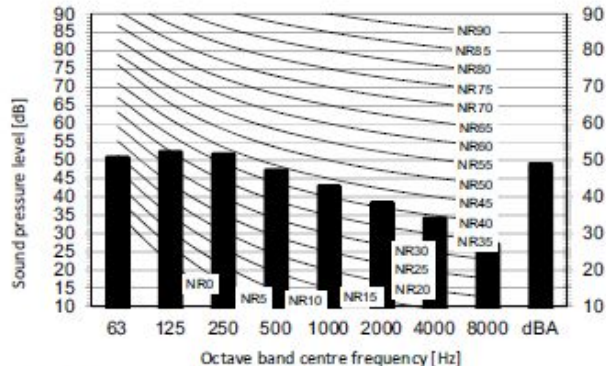
Total dB

A	B
dBA	49

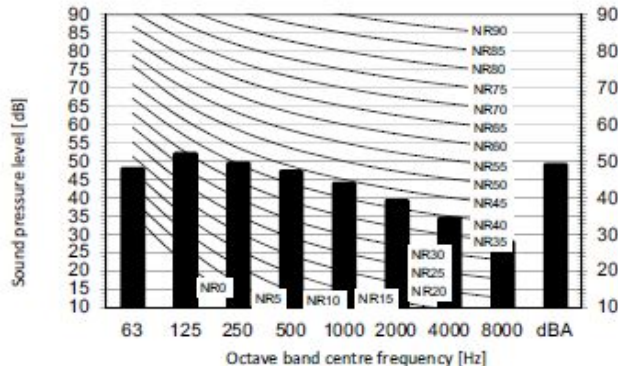
Pressure data is carried
in anechoic chamber with a
microphone at 1m distance from

RXA35: Sound Pressure Spectrum

Cooling mode



Heating mode



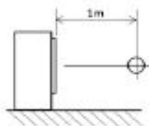
Legend

dBA = A-weighted sound pressure level (A scale according to IEC).

A Scale

B Fan speed: High

Location of microphone



Cooling

Total dB

A	B
dBA	49

Heating

Total dB

A	B
dBA	49

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Notes

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