

The design of air conditioning incorporating luminaires is complex and requires knowledge of heat load, air change rates, pressure drop and supply air temperatures. Failure to consider these factors carefully could cause the luminaires to fail to fulfil their function.

4.1.6 Acoustics

Luminaires may amplify the sound produced by components in the luminaire, e.g. the control gear, or produced elsewhere but transmitted to the luminaire through the building structure. Either way, the result is noise. Some spaces, such as concert halls have strict criteria about background noise, usually expressed as a noise rating (NR). A noise rating consists of numbered curve showing the maximum sound pressure level allowed in each frequency band (Figure 4.9). Table 4.2 gives recommended NR values for different applications. Where noise is likely to be a problem, care should be taken to use well constructed luminaires and to mount them so they are free from vibration. It is also desirable to use high frequency control gear but if this is not possible, remote positioning of control gear may be necessary.

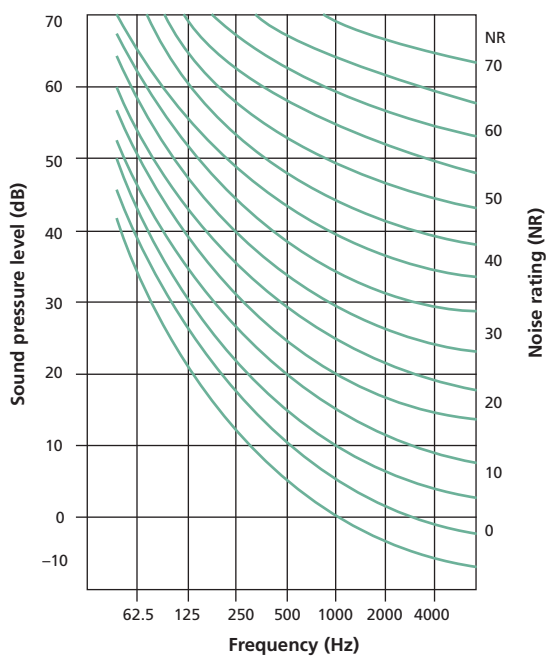


Figure 4.9 A set of noise rating curves, plotted as sound pressure level at different frequencies

Application	Noise rating
Studios	10
Concert halls	20
Conference rooms	25
Lecture rooms	25
Auditoria	25
Hospitals	30
Private offices	30

Table 4.2
Recommended noise rating values for different applications