

The JBL Model L19 Loudspeaker System

Author: G. Timbers, Design Engineer

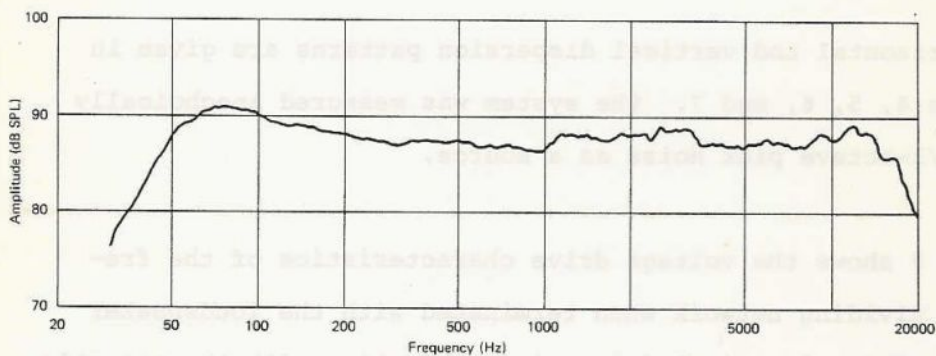
Frequency response measurements at JBL are made on a large flat baffle, essentially into half space. Figure 1 shows the exceptionally smooth on-axis response of the L19 system at a distance of 1 m for a 1 W nominal input. Anechoic measurements give substantially the same curve from 250 Hz up. The impedance curve is shown in Figure 2.

The second and third harmonic distortion characteristics of a typical L19 are displayed in Figure 3. Once again the drive level is 1 W at a distance of 1 m. Note that for the majority of the audible range the L19 remains below 0.3% distortion.

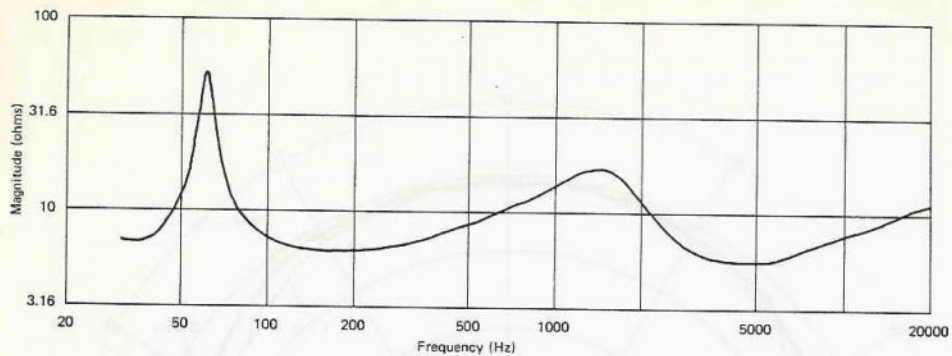
The horizontal and vertical dispersion patterns are given in Figures 4, 5, 6, and 7. The system was measured anechoically with 1/3-octave pink noise as a source.

Figure 8 shows the voltage drive characteristics of the frequency dividing network when terminated with the loudspeaker loads. This electrical drive, in combination with the acoustic response of each transducer, yields the smooth frequency response curve discussed earlier. The high frequency level control is set to its mid position in this curve, as with all others.

The nominal sensitivity of the L19 system is 87 dB SPL (1 W @ 1 m). In a free field, an input of 10 W will produce a level of about 88 dB SPL at 3 m (about 3 - 4 dB higher in a typical indoor environment). Normal music levels, even for pop and rock, are in the 90 - 100 dB SPL range; thus the nominal 35 W per channel continuous power rating of the system is sufficient to meet these demands. A pair of L19 systems driven by a 35 W per channel amplifier in an average listening room is capable of levels in excess of 100 dB SPL.

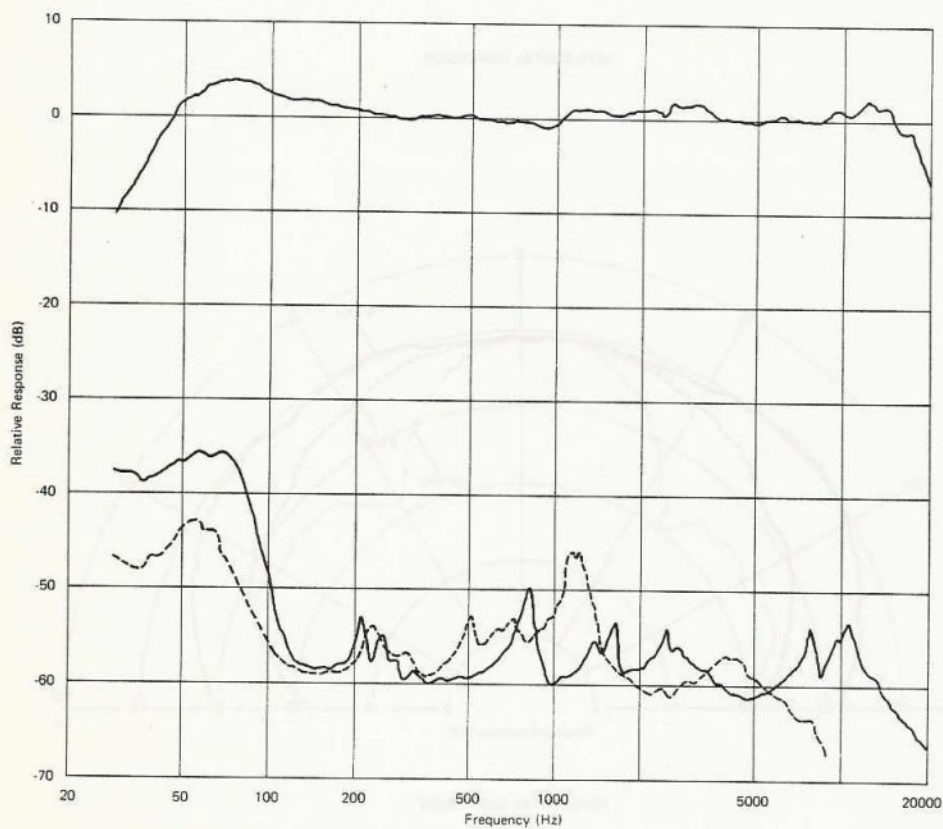


FREQUENCY RESPONSE



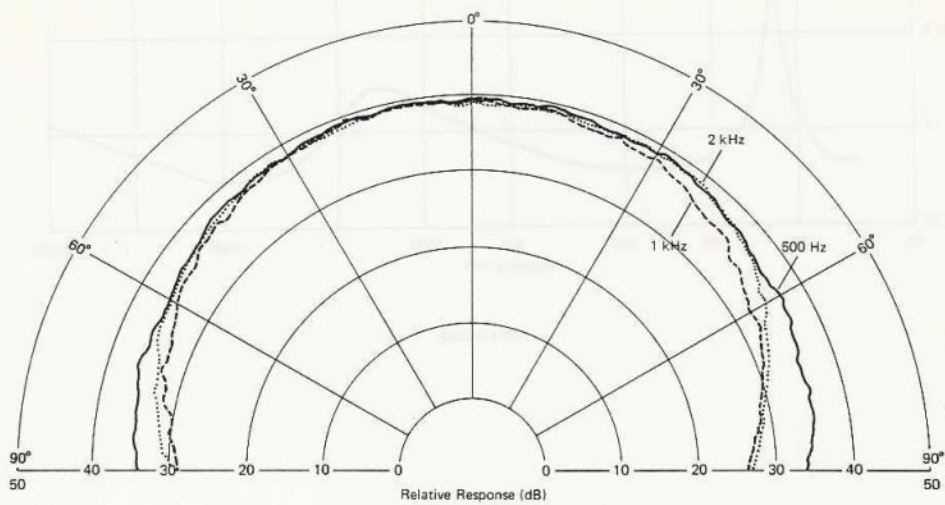
IMPEDANCE

Figure 2



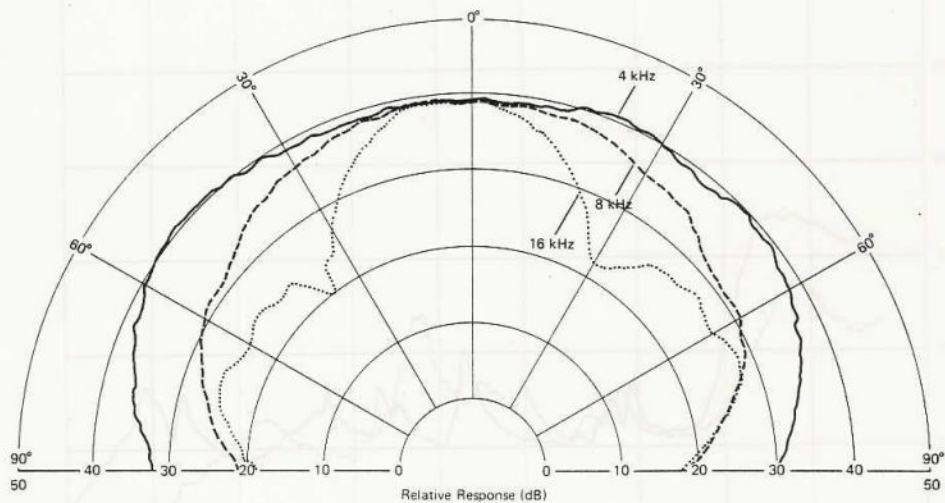
1W HARMONIC DISTORTION

Figure 3



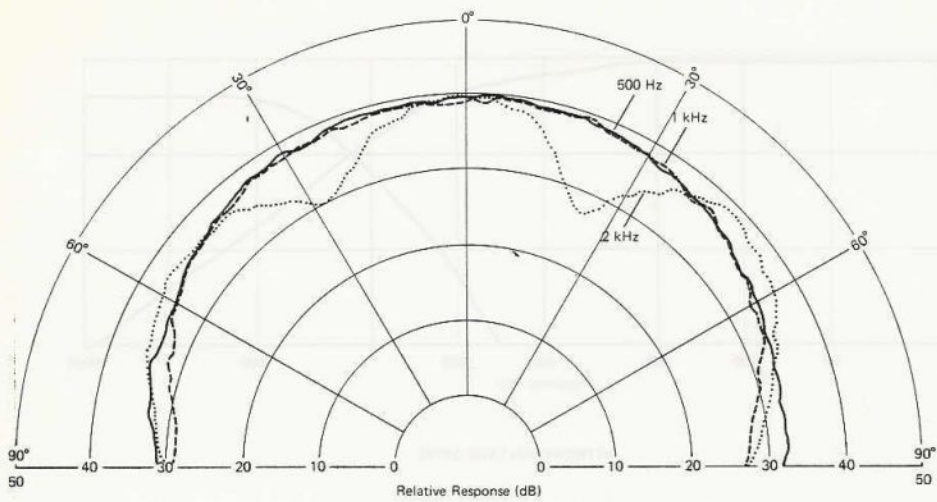
HORIZONTAL DISPERSION

Figure 4



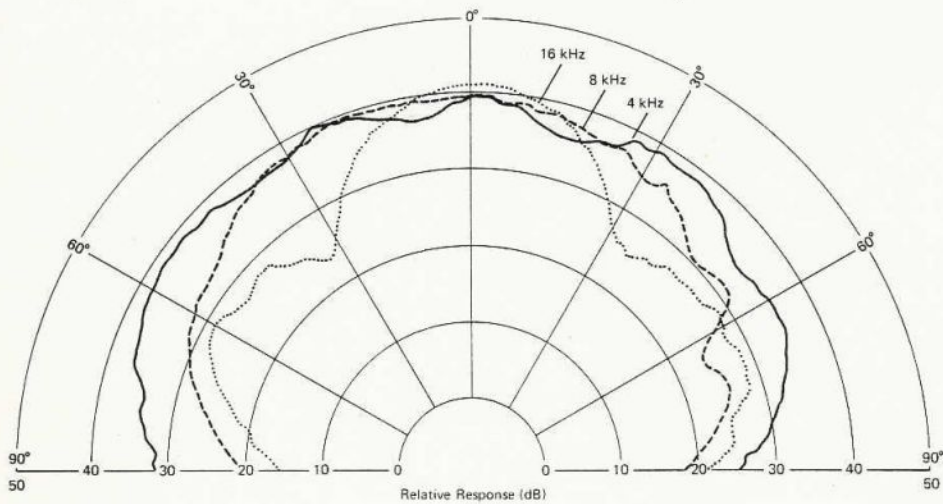
HORIZONTAL DISPERSION

Figure 5



VERTICAL DISPERSION

Figure 6



VERTICAL DISPERSION

Figure 7

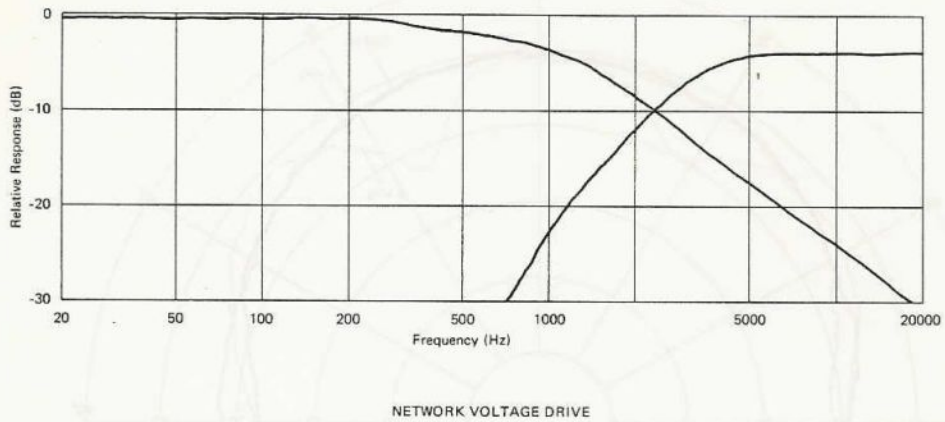


Figure 8

