

Tannoy Precision 8P

KEITH HOLLAND

The Precision 8P from Tannoy is a 3-way passive loudspeaker comprising a concentric bass/mid/tweeter and a separate 'super-tweeter'. Tannoy has been producing its famous Dual Concentric drivers in a range of sizes for many years, and the 8P uses an 8-inch (200mm) paper-coned woofer and a 1-inch (25mm) titanium-domed tweeter radiating through the apex of the woofer cone. The super tweeter is also a 25mm titanium dome unit that endows the 8P with a claimed bandwidth of over 50kHz (the measurements in this review are limited to 20kHz so this claim has not been verified here). The cabinet has external dimensions of 272mm wide by 440mm high by 288mm deep with a rear-mounted port and connection terminals. The speakers weigh in at 12.7kg each.

Tannoy specifies power handling figures of 60W RMS and 160W programme which, along with a sensitivity of 93dB SPL for 1W at 1m distance under half-space conditions, gives a single speaker maximum output capabilities of about 111dB (RMS) and 115dB (programme) at 1m. The electrical impedance is a



nominal 6ohms and the drivers are magnetically shielded. The crossover frequency between the woofer and tweeter is stated as being 2.2kHz, but Tannoy does not specify at what frequency the super tweeter takes over from the concentric one.

Figure 1 shows the on-axis frequency response and harmonic distortion for the Precision 8P. Although a bit uneven at high frequencies, the response is seen to lie between +/-3dB limits from 55Hz to 20kHz, with a 3rd-order low-frequency roll-off that reaches -10dB at a commendable 30Hz or so. The 3rd-order slope and slightly uneven roll-off suggest that Tannoy may have opted for an unusual port alignment with this loudspeaker, but this appears to work well. The harmonic distortion performance was measured with the loudspeaker generating a sound pressure level of 90dB at 1m (anechoic). The 2nd harmonic rises to a maximum level of 30dB (3%) at 45Hz, which falls to less than -40dB (1%) for frequencies above 80Hz, and the 3rd harmonic remains below -40dB at all frequencies above 35Hz. These figures are typical of

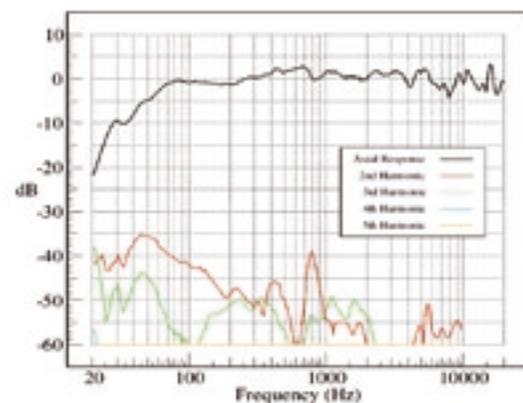


Fig. 1. On-axis frequency response and harmonic distortion.

a passive loudspeaker of this size.

Figures 2 and 3 represent the off-axis performance of the 8P. As expected with concentric drivers, there is no hint of an interference notch at the crossover frequency that is a characteristic of most loudspeakers with spaced drivers. The vertical and horizontal 15- and 30-degree off-axis responses are all very similar and close to the on-axis response, and at wider off-axis angles the response is seen to fall with increasing frequency in a controlled manner.

The time domain performance is demonstrated via the step response, acoustic source position and power cepstrum plots (Figures 4, 5 and 6) and the combined frequency/time performance via the waterfall plot in Figure 7. The step response for the Precision 8P is one of the best of any loudspeaker I have tested so far, with an extremely rapid rise and controlled fall with little or no separation between the responses of the individual drivers. The acoustic source position is

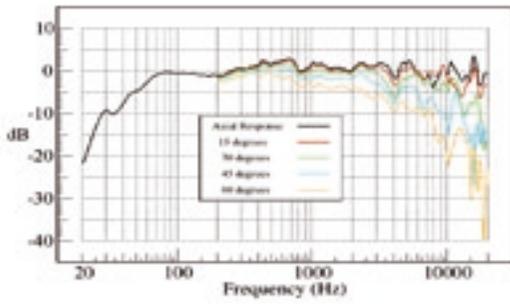


Fig. 2. Horizontal off-axis response.

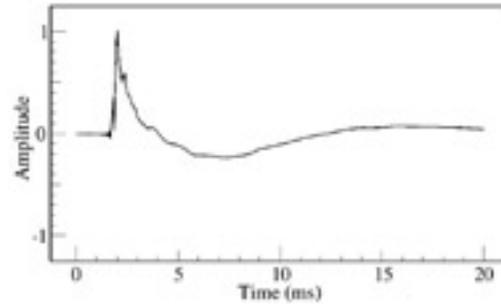


Fig. 4. Step response.

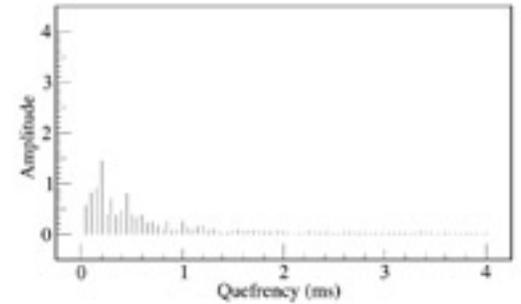


Fig. 6. Power cepstrum.

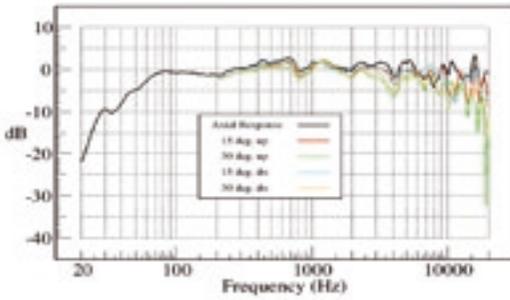


Fig. 3. Vertical off-axis response.

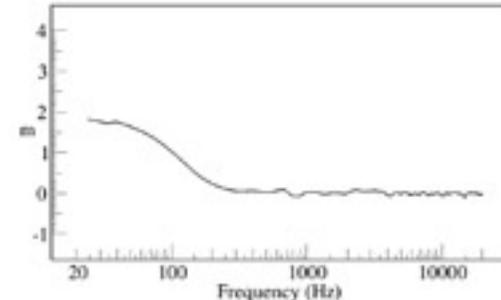


Fig. 5. Acoustic source position.

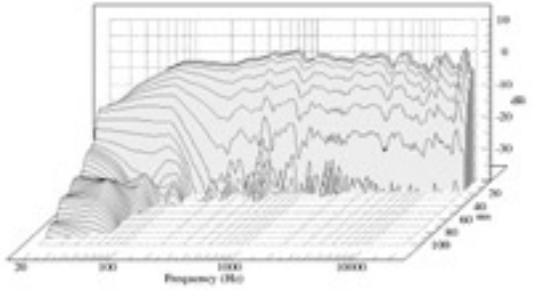


Fig. 7. Waterfall plot.

also commendable with the low-frequency parts of transient signals effectively radiating less than 2m behind the mid- and high-frequency parts. The power cepstrum indicates the presence of an echo after about 200 microseconds, which may be responsible for the slightly uneven high-frequency response. The decay of the low frequencies displayed in the waterfall plot is unusual in that there appears to be a rapid initial decay to about -20 or -30dB followed by a slower decay. This may be a consequence of an unusual port

alignment as mentioned above. All other frequencies decay rapidly with only very slight indication of the presence of resonances in the mid-band.

To sum up, the Precision 8P is a very commendable performer. Of particular note is the time domain performance with a very accurate step response, compact source position and fairly rapid (initial) low-frequency decay; these suggest that this loudspeaker should be excellent at reproducing transient signals. Probably the most notable feature of this performance

however, is that the accurate time domain performance is achieved with little compromise in frequency response, either on- or off-axis. Considering also the point-source properties of the concentric driver layout, it is clear that this loudspeaker should prove hard to beat for nearfield monitoring, at any price. ■

Contact
TANNOY, UK:
Website: www.tannoy.com