

## GAME OF CONTRAST

### *DLS Flatbox Large*

Dynamic speakers from DLS have an impeccable reputation among car audio enthusiasts, but in recent years the Swedish company has been making its presence felt ever more clearly as a manufacturer of speakers for home use. The application of their own dynamics with the necessary characteristics allows DLS to make speakers with an excellent price/quality ratio.

The portfolio of designer models in this brand has recently been extended by the Flatbox range. These are compact wall-mounted speakers with an elegant black or white lacquered finish. The largest model - the Large - selected for this review is also distinguished by its universality. It can be installed as the front, rear or central speakers in a home cinema system. Or it can be used with some success for a stereo system, — a pair of Flatbox Large speakers gives a high-quality sound to an additional area.

Each speaker in the kit is fitted with two grills of your choice - to give either a contrastive or a monochrome design. In terms of its construction, Flatbox Large comes as a mini-monitor with a traditional phase-inverting carcass made of MDF, but in a flatter shape. Installed on the front panel are a 28-millimetre silk dome tweeter and a pair of mid-range loudspeakers. Despite their small diameter (8 cm), the “squawkers” create a very serious impression: the diffusers are constructed from long-fibre cellulose, have a resin bracket and central covers made of impregnated cloth.

In terms of sound, the Swedish speaker system creates a strong impression. And who would imagine that such compact speakers with small diaphragms were capable of reproducing such a rich and linear sound with a very respectable bass level. The only noticeable things are minor resonances in the range 120 - 140 Hz, but the box-like coloration in the sound is no longer noticeable. The middle register is very detailed and, particularly pleasingly, musically balanced. The upper band is reproduced clearly, with high tonal discrimination, and without dry undertones. The speakers feature a reasonably good overload capability. No distortions were detected at all when listening at medium and higher volume levels. Only at levels close to the maximum does distortion become evident, caused by restrictions in the motion of the diffusers. On the plus side

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Manufacturer	DLS Svenska AB (Sweden)
Made in	China
Cost of pair, Rub.	24000
<a href="http://www.dls-home.ru">www.dls-home.ru</a>	
Input	
power, Wt	30 — 120
Sensitivity (1 Wt/m), dB 87	
Impedance, Ohm	4
Frequency range, Hz	70 — 25 000
Non-uniformity in AFC, dB	not available
Physical	
measurements, mm	220 x 92 x 520
Weight (single), Kg	4,6



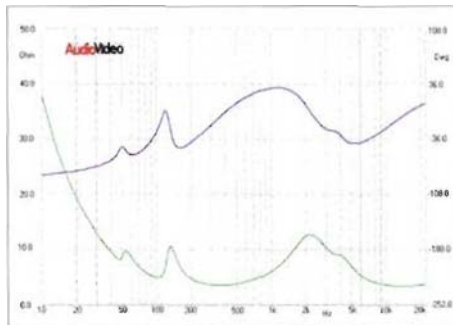
we also count the accurate focus in the audio scene. There is a minor binding of the speaker-oscillators to the oscillators, due to which the echeloning of the audio space is slightly impaired. But we must accept that of the flat wall-mounted speakers, the DLS Flatbox Large are the ones that “redraw” the sound space in the very best way.

**WE LIKED**

*Significant for systems of this size are the bass potential and the excellent musical balance. Natural reproduction of the middle and high ranges.*

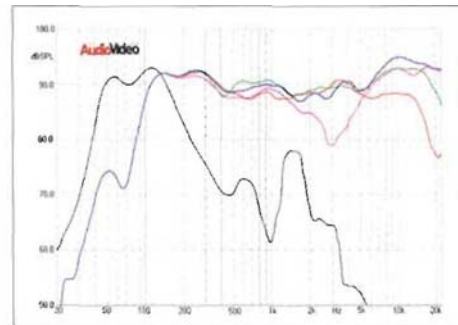
**WE DIDNT LIKE**

*“Box-like” resonances are slight, but affect the bass region where they are noticeable. Images at the edges of the scene are slightly bound to the speakers.*



**Frequency dependence of Z modulus for the DLS Flatbox Large**

System with fairly uniform, but low impedance — nominal value 4 Ohm, but at high frequencies, starting at 10 kHz, it falls to 3 Ohm. This fact must be taken into account when selecting an amplifier, which will have to supply increased current in the HF-range, where distortion increases in any case. A discrimination filter with a centre frequency of 2900 Hz gives a fairly low hump with a small step — it seems like there is a section in the circuit to compensate for the reactive components. The phase inverter is tuned to 70 Hz, and judging by the rise in the curve in the left-hand part of the diagram, at the input to the speakers there is an isolating capacitor acting as a filter for low frequencies.



**Amplitude-frequency characteristic of the DLS Flatbox Large**

Very respectable for flat wall-mounted speakers — the non-uniformity in the mid-range frequencies does not exceed 43 dB, which means that there will be no noticeable disturbance of the tonal balance. The increases at the edges of the range, as is fully evident, have been specially created, by its very nature this is a frequency correction, enlivening the sound of the speakers at low volume. The directionality diagram is ideal — the curves, taken at various angles from the acoustic axis and with the speakers in the vertical position (green and red), are practically linear and have minimal distortion. The curve in violet shows what happens if the speaker system is placed horizontally and angled away from the axis by 30 degrees. In this case the mid-basses and tweeters begin to cross over each other, which causes a deep interference notch at 3 kHz. The phase inverter has an organ resonance at 1600 Hz, which can be noticed at high volume. The sensitivity is fairly high, on the order of 93 dB, and therefore even a 40-Watt amplifier will be quite adequate to fill a medium-sized area.

