

DALI SUB C-8 D

WHITEPAPER



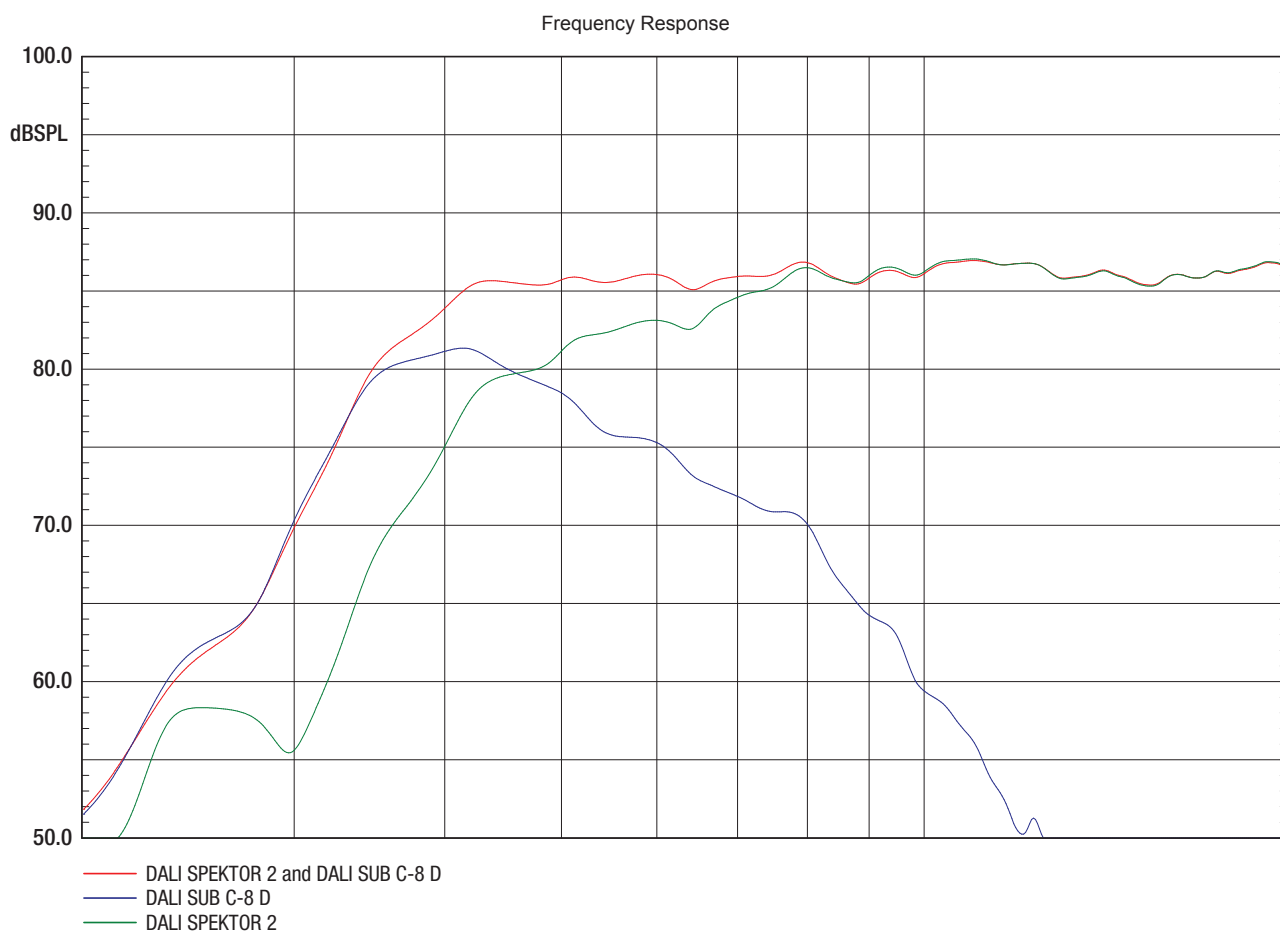
IN ADMIRATION OF MUSIC



INTRODUCTION

Unlike some subwoofers the DALI SUB C-8 D has been engineered to perform equally well on both music and movies. It is very important to DALI that a subwoofer can render a performance true to the input signal. Therefore a DALI subwoofer is everything but a 'boombox'.

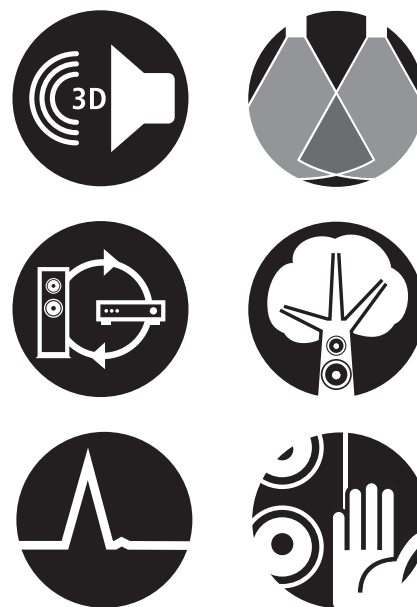
ACOUSTIC BACKGROUND



The DALI SUB C-8 D clearly has its heart set on high fidelity.

The DALI SUB C-8 D will feel equally at home in a movie focused surround setup and a compact stereo setup meant for mainly musical enjoyment.

Over the years DALI's engineers have developed a set of sound design principles. Today these are applied in the creation of any DALI speaker. Naturally our subwoofers must be able to enter into any setup without sacrificing the purpose of providing wide dispersion, time coherent and low-loss performance.



You can read more about our sound design principles at <https://www.dali-speakers.com/sound/sound-design/>

CABINET

The solid MDF cabinet is designed and manufactured to meet the tough DALI specifications. The enclosure comes in a choice of Black Ash or White finishes, making it blend perfectly with most speaker designs and room decors.

The entire cabinet is effectively decoupled from the floor by means of four polymer based oversized spikes.

Appearing to hover above the floor the distance of 30 mm eliminates any potential turbulence from the space between the cabinet and the floor itself. Still, the proximity to the floor ensures that the benefit of having a down-firing subwoofer is maintained; a higher efficiency and more freedom in positioning.



WOOFER

DALI SUB C-8 D is equipped with an 8" down-firing woofer. The cone is constructed from a high-quality paper pulp resulting in a rigid cone with excellent breakup characteristics while at the same time being very lightweight and agile.

The engine of the woofer is built around an 'oversized' ferrite magnet and optimized for maximum flux within the voice coil gap. The reason is that it was crucial for the project team to reach a high B/L product to enable the SUB C-8 D to render the finer low frequency details of music, also at a higher sound pressure level. The measured B/L value of 14 N/Ampere is a good indication of the level of control and precision that was reached, and rarely to be found in this category at all. And the numerous listening sessions has truly convinced us that this was the right way to go.

The voice coil is 26.5 mm long and built for long excursions. It is vented to ensure air-cooling to the system, and the coil itself. Venting this 4-layer voice coil keeps the temperature down, and the benefit is a stable impedance response.

Also, the pole piece is vented for maximum cooling. Here the venting has another purpose too; it reduces internal compression in the motor system. This ensures free movement of the cone without any over/under pressure affecting the performance.

Adhering to the low-loss sound design principle, the surround of the woofer is built to allow long and linear excursion. The oversized suspension is designed to allow both weak and strong transients to turn into undistorted acoustic signals.





AMPLIFIER

The integrated 170 Watt RMS Class D amplifier is a highly linear construction. The DALI SUB C-8 D will follow and render the required signal with an absolute minimum of bias. Designed not only for continuous power, but also for peak power, this subwoofer is able to deliver 220 Watt Peak Power. This is very relevant when it comes to both movie and music signals.

The switch mode power supply is part of the reason for very low power consumption - only 0.4 Watt in stand-by mode. And the amplifier displays an impressive efficiency of 70%. In unison the high-efficiency amplifier section and power supply construction generate an absolute minimum of heat loss. For that reason you will find no external heat sink on this subwoofer.

To improve sound reproduction in general, and to ensure that this subwoofer can perform under difficult

circumstances, a limiter has been incorporated in the amplifier section. The integrated limiter works in two areas: It compares the input signal amplitude to the potential output signal level, and it compares the available supply voltage from the power supply to the expected output signal. If any of these comparisons show that there will be a problem then the limiter will cut the signal in a soft manner and without affecting peak power.

Fitted with controls for gain, cut-off frequency, and phase, the DALI SUB C-8 D will adapt to any front speaker and room acoustics. And with a choice of LFE and LINE inputs it can be connected to almost any amplifier, receiver or processor.

APPLICATION

Placing a subwoofer is a very large part of creating the perfect audio reproduction. DALI recommends placing the SUB C-8 D in a corner or if that is not possible alongside a wall. This will maximise the bass output and the distribution around the room. The compact size of the SUB C-8 D makes placing it correctly much easier than many larger subwoofers.

Available in Black Ash and White, the SUB C-8 D is the natural companion for many DALI speakers. Any compact speaker from the SPEKTOR or ZENSOR series will integrate perfectly with the SUB C-8 D, and the SUB C-8 D will compliment surround setups from the same series just as well.

And importantly; the design, technology, and construction of this subwoofer makes it a perfect upgrade of a speaker system of another brand. Whether it's a 2.1-, 5.1- or 7.2-channel system – or something in between – the DALI SUB C-8 D will take natural sound one step further.



TECHNICAL SPECIFICATIONS

DALI SUB C-8 D	
Frequency Range [+/- 3] dB [Hz]	33 – 200
Maximum SPL [dB]	109
Crossover Frequencies [Hz]	40 - 120
Low Frequency Driver(s)	1 x 8" long stroke
Low frequency driver, Diaphragm type	Paper
Enclosure Type	Bass reflex
Bass Reflex Tuning Frequency [Hz]	49
Max. Amplifier Power Output [RMS Watts]	220
Continuous IEC Power Output [RMS Watts]	170
Input Impedance [kohm]	25
Connection Input(s)	RCA, Stereo (low-pass filtered) LFE (Mono)
Magnetic Shielding	No
Recommended Placement	Floor, near wall or corner
Recommended Distance From Wall [cm]	10 - 30
Functions	Crossover Frequency Phase Switch Standby (Auto Power) On/Off Switch, Volume (Gain)
Max. Power Consumption [Watts]	250
Dimensions (H x W x D) [mm]	335 x 295 x 310
Weight [kg]	10.4

All technical specifications are subject to change without notice.