
DALI 3b

Congratulations on your fine judgement. In its class the DALI 3b is one of the very finest loudspeakers on the market. To get the maximum performance from DALI 3b we recommend that you read this manual before installing your new speakers.

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POSITIONING

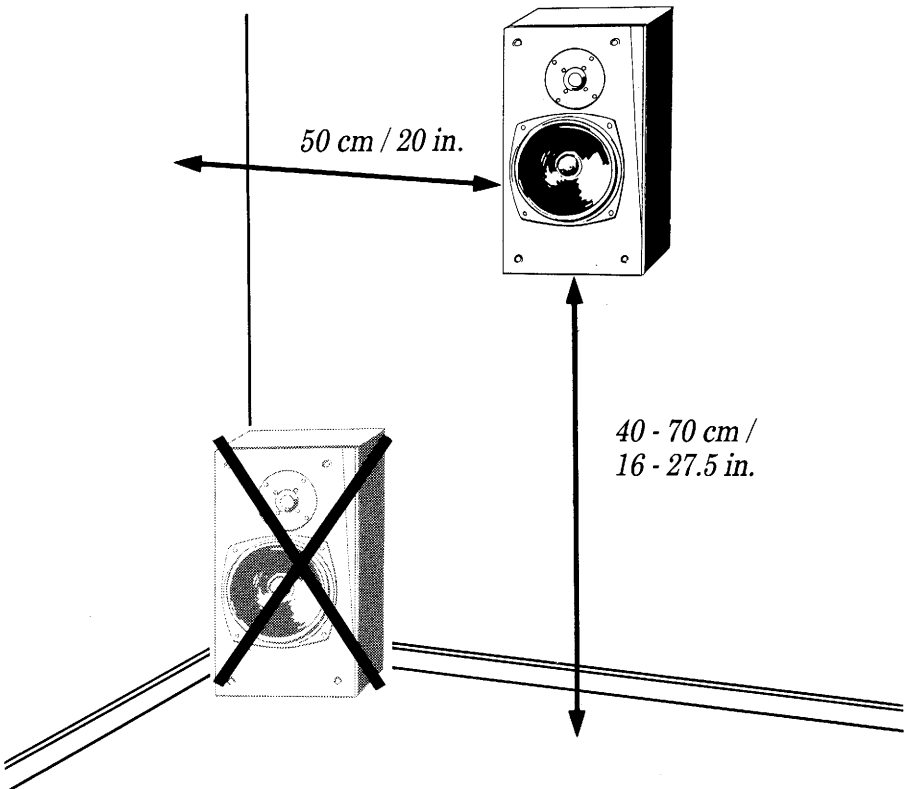
DISTANCE FROM WALLS

DALI 3b gives the best reproduction if placed on a speaker support of a height of between 40 cm (16 in) and 70 cm (27.5 in). The system must be placed as close to the back wall as possible and approximately 50 cm (20 in) from the side walls.

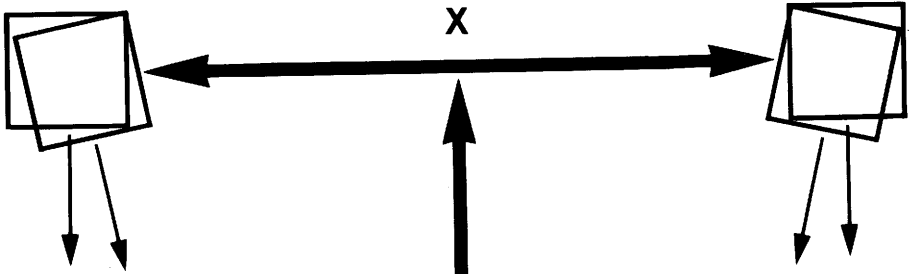
Alternatively DALI 3b may be placed on the wall at a distance of between 40 cm (16 in) and 70 cm (27.5 in) from the floor. Or DALI 3b may be placed on a bookcase in a way allowing that the distance from the floor is kept within the range of 70 - 130 cm (27.5 - 51 in).

DALI 3b should be placed vertically.

Corner location should be avoided.

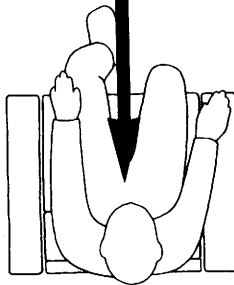


POSITIONING



EQUAL DISTANCE:

The distance from your normal listening position to both speakers should be equal. This distance should also equal the distance between both speakers.



ANGLING (TOE-IN):

Not normally necessary except where the walls are highly sound absorbent. In this case a slight angling may improve stereo imaging.

SIGNAL SOURCES

We recommend the use of the best speaker cables and, especially, a very good turntable or CD-player.

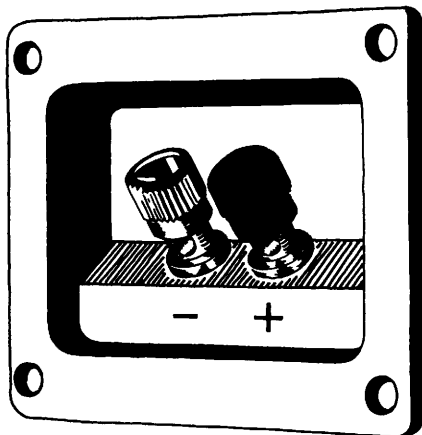
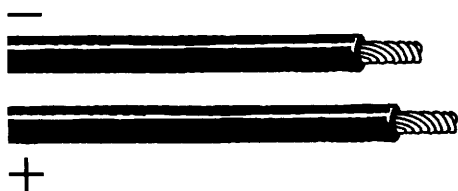
Limited sound reproduction is often caused by misadjustment and/or weak signal equipment.

CONNECTION

The gold-plated terminal on DALI 3b makes it possible to use banana plugs or heavy bared wires for amplifier connection.

IMPORTANT!

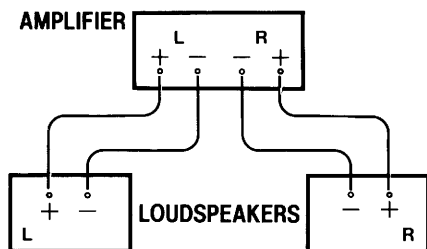
Turn off the amplifier when you are working at loudspeaker connection!



PHASING

To get true stereo-reproduction it is necessary that the loudspeakers are phased correctly. Always connect the amplifier + to the loudspeaker +, and the amplifier - to the loudspeaker -.

On most speaker cables one of the leads will have an indication making it easy to do this the right way.



DAILY USE

The main point here is: enjoy the music! The only regular maintenance required is occasional cleaning of the surfaces.

WOOD:

Dust with cloth.

TEXTILE FRONT:

Brush with a clothes-brush or vacuum clean with a brush attachment.

DOCUMENTATION

The original DALI 3 was selected »Loudspeaker of the Year« for 1985 by the Danish magazine »Hi-Fi & Elektronik« and received rave reviews in American, Australian and Japanese journals. Its successor, DALI 3a tops the list in »Hi-Fi & Elektronik«'s rating of the performance, finish and affordability of loudspeakers reviewed in 1988. The DALI laboratories are engaged in an ongoing research and development programme, not only with regard to new products, but also to seek out possible areas for improvement in our current models. In the case of the DALI 3b, significant improvements have been achieved in major areas in a process of evolutionary development, while retaining all the qualities which made the DALI 3a unique.

The DALI 3b incorporates the same 8" woofer as the DALI 3a, where much attention has been paid to the diaphragm, the most critical component in a driver. An 8" driver capable of perfect piston motion up to 3 kHz is a physical impossibility. This is analogous to the motion of a rope on the ground when one end is flicked - the wave movement through the rope is transmitted at a finite speed and ends with a flick at the other end. This is how oscillations in a driver diaphragm are propagated. The movement starts at the voice coil and ends with a »flick« at the roll suspension. Two things now need to be achieved: 1) the transmission of the sound wave through the diaphragm should not be faster than from the voice coil through the air and 2) the »flick« at the rim should be damped to such an extent that the edge suspension should cancel it. The first point requires the sound velocity in the diaphragm material to be independent of frequency and to fit the angle of the diaphragm relative to the voice coil. The second point calls for controlled damping of the diaphragm material as well as frequency independence, with high damping via the roll suspension.

Following many calculations and much testing, we managed to control partial oscillations in the 8" driver. It features a very expensive surface treated paper diaphragm, terminated with a rubber roll surround. The result is a woofer with linear response up to 4 kHz and very well controlled roll-off above this frequency. To make this driver suitable for the 19 litre sealed cabinet, the suspension is extremely compliant, facilitating a driver with 8 mm linear excursion. The result is a bass system with a Q of .7 providing best possible definition and transient response.

A newly developed 1" duraluminium metal dome covers the treble range. One of the many advantages of this material is its perfect piston

characteristics over the entire audible frequency range, unlike the more common cloth and synthetic domes which typically have break-up modes beginning at 10-15 kHz. A metal dome offers exceptionally neutral response, amazing clarity and an abundance of detail. The metal dome is mounted directly on the voice coil, for the best transfer of energy and for improved heat dispersion which contributes greatly to the driver's increased power handling capability.

The magnet system is a powerful low loss type with a solid core and bottom plate.

It is well known that high quality drivers do not require complicated crossover networks. The crossover of DALI 3b reflects a sound design philosophy; that is to use only what is necessary and make it of the highest quality. The fairly simple crossover of DALI 3b contributes to the fine frequency coherence, phase relationship and even dispersion (even at extreme angles). A precise stereo image is achieved through the use of high quality inductors and metallised polypropylene capacitors.

Like every DALI loudspeaker, the cabinet for the DALI 3b is manufactured to the highest standards of Danish furniture craftsmanship, and improves on the high standard set by its predecessor. The front baffle is cut from 22 mm massive MDF (Medium Density Fiberboard) which, in addition to its greater mass when compared to ordinary particle board, also offers improved internal damping. The cabinet has been reinforced based on the results of modal analysis which helped to define and refine the structural integrity of the cabinet. The objective of the cabinet construction is to eliminate low Q resonances, which have been proven to be the most annoying. The sides and rear of the cabinet are cut from the finest particle board with an impressive surface finish. Through careful placement of the drivers and special attention to the shape of the bevelled grill frame, the DALI 3b achieves what every serious manufacturer dreams of, but rarely accomplishes; the audible and measureable performance of the DALI 3b are identical, with or without the grill frame. The multi-way terminals on the DALI 3b accept banana plugs, spade lugs and heavy-duty cable.

The end result is a loudspeaker whose sonic performance and appearance make it a more than worthy heir to its popular predecessor.

