

FAZON MIKRO

WHITEPAPER



IN ADMIRATION OF MUSIC

INTRODUCTION

Finding the space for a great sounding audio system is not always possible with more traditional loudspeakers. In recognition of this issue, DALI set out to create a solution for this problem with a small but great sounding speaker that was not only compact in size but also pleasing to the eye. Understanding that consumers looking at compact speakers are often looking for a lifestyle type product, designing this new speaker to fit in with our existing FAZON series of speakers was an easy decision.

DALI's design and R&D team have worked tirelessly to overcome all the obstacles associated with delivering full range quality audio from an extremely compact speaker. Not only did they accept the challenges that this project demanded, they exceeded all the expectations in terms of performance and design, in creating a compact speaker that belies its small form in terms of audio performance. These tiny speakers are far more powerful than their modest, elegant exterior suggests, and are the perfect addition to the fantastic FAZON series.

DALI is honoured to introduce the ultra compact FAZON MIKRO.



CABINET

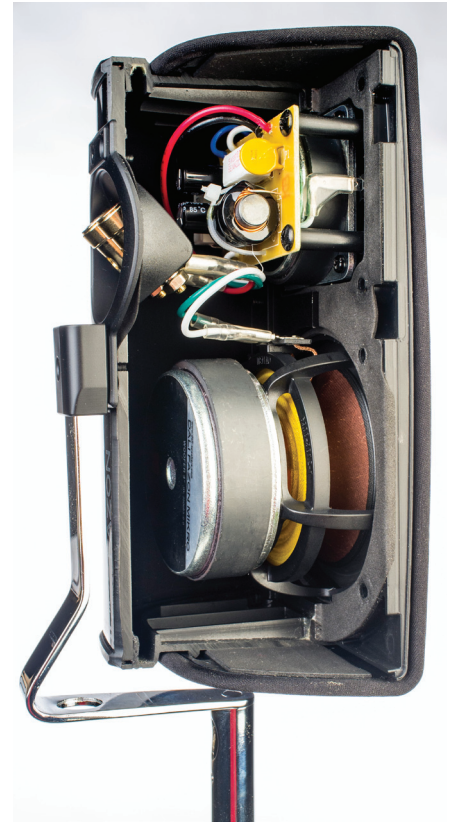
When designing the cabinet for a compact speaker one of the toughest challenges is providing the amount of necessary internal volume. Volume is a key part in making a small speaker sound big, and maximising the internal volume is at the heart of any loudspeaker design project. Using traditional materials such as MDF or plastic in a small speaker whilst still providing the necessary rigidity and strength in the cabinet would result in almost no internal volume. One of the objectives when designing the FAZON MIKRO was therefore to find a material that met all of the above criteria but, at the same time, offer the ability to shape the cabinet in a way that would offer both optimum sound and visual qualities.

Drawing on the experience gained from designing the multi award winning FAZON series, die-cast aluminium was quickly the front-runner for the cabinet construction. Being up to ten times stronger than wood, and twenty times stronger than plastic, aluminium has many advantages. It also offers the possibility to be shaped into a non square shape thus avoiding standing

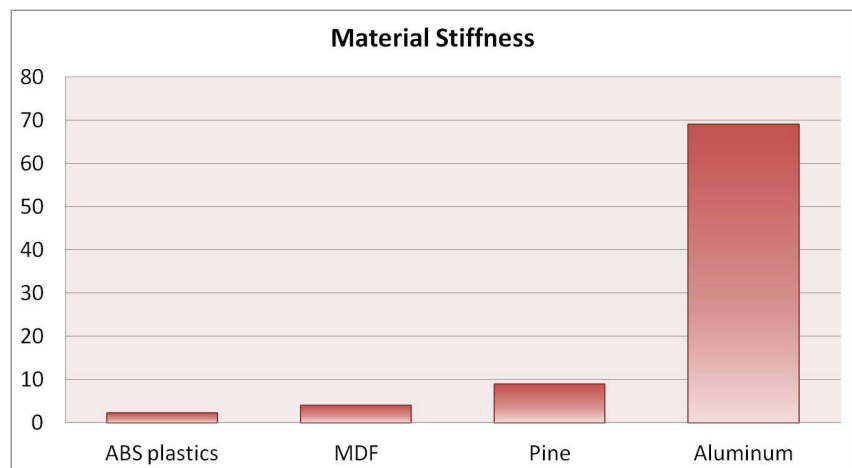
wave modes to ensure the perfect acoustic environment for the drivers. It also creates a stunning exterior which matches the lifestyle segments where the FAZON series is targeted.

Utilising the great strength of aluminium allowed our design team to design a cabinet with a much thinner structure which maximises the precious internal volume without the loss of the required rigidity. Matching the die-cast aluminium cabinet with a composite top, base and front baffle ensures the perfect mix of materials to remove any potential internal resonance and ensures that the cabinet does not add any unwanted acoustic energy to the sound generated by the drivers. The front baffle is secured to the aluminium body by screws and airtight soft rubber seal, which ensures a tight and vibration free connection to the main cabinet.

The front grille is cleverly held solidly in place by utilising the leverage of the curved grille, locking it firmly in place to secure against vibrations. Chrome side trims complete the visual appearance to match the entire FAZON series.



Despite the limited space inside the cabinet, the FAZON MIKRO is able to deliver both powerful dynamics and bass.



Showing a typical Young Modulus of 69 GPa aluminium is characterized by a stiffness approximately 15 – 20 times the value of MDF (Medium Density Fibreboard) – the most frequently applied cabinet material for high quality speakers.

TWEETER



The ultra light-weight weave fabric combined with the very capable magnet motor system allows the tweeter to reproduce high frequencies with higher accuracy.

True to the other FAZON series loudspeakers, DALI decided to use a lightweight soft-dome tweeter to supply all the high frequencies for the FAZON MIKRO. The 20mm tweeter is a brand new design and has been especially developed for use with the MIKRO speakers utilising expertise gained over 30 years of loudspeaker design and

manufacture. Based on a 55mm ferrite magnet, the FAZON MIKRO tweeter is able to handle more power and convert it into movement and not heat, thereby reducing power compression. Soft felt damping is used on top of the pole piece to eliminate unwanted reflections in the area right under the dome. This allows the tweeter to

generate high sound pressure levels and extreme excursions to render high frequencies with very high accuracy and speed. Thus enabling the FAZON MIKRO to deliver stunning detail in the high frequencies and extend the sound image way above the audible limit of the ear for a more complete sound experience.

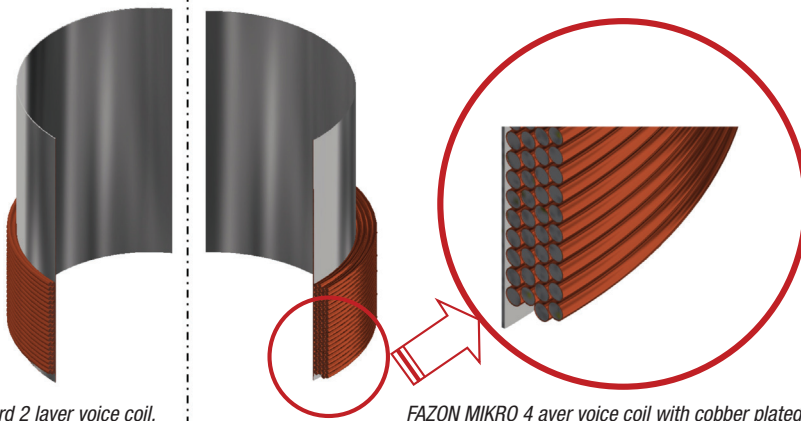
Terminals

Keeping true to the simple and compact design of the FAZON MIKRO, the speaker cable terminals have been kept small and simple to use, but large enough to accept good quality speaker cables. The spring loaded push terminals will hold cables with a diameter of up to 4mm and create a lasting firm grip to ensure optimum connectivity between the cables and the speaker



Spring loaded push terminals create a lasting firm grip.

WOOFER



Standard 2 layer voice coil.

FAZON MIKRO 4 layer voice coil with copper plated aluminium.

The woofer is based on a lightweight non magnetic chassis and a powerful magnet motor system working together with the classic DALI wood fibre cone to reproduce true Hi-Fi sound.

Designing a woofer for a small cabinet requires a lot of focus on sensitivity as there is only a relatively small cone area to move the air. This, therefore, requires as much of the energy from the amplifier to be turned into movement as possible. Through the use of DALI's low-loss technologies, DALI's acoustic engineers have put together a woofer that not only delivers on high sensitivity, but also has a very linear magnet motor system with an 'easy on the amplifier' impedance curve.

The basket is constructed from a glass reinforced polymer that helps make it light, very strong and keeps it from interfering with the magnetic field surrounding the voice coil. The visual part of the woofer, the cone, is made from DALI's trademarked wood fibre mixed with a fine grain paper pulp, and is secured to the basket with a low-loss rubber surround. The voice coil is surrounded by four layers of copper plated aluminium wire to build a very

strong but light magnet motor system that delivers highly controlled motion of the voice coil, but also keeps it easy to drive.

All this translates into a woofer that is easy to drive, even when used with smaller stereo systems, reproduces even the smallest micro details in the audio picture, and has the ability to generate low bass at a surprising high level for a woofer of this size.

APPLICATION

The FAZON MIKRO features a wide dispersion pattern, a property shared with all DALI speakers, a technique that has been refined by the acoustic engineers at DALI over the years. DALI speakers in general should not be toed in, allowing a higher degree of freedom in placement, and a much larger 'sweet spot' in the listening position.

Flexibility is the key with FAZON MIKRO, and it can be used mounted on the wall, on a bookshelf or cabinet or on the optional floor stands. The supplied bracket has multiple functions and can be used both as a wall mount for the FAZON MIKRO or MIKRO VOKAL speaker, or as the stand for the FAZON MIKRO VOKAL when positioned on a bookshelf or cabinet.

The FAZON MIKRO is designed to be positioned close to the wall, even when used with the optional floor stands. This not only minimizes the visual impact of the speaker on the room, but also helps the FAZON MIKRO extend the low bass performance.

The FAZON MIKRO will work perfectly when used in a stereo or surround sound set-up. They also perfectly compliment the other products from the FAZON series, and can therefore easily be introduced to a system already featuring DALI FAZON SATs, LCR or F5 speakers as either surround or rear speakers. The FAZON MIKRO VOKAL can also easily be used as the centre speaker in collaboration with either the FAZON SAT or FAZON LCR.

The FAZON MIKRO is a full range speaker that will supply a complete audio picture on its own, but adding a subwoofer will expand the sound to an even fuller and more dynamic experience - even in stereo. The FAZON SUB 1 is the perfect companion for a stereo set of FAZON MIKRO's, but will work just as well in a surround setup. If even more bass is required or the system is being used in a larger room the soon to be released DALI SUB E-9 F would be the perfect choice in a FAZON MIKRO surround system.



Clever kick-stand / wall-mount bracket is included with the FAZON MIKRO.



FAZON MIKRO 5.1 system together with the DALI FAZON SUB1.

SUMMARY



The goal to build a compact lifestyle speaker that delivers true hi-fi quality sound has been fully met with the FAZON MIKRO.

The FAZON MIKRO is a very elegant compact speaker, available in a choice of black or white high gloss lacquered aluminium cabinet with a richly detailed black coated composite front baffle and an ingenious designed snug fitting front grille.

Its ultra light soft dome tweeter and low-loss woofer builds a rich, coherent, precise and very detailed soundstage.

It's easy to drive, powerful and delivers a full range frequency reproduction.

Its compact size and flexible mounting system makes it easy to place in any room.

It fits perfectly into any existing FAZON system both in colour, appearance and sound.

It offers the ability to build a complete high quality surround system at a very compact size and extremely competitive price.

The FAZON MIKRO is a speaker designed for people who want high quality sound from a compact and elegantly designed speaker.

	FAZON MIKRO	FAZON MIKRO VOKAL
Frequency Range [+/- 3] dB [Hz]	95-25,000	95-25,000
Sensitivity [2.83V/1m] [dB]	84.0	84.0
Nominal Impedance [ohms]	6	6
Maximum SPL [dB]	101	101
Recommended Amp. Power [Watts]	30-120	30-120
Crossover Frequencies [Hz]	2,560	2,560
High Frequency Driver	1 x 20 mm soft fibre dome	1 x 20 mm soft fibre dome
Low Frequency/Midrange Driver(s)	1 x 4" wood fibre cone	1 x 4" wood fibre cone
Enclosure Type	Closed box	Closed box
Connection Input(s)	Single wire	Single wire
Recommended Placement	Above/Below TV Screen, On-Wall, Shelf, Stand	Above/Below TV Screen, On-Wall, Shelf, Stand
Magnetic Shielding	No	No
Dimensions (H x W x D) [mm] (Wall mounted)	196 x 113 x 96	113 x 196 x 96
Dimensions (H x W x D) [inches] (Wall mounted)	7.72 x 4.45 x 3.78	4.45 x 7.72 x 3.78
Dimensions (H x W x D) [mm] (Placed on a desk)	196 x 113 x 99	115 x 196 x 99
Dimensions (H x W x D) [inches] (Placed on a desk)	7.72 x 4.45 x 3.90	4.53 x 7.72 x 3.90
Weight [kg/lb]	1.5/3.3	1.5/3.3
Accessories	Wall bracket Wall bracket bumper Pads Manual	Wall bracket Wall bracket bumper Pads Manual

All technical specifications are subject to change without notice.