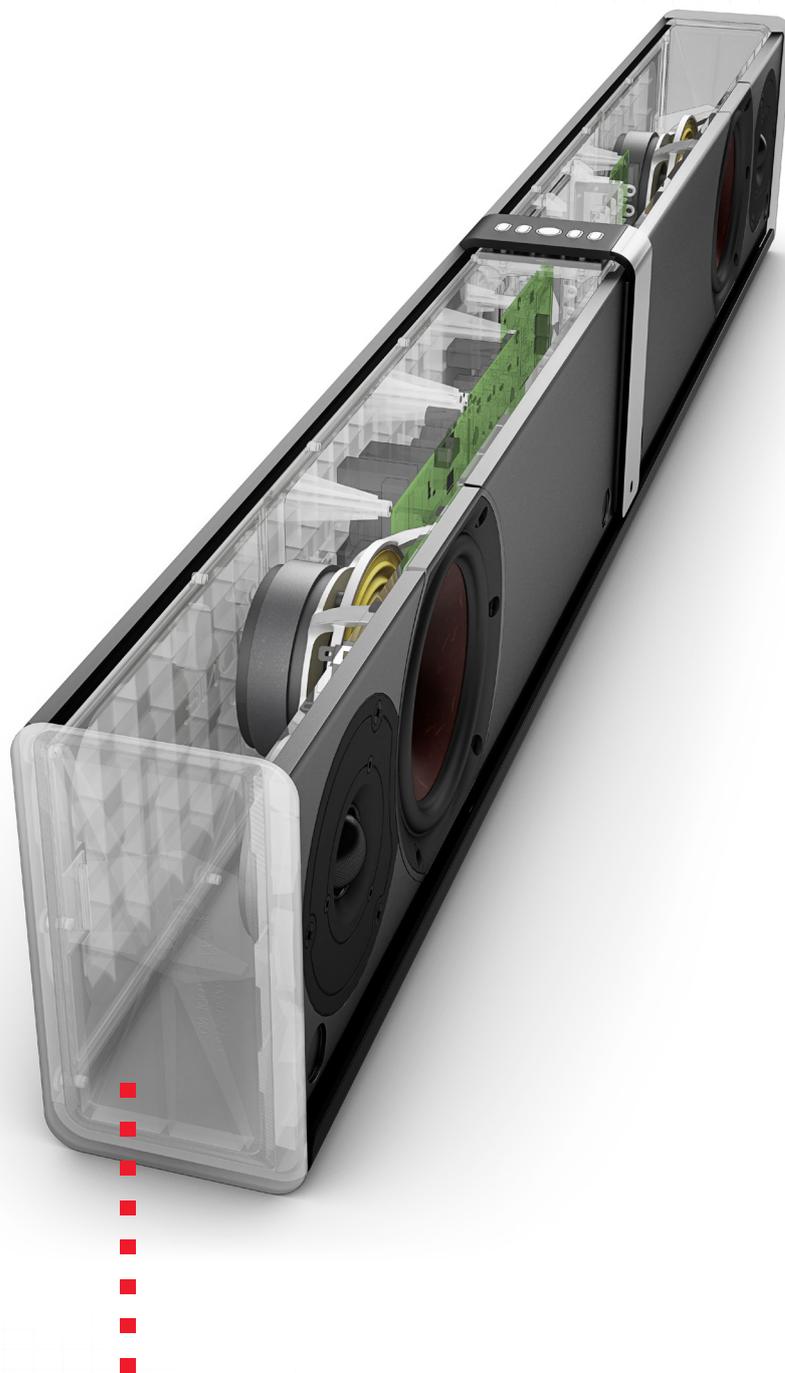


DALI KUBIK ONE

WHITEPAPER



IN ADMIRATION OF MUSIC

INTRODUCTION



Introducing a high quality audio experience into a home can be a daunting exercise, and many settle for poorer sound quality to gain the convenience of ease of use. With the KUBIK series of active speakers DALI is about to change this by offering a high quality sound experience in a very flexible easy to use loudspeaker.

DALI KUBIK ONE is a complete audio system in a simple, stylish and easy to place package. Everything required is contained within a single unit, allowing sound to be transferred to the KUBIK ONE via Bluetooth, analogue, optical or USB inputs.

The one-piece aluminium chassis houses the well known DALI wood fibre cone woofers and the ultra light weight soft dome tweeters. It also encompasses the 100W amplifier, power supply and a vast range of connections, all smartly covered by two interchangeable front fabric grilles that

are available in Red, White or Black. Being a complete audio system, the KUBIK ONE easily slips into a range of user scenarios; extending the TV and movie experience in the TV room, bringing musical enjoyment to the common room, delivering wonderful audio moments in the living room, making the party in the den or being the musical focal point in the house for all to enjoy.

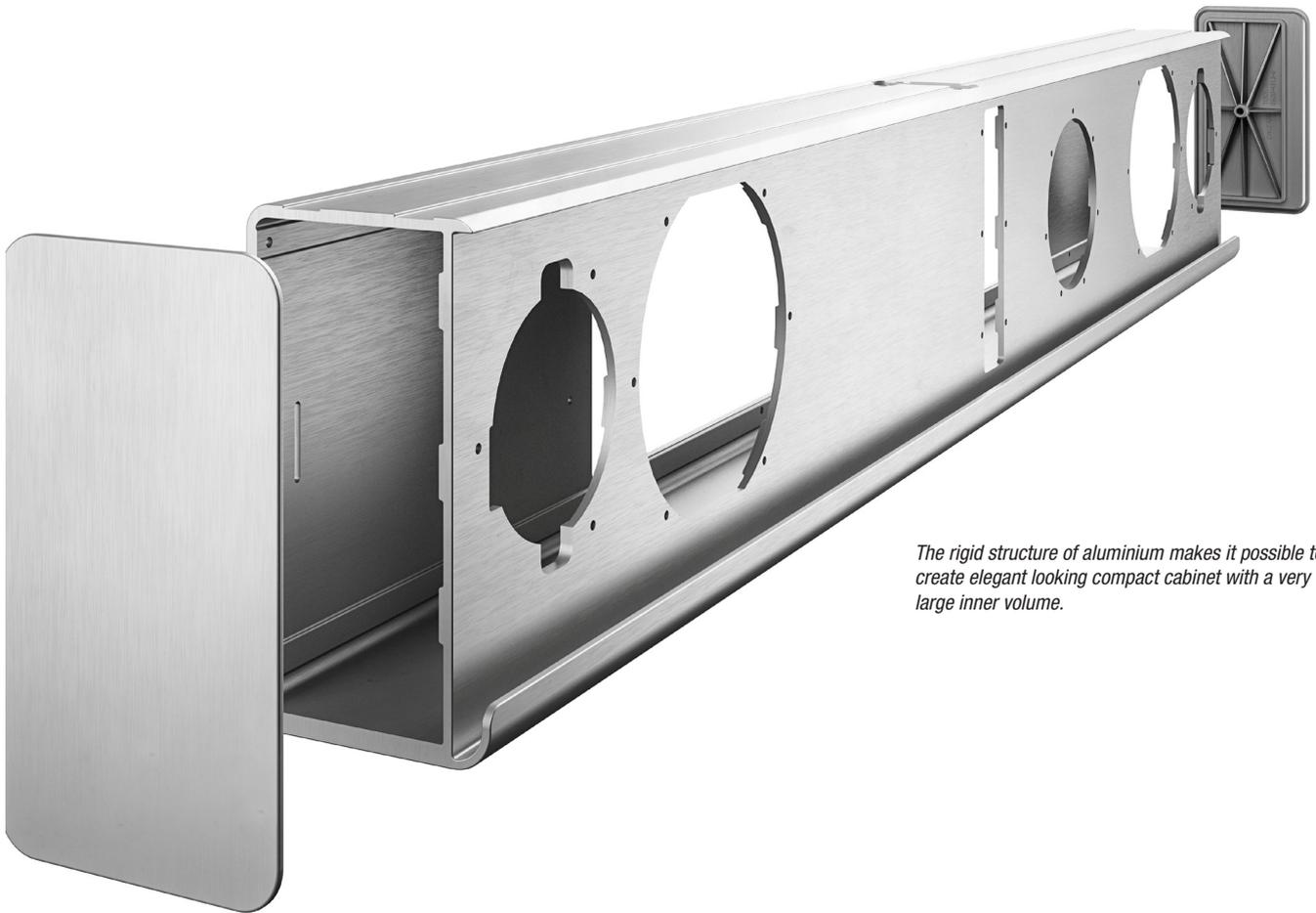
With Bluetooth wireless capability anyone can join in from their phone, tablet or PC. The two optical inputs make it possible to have the KUBIK ONE connected to both a TV and music player at the same time, making switching from TV to music as easy as pushing a button. USB access for PC's or MAC's and two analogue inputs complete the many connection possibilities.

KUBIK ONE is an audio system that is up and running within minutes of being removed from its box, but will deliver years of high quality music and TV experiences. It's a classic DALI - modern and easy to use with a design that will fit in any home.

Enjoy!



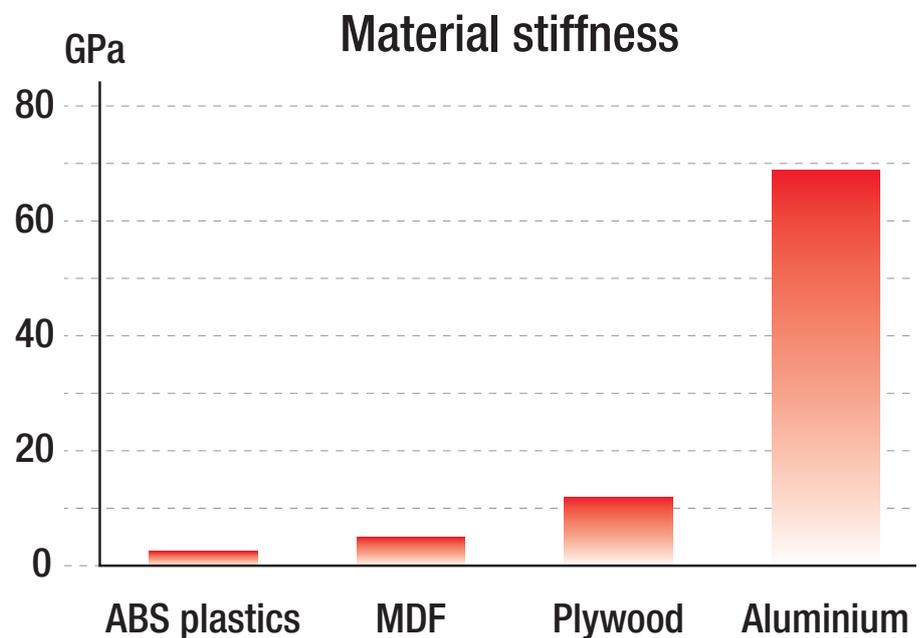
CABINET



The rigid structure of aluminium makes it possible to create elegant looking compact cabinet with a very large inner volume.

A single piece of extruded aluminium forms the basis of the main housing. The use of aluminium makes it possible to make the cabinet very compact, whilst still leaving plenty of room on the inside to render even the lowest bass frequencies. By using aluminium it allows the cabinet walls to be thinner than if constructed using traditional materials. This can be done without losing the rigid structure that is all important to suppress unwanted resonances. At the same time, the aluminium base gives the KUBIK ONE its modern and simple visual design features.

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



The back of the KUBIK ONE is constructed of a composite material and is where the main connectors are conveniently positioned. By blending different materials like aluminium and composites, unwanted effects like resonances are further eliminated.

The connection bay has a built-in cable management system that secures the connected cables to the KUBIK ONE and allows them to travel behind the unit, hiding them from view. If placed under a TV, all cables can be fed behind the KUBIK ONE, leading to a clean and organised look.

The front grilles are available in a choice of three colours at launch (Red, White and Black) but like the rest of the KUBIK series, additional colours will be available in the future.



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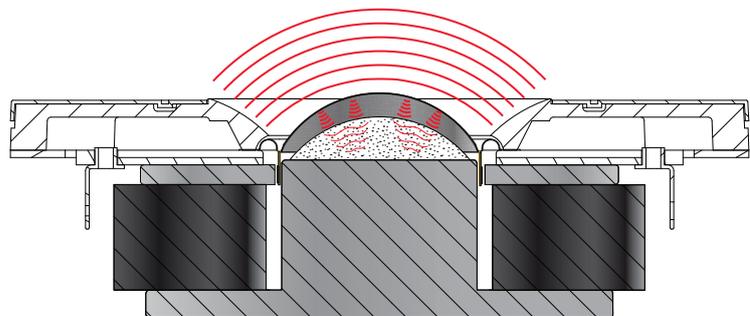
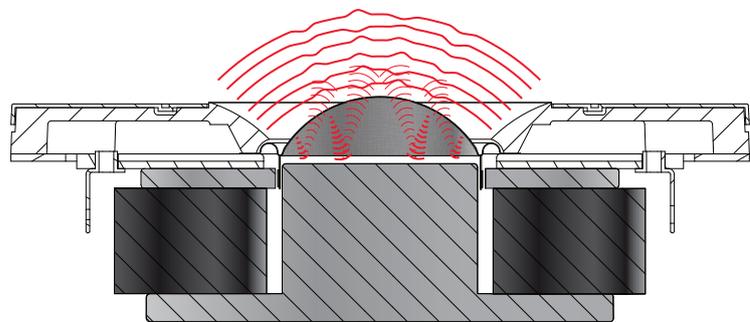


TWEETER



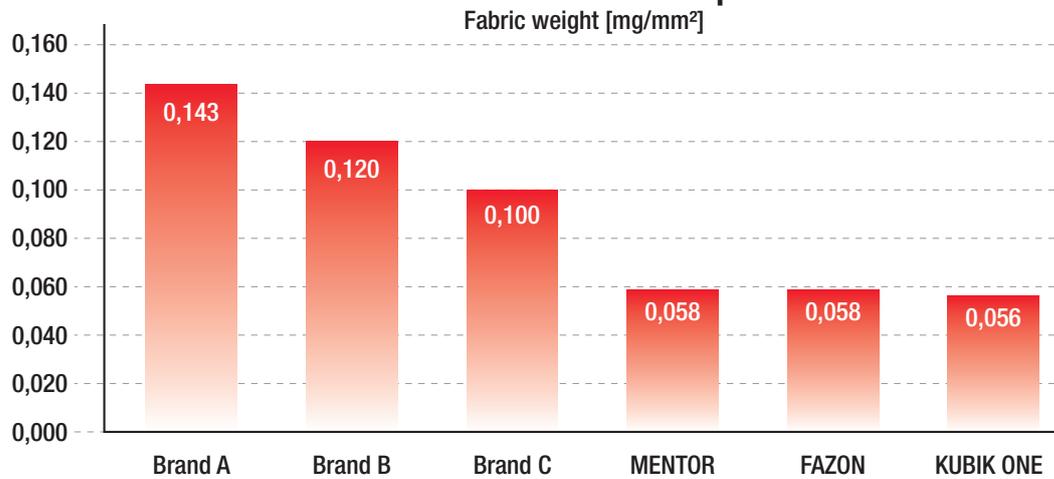
A dedicated focus on bringing the mid-range alive and always conveying a true rendition of voices and instruments in the upper frequency range, makes building a high quality tweeter an important part of the DALI sonic definition. KUBIK ONE's soft dome tweeter is built around a powerful ferrite magnet and very narrow magnet gap, a technique optimised and enhanced by DALI over many years.

This type of magnet enables the KUBIK ONE to handle more power and helps disperse the heat generated around the fast moving voice coil quicker, thereby reducing power compression. This in turn allows the tweeter to reproduce high frequencies with improved accuracy, giving the KUBIK ONE an impressively detailed sound.



In the right light this fabric will reveal the soft felt damping on top of the pole piece. This damping material eliminates unwanted reflections that may occur from a traditional flat-surface pole piece applied in simpler tweeter constructions. This is another example of the meticulous care for construction details that – altogether – allow the unfiltered reproduction of all details in the music..

Softdome material comparison



The ultra-light soft dome tweeter used in the KUBIK ONE system ensures effortless and unbiased reproduction of the finest details.

The KUBIK tweeter is constructed on the basis of an ultra light-weight weave fabric, and when compared to most soft dome tweeters available, the DALI dome material is less than half the weight of our competitors'.

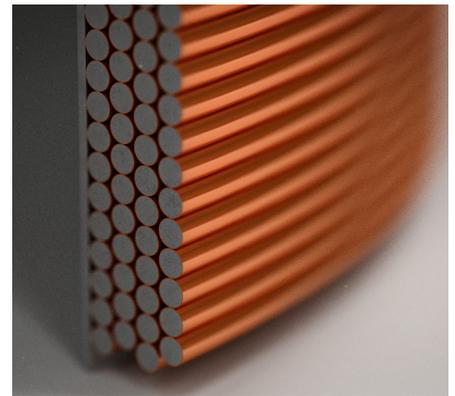
The positioning of the tweeter front plate near the dome has been chosen to create the optimal working conditions for the soft dome. The aim is to combine an extended frequency

response with wide dispersion and low colouration, and improve the integration of both the tweeter and the mid/bass driver.

WOOFER



The woofer used in the KUBIK ONE system is built on a lightweight non-magnetic chassis and a powerful magnet motor system working together with the classic DALI wood fibre cone, reproducing true Hi-Fi sound.



The 4-layer lightweight voice coil design is applied to create a high motor force, enabling both powerful and precise sound reproduction.

Using only drivers designed in-house, DALI develops each driver specifically for the individual loudspeaker. Designed to meet the demands of DALI's sound philosophies, every material used in the woofer is carefully selected. This is an important part of building a high quality audio product.

The chassis used in the KUBIK ONE woofer is based on a glass reinforced polymer. Using this material DALI was able to create a lightweight but extremely strong chassis for the 5" woofer. The non-magnetic chassis increases the flux density in the magnet gap by 10%, adding more power and

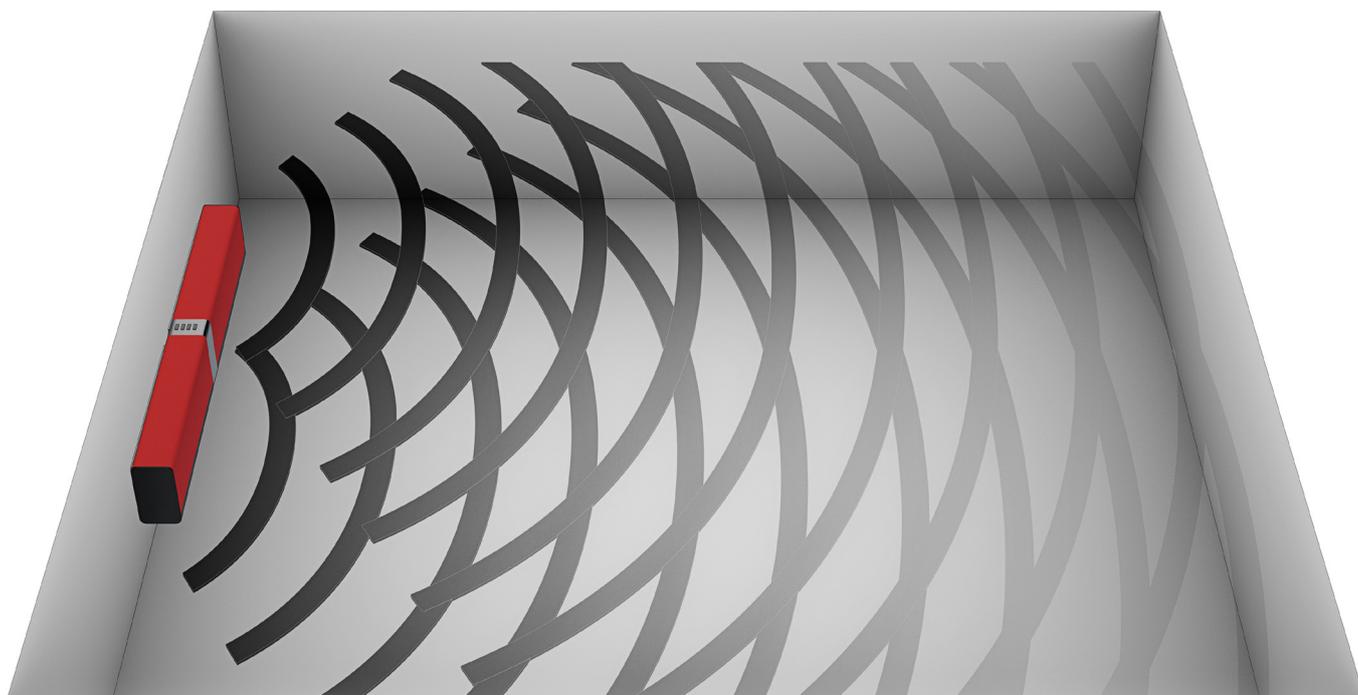
control to the magnet motor system. The cone is made from a blend of wood fibre and paper pulp to give it a stiff, lightweight but well-behaving structure, and is connected to the chassis using a DALI low-loss surround. The very agile rubber surround gives the cone undamped movement, and helps retain the fine details in the audio signal even at low volumes. Driving the wood fibre cone is a strong magnet motor system based around a four layer voice coil.

The decision to use a four layer voice coil is an important part of delivering the required sound pressure. Generating 17% more force than a two

layer system, and 27% less electrical Q, it gives a significant improvement in control of the entire moving part of the system. To keep the voice coil light, a copper clad aluminium wire was used for the four layers. Using traditional copper wire would make the voice coil heavy, harder to control and therefore a tougher drive for the amplifier. A heavy voice coil can also cause massive loss of detail in sound reproduction.

The combination of all of these low-loss technologies results in a serious improvement in bass control, reproduction of micro details, and greater transparency.

WIDE DISPERSION



The KUBIK ONE systems wide audio dispersion expands the optimum listening area hugely when compared to other systems, and gives you the best reproduction of the audio image even when you move around the room.

Bringing high quality audio to all corners of the room is one of the main features of DALI Wide Dispersion drivers. By optimising the audio reproduction for off-axis dispersion, the majority of the reproduced signal will be of the highest possible quality. It increases the sweet spot in the listening area, and also means that the signal reflected off the walls will be of the same high quality as the signal reaching your ears directly.

The drivers in KUBIK ONE are likewise designed for Wide Dispersion. This gives you the experience of a well integrated sound, even when listening at a significant off-axis angle, and as you are rarely placed directly in front of the loudspeaker when listening to music, this is very important. It helps the KUBIK ONE build a large, coherent and lifelike soundstage and enables the KUBIK ONE to fill even larger rooms with well defined and

detailed audio. When wall-mounted or positioned close against a wall, the KUBIK ONE will deliver room filling and well timed bass, and will use the surrounding wall area to maximise the output of all frequencies.

AMPLIFIER

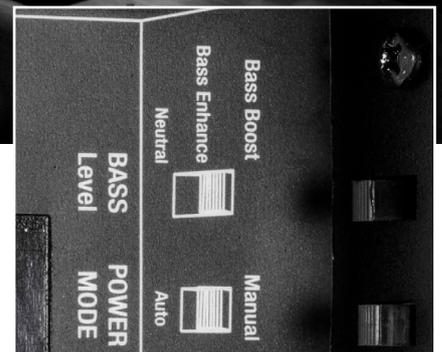


Selecting an amplifier and power supply for a system like the KUBIK ONE is no simple process. Measuring and analysing on technical specifications will only get you so far. In the end it all comes down to listening. KUBIK ONE's amplifier is able not only to deliver a powerful and well controlled signal to all the drivers, but also to give the drivers the optimum working conditions.

KUBIK ONE's 100 Watt Class D amplifier is a true active solution, offering a fully digital crossover, direct handling of digital sources and a high quality AD converter. The four channel stereo amplifier (4 x 25 Watts) controls the audio signal to the woofer and the tweeter module individually. This is a major reason behind the high quality performance of the KUBIK ONE system since it makes it possible to control and optimize the audio stream perfectly for the drivers used. Having that level of control lets the acoustic engineers

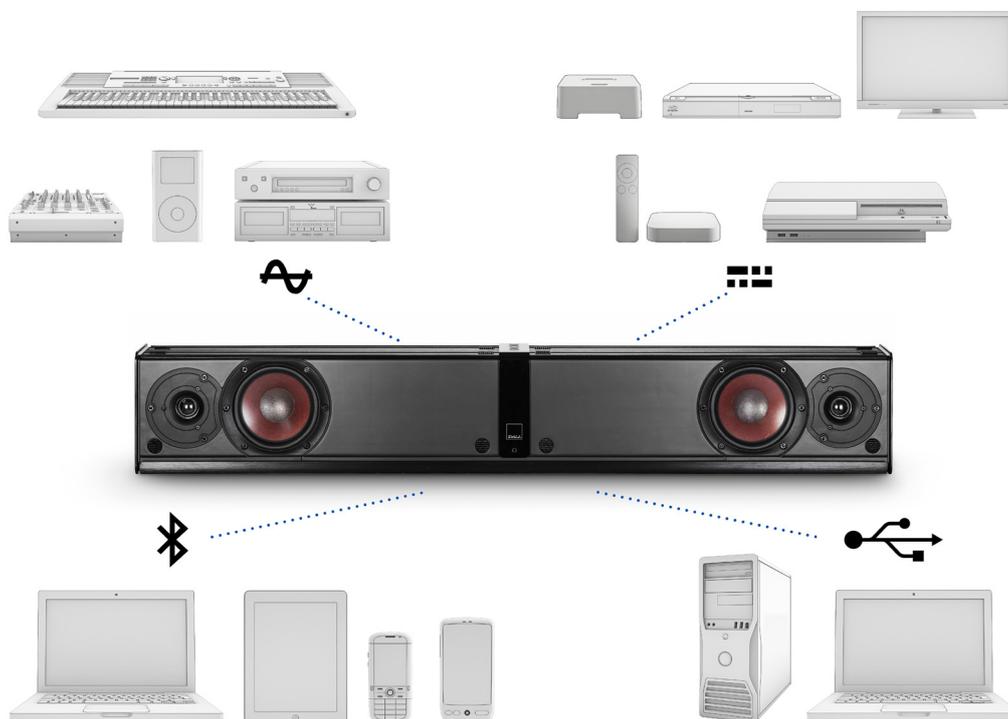
transform every bit of information into accurate motion in the drivers.

A Switch Mode Power Supply offers consistent output, compact size and a low heat emission. By integrating the SMPS into the KUBIK ONE, the power supply can be tightly optimised for the amplifier and the signal path between power supply and amplifier is shortened to almost zero elimination reactance. The integration also eliminates the need for a clumsy external power adaptor. At the same time the SMPS is less dependent on a steady mains supply compared to a traditional power supply, allowing the KUBIK ONE system to continue to work at maximum efficiency, even in areas with a fluctuating mains supply. With a maximum power output of 120 Watts, the power supply will never become the bottleneck, and will even at peak levels be able to deliver the needed power to the amplifier.



Knowing that the KUBIK ONE will be used in anything from small TV rooms to large kitchen areas, DALI decided to add a Bass Level function. This function is controlled from a switch on the back of the unit and offers you three settings. The Neutral setting gives you an authentic bass reproduction. Bass Enhance offers a slight boost in the lower mid-range and bass area, and is perfect for larger rooms or an enhanced TV experience. Bass Boost lifts the same area as Bass Enhance, but increases the levels. This setting is meant for large rooms or rooms that tend to absorb a lot of bass. Using Bass Level offers the possibility to use the KUBIK ONE in almost any environment, even without adding a subwoofer.

CONNECTIONS



The very flexible KUBIK ONE offers a wide range of possible connections, which makes it easy to connect the KUBIK ONE with any of your existing audio sources.

KUBIK ONE offers a wide range of possible connections. This makes the very flexible KUBIK ONE easy to use with any of your existing audio sources, and quick to connect to your phone or tablet. A simple button push is all that is needed to change input source, and if the KUBIK ONE is off or in auto mode, it will automatically detect the source being activated and turn itself on, and begin playing the audio from that source. This even works for Bluetooth. Just reactivate the pairing from your phone or tablet, and the KUBIK ONE will turn on, connect to the phone, tablet or PC and start playing.

Bluetooth

Streaming music can come from a variety of sources, but with mobile devices proving to be extremely popular, the need for a wireless connection is necessary. By adding Bluetooth ver. 3.0 to the KUBIK ONE, DALI stays true to the goal of making an active speaker for everybody, and

by offering the Apt-X protocol on top, even the most demanding of listeners get the best possible transfer of audio. Use KUBIK ONE and Bluetooth with your phone, tablet or PC/Mac.

Optical (TOSLink) & IR Learning

The KUBIK ONE offers two optical inputs, one for TV use and one for other audio sources. Using an optical output from a TV leaves you with a fixed volume problem, rendering the TV remote unusable to control the volume of the external speakers. Via an easy to use IR learning system built into the KUBIK ONE, almost any remote control can be used to navigate every function on the KUBIK ONE. Control the volume, mute, power and source select in three easy steps. This sets the KUBIK ONE apart for all other external TV speakers systems and makes it the perfect audio centre piece in the living room.



The very flexible KUBIK ONE offers a wide range of possible connections, which makes it easy to connect the KUBIK ONE with any of your existing audio sources.

APPLICATION



Living rooms are still one of the most frequent places to listen to music and enjoy movies. Setting up a KUBIK ONE in the living room is the perfect way of getting the most from your audio sources and getting rid of complicated and bulky audio systems.

Flat screen TV's have very little space for decent speakers, and most often the sound quality is not of a particularly high standard. The KUBIK ONE gives back the full enjoyment of all TV moments by delivering controlled bass in movies, clear and understandable voices when watching the news, and a perfect harmony of both when enjoying any type of concert or musical performance.

Kitchens have evolved into the main meeting place in many households over the years, and enjoying great sounding music whilst working or socialising can be an important part of the experience. Using the KUBIK ONE with a Bluetooth connection from a phone or tablet makes playing music extremely convenient. Connecting a steaming device directly to the KUBIK ONE can add to both the ease of use and to the audio quality.

With the KUBIK ONE, DALI delivers an extremely flexible, easy to use, high quality all-in-one audio system. Able to deliver audio from any source, and perfectly equipped when used either under the TV, or as the main music system in any room. The KUBIK ONE will cover you musical or TV audio needs and do in style and with ease.



TECHNICAL SPECIFICATIONS

KUBIK ONE	
Frequency Range +/-3dB [Hz]	48-22,000
Maximum SPL [dB]	103 per channel
Crossover Frequency [Hz]	3,000
Crossover Principle	DSP based digital IIR, 2. order
High Frequency Driver	2 x 25 mm Soft Textile Dome
Low Frequency/midrange Driver(s)	2 x 5.25" Wood Fibre Cone
Enclosure Type	Closed box
Continous IEC Power Output [RMS watt]	4 x 25
Input Impedance [Ω]	25k
Connection Input(s)	3.5 mm mini jack, RCA (Cinch) Optical (Toslink), USB (Micro)
Wireless Input(s)	Bluetooth™ Apt-X
Connection Output(s)	Sub out
Amplifier Type	Fully digital Class D, open loop type
Recommended Placement	Keyhole mounting On-Wall, Shelf, Stand
Recommended Distance From Wall [cm]	0 - 30
Functions	IR Learning, Power On/Off, Source Select, Standby (Auto Power) On/Off, Volume, Volume (Gain)
Standby Power Consumption [W]	<0,5
Maximum Power Consumption [W]	150
Dimensions (HxWxD) [mm]	162 x 980 x 102
Weight [kg]	9,6
Accessories Included	Mains Cable (1.5m), Manual, Remote Control, Bumpers
Optional Accessories	Interchangeable Grilles
Finish	Black Grille, Ice Grille, Red Grille

All technical specifications are subject to change without notice.