

DALI OBERON

WHITE PAPER



DALI

IN ADMIRATION OF MUSIC

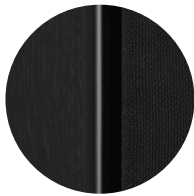
Introduction

Improving and evolving products is the ultimate goal for any innovative company. By using the knowledge, skill and technology gained over the years, our aim is to ensure that customers are presented with the very best we have to offer - delivering the greatest musical experiences, emotion and enjoyment possible.

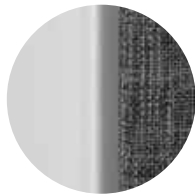
For more than 35 years, DALI has brought "Best in class" audio experiences to its customers. We have dedicated ourselves to constantly improving those experiences through craftsmanship, technological advances and a passion for reproducing music and movies just as the artist intended.

DALI innovations, such as oversized soft dome tweeters, SMC magnet systems and DALI manufactured drivers have been available for many years in our high-end speakers. But we are now in a position where we are able to bring high-end DALI technologies to a speaker series at a more affordable price range, and bring a brand new look to the listening experience.

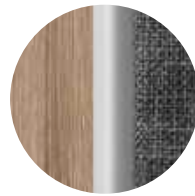
With the launch of the DALI OBERON, we have selected the best elements from our current speakers, and brought them together in a series that delivers on audio quality, looks and versatility. The series has a speaker for every room and situation, from the small and compact OBERON 1, the OBERON VOKAL and OBERON ON-WALL, through to the large floor-standing OBERON 9. Not forgetting the larger stand-mount OBERON 3 and the two smaller floor-standing models, OBERON 5 and OBERON 7.



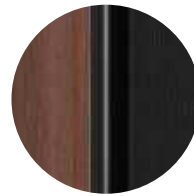
BLACK ASH



WHITE



LIGHT OAK



DARK WALNUT



OBERON 1

OBERON 3

OBERON 5

OBERON 9

OBERON 7

OBERON ON-WALL

OBERON VOKAL



Built within a solid MDF cabinet, the DALI OBERON series is available in four finishes: Black Ash, White, Dark Walnut and Light Oak*. The matte black or white front baffle frames the oversized 29mm ultra-lightweight soft dome tweeter and the SMC based woofers, with a new and optimised wood fibre structured cone. The rear mounted bass port ensures optimum integration within the room, and the elegantly shaped aluminium base gives the three floor-standing models a lighter look. The OBERON ON-WALL brings a slim on-wall solution to this series and utilises DALI's unique on-wall bass port system.

OBERON also introduces an exciting front grille design. The rounded front grilles add a lighter and contemporary

visual look to the speaker series. Mountain Grey is the standard grille supplied with the light finishes, with Shadow Black standard on the dark finishes. Marshmallow White and traditional Black options are also available.

The DALI OBERON series is a true showcase of DALI ideas, traditions and inventions, all wrapped in an elegant and modern design. It redefines what is possible, both in audio quality and visual design, in its price range.

We are extremely proud of the DALI OBERON series. Read-on for a detailed description of the design ideas, technologies and innovations behind the series.

* The OBERON 9 is available in Black Ash and Dark Walnut only.

Cabinet

Constructed from CNC machined MDF board and dressed in carefully selected high-grade laminates, the cabinet forms the solid base for the speaker. The floor-standing cabinets employ a highly rigid construction, with solid bracing across the inside of the cabinet for reinforcement. This contributes to the stiffness and practically eliminate panel resonance.

To optimise timing, the speakers are fitted with acoustic damping material internally along the sides, top and bottom - but not on the rear side of the front baffle. This creates a more direct contact between woofer and bass port. The audible result is a more precise bass and increased 'attack' in the midrange.

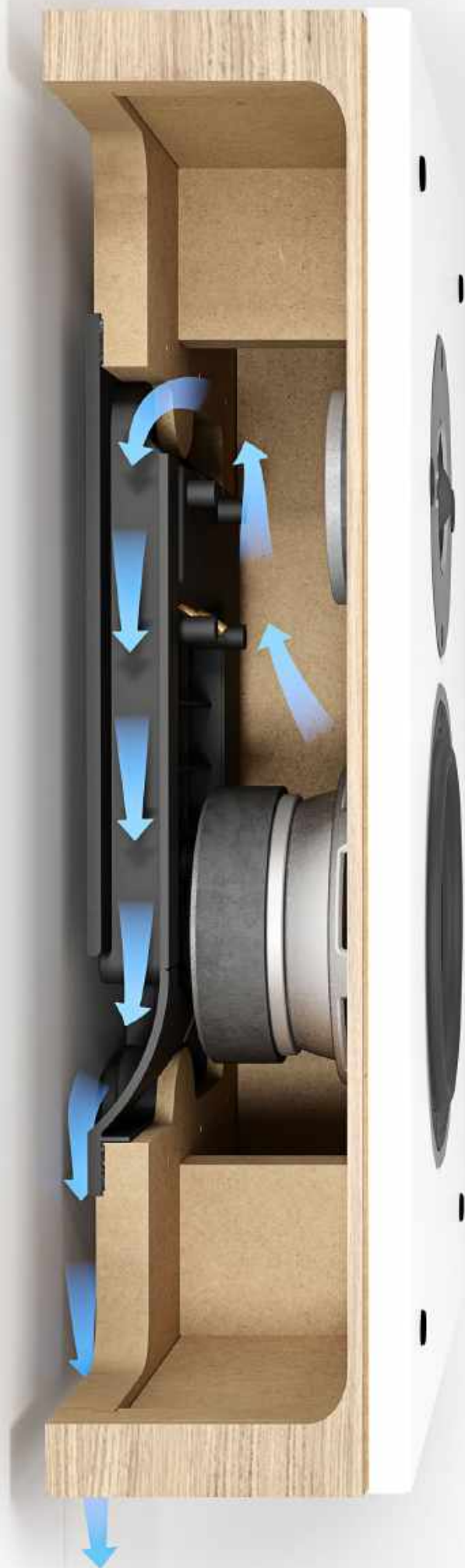
The bass ports are placed on the rear on most of the models, optimising room integration by utilising the wall for improved bass performance. On the OBERON VOKAL the base port is placed on the front to support placement in TV furniture.

This is achieved without losing the all-important 'easy placement' that DALI has become known for throughout its speaker series'.

High-density MDF together with the front baffle forms the solid base for the tweeter and woofers.

The elegantly shaped aluminium base gives the two floor standing models a lighter look.





The OBERON ON-WALL takes the use of the rear wall to a whole new level. Using the unique port design originally introduced with our RUBICON LCR, the OBERON ON-WALL bass ports fire downwards, letting the ports and the wall work together to extend the bass reproduction far beyond what should be possible from such a compact cabinet.

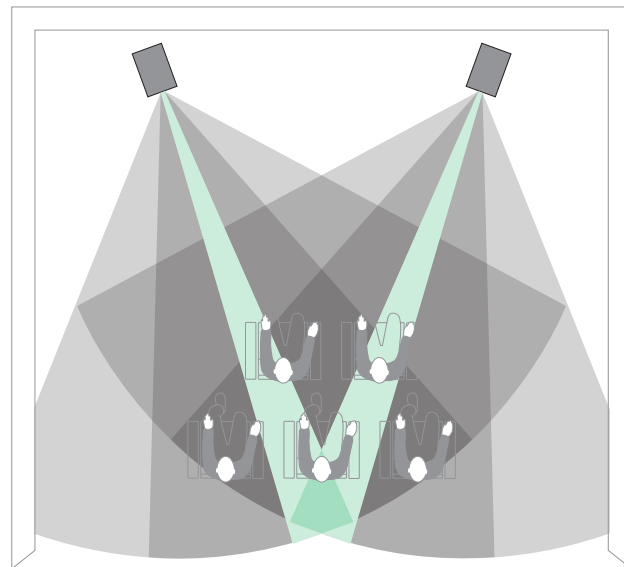
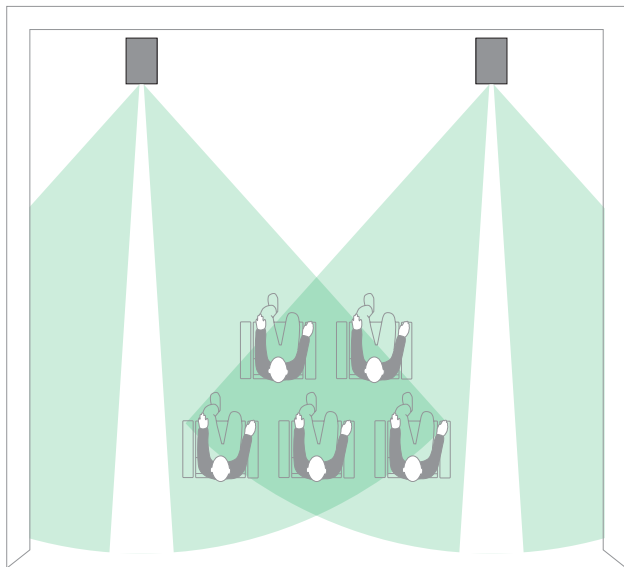
The front baffle is finished in an exclusive matte finish, complementing the dark aluminium details. The rounded front grille is constructed from an acoustically transparent fabric that completes the visual appearance of the OBERON speaker.

High quality DALI terminals secure maximum grip on speaker cables, whether raw or fitted with banana plugs.



The unique bass port design lets the ON-WALL use the wall to extend bass performance.

DALI speakers is build for wide dispersion, filling the room with the best quality audio and enlarging the listening sweet spot.

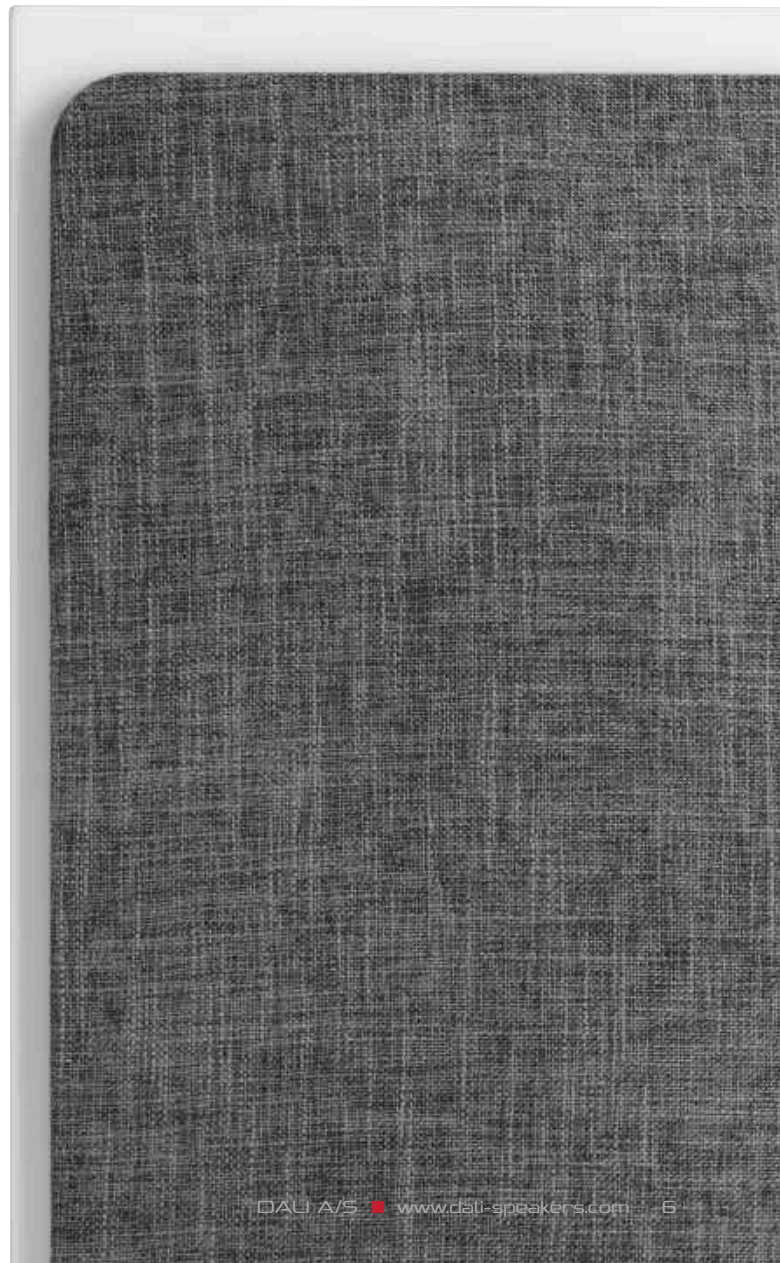


Wide Dispersion

DALI makes it easy to integrate loudspeakers into any room. Both the driver materials and geometry incorporated in the OBERON series have been selected to generate a wide dispersion pattern in the listening space. Furthermore, the same principles are applied in the design of the crossover.

Listeners thus experience a well-integrated sound, even when seated at a significant off axis angle. This is important as listeners are rarely seated directly in front of loudspeaker when listening to music.

An added benefit is significantly reduced harmonic distortion and diffraction as these effects are always stronger in the on-axis response. It's for these reasons that DALI speakers are designed not to be angled inward-in.



Woofers

At DALI, we strongly believe in reproducing the recorded signal. No more, no less...

To achieve this, it's not only necessary to reproduce the frequency contents in the signal, but also the dynamics in all its aspects – ranging from subtle micro details to high level bursts.

The OBERON speakers have been engineered accordingly. Like all DALI drivers dedicated to reproducing the delicate midrange and bass frequency band, the OBERON woofer features a wood fibre diaphragm. This blend of a fine grain paper pulp, reinforced with wood fibres, creates a stiff, light weight and well-behaved structure. In combination with a low-loss surround and suspension, the diaphragm reproduces the micro details in the signal – unfiltered and with great accuracy.

The diaphragm area of the larger drivers in the OBERON series has greater diameter than the typical standard. The combined diaphragm area of the twin 9" woofers in the OBERON 9 is 12% larger than a 12" woofer! And the 7" woofers in the OBERON 3 and 7 is approximately 15% larger when compared to the diaphragm area of the more common 6½" size. A larger cone area allows the same

sound pressure level to be generated, utilising a lower voice coil excursion. It also allows a higher maximum sound pressure level and – most importantly – it leads to an effortless reproduction of the dynamics in the music. In addition, the dedicated 7" midrange in the 3-way OBERON 9 ensures that voices and instruments stay clean and undistorted even at highest sound pressure.

Bass and midrange diaphragms are terminated by a rubber surround chosen for its soft and highly flexible properties. This enables the diaphragm free movement with minimal damping, and leaves the magnet motor to control the movement.

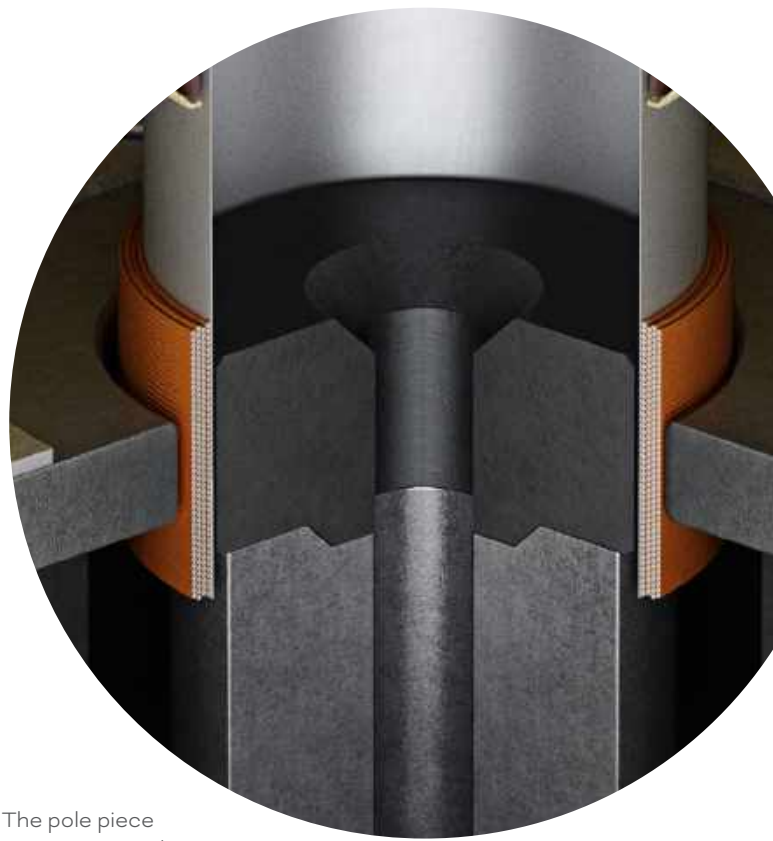
The OBERON voice coil is a 4-layer design, and while 4-layers is effective for high force factor, the higher moving mass traditionally presents a problem for the midrange response – impairing voice reproduction. Our solution for minimizing the mass was to employ a light weight, copper clad aluminium wire. This somewhat costly solution applies a thin copper skin to an aluminium core. Combining the high conductivity/weight ratio of aluminium (205% the value of copper), with the superior contact resistance properties and better mechanical strength of copper, we get a lightweight voice coil with high conductivity, capable

The low-loss OBERON woofer is designed and manufactured by DALI.



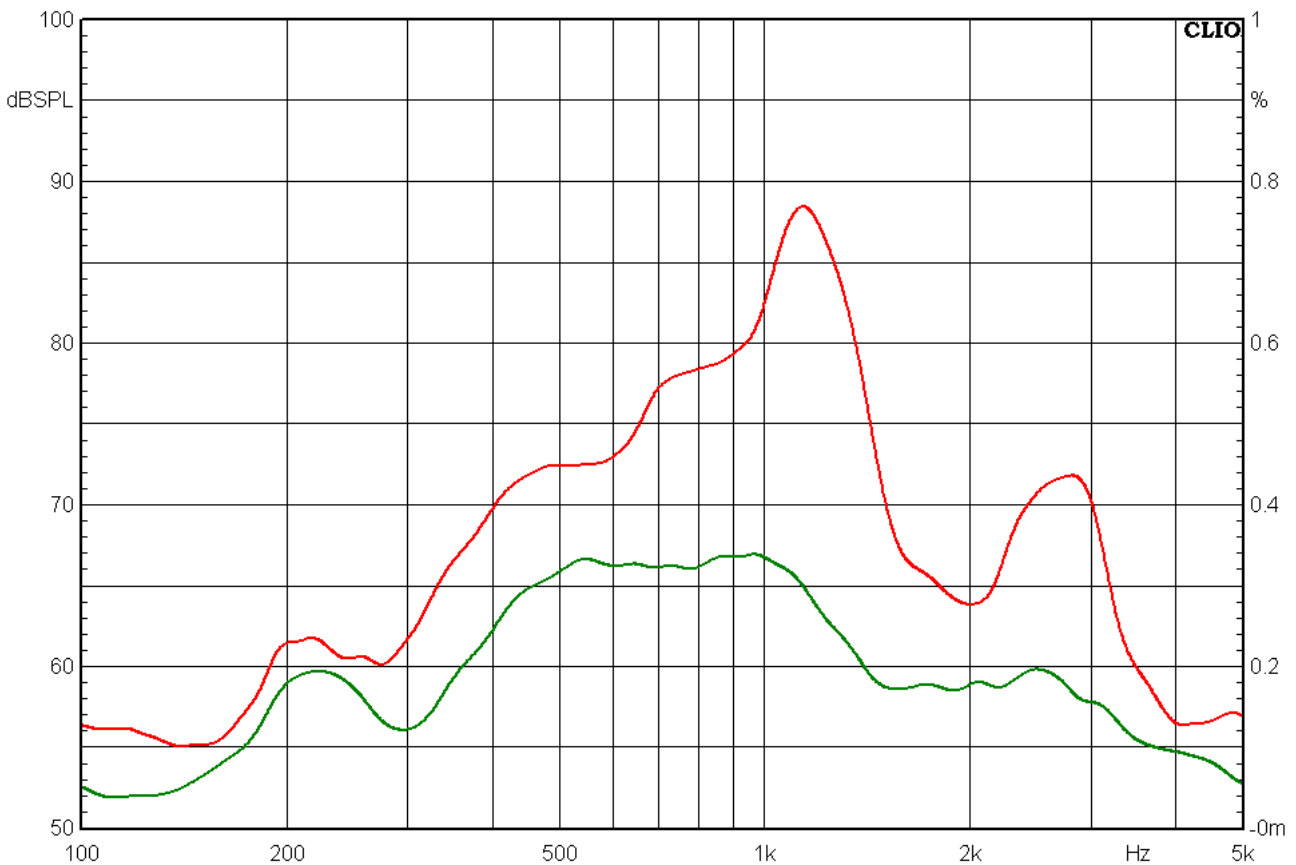
of handling high peak signal levels. The result is seriously improved bass control, well controlled reproduction of micro details and great transient capabilities. The OBERON ON-WALL is fitted with a 2-layer voice coil. The wall mounted position helps deliver sufficient bass performance, and the lighter 2-layer voice coil adds the mid-range needed to match the bass performance. Aluminium is employed for the voice coil formers except for the OBERON 9 bass drivers which use glass fibre for enhanced bass dynamics.

The magnet system comprises a large ferrite ring magnet that surrounds a pole piece made from a unique combination of iron and SMC. Using iron for just the base of the pole piece with a 10 mm SMC crown means iron's negative effects are minimised. The SMC crown is placed right in the middle of the voice coil working region to ensure its maximum effect and results in a greatly improved flux linearity. The use of the SMC disk also greatly reduces distortion caused by hysteresis and eddy currents. These combined improvements in the magnet motor system result enable the OBERON series to offer significantly more relaxed, detailed and entertaining midrange performance.



The pole piece is a unique combination of iron and SMC, greatly minimizing mechanical distortion.

The SMC disk on top of the iron pole piece helps to dramatically lower 3. order harmonic distortion compared to a similar DALI woofer model based on a pure iron pole piece.





Ultra-light soft dome tweeter developed for the OBERON series delivers effortless and unbiased reproduction of the finest details.

Tweeter

The brand new 29 mm ultra-light soft dome tweeter has been developed specifically for the OBERON series. Leveraging solutions used in DALI's other tweeters, this unit is at the same time something brand new and filled with well proven DALI technologies.

The oversized 29 mm membrane is constructed from an ultra-light weight weave fabric. Compared to most soft dome tweeters in the market, the DALI dome material is less than half the weight; 0.060 mg per mm².

The large size of the membrane lets the tweeter generate higher sound pressure with less excursion, keeping the voice coil motion to a precise minimum. To further improve power handling, to reduce power compression, and to support linear excursion of the voice coil, the tweeter magnet system incorporates ferro-fluid cooling. For long term stability in a saturated field, a high quality (220 gauss type) is used.

Covering the entire top of the pole piece is soft felt damping. This damping material eliminates unwanted reflections that may occur from a traditional flat-surface pole piece, applied in simpler tweeter constructions.

The DALI manufactured ultra-light weight soft dome tweeter is additionally optimised for a larger bandwidth in its lower frequency area. This ensures the optimal handover from the midrange woofer to the tweeter, creating a well balanced, unforced and very coherent upper midrange.

The tweeter front plate near the dome has been designed with similar geometry as the OPTICON and RUBICON tweeters to create the optimal working conditions for the soft dome. The aim is to combine an extended frequency response with wide dispersion and low coloration.

Products

The DALI OBERON series consists of seven models. Two stand-mount speakers: the very compact OBERON 1 and the larger OBERON 3. Three floor-standing speakers: the elegant compact OBERON 5, the larger OBERON 7 and the largest of the series the OBERON 9. The OBERON ON-

WALL is the very slim and compact dedicated on-wall speaker of the series, and the OBERON VOKAL is the centre piece of an OBERON surround setup. Six models are available in four finishes, Black Ash, White, Light Oak and Dark Walnut, with one, the OBERON 9 available in Black and Dark Walnut only.



OBERON 1

The OBERON 1 is the ultra-compact speaker of the line-up. Sporting the same oversized 29mm ultra-lightweight soft dome tweeter as the rest of the series, and a 5¼" wood fibre SMC based woofer to handle lower midrange and bass. The cabinet size enables an optimal balance between inner volume for bass performance, and a compact appearance for small rooms, discreet audio set-ups or wall mounting.

OBERON 3

The OBERON 3 brings the best of both worlds. The 29mm ultra-lightweight soft dome tweeter seamlessly integrates with the 7" wood fibre SMC based woofer for impressive highs, detailed and crisp mids and a surprising coherent and well-timed bass. Combining the large sound of a floor-standing speaker with the compact design of a stand-mount, the OBERON 3 is the perfect fit for any stand-mount or shelf solution.





OBERON 5

The OBERON 5 is the ultimate performer. A compact and elegant floor-standing speaker, housing 2 x 5¼" wood fibre SMC based woofers and the series' wide bandwidth 29mm ultra-lightweight soft dome tweeter. This slim floor-stander will surprise with its ability to deliver a deep firm bass. Together with the clear and well defined mid-range and the airy high frequencies, this speaker is at home with any music or movie sound track.





OBERON 7

The OBERON 7 brings everything together. This large floor-standing speaker has 2 x 7" wood fibre SMC based woofers and the oversized 29mm ultra-lightweight soft dome tweeter. This, combined with the large but elegant cabinet, delivers the very best in deep bass and large room performance. Despite its size, this speaker is surprisingly delicate and will impress with its ability to render any music style naturally and lifelike even at lower volumes. This makes the OBERON 7 perfect for almost any audio setup and any music or movie style.

OBERON 9

The Powerful OBERON 9 is the top of the OBERON range, and with two long-throw 9" woofers it offers dynamic capabilities most speakers can only dream of. The OBERON 9 is a true three-way high-end HiFi speaker that combines ultimate refinement and startling detail with effortless power to reproduce music and film at real life volume levels. OBERON 9 can bring genuine concert and cinema experiences right into your home.

The OBERON 9 is available in Black Ash and Dark Walnut.





OBERON ON-WALL

The OBERON ON-WALL is the slim, discreet and surprisingly powerful on-wall speaker of the series. Housing the oversized 29mm ultra-lightweight soft dome tweeter, a 5¼" wood fibre SMC based woofer and the unique DALI down-firing bass port system. The combination of technologies used made it possible to create a speaker that despite its compact size, will render audio like a much larger model. For this reason it's the perfect discreet choice for both stereo and surround set-ups.



OBERON VOKAL

The OBERON VOKAL is the finishing touch for your OBERON surround system. It is designed to be the perfect match with any of the other speakers in the series. With a 29mm ultra-lightweight soft dome tweeter and 2 x 5¼" wood fibre SMC based woofers, the OBERON VOKAL delivers a precise, clear and detailed movie or concert sound track.





Application

The OBERON series presents a 'speaker for every use' line-up of models. With two compact stand-mounts, three floor-standing, an on-wall and a centre channel, the OBERON has something for every need. Every speaker model is perfect for stereo use, and is able to fill everything from small apartments to large living rooms with high-quality sound.

The OBERON series also includes several solutions for the ultimate surround setup for any room, from the very competitive combination of OBERON 1 with an

OBERON VOKAL together with the DALI SUB C-8 D or DALI SUB E-9 F, through to the powerful room dominating combination of OBERON 7, OBERON ON-WALL and OBERON VOKAL, together with the DALI SUB E-12 F or a DALI SUB K-14 F.

DALI OBERON is a series of speakers that gets the balance of audio quality, visual design and price just right. With new exciting visuals, the use of SMC and the new oversized dome tweeter, DALI OBERON speakers offer Hi-Fi quality sound in a fresh design.

Technical specifications

	OBERON 1	OBERON 3	OBERON 5	OBERON 7	OBERON 9
Frequency Range [+/- 3] dB [Hz]	51 - 26,000	47 - 26,000	39 - 26,000	36 - 26,000	35-26,000
Sensitivity (2.83V/1m) [dB]	86	87	88	88.5	90.5
Nominal Impedance [ohm]	6	6	6	6	4
Maximum SPL [dB]	106	108	108	110	113
Recommended Amplifier Power [Watt]	25 - 100	25 - 150	30 - 150	30 - 180	50 - 400
Crossover Frequency [Hz]	2,800	2,400	2,400	2,300	780/3,400
Crossover Principle	2-way	2-way	2-way	2-way	3-way
High Frequency Driver	1 x 29 mm soft dome	1 x 29 mm soft dome	1 x 29 mm soft dome	1 x 29 mm soft dome	1 x 29 mm soft dome
Low Frequency / mid-range Driver(s)	1 x 5 1/4"	1 x 7"	2 x 5 1/4"	2 x 7"	2 x 9" / 1 x 7"
Enclosure type	Bass reflex	Bass reflex	Bass reflex	Bass reflex	Bass reflex
Bass Reflex Tuning Frequency [Hz]	50	49	43	39.5	31
Connection Input(s)	Single	Single	Single	Single	Single
Recommended placement	Stand/Shelf	Stand/Shelf	Floor	Floor	Floor
Recommended Distance from rear wall to speaker's rear panel [cm]	1 - 50	5 - 50	15 - 80	20 - 80	20 - 80
Dimensions (H x W x D) [mm]	274 x 162 x 234	350 x 200 x 315	830 x 162 x 283	1015 x 200 x 340	1172 x 260 x 406
Dimensions (H x W x D) [inches]	10.8 x 6.4 x 9.2	13.7 x 7.8 x 12.3	32.7 x 6.4 x 11.2	40.0 x 7.8 x 13.4	46.1 x 13.2 x 16
Weight [kg/lb]	4.2 / 9.2	6.3 / 13.9	10.8 / 23.8	14.8 / 32.5	37.1 / 81.8
Accessories	Rubber feet, Manual	Rubber feet, Manual	Spikes, Rubber feet, Manual	Spikes, Rubber feet, Manual	Spikes, Rubber feet, Manual

	OBERON VOKAL	OBERON ON-WALL
Frequency Range [+/- 3] dB [Hz]	47 - 26,000	55 -26,000
Sensitivity (2.83V/1m) [dB]	89.5	87
Nominal Impedance [ohm]	4	6
Maximum SPL [dB]	109	107
Recommended Amplifier Power [Watt]	25 - 150	25 -100
Crossover Frequency [Hz]	2,600	2,100
Crossover Principle	2-way	2-way
High Frequency Driver	1 x 29 mm soft dome	1 x 29 mm soft dome
Low Frequency / mid-range Driver(s)	2 x 5 1/4"	5 1/4"
Enclosure type	Bass reflex	Bass reflex
Bass Reflex Tuning Frequency [Hz]	46	50
Connection Input(s)	Single	Single
Recommended placement	Shelf	Wall
Recommended Distance from rear wall to speaker's rear panel [cm]	0 - 50	0 - 10
Dimensions (H x W x D) [mm]	161 x 441 x 295	385 x 245 x 120
Dimensions (H x W x D) [inches]	6.3 x 17.4 x 11.6	15.2 x 9.7 x 4.7
Weight [kg/lb]	7.45 / 16.4	- / -4.9 / 10.8
Accessories	Rubber feet, Manual	Rubber feet, Manual

All technical specifications are subject to change without notice.