

New Mercedes-Benz SL - Lightweight and athletic

Press Information

September 2012

With the completely redeveloped SL, Mercedes-Benz continues a tradition that began 60 years ago. The letters “SL” have ever since been synonymous with a symbiosis of sportiness, style and comfort – and with groundbreaking innovations. The new SL has been produced for the first time almost entirely from aluminium and weighs up to 140 kilograms less than its predecessor. Its highly rigid all-aluminium bodyshell provides the basis for agile, sporty handling that has been taken to an entirely new level, coupled with exemplary roll characteristics and ride comfort. Even better driving dynamics come courtesy of the new BlueDIRECT engines; they are more powerful yet at the same time more economical when compared to the outgoing generation.

Other new features include the unique FrontBass® system, which turns the luxury sports car into a concert hall regardless of whether the top is open or closed, and the highly efficient adaptive windscreen wipe/wash system MAGIC VISION CONTROL; it supplies water from the wiper blade to the windscreen – as required and depending on the direction of wipe.

Dr Dieter Zetsche, Chairman of the Board of Management of Daimler AG and Head of Mercedes-Benz Cars: “There are around 900 million cars in the world and thousands of models. But there are only a handful of automotive icons. Our SL is one of them: it has class, it has style, it oozes comfort and luxury. But it blends all of this with unbelievable sportiness and dynamism. Virtually no other car can meet Gottlieb Daimler’s standard as perfectly as our SL: the best or nothing.”

The new-generation Mercedes-Benz SL takes the meaning of the famous letters “SL” – super-light – literally. Consistent weight reduction is one of the most outstanding design characteristics in the new SL – as was the case in its namesake, the original SL of 1952 with its lightweight tubular frame. For the first time Mercedes-Benz has implemented an all-aluminium bodyshell in a series-production model. Only very few components consist of other materials. The designers use the even lighter magnesium for the cover behind the tank. High-strength steel tubing is integrated in the A-pillars for safety reasons.

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The new aluminium bodyshell weighs around 110 kilograms less than it would using the steel technology from the predecessor. “The effect is rather as if a heavyweight-class passenger had got out of the car” says Dr Thomas Rudlaff, responsible for the aluminium bodyshell at Mercedes-Benz. “The result is perceptible and measurable. Less weight means more dynamism and less consumption. In other words: the motoring enjoyment increases, the environmental burden decreases.”

The aluminium structure is not only lighter but also proves superior to the predecessor’s steel construction in terms of rigidity, safety and comfort. This is achieved thanks, among other things, to its intelligent lightweight construction with components optimised for their specific task. Thus, diverse processes are used to make different kinds of aluminium depending on the use the component is to be given: the parts are made by chill casting or vacuum die-casting, worked into extruded aluminium sections or into aluminium panels of different thicknesses. The result: high rigidity, high safety levels and better vibration characteristics.

Although the new SL is even more comfortable and has more safety devices on board than its predecessor and therefore does actually sacrifice some of the weight saved through the aluminium bodyshell, the scales show some astonishing figures: the new SL 500 (1785 kg) weighs around 125 kilograms less than its predecessor bearing the same name. On balance, the SL 350 (1685 kg) is even 140 kilograms lighter – all thanks to a host of other intelligent enhanced details to reduce weight, which Mercedes-Benz has also implemented in the new SL in addition to the aluminium bodyshell.

Driving pleasure: frugal, powerful engines and agile suspension

Powerful while accelerating, effortlessly superior across all speeds, nimble on winding roads – the new SL provides no end of driving pleasure. Apart from the powerful engines, the sportily tuned yet comfortable suspension, which also boasts an intelligent lightweight construction, proves outstanding. For instance, the steering knuckles and spring links on the front axle are also made out of aluminium to reduce the unsprung masses. The same also applies to virtually all the wheel location components on the rear axle.

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The new SL is available with two different suspension systems: the SL features semi-active adjustable damping as standard. The optional active suspension system ABC (Active Body Control) is available as an alternative.

Both suspension variants are combined with a new electromechanical Direct-Steer system featuring speed-sensitive power steering and a ratio that can be varied across the steering wheel angle. This ensures excellent straight-line stability and, therefore, a high degree of assuredness when travelling at motorway speeds and makes the SL very agile. It also reduces the amount of steering required when parking and manoeuvring.

The new V8 in the SL 500 develops **320 kW** from its displacement of 4663 cc and thus around 12 percent more than its predecessor despite some 0.8 litres less displacement. The fuel consumption has been reduced by up to 22 percent. At the same time, the torque has increased from 530 Nm to 700 Nm – a gain of 32 percent. Although the displacement remains the same at 3499 cc, the new V6 engine in the new SL 350 develops **225 kW** and delivers 370 Nm of torque.

Both engine variants come with a standard-fit ECO start/stop function. The 7G-TRONIC PLUS automatic transmission, which has been optimised in relation to fuel consumption and comfort, also contributes to the exemplary, low fuel consumption. The fuel economy of the BlueDIRECT engines takes nothing away from the roadster's raciness. Quite the contrary: the SL 350 accelerates from 0 to 100 km/h in 5.9 seconds, making it three tenths of a second faster than its predecessor. The SL 500 takes just 4.6 seconds – eight tenths less than the previous SL 500.

Interior: aesthetic, stylish, sporty

The new SL combines its aesthetically honed profile, which follows the Mercedes-Benz tradition, with a luxurious feel. Fine materials, perfectly finished with great attention to detail, distinguish the style and character of the interior.

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Compared with its predecessor, the new generation of the SL is much longer (+50 mm to 4612 mm) and wider (+57 mm to 1877 mm), providing more room for more comfort in the interior, too. Shoulder room (+37 mm) and elbow room (+28 mm) have been increased, exceeding the dimensions normally found in this vehicle class. Clear lines create a formally coherent internal space within this comfortable interior. Generously used wood trim extends from the centre console across the dashboard into the doors, creating a pleasant wrap-around effect. Three types of wood along with two different aluminium trim finishes are available. Perfectly in tune with the roadster's character, it combines the unpretentious atmosphere of a high-performance sports car with the comfortable, stylish ambience one comes to expect in a luxurious touring car.

Design: classic SL proportions

The designers have brought the latest generation of the SL unmistakably to life on the basis of tradition but added new perspectives and visions. The result is a stylishly sporty and elegant luxury sports car with the classic hallmark SL balanced proportions: the long bonnet gives way to a compact passenger compartment that is set well back. A wide, muscular tail end giving the impression of raciness provides the finishing touch. A handful of elaborately styled lines define the powerfully sculpted and yet calm surfaces of the flanks. Finely worked details, a striking tail end as well as ventilation grilles with chromed fins from the dynamic traditional Mercedes-Benz design heritage visually emphasise the SL legend.

An upright classic sports car radiator grille clearly marks out the new SL visually as a prestigious member of the current Mercedes-Benz sports car family. The centrally positioned star is a contemporary reinterpretation of the famous trademark, which now extends into the centre section with its organically flowing contours.

Dynamically slanting headlamps set well to the outside flank the striking front end and give the new roadster its own unmistakable face. The headlamps come as standard with the Intelligent Light System (ILS). With five different lighting functions that are tailored to typical driving and weather conditions, and are activated depending on the driving situation, they offer the driver a much better illuminated field of vision. The striking curved sidelights and the horizontal strip of the daytime running lamps in the far ends of the bumper feature LED technology.

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Aerodynamics: new standards

The design of the new SL not only meets high aesthetic demands – it also boasts exemplary aerodynamic qualities.

As such, the roadster merits best marks in its segment in four important disciplines:

- With the lowest drag coefficient ($c_d = 0.27$ in the SL 350);
- With the lowest wind noise that is virtually on a par with a closed saloon;
- With the best comfort for open-top motoring so that you can still have the roof down even at high speed;
- With virtually no accumulation of dirt on the side windows.

Two world premieres: FrontBass® and MAGIC VISION CONTROL

With two innovations, the new SL remains true to its tradition as a technological trendsetter: Both innovations are part of the extensive standard equipment of the new SL.

- MAGIC VISION CONTROL is a new, intelligent and highly efficient wipe/wash system. The innovative wiper blade concept always applies the washer fluid just in front of the wiper blade lip via the channels integrated into the blade – in both directions of wipe. As a result, no water is splashed onto the windscreen during spraying to disrupt the driver's visibility, while at the same time cleaning the windscreen perfectly. The water also remains on the windscreen, thus ensuring it is cleaned without troubling the occupants, even with the roof down. For the first time an optional fully heated wiper blade which prevents snow or ice from forming on the blade

in winter is available. This heating function also allows warm water to be applied directly onto the windscreen for the first time, even in cold temperatures.

- Also unique, the FrontBass® system intelligently uses the free spaces in the aluminium structures in front of the footwell as resonance spaces for the bass loudspeakers. As a result the new SL features clear, crisp bass sounds that facilitate a concert hall ambience even with the top down, and frees up space in the doors.

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Mercedes-Benz SL-Class Roadster Pricing (MRLP)

SL 350	\$225,000
SL 500	\$304,500
SL 63 AMG	\$381,500
SL 65 AMG	\$466,500

Important note to editors - The price detailed in this document is the current Manufacturer's Recommended List Price (MRLP).

As you may be aware, the MRLP includes GST and any LCT applicable to the base / standard specification model but EXCLUDES DEALER DELIVERY AND ALL ON ROAD COSTS such as, for example, registration fees, stamp duty, CTP and the like.

Accordingly, please ensure that when you publish the details contained in this document, your publication makes it clear to its readers that:

- The attached pricing is an MRLP
- That the MRLP excludes on-road costs and dealer delivery, and
- For drive away price information, consumers should contact dealers

Whilst we are unable to provide you with drive away pricing due to the wide variation in on-road costs between states and territories, and the different ranges of dealer delivery imposed by dealers, we encourage you to contact one of our authorised Mercedes-Benz passenger car dealers in order to obtain relevant and accurate drive away information for your specific audience.

The safest roadster

Thanks to the crash-optimised aluminium structure, standard-fit PRE-SAFE® and assistance systems on the same high level as the S-Class, the SL is the world's safest roadster. The rigid aluminium bodyshell forms a sturdy passenger compartment along with precisely defined deformation zones in the front and tail ends. In the event of the vehicle overturning, A-pillars made out of a mix of steel and aluminium and two roll-over bars protect the passenger compartment. The restraint systems including the two-stage driver and passenger airbags have been further developed. A headbag integrally covers the side head-impact area. An additional thorax airbag in the seat backrest can protect the upper body in the event of a side impact. Another new feature is the crash-responsive NECK-PRO head restraints developed by Mercedes-Benz which are fitted as standard in the SL.

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An active bonnet and a front end with a large, yielding impact area help ensure pedestrian protection.

A safety highlight comes in the form of the standard-specification anticipatory occupant protection system PRE-SAFE®, developed by Mercedes-Benz and the only one of its kind in the world. If it recognises that there is an acute risk of an accident, it reacts reflexively by activating preventive measures to protect the occupants, so that the belts and airbags can exercise their protective effect optimally in the event of a subsequent impact which might ensue. Additional post-crash measures supplement the integral safety concept and facilitate rapid assistance: regardless of the severity of the impact, the doors can be automatically unlocked after an accident, the interior lighting activated and the side windows lowered by 50 millimetres to ventilate the interior more effectively. The steering wheel can also be moved upwards.

Standard-specification: ATTENTION ASSIST and ADAPTIVE BRAKE

In the new SL, too, a unique combination of driver assistance systems helps prevent accidents. These include the standard-fit drowsiness detection system ATTENTION ASSIST and the ADAPTIVE BRAKE. The latter features ABS, acceleration skid control (ASR) and active yaw control, and offers comfort and convenience functions in addition to safety functions.

The ADAPTIVE BRAKE works in conjunction with the equally adaptive brake lights. In emergency braking situations, it uses flashing brake lights to warn vehicles behind.

PRE-SAFE® Brake: autonomous partial and emergency braking in response to a serious risk of a rear-end collision

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As an option DISTRONIC PLUS proximity control and PRE-SAFE® Brake, which is already well proven in other Mercedes-Benz models, are available. Both work on the basis of the same radar sensors. Once a serious risk of a rear-end collision is detected, the PRE-SAFE® Brake warns the driver initially and can initiate autonomous braking if the driver fails to react, and so either prevent the accident or at least mitigate its severity. PRE-SAFE® can also activate occupant protection measures.

HANDS-FREE ACCESS – ‘kick’ to open

One of the new products and features from Mercedes-Benz is a system known as HANDS-FREE ACCESS. Standard on the new SL for the first time anywhere in the world, and it allows drivers to operate the boot lid without using their hands. This work is taken care of by a hydraulic drive system, for which the control signals are given by the SL owner without touching anything, but by making as though to kick under the area of the rear bumper with their foot; doing so activates this fully automatic comfort-increasing equipment. Mercedes-Benz is the only manufacturer to offer a system which not only opens but also closes the boot lid automatically.

With the innovative convenience function HANDS-FREE ACCESS there is no longer any need for drivers to have to get annoyed by having to put their purchases and other objects down on the – often dirty – ground when out shopping and when they literally have their hands full, in order to reach for the handle. Should an unintentional ‘kick’ result in the boot lid opening or closing without the driver wanting this to happen, a second kick will correct it. When this occurs, the automatic system interrupts the procedure and reverses the effect of the signal given in error by actuating the boot lid against the original direction of movement – in the case of unintended opening, the second kick closes the boot lid again.

An appropriate safety program facilitates unhindered use of the HANDS-FREE ACCESS system. An acoustic signal provides the information that an opening or closing procedure has been initiated, and an automatic reversing function stops the boot lid as soon as the system recognises that there is an obstacle blocking the boot lid.

Aluminium comes up trumps

- **Lots of technical innovations**
- **Torsional stiffness increased by around 20 percent**
- **State-of-the-art joining methods for high loadability**
- **Exemplary NVH comfort**
- **Three roof variants from which to choose**

Cars are becoming increasingly safer, more comfortable, but often heavier as well. The new Mercedes-Benz SL not only stops this trend, it turns it around. In spite of increased comfort, performance and safety, it is 140 kilograms lighter than its predecessor.

The greater part of the weight-reduction “diet” is hidden from the eyes of the observer of the SL. Under the aluminium outer skin there is a bodyshell made almost entirely from aluminium, only very few components being made from other materials. The even lighter magnesium is used in part for the cover behind the tank. The A-pillars and the roof frame are of steel sheet metal incorporating high-strength steel tubing. For these elements steel is the best solution to provide survival space for occupants in the event of the vehicle overturning.

The bodyshell of the SL is the first all-aluminium bodyshell to be produced in large series at Mercedes-Benz. This entirely new development weighs 254 kilograms and is thus 110 kilograms lighter than a comparable steel bodyshell. Further extensive lightweight design features compensate the additional weight unavoidably caused by the increased comfort, the new assistance systems and other technical features. Under the bottom line an enormous weight advantage remains for the new SL. As the SL 500 it weighs 125 kilograms less than its predecessor, while the SL 350 weighs 140 kilograms less than its previous version.

For the roadster the aluminium bodyshell is superior to a steel construction

The developers at Mercedes-Benz did not rest content achieving weight benefits alone. The aluminium structure had to be superior to a steel construction in terms of rigidity and comfort as well. In order to attain this high objective, developers consistently went for an intelligent lightweight construction, and explored many new paths to do this. Every single component of the aluminium bodyshell was specifically optimised for its particular function and expected loads. Thus, diverse processes are used to make different kinds of aluminium depending on the use the component is to be given: the parts are made by chill casting or vacuum die casting, worked into extruded aluminium sections or into aluminium plates of thicknesses that vary within one and the same component; these are what are known as the tailored welded blanks. Expressed in numbers, the bodyshell weight is made up of: 44 percent cast aluminium, 17 percent aluminium sections, 28 percent aluminium sheet metal, 8 percent steel and 3 percent of other materials.

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At the Bremen production facilities the parts are assembled using diverse load-adequate joining methods, some of which are innovative processes. Secure joints are ensured, for example, by MIG welding, hemming, bonding, self-piercing rivets, flow hole bolting, or friction stir welding – a joining method by which a highly resistant weld seam is produced by means of friction heat; a method particularly well-suited to aluminium on account of its low melting point.

Particular highlights of the bodyshell:

- The firewall is at present the largest aluminium cast component made in large series for vehicle bodywork
- Many sheet metal parts are designed in such a way that for the first time they can be made from 100-percent recycled aluminium, saving 80 percent of the energy used in their production.
- The main floorpan consists of a 3-layer shaped panel made from thin, extrusion-moulded hollow sections, welded together by friction stir welding.
- The longitudinal members in the vehicle front end are made using high-pressure hydroforming (IHU) technology, which enables the creation of highly complex and robust components, permitting optimum use of reduced installation spaces.

- The door sills (longitudinal members) consist of 1.7 metre-long, 7-chamber extrusion-moulded aluminium sections; these provide rigidity in the lateral sectors and safety in the event of a collision. Flexible chamber distribution makes possible a minimum component weight coupled with optimum characteristics.
- The tunnel is made of aluminium sheet metal with a reinforcement of varying thickness (3 different thicknesses depending on the sector, a so-called tailored welded blank, TWB).
- The rear sector floor is a MIG welded frame with a hollow chilled cast longitudinal member as its central element. This technique is employed in the SL for the very first time in automotive bodyshell construction.
- The rear sector floor frame structure is closed by floor sheet metal panels and the boot tub made by vacuum die-casting.
- The boot recess is made from recycled sheet metal.
- The central member connects the front end with the rear sector floor. The mounting points for the drive shaft, the transmission cross beam, the transmission tunnel braces and the seat bolting points on the tunnel side are all integrated into a single element. The wall thicknesses and rib distribution are oriented bionically towards the requirements and loads.
- Many other components were optimised bionically, i.e. based on examples from the natural environment. These structures reduce the vehicle weight compared to a classic design even further.

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The sum total of all the design measures leads to a lightweight, torsionally and flexurally rigid bodyshell with an optimum rigidity/weight ratio. It was possible to increase the bodywork's torsional rigidity by more than 20 percent over the already highly rigid preceding model series. This is confirmed by measurements of the new SL's torsional strength - at 19400 Nm per degree the roadster achieves an absolute top value (its predecessor already reached 16400 Nm per degree).

Meets the highest safety standards

At the same time the high-strength structural elements of the aluminium bodyshell make the new SL even safer than the preceding model in the event of a collision. Extrusion-moulded sections, connecting cast nodes and a double-thickness plate floor form a passenger compartment that is just as lightweight as it is sturdy. Two aluminium sections in each door together with the side sills (very rigid thanks to their internal chamber structure) and crash-resistant seats provide the greatest possible survival space in the event of a side collision.

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A front end deformation zone acting on several levels and in which the aluminium front axle subframe is integrated as an additional third longitudinal member, distributes collision forces to a large area, conducting them past the passenger compartment. And in the rear, too, there is sufficient energy-absorbing deformation potential. A structural cage made from chilled cast longitudinal members, transversal sections and a cast magnesium tank separation bulkhead also contribute to this. This is also where the fuel tank is nested in a crash-protected manner above the rear axle. This way all the statutory safety requirements are met as well as the even stricter ones from Mercedes-Benz.

The doors and the bonnet, too, are lightweight

The intelligent material mix is completed by the boot lid, of SMC-hybrid design (SMC = sheet moulding compound). It consists of a single-shell synthetic material panel mounted on a steel reinforcement. Both materials have virtually identical thermal expansion coefficients and complement each other very well. The interior steel construction permits maximum rigidity with minimum use of space, while the plastic panelling allows the full integration of the aerials for navigation, digital radio and mobile telephony out of sight in the rear area so that the SL does not need to carry a aerial stump on its aerodynamically refined body.

The bonnet of the SL is made from aluminium, as was that of its predecessor. It was optimised in terms of form and materials, contributing towards the outstanding pedestrian protection.

The doors, too, are of a lightweight design and made from aluminium. They are fashioned from a combination of sheet metal, extruded sections and cast metal

parts, joined by diverse methods: riveting, bonding and hemming. Their aluminium and steel hinges are friction-based and are infinitely adjustable to any desired angle when opened, so that when getting into or out of the car they can remain securely open at any angle permitted by the space available at the side. This is particularly desirable in cramped parking conditions such as in a garage or car park.

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Sophisticated corrosion protection concept

The aluminium bodyshell of the new SL offers no point of attack for corrosion. A sophisticated surface protection concept ensures the preservation of the brilliant look both of the outside skin and of the underside of the sheet metal panels, thus simultaneously protecting the renowned reliability and value stability of Mercedes-Benz vehicles. The protection concept was developed and tested on the basis of the environmental burden in different climate zones of the world and the specific loads the vehicle is subjected to.

The foundation for maximum corrosion resistance is formed by corrosion-resistant aluminium alloys and design features, while the few steel vehicle components are all fully galvanised. High-quality zinc/nickel coatings or special electrochemical insulation measures prevent contact corrosion with aluminium. All the seams are meticulously sealed, the surfaces protected through cathodic dip priming and multiple coats of paint. Sectors particularly exposed to corrosion are additionally protected with wax, to ensure that the pristine aspect of the new car is preserved for a long time.

Intelligent Light System and LED tail lights as standard

The headlamps on the new SL have been enhanced. As part of its standard specification, the new roadster is equipped with the Intelligent Light System (ILS) featuring bi-xenon headlamps. A driving direction indicator, sidelights and the daytime running lamps with LED technology complete the Intelligent Light System.

The tail lights on the new SL benefit from the advantages offered by the LED technology. LEDs light up approximately 150 milliseconds faster than conventional bulbs, plus they have a considerably longer life and conserve current. In the SL's tail lights, the LEDs also light up with differing intensity in a targeted manner in certain sections of the tail lights, depending on the light function. This technology ensures an unmistakable night design.

Rear reversing lights and rear fog lamps are integrated into the rear bumper. The third brake light featuring LED technology is integrated in the boot lid above the Mercedes star.

Visibility as if by magic

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- **World premiere – wipe and wash systems folded into one**
- **A duct system takes the water directly to the wiper blade**
- **Programs for summer, winter and cabriolet operation**
- **Fully heated system against snow and ice**

An astonishing experience: the wiper blade glides over the badly soiled windscreen of the new SL, without a sign of a cleaning water jet, the occupants do not notice anything yet the windscreen is still cleaned! The new SL is the first vehicle to be equipped with the adaptive MAGIC VISION CONTROL wiper/washer system developed by Mercedes-Benz. It cleans the windscreen without the splash of water that usually briefly disrupts the driver's field of view in the case of conventional windscreen washing systems – something that is especially unpleasant at night or when the sun is low in the sky and at high speeds.

In fact, the windscreen cleaning operation in the SL is still performed with washer fluid in the conventional manner. The innovation lies in the way the fluid is conducted to the windscreen in order to clean it. This is done by means of water guides integrated on both sides along the wiper blade – one on the left and one on the right – with minute laser-cut spraying holes. Via these channels, the innovative washer/wiper system always supplies washing fluid to the windscreen discreetly, precisely where it is needed: just in front of the wiper blade lip, according to the direction of movement of the wiper. The holes are distributed along the entire length of the wiper blade, being more closely spaced towards the outside of the blade, where it sweeps a greater area, than closer in, where the area swept is smaller.

Programs for summer, winter and cabriolet operation

Mercedes-Benz controls the MAGIC VISION CONTROL system intelligently via three partly autonomous wash programs – for summer, for winter and for cabriolet driving. It is the first windscreen wipe/wash system anywhere in the world to operate in this way. In summer, small quantities of water are

sufficient to remove a light powdering of dust. In winter the dirt mixed with de-icing salt requires a greater amount of water. The MAGIC VISION CONTROL system works in accordance with the outside temperature, and it also automatically adapts the washer fluid quantity to the surrounding conditions.

A particularly interesting feature of the SL Roadster is the Cabriolet function: when the hardtop is down, the electronic control system reduces the amount of water, apart from which it demands the required water mainly on the downward stroke of the wiper arm. This way the windscreen can be conveniently cleaned during the journey and with an open roof, without any of the water spraying into the vehicle interior. Another pleasant side effect is that, since the washer fluid is directed specifically and in a well-metered manner to the area to be cleaned, one doesn't douse anyone else in the surroundings with water, either, and it also doesn't distribute any spray onto the vehicles behind. At the end of the day, a better cleaning effect is attained with up to half the amount of washer fluid. It has therefore been possible to reduce the volume of the washer fluid reservoir by 1.7 litres compared with the preceding model. This in turn contributes to a reduction in weight and consequently to greater efficiency.

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Winter-proof thanks to the heated system

On request the MAGIC VISION CONTROL wiper blades are completely heated on the new SL, making Mercedes-Benz the first manufacturer in the world to offer a fully heated wiper/washer system. It consists of a washer fluid container heated through coolant waste heat, electric heating for the entire hose system and, as a newly-developed highlight, a fully heated wiper blade. This effectively prevents the formation of snow on the wiper blades, so typical in winter. To do this each of the spring rails of the blade is equipped with a heater foil with an output of 35 watts per blade. It heats the spoiler and the wipe lip. Snow and ice cannot freeze onto the blade; it remains supple in winter, too, and always cleans well.

The heating is also controlled as required according to the duration of operation and the outside temperature. It is only below a temperature of minus 20 degrees Celsius that the system makes use of the entire system's maximum output, 270 watts. Between 5 degrees above and 20 degrees below zero the heating operates in an energy-saving mode and only requires the output needed to thaw out the wiper/washer system and keep it free of snow and ice.

The fully integral sound of tomorrow

- **FrontBass® – open-air enjoyment with listening pleasure**
- **Crystal-clear sound with high dynamism, even with the top down**
- **The bass system uses the support structures of the vehicle as resonance spaces**
- **Precisely defined sound characteristics for a concert hall ambience**

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As a rule, those gifted with a sensitive sense of hearing cannot expect much listening enjoyment in a roadster. Even good car radios and CD players are disappointing under these arduous acoustic conditions. Instead, in open-top cars, the music flies away with the wind; it frays and breaks up in all directions without its acoustic base – passengers generally have to be satisfied with a woolly “sound carpet”, or close the roof. Open-air pleasure and musical enjoyment could hardly be expected in a roadster. A great part of the blame for this lies with the location of the bass loudspeakers in the doors or under a seat. Mercedes-Benz now presents a solution to this conflict: the unique FrontBass® system, which at last creates the conditions for a concert hall ambience in a roadster too. In the new SL, the FrontBass® system is celebrating its world premiere.

Crisp bass sound from the footwell

The principle sounds simple: Instead of being placed in the doors in the usual way, in the new SL generation the bass loudspeakers are installed in the footwell in front of the driver and passenger. This is not possible with traditional vehicle shell structures, but the two front longitudinal members in the front aluminium skeleton of the new SL provide the resonance space needed for this arrangement. The loudspeakers are fitted directly in two openings in the firewall on either side of the footwell. Cavities in the longitudinal members behind the speakers act as resonating chambers. The outstanding inherent rigidity of these structural components results in ultra-precise low notes with extremely little distortion, right up to very high signal levels. In other words, the new SL features clear, crisp bass sounds with a high dynamic range as part of its standard equipment.

The position of these two independent closed woofers in the footwell permits the creation of ideal acoustic conditions, because the firewall, the vehicle floor

and the underside of the dashboard form a sort of funnel that focuses and concentrates the sound – a better sound performance is the result. The acoustic effectiveness improves significantly. The formula ‘low energy plus lots of sound volume’ saves energy on top of it all. This way, the FrontBass® system also contributes towards a CO₂ reduction.

Precise, brilliant sound

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With the new FrontBass® system, Mercedes-Benz is not only revolutionising in-car bass sound reproduction – and in particular aboard an open-top roadster – it is also creating the conditions for exceptional listening enjoyment. Since the bass loudspeakers now do not need to be installed in the doors, the disruptive acoustic vibrations typical of this configuration no longer occur. In addition to this, the sound experts have placed the mid-range and high-tone loudspeakers in the doors, the dashboard and in the vehicle rear optimally close to the beltline and thus almost at the same height as the SL occupants’ ears. This way they produce a precise, brilliant sound quality. The experts speak of an exact stage reproduction with precise instrument representation and an equally precise spatial graduation.

Even the standard entry-level FrontBass® system creates a pronounced encircling sound feel and an emotive sound experience, independently of whether the vehicle roof is open or closed. As Norbert Niemczyk, responsible for the new FrontBass® system at Mercedes-Benz, explains: “Our objective was not mere sound volume – although in this respect, too, the system performs amazingly – but a clear sound instead, one that never becomes “mushy”. We have achieved this. All those who experienced the sound with the FrontBass® system for the first time got out of the car with a big smile on their face – in-house we call that the FrontBass® smile.”

Friendly to the surroundings: focused sound

Acoustic enjoyment of the highest level is part of the programme in the new SL both with a closed and with an open top. As the FrontBass® system focuses the sound, the powerful sound is concentrated on the vehicle occupants – the surroundings are significantly less disturbed than is the case with conventional sound systems. Apart from this, the amplifier automatically controls the loudspeakers in a different manner depending on whether the passenger compartment is closed or open, according to the acoustic conditions, in order to create the best possible sound.

Bodyshell tuned to FrontBass®

In order to realise the FrontBass® concept, the sound specialists worked in close cooperation with the bodyshell designers right from the very first planning stage. A small welcome side effect is that since the FrontBass® concept made

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the loudspeakers in the doors superfluous, the designers were able to use the space made free in the doors for additional stowage compartments.

The aerials are no longer visible

The new Mercedes-Benz SL no longer has any visible aerials. The aerial structures for the radio and TV reception are housed in the windscreen. The concomitant aerial amplifiers are located in the area of the A-pillar. The aerials for are discreetly integrated in the hybrid boot lid.

New Digital Owner's Manual

For the first time Mercedes-Benz is equipping the new SL with a Digital Owner's Manual. The driver can use it to call up information on operating their vehicle via the COMAND Online system and view it there on the screen.

The new SL's Digital Owner's Manual has decisive advantages over a printed version:

- All the information is available immediately.
- It is quick and convenient to search for certain information
- There are various options available for performing a search – by inputting a key word, via the index or via the virtual depiction of a vehicle

Mercedes-Benz supplements the Digital Owner's Manual for the SL with a reduced printed edition which contains the fundamental steps for reliable operation of the vehicle. Not to be forgotten is the fact that as only around 280 printed pages are included as opposed to more than 580 previously, approximately half a kilo in weight is saved.

From generation to generation – the SL is always an icon of its time

- **It all began with international racing victories**
- **A unique sports-car legend for 60 years**
- **Highly sought-after vehicles for enthusiasts**
- **Irresistible design, superb engineering**

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Sixty years ago the story that would immediately become a legend began. Six years following the end of the war – a time during which some of the Daimler-Benz plants still lay in ruin – the Head of Testing, Rudolf Uhlenhaut, was inspired to shed a positive light on the developments taking place at Mercedes-Benz through successes in motorsport. The means available were limited, and he made a virtue out of necessity by building the first SL from the components available and from a generous portion of pioneering spirit: a racing car which was sent to the international race tracks as early as 1952. The 300 SL (whose in-house code was W 194) won the legendary 24 Hours of Le Mans race that year with a spectacular one-two victory. This followed on from a one-two-three finish at the Bern Grand Prix, and at the Jubilee Grand Prix for Sports Cars at the Nürburgring the 300 SL even took the first four places. This hugely successful racing year was even crowned by the newcomer with a triumphant one-two win at the III Carrera Panamericana, a long-distance race over 3111 kilometres right across Mexico. Soon it was clear to everyone that Rudolf Uhlenhaut's delighted team had put a unique car on the road.

At the same time the combination of the letters "SL" became a phenomenon. As an abbreviation of "super" and "light" it had originally merely been intended to differentiate between the 300 and 300 S models, but it soon took on a charismatic shine. The forefather of the race track was followed by the first descendant available for purchase in 1954: the 300 SL series-production sports car (W 198), which achieved equal renown and was known as the "gullwing" model on account of its unusual doors. Ever since, the two letters have stood for unique cars, for legendary sports cars. The irresistible design, the superb engineering and the virtually unlimited motoring pleasure they bring have bestowed on the Mercedes-Benz SL an aura which has elevated all the models created since 1954 to the status of classic, one after the other.

Amongst

automotive enthusiasts they are highly sought-after collectors' vehicles and pass on their special status from generation to generation. It is no wonder, then, that the 300 SL gullwing model was voted "Sports Car of the Century" by a jury consisting of motoring journalists in 1999.

To mark its sixtieth birthday, Mercedes-Benz has completely assembled the 1952 racing car with the vehicle identification number 2 again – true to its original state and in such a way that it is ready to drive. Countless hours of work, a great deal of sweat and know-how have been invested by the specialists at Mercedes-Benz Classic in the car's restoration. In so doing they went to enormous lengths to ensure that the vehicle was not "over-restored" and that instead it would retain its individual patina which makes its unique character shine. On the occasion of the unveiling of the new SL, the forefather – bathed in authentic splendour – was also presented to the public and demonstrated the fountainhead of the SL legend. In this juxtaposition the two SL models from 1952 and 2012 represented the entire spectrum of the SL legend – spanning from its origins right through to the current pinnacle.

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But 60 years ago it was not just the SL bloodline that was born; at the same time the foundations for the entire Mercedes-Benz sports car family were laid – and today, encompassing the SL, the SLK and the SLS AMG, it is more strongly differentiated than ever before. Even back in the 1950s, when the successful racing car evolved into a series-production car available for purchase, Mercedes-Benz offered not just the decidedly sporty 300 SL "Gullwing" but a second SL model, too: the less powerful yet equally fascinating 190 SL, which, in its capacity as the "little brother" of the gullwing model, opened up the opportunity to experience the SL legend to a larger circle of customers.

In the present day the 190 SL is often regarded as the predecessor of the compact SLK, whilst the 300 SL gullwing model with its characteristic doors and its outstanding performance potential is widely perceived as the ancestor of the SLS AMG. Both models, the 300 SL and the 190 SL, are, however, first and foremost precisely what is revealed by the model lettering on the boot lid: the roots of the legendary SL ancestral line, which stands for refined sportiness like no other has done for over six decades now.

The cars in this model series were created with their own unique characteristics because their time had come, because Mercedes-Benz was meeting its customers' requirements. This also applies to the subsequent SL generations – each one reflects the spirit of its day and the wishes and desires

of their buyers. The sales success of every single SL generation proves Mercedes-Benz has always built the SL which was best suited to its time – having said that, they generally tended to be somewhat ahead of their time in Stuttgart, setting new trends. This is why comfort, which, alongside sportiness, can be seen as the inherent discipline of the SL models, became an indispensable part of the SL philosophy very early on. Further hallmark SL characteristics spanning the generations include superior performance, technical innovations and, of course, an exciting, often surprising, design which always finds new ways of succinctly expressing the high emotional appeal of the SL models.

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1954 – 1963: W 198 – the legend enters series production

Without a doubt the 300 SL racing car of 1952 was the primal concept. With an enhanced design and boasting refined ride comfort in spite of its higher output, it was continued as a series-production sports car. In 1954 the 300 SL gullwing model embarked on an incomparable triumphal procession. Alongside the gullwing doors, its other characteristic features were the filigree space frame familiar from the racing car and also the first four-stroke engine with petrol injection in a series-production passenger car. It had an output which was sensational in its day: 215 hp from a displacement of three litres. From 1957 the 300 SL was then built exclusively as an open-top version.

An open-top model right from the outset, the 190 SL was presented to the public at the same time as the 300 SL. Its roots lay in proven series-production technology rather than in the world of racing. Yet this did not impact on the fascination surrounding the vehicle – on the contrary: that special SL feel was now available for a significantly larger group of buyers to experience. In eight years nearly 26,000 vehicles found proud owners.

“The 300 SL belongs to the genus of cars which challenge their drivers and at the same time give them enormous driving pleasure.”

Juan Manuel Fangio, five times Formula 1 world champion

1963 – 1971: W 113 – the “Pagoda”

In the spring of 1963, when Mercedes-Benz ceased production of the 300 SL and 190 SL, the joint successor was an SL model which caused a furore – above all because of its unusual exterior. As well as the fresh, new lines, the dominating design feature was a removable coupé roof, which sloped down to

the centre of the vehicle. This was unique, and reminiscent of Far Eastern temple architecture, resulting in this SL being referred to colloquially as the “Pagoda”.

“In the many years I have been driving, I cannot remember wanting to own any car I have ever driven (with the exception of racing cars!) as much as this one.”

Formula 1 racing driver and Mille Miglia winner Stirling Moss in a letter to the Head of Racing, Alfred Neubauer

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1971 – 1989: R 107 – the evergreen

In 1971, the “Pagoda” model was then followed by an SL model series which was destined to be built for 18 years. The advanced styling of this classic ensured that it has continued to look contemporary to this day. Known internally as the R 107, this roadster’s combination of distinctive curves and clean, frill-free lines still gives it a handsome and iconic appearance.

The R 107 was the first SL generation to be characterised by a large variety of models. During its long construction period, it was available, for instance, with engines from the 2.8-litre six-cylinder in-line engine to the 5.6-litre V8. Over a long period of time the customer was able to choose from three engines. And the R 107 set new standards in safety with its high safety reserves and numerous innovative, detailed solutions.

“It’s powerful, yet not ostentatious. It simply oozes superiority and masculinity.”

Hans Hermann, Formula-1 racing driver and Le-Mans winner.

1989 – 2001: R 129 – the sculpture with style

In 1989 the last of 237,287 SL Roadsters of the model series R 107 rolled off the assembly line in Sindelfingen, to be succeeded by the SL model series known internally as the R 129. Its defining wedge shape immediately found popularity, radiating taste and style. Today it is thought of as an automotive sculpture.

In addition to design quality of the highest calibre and maximum open-air motoring pleasure, this SL offered occupant protection on an uncompromisingly high level. Its safety features included, for example, a roll-over bar which automatically extends in critical situations and – for the first time anywhere in the world – what is known as an integral seat with a

three-point seat belt integrated into the seat. The R 129 also raised the bar when it came to its engine line-up – featuring units with up to twelve cylinders – and its driving characteristics.

“I bought the SL because I believe it to be the finest car in the world.”

José Carreras, star tenor and automotive enthusiast

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2001 – 2012: R 230 – a stylish synthesis of tradition and modernity

With a stylistically fascinating and technically discerning sports car in the model series R 230, Mercedes-Benz continued the long SL tradition in the autumn of 2001. It was the first SL to be fitted with a vario-roof. The innovative roof construction, which transforms the two-seater roadster into a weatherproof coupé (or vice versa) within a few seconds, was launched by Mercedes-Benz in 1996 in the first-generation SLK, and enhanced for the SL. The R 230 also offers the active suspension system Active Body Control (ABC), a unique package comprising state-of-the-art electronic control systems and optimised occupant protection. But the R 230 also stands for new performance dimensions and outstanding sportiness: as the SL 55 AMG, which was used in 2001 and 2002 as the official Safety Car in Formula 1, it exceeds the **368 kW/500 hp** mark. When it was unveiled in 2004, the SL 65 AMG was no less than the most torquey roadster in the world, and in 2008 and 2009 the R 230 once again took on the role of the Formula 1 Safety Car – this time as the SL 63 AMG.

“With regard to the balancing act between comfort and sportiness, the SL is now setting new benchmarks”

Wolfgang König, automotive journalist in the 2001 road test

As of 2012: R 231 – athlete and aesthete

The new SL is now taking on the original SL, as demonstrated objectively by its performance data and subjectively by its driving feel. Along with the S-Class and the E-Class, the SL belongs to the Mercedes-Benz model series with the longest tradition. And like virtually no other vehicle class from Mercedes-Benz it stands for fascination and emotion.

Mercedes-Benz SL 350 BlueEFFICIENCY

Engine

Number of cylinders/arrangement		V6, 4 valves per cylinder
Displacement	cc	3498
Bore x stroke	mm	92.9 x 86.0
Rated output	Kw	225 at 6500 rpm
Rated torque	Nm	370 at 3500-5250 rpm
Compression ratio		12.0 : 1
Mixture formation		Direct petrol injection

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Power transmission

Transmission		Seven-speed automatic transmission
Gear ratios	Final drive	3.07
	1st gear	4.38
	2nd gear	2.86
	3rd gear	1.92
	4th gear	1.37
	5th gear	1.00
	6th gear	0.82
	7th gear	0.73
	Reverse gear	3.42

Chassis and suspension

Front axle		Multi-link suspension, coil springs, gas pressure shock absorbers with automatic continuous adjustable damping, stabiliser bar
Rear axle		Independent multi-link suspension, coil springs, gas pressure shock absorbers with automatic continuous adjustable damping, stabiliser bar
Braking system		Internally ventilated and perforated disc brakes at front, internally ventilated disc brakes at rear, electric parking brake at rear, ABS, Brake Assist, ESP [®]
Steering		Electromechanical Direct-Steer system, speed-sensitive
Wheels		Front 8.5 J x 18 Rear 9.5 J x 18
Tyres		Front 255/40 R 18 Rear 285/35 R 18

Dimensions and weights

Wheelbase	mm	2585
Track front/rear	mm	1608/1635
Overall length	mm	4612
Overall width	mm	1877
Overall height	mm	1314
Turning circle	m	11.04
Boot capacity *	l	364-504
Kerb weight acc. to EC	kg	1685
Payload	kg	380
Perm. GVW	kg	2065
Tank capacity	l	93

Performance and fuel consumption

Acceleration 0-100 km/h	s	5.9
Top speed	km/h	210
Fuel consumption comb.	l/100 km	8.3
CO ₂ emissions	g/km	192

* acc. to VDA measuring method

Mercedes-Benz SL 500 BlueEFFICIENCY

Engine

Number of cylinders/arrangement		V8, 4 valves per cylinder
Displacement	cc	4663
Bore x stroke	mm	92.9 x 86.0
Rated output	kw	320 at 5250 rpm
Rated torque	Nm	700 at 1800-3500 rpm
Compression ratio		10.5:1
Mixture formation		Direct petrol injection, two turbochargers

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Power transmission

Transmission		Seven-speed automatic transmission
Gear ratios	Final drive	2.65
	1st gear	4.38
	2nd gear	2.86
	3rd gear	1.92
	4th gear	1.37
	5th gear	1.00
	6th gear	0.82
	7th gear	0.73
	Reverse gear	3.42

Chassis and suspension

Front axle		Multi-link suspension, coil springs, gas pressure shock absorbers with automatic continuous adjustable damping, stabiliser bar
Rear axle		Independent multi-link suspension, coil springs, gas pressure shock absorbers with automatic continuous adjustable damping, stabiliser bar
Braking system		Internally ventilated and perforated disc brakes at front, internally ventilated disc brakes at rear, electric parking brake at rear, ABS, Brake Assist, ESP®
Steering		Electromechanical Direct-Steer system, speed-sensitive
Wheels		Front 8.5 J x 19 Rear 9.5 J x 19
Tyres		Front 255/35 R 19 Rear 285/30 R 19

Dimensions and weights

Wheelbase	mm	2585
Track front/rear	mm	1597/1600
Overall length	mm	4612
Overall width	mm	1877
Overall height	mm	1315
Turning circle	m	11.04
Boot capacity *	l	364-504
Kerb weight acc. to EC	kg	1785
Payload	kg	380
Perm. GVW	kg	2165
Tank capacity	l	93

Performance and fuel consumption

Acceleration 0-100 km/h	s	4.6
Top speed	km/h	210
Fuel consumption comb.	l/100 km	9.4
CO ₂ emissions	g/km	218

*acc. to VDA measuring method