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The new A8 – the Audi flagship

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Annex: Technical Data

The equipment, data and prices specified in this document refer to the model range offered in Germany. Subject to change without notice; errors and omissions excepted.

Summary

More composed than ever – the new Audi A8

Excellent comfort, superb craftsmanship, strict lightweight construction and a broad portfolio of high-end technologies: Audi has exhaustively updated its A8 flagship. New assistance systems and the innovative Matrix LED headlights make for even more superior driving. The engines are more powerful and more efficient.

The A8 makes Audi one of the innovation leaders in the luxury segment. One outstanding strength of the sedan is its lightweight construction. The standard-wheelbase A8 3.0 TFSI quattro has a curb weight of just 1,830 kilograms (*4,034.46 lb*) – the lowest value among the competitors with all-wheel drive. The decisive factor here is the body. An Audi Space Frame (ASF) made almost entirely of aluminum, it weighs just 231 kilograms (*509.27 lb*).

The new Audi A8 is the largest sedan in its competitive segment. It is 5.14 meters (*16.86 ft*) long, has a wheelbase of 2.99 meters (*9.81 ft*), is 1.95 meters (*6.40 ft*) wide and 1.46 meters (*4.79 ft*) tall. The A8 L gains an additional 13 centimeters (*5.12 in*) in both length and wheelbase. The 520-liter (*18.36 cubic ft*) trunk in both variants has been reconfigured to be even easier to load. Thanks to new noise damping measures, the already low interior noise level has been reduced even further.

The dynamic design of the Audi A8 is now more expressive. The engine hood, the Singleframe grille and the front bumper have more pronounced contours, and the headlights have become flatter. The latter are optionally available with Audi's innovative Matrix LED technology. With these headlights, the high-beam comprises 25 small, individual light-emitting diodes per unit that can be switched on and off or dimmed individually as needed. This enables the headlight system to react to oncoming or preceding vehicles and blank out light with great precision while continuing to fully illuminate the rest of the road.

The LED lights at the rear of the car have been revised. In all versions except the S8, the exhaust system terminates in two large, trapezoidal tailpipe tips on each side of the rear end. Fine chrome strips and high-gloss black window frames round out the revised design. There is a choice of 12 exterior colors, including five new ones. Wheel sizes range up to 21 inches on the sporty S8.

Interior: Plenty of room and fine materials

In the interior of the Audi flagship, the elegant lines and generous spaciousness stand out. Audi offers a wide range of options for the front seats, including ventilation and massage functions in five programs. Both the A8 and the A8 L can be equipped with two individual power seats. In the A8 L, these are complemented by a continuous, leather-covered center console, and the optional reclining seat with power fold-out footrest takes comfort up another notch. There are many additional luxury features from which to choose, from the fully integrated rear seat entertainment and the cabin air ionizer to the power-closing doors or the refrigerator in the rear seat back.

All components exhibit uncompromisingly precise workmanship. Every detail demonstrates the hand-built character of the new Audi A8. The range of seat coverings, inlays and colors has become even more upscale in many areas, such as the sustainably tanned Unicum leather, which is particularly natural-looking and breathable. New additions among the inlays are the veneers fine grain poplar brown silver and fine grain ash natural gold brown, which are adorned with silver and gold, respectively.

Particularly discerning customers will find solutions for freely customizing their automobile in the Audi exclusive range. The limited-edition A8 L W12 Audi exclusive concept features a leather interior in the color Agatha cognac from the Italian furniture maker Poltrona Frau.

Despite the abundance of functions, the new Audi A8 features an exemplarily clear operating concept. This includes the MMI control unit with the large rotary pushbutton. If MMI navigation plus is on board, the system also includes a touchpad. The driver can enter characters via the MMI touch to control numerous navigation and multimedia functions.

The technology module Audi connect including car phone complements MMI navigation plus and connects the sedan to the Internet. Passengers can surf and e-mail freely on their mobile devices using the Wi-Fi hotspot, while the driver can benefit from tailored online Audi connect services delivered to the car. Components such as the Bang & Olufsen Advanced Sound System and rear seat entertainment round out the range.

The optional assistance systems provide the driver with even greater control on the road. The adaptive cruise control with stop&go function (not for the A8 hybrid) is coupled with an expanded version of the standard Audi pre sense basic safety system. The same applies to Audi side assist. New in the A8 are Audi active lane assist, which makes slight steering adjustments when necessary, the park assist system with 360° display, which steers the sedan autonomously when parking, and the head-up display. The night vision assistant now recognizes larger animals in addition to pedestrians.

The engine lineup: two TFSI and two TDI units

The new Audi A8 will initially be offered in Germany with two gasoline and two diesel engines. These are the supercharged 3.0 TFSI with 228 kW (310 hp), the V8 biturbo 4.0 TFSI with 320 kW (435 hp), the highly efficient 3.0 TDI with 190 kW (258 hp) and the 4.2 TDI, which produces 283 kW (385 hp) and 850 Nm (626.93 lb-ft) of torque.

Output has been increased with most engines; all have seen a reduction in fuel consumption of as much as ten percent. The 4.0 TFSI accelerates the A8 from 0 to 100 km/h (62.14 mph) in 4.5 seconds. Under partial load, its cylinder on demand (COD) system deactivates four cylinders. The most efficient engine is the 3.0 TDI, which consumes on average just 5.9 liters of diesel per 100 kilometers (39.87 US mpg), corresponding to 155 grams of CO₂ per kilometer (249.45 g/mile). All engines comply with the Euro 6 emissions standard.

The classic variants are joined by three additional models. The Audi A8 hybrid (also available as a long version) is equipped with a 2.0 TFSI and electric motor for a system output of 180 kW (245 hp). The power flows to the front wheels via a modified tiptronic. The air-cooled lithium-ion battery in the back enables electric driving at speeds up to 100 km/h (62.14 mph) or a range of roughly three kilometers (1.86 miles) at a constant 60 km/h (37.28 mph).

The A8 hybrid consumes on average just 6.3 liters of fuel per 100 kilometers (147 grams CO₂ per kilometer) [*37.34 US mpg/236.57 g/mile*].

The luxurious top-of-the-line model is the Audi A8 L W12, which comes standard with a comprehensive range of equipment. Its gasoline engine is extremely short and lightweight thanks to its W layout. Displacing 6.3 liters, the highly cultivated engine produces 368 kW (500 hp). At 11.3 liters per 100 kilometers (264 grams CO₂ per kilometer) [*20.82 US mpg/424.87 g/mile*], average fuel consumption is still moderate. A specially developed COD system activates at low load.

With 382 kW (520 hp), the S8 is the big sports sedan. Its sonorous 4.0 TFSI accelerates the S8 from 0 to 100 km/h (*62.14 mph*) in 4.1 seconds. Yet it consumes on average just 9.6 liters of fuel per 100 kilometers (225 grams CO₂ per kilometer) [*24.50 US mpg/362.10 g/mile*]. The COD system also plays an important role here. Active Noise Cancellation (ANC), a technology also used in the A8 L W12, the A8 4.0 TFSI and the A8 hybrid, broadcasts a precise antiphase sound to eliminate intrusive noise while operating on four cylinders. The chassis and many body details reflect the special positioning of the S8 in the A8 portfolio.

The new Audi A8 is equipped with a fast and smooth-shifting, eight-speed tiptronic. The electronically controlled automatic transmission is paired with quattro permanent all-wheel drive. Audi complements this with the optional sport differential, which distributes the power between the rear wheels as needed. It is standard with the A8 4.2 TDI clean diesel quattro and the S8.

The chassis: sporty character

The sedan owes its sporty character in large part to the chassis. The Audi drive select system, which varies the function of various technology components, is standard. It also controls the adaptive air suspension including the adaptive dampers. Audi offers the air suspension with a sporty setup upon request. The power steering now has an efficient electromechanical drive. Dynamic steering, which varies boost as a function of the speed driven, is available as an option.

Audi offers carbon fiber ceramic brake discs as options for V8 models and the A8 L W12. The new 9J x 20 aluminum technology wheels round out the lightweight construction concept of the A8. All together they are 17.6 kilograms (38.80 lb) lighter than forged wheels of the same design.

The new Audi A8 is scheduled to arrive at German dealerships in November. Despite the more generous list of equipment and more powerful engines, prices vary only slightly. The new Audi A8 will be available in Germany with prices starting at 74,500 euros.

At a glance

The new Audi A8

Drive

- Two TFSI and two TDI, output of 190 kW (258 hp) to 320 kW (435 hp)
- Highly efficient Audi A8 hybrid consumes just 6.3 liters per 100 kilometers (*37.34 US mpg*)
- Audi A8 4.2 TDI gains 25 kW (34 hp); output now 283 kW (385 hp)
- Audi S8 with 382 kW (520 hp) and sportily tuned suspension
- Audi A8 L W12 with 368 kW (500 hp) and a superb standard equipment package
- All engines certified in accordance with Euro 6, consumption reduced by up to 10 percent
- Cylinder on demand (COD) system for cylinder deactivation under part load with the V8 gasoline engines and the W12
- Active Noise Cancellation (ANC) with the V8 gasoline engines, in the W12 and in the A8 hybrid
- Eight-speed tiptronic and quattro drive system standard (except in the A8 hybrid), sport differential standard in the A8 4.2 TDI clean diesel quattro and the S8

Chassis

- Adaptive air suspension with electronically controlled damping, Audi drive select
- Optional carbon fiber ceramic brakes on eight-cylinder models and above
- Power steering with electromechanical drive; alternatively dynamic steering
- Twenty-inch aluminum technology wheels with new lightweight design concept

Body and design

- Aluminum Audi Space Frame (ASF) body, weighs just 231 kilograms (*509.27 lb*)
- Two body variants with lengths of 5.14 or 5.25 meters (*16.86 or 17.22 ft*)
- Headlights with optional revolutionary Matrix LED technology, with highly precise electronic control and dynamic turn signals
- Dynamic turning signals in the LED rear lights

Interior and controls

- Numerous seat variants including ventilation and massage, A8 L with option for relaxation seat in rear with power fold-out footrest
- Spacious, exclusive interior, superb craftsmanship
- New colors, inlays and grades of leather in the interior, including natural-like Unicum leather, along with three Audi design selections
- State-of-the-art driver assistance systems and head-up display
- Optional Bang & Olufsen Advanced Sound System and rear seat entertainment
- Optional MMI navigation plus and Audi connect including car phone for online services

Full version

The sportiest premium sedan in the full-size class – The new Audi A8

A multitude of high-end technologies, systematic lightweight construction and excellent comfort: Audi presents a thoroughly revised version of its successful A8 flagship. Its engines have become even more powerful and efficient; new assistance systems and the innovative Matrix LED headlights make for even more superior driving.

Body

Amazingly light: Weighing just 231 kilograms (241 kilograms for the A8 L) [509.27 lb/531.31 lb], the ASF body of the A8 sets standards in the luxury class. With its standard quattro drive system, the A8 3.0 TFSI quattro has a curb weight of just 1,830 kilograms (4,034.46 lb), significantly less than its competitors with all-wheel drive.

The Audi Space Frame (ASF), which the brand debuted 20 years ago, is roughly 40 percent lighter than a corresponding steel body. Its layout follows bionic principles: Like the bones in a skeleton, all of the parts combine optimal function with low weight. Aluminum extruded sections and die-castings form a frame to which the aluminum sheets are joined by friction connections. Audi always uses the material in a tailored configuration. The ASF of the A8 combines 13 different grades of aluminum.

Castings are used anywhere high local forces are introduced and versatility and design freedom are particularly important. The multifunctional A-pillar node, for example, connects the longitudinal member, the windshield crossmember, the roof frame, the strut mount, and the omega bracket in front of the footwell. Most of the 25 castings in the A8 are manufactured using the vacuum casting process.

The extruded sections are also characterized by design flexibility, with each one optimized precisely for its intended purpose. The roof arch, for example, is hydroformed under very high water pressure. Its cross-section changes multiple times over its length, with smooth transitions.

The A8's B-pillars are an exception in the ASF: They are made of hot-shaped steel. The blanks are heated in a furnace to over 1,000 degrees Celsius and shaped immediately thereafter at around 200 degrees Celsius in a water-cooled pressing die. This abrupt change in temperature creates an iron-carbon structure of maximum tensile strength. This measures 1,500 Newtons per square millimeter in the upper section of the pillars; somewhat lower in the lower section because this is where most of the energy is dissipated in the event of a side impact collision.

Thanks to their low wall thickness, the hot-shaped B-pillars are relatively lightweight, accounting for eight percent of the A8 body's weight. The aluminum sheets and castings account for 35 percent, and the extruded sections 22 percent. The distribution is similar in the A8 L.

Joining the wrought components and individual parts is a high-tech process. 1,847 punch rivets, 632 self-tapping screws and 202 weld points help keep things tightly together. A structural adhesive is used at the bolted connections of the B-pillars to enhance strength. It also serves as a separating layer that prevents contact corrosion. All together, the bonded seams measure 44 meters (*144.36 ft*) long.

The invisible roof seam: The epitomy of Audi precision

Another Audi domain is laser welding. The particularly strong and rigid seams it produces makes it possible to attach large sheet metal parts to the structure. The 1.8-meter (*5.91 ft*) aluminum invisible seam between the roof and the side of the car is produced via this method. It epitomizes the precision of Audi. The maximum tolerance for the outer skin is just 0.1 millimeters (*0.004 in*). The development engineers have also trimmed every unnecessary gram of weight from the add-on components. The lower crossmember of the front end, for instance, is a matrix of fiber-reinforced polymer with three embedded aluminum panels.

The ASF body is extremely light, very stiff and offers a high degree of vibrational comfort. For example, the front axle subframe directs the impulses it receives from the wheels into a multi-element structure consisting of beams and sections. All A8 models include two vibration dampers mounted on the front suspension.

Considerable attention was also paid to the sound radiation of the large sheet metal panels and body cavities during the A8 update. Acoustic bulkheads, absorbers, insulation and layers of foam prevent them from vibrating. Fine-seamed seals block out airborne sound. The cabin has also been carefully insulated, such as in the area of the front carpeting. The quiet in the cabin - the typical Audi feeling - is now even more impressive.

With a coefficient of drag of just 0.26 for the 3.0 TDI quattro, the A8 slips through the wind quietly and easily. Low lift coefficients at the front and rear axles guarantee outstanding stability even at high speeds. The flow of air along the underbody and through the engine compartment also had a prominent place in the requirements specification. Advances with the radiator package and the efficiency gains with the air conditioning system reduce fuel consumption by several grams CO₂ per kilometer.

The underbody panel, which exposes only the exhaust system and the rear axle, offers additional advantages beyond its aerodynamic effects. It protects the sheet metal and engine against salt and stone impacts, and also serves as noise insulation. A NACA vent directs the slip stream to the transmission oil cooler. At the rear of the car, a cover plate and the mufflers form an upwardly angled diffuser surface.

Quiet cabin: Excellent wind noise comfort

The Audi A8 L is also at the head of its class in wind noise comfort. To further improve exterior noise insulation, Audi offers two optional glazings. The first is double/acoustic glazing. Composite safety glazing, which also includes an acoustically insulating film in between, is available as an option in the A8 and standard in the S8. The second option is insulating acoustic glass (standard in the A8 L W12). It uses a metal vapor coating to reflect the infrared component of sunlight. Audi offers darkened side rear windows of double acoustic glass in the rear.

The body of the Audi A8 protects passengers in any type of collision. In a frontal collision, four load paths on each side of the vehicle absorb the forces. Two of these are located in the upper portions of the fenders, the others in the longitudinal members and the buffers in front of the subframe for the engine and the front axle.

A crossmember comprising a double box section bent into the shape of an omega provides additional protection for the passenger cell. Positioned at the level of the footwells, it directs the forces into the floor and the A-pillars. The longitudinal members in the floor panel come together in the shape of an arrow below the rear seat bench. Together with the center tunnel they constitute the body's strong backbone. In the back, large members protect the passenger cell.

The adaptive restraint system stands guard in the cabin of the Audi A8. It protects passengers of different sizes particularly effectively by intelligently managing the collaboration between the airbags and the belt force limiters. In a rear-end collision, the integral head restraint system averts the danger of whiplash injuries. In a side-impact collision, four side airbags and the head airbag system protect the occupants. Automatic three-point seat belts with adaptive force limiters complete the restraint system.

The trunk of the new Audi A8 has a capacity of 520 liters (*18.36 cubic ft*). Loading is comfortable thanks to its low loading lip and the revised layout. There is plenty of space for four golf bags. The trunk lid swings upward when unlocked. Pull the lid down and the self-closing trunk does the rest. The optional trunk package includes a floor net, two hooks for bags, an umbrella holder and a 12 V power outlet. A load-through hatch with a removable ski bag and a power-retractable trailer hitch are also available (both not for the A8 hybrid).

Audi also offers gesture control for unlocking the trunk lid as an option in combination with the convenience key (standard with S8 and A8 L W12). The top-of-the-line solution is the power-closing trunk lid (standard with A8 L W12). There are two buttons on the inside of the trunk lid. One starts the closing process, the other locks the entire car.

Exterior design

The new Audi A8 is longer (5,135 millimeters/ *16.85 ft*), wider (1,949 millimeters/ *6.39 ft*) and has a longer wheelbase (2,992 millimeters/ *9.82 ft*) than its most important competitors, but is not as tall as them (1,460 millimeters/ *4.79 ft*). The proportions express the car's sporty character.

The sporty harmony is evident in the dynamic design of the Audi A8. Elegance characterizes the interplay between every surface, line and volume. The exterior skin is homogenous; the coupé-like roofline lets the silhouette flow. The surfaces exude composure and prestige, and contrast with the sharp lines. The proportions are also perfectly balanced in the A8 L, which is 130 millimeters (*5.12 in*) longer than the standard version in total length and wheelbase.

The front is more strongly contoured; the hexagonal Singleframe grille more sculptured and richer in detail. Its horizontal double bars underscore the width of the Audi A8 while generous chrome applications emphasize its elegance. The engine hood has four creases. They run to the upper edges of the Singleframe grille and the inside corners of the headlights.

The air inlets in the redesigned front apron now extend all the way across the width of the front and are framed in chrome clasps. The headlights have become flatter and wider. A set of daytime running lights lines the upper and lower edges of the headlights.

Audi installs headlights with xenon plus technology in all A8 models with a V6 engine. The new A8 can also be optionally equipped with redesigned LED headlights that use light-emitting diodes for all functions. In the German market, these are standard with all V8 models, the W12 and the A8 hybrid.

Matrix LED headlights: The light of tomorrow

Making their debut in the updated A8 are the Audi Matrix LED headlights. Audi is launching a new chapter in automotive lighting with this high-end solution. They produce a light that always provides excellent illumination of the road without blinding other road users. The high beam is broken up into 25 small light-emitting diodes per headlight. Groups of five shine through a common reflector.

When the light switch is set to Automatic and the high beams are on, the system is switched on outside of urban areas at speeds of 30 km/h (*18.64 mph*) and above. As soon as the camera in the A8 detects another vehicle, the new headlights switch off or dim individual LEDs in the blink of an eye.

This function is extremely precise. Oncoming and preceding vehicles are excluded from the light pattern and are not blinded, while all other areas between and adjacent to them continues to be fully illuminated. After the oncoming traffic has passed, the high beam once again illuminates the previously excluded sectors with full power. The Audi Matrix LED headlights are purely electrical and extremely flexible. Their light has a specific crystal-like shine.

One additional function of the Matrix LED technology is the so-called marking light, which is coupled with the optional night vision assistant. When this system detects a person in the critical area in front of the car, individual LEDs blink three times in quick succession. This clearly highlights the person against the background, warning both them and the driver. The night vision assistant now also detects and marks larger wild animals. To avoid scaring them, the lights do not blink on the animals.

The LEDs in Audi Matrix LED headlights also assume the function of cornering lights, shifting the focal point of the light along the curve by selectively brightening or dimming. They do this shortly before the wheel is turned based on predictive route data provided by the optional MMI navigation plus (standard in S8 and A8 L W12). Another function are the dynamic turn signals. The LEDs in the turn signals light up successively in blocks every 150 milliseconds, moving in the direction in which the driver wishes to turn.

The side view: Taut and athletic

Viewed from the side, the new Audi A8 is taut and athletic. Typical of the Audi line, the body accounts for two-thirds of the vehicle's overall height, the greenhouse for the remaining third. The tornado line below the windows – another Audi feature – runs tightly above the wheel arches to give the A8 a powerful road stance.

The surfaces below the tornado line interpret the interplay of light and shadow. Proceeding downwards, the surfaces are framed by the gently rising dynamic line running above the sills. Large wheels measuring from 17 to 21 inches in diameter (with the S8) underscore the impression of energy and power. New chrome strips in the lower region of the body, fine strips embedded in the door handles and high-gloss black window frames imbue the side view with even more finesse and quality.

The rear end of the car also interprets the subject of the sporty luxury sedan. A redesigned spoiler lip extends it visually. The rear end appears more homogenous. A chrome strip visually connects the somewhat flatter rear lights and extends into them. The lights have a new markedly horizontal tail light contour and use all LED technology, with 94 individual diodes per unit. In all versions except the S8, the exhaust system terminates in two large, trapezoidal tailpipe tips on both sides of the back end.

Audi delivers its new flagship in twelve colors – two solid shades and ten metallic, pearl-effect or crystal-effect shades. Five of these are new. The finishes are called Argus brown, Brilliant black, Cuvée silver, Florette silver, Glacier white, Havana black, Oolong gray and Phantom black. The shade Daytona gray is reserved exclusively for the S8. Metallic finishes are standard with the A8 hybrid and the A8 L W12. Even more exclusive are the custom finishes that Audi mixes specially at the request of the customer.

Interior

The interior of the new Audi A8 and the Audi A8 L is characterized by an elegant design, authenticity and superb craftsmanship.

The exterior design carries over into the clean lines of the cabin. Its salient element is the “wrap-around” – a wide arch spanning the cabin. It encircles a slim, low instrument panel, reinforcing the impression of expanse and freedom. The front of the instrument panel is a gentle wave, and the horizontal lines underscore the width.

The interior lighting, which is produced by white light-emitting diodes, works its magic in the dark. The optional ambient lighting (standard in the A8 hybrid, S8 and A8 L W12) comes across as even more artistic, a staging comprising LEDs, light guides, light strips and the indirect illumination of the center console. The driver can choose between the color schemes Ivory, Polar, or Ruby/Polar, and adjust the brightness in four zones via the MMI.

The clear operating concept: Typical Audi

With its logical, easy-to-understand structure, the operating concept of the new A8 is typical of Audi. The large dial instruments with their classic, clear graphics, the black faces and red needles (S8: gray faces, white needles) are easy to read. The color display of the driver information system has a diagonal of seven inches. The efficiency program and rest recommendation function are standard. It is operated via the multifunction steering wheel.

Also included as standard equipment are a power-adjustable steering wheel and shift paddles (aluminum in the S8) for the tiptronic. Audi offers the steering wheels in many variations: with three spokes or four, with wood elements in the ring, with leather from Audi exclusive and heated.

The front section of the console is visually separated from the instrument panel. Wide and slightly sloped, it serves as the control panel for the two-zone deluxe automatic air conditioning (three-zone automatic air conditioning in the A8 hybrid). The system features multiple air distribution profiles for quiet and virtually draft-free ventilation. Four-zone deluxe automatic air conditioning is available as an option (standard in the S8 and A8 L W12). It has a separate rear air conditioner and controls 25 servo motors. Audi also installs an ionizer for improved air quality upon request. This is located in the B-pillar and is controlled via a button.

Below the keypad for the air conditioning system is the terminal for the MMI operating and multimedia system. At its center is the large rotary pushbutton with the soft and hard keys for navigation within the menus. The panel to the right is for the audio system. The panel on the left has either six radio station buttons or the touchpad of the optional MMI navigation plus (standard in S8 and A8 L W12).

The monitor of the MMI system is retracted into the instrument panel when not in use. It slides upward electrically when the system is started. The monitor with its eight-inch diagonal, the piano finish of the housing and the high resolution underscore its feeling of quality. The monitor renders all images in elegant, three-dimensional graphics.

New in the Audi A8: The head-up display

Audi offers the optional head-up display, which is recessed in the instrument panel. It projects the displays the driver wants to see as colored symbols and numbers in his or her primary field of vision on the windshield. They appear to float in a 26 x 9 centimeter (*10.24 x 3.54 in*) window roughly 2.5 meters (*8.20 ft*) in front of the windshield.

The driver can grasp the images of the head-up display very quickly because his or her eyes, accustomed to distance vision, do not have to adjust. The preferred information for the head-up display can be selected via the MMI. The driver can also adjust the height and brightness of the image.

A liquid crystal display generates the image, and two aspheric corrective mirrors enlarge and redirect it. Their highly precise calibration compensates for the inevitable minor distortions arising from the geometry of the windshield. To avoid ghost images, the windshield and the sound-insulating safety film embedded in it have a special shape.

The front seats in the new Audi A8 offer excellent hold and guidance. The offset upper section of the seat back supports the shoulders. 12-way power seats are standard, with options for three-stage heating (standard in V8 models) and a memory function. The 22-way deluxe seats (standard in the A8 L W12) offer even more luxury, and include pneumatic functions for the lumbar support and side bolster adjustments. The Audi S8 comes standard with technically identical deluxe seats with taller bolsters and perforated, diamond-patterned seat covers.

Besides heating, the deluxe seats and deluxe sport seats are also available with a three-stage ventilation system. Four small fans draw air through the perforated seat covers. The ventilation option is coupled with a massage function, with which ten pneumatic pillows run through five programs (pulse, wave, stretch, lumbar, shoulders) in a choice of five intensities.

All primary adjustments for the seats are made using classic buttons on the console. For secondary functions such as massage, Audi offers a multifunction switch with a rotary ring and four pushbuttons on the side of the seat. The MMI monitor displays the individual operations.

Luxuriously spacious: The rear of the new Audi A8

The rear of the new Audi A8 spoils passengers with luxurious spaciousness, particularly in the long-wheelbase model. The rear doors are 13 centimeters (5.12 in) longer so that even entry is extremely comfortable. The Audi A8 L comes standard with a glass sunroof and electric sun shades for the rear side windows and rear window.

Both body variants come standard with a classic three-position rear seat. Audi offers the individual seat rear seat package as an option. This is a rear seat with two individual, power-adjustable and heated seats (not for A8 hybrid; standard in the A8 L W12). The package includes deluxe head restraints, a front passenger seat that can be adjusted from the rear and four-zone automatic air conditioning. Ventilation and a multi-program massage function are also available.

Another option for the long-wheelbase A8 is the continuous center console. Leather and fine wood veneers give it an exclusive look. The long console includes two large storage compartments, a power outlet and the controls for the rear zones of the four-zone air conditioning. Ventilated seats, massage and ambient lighting are standard here. Optional features such as fold-out tables and a refrigerator make sitting in the rear even more pleasant and are also available for the A8 with the standard wheelbase.

Comfortable reclining seat

The reclining seat in the rear of the Audi A8 L offers first-class luxury like that in an airplane. Occupants can rest their feet on a power footrest that extends out from the back of the front passenger seat and have their backs massaged with ten air-filled pillows. The completely leather-covered center console is standard with the reclining seat. A massage function for the driver-side rear seat and the rear seat entertainment system round out the package. An easy entry and exit function moves both rear seats to the rearmost position when the corresponding door is opened.

Assistance systems

The new Audi A8 L offers a broad portfolio of optional assistance systems that make driving even more relaxing and composed. The large sedan's electrical system includes seven bus systems and, depending on the equipment, roughly 100 control units. The particularly high-performance FlexRay bus system networks many driver assistance and suspension control units. It provides for fast and reliable data transfer between the controllers.

High-performance: adaptive cruise control with stop&go function

The central driver assistance system in the new Audi A8 is the adaptive cruise control (ACC) with stop&go function and Audi pre sense front (not available in the A8 hybrid). The radar cruise control system regulates the speed and the distance to the vehicle ahead by accelerating and braking in a speed range from 0 to 250 km/h (*155.34 mph*), and brakes automatically within certain limits. The driver uses the MMI operating system to determine how comfortable or sporty travel should be – four levels and four distance stages are available.

ACC stop&go analyzes the data from up to 27 other systems on board the A8. The most important information of all is provided by its two radar sensors. Located in the lower part of the front end, they operate in the frequency range between 76 and 77 GHz and cover an area approx. 250 meters (*820.21 ft*) in length with an angle of aperture of 40 degrees. A video camera mounted on the rearview mirror looks some 60 meters (*197 ft*) ahead, also with an aperture angle of 40 degrees.

The system uses this large amount of information to support the driver proactively. For example, it can use the predictive route data provided by the optional MMI navigation plus to reliably calculate the proper line on the highway even in bends. Whether the driver is turning, changing lanes, passing another vehicle or driving on a winding rural road: ACC stop&go handles such situations with ease.

The active range of ACC stop&go also includes rolling at low speed. In a traffic jam, for instance, the system slows the new A8 to a complete stop. If the stop is brief, the sedan automatically resumes moving again; after a longer stop the driver must lightly touch the accelerator or tap the cruise control lever.

The system also uses the signals supplied by the ultrasound sensors of the Audi parking system located in the front bumper when automatically starting off again.

Complex safety system: Audi pre sense

The Audi pre sense safety system is available in a number of different versions in the new A8. In the standard version, Audi pre sense basic, it intervenes upon detecting an unstable driving situation via the sensors of the ESC electronic stabilization control system. In this case, Audi pre sense makes sure that the front seat belts are tensioned by small electric motors and that the sunroof and the windows are closed down to a small gap. The hazard lights warn the traffic behind.

Audi pre sense front is available in combination with ACC stop&go. Above 30 km/h (*18.64 mph*), it helps the driver avoid imminent accidents or at least mitigate any damage. Audi braking guard is activated in critical situations. It first warns the driver via acoustic and visual signals. It prefills the brake system at the same time and also tautens the pneumatic springs and dampers.

If the driver still does not react, then the system briefly brakes the vehicle – a jolt which serves as the second warning. The seat belts are slightly tensioned at the same time. If the driver depresses the pedal now, the hydraulic brake assist increases braking power as appropriate for the situation. Should the driver ignore the warning jolt, autonomous partial braking occurs, which decelerates the A8 at 3 m/s^2 . This assumes that the preceding vehicle is moving. Windows and the sunroof are closed, the hazard warning lights are activated and the seat belts are tensioned strongly.

Yet another Audi pre sense subfunction, Audi pre sense rear, is coupled with Audi side assist. If the system detects an imminent rear-end collision, it uses the adaptive brake light to warn the traffic behind. If the situation becomes critical, it closes the windows and sunroof and tensions the seat belts. Depending on the configuration installed, the seats may also become active. The top of the back rest and the front head restraints move forward and upward; the side bolsters are filled with air.

If the A8 is equipped with the full version of Audi pre sense – the assistance package including Audi pre sense plus – a third and a fourth stage then follow in the event of an emergency. The system now increases deceleration to 5 m/s² and tightens the belts completely. The last braking phase – the autonomous full brake application – occurs roughly half a second before an inevitable collision. The collision and its consequences are greatly mitigated, for by the time the impact occurs the sedan can reduce its speed by as much as 40 km/h (*24.85 mph*).

At speeds below 30 km/h (*18.64 mph*), the new Audi A8 brakes autonomously with full force in an emergency – regardless of whether the car in front is driving or standing still. Below 20 km/h (*12.43 mph*), this full braking in many cases prevents the accident altogether. In other cases, it greatly reduces the impact speed, thus reducing the severity of the accident.

Another innovative system becomes active in the event of a collision. The secondary collision brake assist applies the brakes again without any action on the part of the driver to prevent the A8 from rolling further in an uncontrolled manner.

Radar has your back covered: Audi side assist

The lane change assistant Audi side assist is active at speeds of 30 km/h (*18.64 mph*) and above. Two radar sensors at the rear of the sedan monitor events to a distance of around 70 meters (*229.66 ft*). If they consider a detected vehicle to be critical to a lane change because it is in the blind spot or approaching quickly, a yellow LED indicator lights up in the exterior mirror housing.

If the driver nevertheless activates the turn signal to change lanes, the LED lights flashes brightly multiple times – a signal that can hardly be overlooked. The visual signal is designed so that in practice it is only visible to the driver. Its brightness varies with the ambient light and can be adjusted via the MMI operating system as well as deactivated via a button in the A-pillar.

Stay between the lines: Audi active lane assist

Audi active lane assist warns the driver if he or she is about to leave the lane inadvertently. The system is active at speeds of 65 km/h (*40.39 mph*) and above. A camera in front of the interior mirror monitors the road to a distance of 60 meters (*196.85 ft*) and with an angle of roughly 40 degrees. Software processes its images and detects the lane markings and the course the new A8 is following between them.

If the sedan approaches a line without the turn signal being activated, the system helps the driver to steer back into the lane by subtly intervening in the electromechanical steering. The driver uses the MMI to determine how soon the intervention should occur and whether it should be accompanied by a steering wheel vibration and a warning tone. If the driver selects early intervention, the system helps to keep the A8 in the center of the lane.

Audi active lane assist also intervenes if the car is in danger of skidding. It supports proper countersteering by briefly boosting or reducing the degree of power assistance. Together with Audi side assist, the system is also activated in the event of an impending collision with a vehicle in a parallel lane.

Always informed: Camera-based speed limit display

The camera-based speed limit display can detect speed limits and relevant additional signs. It presents them as graphics on the display of the driver information system or on the optional head-up display. The system analyzes the images delivered by the video camera on the interior mirror and compares them against the information from the MMI navigation plus.

Long-range vision in the dark: The night vision assistant

Another high-end system in the new Audi A8 is the night vision assistant, which detects and highlights pedestrians and larger wild animals. Its far infrared (FIR) camera located in the Singleframe grille detects heat emitted by objects. A computer converts the information from the camera into black and white images and shows them on the driver information system's seven-inch display.

While the cooler surroundings appear dark, people and larger wild animals appear strikingly bright. The image-processing software detects them up to 130 meters (426.51 ft) away and highlights them with yellow markings on the display.

If the computer detects a hazardous situation, the object is marked red and a warning gong sounds. A warning also appears in the optional head-up display. In addition, the LED or Matrix LED headlights flash briefly three times to illuminate the object (if it is a person). The brake system is prefilled at the same time.

With its 24 degree horizontal angle of aperture (vertical angle 18 degrees), the far infrared camera can look ahead up to 300 meters (984.25 ft), far beyond the high beam range. A protective window prevents stones from damaging the camera, which is heated in cold weather and, if dirty, cleaned together with the headlights.

Convenient: Park assist systems

Audi offers a number of park assist systems in the new A8. The parking system plus (standard in the S8 and A8 L W12) uses eight ultrasonic sensors to indicate the distance to the front and rear acoustically and graphically. This can be complemented with the optional reversing camera and 360° cameras. Four small cameras record the car's immediate surroundings and generate a virtual top-down view. The driver can call up various other camera angles on the MMI monitor.

New in the Audi A8 is the park assist with 360° display. It uses 12 ultrasonic sensors to locate and measure parking spaces along a road when the vehicle is being driven at a moderate speed. As soon as the system finds a large enough space, a corresponding notification appears on the driver information system display. Once the driver puts the car in reverse, the system takes over the work of steering – the driver only has to accelerate, change gears and brake. The 360° display warns the driver of any obstacles to the side of the vehicle.

Parking spots can be either parallel or perpendicular to the road. The system will maneuver forward and backward multiple times while parking, if necessary. It provides similar support when pulling out of parallel parking spaces. During this process, the vehicle moves no faster than seven km/h (4.35 mph).

Infotainment systems

The new Audi A8 is also far ahead of the competition when it comes to infotainment. The optional MMI navigation plus (standard in the S8 and A8 L W12) makes its data available to other technology modules. Its clear operating concept with the MMI touch touchpad is another pioneering solution. And there are numerous supplemental modules available, from the Audi connect system including online car phone to rear seat entertainment.

MMI navigation plus with MMI touch consists of two blocks. The radio unit combines the functions of tuner and sound system. The main unit contains additional components, including a DVD drive, two card readers and a 60 GB hard drive with the navigation data. A third of its capacity is reserved as memory for telephone and music data. The Audi music interface and Bluetooth interface make it easy to connect mobile devices and cell phones.

A powerful graphics processor generates top-quality, three-dimensional images. The map displays a detail-rich 3D terrain model, and the driver can choose between the classic arrow graphics or an animated representation during navigation. The power-retractable MMI monitor measures eight inches diagonally and delivers truly crisp images in brilliant colors thanks to its high resolution of 800 x 480 pixels.

The driver uses the MMI touch to enter a navigation destination or a telephone number by drawing the letters, numbers and even characters from Asian languages on the control panel with a finger. The driver's hand can rest comfortably on the tiptronic's gear selector lever during input. The system provides acoustic feedback after every character. The MMI touch also can be used to shift the map and scroll through lists. Thanks to black panel technology, the touchpad also serves as the control panel for six radio stations.

The MMI navigation plus in the new A8 also offers classic Audi operation with the large rotary pushbutton. Cities and streets can be entered using the natural speech voice control function, which also extends to telephone and music data on the hard drive.

MMI navigation plus: Close networking

MMI navigation plus works very closely with the assistance and safety systems on board the new Audi A8. The navigation system predictively analyzes the data of the route driven and sends this information to the computers controlling the adaptive cruise control with stop&go function (not for A8 hybrid), the Matrix LED headlights and the tiptronic. This enables these systems to precisely adapt their function to the given conditions in advance.

A wide range of hi-fi and communication modules are available in the new Audi A8. The radio, which includes a DVD drive, two card readers and a triple tuner, comes as standard, as is the Audi sound system. It comprises a six-channel amplifier with 180 watts of power and ten speakers. Options include a dual tuner for digital radio reception (DAB and DAB +), a digital TV tuner and a DVD/CD changer (standard in the S8 and A8 L W12).

The next step up in the hi-fi hierarchy is the Bose surround sound system, which is standard in all V8 models, the A8 hybrid and the A8 L W 12. A digital amplifier with over 600 watts drives 14 speakers including a subwoofer. The system can also play stereo recordings in five-channel surround sound.

At the top of the line is the Bang & Olufsen Advanced Sound System. It uses a special algorithm to generate sound reflections like those that occur in a concert hall so that the music resounds from a large virtual stage. The heart of this top unit are two amplifiers with over 1,400 watts of total output. Their digital output stages, which have been systematically designed for energy efficiency, drive 19 speakers (including subwoofer) via 19 channels. The tweeters are recessed into the instrument panel on the left and the right and rise up out of the dashboard when the system is started. The speaker grilles are made of polished aluminum. Acoustic encapsulation prevents the noise from escaping to the outside.

Rear seat entertainment is available for all engine and body variants with the exception of the A8 hybrid. It is included in all cars equipped with the reclining seat. Two 10.2-inch displays are mounted on the backrests of the driver and front-passenger seats. The angle of the screens is adjustable, and they can each display different content.

The rear seat entertainment system includes its own DVD drive, a hard drive jukebox, two slots for SD memory cards and a separate Audi music interface for connecting mobile players. At the same time, it also offers full access to the sound system, the TV tuner and MMI navigation plus. It is controlled via a separate MMI control panel in the rear center armrest. Sound is supplied via the car's speakers or two sets of either wired or Bluetooth headphones.

Audi connect

The ideal complement to MMI navigation plus is the optional Audi connect module (standard in the S8 and A8 L W12), a data transmission module that provides the connection to the Internet. In the A8 this is a UMTS module. In areas where no UMTS connection is possible, Audi connect steps down to an available EDGE connection.

Passengers in the new A8 can surf the web and e-mail with up to eight mobile devices via the WLAN hotspot that is included with Audi connect. The system uses LTE to deliver the tailored services of Audi connect to the driver – from navigation with Google Earth and Google Street View to Audi music stream web radio and online traffic information. The newest service, parking information, displays parking lots and parking garages at the current location, the destination or at any other location.

Audi connect uses the car's antenna, which ensures optimal reception. A digital voice processor delivers excellent hands-free call quality, with voice signals transmitted via the sound system. One or two cordless handsets can be added to the system for discrete phone use, if desired. Encryption according to the WPA2 standard makes data transmission secure.

To use Audi connect, the driver simply has to insert a data-capable SIM card. The connection can also be established using the SIM Access Profile of a compatible cell phone. No additional fees or separate contracts are required. Audi recommends a flat rate due to the potentially large volumes of data.

Engines

Powerful, efficient and highly cultivated – Audi is launching the new A8 in the German market with a choice of four engines. Both TFSI gasoline units and the two TDI diesels feature forced induction and direct injection. All engines intended for use in Europe satisfy the requirements of the Euro 6 emissions standard. The start-stop system is standard. Fuel consumption has been reduced by as much as 10 percent, yet power output has increased for most engines and now ranges from 190 kW (258 hp) and 320 kW (435 hp). Three additional models – the A8 L W12, the Audi S8 and the Audi A8 hybrid – round out the lineup.

The 3.0 TFSI: Spontaneous, sonorous, sporty

The intensively revised 3.0 TFSI steps up the power with 228 kW (310) hp and 440 Nm (324.53 *lb-ft*) of torque, the latter available between 2,900 and 4,750 rpm. The six-cylinder unit compresses the intake air using a supercharger located in the 90-degree V formed by the cylinder banks. Two intercoolers lower the temperature of the air again so that more oxygen enters the cylinders.

Compared with the previous engine, the new 3.0 TFSI produces 15 kW (20 hp) more power and consumes less fuel. Solutions such as a supercharger that can be shut down at low loads, adjustable intake and exhaust camshafts, a lower weight crankshaft, a higher 10.8:1 compression ratio and a package of measures involving the chain drive and the water pump, among other components, to reduce friction are responsible for this reduction in fuel consumption. The balance shaft, cylinder sleeves, oil pan and crankcase ventilation system have also been modified.

A major innovation in the 3.0 TFSI is the addition of indirect injection as a complement to direct fuel injection. It injects the fuel at the end of the flap flange in the vicinity of the tumble flaps, where it is swirled intensively with the air. The improved mixture formation this results in boosts fuel economy and reduces particulate emissions. Direct injection, which develops pressures up to 200 bar, is used when starting and at higher loads.

Powerful thrust, spontaneous response and a sonorous sound – the three-liter V6 with a displacement of 2,995 cc is a sporty engine. It accelerates the A8 from 0 to 100 km/h (*62.14 mph*) in 5.7 seconds (A8 L: 5.9 seconds). As with nearly all A8 models, top speed is a governed 250 km/h (*155.34 mph*). Average fuel consumption is 7.8 liters per 100 kilometers (*30.16 US mpg*), corresponding to 183 grams CO₂ per kilometer (*294.51 g/mile*). These same figures for the A8 L are 7.9 liters (*29.77 US mpg*) and 184 grams (*296.12 g/mile*).

The 4.0 TFSI: COD reduces consumption

The 4.0 TFSI produces 320 kW (435 hp), 11 kW (15 hp) more than before. It delivers a 600 Nm (*442.54 lb-ft*) of torque to the crankshaft between 1,500 and 5,000 rpm. The 3,993 cc biturbo V8 accelerates the new A8 from 0 to 100 km/h (*62.14 mph*) in 4.5 seconds. The A8 L completes the sprint in 4.6 seconds. However, its average fuel consumption is just 9.1 liters per 100 kilometers (*25.85 US mpg*), corresponding to 213 grams CO₂ per kilometer (*342.79 g/mile*). The same figures for the A8 L are 9.2 liters and 216 grams (*25.57 US mpg and 347.62 g/mile*).

These top values are attributable to an entire package of detailed improvements. The most important efficiency technology, however, is the cylinder on demand (COD) system. It shuts down four cylinder under part load by closing the valves and deactivating both injection and ignition. To compensate for intrusive noise, the Active Noise Cancellation (ANC) broadcasts a precise antiphase sound to the cabin, and active engine mounts dampen vibrations during four-cylinder operation.

The high-tech character of the 4.0 TFSI is manifested in numerous details, such as the twin-scroll turbo chargers that provide for the early and rapid development of torque, in the innovative thermal management and in the layout of the cylinder heads. Their intake side is on the outside and the exhaust side on the inside. The turbos and their intercooler are located in the inner V. This layout results in short gas flow paths with minimal flow losses and spontaneous response.

The 3.0 TDI: The efficiency diesel

155 grams CO₂ per kilometer (*249.45 g/mile*), corresponding to 5.9 liters of fuel per 100 kilometers (*39.87 US mpg*): the 3.0 TDI is a highly efficient engine. The 2,967 cc V6 diesel produces 190 kW (258 hp), 6 kW (8 hp) more than before and generates 580 Nm (*427.79 lb-ft*) of torque between 1,750 and 2,500 rpm. The standard sprint takes 5.9 seconds with the A8 and two-tenths of a second longer with the A8 L. Fuel consumption is 5.9 liters per 100 kilometers (*39.87 US mpg*), corresponding to 155 grams CO₂ per kilometer (*249.45 g/mile*). The same figures for the A8 L are 6.0 liters and 158 grams (*39.20 US mpg and 254.28 g/mile*).

Special technical features of the six-cylinder unit, which underwent a series of modifications, include the low weight of less than 200 kilograms (*440.92 lb*) and the particularly sophisticated thermal management. The crankcase and cylinder heads have separate coolant loops. Coolant is not circulated in the block during the warmup phase. The 3.0 TDI complies with the exhaust limits of the American ULEV 2 BIN5 specification and also the second stage of the Euro 6 standard, which does not enter into force until 2017.

The 4.2 TDI: Immense torque

The 4.2 TDI tops all of the engines when it comes to torque. The V8 displaces 4,134 cc and produces 850 Nm (*626.93 lb-ft*) of torque between 2,000 and 2,750 rpm. Its output has increased by a 25 kW (34 hp) to 283 kW (385 hp). The power diesel provides for impressive performance. The sprint from 0 to 100 km/h takes just 4.7 seconds (A8 L: 4.9 seconds). The new Audi A8 4.2 TDI gets by on just 7.4 liters/100 kilometers (*31.79 US mpg*), corresponding to CO₂ emissions of 194 g/km (*312.21 g/mile*). These values for the long-wheelbase version are 7.5 liters and 197 grams (*31.36 US mpg and 317.04 g/mile*).

The technical update undergone by the 4.2 TDI included changes to the valve drive, the pistons and the turbocharger. The engineers were able to dramatically reduce the engine speed of the V8 diesel to 800 rpm for improved fuel efficiency. Another aspect in common is the SCR emissions control system (SCR = selective catalytic reduction), in which the additive AdBlue breaks down the nitrogen oxides.

A metering pump injects small amounts of this additive from two tanks with a combined volume of 27 liters (*7.13 US gallons*) into the special DeNo_x catalytic converter at the end of the exhaust system. This measure enables the 4.2 TDI to meet the EU 6 emissions standard.

Power transmission

The A8 engine variants roll off the assembly line with an eight-speed tiptronic. The lower gears of the classic torque converter transmission are tightly spaced for sporty performance, while their high overall gear ratio of 7.0:1 reduces fuel consumption. All gear changes are fast, very flexible and smooth. The highly efficient oil pump and the heating of the transmission by the engine coolant during the warmup phase contribute to the high efficiency of the eight-speed tiptronic. A hydraulic accumulator enables the start-stop function.

The Dynamic Shift Program DSP is responsible for controlling the transmission and features the automatic operating modes D and S. It is networked with the route data provided by the MMI navigation plus. The driver operates the eight-speed tiptronic purely electronically, either with the standard shift paddles behind the steering wheel or via the elegant lever on the center tunnel console. A brief tap initiates gear changes.

The standard quattro permanent all-wheel drive (not with A8 hybrid) moves the new A8 to the front of the luxury segment. Its asymmetric and dynamic setup harmonizes perfectly with the sporty and stable handling. During normal driving, the self-locking center differential sends 60 percent of the power to the rear axle and 40 percent to the front. If one axle slips, the majority of the power goes to the other axle. The rear axle differential in the quattro drivetrain helps to balance the distribution of axle loads.

Customers seeking even more dynamic handling can order the optional sport differential for the rear axle. It is standard in the A8 4.2 TDI and the S8. It uses two superposition gears to steplessly vary the distribution of the power between the wheels. In fast curves, the sport differential literally pushes the sedan into the radius. The driver can vary the function of the Audi drive select system in five steps (auto, dynamic, comfort, individual and efficiency).

Chassis

Great precision, supreme stability, sporty character and excellent ride comfort: The chassis of the new Audi A8 combines many strengths. The adaptive air suspension and Audi drive select are standard, with dynamic steering available as an option.

With a track of 1,644 millimeters (*64.72 in*) the front axle comprises five links – two transverse links, the support link and the control arm plus the track rod. All wheel control arms and many other parts, such as the bearing mount and the pivot bearing, are made of aluminum. The five-link design can handle longitudinal and lateral forces separately. Its bearings are sportily stiff in the lateral direction and supple and soft in the longitudinal direction.

The subframe for the suspension and the engine is made of high-strength steel and reinforced with X-shaped braces. Because it is rigidly bolted to the front end of the car, it becomes an integral component of the body. The high rigidity ensures that steering forces develop without delay. A diecast aluminum strut brace further enhances the rigidity of the front of the car.

Among the additions to the Audi A8 is the electromechanical rack-and-pinion steering. Unlike a hydraulic unit, it requires energy only while turning, thus reducing fuel consumption. The steering gear ratio of 16.1:1 is sporty and direct, and steering boost varies as a function of vehicle speed. The assistance systems Audi active lane assist and park assist would not be possible without the steering system's electromechanical drive.

The electromechanical steering provides finely differentiated feedback from the road, responds spontaneously and is very precise. The steering gear is mounted very low, on a level with the center of the wheel. The track rod forces are applied directly. The steering rack and the servo drive are arranged in concentric circles for a very compact layout.

The rear axle of the new A8 has a track width of 1,635 millimeters (*64.35 in*) and is a track-controlled trapezoidal link construction that ensures supreme handling and comfort. The two trapezoidal links are warm-hardened aluminum castings; the transverse links and track rods are aluminum forgings.

The struts act directly on the wheel carriers, which are chill-cast aluminum. This solution allows a high damping ratio and thus sensitive response. The rear axle subframe comprises steel longitudinal and transverse tubes. Four hydraulic bearings connecting the subframe to the body also greatly contribute to the ride comfort.

The adaptive air suspension: Sensitive suspension

All versions of the new Audi A8 come standard with the adaptive air suspension regardless of the engine. The air supply unit is located in the rear of the car, where the compressor fills a pressure accumulator with a volume of 5.8 liters (*0.20 cubic ft*). The pneumatic struts enclose adjustable, two-tube shock absorbers whose performance can be adjusted by the millisecond via the control current for the electromagnetic damper valves. Supplied with data from a complex system of sensors, the damper management system detects the road conditions, the driver's style and the mode specified in Audi drive select.

The five modes the driver can select their for the adaptive air suspension influence body's ride height. In auto mode, the superstructure is lowered 20 millimeters (*0.79 in*) when the A8 drives for longer than 30 seconds at over 120 km/h (*74.56 mph*). The body is not lowered in comfort mode. In dynamic mode, on the other hand, the body is lowered 10 millimeters (*0.39 in*) from the outset, and is lowered another 10 millimeters when the 120 km/h (*74.56 mph*) threshold is reached. In efficiency mode, numerous systems work with particularly little energy, and the fifth mode, individual, gives the driver the opportunity to adapt the system within certain limits to his or her preferences. Another special feature is the lift function, which increases ground clearance by 25 millimeters (*0.98 in*). The optional adaptive air suspension sport lowers the standard ride height by 10 millimeters (*0.39 in*).

Audi drive select opens up a wide range of possibilities for the driving experience in the new Audi A8. In the standard version, it integrates the adaptive air suspension, the eight-speed tiptronic, the electromechanical power steering, Audi pre sense basic, the engine control unit and the air conditioning. The driver can vary the function of these components between the modes comfort, auto, dynamic, efficiency (not in the A8 hybrid) and individual.

The optional modules sport differential (standard in the A8 4.2 TDI and the S8), ACC stop&go, dynamic steering and the accelerator characteristic can also be controlled via Audi drive select.

At the heart of the dynamic steering system is a superposition gear that varies the steering ratio by nearly 100 percent as a function of driving speed and the setting in Audi drive select. When maneuvering and in city traffic, the system is very direct. On the highway, an indirect steering ratio and less boost promote straight-line stability. At the vehicle's cornering limits, dynamic steering minimizes oversteer and understeer by making subtle, lightning fast adjustments, if necessary. It also counteracts the car's pulling to one side when braking on surfaces with different coefficients of friction.

The brake system: Lightweight construction and high performance

The brake system of the new Audi A8 is powerful and robust, yet lightweight. Stainless steel pins connect the cast iron friction rings to the aluminum brake caps. This concept prevents the transmission of temperature peaks, reduces the risk of fade and cuts up to four kilograms (*8.82 lb* of weight). The very high rate of ventilation made possible by the turbine design of the cooling channels between the discs enhances braking performance.

Disc diameter varies depending on the engine, measuring 365, 380 or 400 millimeters (*14.37, 14.96 or 15.75 in*) up front and either 330 or 356 millimeters (*12.99 or 14.02 in*) on the rear axle. The brake caps and calipers, which have two pistons each up front and one in the rear, are painted black. For the W12 and the V8 versions, Audi optionally supplies large brake discs made of carbon fiber ceramic. They are even lighter than the steel discs and are extremely durable.

The ESC electronic stabilization control system includes a sport mode, which the driver can select in the MMI. Engine intervention is largely deactivated in this case, and braking interventions are weakened somewhat, enabling skilled drivers to move the sedan particularly dynamically. The electromechanical parking brake in the new Audi A8, which acts on the rear wheels, also serves as the emergency brake. Audi hold assist makes it easier to start out on uphill and downhill slopes.

There is a large range of alloy wheels. V6 models roll on 17-inch wheels and size 235/60 tires. With the V8 models, these dimensions are 18 inches and 235/55. Additional wheels and tires from 18 to 20 inches in diameter (21 inches with the S8) in modern designs, including two-tone and titanium-look finishes, are available as options. Run-flat tires are available for the 19-inch wheels. The winter tire lineup ranges from 17 to 20 inches. A tire pressure indicator is standard.

New in the lineup are 9 J x 20 aluminum technology wheels manufactured using an innovative cladding technology. A forged aluminum carrier wheel forms the basis. Its design with the ten slender arms has been optimized for minimal weight. Only slight consideration need be paid to wall thicknesses and cross-sections during casting. A special foam permanently bonds the carrier wheel to a design element of high-impact, injection-molded polymer, which also features a ten-spoke design. The foam fills the cavities and is extremely resistant to heat, which is important with powerful braking.

The new aluminum technology wheel underscores Audi's claim to leadership in lightweight construction. Besides the great design freedom, it also reduces the car's unsprung masses substantially. Its innovative structure saves 4.35 kilograms (*9.59 lb*) compared with a conventionally fabricated forged wheel of the same design. That means a total weight reduction per car of 17.4 kilograms (*38.36 lb*). Its surfaces in Iridium/Contrasting Gray emphasizes the three-dimensional effect and gives the new A8 wheels with an exclusive and unique look.

Uncompromising: The quality

Quality knows no compromise, and this philosophy was also applied to the interior design of the new A8 and A8 L. The combination of premium materials, their appearance and their feel are responsible for the handcrafted atmosphere on board the large sedan.

One special feature in the Audi A8 is the start-stop button on the center tunnel console. It is illuminated red from within, and the letters have been machined with extreme precision from the aluminum surface. The backs of the deluxe seats have inlays of fine wood. The edges of all the veneers are reworked by hand following machine milling.

All the veneer elements for one car are generally made from one root or one trunk so that the individual pieces have a uniform appearance with respect to shade and grain.

The selector lever of the eight-speed tiptronic is covered with either leather, wood veneer or carbon. An illuminated display for the driving program is embedded in the surface. All of the switches in the new Audi A8 move easily without play. The operating forces, sounds and travel have been precisely defined.

Many of the controls have a high-gloss black finish. Heavily used components are coated with a UV-cured topcoat that makes them extremely resistant to scratching. A coat of Cerapaint protects the aluminum sill strips against damage. The strips bear illuminated, model-specific logos in the A8 hybrid, the S8 and the A8 L W12. With all other variants, they are illuminated in combination with the ambient lighting.

Natural-looking and sustainable: The new Unicum leather

One of the highlights of the new Audi A8 is the Unicum leather, which is particularly natural-looking, breathable and soft. It has been tanned sustainably, with the tanning agents produced from central European leaves and herbs, thus placing a priority on resource conservation and a responsibility to nature. Natural features of the animal hide remain visible, and the leather is not sealed but rather treated only with a water-repellant protective coating. This natural surface emphasizes the leather as a natural product.

Unicum leather is emblematic of a new philosophy regarding the equipment and trim of the new A8. Luxury in this case means sustainability and authenticity – the emphasis on intentionally natural materials that have been carefully selected and processed. The seat upholstery comprises 110 individual pieces of leather that have been cut, placed and stitched by hand.

The concept behind the inlays also reflects this philosophy. The new wood application fine grain poplar brown silver naturally contains a lot of knots, which can fall out as the wood dries. A paste of silver pigments fills in the holes. This enables significantly larger amounts of veneer to be used – reflecting again the sustainable use of natural materials.

The wood decor fine grain ash natural gold brown is left naturally open-pored. Its surface feels rough to the touch for an unadulterated haptic experience.

The applications in the area of the instrument panel and doors of the A8 are made of two pieces. The bottom section of the standard inlay is high-gloss black, and the upper application surfaces are a new dark walnut. Besides the new veneers fine grain poplar brown silver and fine grain ash natural pearl gray, the range also includes Vavona wood assam gray, fine grain ash balsamico and piano finish black. The standard applications in the S8 are made of Carbon Atlas in combination with aluminum.

There is a choice of seven base colors for the interior: black, nutmeg, nougat brown, atlas beige, velvet beige, titanium gray and lunar silver (S8-specific). The upper section of the instrument panel and the top shoulders are available in black, steel gray or moor brown. The colors for the headlining, which is also available in Alcantara, are lunar silver, silk beige, black and snow white. There is also a wide range of materials available. The standard seats in the V6 models and the A8 hybrid are covered with black fabric, with Valcona leather available as an option. The comfort seats are available in Valette, Valcona or natural leather.

Audi offers two design selections in addition to the standard selections: Balao brown and sycamore gray. The design selection Balao brown combines rich, chocolate brown leather with inlays of open-pored, balsamico fine grain ash and silvery aluminum. A white Alcantara headlining and white contrast stitching provide accents. With the new Audi design selection sycamore gray, the full leather interior is immersed in gray tones accentuated with stitching and piping in pearl gold. The inlays are fine grain ash natural pearl gray with the pores washed with gold. The headlining here is also snow white Alcantara.

An exclusive design in black-Vermont brown is available for the S8. The climate-controlled sport seats in Vermont brown leather have dark contrast stitching, while the rest of the interior is black with color-matched brown accents on many of the leather-covered components. The application in the doors and the instrument panel is the new carbon twill with copper thread, a harmonious complement to the black and brown interior. Typical for the S models, the headlining is black Alcantara.

The Audi exclusive range offers many additional suggestions for leather upholstery/trim and wood applications.

Equipment

The new A8, the Audi flagship, rolls off the assembly line with a comprehensive array of standard equipment. Numerous high-end features are available on request. In addition, the Audi exclusive range offers virtually unlimited opportunities for customizing the sedan to the buyer's own personal style.

The new Audi A8 occupies a special position in the luxury class with respect to the drivetrain and chassis. The eight-speed tiptronic and quattro permanent all-wheel drive are standard with all model variants except for the A8 hybrid. The A8 4.2 TDI and the S8 also come standard with the sport differential. The Audi drive select system, which is also standard in the A8, controls such features as the adaptive air suspension including active damper control.

Numerous active and passive safety systems are on board. In the German market, LED headlights are standard in all eight-cylinder models and the hybrid. The A8 L W12 even comes standard with the Matrix LED headlights. The LED rear lights, Audi pre sense basic and the anti-theft alarm system also serve safety and security. The adaptive restraint system, eight airbags, tire pressure monitoring display, Isofix anchor points for mounting child safety seats and Audi pre sense basic round out the safety package. Helping after a rear-end collision is the secondary collision brake assist, which prevents the car from skidding uncontrollably.

The standard range of comfort and convenience figures is equally impressive. These include such body features as the sliding/tilting glass sunroof (in the A8 L), the power-closing trunk, and heated and power folding side mirrors.

In the cabin, the new A8 comes standard with cruise control, two-zone automatic air conditioning, LED interior lighting and power sunshades in the back (in the A8 L).

Its extremely comfortable ergonomics concept includes the power front seats with lumbar support and leather upholstery (except for V6 and A8 hybrid), power steering column, electromechanical parking brake, start-stop button, the MMI operating system with the eight-inch monitor, and the driver information system with seven-inch monitor and rest recommendation, which is controlled via the multifunction steering wheel.

Optional extras: Tailored individuality

The new Audi A8 is also far ahead of the competition when it comes to optional extras. Noteworthy extras in the area of dynamics are the dynamic steering, the adaptive air suspension sport and the carbon fiber-ceramic brakes (V8 models and up). Wheels are available in sizes up to 21 inches (with the S8). Besides the xenon plus headlights for the six-cylinder models, LED headlights (standard in eight-cylinder models and the A8 hybrid) or the innovative Matrix LED headlights (standard in the A8 L W12) can also be ordered. Audi underscores its leadership position in automotive lighting with this three-tier offer.

Practical features for every day includes the trunk package, the load-through hatch with removable ski bag (not with A8 hybrid), the gesture-controlled trunk lock (standard with S8 and A8 L W12) and the power opening and closing trunk lid (standard with A8 L W12). Power closing for the doors is available as an option, as is sound-insulating glazing for the windows (both standard with A8 L W12). There is also a solar sliding/tilting sunroof for the normal wheelbase A8 and a panorama glass roof for the long version.

Among the numerous luxury options are a few features that deserve special mention: the convenience key with sensor-controlled trunk lock (standard with the S8 and A8 L W12), four-zone automatic air conditioning (standard with S8 and A8 L W12), auxiliary heating and windshield heating (neither of which with the A8 hybrid), the relaxation seat (in the A8 L), heated steering wheel (standard with A8 L W12) and the ambient lighting (standard with A8 hybrid, S8 and A8 L W12).

22-way adjustment: The comfort seats

Audi also offers numerous seating options. The comfort seats for the driver and front seat passenger (standard with the A8 L W12) and the comfort sport seats (standard in the S8) offer 22-way adjustment. Ventilation and massage functions are available as options. The natural-looking Unicum leather is a particularly attractive upholstery.

A three-element seating system with two power-adjustable and heated individual seats is available for the rear of the Audi A8 (standard with A8 L W12, not available for A8 hybrid). In the long-wheelbase A8, this can be combined with the optional continuous, leather-covered center console. Audi also offers ventilation and massage functions for the individual rear seats, fold-out tables and a cool box and a bar compartment. The high-end solution is the relaxation seat with power fold-out footrest (A8 L only). It comes with many top features, including the rear seat entertainment system.

Audi has developed a broad program of interior colors, upholsteries and inlays for the luxury sedan's customers. The two Audi design selections impress with particularly exclusive combinations and with various optional packages and individual solutions with leather, Alcantara and fine wood veneers.

The assistance systems adaptive cruise control with stop&go function, Audi side assist, Audi active lane assist, the park assist systems, the night vision assistant, camera-based speed limit display and the head-up display support the driver. The first two systems are combined with versions of the Audi pre sense safety system. Audi includes the full version with the name Audi pre sense plus in the assistance package (not for A8 hybrid).

The range of navigation and infotainment systems is also extremely attractive. MMI navigation plus (standard in the S8 and A8 L W12) has the data on the road ahead and forwards these to the control units for the tiptronic, the headlights and the ACC stop&go. MMI touch is available for entering destinations, and Audi connect links the A8 to the Internet. Three sound systems, including the top-end system from Bang & Olufsen, spoil the ears with premium sound.

The new Audi A8 is scheduled to arrive at German dealerships in November. Despite the more generous list of equipment and more powerful engines, prices vary only slightly. In Germany the A8 3.0 TDI quattro is priced at 74,500 euros.

The most important sales market for the new Audi A8 is China, where the brand's sales figures have been rising sharply for many years. Europe and North America also play important roles. The Asian customers, in particular, prefer the long-wheelbase A8.

The Audi A8 L W12

The long-wheelbase Audi A8 L W12 stands at the head of the new A8 model family. It features an exclusive powerplant. The W12 gasoline engine produces 368 kW (500 hp) and delivers 625 Nm (*460.98 lb-ft*) of torque at 4,750 rpm. The sprint from 0 to 100 km/h (*62.14 mph*) is completed in 4.6 seconds; the electronically governed top speed of 250 km/h (*155.34 mph*) is just a formality. Average fuel consumption of the highly cultivated twelve-cylinder is 11.3 liters per 100 kilometers (*20.82 US mpg*), corresponding to CO₂ emissions of 264 grams per kilometer (*424.87 g/mile*).

Displacing 6,299 cc, the W12 engine is barely over 50 centimeters long and roughly 70 centimeters wide and tall. It consists of four rows of three cylinders. Two rows face each other in a mutually offset configuration at 15-degree angles, respectively, and collectively form a single broad bank. The two cylinder banks thus form a 72-degree V configuration. The crankshaft has a crankpin offset of twelve degrees so that the twelve cylinders ignite in the ideal interval of 60 degrees.

Weighing 234 kilograms (*515.88 lb*), the W12 engine is relatively lightweight. Its crankcase is made of a high-strength, lightweight aluminum-silicon alloy, with a traverse with embedded cast iron bearing seats forming the bottom. Due to the V-position within the cylinder banks, the pistons, which are also made of a lightweight alloy, have beveled surfaces in order to create combustion chambers with optimized geometry for maximum efficiency. The crankshaft drive and chain drive have been optimized for minimal friction, and the thermal management system distributes the heat flows between the engine, transmission and interior.

Rotating inside the aluminum cylinder heads are four camshafts, which can be moved through 52 degrees of crankshaft motion. Chain-driven, they actuate the 48 valves via roller cam followers. The fuel flows directly into the combustion chambers, and the shape of the intake ports imports a rolling motion to the inflowing air. Together with the high compression ratio of 11.8:1, this “tumble” also increases efficiency.

New in the W12 is the efficiency technology cylinder on demand (COD). At low to intermediate load and engine speed, such as 250 Nm (*184.39 lb-ft*) at 3,000 rpm, it shuts down the cylinders of the left or right bank when in the upper four gears by deactivating the injection and ignition. In the event of a lengthy deactivation phase, the cylinders in the deactivated bank are fired to prevent their catalytic converter from cooling off. The cylinder banks are thus deactivated in turns during extended periods of COD operation.

Design: Understated appearance

Understated visual clues reveal the identity of the Audi A8 L W12. The bars in the Singleframe grille are wider at the corners, and chrome honeycomb grilles are mounted behind it and in the air inlets. W12 badges shine from the grille, the flanks and the back of the car.

The top-of-the-line A8 features brakes with six-piston calipers up front. Size 255/45 tires are mounted on 19-inch wheels. The tires include “torus absorbers” – foam strips between the running surface and the carcass that dampen the noise generated in the torus (annular body) of the tire when rolling. Optional 20-inch wheels with a 15-spoke structured design are exclusive to the A8 L W12.

The Audi A8 L W12 comes with a very luxurious array of standard equipment. Examples include Matrix LED headlights, ambient lighting, power door closing, comfort seats up front and individual rear seats with comfort head restraints, grab handles with wood segments (piano finish), make-up mirror and separate reading lights. There is also the extended leather and an Alcantara package, inlays in piano finish and aluminum, four-zone automatic air conditioning, the parking system plus with reversing camera, MMI navigation plus with W12-specific welcome screen and Audi connect including car phone with separate handset. A cell phone holder is located in the pocket in the right rear door.

For customers looking for something very special, quattro GmbH offers the A8 L W12 Audi exclusive concept, which is limited to a run of just 50 units. Leather from the Italian furniture manufacturer Poltrona Frau in the color Agatha cognac dominates the interior. Its gently treated surface is velvety soft. The inlays are made of the rare veneer fine grain olive ash natural silver brown with silver pigments as pore filler. Its gray-brown shade harmonizes with the granite gray piping on the seats. The headlining is snow white.

The Audi S8

The S8, which Audi offers with the standard wheelbase, is the most powerful and sportiest model in the new A8 lineup. The 4.0 TFSI produces 382 kW (520 hp) and develops 650 Nm (*479.42 lb-ft*) of torque between 1,700 and 5,500 rpm. The sprint from 0 to 100 km/h (*62.14 mph*) only takes 4.1 seconds; its acceleration ends at a top speed of 250 km/h (*155.34 mph*). The V8 biturbo, whose sound is now even more sonorous, consumes on average 9.6 liters of fuel per 100 kilometers (*24.50 US mpg*), a CO₂ equivalent of 225 grams per kilometer (*362.10 g/mile*).

Behind these top figures is the entire range of Audi's technological expertise, from the layout of the cylinder heads with the hot side on the inside to the twin-scroll turbochargers to the cylinder on demand (COD) system, which shuts down four of the eight cylinders when operating under part load. The Active Noise Cancellation (ANC) system and the active engine mounts suppress undesired noise components and vibrations during these phases by producing precise antiphase vibrations.

The eight-speed tiptronic in the S8 also unites sportiness and efficiency. That keeps engine speed low, yet kicks down quickly and comfortably when prompted by the driver. The tiptronic delivers the power to a quattro drivetrain supplemented with the sport differential at the rear axle. Among the chassis highlights are the adaptive air suspension sport and dynamic steering. The differential, air suspension and dynamic steering receive S-specific tuning.

The standard wheels of the new Audi S8 measure 9 J x 20 and are shod with size 265/40 tires. Options extend up to exclusive 21-inch wheels with size 275/35 tires. The internally vented disc brakes have a diameter of 400 millimeters (*15.75 in*) up front and 365 (*14.37 in*) in the back.

S8 logos adorn the black, six-piston calipers up front. Audi also mounts optional carbon fiber ceramic discs with anthracite gray brake calipers.

Distinctive design details visualize the sporty character of the Audi S8. Its Singleframe grille is painted platinum gray and the horizontal double bars are finished in chrome. The three air inlets are separate from one another. The two large inlets on the outside are filled with honeycomb grilles and structured with thick chrome bars. The lower section of the front apron is a splitter shifted to the front.

On the flanks, body color trim strips on the sills and polished aluminum-look mirror housings catch the eye. The diffuser insert at the back is platinum gray and includes a two-layer blade in an aluminum-look finish. The exhaust system ends in twin oval tailpipes on each side of the car. S8 or V8 T badges can be found in the front, on the back and on the sides. The finish Daytona gray, pearl effect is reserved exclusively for the sporty top-of-the-line model.

Interior: Fine materials for sporty elegance

S-model interiors are characterized by the gray dials of the analog clock and the dial instruments with white needles. The inlays are Carbon Atlas and brushed aluminum, the door trim panels in Alcantara and the selector lever for the tiptronic is in carbon. The pedals and footrest shine in an aluminum-look finish. A red ring adorns the start-stop button; an S8 badge the steering wheel. There is a choice of four colors for the interior and ten colors for the upholstery. The standard comfort sport seats are covered in perforated Valcona leather and feature diamond-quilted center sections.

The sportiest model of the A8 family offers a very generous list of standard equipment, including LED headlights, ambient lighting, convenience key, four-zone automatic air conditioning, Bose surround sound system and MMI navigation plus with S8-specific welcome screen. An exclusive option for the S8 is the Audi design selection black/Vermont brown. The inlays here are called Carbon twill copper – a copper thread matching the color of the seat coverings runs through the carbon fabric.

The Audi A8 hybrid (preliminary data)

The Audi A8 hybrid was designed as a parallel hybrid. Its 2.0 TFSI, which produces 155 kW (211 hp) and 350 Nm (258.15 lb-ft) of torque, and the electric motor (40 kW/210 Nm [154.89 lb-ft]) are mounted one directly behind the other and linked by a clutch to work together, when necessary. System power is 180 kW (245 hp); maximum system torque is 480 Nm (354.03 lb-ft). The power flows to the front wheels through a heavily modified eight-speed tiptronic, in which the electric motor takes the place of the torque converter. The lithium-ion battery in the rear provides 1.3 kWh of energy, and its air cooling system switches between two levels as needed.

The performance of a six-cylinder is combined with the fuel economy of a four-cylinder in the Audi A8 hybrid. The sprint from 0 to 100 km/h (62.14 mph) is a matter of 7.7 seconds; top speed is reached at 235 km/h (146.02 mph). In the standard cycle, the hybrid sedan consumes on average just 6.3 liters of fuel per 100 kilometers (37.34 US mpg). The CO₂ emissions of 147 grams per kilometer (236.57 g/mile) are the top value in the A8 model series and the entire luxury segment.

In electric mode, the Audi A8 hybrid can cover roughly three kilometers (1.86 miles) at a speed of 60 km/h (37.28 mph). Top speed on electric power is 100 km/h (62.14 mph). The driver can choose between three driving programs. The control unit in the powertrain switches between five operating modes as needed: driving with the TFSI, electric driving, hybrid mode, recuperation and boosting.

The standard LED headlights give the front of the Audi A8 hybrid a distinctive expression, and the 19-inch wheels sport the turbine design exclusive to the hybrid. Small badges on the body indicate the drive concept. Special displays and graphics in the instrument cluster present all the key information about the operating state of the hybrid drive. A power meter replaces the tachometer.

The standard equipment list for the Audi A8 hybrid is also very generous. Among other things, it includes a metallic paint finish, ambient lighting, three-zone automatic air conditioning and the Bose sound system. A tailor-made luggage set is provided for the trunk, which is slightly constrained by the lithium-ion battery.