



Press Information

June 25, 2025

CONCEPT AMG GT XX – a New Dimension of Performance

- Pioneering technology program offers insight into the first series-production model based on AMG.EA high performance architecture
- Revolutionary drive concept with three axial flux motors delivers more than 1,341 hp peak output
- Groundbreaking high voltage battery with direct-cooled cylindrical cells enables remarkable, sustained performance on the road and when charging
- Approximately 400 km of range (WLTP)¹ can be charged in about five minutes - the distance from Affalterbach to Spa-Francorchamps
- Four-door coupe packed with innovations inside and out

Affalterbach. The performance of the future is on its way – with exceptional technology, outstanding endurance, hyper-fast charging and a highly emotional design.

The CONCEPT AMG GT XX is a pioneering technology program that offers an impressive look into a forthcoming four-door series-production sports car from Mercedes-AMG. With three axial flux motors and a high performance battery developed from scratch, the brand from Affalterbach presents a revolutionary drive concept that enables a whole new dimension of performance. It includes an abundance of technical innovations earmarked for use in the subsequent series-production models based on the high performance AMG Electric Architecture (AMG.EA).

“The best minds in our global R&D network have contributed their extensive expertise – from Mercedes-Benz in Sindelfingen and Untertürkheim to Mercedes-AMG in Affalterbach and YASA in the UK to our Formula 1 drivetrain experts at Mercedes-AMG High Performance Powertrains in Brixworth. Together, they have developed the CONCEPT AMG GT XX and are providing an insight into pioneering drivetrain technology and the future of performance. The technology program pushes the boundaries even further and ventures into new ground. The CONCEPT AMG GT XX with its three axial flux motors now lifts performance and endurance to a completely new level.”

Markus Schäfer, Member of the Board of Management of Mercedes-Benz Group AG, Chief Technology Officer,
Development & Procurement

¹ The information is preliminary. The range values are provisional, based on digital simulations of the standard determination for WLTP. So far, there are neither confirmed values from an officially recognized testing organization nor an EC type approval nor a certificate of conformity with official values. Discrepancies between the provided information and the official values are possible. Binding values are not yet available.

“The CONCEPT AMG GT XX is the next milestone in the history of AMG and forges a whole new dimension of performance. We’re bringing groundbreaking technology that redefines high performance. And the best thing is that this car is a true AMG with every fiber of its being. The heart of an AMG was always the motor, and that will remain so with our in-house electric architecture. With our high-tech axial flux motor, we’re delivering a revolutionary new drive that is unparalleled in terms of power density, weight and packaging. This pairs with a new performance battery developed from scratch that enables previously unimagined level of performance and endurance.”

Michael Schiebe, CEO of Mercedes-AMG GmbH and
Head of Business Units Mercedes-Benz G-Class and Mercedes-Maybach

“With the CONCEPT AMG GT XX, we have succeeded in translating our design vision for AMG into the future. Sports cars have always been the icons of our brand; they are emotional and truly special to create. They represent unique moments in time. Icons like the 300 SL and the legendary Silver Arrows are the emotional heart of our brand, as are the GT and AMG ONE. Crafting these masterpieces is about creating something extraordinary – from the C111 to the Vision One-Eleven, and into the future of production. The brand-new CONCEPT AMG GT XX embodies the hot part of our design philosophy of sensual purity.”

Gorden Wagener, Chief Design Officer Mercedes-Benz Group AG

Revolutionary drivetrain: high performance axial flux motors and new battery technology

In the nearly 60-year history of the Mercedes-Benz performance and sports car brand, the powertrain has always been the heart of the vehicle, bar none. The team at Affalterbach are continuing this tradition with the CONCEPT AMG GT XX, which introduces a revolutionary drive technology in the form of the innovative axial flux motor.

Its technological underpinnings were originally developed by British electric motor specialist YASA – a wholly owned subsidiary of Mercedes-Benz AG. For its application in the CONCEPT AMG GT XX and subsequently in series production, the concept was taken to a whole new level of performance. This was achieved in a collaboration between Mercedes-AMG and the technology experts from YASA. The performance specialists from Affalterbach have also developed the software for the operating strategy, which optimally utilizes the high performance of the motors. The innovative electric motors enable high output from an extremely compact package and enter series production at Mercedes-AMG in 2026.

Thanks to a peak output of over 1,341 hp, the CONCEPT AMG GT XX can reach speeds of more than 223 mph. In combination with the new high performance battery, the three axial flux motors attain a completely new level, particularly in respect of continuous output. This allows the CONCEPT AMG GT XX to be pushed to its limits repeatedly, offering a new level of continuous performance that was almost unthinkable in the world of electric mobility – until now. The battery remains in an optimal temperature range even during intense driving, enabling both performance on the road and extremely fast charging. The concept vehicle can charge to approximately 400 kilometers (WLTP)² of range in around five minutes, which is roughly equivalent to the distance from Affalterbach to Spa-Francorchamps. After fast charging, the vehicle can immediately deliver full output again - an unprecedented capability.

Significant benefits in power profile, weight and packaging

Axial flux motors offer many benefits: they are significantly more compact, lighter and, above all, more powerful than conventional electric motors (radial flux motors). The power density of axial flux motors is around three times that of conventional electric motors. At the same time, the innovative motors are around two-thirds lighter and are just one third of the size. This compact motor design offers more flexibility when it

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comes to drivetrain packaging. Compared with conventional electric motors, the innovative drive delivers a considerably higher sustained power output as well as higher torque. This translates into the highest levels of performance, reproduceable again and again with great frequency.

In an axial flux motor, the electromagnetic flux runs parallel to the motor's axis of rotation. In a conventional electric motor, it runs perpendicular to the axis of rotation. The large components in an axial flux motor are shaped like slim discs. The stator is positioned between two rotors on the left and right sides. This layout of stator and rotors enables optimum power transmission to the rotors through the electric field generated by the stator. In the CONCEPT AMG GT XX, this combination is barely 3.5 inches wide. Each of the two motors at the rear are around just 3.1 inches wide.

Compelling power: more than 1,341 hp peak output

No fewer than three of these innovative electric motors guarantee outstanding system power in the CONCEPT AMG GT XX with a peak output of more than 1,341 hp. The motors are packaged into two High Performance Electric Drive Units (HP.EDUs) – one at the front and one at the rear. The HP.EDU at the rear has two axial flux motors, each equipped with a compact planetary gearset and one inverter, in a single casing. The motors and transmissions are oil cooled. To save even more space, the necessary pump control unit with hydraulic pumps and suction filters is integrated into the HP.EDU. The two inverters (one per motor) are water cooled. The material properties of silicon carbide offer multiple benefits for demanding applications requiring high voltages, high current, high temperatures and high heat conductivity.

The front HP.EDU comprises one axial flux motor, a spur-gear transmission and an inverter. The front electric drive functions as a booster motor for when additional power or traction is required at the front wheels. When the front electric motor is not needed for the driving situation, a Disconnect Unit (DCU) decouples it. During acceleration and recuperation, the DCU engages for optimal performance. During steady driving, low load and coasting, it disengages again, reducing unnecessary drag losses and increasing efficiency.

Innovative processes for axial flux motor production

The axial flux motors are produced at the Mercedes-Benz plant in the Marienfelde area of Berlin. It has been an important part of the global Mercedes-Benz Powertrain production network for decades and handles the production of various drive components. Axial flux motor production involves approximately 100 processes, of which roughly 65 are new for Mercedes-Benz and 35 are world firsts. These include new forms of laser technology combined with innovative joining processes and artificial intelligence. These new production processes were developed largely in-house by Mercedes-Benz, and the innovations led to more than 30 patent applications. All this underscores Berlin-Marienfelde's leading role worldwide in production-process innovations.

Inspired by Formula 1, developed in Affalterbach: High Performance Electric Battery

The high voltage battery in the CONCEPT AMG GT XX is a completely new development. It benefits from all the experience from the AMG ONE and Formula 1® as well as the knowledge of the best engineers from Mercedes-AMG in Affalterbach and Mercedes-AMG High Performance Powertrains (HPP) in Brixworth (UK).

The High Performance Electric Battery (HPEB) delivers a high power output with exceptional repeatability, guaranteeing the vehicle's outstanding overall performance. This is paired with rapid energy absorption and high power density. Contributing to the high system performance are three main aspects: new battery cell developments, direct cooling of the cells and high voltage.

New battery cells developed to meet exceptionally high performance demands

The battery features a completely new cell design, developed for exceptionally high performance. The CONCEPT AMG GT XX uses cylindrical cells that are remarkably tall and slim. This format delivers many

benefits for cell cooling. The narrow diameter means the distance from the cell core to the casing is particularly small. This enables rapid dissipation of heat generated under load and ensures each individual cell is kept within the optimum temperature window.

Also new is the laser-welded aluminum cell housing. It is lighter than the steel housings typically used and has considerably better electrical and heat conductivity. This offers benefits in the targeted thermal control of the cells – with faster cooling or heating on demand.

The cells use the full-tab configuration which means the entire surface of the cell tail is electrically and thermally connected to the pole. This enables a significant reduction in the cell's internal resistance, which facilitates high charging and discharging power. Furthermore, full-tab battery cells are especially robust and also function reliably under demanding load conditions.

A further innovation is the optimized operating window. The full-tab cells underwent detailed measurement and testing in advance using a special reference electrode and core temperature sensors. The data gathered was implemented in the software for the battery management system. This enables better modelling of cell behavior and thus a significant increase of charging power at higher temperatures.

The cell chemistry was developed specifically for the CONCEPT AMG GT XX. It is based on NCMA (nickel/cobalt/manganese/aluminum) in the cathode and an anode with silicon content. This offers a combination of high energy density of 300 Wh/kg (740 Wh/l on cell level), powerful charging performance and long lifespan that is thus far unique.

Overall, the combination of a tall, narrow cell format, aluminum housing, full-tab technology and NCMA chemistry lays the foundation for high performance within the individual battery cells, especially in terms of sustained power delivery.

Intelligent direct cooling of the battery cells

The individual cells are packaged into laser-welded plastic modules. Direct cell cooling is integrated into the plastic modules to ensure optimum heat dissipation. A high tech coolant based on an electrically non-conductive oil flows around each individual cell to maintain the optimum temperature. The coolant flows through coolant channels in the modules, which are optimized for equal cooling of all the cells. A special piping system ensures even distribution of the cooling oil. There are more than 3,000 cells in the CONCEPT AMG GT XX.

The lithium-ion battery has a high voltage of more than 800 volts, which also contributes to overall performance. The benefits of the high voltage are lower weight due to the lighter cables, higher continuous power output and shorter battery charging times. Charge losses via the charging cable are also considerably less.

Temperature control for short charging times, minimal aging and long lifespan

Temperature control of the HPEB is intelligently configured for different driving situations. Heating it to the optimum temperature window is fast and precise. Maximum power is delivered across a wide temperature band.

The operating strategy is programmed to facilitate maximum performance from the battery, followed by a reduction in temperature through the direct cooling system. Intelligent heat management controls the temperature of the coolant for each cell module at precisely the pre-determined value as required (on-demand cooling). As a result, the battery retains its high power reserves, even during dynamic driving with frequent

acceleration (battery discharged) and deceleration (battery charged via recuperation). This effective direct cooling in combination with the cell enables the high level of sustained power density.

Fast charging performance

The charging performance likewise sets new benchmarks – again due to direct cooling. This pairs with optimized thermal management of the cells and power lines during charging. The CONCEPT AMG GT XX achieves a very high average charging power of more than 850 kW at 1,000 amps over a wide range of the charging curve.

To match the vehicle's charging performance, the Mercedes-Benz Charging Unit worked in close collaboration with partner Alpitronic, the European market leader in high power charging. Alpitronic has developed a prototype charging station. It is the first charging station able to transmit such a high current via a standard CCS cable.

For the future series-production models, Mercedes-Benz will expand the infrastructure of its own Mercedes-Benz Charging Network with the next generation of high performance charging stations. Customers will benefit from extremely fast charging times.

Body structure and battery housing: safety is the number one priority

The body structure of the CONCEPT AMG GT XX is based on the new AMG.EA architecture and is completely new. The intelligent material matrix consisting of aluminum, steel and fiber composite materials combines the exceptional rigidity that is a hallmark of AMG with low weight. Optimized material cross-sections and component design create space for the advanced technology and sophisticated powertrain.

The high voltage battery is centrally integrated into the structure of the electric skateboard platform. Its protective housing encases the cell modules, all switch components and the Battery Management System (BMS), which is likewise an exclusive in-house development by AMG. Defined lateral load paths combine high torsional rigidity with low weight and form the basis for a high level of crash safety.

The battery housing is part of the vehicle structure and integrated into the crash concept. Battery, high voltage (HV) cables and further HV components are configured and secured to fulfill Mercedes-Benz's high safety requirements.

Exterior: rebellious design with first-class aerodynamics

With its dynamic fastback, low slung hood and sharply raked windshield, the CONCEPT AMG GT XX is a statement of the brand's signature sports car performance. This is further underscored by the striking color scheme in sunset beam orange.

The AMG specific front grille with ten vertical struts embodies a characteristic AMG design feature. However, it is further developed with its more oval and concave form. The Mercedes star is integrated into the middle. The slender, rectangular auxiliary headlights are recessed into the outer edges of the grille. The vertically arranged main headlights set innovative accents with low beam and high beam stacked one on top of the other.

A characteristic feature from motorsport is the two-part air outlets in the hood, each with two fins. These dissipate warm air from the horizontal cooling modules in the front of the vehicle and thus optimize the cooling air path. The front splitter extends far around the front of the car with an integrated air curtain function reaching up to the front wheel arches. The hood encapsulates the front as far as the wheel arches and emphasizes the distinctive sports car DNA of the CONCEPT AMG GT XX with two power domes.

The vehicle's profile is defined by the low-slung front end, from which the fenders flare organically to frame the front wheels. The long, low greenhouse with double-bubble roof and three windows on each side rests on the muscular rear shoulders. The exterior mirrors are elevated on the front doors, in typical sports car fashion. The sill claddings have aerodynamic contours that extend into the rear wheel arches. Aerodynamic fine-tuning is also evident in the recessed door handles.

From a bird's eye perspective, the streamlined greenhouse tapers rearward, allowing for particularly wide shoulders. The rear wheel arches also flow organically from the flanks. Another design element at the rear is the wide diffuser in exposed carbon, which sweeps deeply down at either side. Designed to ensure rear stability at high speeds, its form is reminiscent of the AMG ONE.

The vehicle body rests visually on a powerful floor structure that extends from the front splitter along the sill blades to the rear diffuser. The overhangs front and rear underscore the iconic overall proportions. The dynamic character is also expressed in the extravagant paintwork in sunset beam orange. Thanks to its special composition, the surfaces shimmer in the light like liquid metal.

The dynamic rear design, with its sharply angled aerodynamic edge and six circular deep red taillights, forms a unique vehicle identity. The lights and centrally positioned MBUX Fluid Light Panel are each framed by an elongated recess with conical sidewalls to create a particularly impressive sense of depth. The active airbrake is seamlessly integrated into the rear of the vehicle.

Aerodynamics: important factor for high performance, especially at high speeds

At 186 mph, approximately 83 percent of the drive energy is required to overcome drag. This shows how important efficient aerodynamics are in the high performance segment. The CONCEPT AMG GT XX shows what is technically possible. Aspects include the sporty flat shape, sharply raked windscreen, low-slung hood, angled side windows and the absence of a rear windshield.

The refinement continues into the underbody. A specially developed contour ensures aerodynamic balance, meaning optimum downforce paired with maximum efficiency. It generates the Venturi effect, which reduces lift at the rear without notably impacting the c_d figure. This facilitates a lower rear and lessens the need for a pronounced rear spoiler. The intelligent aerodynamics offer a high level of handling stability in all areas up to the top speed of more than 223 mph.

The painstaking aerodynamic refinements reduce the drag coefficient and frontal area – which contributes to high speed performance as well as longer range at high speeds. Despite the wide high performance tires, the drag coefficient is $c_d=0.198$.

Aerodynamics also support other cooling functions

In addition to the large air outlets in the front hood, the CONCEPT AMG GT XX utilizes a passive cooling plate located at the front of the underbody, using the airflow beneath the car for cooling. Another feature is the active air control system AIRPANEL, known from the AMG GT series models and further developed here. This allows for the best compromise between cooling and aerodynamic drag. The system manages airflow in multiple stages according to cooling requirements, operating with louvers hidden behind the air intake in the front bumper. Normally, these are closed, reducing drag and directing air towards the underbody. When certain temperatures at predefined components are reached and cooling demand is particularly high, the louvers open in multiple stages, allowing cooling air to flow to the heat exchangers as needed.

Interior design: purist cockpit with exposed technology

The interior of the CONCEPT AMG GT XX is reduced to the essentials, like a race car, while offering a luxurious look and feel. The interior is immersed almost completely in black. Silver and orange accents emphasize the

visually minimalist focus on technical elements. Taking center stage are the high quality materials with different textures that feel as good as they look. Visible body structures and interior components inspired by high voltage cables create a close connection to motorsport, the origin of AMG. The purist cockpit, with two integrated screens, is fully focused on driving. The vehicle and all its instruments are controlled via two large LCD displays: 10.25-inch instrument cluster and the 14-inch multimedia touchscreen. The displays are ergonomically angled towards the driver and have a seamless glass look.

The steering wheel is similar to that in the AMG ONE, with its almost rectangular shape and two horizontal struts on either side inspired by motorsport. The steering wheel paddles serve to control recuperation. A display on the steering column uses different color codes via eight LEDs to indicate the state of charge (blue), recuperation and current performance (red). In addition, there are two round AMG steering wheel buttons that control other functions and display the options with colored icons.

A particularly distinctive feature of the interior is the exposed extrusions of the body structure around the center console, with illuminated orange tubes. Their look creates an instinctive association with high voltage cables. Another striking feature is the design element in the center console, which takes the form of the AMG crest. The CONCEPT AMG GT XX thus expresses its top electric performance with high tech features machined from solid metal and illuminated.

There is likewise no cladding on the instrument panel. It references the look of a classic sports car engine block with the AMG logo machined into it and matte black finish. At the same time, the structural crossmember forms the upper part of the cockpit. The instrument panel is fully integrated and also contains the ducting for fresh air and cables. The vertical H-struts positioned centrally beneath it combine the cockpit substructure and center console mount in one module. Consistent implementation of the extrusion structure represents an overarching design theme.

Sculpturally minimalist door claddings are penetrated by an armrest featuring the extrusion structure. The subtly backlit racing perforations in the door panels provide a second-read effect that breaks up the black.

To save weight, the individually formed carbon fiber bucket seats in the rear, including the cushions, are completely integrated into the car's rear bulkhead. The roof has no headliner, which saves weight and exposes the carbon fiber structure. The door panels with lightweight tubes and orange closing loops complete the innovative and sporty overall look. The checkered flag design of the color-backlit fabric is a further reference to motorsport. The fastening points on the doors are clad with small buttons of machined aluminum. These display the AMG crest and are accented with the exterior paint color.

The floor covering is made of 100-percent recycled materials. Its sporty design with checkered flag elements again references motorsport.

Emotional and intuitive MBUX

The user interface and the Mercedes-Benz User Experience (MBUX) in the CONCEPT AMG GT XX are emotional and intuitive to use. It is based on the in-house Mercedes-Benz Operating System (MB.OS). The deeply integrated chip-to-cloud architecture networks and controls all domains and functions. For the CONCEPT AMG GT XX, the UI/UX design team in Sindelfingen designed an exclusive interface that shows the highlights of the electric drive system, including the High Performance Electric Battery as a video animation on the multimedia display.

High level of traction and directional stability: AMG Performance 4MATIC+ fully variable all-wheel drive

The CONCEPT AMG GT XX delivers its power to the road with the AMG Performance 4MATIC+ all-wheel drive. Completely decoupled from one another, the three electric motors allow fully variable torque distribution to the front and rear wheels. This enables a high level of traction and driving safety as well as greater efficiency. The transition between rear-wheel and all-wheel drive occurs continuously based on an ingenious matrix that integrates the control algorithms into the entire vehicle architecture.

Multiple innovations for the sports car of the future

The CONCEPT AMG GT XX not only sets new standards in performance but is also pioneering the future of the sports car with many other innovations inside and out. Highlights include luminescent areas of paintwork along its flanks, speakers integrated into the front headlights and the MBUX Fluid Light Panel at the rear. The interior features innovative biotechnology-based materials as well as ergonomic 3D seat pads.

MBUX Fluid Light Paint

The exterior of the CONCEPT AMG GT XX shines with luminescent paint segments. This allows special effects by night on defined areas of the vehicle body. To achieve this, the experts from research and development use electroluminescence technology: special color pigments emit light in response to an alternating current. This results in brightly glowing paint that is clearly noticeable in the dark. The paint is built up in several electrically conductive and insulating layers. Mercedes-AMG has already successfully tested this paint on a GT3 race car at the 24-hour race on the Nürburgring. On the CONCEPT AMG GT XX, the cladding on the longitudinal beams is highlighted in color with luminescent segments referencing the AMG logo. However, the paintwork is not only for visual effect at night. During the charging process, it also serves as a means of communication and visually enhances the experience. The segments switch off one after the other – and once they are all off, the CONCEPT AMG GT XX is ready to go and gives yet another signal as it drives off.

Speakers in the headlights

Another innovation combines light and sound in a new form. The exterior speakers for emitting driving sounds are integrated into the front headlights for the first time in the CONCEPT AMG GT XX. These use the headlight housing as a speaker enclosure. This integration saves space, reduces weight and enables new sound variants. In addition, the speakers also serve as signals for pedestrian protection. Another feature is the passive membrane technology in the soundbar. It enables low frequency and more powerful bass reproduction, as it makes better use of the available installation space.

Communication with the outside world via MBUX Fluid Light Panel at the rear

The innovative MBUX Fluid Light Panel at the rear of the vehicle features more than 700 freely programmable RGB LEDs. The illumination enables active communication with the outside world. The front side has been media blasted to achieve perfect homogeneity for the backlighting of each pixel. The innovative internal structure prevents light scattering between the pixels and ensures outstanding image quality. When turned off, the panel features an elegant 3D pixel look. When turned on, a special effect is created through the unexpected light staging.

Thanks to an intelligent software solution, information from the vehicle can be displayed in real time for the first time as text or animation. It can show a variety of content, such as a digital AMG logo or the current charging process.

Interior innovations: alternative materials for the sports car of the future

The interior of the CONCEPT AMG GT XX also points to the future with LABFIBER materials. This refers to innovative materials based on biotechnology. The technology program features alternatives to leather and silk, both produced with the help of biotechnology.

Biotechnology-based leather alternative derived from recycled GT3 racing tires

The LABFIBER Biotech Leather Alternative was developed and manufactured with the help of modern biotechnology. It is the result of an exclusive and intensive development partnership with U.S. bio-design startup Modern Meadow. This collaboration leverages the next generation materials technology from Modern Meadow to further develop the LABFIBER Biotech Leather Alternative for series production and set new standards in vehicle interiors. The use of this innovative material in the CONCEPT AMG GT XX is a first in the automotive sector. It consists of a combination of recycled rubber, vegetable proteins and biopolymers. LABFIBER Biotech Leather Alternative mimics the most important characteristics of the collagens found in leather. The new material therefore offers a level of design freedom equivalent to that of conventional leather. The leather alternative can be produced with different surface finishes such as nubuck, full grain leather or suede as well as a variety of colors and textures.

Using a chemical recycling process, pyrolysis oil is first produced using old tires and certified biomethane from agricultural waste. These are then processed into plastic fibers in accordance with the mass balance method. These microfibers, in turn, are used to create a semi-finished product to which vegetable proteins and bio-based polymers are added. In contrast to artificial leather, this innovative combination of materials has the same structure as genuine leather and can also be processed like genuine leather in retanning processes. As a result, it has the same high quality look and feel as materials like nubuck leather as well as natural aging properties. The bio-design means the LABFIBER Biotech Leather Alternative is breathable and waterproof as well as being lighter than real leather. Its maximum tensile strength is also twice as high as that of genuine leather, meaning it is very robust. And because of its low thermal conductivity, the material does not heat up quickly, even in summer. The content derived from recycled plastic can be fully recycled.

For the application in the CONCEPT AMG GT XX, Mercedes-AMG uses pyrolysis oil produced from racing tires that were actually used in competition on AMG GT3 customer racing cars. One scrap tire provides the basis for approximately 43 square feet of new LABFIBER Biotech Leather Alternative. The black seat pads of the bucket seats are covered with the Nappa-look variant. The innovative material is configured for closing material loops. It embraces complete chemical recycling, whereby the end product (LABFIBER Biotech Leather Alternative) is of a higher value than the starting material (scrap tires) – a perfect case of upcycling.

Another innovative material in the CONCEPT AMG GT XX is the biotechnology-based LABFIBER Biotech Silk Alternative. This starts with silk proteins produced by genetically modified bacteria. These proteins are refined into a shiny, silky yarn using a wet spinning process. The synthetic silk has the same functional properties as animal-based silk. However, it is 100 percent biodegradable, very light and at the same time high strength. In the CONCEPT AMG GT XX, the door handles are made from this innovative silk alternative, produced in orange to match the exterior.

Seats: innovative tailor-made ergonomics from the 3D printer

The front bucket seats are based on carbon fiber racing shells with ventilation openings and integrated headrests. The new 3D-printed seat pads with an open 3D structure offer a new level of customization with optimized ergonomics and are easy to swap out. This creates a comfortable seat structure adapted specifically to each user. The seat pads are covered with the innovative LABFIBER Biotechnological Leather Alternative in Pearl Black. The idea behind the seat pads also comes from motorsport. Each driver has a set of individual seat cushions that can be quickly swapped out – for example during driver changes in endurance races. In the CONCEPT AMG GT XX, the individually designed seat pads were created using 3D printing technology. The ergonomic data is provided by a body scan of the respective individual. The six-point safety harnesses underscore the sporty design.

Patented world first: active, intelligent, electronically controlled Aero Wheel with moving aero blades

A special highlight is the active Aero Wheel that optimizes brake cooling, aerodynamic efficiency and maximum range. The 21-inch five-spoke forged aluminum wheel is equipped with five movable elements. When closely positioned, the blades close flush to the wheel, thereby reducing drag. This improves range and reduces energy consumption.

A control unit located in the vehicle monitors and controls, among other things, the function of the brake system. It detects the need for increased brake cooling. When it sends a signal to the actuators, these deploy and actively open the blades, which opens an annulus on the outer wheel rim. Supported by the radial louvers on the inner side of the aero blades, cooling air is pumped through the wheel to the brake and back out again. Increasing the air mass flow in this way achieves significantly more efficient brake cooling. The active removal of air from the wheel arch, which interacts aerodynamically with the underbody, also has a positive influence on the vehicle's aerodynamic downforce.

Integrated in the hub of each wheel is a central actuator that is straightforward to install and remove. This actuator moves the aero blades. Each actuator is an autonomous unit that uses the spinning wheel to produce its own electrical energy via a mini-generator. The actuator uses Bluetooth to communicate wirelessly with the control unit in the vehicle. Paired with an integrated high performance battery, it can generate and store enough energy for up to 200 blade movements, thus ensuring optimal brake cooling at all times.

Key technical data at a glance

CONCEPT AMG GT XX		
Electric motors	Type	Three axial flux motors
Max. drivetrain output	hp	>1,341
Drive config.		AMG Performance 4MATIC+ fully variable all-wheel drive
Top speed	mph	>223
Charging time for approx. 400 km of range (WLTP) ³	min	~5
Average DC charging power over wide SOC range	kW	>850
Nominal voltage	V	>800
Length / width / height	in	204.9 / 76.6 without mirrors (83.9 with mirrors) / 51.9
C _d value		0.198
Frontal area	m ²	2.24

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About Mercedes-Benz USA

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