



Mercedes-Benz

The new Mercedes-Benz C350 PLUG-IN HYBRID

Press Information

Efficiency, dynamism and comfort – the best of three worlds

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Stuttgart. Following its premiere in the S-Class, Mercedes-Benz is now offering its most advanced hybrid technology yet in the C-Class. With a range of 20 miles in purely electric mode, local emission-free driving is now a reality. Its four-cylinder gasoline engine, in conjunction with a powerful electric motor, gives it a total system output of 275 horsepower and 443 lb-ft of torque. This allows the new C350 PLUG-IN HYBRID to deliver the performance of a sports car while still offering exemplary fuel consumption. In addition, the standard AIRMATIC air suspension and convenient Pre-Entry Climate Control system that can be controlled via the internet create a truly exceptional level of driving and climate comfort. The C350 PLUG-IN HYBRID will be available in U.S. dealerships in the fall.

Prof Dr Thomas Weber, Member of the Board of Management of Daimler AG and responsible for Group Research and Mercedes-Benz Cars Development: "The PLUG-IN HYBRID is an investment in the future of Mercedes-Benz and we believe it will become established as the successful technology for maximum efficiency coupled with powerful dynamic performance. We will be launching ten new PLUG-IN HYBRID models up to 2017."

Following the C300 BlueTEC HYBRID, the C350 PLUG-IN HYBRID is the second hybrid model in the new C-Class and the second Mercedes-Benz model to feature PLUG-IN HYBRID technology. Thanks to the combination of combustion engine and electric drive, hybrid drive systems deliver impressively low fuel consumption with high performance. The electric motor is able to replace or support the combustion engine in a variety of situations, while making

practical use of energy generated while braking by converting it into electric energy and storing it.

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The C350 PLUG-IN HYBRID uses the most advanced form of hybrid technology currently available. Its electrical energy storage unit is a high-voltage lithium-ion battery with a total capacity of 6.2 kWh, which can be charged from an external power source to effectively contribute to the low consumption and emission figures. The battery is water-cooled, weighs around 220 pounds and is mounted in a sheet-steel housing underneath the rear axle in order to maximize crash safety, driving dynamics and trunk space.

Thanks to an intelligent on-board charging system, the battery can be quickly recharged at a wallbox, at one of the growing number of public charging points or even charged via a standard domestic socket.

Despite the space taken up by the battery, the C350 PLUG-IN HYBRID Sedan still offers a trunk capacity of 11.8 cubic feet.

PLUG-IN HYBRID for the first time now with a four-cylinder engine

In the new Mercedes-Benz C350 PLUG-IN HYBRID, the hybrid drive concept is combined for the first time with an efficient four-cylinder gasoline engine. From a displacement of just under two liters, it produces **208 horsepower** and 258 lb-ft of torque. Its direct injection system with spray-guided combustion uses electronically precise controlled multiple injection and fast multi-spark ignition to deliver outstanding performance coupled with high efficiency and exemplary emissions. The electric motor of the C350 PLUG-IN HYBRID has an output of up to **80 horsepower** and delivers 251 lb-ft of torque. Overall, the C350 PLUG-IN HYBRID offers a total system output of 275 horsepower and 443 lb-ft of torque.

7-speed automatic with additional clutch

The hybrid module of the standard 7-speed automatic transmission 7G-TRONIC PLUS incorporates both the electric motor and an additional clutch between the combustion engine and the electric motor. When driving in all-electric mode, this decouples the combustion engine from the drive train. It also offers the possibility of moving off using the combustion engine with the performance of a wet start-up clutch. In this case, the clutch is a substitute for the torque converter.

Technical data

Internal combustion engine	
Number of cylinders/arrangement	turbo I-4
Mixture formation	High-pressure injection, 1 turbocharger
Displacement (cc)	1991
Rated output (hp at rpm)	208 at 5500
Rated torque (lb-ft)	258 @ 1,200 - 4,000
Electric motor	
Output (hp)	80
Torque (lb-ft)	251
System output	
System output (hp)	275
System torque (lb-ft)	443
Acceleration 0-60 mph (s)	5.9
Top speed (mph)	130
Top speed electric (mph)	80
Electric range (miles)	20
Total battery capacity (kWh)	6.2

The performance of a sports car

The high overall system output and intelligent engine management give this model the dynamic performance of a nimble sports car. This is combined with the ride comfort of a premium sedan, along with fuel consumption and environmental compatibility at a level that, until not that long ago, would not even have been expected of many small cars. The Sedan can sprint from zero to 60 mph in 5.9 seconds and can reach a top speed of 130 mph. The C350 PLUG-IN HYBRID also offers the possibility of driving up to 20 miles in all-electric mode, and thus completely free of CO₂ emissions locally.

A hybrid is efficient, dynamic and completely straightforward to drive

Driving the new C350 PLUG-IN HYBRID is just as intuitive as any other automatic vehicle from Mercedes-Benz. Simply climb in, start the engine and off you go. On your journey you will enjoy its exemplary efficiency and, if you so wish, you can kick down to experience the superb acceleration of the electric motor.

The C350 PLUG-IN HYBRID offers all the characteristics of a state-of-the-art hybrid vehicle. These include first and foremost:

- **Silent start:** The vehicle starts virtually silently and runs in electric mode. At this point, the combustion engine is generally held inactive. Electric output of up to 80 horsepower is available for driving in all-electric mode.
- **Boost:** The electric motor kicks in to boost the output of the combustion engine by a further 80 horsepower- for example for rapid acceleration.
- **Energy recuperation:** During braking and coasting, energy is recovered and stored in the battery. This energy can then be used at a later stage for electric driving or the boost function.

Making by braking

The greatest potential for lowering the energy consumption of hybrid drive systems lies in maximizing energy recovery during coasting and braking. When the brake pedal is depressed, the electric motor initially takes on the task of decelerating, acting here as an alternator. If firmer braking is required, the disk brakes will then intervene mechanically to provide additional grip. This overlap between conventional mechanical braking and the electric braking performance of the electric motor in alternator mode increases effectiveness but remains imperceptible.

Furthermore, the intelligent engine management system of the C350 PLUG-IN HYBRID works in the background to select the ideal combination between the combustion engine and the electric motor.

Impulses for the driver

One new feature of the C350 PLUG-IN HYBRID is a haptic accelerator pedal, which can help to reduce fuel consumption and thus also exhaust emissions. It provides two types of information:

- When driving in electric mode, if the driver's foot meets a point of resistance on the gas pedal this is an indication that maximum electric performance is being delivered. If the driver continues to depress the gas pedal beyond this resistance point, the combustion engine will kick in.
- A double impulse from the ECO Assist function signals that the driver should remove their foot from the gas pedal in order to switch off the combustion engine and decouple it from the drive train. Assuming that the driver does what the double impulse suggests, the intelligent engine management system of the C350 PLUG-IN HYBRID will vary the deceleration mode between unpowered (sailing) and recuperation, using data from the vehicle's radar systems as its basis.

Individual transmission mode

The complex technology of the C350 PLUG-IN HYBRID makes it no more difficult to drive than a conventional vehicle with an automatic transmission. But anyone wanting to can also intervene manually and regulate the hybrid interplay themselves, with the help of five operating modes and three transmission modes. This is done via an operating mode switch and a transmission mode switch located in the center console. A display in the middle of the instrument cluster shows the current setting.

Selecting a specific transmission mode enables the driver to define certain functions that influence the driving experience.

The following transmission modes are available:

- **I Individual:** Individual definition of the characteristics of the transmission mode, including:
 - Drive system
 - Chassis and suspension
 - Steering
 - ECO Assist
 - Climate control

- **S + Sport+:** Maximum boost performance, very sporty gear changes, the combustion engine is always active, particularly stiff suspension and damping settings.
- **S Sport:** Enhanced boost performance, sporty gear changes, the combustion engine is always active, stiff suspension and damping settings.
- **C Comfort:** Boost performance and recuperation optimized for comfort and consumption, electric drive/ engine shut-off possible up to 80 mph, and comfort-oriented standard settings.
- **E Economy:** Boost performance is consumption-optimized, recuperation minimized in favor of coasting distance. All-electric mode and engine shut-off are possible. If the navigation system's route guidance function is switched on and the Hybrid operating mode selected, the system will control the charge status of the high-voltage battery according to the route, ensuring that the electric operating mode is used as far as possible in built-up areas. The ECO Assist is also active.

ECO Assist activates an additional function, using the radar technology behind the standard proximity warning system in order to do so. If the radar system identifies a slower-moving vehicle ahead, it sends a double impulse through the "haptic accelerator pedal" to signal to the driver to take their foot off the accelerator. The vehicle will then adjust its deceleration automatically, using the electric motor to do so. In this way frequent braking, particularly in stop-and-go traffic, can be avoided.

Choice of four operating modes

In addition to selecting a transmission program, the driver of the C350 PLUG-IN HYBRID can also use the operating mode switch to influence the regulation between electric mode and the use of the combustion engine for driving. In the Eco and Comfort transmission modes, the following operating modes are available:

- **Hybrid:** All hybrid functions such as electric operating mode, boost and recuperation are available and are applied according to the driving situation and route in the most fuel-efficient manner.

- E-mode: Used for all-electric driving – for example in inner-city areas or because the battery holds sufficient charge for the remainder of the journey.
- E-save: The charge status of the battery is maintained – for example to allow all-electric driving in an environmental zone at a later stage in the journey. Electric driving and the boost function are therefore only available to a limited extent.
- Charge: Allows the battery to be recharged while driving using the combustion engine – for example in order to ensure a higher state of battery charge for later parts of the journey. The combustion engine remains switched on and fuel consumption may increase. Electric operation is not possible.

In the transmission modes S+ and S, the "hybrid" operating mode is activated. In the "Individual" mode, the choice of available operating modes depends upon the drive system setting.

Route-based operating strategy

The best strategy for efficient operation is anticipatory driving. If the exact destination is known because the relevant data has been entered into the navigation system, charge and discharge of the high-voltage battery in the C350 PLUG-IN HYBRID is controlled to ensure the optimal use of energy over the whole route.

Another key point is the requirement that urban areas should be reached with a fully charged battery if possible, so that the vehicle can be driven efficiently in stop-and-go traffic – and frequently in electric mode.

Air suspension and Pre-Entry Climate Control as standard

The new C350 PLUG-IN HYBRID offers the familiar range of equipment and appointment options that are available in the C-Class. In addition, it includes the enhanced comfort feature AIRMATIC air suspension as part of its standard specification, along with a further comprehensive range of pre-entry climate control options.

Thanks to its electronically regulated continuously variable damper adjustment at both the front and rear axle, the air suspension offers self-levelling suspension and outstanding ride comfort with minimal road roar and tire vibration even when the vehicle is loaded.

Pre-Entry Climate Control, a further standard feature, makes it possible to set the desired temperature for the interior of the vehicle before setting off – cooling it in the summer, or warming it up in the winter. This can be activated by pre-setting the departure time, which can be set in the vehicle or from home via the internet. This is possible due to the electrically powered refrigerant compressor and electric heating elements for the warm air circulation. In vehicles with the appropriate specification, the seat ventilation or heating will also be activated.

In addition to the Pre-Entry Climate Control function, the charging of the vehicle can also be controlled online. It is also possible to check the charge status of the high-voltage battery or the vehicle's potential range in electric mode.

Two different faces for the PLUG-IN HYBRID as well

The C350 PLUG-IN HYBRID is supplied with an aggressively elegant design, which emphasizes its sporty, premium-vehicle character. As an alternative, the Sedan is also available with the optional Luxury Package. With its classic radiator grille and the three-pointed star on the hood, the C-Class conveys prestige status and a sense of modern luxury.

The Mercedes-Benz designers have styled the interior at a level which is rarely encountered even in higher vehicle categories. This is evident from the carefully chosen high-class materials and their pleasant touch and feel as well as from the precision of the finely crafted details. Prominently located immediately above the center console is a centrally positioned free-standing central display unit. All the functions of the head unit can be intuitively controlled using a rotary knob or the optional touchpad (included with the COMAND Navigation system). Also available: A head-up display that projects important information onto the windscreen directly in the driver's field of vision.

The C350 PLUG-IN HYBRID is fitted as standard with halogen headlamps. In addition to the standard-fit headlamps, two energy-saving LED variants are

available: A static system and a dynamic version with Active Curve Illumination.

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Assistance systems for added safety and comfort

The C350 PLUG-IN HYBRID Sedan offers the same extensive range of safety and assistance systems as all other C-Class models. Two of the systems fitted as standard are ATTENTION ASSIST, which can warn of inattentiveness and fatigue, and COLLISION PREVENTION ASSIST PLUS, which protects against a collision at speeds of over 5 mph. If the danger remains and the driver fails to react, this system can also undertake autonomous braking at speeds of up to 65 mph, helping to reduce the severity of an accident involving a slower-moving vehicle. Further systems from the new S and E-Class, either new or with significantly enhanced functions, are also available as options.

Vibrant infotainment experience

Even the basic version of the sophisticated multimedia system found in the C-Class is internet-compatible, if there is an active mbrace® subscription and Mercedes-Benz Apps package. This enables the internet to be surfed without restrictions when the vehicle is stationary. Also standard is a Hands-free Bluetooth interface, which allows calls to be placed or answered and access to select phonebooks without taking your hands off the steering wheel. Standard Bluetooth audio streaming also allows for convenient cable-free playback.

Extensive know-how in the field of hybrid and electric vehicles

In 1982, at the same time as it was launching the Mercedes-Benz 190, the predecessor to the C-Class, Mercedes-Benz also presented the first concept vehicle with hybrid drive – a two-cylinder horizontally opposed engine that served to charge the battery. A number of other experimental vehicles followed, and in 2009 Mercedes-Benz was proud to debut the world's first standard-specification hybrid drive with a lithium-ion battery. For a long time this S400 HYBRID was the most fuel-efficient gasoline-powered luxury sedan and the most successful hybrid in its segment.

The second-generation hybrid transmission evolved on the basis of the 7G TRONIC PLUS automatic transmission. It premiered in 2012 in the E300 BlueTEC HYBRID, the first diesel hybrid in the premium segment worldwide. By combining the efficiency of a diesel engine with the advantages of the

hybrid drive, Mercedes-Benz set another milestone in the development of the automobile and exemplary fuel consumption values in the luxury sedan segment.

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After the E300 BlueTEC HYBRID, S400 HYBRID, S300 BlueTEC HYBRID, C300 BlueTEC HYBRID and S500 PLUG-IN HYBRID, the C350 PLUG-IN HYBRID is the latest hybrid model to come from Mercedes Benz. In the years to come the main emphasis will be on plug-in hybrids. The company is also a leading player in the field of purely electric mobility.

Growing range: All current Hybrid and Electric Drive vehicles from Mercedes-Benz Cars worldwide:

2012: smart electric drive
2012: E300 BlueTEC HYBRID
2013: SLS AMG Coupé Electric Drive
2013: S400 HYBRID
2013: S300 BlueTEC HYBRID
2014: C300 BlueTEC Hybrid
2014: B-Class Electric Drive
2014: S550 PLUG-IN HYBRID
2015: C350 PLUG-IN HYBRID

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