



PORSCHE

Press Information

2015 Frankfurt Motor Show

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Tradition and future**Porsche concept car: Mission E
Debut: new Porsche 911 Carrera**

This is what it might look like – the Porsche of tomorrow. Together with the new 911 Carrera, Porsche is presenting the “Mission E” concept car at the IAA in Frankfurt from 17 to 27 September. The concept car is a coherent design of a sports car with an electric drive and all of the traits that make up a Porsche. In the Mission E, an entirely new spread is experienced between performance and efficiency – supplemented by a futuristic display and control concept. The joint premiere with the new generation 911 Carrera has symbolic character. The first all-electrically powered four-seat Porsche of the 21st century represents the future of a concept that made the 911 the most successful sports car ever for over 50 years.

The 911 Carrera and Mission E share one clear statement, namely that excellent sporty performance can be combined with maximum efficiency – the traditional Porsche values. In the new generation of the classic 911 Carrera sports car, innovative turbocharged engines stand for these values. The message of the concept car is E performance. This means that even an electrically powered Porsche naturally fulfils all requirements related to performance, range and driving dynamics.

The Mission E concept car shows how Porsche envisions the future of the electric sports car. The fascinating design of the four-door car with four seats bears many references to the 911 while revealing the Mission E to be a Porsche at first glance. The passionately designed sports car with all-wheel drive develops a total power of over 600 hp, which can be converted into typical Porsche driving dynamics. The driving range of the Mission E is over 500 kilometres, and the innovative 800-volts battery charging system Porsche Turbo Charging reduces charging time to just slightly longer than it takes to fill a car’s fuel tank today. At the quick charge station, it takes just over fifteen minutes to provide enough charge for around 80 per cent of the total range. In keeping with the car’s purist interior, the control and display concept is intuitive with eye-tracking and gesture control as well as innovative functions.

The new generation 911 Carrera makes its debut at the IAA with new turbocharged engines, optimised chassis and the entirely new Porsche Communication Management system with online navigation. The turbocharged three-litre flat engine in the 911 Carrera has a power output of 370 hp (272 kW). In the 911 Carrera S it even generates 420 hp (309 kW), thanks to such features as modified turbochargers. Also excellent is the significant increase in torque together with an improvement of just around 12 per cent in fuel economy. The 911 Carrera has a maximum torque of 450 Nm and the 911 Carrera S even has 500 Nm. This torque is available from a low 1,700 rpm over practically the entire engine speed range. At the same time, the new engines with their maximum speed of 7,500 rpm are very free-revving and passionate.

World premiere of the first battery-powered four-seat concept car from Porsche

Porsche Mission E: 600 hp, 500 km driving range, 15 minutes charging time

In presenting the Mission E at the IAA in Frankfurt, Porsche is introducing the first all-electrically powered four-seat sports car in the brand's history. The concept car combines the unmistakable emotional design of a Porsche with excellent performance and the forward-thinking practicality of the first 800-volt drive system. Key specification data of this fascinating sports car: four doors and four single seats, over 600 hp (440 kW) system power and over 500 km driving range. All-wheel drive and all-wheel steering, zero to 100 km/h acceleration in under 3.5 seconds and a charging time of around 15 minutes to reach an 80 per cent charge of electrical energy. Instruments are intuitively operated by eye-tracking and gesture control, some even via holograms – highly oriented toward the driver by automatically adjusting the displays to the driver's position.

Drive system: over 600 hp with technologies from endurance racing

The drive system of the Mission E is entirely new, yet it is typical Porsche, i.e. proven in motor racing. Two permanently-excited synchronous motors (PSM) – similar to those used in this year's Le Mans victor, the 919 hybrid – accelerate the sports car and recover braking energy. The best proof of a Porsche is 24 hours of top racing performance and a 1-2 finish. Together the two motors produce over 600 hp, and they propel the Mission E to a speed of 100 km/h in less than 3.5 seconds and to 200 km/h in under twelve seconds. In addition to their high efficiency, power density and uniform power development, they offer another advantage: unlike today's electric drive systems, they can develop their full power even after multiple accelerations at short intervals. The need-based all-wheel drive system with Porsche Torque Vectoring – which automatically distributes torque to the individual wheels – transfers the drive system's power to the road, and all-wheel steering gives precise, sporty steering in the desired direction. This makes the Mission E fit for the circuit race track; its lap time on the North Loop of the Nürburgring is under the eight-minute mark.

Everyday practicality: convenient and quick charging, over 500 km driving range

It is not just passionate sportiness that makes up a Porsche but also a high level of everyday practicality. Accordingly, the Mission E can travel over 500 km on one battery charge, and it can be charged with enough energy for around 400 km more driving range in less than fifteen minutes. The reason: Porsche is a front-runner in introducing innovative 800-volt technology for the first time. Doubling the voltage – compared to today's electric vehicles that operate at 400 volts – offers multiple advantages: shorter charging times and lower weight, because lighter, smaller gauge copper cables are sufficient for energy transport. A moveable body segment on the front left wing in front of the driver's door gives access to the charging port for the innovative "Porsche Turbo Charging" system. Via the 800-volt port, the battery can be charged to approximately 80 per cent of its capacity in around 15 minutes – a record time for electric vehicles. As an alternative, the technology platform can be connected to a conventional 400-volt quick-charging station, or it can be replenished at home in the garage via convenient inductive charging by simply parking over a coil embedded in the floor of the garage from which the energy is transferred without cables to a coil on the car's underbody.

Low centre of gravity for superior driving dynamics

Another feature that is typical of a Porsche sports car is a lightweight concept with optimal weight distribution and a low centre of gravity. The battery mounted in the car's underbody, which is based on the latest lithium-ion technology, runs the whole length between the front and rear axles. This distributes its weight to the two drive axles uniformly, resulting in exceptionally good balance. In addition, it makes the sports car's centre of gravity extremely low. Both of these factors significantly boost performance and a sports car feeling. The body as a whole is made up of a functional mix of aluminium, steel and carbon fibre reinforced polymer. The wheels are made of carbon: the Mission E has wide tyres mounted on 21-inch wheels in front and 22-inch wheels at the rear.

Design: fascinating sports car with Porsche DNA

Every square inch, every angle, every radius of the Mission E reflects one thing above all else: emotional sportiness in the best tradition of Porsche design. The starting point is the sculpture of a sport saloon with a low height of 130 cm with sports car attributes from Zuffenhausen that embodies visible innovations such as its integrated aerodynamics. Distinc-

tive air inlets and outlets – on the front, sides and at the rear – typify the body's full flow-through design that enhances efficiency and performance. Integrated air guides improve air-flow around the wheels, for instance, and air outlets on the sides reduce overpressure in the wheel wells, thereby reducing lift.

The much reduced sculpting of the front end shows a classic Porsche sweepback, and it relates the concept car to the 918 Spyder and Porsche race cars. A new type of matrix LED headlights in the brand's typical four-point light design captures the viewer's gaze. Integrated as an element hovering in the airflow of the air inlet, they lend a futuristic character to the front end. The four LED units are grouped around a flat sensor for assistance systems whose border serves as an indicator light. Distinctive front wings and an extremely low-cut bonnet reference 911 design. As in the 911 GT3 RS, a wide characteristic recess extends from the overlapping front luggage compartment lid up and over the roof. The line of the side windows is also similar to that of the 911, however, with one important difference: two counter-opening doors enable convenient entry – without a B-pillar. Another difference: instead of the classic door mirror, inconspicuous cameras are mounted on the sides that contribute to the car's exceptional aerodynamics.

The rear design underscores the typical sports car architecture. The lean cabin with its accelerated rear windscreen, which draws inward at the rear, creates space for the sculpted shape of the rear wings that only a Porsche can have. A three-dimensional "PORSCHE" badge illuminated from inside hovers beneath an arch of light that extends across the entire width in a black glass element.

Interior: light and open with four single seats

The interior of the Mission E transfers all of the traditional Porsche design principles into the future: openness, purist design, clean architecture, driver orientation and everyday practicality. The all-electric drive concept made it possible to fully reinterpret the interior. The lack of a transmission tunnel, for instance, opens up space and gives a lighter and more airy atmosphere to the entire interior. Race bucket seats served as inspiration for the four single seats. Their lightweight design is weight-saving, and it gives occupants secure lateral support during dynamic driving. Between the front seats, the centre console – elegantly curved like a bridge with open space beneath it – extends up to the dashboard.

Display and control concept: intuitive, fast and free of distractions

A new world based on an innovative display and control concept opens up before the driver. It is intuitive, fast and free of distractions – created for the sports car of tomorrow. The filigree driver's display is curved, low-profile and free-standing. The instrument cluster shows five round instruments – they can be recognized as Porsche, but they are displayed virtually in OLED technology, i.e. by organic light-emitting diodes. The round instruments are organized according to the driver-relevant themes of Connected Car, Performance, Drive, Energy and Sport Chrono. The controls are just as innovative. An eye-tracking system detects, via camera, which instrument the driver is viewing. The driver can then activate the menu of the instrument in focus by pushing a button on the steering wheel and navigate in it – which also involves an interplay of eye-tracking and manual activation. But that is not all: the display follows the seat position and body attitude of the driver in what is known as a parallax effect. If the driver sits lower, higher or leans to one side, the 3D display of the round instruments reacts and moves with the driver. This eliminates situations in which the steering wheel blocks the driver's view of certain key information, for instance. All relevant information such as vehicle speed is always within the driver's line of sight.

The Mission E can even portray driving fun: a camera mounted in the rear-view mirror recognizes the driver's good mood and shows it as an emoticon in the round instrument. The fun factor can be saved together with individual information such as the route or speed, and it can be shared with friends via a social media link.

Holographic display with touch-free gesture control

The entire dashboard is chock full of new ideas. Its division into two three-dimensionally structuring layers reinforces the impression of lightness and clarity. The upper layer integrates the driver's display, and between the levels there is a holographic display that extends far into the passenger's side. It shows individually selectable apps, which are stacked in virtual space and arranged by priority with a three-dimensional effect. The driver – or passenger – can use these apps to touch-free control primary functions such as media, navigation, climate control, contacts and vehicle. The desired symbol is activated by gestures that are detected by sensors. A grasping gesture means select, while pulling means control. Moreover, driver or passenger can use a touch display on the centre console to control secondary functions such as detailed information menus.

The concept vehicle can also be configured externally from a tablet via Porsche Car Connect. Using “Over the Air and Remote Services” the driver can essentially change the functional content of the vehicle overnight. A simple update via the integrated high-speed data module is all it takes to implement the travel guide or additional functions for the chassis, engine or infotainment system. The driver can use a smartphone or tablet to start updates conveniently from the Porsche Connect Store. Furthermore, Porsche Connect enables direct contact to a Porsche Centre for remote diagnostics or to schedule appointments. Another function of integrated Remote Services is the digital key, which can be sent via the Porsche Connect Portal. It not only lets the owner open the doors, but also other persons authorized by the owner such as friends or family. After successful authentication, the key can be used within a specific time frame and defined location.

The virtual exterior mirrors are literally eye-catching. The lower corners of the windscreen show the images of the outside cameras that are mounted in the front wings. The benefits: the driver gets a better view of images and the surroundings, and safety information can also be actively displayed there.

More driving pleasure, performance and efficiency

The new Porsche 911 Carrera

The 911 has been the world's best-selling sports car for decades. Now the new generation has arrived to further extend this lead. With innovative turbo flat engines, an advanced chassis with an even greater spread between performance and comfort and a new infotainment system it is exceedingly well-equipped for this. Thanks to more than four decades of experience with turbo engines – in both motor racing and production sports cars – the new engines in the new 911 Carrera set benchmarks in terms of performance, driving pleasure and efficiency. The rear-axle steering available as an option for the Carrera models for the first time further greatly extends the range of driving dynamics.

Many exterior features of the 911 Carrera have been visually refined: these range from new headlights with four-point daytime running lights to door handles without recess covers, a redesigned rear lid with vertical louvres and new rear lights – including the characteristic four-point brake lights. In the interior the new standard Porsche Communication Management with a multi-touch display offers a considerably expanded range of functions and greatly simplified operation.

New turbocharged engines: 20 hp power increase coupled with lower fuel consumption

The completely new engine generation with bi-turbo charging raises the emotional driving pleasure in the 911 Carrera to an even more intensive experience: 370 hp (272 kW) of power at the rear of the 911 Carrera is waiting to be unleashed and converted into sporty propulsion. The engine in the 911 Carrera S now delivers 420 hp (309 kW). In both cases this represents a power increase of 20 hp (15 kW). Both engines have a displacement of three litres. The greater power of the 911 Carrera S results from turbochargers with modified compressors, a specific exhaust system and tuned engine management.

The new Porsche engines are characterised by significantly increased torque (60 Nm in each case) with maximum torque of 450 Nm and 500 Nm respectively delivered constantly from a low 1,700 rpm up to 5,000 rpm in both cases, thus ensuring excellent driving performance. At the same time with a maximum speed of 7,500 rpm the new engine generation clearly exceeds the top speeds of conventional turbo engines – underscored by the typical sonorous Porsche engine sound.

Every new 911 generation boasts enhanced performance and efficiency compared with the predecessor. For example, depending on the model variant, the new engine generation is almost twelve percent more efficient: fuel consumption is reduced by up to a litre per 100 kilometres. The 911 Carrera with PDK transmission now consumes just 7.4 litres of fuel per 100 kilometres (a reduction of 0.8 l per 100 km), while the 911 Carrera S with PDK consumes 7.7 l/100 km (1.0 l less per 100 km).

The new 911 also boasts impressive performance: the 911 Carrera Coupé with Porsche-Doppelkupplung (PDK) and Sport Chrono Package sprints from zero to 100 km/h in 4.2 seconds – making it two tenths of a second faster than its predecessor. The 911 Carrera S with PDK and Sport Chrono Package performs its showcase discipline in just 3.9 seconds (also 0.2 s faster). This means that it is the first 911 in the Carrera family to undercut the magic four second mark. And the top speeds of both models have also increased further: the 911 Carrera now has a top speed of 295 km/h (an increase of six km/h), while the 911 Carrera S now even reaches 308 km/h (an increase of four km/h).

In conjunction with the optional Sport Chrono Package the 911 Carrera now has a mode switch on the steering wheel for the first time, derived from the hybrid mode switch of the 918 Spyder. The mode switch consists of a rotary ring with four positions for the driving modes “Normal”, “Sport”, “Sport Plus” and “Individual”. Depending on the equipment, the latter setting enables drivers to configure their own individual vehicle set-up, for example the PASM, active engine mounts, PDK shifting strategy and sports exhaust system. In combination with PDK transmission the mode switch has an additional button, the “Sport Response Button”. When this button is pressed the drivetrain is pre-conditioned for maximum acceleration for 20 seconds, for example before overtaking manoeuvres. For this, the optimum gear is engaged and the engine management adjusted to an even more spontaneous response for a short time.

A standard feature: reengineered PASM chassis lowers the ride height by ten millimetres

The 911 Carrera is the benchmark for driving dynamics of all-round sports cars. With every new generation Porsche further increases the spread between everyday comfort and circuit performance. For the first time, the new PASM chassis (Porsche Active Suspension Management), which lowers the ride height by ten millimetres, is a standard feature on board all Carrera models. It further improves stability during fast cornering. At the same time the new shock absorber generation with its wider spread characteristics enhances comfort thanks to an even more precise response characteristic and also improves the body connection during dynamic driving. New standard wheels with five slim twin spokes carry tyres with reduced rolling resistance and enhanced performance. Furthermore, on all variants the width of the rear rims has increased by 0.5 to 11.5 inches and the rear tyres of the 911 Carrera S now measure 305 instead of 295 millimetres.

The active rear-axle steering that is available as an option for the 911 Carrera S is chassis technology adopted from the 911 Turbo and 911 GT3. It further enhances the turn-in behaviour of the 911. In addition, it makes for high driving stability when changing lanes at high speeds. At the same time it ensures greater manoeuvrability in city traffic thanks to the turning circle reduced by 0.4 metres. The improved handling is transmitted to the driver via the new steering wheel generation with a design based on the steering wheel of the 918 Spyder. The basic steering wheel has a diameter of 375 millimetres; the optional GT sports steering wheel measures 360 millimetres. For unlimited everyday practicality Porsche offers a hydraulic lift system with integrated lifting cylinders in the struts of the front axle. Pressing a button increases the ground clearance at the front by 40 millimetres within 5 seconds and thus prevents the vehicle underbody from hitting the ground, for example on steep garage exits.

New Porsche Communication Management including online navigation

A standard feature of the new 911 Carrera models is the newly developed Porsche Communication Management System (PCM) including online navigation module and voice control. The PCM can be operated by performing multi-touch gestures on the seven-inch display, similar to operating a smartphone. User inputs by handwriting are possible, for instance.

Mobile phones and smartphones can now also be connected via Wi-Fi. The smartphone tray being integrated for the first time in the centre armrest also offers battery-saving charging and optimised mobile phone reception. Also new is the option of connecting an iPhone to the PCM to use Apple CarPlay.

Real-time traffic information is available for significantly improved navigation. It gives the driver a quick overview of the traffic situation and guarantees dynamic adaptation of the route to this information. Google Earth and Google Street View are also being integrated for the first time to offer better orientation. Other components of the PCM are Porsche Car Connect and the Porsche Connect app, which can be used for such functions as remote control of vehicle functions, transfer of destinations to the PCM for navigation and use of music streaming services by third-party providers via the PCM.

New and extended optional assistance systems

The 911 Carrera can now be customised even more precisely according to personal preferences with further new and improved assistance systems: the optional automatic speed control can now also brake moderately when the pre-set speed is exceeded, for example when driving downhill. The Adaptive Cruise Control ACC (option) now has a coasting function in conjunction with a PDK transmission. When driving in a queue the clutches are disengaged, thus saving fuel with unpowered coasting. The optional lane change assistant monitors traffic behind with radar and uses LED lamps in the left and right of the mirror triangle to warn the driver about approaching vehicles in the blind spot. In addition, Porsche increases the active safety of the sports car with the post-collision braking system as a standard feature.

40 years' turbo experience in motorsport and series production

At Porsche, innovations and developments that have proved themselves under extreme racing conditions always benefit production models, too. Testing in motorsport in particular ensures the performance and resilience of new engines for production sports cars. In the development of charged six-cylinder flat engines Porsche can therefore look back on more than 40 years' experience. For example, turbocharging with a bypass valve was first used

in 1972 in the 917/10 racing car before entering series production two years later in 1974 in the first 911 Turbo. In 1974 charge air cooling was also first introduced in the 917/10. In 1977 this technology then celebrated its premiere in the 911 Turbo 3.3. Further milestones in the development of turbo engines include sequential turbocharging with two consecutive chargers (for the first time in the super car 959), bi-turbo charging with two parallel chargers (for the first time in the 911 Turbo, type 993) and adjustable intake valves (for the first time in the 911 Turbo, type 996).

Specifications Porsche 911 Carrera*

Body:	Two-plus-two seat coupé; lightweight body in aluminium-steel construction with doors, boot and bonnet lids made of aluminium; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.		
Aerodynamics:	Drag coefficient c_d :	0.29	
	Frontal area A:	2.02 m ²	
	$c_d \times A$:	0.59	
Engine:	Water-cooled flat-six engine; aluminium engine block and cylinder heads; four overhead camshafts, four valves per cylinder, variable inlet and outlet valve timing; inlet valve lift (VarioCam Plus); hydraulic valve clearance adjustment; direct petrol injection; bi-turbo charging; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; engine oil 13.1 litres (refill volume 8.0 litres); electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management for coolant circulation; auto start/stop function.		
	Bore	91.0 mm	
	Stroke	76.4 mm	
	Displacement	2,981 cm ³	
	Compression ratio	10:1	
	Engine power	370 hp (272 kW) at 6,500 rpm	
	Max. torque	450 Nm at 1,700 – 5,000 rpm	
	Power output per litre	124.1 hp/l (91.2 kW/l)	
	Max. engine speed	7,500 rpm	
	Fuel type	super plus	
Electrical system:	12 Volt; alternator 2,450 W; battery 80 Ah; electrical system recuperation.		

* Specifications may vary according to markets

Status: September 2015

Transmission: Engine and transmission bolted together to form a single drive unit; rear wheel drive; seven-speed manual transmission with two-plate clutch; optional seven-speed dual clutch transmission (PDK).

Gear ratios	Manual transmission	PDK
1 st gear	3.91	3.91
2 nd gear	2.29	2.29
3 rd gear	1.58	1.58
4 th gear	1.18	1.18
5 th gear	0.94	0.94
6 th gear	0.79	0.79
7 th gear	0.62	0.62
Reverse	3.55	3.55
Constant RA ratio	1.11	1.11
Total RA ratio	3.44	3.44
Clutch diameter	228 mm	202/153 mm

Chassis: Front axle: strut suspension (MacPherson type, Porsche optimised) with wheels independently suspended by transverse links, longitudinal links and struts; cylindrical coil springs with internal dampers; electromechanical power steering; optional front axle lift system.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal dampers.

Porsche Active Suspension Management (PASM) with electronically controlled dampers; two manually selectable damping programmes.

Brakes: Dual-circuit brake system with separate circuits for front and rear axles; Porsche Stability Management (PSM); vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function; post-collision braking system.

Front axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 34 mm thickness.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 28 mm thickness.

Wheels and tyres:	front	8.5 J x 19	with	235/40 ZR 19
	rear	11.5 J x 19	with	295/35 ZR 19

Weights:	Unladen weight (DIN)	1,430 (1,450) kg
	Permissible gross weight	1,875 (1,890) kg

Dimensions:	Length	4,499 mm
	Width	1,808 mm
	Width with door mirrors	1,978 mm
	Height	1,303 mm
	Wheelbase	2,450 mm

Track widths	front	1,541 mm
	rear	1,518 mm

Luggage comp. capacity	front	145 l
	rear	260 l

Fuel tank capacity	64 l
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Values in brackets refer to vehicles with PDK transmission

Performance:	Top speed	295 (293) km/h
	Acceleration	
	0 – 100 km/h	4.6 (4.4) s
	with Sport Plus and PDK	4.2 s
	0 – 200 km/h	15.3 (14.8) s
	with Sport Plus and PDK	14.5 s
Fuel consumption: (NEDC)	0 – 60 mph	4.4 (4.2) s
	with Sport Plus and PDK	4.0 s
	1/4 mile (400 m)	12.8 (12.6) s
	with Sport Plus and PDK	12.3 s
	Combined	8.3 (7.4) l/100 km
	Urban	11.7 (9.9) l/100 km
CO₂ emissions:	Extra-urban	6.3 (6.0) l/100 km
	Combined	190 (169) g/km
Emissions class:		Euro 6

Values in brackets refer to vehicles with PDK transmission

Specifications Porsche 911 Carrera S*

Body:	Two-plus-two seat coupé; lightweight body in aluminium-steel construction with doors, boot and bonnet lids made of aluminium; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.		
Aerodynamics:	Drag coefficient c_d :	0.30	
	Frontal area A:	2.02 m ²	
	$c_d \times A$:	0.61	
Engine:	Water-cooled flat-six engine; aluminium engine block and cylinder heads; four overhead camshafts, four valves per cylinder, variable inlet and outlet valve timing; inlet valve lift (VarioCam Plus); hydraulic valve clearance adjustment; direct petrol injection; bi-turbo charging; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; engine oil 13.1 litres (refill volume 8.0 litres); electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management for coolant circulation; auto start/stop function.		
	Bore	91.0 mm	
	Stroke	76.4 mm	
	Displacement	2,981 cm ³	
	Compression ratio	10:1	
	Engine power	420 hp (309 kW) at 6,500 rpm	
	Max. torque	500 Nm at 1,700 – 5,000 rpm	
	Power output per litre	140.9 hp/l (103.7 kW/l)	
	Max. engine speed	7,500 rpm	
	Fuel type	super plus	
Electrical system:	12 Volt; alternator 2,940 W; battery 80 Ah; electrical system recuperation.		

* Specifications may vary according to markets

Status: September 2015

Transmission: Engine and transmission bolted into combined drive unit; rear-wheel drive; seven-speed manual transmission with two-plate clutch, mechanically locking rear differential and Porsche Torque Vectoring (PTV); optional seven-speed dual clutch transmission (PDK) with controlled rear locking differential and PTV Plus.

Gear ratios	Manual transmission	PDK
1 st gear	3.91	3.91
2 nd gear	2.29	2.29
3 rd gear	1.58	1.58
4 th gear	1.18	1.18
5 th gear	0.94	0.94
6 th gear	0.79	0.79
7 th gear	0.62	0.62
Reverse	3.55	3.55
Constant RA ratio	1.16	1.16
Total RA ratio	3.59	3.59
Clutch diameter	228 mm	202/153 mm

Chassis: Front axle: strut suspension (MacPherson type, Porsche optimised) with wheels independently suspended by transverse links, longitudinal links and struts; cylindrical coil springs with internal dampers; electromechanical power steering; optional front axle lift system.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal dampers; optional rear-wheel steering.

Porsche Active Suspension Management (PASM) with electronically controlled dampers; two manually selectable damping programmes.

Brakes: Dual-circuit brake system with separate circuits for front and rear axles; Porsche Stability Management (PSM); vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function; post-collision braking system.

Front axle: six-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 350 mm diameter and 34 mm thickness.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 28 mm thickness.

Wheels and tyres:	front	8.5 J x 20	with	245/35 ZR 20
	rear	11.5 J x 20	with	305/30 ZR 20

Weights:	Unladen weight (DIN)	1,440 (1,460) kg
	Permissible gross weight	1,900 (1,915) kg

Dimensions:	Length	4,499 mm
	Width	1,808 mm
	Width with door mirrors	1,978 mm
	Height	1,302 mm
	Wheelbase	2,450 mm

Track widths	front	1,543 mm
	rear	1,518 mm

Luggage comp. capacity	front	145 l
	rear	260 l

Fuel tank capacity	64 l
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Values in brackets refer to vehicles with PDK transmission

Performance:	Top speed	308 (306) km/h
	Acceleration	
	0 – 100 km/h	4.3 (4.1) s
	with Sport Plus and PDK	3.9 s
	0 – 200 km/h	13.7 (13.2) s
	with Sport Plus and PDK	12.9 s
Fuel consumption: (NEDC)	0 – 60 mph	4.1 (3.9) s
	with Sport Plus and PDK	3.7 s
	1/4 mile (400 m)	12.5 (12.3) s
	with Sport Plus and PDK	12.0 s
	Combined	8.7 (7.7) l/100 km
	Urban	12.2 (10.1) l/100 km
CO₂ emissions:	Extra-urban	6.6 (6.4) l/100 km
	Combined	199 (174) g/km
Emissions class:		Euro 6

Values in brackets refer to vehicles with PDK transmission

Specifications Porsche 911 Carrera Cabriolet*

Body:	Two-plus-two seat cabriolet; lightweight body in aluminium-steel construction with doors, boot and bonnet lids made of aluminium; fully automatic panel bow top; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.	
Aerodynamics:	Drag coefficient c_d :	0.30
	Frontal area A:	2.02 m ²
	$c_d \times A$:	0.61
Engine:	Water-cooled flat-six engine; aluminium engine block and cylinder heads; four overhead camshafts, four valves per cylinder, variable inlet and outlet valve timing; inlet valve lift (VarioCam Plus); hydraulic valve clearance adjustment; direct petrol injection; bi-turbo charging; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; engine oil 13.1 litres (refill volume 8.0 litres); electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management for coolant circulation; auto start/stop function.	
	Bore	91.0 mm
	Stroke	76.4 mm
	Displacement	2,981 cm ³
	Compression ratio	10:1
	Engine power	370 hp (272 kW) at 6,500 rpm
	Max. torque	450 Nm at 1,700 – 5,000 rpm
	Power output per litre	124.1 hp/l (91.2 kW/l)
	Max. engine speed	7,500 rpm
	Fuel type	super plus
Electrical system:	12 Volt; alternator 2,450 W; battery 80 Ah; electrical system recuperation.	

* Specifications may vary according to markets

Status: September 2015

Transmission:

Engine and transmission bolted together to form a single drive unit; rear wheel drive; seven-speed manual transmission with two-plate clutch; optional seven-speed dual clutch transmission (PDK)

Gear ratios	Manual transmission	PDK
1 st gear	3.91	3.91
2 nd gear	2.29	2.29
3 rd gear	1.58	1.58
4 th gear	1.18	1.18
5 th gear	0.94	0.94
6 th gear	0.79	0.79
7 th gear	0.62	0.62
Reverse	3.55	3.55
Constant RA ratio	1.11	1.11
Total RA ratio	3.44	3.44
Clutch diameter	228 mm	202/153 mm

Chassis:

Front axle: strut suspension (MacPherson type, Porsche optimised) with wheels independently suspended by transverse links, longitudinal links and struts; cylindrical coil springs with internal dampers; electromechanical power steering; optional front axle lift system.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal dampers.

Porsche Active Suspension Management (PASM) with electronically controlled dampers; two manually selectable damping programmes.

Brakes: Dual-circuit brake system with separate circuits for front and rear axles; Porsche Stability Management (PSM); vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function; post-collision braking system.

Front axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 34 mm thickness.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 28 mm thickness.

Wheels and tyres:	front	8.5 J x 19	with	235/40 ZR 19
	rear	11.5 J x 19	with	295/35 ZR 19

Weights:	Unladen weight (DIN)	1,500 (1,520) kg
	Permissible gross weight	1,925 (1,940) kg

Dimensions:	Length	4,499 mm
	Width	1,808 mm
	Width with door mirrors	1,978 mm
	Height	1,297 mm
	Wheelbase	2,450 mm

Track widths	front	1,541 mm
	rear	1,518 mm

Luggage comp. capacity	front	145 l
	rear	160 l

Fuel tank capacity	64 l
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Values in brackets refer to vehicles with PDK transmission

Performance:	Top speed	292 (290) km/h
	Acceleration	
	0 – 100 km/h	4.8 (4.6) s
	with Sport Plus and PDK	4.4 s
	0 – 200 km/h	16.0 (15.5) s
	with Sport Plus and PDK	15.2 s
Fuel consumption: (NEDC)	0 – 60 mph	4.6 (4.4) s
	with Sport Plus and PDK	4.2 s
	1/4 mile (400 m)	13.0 (12.8) s
	with Sport Plus and PDK	12.5 s
	Combined	8.5 (7.5) l/100 km
	Urban	11.9 (9.9) l/100 km
CO₂ emissions:	Extra-urban	6.5 (6.2) l/100 km
	Combined	195 (172) g/km
Emissions class:		Euro 6

Values in brackets refer to vehicles with PDK transmission

Specifications Porsche 911 Carrera S Cabriolet*

Body:	Two-plus-two seat cabriolet; lightweight body in aluminium-steel construction with doors, boot and bonnet lids made of aluminium; fully automatic panel bow top; two-stage driver and front passenger airbags; side and head airbags for driver and front passenger.		
Aerodynamics:	Drag coefficient c_d :	0.30	
	Frontal area A:	2.02 m ²	
	$c_d \times A$:	0.61	
Engine:	Water-cooled flat-six engine; aluminium engine block and cylinder heads; four overhead camshafts, four valves per cylinder, variable inlet and outlet valve timing; inlet valve lift (VarioCam Plus); hydraulic valve clearance adjustment; direct petrol injection; bi-turbo charging; one three-way catalytic converter per cylinder bank, each with two oxygen sensors; engine oil 13.1 litres (refill volume 8.0 litres); electronic ignition with solid-state ignition distribution (six active ignition modules); thermal management for coolant circulation; auto start/stop function.		
	Bore	91.0 mm	
	Stroke	76.4 mm	
	Displacement	2,981 cm ³	
	Compression ratio	10:1	
	Engine power	420 hp (309 kW) at 6,500 rpm	
	Max. torque	500 Nm at 1,700 – 5,000 rpm	
	Power output per litre	140.9 hp/l (103.7 kW/l)	
	Max. engine speed	7,500 rpm	
	Fuel type	super plus	
Electrical system:	12 Volt; alternator 2,940 W; battery 80 Ah; electrical system recuperation.		

* Specifications may vary according to markets

Status: September 2015

Transmission:

Engine and transmission bolted into combined drive unit; rear-wheel drive; seven-speed manual transmission with two-plate clutch, mechanically locking rear differential and Porsche Torque Vectoring (PTV); optional seven-speed dual clutch transmission (PDK) with controlled rear locking differential and PTV Plus.

Gear ratios	Manual transmission	PDK
1 st gear	3.91	3.91
2 nd gear	2.29	2.29
3 rd gear	1.58	1.58
4 th gear	1.18	1.18
5 th gear	0.94	0.94
6 th gear	0.79	0.79
7 th gear	0.62	0.62
Reverse	3.55	3.55
Constant RA ratio	1.16	1.16
Final drive ratio	3.59	3.59
Clutch diameter	228 mm	202/153 mm

Chassis:

Front axle: strut suspension (MacPherson type, Porsche optimised) with wheels independently suspended by transverse links, longitudinal links and struts; cylindrical coil springs with internal dampers; electromechanical power steering; optional front axle lift system.

Rear axle: multi-link suspension with wheels independently suspended on five links; cylindrical coil springs with coaxial internal dampers; optional rear-wheel steering.

Porsche Active Suspension Management (PASM) with electronically controlled dampers; two manually selectable damping programmes.

Brakes: Dual-circuit brake system with separate circuits for front and rear axles; Porsche Stability Management (PSM); vacuum brake booster; brake assistant; electric duo-servo parking brake; auto-hold function; post-collision braking system.

Front axle: six-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 350 mm diameter and 34 mm thickness.

Rear axle: four-piston aluminium monobloc brake callipers, perforated and internally ventilated brake discs with 330 mm diameter and 28 mm thickness.

Wheels and tyres:	front	8.5 J x 20	with	245/35 ZR 20
	rear	11.5 J x 20	with	305/30 ZR 20

Weights:	Unladen weight (DIN)	1,510 (1,530) kg
	Permissible gross weight	1,950 (1,965) kg

Dimensions:	Length	4,499 mm
	Width	1,808 mm
	Width with door mirrors	1,978 mm
	Height	1,298 mm
	Wheelbase	2,450 mm

Track widths	front	1,543 mm
	rear	1,518 mm

Luggage comp. capacity	front	145 l
	rear	160 l

Fuel tank capacity	64 l
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Values in brackets refer to vehicles with PDK transmission

Performance:	Top speed	306 (304) km/h
	Acceleration	
	0 – 100 km/h	4.5 (4.3) s
	with Sport Plus and PDK	4.1 s
	0 – 200 km/h	14.4 (13.9) s
	with Sport Plus and PDK	13.6 s
Fuel consumption: (NEDC)	0 – 60 mph	4.3 (4.1) s
	with Sport Plus and PDK	3.9 s
	1/4 mile (400 m)	12.7 (12.5) s
	with Sport Plus and PDK	12.2 s
	Combined	8.8 (7.8) l/100 km
	Urban	12.3 (10.2) l/100 km
CO₂ emissions:	Extra-urban	6.7 (6.5) l/100 km
	Combined	202 (178) g/km
Emissions class:		Euro 6

Values in brackets refer to vehicles with PDK transmission