

# The BMW i8. Contents.



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Note: The equipment described refers to the specification for the German market.

# 1. The BMW i8. (At a glance)



- BMW i symbolises visionary vehicle concepts, inspirational design and a new take on the meaning of “premium”, with sustainability as a key defining element.
- Market launch of the BMW i8, the second model from new brand BMW i and first plug-in hybrid vehicle from the BMW Group; distinctly forward-looking and sustainability-focused sports car; revolutionary interpretation of BMW’s hallmark driving pleasure.
- 2+2-seater with LifeDrive architecture developed specifically for BMW i, aerodynamically groundbreaking body design and visionary interior design deliver an intense driving experience; Life module passenger cell made from carbon-fibre-reinforced plastic (CFRP); drive system technology, high-voltage battery, chassis, and crash and structural functions integrated into the aluminium Drive module; kerb weight: 1,485 kilograms; Cd: 0.26; very low centre of gravity at less than 460 millimetres; well-balanced weight distribution.
- Emotion-led visual impression based around established BMW i design language; classical sports car proportions and fresh interpretation of BMW design attributes; doors open upwards like wings; clean lines, plus surface design (external and internal) based on the layering principle; full-LED headlights and LED rear lights as standard, laser light available as an option for the first time ever in a production car.
- All-embracing sustainability concept running like a thread through the value chain; carbon fibre production and vehicle assembly using 100 per cent renewable electricity; innovative processing methods for recycled materials together with the use of materials treated in an environmentally friendly manner ensures that all components have a totally premium look and feel; leather tanned with olive leaf extracts for the instrument panel and visible sustainability as an intrinsic element of the avant-garde design: use of CFRP, aerodynamic performance, BMW eDrive technology, lightweight engineering and resource-efficient material selection all vividly depicted; results and methodology for the BMW i8’s life-cycle assessment (LCA) certified by the TÜV SÜD German technical inspection authority in accordance with ISO 14040/44.

- Plug-in hybrid system developed and produced by the BMW Group represents the latest development stage of Efficient Dynamics; three-cylinder petrol engine with BMW TwinPower Turbo technology combined with BMW eDrive technology in the form of a hybrid synchronous electric motor; engine with a displacement of 1.5 litres, output of 170 kW/231 hp and maximum torque of 320 Nm (236 lb-ft); power sent to the rear wheels via a six-speed automatic gearbox; electric motor with an output of 96 kW/131 hp and maximum torque of 250 Nm (184 lb-ft); power channelled through the front wheels via a two-stage automatic transmission; lithium-ion high-voltage battery with direct refrigerant cooling and gross capacity of 7.1 kWh.
- Combination of BMW TwinPower Turbo and BMW eDrive technology plus intelligent energy management produce a maximum system output of 266 kW/362 hp and give the BMW i8 the performance characteristics of a pure-bred sports car (0 – 100 km/h / 62 mph in 4.4 seconds) accompanied by fuel economy and emissions figures more familiar from a small car; EU fuel consumption: 2.1 litres per 100 km (approx. 135 mpg imp), CO<sub>2</sub> emissions: 49 g/km; exceptional efficiency in everyday driving too, with actual fuel consumption figures that are around 50 per cent lower compared to conventional sports car concepts; “glued-to-the-road” AWD driving experience with torque distribution geared towards optimised dynamics.
- Driving Experience Control switch and eDrive button allow driver to choose from five driving modes; range of up to 37 kilometres (23 miles) on electric power alone in EU test cycle and a top speed of 120 km/h (75 mph); COMFORT mode offers optimum balance between dynamics and efficiency; combined range: up to 600 kilometres (approx. 375 miles) in EU test cycle; SPORT mode with ultra-intense boost function provided by the electric motor and systematic energy recuperation for the high-voltage battery; ECO PRO mode can be used in both all-electric mode and hybrid mode.
- Lithium-ion high-voltage battery can be recharged when stationary from any conventional domestic power socket, the BMW i Wallbox or at public charging stations; possibility of preconditioning the interior temperature and cooling the high-voltage battery while charging from the BMW i Wallbox or at a charging station; charging process can be monitored and controlled remotely by means of the BMW i Remote app for smartphones.
- Sophisticated chassis technology featuring a double-wishbone front axle and a five-link rear axle; Electric Power Steering; Dynamic Damper Control as standard; 20-inch light-alloy wheels as standard.

- Intelligent lightweight construction with elements including a CFRP passenger cell, doors with a CFRP-aluminium structure, an instrument panel with magnesium supporting structure, an aluminium chassis and a partition between the passenger compartment and boot made from hardened thin glass; comprehensive safety concept and an ultra-torsionally stiff passenger cell; front, side and head/curtain airbags, inertia-reel seatbelts with belt force limiters front and rear, ISOFIX child seat attachment points and tyre pressure monitoring for each individual wheel as standard; pedestrian alert sound available as an option.
- Extensive standard equipment includes the Navigation System Professional with proactive drive management for all-electric driving, fully digital instrument display for content and presentation formats that adapt according to the driving mode with 3D graphics, 2-zone automatic climate control, BMW iDrive with freestanding 8.8-inch Control Display and Touch Controller, leather sports steering wheel with multifunction buttons, electrically adjustable leather sports seats and leather-trimmed instrument panel; choice of four exterior paint finishes and four interior equipment variants.
- Immediately available at launch from June 2014: BMW i8 with Pure Impulse exclusive package; fully equipped with 20-inch light-alloy wheels, LED headlights with extended features, BMW Head-Up Display, Driving Assistant with Surround View, seatbelts in BMW i Blue, roof liner in Anthracite, electrically adjustable front seats, light package, storage package, anti-theft alarm system, Harman Kardon hi-fi speaker system, larger fuel tank; exclusive interior appointments in Spheric full leather in Carum Grey, high-gloss black brake callipers with BMW i Blue highlighting and BMW i logo, ceramic gear selector, floor mats with leather piping and border seam in BMW i Blue, engine cover in leather, door sill strips with laser-etched model designation, plus BMW i Pure Impulse Card for exclusive lifestyle and event offers.
- Groundbreaking display and control concept that is in keeping with the vehicle's character and adds to the driving experience; individual interpretation of the traditional BMW driver-focused cockpit layout; multifunctional instrument display in bespoke design; instrument panel displays that take their cue from the current driving mode, including three-dimensional graphics; sound and light effects when the electric drive is started; dynamic range display in Control Display; perfectly legible supplementary information on powertrain control, driving mode and options for driving as efficiently as possible; the vehicle's typically straightforward control logic including accompanying graphics also helps

with both the process of charging from the BMW i Wallbox and using remote functions via the smartphone app.

- Wide range of BMW ConnectedDrive features: options include BMW Head-Up Display and Driving Assistant package with High Beam Assistant, rear view camera, Surround View, Speed Limit Info including No Passing Info display and Collision and Pedestrian Warning with City Braking function; also available are BMW Online Entertainment and internet access; standard features include Intelligent Emergency Call, BMW ConnectedDrive Services with Concierge Service and Real Time Traffic Information along with mobility services developed specifically for BMW i, such as the BMW i Remote app, BMW TeleServices including Battery Guard and intermodal route guidance.
- Services specifically developed for BMW i as part of the 360° ELECTRIC programme: BMW i Wallbox for convenient battery charging at home, ChargeNow card giving customers a cash-free payment option at public charging stations, innovative mobility services such as ParkNow LongTerm, MyCityWay and ParkatmyHouse; flexible mobility solutions thanks to the provision of BMW vehicles to suit requirements; Assistance Services for maintenance, repair and in the event of breakdown; flexible sales concept.

Further information on official fuel consumption figures, specific CO<sub>2</sub> emission values and the electric power consumption of new passenger cars is included in the following guideline: "Leitfaden über Kraftstoffverbrauch, die CO<sub>2</sub>-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Guideline for fuel consumption, CO<sub>2</sub> emissions and electric power consumption of new passenger cars), which can be obtained from all dealerships, from the Deutsche Automobil Treuhand GmbH (DAT), Hellmuth-Hirth-Str. 1, 73760 Ostfildern-Schornhausen and at <http://www.dat.de/en/offers/publications/guideline-for-fuel-consumption.html>. LeitfadenCO<sub>2</sub> (GuidelineCO<sub>2</sub>) (PDF – 2.7 MB)

## 2. A vision becomes reality: The design.



With its ultra-dynamic proportions, elegantly sporty lines, low-slung silhouette and innovative design features, the BMW i8 represents a new generation of sports car. Bringing together hallmark features of the BMW brand with the design language developed specially for BMW i cars creates a progressive aesthetic which faithfully communicates the performance attributes, efficiency and innovative premium character of the plug-in hybrid sports car.

The launch of the BMW i8 sees the world's first sports car to be purpose-built with sustainability in mind complete its journey from vision to reality. Its unmistakable, emotion-stirring looks can be put down to a prototype design that was first unveiled in the guise of the BMW Vision EfficientDynamics, meticulously refined for the BMW i8 Concept exhibited at the 2011 Frankfurt Motor Show and now adopted virtually unchanged for the production version. Both the exterior and interior of the emotionally-led 2+2-seater embody a revolutionary, pioneering take on the Sheer Driving Pleasure for which BMW is renowned. Clean, minimalist lines, homogeneous surfaces defined by a small number of crisp edges and function-focused details underline the forward-looking nature of the BMW i8.

As the second series-produced BMW i model on the road, the BMW i8 also reveals the versatility of the design language which is establishing itself as an unmistakable signature of BMW i cars. Its design signals lightness, safety, efficiency and pure driving pleasure – stand-out qualities that the BMW i8 plug-in hybrid sports car shares with the BMW i3, its pure-electric sibling conceived for agile and comfortable urban driving.

The key to this versatility is the innovative LifeDrive architecture, which opens up an exceptional degree of freedom for the design of BMW i cars. The central element of the Life module is the carbon-fibre-reinforced plastic (CFRP) passenger cell. The Life module is fixed to the aluminium Drive module, which houses all the drive and chassis technology. This distinctive two-way split is reflected on both the outside and the inside of the car by the visible layering and intertwining of different surfaces, with three-dimensional and flowing transitions between the Life module and Drive module accentuating the dynamic appearance of the BMW i8.

A length of 4,689 millimetres, width of 1,942 millimetres and height of 1,297 millimetres (including roof fin) give the BMW i8 typical sports car

proportions. Its dynamic character is also reflected in its long bonnet, clearly visible aerodynamic aids, stretched roofline, short overhangs and long, 2,800-millimetre wheelbase. The pioneering combination of sporting ability and efficiency is translated into the design of the 2+2-seater with intoxicating élan – and with the signature BMW i design language to the fore. The car's wide track (1,644 millimetres at the front axle, 1,721 millimetres at the rear) completes the powerful dynamic presence generated by the car's proportions.

### **Exterior design: an aesthetic synthesis of dynamic appeal and pioneering technology.**

The design of the BMW i8 body is as groundbreaking as the plug-in hybrid sports car's concept as a whole. Hallmark BMW dynamics, lightweight design and efficiency are all expressed in the car's proportions, lines and surface design. The 2+2-seater is immediately recognisable as a BMW i model and a new-generation sports car.

The structure of overlapping and interlocking surfaces – lent additional emphasis by the car's colour scheme – also contributes to the unmistakable appearance of the BMW i8. This layering principle allows aerodynamic forms to be wrapped up in a progressively styled package, while powerfully formed wheel arches draw attention to the wide track of the BMW i8. The compact construction distinguishing both the electric motor and combustion engine allows the front and rear sections of the car to have a particularly low-slung design and thus accentuate its dynamically stretched flanks. The doors, which open forwards and upwards like wings, add extra intrigue to the sports car design of the BMW i8.

A signature feature of BMW i cars is the "black belt". On the BMW i8, it emerges in a "V" shape from the bonnet and extends back over the roof into the rear section of the car, where it frames the centre section of the rear apron. At the front end, the black belt is framed by the body-coloured apron and side panels, while at the rear it is overlapped by the "floating" roof pillars, which extend over the rear lights. Another element of the standalone BMW i design language is the "stream flow" contour of the side window styling. On the BMW i8 the stream flow also determines the path travelled by the air between the falling roofline and the character line rising through the rear section of the car's flanks towards the rear spoiler lip.

The front view of the BMW i8 exudes sporting ability in its purest form. Large front apron air intakes arranged over several levels generate a powerful feeling of depth. The extremely broad BMW kidney grille stretches over to the slim headlights, accentuating the width of the BMW i8 and its road-focused stance. The car's full-LED headlights adopt the hallmark U-shape of BMW i

models. The dipped and high-beam light is emitted by a lens positioned on the far outer edge of the light units. The three-dimensional design of the light sources lends their appearance a distinctly sporty character.

The low-slung stance of the rear end and its horizontal, width-emphasising lines also provide a clear showcase for the dynamic potential of the BMW i8. The rear is bordered by the sculpted rear wheel arches. The sloping rear window opens high, allowing easy access to the storage compartment located underneath. The rear lights, reflectors and rear diffuser form a single visual unit that strengthens the car's already powerful appearance. Like the headlights, the intricately designed rear light clusters also feature the characteristic BMW i U-shaped design. The direction indicators are integrated above the rear lights into the downsweep of the roofline. All of the lights on the BMW i8 are LEDs as standard.

**Visible efficiency: aerodynamic optimisation on a detailed level.**

The BMW i8 boasts a drag coefficient ( $C_d$ ) of 0.26 and a fine aerodynamic balance. The low-slung bonnet, almost totally blanked off kidney grille, air flap control system, Air Curtains in the front apron, sealed underbody, contoured side skirts, "stream flow" lines of the car's flanks, and the air ducts between the rear lights and roof frame allow the air to be channelled extremely effectively as it hits the car.

The large, comparatively slim wheels with their bespoke, aerodynamically optimised design also help to quell efficiency-reducing turbulence – and their effect is reinforced by aeroflaps positioned behind the front wheels and ahead of the rear wheels. Precisely defined air flow across all areas of the body provides a balance between air resistance and lift designed to maximise driving dynamics and directional stability.

The paintwork adorning the side body panels and front and rear ends of the BMW i8 can be specified in a choice of four metallic colours: Sophisto Grey brilliant effect as well as the three finishes which have been created exclusively for BMW i – Crystal White pearl effect, Protonic Blue and Ionic Silver. All the paint finishes provide a striking contrast to the black belt. Depending on the colour chosen, the accent surfaces on the side skirts, at the rear and on the BMW kidney grille surround come in BMW i Blue or Frozen Grey metallic.

**Interior design: customary BMW driver focus, low seating position, visible lightweight engineering.**

Future-focused design also dominates the interior of the BMW i8. The driver orientation typical of BMW cockpit design is complemented by progressive elements which highlight the sports car's dynamic flair and light weight. The

driver, front passenger and rear passengers sit low down – in traditional sports car style – in lightweight seats. Exposed CFRP sections of the passenger cell visible around the entry apertures when the doors are opened provide a reminder of the low weight of the BMW i8.

The instrument panel of the BMW i8, with its horizontal lines emphasising the width of the interior and a structure determined by the “layering” principle, creates a light yet powerful impression. The arrangement of the overlapping, three-dimensional segments is complemented by a contrast-rich colour scheme. The layering approach also finds its way, through dynamically curving lines, into the design of the centre console, which is home to the gear selector, the Controller for the iDrive operating system, the start/stop button, the eDrive button and the Driving Experience Control switch. The iDrive system’s Control Display comes in a freestanding 8.8-inch format. A bespoke sports steering wheel with multifunction buttons and the Navigation System Professional are included as standard in the BMW i8. Also standard is the multifunction instrument display, whose content and presentation formats take their cue from the driving mode selected.

**Premium-calibre sustainability: leather tanned with olive leaf extracts, top-quality textiles made from recyclable PET and virgin wool, biopolymer plastic based on castor oil.**

A range of innovative methods form the basis for the use of natural and recycled materials, as well as their ecologically sound processing and supreme quality. The standard leather trim in the BMW i8 extends beyond the seat surfaces to parts of the centre console, instrument panel and interior door panels. The BMW Group is the world’s first carmaker to employ an environmentally friendly process for the treatment of leather. The leather for the surfaces of the seats and the instrument panel is tanned using olive leaf extract. This avoids the creation of environmentally damaging production residue as well as giving the leather a particularly high-quality and natural look. The cattle hide comes from Germany, Austria and Switzerland, and the natural treatment process takes place in Germany. This keeps distances to the BMW i8 production facility at BMW Plant Leipzig pleasingly short.

The textile materials used in the interior of the BMW i8 for accent strips on the seats and door trim, the roof liner, the floor mats, the body pillar trim and floor covering are made in an innovative recycling process. The polyester granules that serve as the source material are produced from materials including recyclable PET and are combined with 40 per cent virgin wool in a special process to create a high-grade cover fabric. The manufacture of the key for the BMW i8 involves another innovative form of raw material production – its casing is made from a biopolymer based on castor beans. The oil gained from

the beans is mixed with 30 per cent glass fibre to make an extremely high-quality and robust material.

It's not just the high proportion of reprocessed plastics that demonstrates the role played by the use of recycled materials in the BMW i sustainability concept: the majority of the aluminium used in the BMW i8 is either gained through recycling or produced using renewable energy.

**Serving the cause of individual style: three equipment lines and the Pure Impulse exclusive package.**

Available as alternatives to the standard Neso trim for the BMW i8 interior are the Carpo and Halo equipment lines. In standard specification, the contrast between black surfaces in the cockpit and light Carum Grey leather surfaces emphasises the lightness and sustainability of this vehicle concept. The leather surfaces of the door and side trim are complemented by functional textile highlights made from recycled material. The optional Carpo equipment line is available in light or dark versions. The naturally treated leather surfaces feature perforated elements and subtle contrast stitching which underline the superior character of the material and workmanship involved. Painted surface elements on the instrument panel, door trim and centre console add the finishing touches to the cutting-edge ambience.

The likewise optional Halo equipment line brings a pervasive aura of luxury and sustainability to the interior of the BMW i8. Top-quality leather surfaces combine with textile accents and contrast stitching in BMW i Blue. And when it comes to the colour scheme, dark Dalbergia Brown and light Carum Grey provide attractive contrasts. The Halo line also brings high-class paintwork to selected instrument panel and door trim surfaces. The accent ring for the leather steering wheel comes in BMW i Blue in the Halo equipment line and in Satin Silver in the other variants.

When specified with the Pure Impulse exclusive package, the BMW i8 comes with extended interior appointments that radiate supreme class. These include perforated Spheric full-leather seat upholstery in Carum Grey with contrast stitching in BMW i Blue, along with interior door panels trimmed in full leather, also finished in Carum Grey. The doors and side trim panels are lined in black exclusive natural leather along with the upper section of the instrument panel. The lower part of the instrument panel, meanwhile, is wrapped in full leather in Carum Grey. An anthracite-coloured roof liner, seatbelts in BMW i Blue, a black leather steering wheel with an accent ring in Satin Silver, as well as interior trim surfaces in Amido metallic put the finishing touches to the cabin's exclusive ambience.

### 3. The best of both worlds: Powertrain and driving experience.



The BMW i8 embodies a revolutionary, future-focused interpretation of the driving pleasure for which BMW is renowned. It was purpose-designed as a plug-in hybrid sports car offering agile performance and outstanding efficiency. An exceptionally lightweight and aerodynamically optimised body – including a passenger cell made from carbon-fibre-reinforced plastic (CFRP) – plus advanced BMW eDrive drive system technology, a compact, highly turbocharged 1.5-litre petrol engine with BMW TwinPower Turbo technology and intelligent energy management all come together to create an overall concept that represents a new landmark in the Efficient Dynamics development strategy. The BMW i8 blends the performance of a top-end sports car with the sort of fuel economy and emissions usually associated with compact models. It is based, moreover, around a vehicle architecture that creates the perfect platform for thrillingly agile handling, thanks to an ultra-low centre of gravity and almost exactly 50:50 weight distribution. The BMW i8 boasts supremely precise driving dynamics and superb steering feel, giving the driver outstanding command of the vehicle even when exploring the limits of its performance.

The three-cylinder combustion engine in the BMW i8 develops 170 kW/231 hp and drives the rear wheels, while the 96 kW/131 hp electric motor draws its energy from a lithium-ion battery, which can be charged from a conventional domestic power socket, and sends its power to the front axle. This bespoke plug-in hybrid system, developed and produced by the BMW Group, enables a range of up to 37 kilometres (23 miles) in the EU test cycle and a top speed of 120 km/h (75 mph) on electric power alone, coupled with a “glued-to-the-road” all-wheel driving experience headlined by powerful acceleration and a dynamically-biased distribution of power through keenly taken corners. The more powerful of the two power sources drives the rear wheels and uses the electric boost from the hybrid system to deliver hallmark BMW driving pleasure while at the same time offering groundbreaking levels of efficiency. The sprint from 0 to 100 km/h (62 mph) takes just 4.4 seconds, yet combined fuel consumption – as calculated in the EU test cycle for plug-in hybrid vehicles – stands at 2.1 litres per 100 kilometres (approx. 135 mpg imp) plus 11.9 kWh of electricity. This equates to CO<sub>2</sub> emissions of 49 grams per kilometre.

The actual fuel economy in everyday driving provides further impressive proof of the BMW i8's outstanding efficiency. Depending on the user's charging

habits and the distances driven, it is capable of returning fuel consumption figures that are almost unheard of for a sports car. The typical driving requirements of commuter traffic can be met with average fuel consumption of less than five litres per 100 kilometres (over 56.5 mpg imp) when utilising the two drive units. If the daily commute is combined with longer sections of motorway and country driving – on weekend trips for instance – the intelligent powertrain management in the BMW i8 is capable of keeping consumption below the seven litres per 100 kilometres mark (40.4 mpg imp). And even when it's just being used for long-distance holiday driving, fuel consumption still averages below eight litres per 100 kilometres (35.3 mpg imp). Overall, the plug-in hybrid's fuel consumption figures are around 50 per cent lower than conventionally powered models in the sports car segment under virtually all operating conditions.

### **For maximum driving pleasure and efficiency: BMW TwinPower Turbo engine and BMW eDrive.**

The plug-in hybrid drive system of the BMW i8, which comprises a BMW TwinPower Turbo engine combined with BMW eDrive technology, offers the best of both worlds: excellent potential for improved efficiency and exciting, sporty driving characteristics. The BMW Group has developed not only the internal combustion engine and electric motor in-house but also the power electronics and the battery. This ensures that all these components offer high product and quality standards, underpinned by the outstanding capabilities of the BMW Group in the field of powertrain research and development.

The revolutionary character of the BMW i8 is emphasised by a further innovation: the use of an internal combustion engine which is making its debut in this model. The BMW i8 is the first BMW production model to be powered by a three-cylinder petrol engine. This highly turbocharged unit is equipped with latest-generation BMW TwinPower Turbo technology. It is exceptionally compact and extracts maximum power of 170 kW/231 hp from its 1.5-litre displacement. The resulting specific output of 113 kW/154 hp per litre of displacement is on a par with high-performance sports car engines and is the highest of any engine produced by the BMW Group.

The new three-cylinder engine derives its typical characteristics from BMW's six-cylinder in-line engines, to which it is closely related and which are noted for their eager power delivery, revving ability and refinement. The three-cylinder's BMW TwinPower Turbo technology comprises a high-performance turbocharging system and direct petrol injection with high-precision injectors positioned between the valves, along with VALVETRONIC throttle-less load control, which improves efficiency and response thanks to seamlessly variable valve lift control. Like a straight-six engine, the three-cylinder unit is free of

first and second-order inertial forces. The low rolling moment, a typical feature of a three-cylinder design, is further reduced by a balancer shaft, while a multi-stage damper integrated in the automatic transmission ensures very smooth and refined running at low rpm. BMW TwinPower Turbo technology and low internal friction improve both fuel efficiency and torque characteristics. Accelerator response is sharp and the three-cylinder unit quickly reaches its maximum torque of 320 Newton metres (236 lb-ft). It also makes its mark by producing a decidedly sporty soundtrack. Both this and the engine's hearty appetite for revs stem from the design characteristics it shares in common with the six-cylinder in-line unit featuring BMW TwinPower Turbo technology.

The car's second power source is a hybrid synchronous electric motor specially developed and produced by the BMW Group for the BMW i8. The motor develops maximum power of 96 kW/131 hp and instantly produces its maximum torque of 250 Newton metres (184 lb-ft) from standstill. Besides the instantaneous response typically generated by electric motors when pulling away, power continues to be developed into the higher load ranges. Credit for the linear power delivery, which extends right up to the high end of the rpm range, goes to a special motor design developed exclusively for BMW i. BMW eDrive technology refines and improves on the principle of the permanently excited synchronous motor with a special arrangement and dimensions for the torque-producing components. This has the effect of generating a "reluctance torque" in addition to the drive torque from the permanent magnets resulting from the rotor's magnetic asymmetry. The upshot of this is that the electric motor can continue to supply plenty of torque at high revs, unlike other motor designs. The hybrid synchronous motor owes its name to this blend of torque-producing properties stemming from two different types of motor.

As well as providing a power boost to assist the petrol engine during acceleration, the electric motor can also power the vehicle by itself. Top speed is then 120 km/h (approx. 75 mph). The BMW i8 has a maximum driving range in this emission-free, virtually soundless, all-electric mode of up to 37 kilometres (23 miles) as measured on the EU test cycle. The motor derives its energy from the lithium-ion battery which is centrally mounted underneath the floor of the vehicle. This model-specific version of the high-voltage battery was developed and produced by the BMW Group. It features an evaporative cooling system, offers a gross energy capacity of 7.1 kilowatt hours and can be recharged from a conventional household power socket, at a BMW i Wallbox or at a public charging station. The battery was designed by the BMW Group and built to last for the life of the car. Customers receive a warranty for the battery spanning eight years or 100,000 kilometres (approx. 62,000 miles).

### **Sports car also displays maximum efficiency when it comes to operating costs.**

The vehicle concept and drive system technology of the BMW i8 help it earn top marks for efficiency. The low fuel consumption of the plug-in hybrid sports car brings with it not only impressively low emissions but also significantly reduced running costs.

The process for calculating the average fuel consumption of plug-in hybrid vehicles in the EU test cycle also takes into account the use of the available energy capacity in a fully charged battery. All of which allows the BMW i8 to boast unrivalled economy given its performance potential; the test cycle fuel consumption comes in at 2.1 litres per 100 kilometres (134.5 mpg imp). This figure is based on a driving profile where the high-voltage battery's capacity is initially used for all-electric driving, before switching to hybrid mode when energy is recuperated to recharge the battery, allowing further sections of the journey to be covered solely on electric power. This profile uses up 11.9 kWh of electricity and 2.1 litres (0.5 gallons) of fuel to complete the 100 kilometres (62 miles). Assuming electricity charges of 0.25 euros per kWh and a fuel price of around 1.50 euros per litre, this results in energy costs of some 6.00 euros per 100 kilometres. This is equivalent to the price of around four litres (0.9 gallons) of premium unleaded petrol.

The pioneering powertrain technology at the heart of the BMW i8 allows customers to benefit from the tax incentives offered in many countries for ultra-low-emission vehicles, especially for electric and hybrid cars. The reliability of the electrical drive system components and their low maintenance requirements minimise the amount of servicing needed. The vehicle concept of the BMW i8 has a favourable impact on its insurance rating too. Any damage to the exterior bodyshell, such as occurs in around 90 per cent of all accidents, can be rectified with relatively little effort and expense by replacing plastic components. Overall, the repair costs following a collision are similar to those for conventional BMW models. This is reflected in the BMW i8's German insurance group rating, which is low for a high-powered sports car in this segment (group 30 for fully comprehensive protection).

### **All-new sports car driving sensation rooted in hybrid-specific all-wheel drive and intelligent energy management.**

The rear wheels of the BMW i8 are driven by the petrol engine via a six-speed automatic transmission, while the front wheels receive their power from the electric motor via a two-stage automatic transmission. This, together with the maximum output of 266 kW/362 hp and peak torque of 320 Newton metres (236 lb-ft) at the rear wheels and 250 Newton metres (184 lb-ft) at the front, provides all-wheel-drive performance which is as dynamic as it is efficient. The BMW i8's intelligent powertrain control system ensures perfect

coordination of both power sources. The variable power-sharing between the internal combustion engine and the electric motor makes the driver aware of the sporty temperament of the BMW i8 at all times, while at the same time maximising the energy efficiency of the overall system. Using the two power sources in unison enables the car to sprint to 100 km/h (62 mph) from stationary in 4.4 seconds. The BMW i8 has an electronically controlled top speed of 250 km/h (155 mph), which can be reached and maintained when the vehicle operates solely on the petrol engine.

Variable front-rear power splitting in line with changing driving conditions makes for excitingly dynamic cornering. On entering the corner, the power split is biased towards the rear wheels to improve turning precision. For more vigorous acceleration out of the corner, the powertrain controller returns to the default split as soon as the steering angle becomes smaller again.

The BMW i8's vehicle concept and powertrain control system mark it out as a progressive, revolutionary sports car. It always achieves the optimal balance between dynamic performance and efficiency, whatever the driving situation. In order to do this, the interaction between combustion engine and electric motor is governed by the intelligent energy management system aboard the BMW i8. A bespoke display and control concept and the link-up between the driver, car and outside world provided by BMW ConnectedDrive bolster the efficiency-enhancing effect of the energy management system. At the same time, they make the targeted management of energy flows in the BMW i8 something the driver can experience in considerable depth.

The high-voltage battery can be recharged via the electric motor with energy recuperated on the overrun. Recovery of energy during braking and overrun phases takes place particularly frequently while driving in SPORT mode. The high-voltage starter-generator, responsible for starting the combustion engine, can also be used as a generator to charge the battery, the necessary power being provided by the BMW TwinPower Turbo engine. These various processes help to ensure that the BMW i8 always has sufficient energy on board to power the electric drive system. The all-electric driving range is sufficient to cover most urban driving requirements. Out of town, the BMW i8 delivers impressively sporty performance extremely efficiently, thanks to the electric motor's power-boosting support for the petrol engine. With such versatility, the BMW i8 belongs to a new generation of sports car which unites sensational performance with cutting-edge efficiency – to enhance both driving pleasure and the sense for sustainability.

The standard-fitted Navigation System Professional links up with a version of the proactive drivetrain management system likewise specially developed for the BMW i8. When the route guidance function is activated, the drivetrain

management is configured to ensure the electric motor is employed as extensively as possible and as wisely as possible from an efficiency point of view. The system analyses the route in full and sets up the drivetrain management to run on purely electric power over low-speed sections of the journey in particular. In so doing it also ensures, for example, that the battery has sufficient capacity for driving in all-electric mode when approaching the journey's end.

**Five driving modes allow drivers to adjust efficiency and dynamic performance as desired – at the touch of a button.**

The BMW i8 affords the driver unusually wide scope for adjusting the drive settings and vehicle setup in order to adapt the driving experience to his or her individual preferences. As well as the electronic gear selector for the automatic transmission, the driver can also use the Driving Experience Control switch – a familiar feature of the latest BMW models – for this purpose. This gives the driver a total of five operating modes to choose from: COMFORT mode, SPORT mode and ECO PRO mode, with the additional option of switching to all-electric driving in COMFORT and ECO PRO mode by pressing the eDrive button. The Driving Experience Control switch on the centre console gives drivers a choice of two vehicle setups. On starting, COMFORT mode is activated, which offers a balance between sporty performance and fuel efficiency, with unrestricted access to all convenience functions. The everyday driving range of the BMW i8 on a full fuel tank and with a fully charged battery in COMFORT mode is up to 600 kilometres (approx. 375 miles), as measured in the EU test cycle. Alternatively, at the touch of a button, ECO PRO mode can be engaged, which, on the BMW i8 as on other models, fosters an efficiency-optimised driving style. The powertrain controller coordinates the cooperation between the petrol engine and the electric motor for maximum fuel economy. At the same time, ECO PRO mode also programs electrical convenience functions such as the air conditioning, seat heating and heated mirrors to operate at minimum power consumption – but without compromising safety.

SPORT mode offers sequential manual gear selection and at the same time switches to a very sporty vehicle setup. With the SPORT setting activated, the engine and electric motor deliver extra-sharp performance, accelerator response is faster and the power boost from the electric motor is maximised. And to keep the battery topped up, SPORT mode also activates maximum energy recuperation during overrun and braking, ensuring that the BMW i8 is able to perform to the very best of its sporting abilities at all times. If the battery is being recharged using the car's kinetic energy, the electric motor's generator function switches to a more powerful setting. At the same time, gear change times are shortened and an extra-sporty setting is selected for the standard-fitted Dynamic Damper Control and the Electric Power Steering.

When the eDrive button is pressed, the vehicle will switch to the electric motor as its sole power source. Only if the battery charge drops below a given level or the driver suddenly wishes to drive at full throttle (kickdown) does the internal combustion engine cut in automatically.

### **Bespoke display and control concept for an intense driving experience.**

A bespoke display and control concept that further intensifies the driving experience brings the sporty and progressive character of the BMW i8 even further to the fore. The iDrive Controller, gear selector and driving function buttons on the centre console are all positioned in the classic BMW arrangement. The instrument cluster in the BMW i8 takes the form of a fully digital multifunctional instrument display. Three-dimensional graphics are used to present the current road speed in digital form, information on the vehicle and powertrain status, as well as feedback from the driver assistance systems, Check Control messages and detailed route instructions from the navigation system. The electric range is permanently displayed too, along with the fuel gauge for the petrol engine.

The specially adapted version of the fully digital instrument display fitted in the BMW i8 shows the car's speed and driving status information in a format and colour selected to suit the driving mode currently engaged. Traditional, orange-coloured circular dials are used for the speed and rpm readouts in SPORT mode. In COMFORT mode a blue "powermeter" display replaces the rev counter to keep the driver up to speed on what the electric motor is up to, while ECO PRO mode adds an efficiency display, which encourages drivers to maximise fuel efficiency through their use of the accelerator.

### **Sophisticated chassis technology for supreme driving dynamics.**

The high-end chassis and suspension technology of the BMW i8 is based on a double-wishbone front axle and a five-link rear axle, whose aluminium components have been specially designed and manufactured in order to optimise both their weight and strength. Not only does the double-wishbone axle with split lower link level enable high levels of lateral acceleration and ensure excellent straight-line stability, this design principle also has the effect of minimising transmission of any bumps in the road to the steering. The kinematics of both the front wheel suspension and the five-link axle at the rear have been geared to superb handling dynamics. What's more, the elastokinematics have been precision-tuned for the vehicle to strike an ideal balance between insulation from tyre roar and satisfying the high demands placed on its dynamic performance abilities.

The Electric Power Steering offers easy manoeuvring in town and typical sports car-style high-speed steering precision. Another distinguishing feature

is that it requires remarkably little energy too. The steering wheel developed especially for the BMW i8 bears the hallmark BMW i design traits, such as the coloured rim inlay and the BMW emblem encircled by a blue ring. It is furthermore the lightest steering wheel available in any BMW Group model and includes both multifunction buttons and shift paddles for changing gear manually as standard, thereby capturing the sporty and sustainable character of the BMW i8 to perfection.

Also standard is Dynamic Damper Control: the electronically controlled dampers endow the vehicle with sharper agility without any loss of ride comfort. The dampers' characteristics change according to the selected driving mode to deliver the desired vehicle dynamics.

The DSC (Dynamic Stability Control) system includes the Anti-lock Braking System (ABS), Cornering Brake Control (CBC), Dynamic Brake Control (DBC), Brake Assist, Brake Standby, Brake Drying function, Start-Off Assistant, Fading Compensation, Active Differential Brake (ADB-x), Driving dynamic impellent torque pre-control, E-Traction, as well as the push button-activated Dynamic Traction Control (DTC) mode.

The brake system on the BMW i8 was purpose developed for the road-hugging hybrid powertrain and delivers superlative performance with outstanding stopping abilities. The perforated brake discs and black painted brake callipers, meanwhile, simply ooze quality and sporty flair.

The car's standard-fit 20-inch forged aluminium wheels sport a bi-colour finish, along with an aerodynamically optimised, lightweight design, plus mixed-sized tyres measuring 195/50 R20 at the front and 215/45 R20 at the rear. Two further light-alloy wheel designs are available as alternatives to the standard specification, both shod with mixed-sized tyres measuring 215/45 R20 for the front and 245/40 R20 for the rear wheels. The slender profile of both wheels and tyres together with their large diameter helps to further hone the aerodynamic properties at the same time as ensuring great cornering dynamics and supreme traction. Finally, the tyres' low rolling resistance further reduces the BMW i8's power consumption.

## 4. Intelligent lightweight design, maximised occupant protection: Body and safety.



The BMW i8 has its own version of the LifeDrive architecture developed for BMW i that gives it a unique range of tools for combining intelligent lightweight design and safety – to the highest standard in each case. The horizontally split LifeDrive architecture consists of two separate, independent modules. The combustion engine and electric motor, battery pack, power electronics, chassis components, and structure and crash functions are arranged together in the aluminium Drive module, while the central element of the Life module is the 2+2-seater's carbon-fibre-reinforced plastic (CFRP) passenger cell. The vehicle structure and materials employed in the i8 represent a pioneering example of automotive construction and reinforce the position of the BMW i8 as an exceptionally progressive model in the sports car segment.

CFRP is the lightest available material that can be used in the construction of a car body without compromising on safety. One of the stand-out characteristics of this high-tech material is its hugely impressive torsional rigidity, yet it also carries 50 per cent less weight than steel and is 30 per cent lighter than aluminium. The LifeDrive architecture and high proportion of CFRP and aluminium in the car's construction allow a previously unprecedented degree of weight saving. The intelligent lightweight design is therefore able to compensate for the additional weight of the plug-in hybrid drive system and the high-voltage battery. The kerb weight of the BMW i8 stands at 1,485 kilograms, and the LifeDrive architecture also has a positive effect on how this weight is distributed. The battery unit is positioned low down in a central position, helping to give the car a low centre of gravity and enhance safety accordingly. Indeed, the centre of gravity of the BMW i8 is less than 460 millimetres from the ground, making it lower than any other current BMW Group model. And this, like the car's almost exact 50:50 weight distribution, ensures excellent handling properties.

### **Intelligent lightweight design as a development principle for all vehicle components.**

The principle of intelligent lightweight design was applied to the rest of the car's components, too. The intelligent construction of the magnesium instrument panel support brings a weight saving of around 30 per cent compared with the BMW 6 Series, for example. In addition, the high structural rigidity of the magnesium support structure gives it a strengthening effect which allows the number of components to be reduced, thereby lowering

weight by a further 10 per cent. Innovative foam plastic technology used in the air conditioning ducts cuts their weight by 60 per cent compared with a conventional solution, while also improving acoustics thanks to its sound-absorbing properties. The fact that the power electronics and electric motor are directly connected reduces the amount of wiring required, while partial use of aluminium wiring enables a further reduction in weight.

The BMW i8 is also the world's first volume-produced vehicle to be equipped with chemically hardened thin glass. This innovative technology, so far used mainly in smartphone manufacturing, lends the material impressive strength. The partition between the passenger compartment and boot of the BMW i8 consists of two layers of chemically hardened glass, each of which is just 0.7 millimetres thick, with acoustic sheeting sandwiched in between. In addition to excellent acoustic properties, a further advantage of this solution is a weight saving of around 50 per cent compared with conventional laminated glass.

The outer skin of the BMW i8 is made of thermoplastic polymers and is likewise manufactured at BMW Plant Leipzig. Apart from being half the weight of sheet steel, the plastic material provides corrosion-free surface protection that is produced using a low-energy process and is resistant to minor damage, too.

### **CFRP passenger cell: flexible in form, extremely strong in crash tests.**

The LifeDrive architecture allows exceptional levels of freedom when it comes to body design. In the case of the BMW i8, the result is an appearance that faithfully reflects the car's sporting characteristics, its innovative premium character and its groundbreaking technology. The impressive structural strength of the CFRP passenger cell allows particularly large door apertures, which in turn ensure comfortable access, even to the rear seats of the BMW i8. The distinctive doors, which open forwards and upwards like wings, are composed of a CFRP inner structure and an aluminium outer skin. This construction is 50 per cent lighter than a conventional door design.

In its dry, resin-free state, CFRP can be worked almost like a textile, and as such allows a high degree of flexibility in how it is shaped. The composite only gains its rigid, final form after the resin injected into the lattice has hardened. This makes it at least as durable as steel, but it is much more lightweight. The high tear resistance along the length of the fibres also allows CFRP components to be given a high-strength design by following their direction of loading. To this end, the fibres are arranged within the component according to the load processes it is subject to. By overlaying the fibre arrangements, components can also be strengthened against load in several different

directions. In this way, the component design can be made significantly more efficient and effective than is possible with any other material that is equally durable in all directions – such as metal. This, in turn, allows further reductions in terms of both material use and weight, leading to another new wave of savings potential. The lower accelerated mass in the event of a crash means that energy-absorbing structures can be scaled back, cutting the weight of the vehicle.

### **LifeDrive architecture – conceived to maximise occupant protection.**

The development of the LifeDrive architecture and the version of it used for the BMW i8 incorporated the latest findings from safety and accident research and the requirements of international crash test procedures. The high-strength passenger compartment teams up with the intelligent distribution of forces within the LifeDrive module to provide the cornerstones for optimum occupant protection. The extremely rigid material used for the passenger cell and the crash-activated aluminium structures at the front and rear end of the Drive module maintain an intact survival space for passengers even in a structurally debilitating offset front crash.

Impressive rigidity, combined with its ability to absorb an enormous amount of energy, makes CFRP extremely damage-tolerant. Even at high impact speeds it displays barely any deformation. As in a Formula One cockpit, this exceptionally stiff material provides an extremely strong survival space. Less body deformation occurs compared with comparable steel bodies. Furthermore, the doors can be opened without any problem and the interior remains largely free of intrusions.

Rescue scenarios were worked through and checked as part of the development process. In standard cutting tests, the process of rescuing occupants from a BMW i8 involved in an accident was, in various scenarios, even more straightforward than that for conventional vehicles. That is because body components made from CFRP are lighter and can be more easily cut than high-strength steels, for example.

### **High safety reserves in a side-on impact.**

The impressive safety characteristics of CFRP also come to the fore in side impact scenarios. Despite the heavy, in some cases concentrated forces, the material barely sustains a dent, and passengers enjoy unbeatable protection. All of which makes CFRP perfectly suited for use in a vehicle's flanks, where every centimetre of undamaged interior is invaluable. However, there are limits to what CFRP can endure. If the forces applied go beyond the limits of the material's strength, the composite of fibres breaks up into its individual components in a controlled process, absorbing energy as it does so.

The occupant protection concept is rounded off by standard safety equipment – including electronically controlled restraint systems – of the same high standard in terms of scope and effectiveness as that featured in vehicles from all the BMW Group's brands. Front airbags and side airbags integrated into the seat backrests, plus head/curtain airbags for both rows of seats, are all fitted as standard, as are three-point inertia-reel seatbelts including belt tensioners and belt force limiters for all seats.

### **Optimum protection for the high-voltage battery.**

The crash-activated aluminium structures in the front and rear sections of the vehicle provide unbeatable safety for the Drive module. In a front or rear-end collision, these absorb a large proportion of the energy generated. The battery, meanwhile, is mounted centrally in the underbody section of the car to give it the best possible degree of protection. Statistically, this is the area that absorbs the least energy in the event of a crash, and the vehicle is subject to barely any deformation here as a result.

The high-voltage system is designed to cope with accidents beyond the legal requirements and includes safeguards with a multi-redundant design to ensure the high-voltage battery's safe reaction even in situations such as these. A series of tests conducted by the renowned DEKRA E-Mobility Competence Center were extremely extensive – ranging from how a car might catch fire, how the flames might spread and what would be required to extinguish the fire, to the pollution caused by run-off of the water used for fighting the fire. The experts concluded that electric and hybrid cars with lithium-ion drive system batteries are just as safe as vehicles with conventional drive systems. To ensure maximum safety in such a crash scenario, the high-voltage battery is disconnected from the high-voltage system and the connected components discharged as soon as the passenger restraint systems are triggered.

### **Repair costs for the BMW i models are normal for their class.**

Tests by vehicle insurers and BMW Accident Research show that accidents primarily result in minor damage. In around 90 per cent of all recorded accidents involving conventional vehicles, the damage sustained is to the outer skin. The BMW i8 takes account of this and is equipped with screw-on/clip-on plastic panelling all around. Minor bumps are absorbed without leaving dents, as usually occurs with metal parts, and damage to the paint does not lead to corrosion. If a section of the external skin needs to be replaced, this can be carried out quickly and economically.

Thanks to innovative repair methods, which also encompass the CFRP components, the sum total of the accident repair costs for all the different cases of damage is similar to that for conventionally powered BMW models.

As a result, the BMW i8 has a comparatively low insurance rating in Germany (group 30 for fully comprehensive).

**Full-LED headlights as standard, unique laser light available as an innovative option.**

The slim headlights of the BMW i8 team up with the BMW kidney grille to form a horizontal unit emphasising the car's width. The plug-in hybrid sports car is fitted as standard with powerful and energy-efficient full-LED headlights. In their lower section, the light sources are framed by a U-shaped bar into which are integrated the daytime driving lights, sidelights and direction indicators. The intricately designed rear light clusters also feature the U-shape typical of BMW i cars. All of the lights on the BMW i8 are LEDs as standard. The optional LED headlights with extended features also include a specific light distribution mode for a notably improved light range when driving on motorways and cross-country routes at speeds over 120 km/h (75 mph).

Before the end of 2014, the BMW i8 will become the world's first series-produced vehicle to be made available with innovative laser headlights as an option. These generate a pure-white, extremely bright light that is pleasant to the eye by carefully converting the beams emitted by tiny laser diodes using a fluorescent phosphorous material inside the headlight. The laser diodes are ten times smaller than conventional light-emitting diodes, helping to save space in the headlight unit and also reduce weight. What's more, the reflector's surface area can be made far smaller compared to LED headlights, and measures less than 3 centimetres in height compared to 9 centimetres previously.

Laser light is monochromatic, which means that the light waves all have the same length. They also have a constant phase difference. As a result, laser lighting can produce a near-parallel beam with impressive luminance, which gives it an intensity ten times brighter than that of conventional light sources. The beam can also be adjusted extremely precisely. The optional laser boost light furthermore produces a high-beam range of up to 600 metres, thereby doubling the already impressive range of the sophisticated LED high-beam headlight. The camera-based, digital High Beam Assistant reliably prevents both oncoming traffic and vehicles travelling ahead from being dazzled. Apart from all this, the laser lighting system is even more efficient too, meaning that energy consumption can be reduced by more than a third even compared to LED headlights, which are already very efficient themselves; laser light generates approximately 170 lumens (photometric unit of light output) per watt, whereas LED lighting produces around 100 lumens per watt.

**Discreet drive sound when driving in all-electric mode to alert pedestrians.**

The pedestrian alert sound that has previously been required by law for electrically powered vehicles in certain markets will be offered as an option worldwide. To ensure that pedestrians are able to detect the vehicle's presence more easily when driving at low speeds purely on electric power, a distinctive sound is generated that mimics the noise made by a turbine. This pedestrian alert sound is active at speeds of up to 30 km/h (approx. 18.5 mph) in order to amplify the vehicle's barely audible road/tyre and wind noise when travelling at this speed.

## 5. Intelligent connectivity, integrated service concept: 360° ELECTRIC for the BMW i8.



In addition to the vehicles themselves, BMW i also offers customers comprehensive and tailor-made mobility services. BMW i8 drivers can therefore make use of the full suite of products and services from 360° ELECTRIC. This integrated concept is unique worldwide and responds to every need when it comes to driving pure-electric and plug-in hybrid vehicles. It covers home charging, mid-journey charging, keeping drivers on the move through flexible mobility options, assistance in the form of special ConnectedDrive services for smartphones and navigation systems, maintenance and repair services, as well as breakdown assistance. The overarching aim of all these measures is to ensure users reach their destination more quickly, reliably and comfortably.

The 360° ELECTRIC package also offers functions from BMW ConnectedDrive specially adapted to suit the demands of electric mobility. These can be used in conjunction with the Navigation System Professional (fitted as standard in the BMW i8) and underpin the intelligent link-up of driver and vehicle via smartphone. One such feature is the BMW i Remote app, which enables the transfer of data between the car and the customer's smartphone and can be used to carry out various functions remotely, including charging the high-voltage battery. These services from 360° ELECTRIC help the driver to enjoy the performance attributes of the plug-in hybrid sports car to the full while at the same time keeping energy consumption – in both petrol and electric form – as low as possible. BMW ConnectedDrive effectively becomes an extension of Efficient Dynamics. In addition, the BMW i8 is also available with numerous highly advanced driver assistance systems, such as the BMW Head-Up Display, the Collision and Pedestrian Warning Assistant with City Braking Function and the Surround View option.

### **360° ELECTRIC: emission-free driving with maximum convenience.**

The BMW i8 plug-in hybrid sports car always achieves top marks for efficiency when it starts a journey with its high-voltage battery fully charged. For customers wishing to charge their car at home, BMW i offers a bespoke solution as part of 360° ELECTRIC which enables the battery pack to be charged at home or at work safely, simply and extremely quickly: the BMW i Wallbox. As well as supplying and assembling the Wallbox, BMW i also checks its installation in customers' homes and provides maintenance, advice and

other services. All of which means BMW i8 drivers enjoy full-house service from a single source.

The BMW i Wallbox can charge an empty high-voltage battery to 80 per cent of its capacity in under two hours. The BMW i8 battery can, of course, also be charged from a conventional domestic power socket using the charging cable supplied. This takes under three hours.

The BMW i Wallbox generates output of 3.7 kW (16 A/230 V) to charge the high-voltage battery safely and comfortably. The charging process can be monitored on a graphic display in the instrument cluster of the BMW i8, as well as on a smartphone via the BMW i Remote app. The app allows the driver to view the current battery charge level and the electric range possible (in kilometres) with the available energy capacity. The data required to prepare the car's interior in advance for an upcoming journey is also displayed. An app-based integrated timer function allows the customer to programme in the timing of a charge to make use of cheaper electricity tariffs during the night, for example. The BMW i Remote app also gives customers the option of selecting a navigation destination or a free public charging station using their smartphone and then sending the relevant addresses to their car.

From August 2014 customers in Germany and 14 other European markets will also have the option of ordering the BMW i Wallbox Pro. Among the benefits of the BMW i Wallbox Pro are additional convenience features. For example, it comes with a 7-inch, user-friendly colour touchscreen, which optimises control and checking functions during the charging process and allows customers to choose their own individual settings. The monitor shows information including the amount of energy fed into the battery so far and stats on previous charge cycles. Added to which, the BMW i Wallbox Pro offers innovative status display modes using LED illumination and is made from top-quality materials. The BMW i Wallbox Pro has a charge output of 3.7 kW and boasts integrated load management. This built-in control functionality prevents overcharging.

The BMW i Wallbox Pro allows customers to set up different user accounts. Information about charging times and energy consumption can then be called up in lists sorted according to user or vehicle. The available information can be transferred via an internet connection by email, for example, for comparison or billing purposes. A BMW i Wallbox Pro which is accessible to several users can be protected from unauthorised use via PIN codes.

The BMW i Wallbox Pro also makes it possible to charge the car with self-generated energy, e.g. through the intelligent integration of a privately-owned solar system. If solar energy is available, the BMW i Wallbox Pro will use it.

The carport systems developed by BMW Group Designworks USA represent the most attractive way of feeding energy generated emission-free into the battery of the BMW i8. They stand out with a design adapted precisely to the exterior forms typical of BMW i cars. The glass-glass solar modules are supported by exclusively designed wood and metal elements which faithfully reflect the familiar lines and surface sculpting of BMW i cars. The carport systems designed by BMW Group Designworks USA can be purchased via the BMW i dealer network from mid-2014.

BMW i has also created a globally expanding cooperative network designed to offer customers turnkey solar carports and roof and garage systems. In Germany, for example, this is done in collaboration with SOLARWATT GmbH. Products include advanced glass-glass solar modules, connectivity with the BMW i Wallbox Pro and an optional home storage unit, which allows customers to charge the high-voltage battery on a time delay – e.g. during the evening or at night.

Its 360° ELECTRIC initiative also sees BMW i backing the use of electricity from renewable sources in other ways, and the brand has joined forces with selected partners to offer a choice of green power solutions. A strategic alliance between BMW AG and German eco power supplier naturstrom AG gives customers in Germany the opportunity to obtain an eco power package for running their BMW i vehicle. The company supplies electricity entirely from renewable sources, with a very high proportion coming from wind power. This means the high-voltage battery of the BMW i8 can be supplied with energy generated with zero CO<sub>2</sub> output.

Integration into smart home systems is also possible. For example, users can programme in a welcome scenario which is activated via the Wallbox. The house lights, shutters and home entertainment systems could all be integrated into this system. The smart home functions which can be controlled via the Wallbox Pro also include home energy management. Partners such as myGEKKO and Solarwatt will be involved from the outset, with further partners coming on stream at a later stage.

**Maximum flexibility when it comes to charging, servicing and complementary mobility solutions.**

If BMW i8 drivers want to continue utilising the full efficiency potential of the electric drive system further along a journey, they can use power from a

public charging station to top up the high-voltage battery. For maximum convenience, drivers can use the ChargeNow network initiated by BMW i. The charging stations brought together within the ChargeNow network can be displayed directly on the car's navigation system, on the customer's smartphone or on the website. In some cases customers can also see whether the charging station is free or in use. The ChargeNow card gives customers access to the BMW i partner charging station and allows them to start the charging process. At the end of the month, customers are sent an overall bill and overview of all charges – as with a mobile phone contract.

ChargeNow already covers a large proportion of Germany's charging network, with new charging stations being incorporated step by step. Across the country, almost 2,000 charging points already belong to the ChargeNow network, rising to nearly 10,000 stations Europe-wide. ChargeNow therefore offers access to around 75 per cent of the overall public charging infrastructure in Europe.

Added to which, BMW i offers ParkNow LongTerm, a product which allows customers to rent a long-term parking space with charging option close to their home or workplace. The expansion of this network is currently being driven via cooperation agreements with car park operators across Europe. In Germany it already covers more than 120 car parks.

### **Assistance services and BMW ConnectedDrive Services under the umbrella of 360° ELECTRIC.**

The 360° ELECTRIC programme also features tailor-made solutions for maintenance and repairs. BMW i-specific mobility services guarantee not only an alternative means of transport for the duration of a workshop visit but also rapid assistance in the event of a breakdown. The BMW i Mobile Care package that comes with the car includes a mobility guarantee for the vehicle or the charging infrastructure which covers everything required to safeguard the unrestricted mobility of a BMW i customer in any situation – from on-site recharging and vehicle recovery to providing a hire car or paying any hotel costs incurred.

360° ELECTRIC also offers a range of other mobility solutions to meet the needs of individual customers should they require extra load-carrying capacity or have changing usage requirements – if they need to swap over to a BMW 5 Series Touring for a weekend trip away with the family, for example, or to a BMW X model for a winter break in the snow. To ensure that this option is comprehensive, convenient and covers all locations, the BMW Group joined forces with Sixt to devise a tailored solution based on the services of Sixt Car Hire. Beyond this, the BMW Financial Services Electrify Program offers

attractive packages that cover financing, leasing, insurance, vehicle-related services and innovative mobility services.

**Precise, up-to-date, reliable: BMW i ConnectedDrive navigation solutions.**

The 360° ELECTRIC line-up also includes navigation services developed specially for BMW i. The navigation system's map view also displays the location of public charging stations, allowing drivers to plan their journeys to incorporate a stop-off to charge the high-voltage battery. This means that additional battery capacity is then available for the remainder of the journey, which can be used either to continue the journey emission-free or to maximise the car's dynamic performance by using the electric motor and combustion engine in tandem.

BMW i8 customers can also call on functions already familiar from the BMW i3, such as intermodal route planning and the BMW i Remote app, which are included as standard. For example, information for mobility planning can be accessed not only inside the car but also on the customer's smartphone.

The BMW i Remote app allows the driver round-the-clock access to vehicle data and information relevant to route planning. The app also shows the driver the location of charging stations – both free and in use – and identifies whether these are within the vehicle's current range. Like the car's navigation system, it displays the car's range map on screen. This intelligent connectivity allows customers to check the status of their BMW i8 when they're not in the car – e.g. when at home, at their workplace or on the way to where the car is parked – and to use the car's electric range as efficiently as possible on upcoming journeys.

**Mobility services from BMW ConnectedDrive: wide variety of functions possible thanks to intelligent connectivity.**

The BMW i8 is equipped as standard with an integrated SIM card. Among other functions, this enables automatic emergency call activation, a safety feature with which BMW played a globally leading role more than 15 years ago. In the event of a collision, Intelligent Emergency Call with automatic vehicle location and accident severity detection sends out information selected to enable rapid and effective assistance at the scene of the accident. The emergency call can also be triggered manually – for example, to summon help as quickly as possible for other road users.

BMW TeleServices also use a telephone connection triggered by the built-in SIM card. This telematics service allows important service-related data about the car to be automatically transmitted to the customer's BMW Service

Partner of choice and also includes a battery monitoring function. The timing of a service and the amount of work required are automatically identified by the vehicle and the driver activates transmission of the relevant data to the BMW Service Partner. The TeleServices can also be used to arrange a service appointment.

Also included as standard are the ConnectedDrive Services that enhance communication and information. For example, Concierge Services lay on a telephone information service for BMW i8 drivers which offers them individual assistance during trips away in particular. The personal connection to a BMW Call Centre gives the caller access to features such as home and business telephone directories. For example, information on tourist sights, opening times for cultural institutions and flight connections, and addresses of restaurants, pharmacies, ATMs and leisure facilities can all be obtained with minimum hassle while on the move. Concierge Services can also take care of hotel reservations. Relevant telephone numbers and addresses for the navigation system can be sent from the BMW Call Centre directly into the car.

Real Time Traffic Information (RTTI) further optimises the route guidance function of the Navigation System Professional. RTTI provides the driver with precise, up-to-date information on the traffic situation in real time and covers motorways, country roads and a large number of city routes. As well as congestion alerts, RTTI also delivers diversion recommendations with precise details on the traffic situation on the suggested alternative route and the time saving expected.

ConnectedDrive Services also include news updates, weather information, address details and in-car email access, plus the transfer of travel routes from PC to car. In addition, these standard ConnectedDrive Services pave the way for unrestricted in-car internet usage via the iDrive control system and for the Online Entertainment function, which offers unrestricted access to more than 24 million music tracks. Internet access and Online Entertainment are both offered as part of attractive flat-rate packages.

Online Entertainment from BMW ConnectedDrive is all about bringing unrestricted premium music enjoyment into the car. This option allows direct access to music services like Napster and rara, which offer users tracks from every conceivable genre, such as rock, pop, soul, classic and jazz, not to mention thousands of audio books. Online Entertainment offers customers an unlimited music flat-rate package with no restriction on how many tracks they select or how much data they use. The first time they use the service they will be asked to input an email address, and a user account will be automatically created. This will open up access to the full music library of the selected

provider for a year, free of charge. Once a track has been selected from the music partner via Online Entertainment – by simply searching according to artists, albums or styles – the download onto the Navigation System Professional's onboard hard disk begins automatically. And customers can access the flat-rate music package they've selected on all other devices supported by the provider, such as smartphones, tablets, TVs, Macs and PCs.

The variety of functions available through ConnectedDrive Services can be further expanded in the BMW i8 through the integration of apps into the car's onboard operating system via the customer's smartphone. The application required to do this is available for both the Apple iPhone and selected smartphones running the Android operating system. Services that can be accessed in the BMW i8 through apps include social media sites like Facebook and Twitter, web radio and other entertainment and communication functions.

### **An all-round solution serving comfort and safety: the Driving Assistant from BMW ConnectedDrive.**

As well as the Navigation System Professional, standard specification for the BMW i8 also includes the cruise control system with braking function and a rain sensor with automatic headlight activation. Among the features available as an option is the Driving Assistant, a package of BMW ConnectedDrive driver assistance systems including the High Beam Assistant, a rear view camera, Surround View, Speed Limit Info with No Passing Info display, Collision Warning, the Pedestrian Warning Assistant with City Braking Function, and Park Distance Control (PDC) with sensors at the front and rear of the car.

High Beam Assistant also helps to optimise visibility during the hours of darkness by assisting the driver in making maximum possible use of the high-beam headlights. The system uses a camera positioned on the windscreen near the rear view mirror to detect oncoming traffic and vehicles travelling ahead to ensure the headlights dip in good time.

Meanwhile, the BMW i8 adds a rear view camera and the Surround View system to PDC to ensure safe and comfortable manoeuvring. In addition to the rear view camera, the Surround View system also uses two cameras in the exterior mirrors and a camera in the front of the car to go about its work. The data it collects is processed by a central computer which generates an overall view of the car and the area around it. This is then shown in the Control Display from a bird's-eye perspective. The additional Side View system with object recognition uses the camera mounted in the front of the

car to ensure that cross-traffic is spotted early – for example, when pulling out from tight gateways – and the driver is warned of the danger.

The Speed Limit Info system displays speed and passing restrictions on the car's current route. It also sources the information it requires from the windscreen-mounted camera and checks it against the data from the navigation system. The camera identifies traffic signs at the edge of the road and overhead signs on motorways.

Safety in city traffic is further enhanced by the likewise camera-based Collision Warning and Pedestrian Warning Assistant with City Braking Function. This system can be used at speeds of up to 60 km/h (37 mph) and initially generates a visual warning in the instrument cluster if there is a danger of collision. If this is not heeded, an urgent warning then prompts the driver to intervene with a flashing version of the symbol and an audible signal. At the same time, the brakes are applied. The system is also able to brake the vehicle automatically if required, with up to maximum stopping power. Collision Warning detects an insufficient distance to vehicles travelling ahead, even at higher speeds. As well as triggering visual and acoustic warnings, this system primes the brakes in potentially dangerous situations to help the driver achieve the shortest possible stopping distance if he or she has to intervene.

The BMW i8 also offers the driver the services of the BMW Head-Up Display, which projects important driving data onto the windscreen. Information including the car's speed, navigation prompts, status alerts from the driver assistance systems, Check Control messages, speed limits and overtaking restrictions, plus telephone and entertainment lists can all be displayed in the driver's direct field of vision. The full spectrum of colours is used to display the graphics and the height of the projection can be adjusted by each driver, as required. As a result, all the information shown by the Head-Up Display can be absorbed comfortably and while maintaining maximum concentration on the road ahead.

### **Bespoke solutions for sales and service.**

Sales of BMW i products and services will be handled via an innovative multi-channel sales model that will be implemented in different ways in different markets. In addition to the established "stationary" sales channel, i.e. authorised dealerships, this model will also comprise a Customer Interaction Centre (CIC), internet sales and a mobile sales team. All the new sales channels will be fully interlinked, ensuring that throughout the buying process customers can select – or switch – sales channels to suit their preferences. The

CIC offers customers personalised, specialised support. This includes a full range of information on mobility services and sustainability.

Of course, the traditional sales channel in the form of independent authorised BMW i dealers will continue to play an important role in vehicle sales. Not all BMW dealers will also handle sales of BMW i models. Bearing in mind the target groups and the general characteristics of the product, the plan is to concentrate on areas with the highest demand, i.e. major urban areas, where specially appointed BMW i dealers will handle sales. At launch, it is expected that more than 10 per cent of European BMW dealers will also be handling sales of BMW i models.

The sales concept for BMW i cars includes bespoke finance and leasing solutions which are geared to individual customer requirements and therefore take into account the most varied service life durations and mileages. Added to which, the financial services will be offered as a package with an extensive selection of additional products tailored to the particular requirements of BMW i customers. These owners will be able to choose from various options and put together a complete package to meet their needs.

## 6. Exclusive details for an extraordinary car: Equipment.



The BMW i8 is not only the most progressive sports car of its time, but also a stand-out member of the premium segment. Like the driving experience, design, material and build quality of the second BMW i model, and the impressive functionality of its every detail, the equipment on board the i8 is also geared to the needs and expectations of extremely demanding target groups. The exclusive style and groundbreaking premium characteristics of the BMW i8 shine through in the design of the interior and its controls, in the list of comfort-enhancing options and in the bespoke range of features available for the personalisation of customers' cars.

Standard equipment for the BMW i8 includes LED headlights, Dynamic Damper Control, the cruise control system with braking function, the Navigation System Professional and a hands-free facility for the customer's telephone. The leather combination and a model-specific sports leather steering wheel with multifunction buttons come as standard in the BMW i8, as does an electromechanical parking brake operated using a toggle switch on the centre console. Likewise fitted as standard are the automatic climate control system with extended features (including separate temperature controls for the driver and front passenger), automatic air recirculation control, and a fogging and solar sensor. An electric heating system with an output of up to 6 kW brings the required warmth to the interior.

### **Exclusive Pure Impulse package: individuality taken to the highest level.**

The exclusive Pure Impulse package will be available from the launch of the BMW i8. This option combines an extremely broad spread of equipment items enhancing the comfort, driving experience, safety, functionality and communications capability of the i8 with a number of exclusive features. Indeed, the exclusive Pure Impulse package offers customers the chance to experience the advanced technology and individual character of the BMW i8 at the highest possible level. It includes 20-inch light-alloy wheels, LED headlights with extended features, and a larger fuel tank. The BMW Head-Up Display and Driving Assistant systems likewise contribute to the ultra-intense driving experience. The range of equipment is rounded off by a light package, a storage package, an alarm system, the Harman Kardon Hi-Fi loudspeaker system, electrically adjustable seats for the driver and front passenger, and convenience telephony with extended smartphone connectivity. Exclusive

touches for both the exterior and interior include brake callipers in high-gloss black with an accent in BMW i Blue and BMW i lettering, a leather-trimmed engine cover, floor mats with stitched borders in BMW i Blue and leather piping, door sill strips with laser-engraved model lettering, bespoke full leather trim in Carum Grey with “i8” lettering embossed in the head restraints and a ceramic application for the gearshift lever.

Drivers of a BMW i8 with the exclusive Pure Impulse package can, moreover, sign up for an innovative lifestyle and event programme. The BMW i Pure Impulse Card grants them access to extraordinary leisure, travel and pleasure-oriented experiences and events which have been carefully tailored to the innovative and sustainable character of BMW i.

**Model-specific options that enhance comfort and safety.**

The navigation data for the standard-fitted Navigation System Professional is kept on an integrated onboard storage system. Offering 20 GB of capacity, this can also accommodate the owner’s personal music collection, for example. With its seven-channel amplifier and six loudspeakers, the Radio Professional (included as standard) produces an outstanding audio experience. Other entertainment sources can be plugged into the AUX-In or USB socket. The options list also includes a Harman Kardon Hi-Fi system with 280-watt, six-channel amplifier and 11 loudspeakers.

Among the other options available for the BMW i8 are Comfort Access and an alarm system. The optional light package allows the driver to select from three different ambient lighting colours for the interior of the BMW i8. The light sources for the dashboard, centre console, door trim and footwells use white, blue and orange hues to generate the desired atmospheric effect.

**Tailor-made by Louis Vuitton: carbon luggage collection.**

The luggage set custom-designed by tradition-steeped label Louis Vuitton for the BMW i8 plug-in hybrid sports car is the ideal prerequisite for a travel experience that is in equal measure exclusive and stylish. This innovative luggage collection comprises two travel bags, a business case and a garment bag. To ensure optimal use of space, the luggage items have been tailor-made to fit perfectly into the interior of the revolutionary BMW i8.

The colour design and choice of material for the luggage likewise take their cue from the unique appearance of the BMW i8: like the sports car’s innovative passenger cell, the bags and case are made entirely from carbon fibre. Louis Vuitton used this particularly lightweight yet at the same time extremely stable high-tech material to create a special textile known for its extreme resistance to shocks, tears and abrasions, and thus ideal for

withstanding the rigours of travel. The exclusive carbon black of the luggage set matches the colours of the BMW i8. Adding an unmistakable touch of sophistication are the hallmark Louis Vuitton chequered Damier pattern and a laser-etched Louis Vuitton signature. The colours black and electric blue used in the microfibre lining cite the trademark brand colours of the BMW i8.

## 7. Technical specifications. BMW i8.

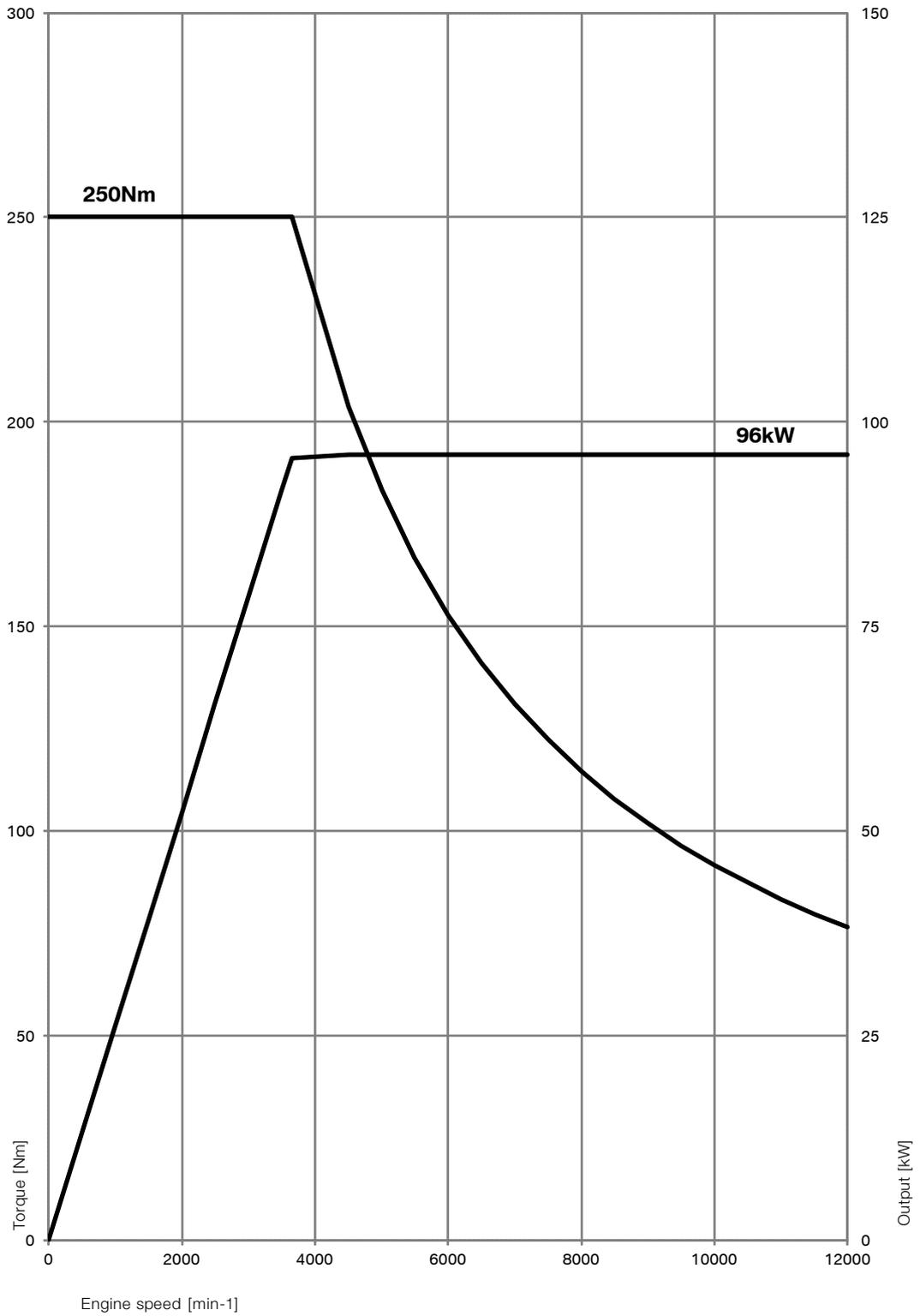


<b>BMW i8</b>		
<b>Body</b>		
Construction		CFRP passenger cell, aluminium chassis
No. of doors/seats		2 / 4
Length/width/height (unladen)	mm	4689 / 1942 / 1293
Wheelbase	mm	2800
Track front / rear	mm	1644 / 1721
Ground clearance	mm	117
Turning circle	m	12.3
Axle load distribution (unladen) front / rear	% / %	49 / 51
Height of centre of gravity	mm	< 460
Kerb weight (DIN / EU)	kg	1485 / 1560
Max. load (DIN)	kg	370
Luggage compartment	ltr	154
Air resistance $C_d \times A$	- / m <sup>2</sup>	0.26 x 2.15
<b>Drive system</b>		
Drive concept		Hybrid-specific all-wheel drive, combustion engine driving the rear wheels, electric motor driving the front wheels
System output	kW / hp	266 / 362
<b>Combustion engine</b>		
		BMW TwinPower Turbo: High Precision Direct Petrol Injection, VALVETRONIC fully variable valve control and supercharging
Config. / no. of cyls / valves		In-line / 3 / 4
Effective capacity	cm <sup>3</sup>	1499
Stroke / bore	mm / mm	94.5 / 82.0
Compression ratio	:1	9.5
Fuel grade		min. RON 91 data for rated output and fuel consumption are based on RON 98
Output	kW / hp at rpm	170 / 231 at 5800
Torque	Nm at rpm	320 at 3700
Tank capacity	ltr	30, optional 42
<b>Electric motor</b>		
		BMW eDrive technology: hybrid synchronous motor with power electronics, integrated charging module and generator mode for recuperation
Max. output	kW / hp at rpm	96 / 131 at 4800
Rated output	kW / hp at rpm	75 / 102 at 4800
Torque	Nm at rpm	250 at 0
<b>Recuperation output</b>	kW	60
<b>High-voltage battery</b>		
Storage technology		Lithium-ion
Voltage	V	355
Capacity gross / net	kWh	7.1 / 5.2
Charging time for 80% charge		< 2h at 3.7kW (16A/230V)
<b>Driving dynamics</b>		
Steering / ratio	- / :1	Electric rack-and-pinion steering (EPS) / 16.0
Front axle		Aluminium double track control arm with anti-dive, separate lower level with wishbone and tie rod
Rear axle		Aluminium five-arm geometry, directly connected
<b>BMW i8</b>		

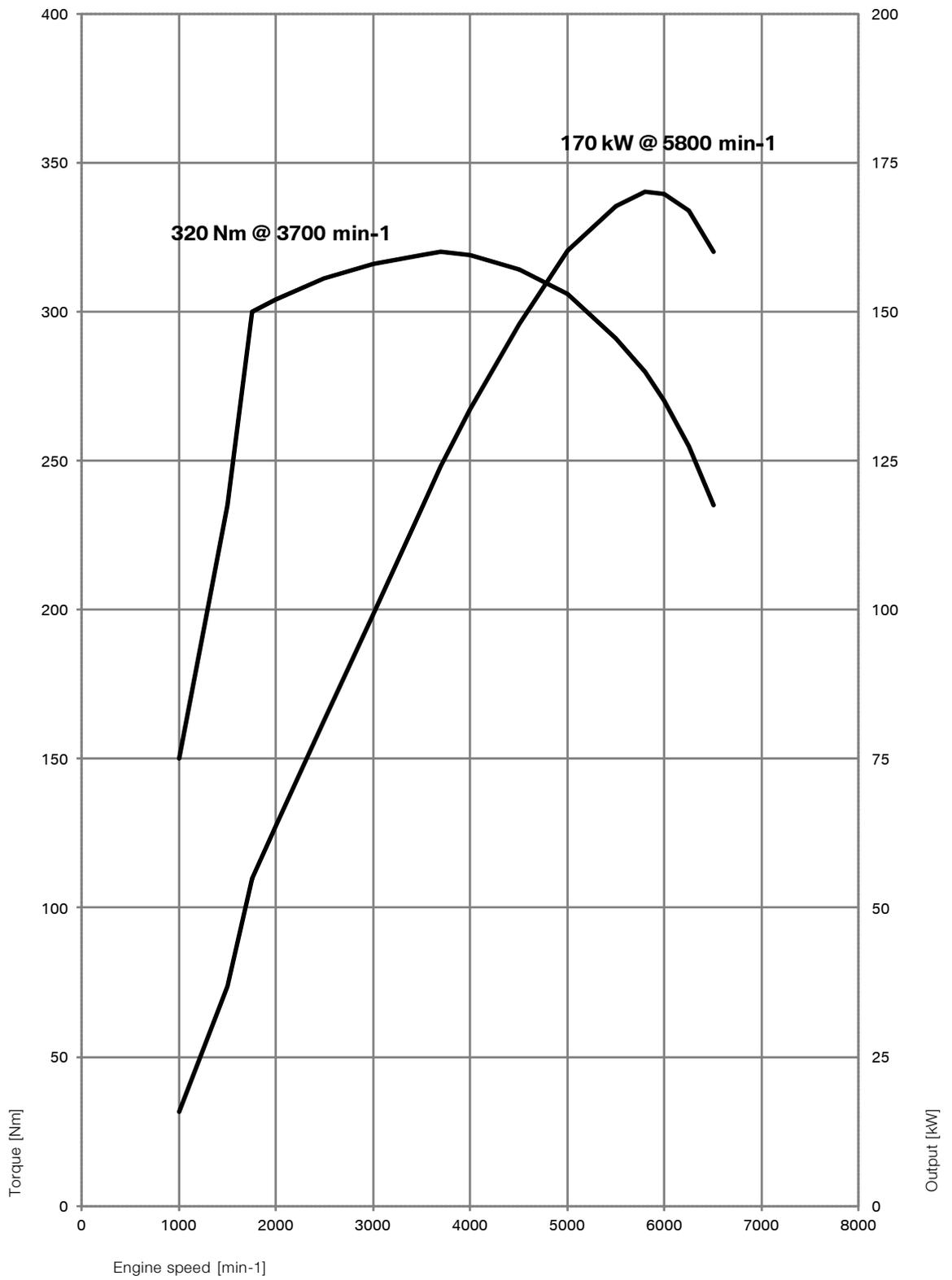
Tyres front / rear		195/50 R20 215/45 R20
Rims front / rear		7J x 20 forged aluminium 7.5J x 20 forged aluminium
Front brakes		4-piston fixed calliper, disc 340mm x 29.2mm, inner-vented
Rear brakes		1-piston floating calliper, disc 340mm x 19.2mm, inner-vented
Driving stability systems		DSC, CBC, DBC, ADB-x, FAV, DTC
<b>Transmission</b>		
for combustion engine (ratios)		6-speed automatic transmission (4.459, 2.508, 1.556, 1.142, 0.851, 0.672)
for electric motor (ratios)	:1	2-speed automatic transmission (11.3, 5.85)
<b>Performance</b>		
Power-to-weight ratio (DIN, unladen)	kg/kW	5.6
Specific output (combustion engine)	kW/ltr	113.3
Acceleration 0 - 100 km/h	s	4.4
80 - 120 km/h	s	2.6
0 - 1000 m	s	22.8
Top speed	km/h	250 (electronically limited)
Top speed electric	km/h	120
EU cycle combined range	km	440 (600 with optional 42-litre tank)
EU cycle electric range	km	37
<b>Consumption / emissions in EC cycle</b>		
Fuel consumption	ltr/100 km	2.1
CO <sub>2</sub> emissions from fuel	g/km	49
Electric power (in addition to fuel consumption)	kWh/100 km	11.9
Emission rating		EU6

All data apply to European ACEA markets. They may vary for other countries.

## 8. Output and torque diagram.



Electric motor



Combustion engine

## 9. Exterior and interior dimensions.

