

BMW eDrive technology. At a glance.



The innovative BMW eDrive technology in the new BMW 225xe and new BMW 330e once again underlines BMW's leading role in the premium segment when it comes to powertrain electrification. BMW eDrive technology includes a number of cutting-edge plug-in hybrid components and makes a significant contribution to reducing fuel consumption and emissions. BMW eDrive is one of the most cutting-edge elements of the groundbreaking BMW EfficientDynamics suite of technology.

Locally emission-free driving.

BMW eDrive is the new drive system technology used in all the electrically powered vehicles from BMW i and the plug-in hybrid models from BMW. As well as outstanding efficiency and seamless everyday practicality, BMW eDrive also delivers the highest standards in driving dynamics and quality, in keeping with BMW tradition. Alongside BMW TwinPower Turbo technology for combustion engines, intelligent lightweight design and optimised aerodynamics, BMW eDrive technology is therefore one of the most important elements in the EfficientDynamics strategy designed to increase power and further reduce fuel consumption and CO₂ emissions. In addition, BMW eDrive offers the option of driving on electric power alone and therefore with zero local emissions – yet at the same time reveals the ability to cover long distances when the two drive systems team up.

Moreover, BMW eDrive technology ensures extremely dynamic acceleration off the line thanks to the instantaneous responses of the electric motor, which generates its remarkable torque from the word go. Plus, the eBoost function, which pools the torque of both drive systems under acceleration, serves up BMW's signature driving pleasure, whatever the conditions.

Designed for different vehicle concepts.

The most important components of BMW eDrive technology are the synchronous electric motor (including the power electronics developed by BMW), the lithium-ion high-voltage battery and intelligent energy management. The latter ensures the electric motor and combustion engine in plug-in hybrid models work together as effectively as possible according to the situation at hand.

Developed initially for the all-electric BMW i3 and BMW i8 plug-in hybrid sports car – which duly led the way in electric mobility in the premium sector – the modular structure of BMW eDrive technology sets it up perfectly for use in various vehicle concepts and segments. BMW uses its plentiful technical experience and customer feedback in the development of the latest BMW eDrive models. The fine-tuning of vehicle-specific elements, such as the battery cells, cooling management, power electronics and operating strategy, has involved the transfer of knowledge from the BMW i3 and BMW i8 to the development of new BMW eDrive models. Here, all components are adapted precisely to the vehicle at hand and optimised in terms of performance, efficiency, safety and durability. Moreover, BMW eDrive technology enables the electrified xDrive concept first featured in the BMW i8 to be executed with great efficiency.

BMW eDrive: familiar BMW character, flexible usage options.

BMW eDrive technology essentially spans the electric motor, the lithium-ion high-voltage battery and the power electronics. Based on a shared eBoost strategy, all BMW plug-in hybrid models offer supreme power delivery by bringing together their two drive systems, and elevate the responsiveness of BMW TwinPower Turbo technology to another new level. BMW eDrive makes all-electric driving in urban areas and over cross-country routes a marketable proposition. An important element of the operating strategy is the need-oriented use of externally sourced and recuperated electric energy to maximise the vehicle's efficiency. The components of the BMW eDrive architecture are tailored to each particular vehicle concept and can be combined with four- and three-cylinder petrol engines as well as with classical rear-wheel drive, BMW xDrive or electrified all-wheel drive.

The eDrive components developed as part of the BMW i projects will soon be integrated into other model ranges from the core brands. This scalable architecture also provides the platform required to offer plug-in hybrid vehicles at attractive prices on a par with those of conventionally powered variants of similar output. This means customers who opt for this advanced drive concept encounter not only the environmental benefits of electric mobility, but also economic plus-points.

Plug-in hybrid: energy management at its most intelligent.

In plug-in hybrid vehicles, intelligent energy management ensures the combustion engine and electric motor work together to maximum effect in all driving situations. Their operating strategy is based on the vehicle starting up on electric power only. BMW's plug-in hybrid vehicles prioritise electric mode at low and moderate speeds, which allows them to exploit the benefits of the locally emission-free electric drive system. Under greater acceleration and at

higher speeds, however, the combustion engine also joins the action. The boost function pools the torque of both drive systems to maximise the car's dynamic performance and lend it remarkable poise and assurance. BMW eDrive ensures that the combustion engine runs efficiently (electric assist) at higher speeds as well. This allows a reduction in fuel consumption on brisk cross-country or motorway runs, for example. And when the route guidance function of the car's navigation system is activated, the proactive function initiates an anticipatory operating strategy which optimises efficiency and maximises the electric driving experience.

Like the BMW i8, the BMW X5 xDrive40e, BMW 330e and BMW 740e can all – at the touch of a button in MAX eDRIVE mode – run on purely electric power up to 120 km/h (75 mph), the BMW 225xe up to 125 km/h (78 mph). Here, the combustion engine only comes into play when the accelerator's kickdown threshold is passed. In SAVE BATTERY mode the battery's charge can be maintained to enable electric driving later on in the journey. If the charge level drops below 50 per cent, the battery is replenished. If the selector lever is moved into the S gate, the combustion engine starts up regardless of the mode engaged, ensuring sustained availability of the combined maximum output of the two drive systems. In addition, the battery's charge is raised to 80 per cent.

With the addition of the BMW eDrive functions, the ECO PRO, COMFORT and SPORT driving experience modes are now even more clearly defined than on conventional vehicles.

Fast and convenient battery charging.

The high-voltage batteries of the new BMW plug-in hybrid models can be charged extremely easily, conveniently and quickly – both at home and while on the move – using BMW 360° ELECTRIC solutions. The battery can be powered up again from a domestic socket using the standard charging cable supplied or from a BMW i Wallbox (charging power: 3.7 kW). When it comes to topping up the battery during a journey, the BMW i mobility service, ChargeNow, gives customers access to the world's largest public charging network of over 30,000 charging points run by partners in 22 countries.

Higher performance, lower fuel consumption.

The new BMW plug-in hybrid models with eDrive technology – such as the new BMW X5 xDrive40e, the BMW 225xe and BMW 330e currently making their debuts, and the BMW 740e due for launch in the near future – are once again setting the benchmark in the various corners of the premium segment when it comes to reducing fuel consumption, and will also meet the stipulations of international legislation in the future regarding CO₂ emissions.

Moreover, their all-electric and therefore locally emission-free driving mode will also allow them to drive into city centre zones where entry is regulated. And yet the BMW plug-in hybrid models also deliver the hallmark BMW attributes of dynamic excellence, sporting ability and driving pleasure while offering the best performance in their respective segments.

The new BMW 225xe.

Specifications.



BMW 225xe		
Body		
No of doors/seats		5/5
Length/width/height (unladen)	mm	4342/1800/1556
Wheelbase	mm	2670
Track, front/rear	mm	1557/1558
Ground clearance	mm	167
Turning circle	m	11.3
Fuel Tank capacity	app ltr	36
Engine oil ¹⁾	ltr	4.25
Weight, unladen, to DIN/EU	kg	1660/1735
Max load to DIN	kg	515
Max permissible	kg	2180
Max axle load, front/rear	kg	1080/1160
Max trailer load (12%), braked/unbraked	kg	-/-
Max roofload/max towbar download	kg	75/-
Luggage comp capacity	ltr	400–1350
Air resistance	Cd x A	0.29 x 2.40
Drive System		
Drive concept	Full hybrid drive, torque vectoring to all four wheels from one or both units via electrified xDrive	
System output	kW/hp	165/224
Combustion Engine		
Config/No of cyls/valves	In-line/3/4	
Engine technology	BMW TwinPower Turbo technology: turbocharger, High Precision Injection, fully variable valve control VALVETRONIC, variable camshaft control Double- VANOS	
Capacity, effective	cc	1499
Stroke/bore	mm	94.6/82.0
Compression ratio	:1	11.0
Fuel	min. RON 91	
Max output	kW/hp	100/136
at	rpm	4400
Max torque	Nm/lb-ft	220/162
at	rpm	1250–4300
Electric Motor		
Motor technology	BMW eDrive technology: synchronous electric motor, generator function for energy recuperation for the high-voltage battery	
Max output ³⁾	kW/hp	65/88
at	rpm	4000
Max torque	Nm/lb-ft	165/122
at	rpm	0–3000
High-voltage Battery		
Storage technology/installation	Lithium-ion/underfloor, underneath rear seat	
Voltage	V	293
Capacity (gross)	kWh	7.7
Charging time for 100% charge	2.2 h at 3.7 kW (16 A/230 V)	

BMW 225xe			
Driving Dynamics and Safety			
Suspension, front		Single-joint spring strut axle in lightweight aluminium-steel construction	
Suspension, rear		Multi-arm axle in lightweight steel construction	
Brakes, front		Single-piston floating-calliper disc brakes / vented	
Brakes, rear		Single-piston floating-calliper disc brakes / vented	
Driving stability systems		Standard: DSC incl. ABS and DTC (Dynamic Traction Control), CBC (Cornering Brake Control), DBC (Dynamic Brake Control), Dry Braking function, Fading Compensation, Start-Off Assistant, Performance Control	
Safety equipment		Standard: airbags for driver and front passenger, side airbags for driver and front passenger, head airbags for front and rear seats, three-point inertia-reel seatbelts on all seats with belt latch tensioner and belt force limiter at the front	
Steering		Electric Power Steering (EPS); Servotronic	
Steering transmission, overall		:1	16.0
Tyres, front/rear		205/55 R17 91W	
Rims, front/rear		7.5J x 17 Light Alloy	
Transmission			
Type of transmission		6-speed Steptronic	
Gear ratios		I	:1 4.459
		II	:1 2.508
		III	:1 1.556
		IV	:1 1.142
		V	:1 0.851
		VI	:1 0.672
		R	:1 3.185
Final drive		:1	3.944
Performance			
Power-to-weight ratio		kg/kW	10.1
Specific output combustion engine		kW/ltr	66.7
Acceleration 0–100 km/h		sec	6.7
Top speed		km/h	202
Top speed electric		km/h	125
EU cycle electric range		km	up to 41
BMW EfficientDynamics			
BMW EfficientDynamics standard features		BMW eDrive technology, Brake Energy Regeneration with recuperation display, electromechanical power steering, hybrid-specific Automatic Start/Stop function, ECO PRO mode, intelligent lightweight construction, on-demand operation of ancillary units, electric climate compressor, map-regulated oil pump, air compressor disconnectable, tyres with reduced rolling resistance	
Fuel Consumption ECE ²⁾			
Cycle Standard Wheels:			
Combined		ltr/100 km	2.1–2.0
CO ₂ emissions from fuel		g/km	49–46
Power consumption combined		kWh/100 km	11.9–11.8
Emission rating		EU6	

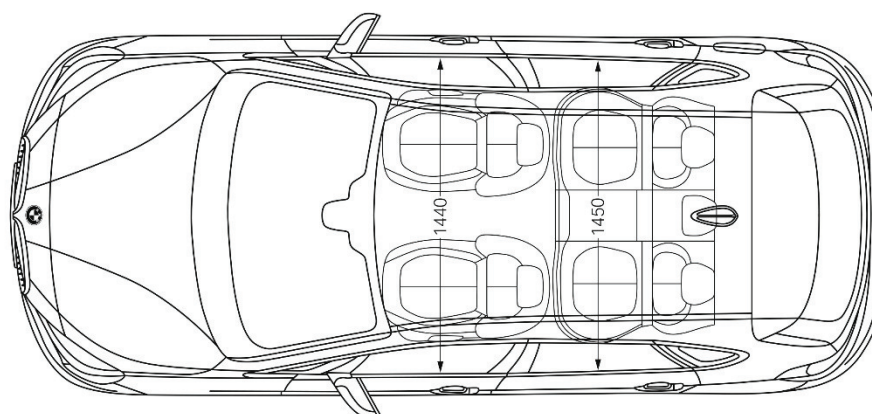
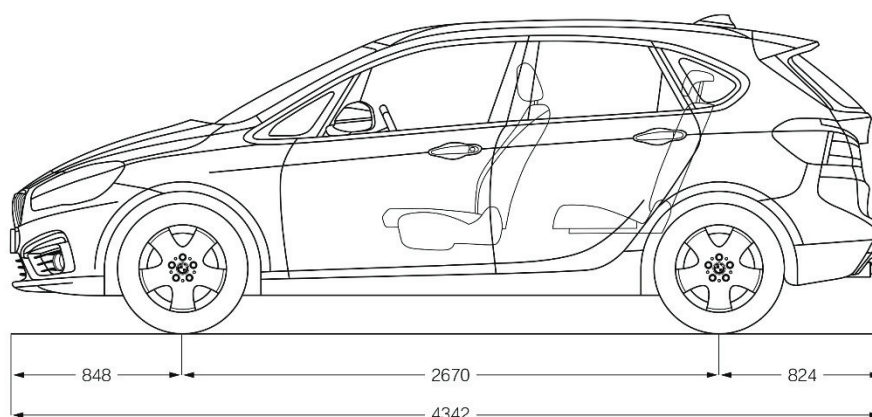
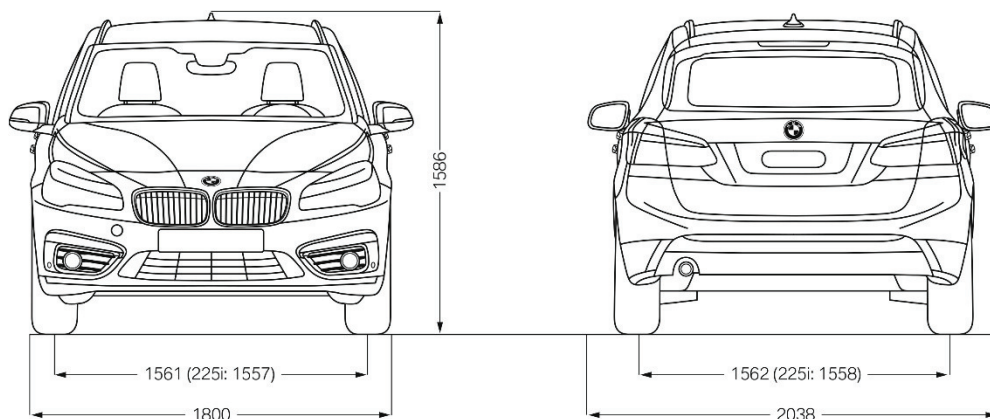
Specifications apply to ACEA markets/data relevant to homologation apply in part only to Germany (weight)

¹⁾ Oil change

²⁾ Fuel consumption and CO₂ emissions depend on the selected tyre format

³⁾ According to ECE R-85

The new BMW 225xe. Exterior and interior dimensions.



The new BMW 330e. Specifications.



BMW 330e Sedan		
Body		
No of doors/seats		4/5
Length/width/height (unladen)	mm	4633/1811/1429
Wheelbase	mm	2810
Track, front/rear	mm	1543/1583
Ground clearance	mm	140
Turning circle	m	11.3
Fuel Tank capacity	app ltr	41
Engine oil ¹⁾	ltr	5.25
Weight, unladen, to DIN/EU	kg	1660/1735
Max load to DIN	kg	535
Max permissible	kg	2195
Max axle load, front/rear	kg	1000/1260
Max trailer load (12%), braked/unbraked	kg	--/--
Max roofload/max towbar downl	kg	75/--
Luggage comp capacity	ltr	370
Air resistance	Cd x A	0.27 x 2.20
Drive System		
Drive concept		Full hybrid drive, permanent excited synchronous machine
System output	kW/hp	185/252
Combustion Engine		
Config/No of cyls/valves		In-line/4/4
Engine technology		BMW TwinPower Turbo technology: TwinScroll turbocharger, High Precision Injection, fully variable valve control VALVETRONIC, variable camshaft control Double-VANOS
Capacity, effective	cc	1998
Stroke/bore	mm	94.6/82.0
Compression ratio	:1	11.0
Fuel		min. RON 91
Max output	kW/hp	135/184
at	rpm	5000–6500
Max torque	Nm/lb-ft	290/214
at	rpm	1350–4250
Electric Motor		
Motor technology		BMW eDrive technology: synchronous electric motor integrated in 8-speed Steptronic, generator function for energy recuperation for the high-voltage battery
Max output ³⁾	kW/hp	65/88
at	rpm	2500
Max torque	Nm/lb-ft	250
at	rpm	0–2500
High-voltage Battery		
Storage technology/installation		Lithium-ion/underfloor, under boot floor
Voltage	V	293
Capacity (gross)	kWh	7.6
Charging time for 80% charge		1.6 h at 3.7 kW (16 A/230 V)

BMW 330e Sedan			
Driving Dynamics and Safety			
Suspension, front		Aluminium double-joint spring strut axle with displaced camber	
Suspension, rear		Five-link axle in lightweight construction	
Brakes, front		Single-piston floating-calliper disc brakes / vented	
Brakes, rear		Single-piston floating-calliper disc brakes / vented	
Driving stability systems		Standard: DSC incl. ABS and DTC (Dynamic Traction Control), CBC (Cornering Brake Control), DBC (Dynamic Brake Control), Dry Braking function, Fading Compensation, Start-Off Assistant	
Safety equipment		Standard: airbags for driver and front passenger, side airbags for driver and front passenger, head airbags for front and rear seats, three-point inertia-ree seatbelts on all seats with belt latch tensioner and belt force limiter at the front seats, crash sensors, tyre defect indicator	
Steering		Electric Power Steering (EPS); Servotronic optional: Variable Sport Steering	
Steering transmission, overall		:1	15.0
Tyres, front/rear		205/60 R16 92W	
Rims, front/rear		7.0J x 16 LM Light Alloy	
Transmission			
Type of transmission		8-speed Steptronic	
Gear ratios		I	:1 4.714
		II	:1 3.143
		III	:1 2.106
		IV	:1 1.667
		V	:1 1.285
		VI	:1 1.000
		VII	:1 0.839
		VII	:1 0.667
		R	:1 3.317
Final drive		:1	2.829
Performance			
Power-to-weight ratio		kg/kW	9.0
Acceleration 0–100 km/h		sec	6.1
Top speed		km/h	225
Top speed electric		km/h	120
EU cycle electric range		km	37–40
BMW EfficientDynamics			
BMW EfficientDynamics standard features		BMW eDrive technology, Brake Energy Regeneration with recuperation display, electromechanical power steering, hybrid-specific Automatic Start/Stop function, ECO PRO mode, intelligent lightweight construction, on demand operation of ancillary units, map-regulated oil pump, electric air compressor , differential with optimized-warm-up behaviour, tyres with reduced rolling resistance	
Fuel Consumption ECE ²⁾			
Cycle Standard Wheels:			
Combined		ltr/100 km	2.1–1.9
CO ₂ emissions from fuel		g/km	49–44
Power consumption combined		kWh/100 km	11.9–11.0
Emission rating		EU6	

Specifications apply to ACEA markets/data relevant to homologation apply in part only to Germany (weight)

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²⁾ Fuel consumption and CO₂ emissions depend on the selected tyre format

³⁾ According to ECE R-85

The new BMW 330e.

Exterior and interior dimensions.

