



## **Sledgehammer Time: The New BMW M5**

The fastest, most powerful M car yet

- Fifth generation of the world's most successful performance sedan
- Most powerful series production engine ever in a BMW M car
- New high-revving turbo-charged V8 engine - power up by 10 per cent, torque up by 30 per cent yet fuel consumption down by 30 per cent
- Seven-speed M double-clutch transmission with Drivelogic featuring new Low Speed Assistance
- New Active M differential for track-car dynamics and supreme touring comfort
- Two M Drive buttons for alternate, pre-defined handling characteristics

For more than 25 years the BMW M5 Sedan has defined the high-performance Sedan segment, in the process becoming the most successful car of its type in the world. Now a new fifth-generation model raises the concept of the premium executive Sedan combining track-car dynamics and supreme touring comfort to an even higher level.

The M5 features the most potent engine ever developed for a BMW production car together with race-bred chassis technology that includes, for the first time, an Active M differential.

Based on BMW's highly successful 5 Series Sedan, the exterior design of the M5 follows the technical requirements of the car, while the interior offers an extensive range of innovative driver assistance systems and premium comfort features.

The new M5 Sedan will be available in Australia from February 2012, priced from \$230,000 (Incl. GST & LCT)

<b>Engine</b>	M TwinPower Turbo V8
<b>Power</b>	412 kW
<b>Torque</b>	680 Nm @ 1500-5750 rpm
<b>Transmission</b>	7-speed M Double clutch transmission with Drivelogic
<b>Acceleration 0-100</b>	4.3s
<b>Top Speed</b>	250 km/h - (electronically limited)
<b>Fuel Consumption (EU)</b>	9.9l/100km's
<b>CO<sup>2</sup> emissions</b>	232 g/km



**Drivetrain:** The heart of any BMW M car is its engine, and never more so than with the new M5. For the first time an M5 features a turbocharged power unit – a high-revving 4.4-litre (4,395cc) V8, here making its world premiere. Developing 412 kW from 6,000-7,000rpm, it is the most potent series-production engine ever to emerge from BMW's high-performance M division. Incorporating the company's M TwinPower Turbo technology consisting of two twin-scroll turbochargers, high-precision direct fuel injection, VALVETRONIC variable valve control and a cross-bank exhaust manifold, it guarantees legendary BMW M-car thrust with seamless lag-free delivery from little more than tickover speed thanks to 680Nm of torque from only 1,500rpm.

Compared with the previous V10-engined M5, maximum power is up by around 10 per cent and peak torque has increased by more than 30 per cent. As a result, the latest M5 can accelerate from 0-100 km/h in just 4.3 seconds. The electronically limited top speed is 250 km/h.

The two cylinder banks of the V8 engine are arranged at 90 degrees, leaving space to accommodate the two turbochargers and catalytic converters in the V-section. This ensures that the engine is not only extremely compact, but that the catalytic converters reach operating temperature more quickly to boost efficiency, while the short length of the unique intake and exhaust ducts minimises pressure losses. BMW's patented cross-bank exhaust manifold optimises gas flow to the twin-scroll turbochargers, which have been specially developed for the M5 Sedan to deliver a maximum charge pressure of 1.5 bar.

Solenoid fuel injectors positioned centrally between the valves, within immediate range of the spark plugs, deliver multiple sprays of fuel directly into the cylinders at a maximum pressure of 200 bar. The cooling effect of direct injection allows an extraordinarily high compression ratio of 10:1, a further aid to efficiency. VALVETRONIC fully variable valve control adjusts the lift of the intake valves to minimise throttle losses in the gas cycle, while Double-VANOS fully variable camshaft control helps the engine achieve its outstanding level of torque at low rpm.



**Transmission:** Power transfer to the wheels is via BMW's seven-speed M Double Clutch Transmission with Drivelogic, featuring traction-optimised automatic gear selection and a Launch Control function for optimum acceleration from a standing start. The M Double Clutch Transmission ensures seamless, linear acceleration while Paddleshifters mounted on the M leather steering wheel enhance the racecar experience.

The transmission offers manual (S) and fully automated (D) shift options, with three programmes in each, allowing the driver to select the most sporty, relaxed or efficient driving style via a rocker switch. There is also a low speed assistance function to keep the car moving smoothly through heavy traffic with only a light touch on the accelerator. At the same time the engine characteristics can be switched from Efficient to Sport or Sport Plus through another button in the centre console.

**EfficientDynamics:** In any BMW, performance goes hand-in-hand with efficiency, and the new M5 Sedan is no exception. With BMW's seven-speed M Double Clutch Transmission with Drivelogic and Efficient Dynamics technology, including engine Auto Start-Stop and Brake Energy Regeneration, the M5's fuel consumption has been reduced by more than 30 per cent to 9.9 l/100 km (EU), while CO<sub>2</sub> emissions are reduced to 232g/km.

**Chassis:** The driving dynamics of the new M5 Sedan see a further advancement of the specially developed differential that allows M drivers to enjoy the benefits of high-powered rear-wheel-drive cars with maximum safety. Called Active M, it is an electronically controlled multi-plate limited slip differential that intervenes rapidly and precisely at an early stage to control wheel-spin and keep the car stable. Its control unit is connected via FlexRay high-speed data transfer to the Dynamic Stability Control (DSC) system to calculate the locking force needed – anywhere between 0 per cent and 100 per cent. It also takes into account the position of the accelerator, the rotational speed of the wheels and the car's yaw rate.

As a result, the BMW M5 Sedan driver not only has the safety net of a sophisticated and responsive traction control system in slippery conditions and tightening corners, but is also able to enjoy the agility which is an essential part of the make-up of all M cars.



The DSC system is linked to the anti-lock brakes (ABS), Cornering Brake Control (CBC), Dynamic Brake Control (DBC), Brake Assistant, Brake Fade Compensation, Brake Drying function and Start-off Assistant. By pressing the DSC button the driver can override the basic settings and select M Dynamic Mode (MDM), which raises the intervention thresholds. “DSC Off” mode can also be activated at the press of a button.

The new M5 Sedan’s agility owes as much to its near perfect front-to-rear weight balance and excellent power-to-weight ratio (4.5kg per kW) as it does to the chassis dynamics which, like the engine, have benefited from BMW’s participation in top-level motorsport.

The M5 Sedan has bespoke M-specific suspension with specially developed axle kinematics honed not only on the race track but also through extensive testing at the Nürburgring. As a result, the chassis components are both light and strong. The new M5 comes as standard with electronically controlled dampers that allow drivers to select from three settings – Comfort for normal road use, Sport when a more dynamic driving style is preferred and Sport Plus for the most extreme driving, such as on a race track.

The hydraulic rack-and-pinion steering with variable ratio is another M-specific feature, combining precise directional stability with a need for less steering effort when manoeuvring. The M Servotronic system has also been specially configured and allows the driver to adapt the characteristics of the speed-sensitive power assistance to individual tastes and requirements via three settings (Comfort, Sport and Sport Plus).

The new M5 has six-piston calliper brakes featuring a further development of BMW’s compound construction so that they resist fade even under repeated heavy loads and deliver an exceptional degree of feel. They are mounted within the standard forged 20-inch M Double Spoke alloys with 265/35 R20 tyres at the front and 295/30 R20 tyres at the rear.

**M Drive:** For the first time, the BMW M5 features two individually configured set-ups for the car which can be called up using the new M Drive buttons on the steering wheel. Six individual parameters covering engine management, M Servotronic steering response, Drivelogic shift programme, DSC mode, Dynamic Damper Control and



information in the Head Up Display can all be pre-set in the two M Drive profiles. As an example, the M5 driver may now pre-programme a 'fire-breathing' track set-up for the car, or a comfortable, fuel efficient handling characteristic for the urban commute, and select either profile with the mere press of a button on the steering wheel. These can be re-configured at any time via the iDrive menu.

**Design:** The dynamic appearance and authoritative stance of the regular 5 Series Sedan have been lifted by M-specific design features at the front, rear and sides. These have been almost entirely dictated by the technical demands of an ultra-high-performance car.

The wide-spread M black slats in the grille and the three air intakes in the low front apron are there to satisfy the cooling requirements of the twin-turbo V8 engine, for example, while the air channelling flaps at the lower edge of the front end were developed on the race track and are designed to optimise the aerodynamics of the car.

The contours of the bonnet converge into a V shape to meet the customary BMW double-kidney grille, which sits above a forward projecting central aperture between two curving side intakes which collectively emphasise the width of the new M5 Sedan. Standard bi-xenon front light clusters contain visually unique LED light rings and indicator lights which consist of 10 LED units. LED accent lights cut across the top of the familiar BMW twin round headlamps.

A long wheelbase, set-back passenger compartment and high-gloss black side window surround accentuate the stretched profile of the new M5 Sedan. Flared wheel arches, flush 20-inch wheels and lowered M suspension ensure the car's sporting characteristics do not go unnoticed. The wheels give a clear view of the distinctive M logo displayed on the dark blue metallic lacquered six-piston fixed callipers of the high-performance braking system.

The front side sections have a fresh interpretation of the hallmark M gills within a chrome frame adorned with the BMW M logo, while the mirror casings – in body colour with high-gloss black lower edges and bases – are aerodynamically shaped, emphasised by their horizontal crease line. The side skirts feature a powerful bulge and a rising crease which draws attention to the driven wheels and re-emphasises that this is the performance flagship of the 5 Series range.



At the rear, horizontal lines give the M5 a wide, sporty stance, and a diffuser is incorporated in the lower edge of the apron to allow sufficient airflow through the underfloor section. A signature feature of the new M5 is the twin-tailpipe exhaust system, positioned wide on either side of the diffuser.

A subtle Gurney flap on the rear edge of the boot lid provides additional downforce at high speed. L-shaped rear light units contain LED strips, indicators and brake lamps and are clearly identifiable at night as belonging to a BMW.

**Interior design:** The interior of the M5 fuses the intimacy of a sports-car cockpit, the spaciousness of a prestige Sedan and the luxury of a premium car. It features bespoke M Sports seats, Full Merino leather upholstery, Aluminium Trace interior trim strips and the BMW Individual roof liner in Alcantara Anthracite, plus the BMW iDrive control system with a 10.2-inch Control Display. M5 lettering on the sill panels is standard.

The instrument cluster with black-panel technology includes classic BMW M circular dials with red needles and white illumination. The multifunction buttons on the M leather steering wheel operate the cruise control, radio and telephone. On the left-hand side the driver will now find the two M Drive buttons for instant availability of pre-determined driving profiles.

**Standard and optional equipment:** The new BMW M5 offers an extensive range of standard and optional equipment featuring innovative driver assistance systems and mobility services in a sports car-like cockpit that meets every requirement of a premium high-performance Sedan.

Standard equipment in Australia includes Professional Navigation, Rear View Camera and Surround View (comprising Top View and Side View cameras), Head-up Display, front and rear Park Distance Control, four-zone climate control, Bi-Xenon headlights, Adaptive Headlights, High-Beam Assistant as well as heating and ventilation for the front seat passengers. The Audio system in the M5 is BMW's Hi-Fi System Professional equipped with a Dolby Pro Logic sound processor, surround mode, digital 600 watt amplifier and no less than 16 loudspeakers to help create the ideal atmosphere. Furthermore, via the integration of Smartphones and music players features such as Bluetooth and USB audio interface and internet functionality, keep occupants entertained and informed.



The comprehensive standard specification list also includes Sunroof, Comfort Access, Automatic Tailgate functionality, M Multi-function seats and a DVD changer.

Optional equipment including, Lane Change and Lane Departure warnings and BMW Night Vision ensure the driver is aware of anything and everything happening within the vicinity of the car.

The new BMW M5 is available in Australian BMW dealerships from February 2012.

# Specifications.

## BMW M5.



		<b>BMW M5</b>
<b>Body</b>		
No. of doors/seats		4 / 5
Length/width/height (unladen)	mm	4910 / 1891 / 1456
Wheelbase	mm	2964
Track, front/rear	mm	1627 / 1582
Ground clearance	mm	117
Turning circle	m	12,6
Tank capacity	approx. l	80
Cooling system incl heating	l	18,5
Engine oil <sup>1)</sup>	l	8,4
Weight, unladen, to DIN/EU	kg	1870 / 1945
Max load to DIN	kg	540
Max permissible weight	kg	2410
Max axle load, front/rear	kg	1180 / 1260
Max trailer load, braked (12%/unbraked)	kg	2000 / 750
Max roof load/towbar	kg	100 / 90
Luggage comp capacity	l	520
Air drag	c <sub>x</sub> x A	0.33 x 2.40
<b>Engine</b>		
Configuration/No of		V90 / 8 / 4
Engine technology		M TwinPower Turbo technology with cross-bank exhaust manifold, twin-scroll turbocharging, direct petrol injection (High Precision Injection), VALVETRONIC and Double-Vanos
Effective capacity	cm <sup>3</sup>	4395
Bore/stroke	mm	88.3 / 89.0
Compression ratio	:1	10.0
Fuel grade		RON 98 (min. 95)
Output	kW/hp	412 / 560
at	min <sup>-1</sup>	6000 – 7000
Torque	Nm	680
at	min <sup>-1</sup>	1500 – 5750
<b>Electrical system</b>		
Battery/Installation	Ah/–	105 / luggage comp
Alternator	A/W	209 / 2926
<b>Driving dynamics and safety</b>		
Suspension, front		Double track control arm with M-specific elastokinematics, small, negative steering roll radius, anti-dive
Suspension, rear		Integral-V multi-arm axle with M-specific elastokinematics, spatial suspension with anti-squat and anti-dive
Brakes, front		Six-piston fixed-calliper compound disc brakes
Diameter	mm	400 x 36 / vented
Brakes, rear		Single-piston fixed-calliper compound disc brakes
Diameter	mm	396 x 24 / vented
Driving stability systems		Standard: DSC incl. ABS, ASC and MDM (M Dynamic Mode), CBC (Cornering Brake Control), DBC (Dynamic Brake Control), Dry Braking function, Fading Compensation, Start-Off Assistant, Dynamic Damper Control, Active M Differential, linked to Integrated Chassis Management (ICM)
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, crash-activated head restraints at the front, crash sensors, Tyre Defect Indicator
Steering		Hydraulic rack-and-pinion steering with M-specific Servotronic function
Steering ratio, overall	:1	18.0
Tyres, front/rear		265/35 R20 99Y 295/30 R20 99Y
Rims, front/rear		9J x 20 LM 10J x 20 LM



# Specifications.

## BMW M5.



### BMW M5

#### BMW ConnectedDrive

Comfort	Comfort Access, Automatic Tailgate, Integration of mobile devices
Infotainment	Standard: Navigation Professional, Internet access, Bluetooth Audio Streaming, Extended connectivity of Audio devices
Safety	Standard: variable light distribution and adaptive headlight range control, High Beam Assistant, Park Distance Control, rear-view camera, Surround View incl. Top View and Side View, Head-Up Display. Optional: BMW Night Vision with pedestrian recognition Lane Change Warning, Lane Departure Warning,

#### Transmission

Type of gearbox	Seven-speed M double-clutch transmission with Drivelogic		
Gear ratios	I	:1	4.806
	II	:1	2.593
	III	:1	1.701
	IV	:1	1.277
	V	:1	1.000
	VI	:1	0.844
	VII	:1	0.671
	R	:1	4.172
Final drive		:1	3.154

#### Performance

Power-to-weight ratio	kg/kW	4.5	
Output per litre	kW/l	93.7	
Acceleration	0–100 km/h	s	4.3
	0–1000 m	s	21.9
in 4 <sup>th</sup> /5th gear	80–120 km/h	s	3.7 / 4.6
Top speed	km/h	250 <sup>j</sup>	

#### BMW EfficientDynamics

BMW EfficientDynamics standard features	Brake Energy Regeneration with recuperation display, Auto Start-Stop function, intelligent lightweight construction, on-demand operation of ancillary units, flow rate-controlled power steering pump
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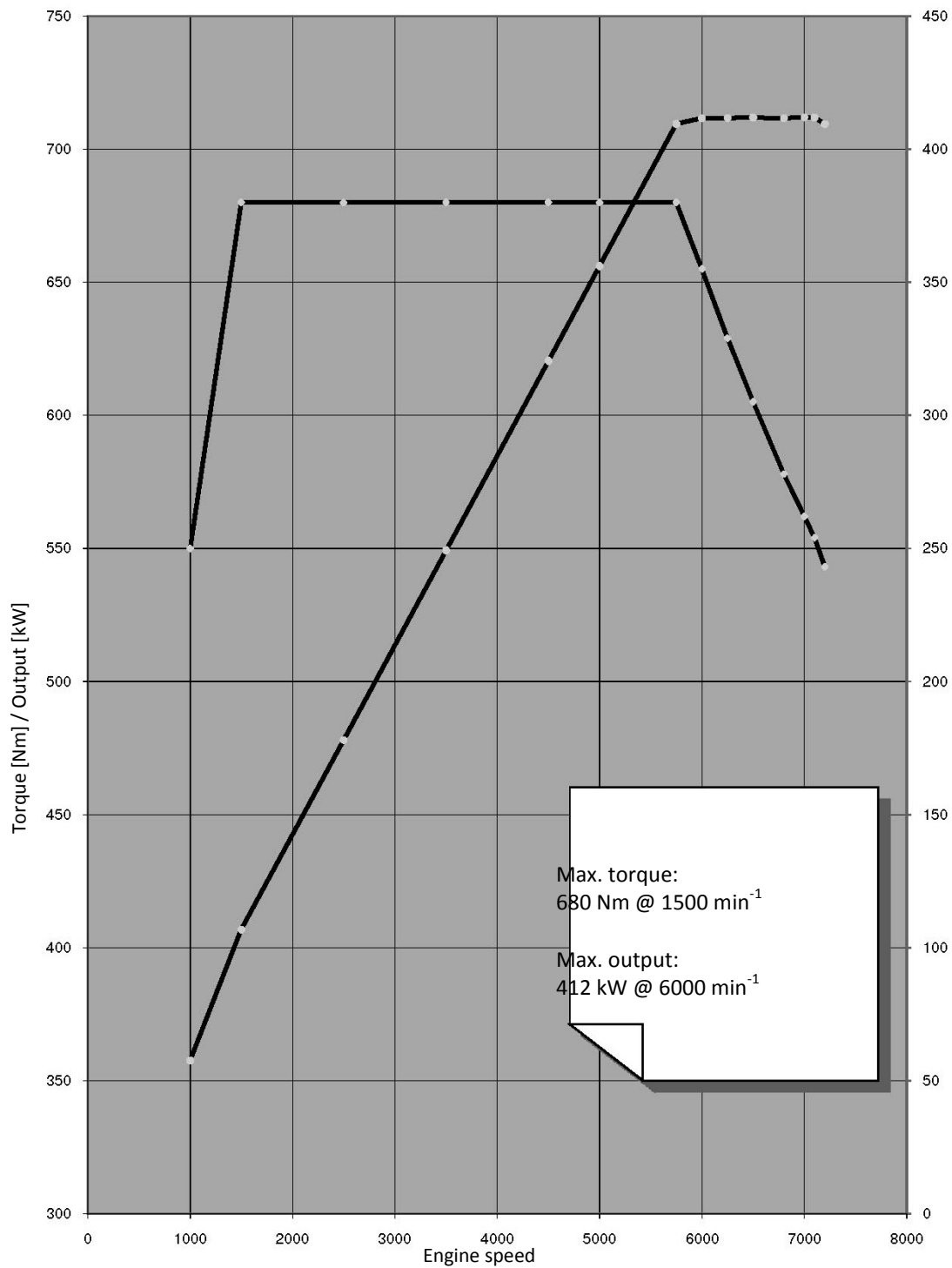
#### Fuel consumption EU

with standard tyres		
Urban	l/100km	14.0
Extra-urban	l/100km	7.6
Combined	l/100km	9.9
CO <sub>2</sub>	g/km	232
Emission rating		EU5

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

<sup>1)</sup> Oil change

# Output and Torque Diagram. BMW M5.



# Exterior and interior Dimensions. BMW M5.

