



Media Information
23rd June 2011

Intelligent lightweight design paves the way for even higher performance: the BMW M3 CRT.
Carbon Racing Technology: BMW M GmbH factory produces a limited-edition high-performance sports car based on the BMW M3 Saloon – Innovative use of carbon-fibre reinforced plastic minimises weight – Weight-to-power ratio: 3.5 kilograms per horsepower.

Munich/Nürburg. BMW M GmbH will use the M Night event in the lead-up to the Nürburgring 24-hour race to unveil a spectacular new addition to its model range. The BMW M3 CRT (Carbon Racing Technology) embodies a concentrated blend of state-of-the-art development expertise – inspired directly by motor sport – in the areas of drive system and chassis technology and intelligent lightweight design. It also represents the worldwide debut of a new production process for carbon-fibre reinforced plastic (CFRP) components in the automotive industry. This process allows CFRP to be introduced widely in the construction of the high-performance BMW M3 Saloon-based sports car created by the BMW M GmbH factory. And that helps it achieve a weight-to-power ratio of 3.5 kilograms per horsepower. A V8 engine with customary M high-revving characteristics and maximum output of 331 kW/450 hp accelerates the BMW M3 CRT from 0 to 100 km/h in just 4.4 seconds.

The BMW M3 CRT will be produced by the BMW M GmbH factory in a limited run of 67 units. Following in the tyre tracks of the BMW M3 GTS – of which 135 examples were produced – this is the second small-series, high-performance M3 off-shoot to be bred for the race track but registered for the road. The exclusive character of the Saloon is emphasised by bespoke lightweight design components manufactured as part of an innovative production process. The bonnet of the BMW M3 CRT and the bucket seats for the driver and front passenger are made from a cellular carbon honeycomb, which is produced in a globally unique process pioneered for the manufacture of body components for the BMW i3 and BMW i8 models.

Innovative manufacturing process for lightweight CFRP components.

These new models – due to enter volume production in 2013 and equipped with innovative electric and BMW ActiveHybrid drive system technology – will feature a body consisting entirely of CFRP in the passenger cell area. In a new development, the production

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process introduced for this purpose enables the cuttings left behind in the construction of the body to be reprocessed. The basic material (made up of carbon fibre thread) can now be woven into CFRP mats of any size before being impregnated with synthetic resin and hardened in a similar way to the material used in the body of the BMW i3 and BMW i8. For the BMW M3 CRT this allows the creation of a bonnet made from two CFRP mouldings encasing an aramid honeycomb structure. This construction imbues the bonnet with the strength of a conventional steel equivalent, but at roughly a quarter of its weight. The weight saving over the aluminium bonnet of the standard BMW M3 Saloon is around 50 per cent.

The material produced through this innovative manufacturing technology is also used for the car's bucket seats. Here, the CFRP layers are wrapped around a recycled-paper honeycomb, with a carbon layer made using conventional production technology added to visible areas. CFRP is also used to make both the rear spoiler of the BMW M3 CRT and an air-channelling element integrated into its front apron.

This innovative manufacturing process opens up considerable potential for increased use of CFRP in series-produced cars as a means of lowering weight. The BMW Group is leading the way in this area of automotive construction, while BMW M GmbH can call on extensive racing expertise when it comes to intelligent lightweight design. The BMW M3 CRT is the latest in a fine tradition of highly exclusive high-performance sports cars optimised with the help of lightweight design. This lineage stretches back to the BMW 3.0 CSL of the 1970s and reached another high point in 2002 with the BMW M3 CSL. BMW M GmbH also broke new ground with the use of CFRP in series-produced vehicles; like the BMW M6 produced up to 2010, the current BMW M3 Coupé comes as standard with a roof made from carbon-fibre reinforced plastic.



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Significant weight reduction despite generous standard equipment.

The low-weight construction of the BMW M3 CRT is enhanced by sound-proofing configured specially for the new variant and a sports exhaust system with an extremely lightweight titanium muffler. Also unique to the CRT are the two individual rear seats, which take their cues from the lateral support-enhancing contours of the front seats.

Included in the standard specification of the BMW M3 CRT are the M double-clutch transmission with Drivelogic, Navigation system Professional, BMW Individual High End audio system, a light, exterior mirror and luggage area package, an alarm system and Park Distance Control with sensors at the front and rear of the car. Despite this extremely generous selection of standard kit, its DIN unladen weight of 1,580 kg undercuts that of the standard BMW M3 Saloon by around 45 kg. When you take into account the equipment on board the weight saving is more like 70 kg. Added to which, cleverly reducing the load at the front of the car raises the proportion of the car's weight over the rear axle to 48.4 per cent, which has an extremely positive effect on agility.

High-revving V8 engine with extra power; M DCT Drivelogic.

Under the CFRP bonnet of the BMW M3 CRT lies a variant of the V8 engine developed exclusively for the BMW M3 with further increased displacement, output and maximum torque. The high-revving unit provides the linear power delivery you expect from an M car and a highly responsive performance profile honed by the demands of the race track. Tuned for the BMW M3 GTS, the eight-cylinder engine develops 331 kW/450 hp from its 4,360 cc displacement. Maximum output is reached at 8,300 rpm, and the driver will find peak torque of 440 Newton metres on tap at 3,750 rpm. Helping to give the engine its intoxicating performance is wizardry derived directly from motor sport, including a bedplate crankcase construction in a special aluminium-silicon alloy, individual throttle butterflies, a knock control system with ion current technology and a dynamically-optimised wet sump oil supply.



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Transferring the engine's power to the rear wheels is the M double-clutch transmission with Drivelogic developed for the BMW M3. The seven-speed M DCT Drivelogic unit also works according to a principle developed in motor sport, allowing an uninterrupted flow of power through gear changes to deliver extremely dynamic acceleration. Its shift characteristics have been tuned specially for the engine powering the BMW M3 CRT. Shift paddles on the steering wheel allow the driver to change gear manually with optimum ergonomics. And a Launch Control function is on hand to generate maximum acceleration off the start line.

Special chassis construction with race-bred technology.

Expertise from race competition also makes its presence felt in the chassis technology of the BMW M3 CRT. The BMW M3 Saloon's front and rear axle construction has been enhanced by a rigid rear axle subframe and coilover suspension whose dampers are individually adjustable in their compression and rebound. The six-piston, fixed-calliper high-performance brakes of the BMW M3 CRT boast a low-weight compound construction. The vented brake discs measure 378 x 32 millimetres at the front axle and 380 x 28 millimetres at the rear. The new M3 variant also uses Stahlflex brake lines and model-specific comfort brake pads.

The specially tuned DSC (Dynamic Stability Control) system – including ABS and M Dynamic Mode (MDM) – responds to both the greater dynamic potential of the BMW M3 CRT and its optimised axle load distribution. Meanwhile, the 245/35 R 19 front tyres and 265/35 R 19 rears (fitted on 19-inch M light-alloy wheels in Y-spoke design) ensure the engine's acceleration and braking power is transferred to the road with maximum impact. The electronic engine management of the BMW M3 CRT caps its top speed at 290 km/h.

The exclusive Frozen Polar Silver metallic exterior paint shade in combination with Melbourne Red metallic applications and special treatment for the BMW kidney grille also help to set the BMW M3 CRT apart from the standard M3. Inside, the Saloon comes with



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likewise exclusive door sill strips, door panels and trim strips in aluminium grain structure. Completing the distinctive ambience inside the high-performance Saloon are the Alcantara-covered M steering wheel, which has an M Drive button allowing the driver to call up his preferred set-up instantly, and special Sakhir Orange and Black bi-colour covers for the front and individual rear seats.

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The BMW M GmbH.

The BMW M GmbH is a one hundred percent subsidiary of the BMW AG. With products and services in the [five](#) business areas BMW M Automobiles, BMW Individual, M Sport Packages and Options, BMW Group Driving Experience as well as special task and security vehicles, it addresses customers with particularly high demands on the performance, exclusivity and individuality of their vehicle. The Munich-based company was founded in 1972 as the BMW Motorsport GmbH. Since then, the letter M has been internationally synonymous with success in motor sports and with the fascination of high-performance sports cars for use in everyday road traffic. Production of BMW M automobiles is integrated into the manufacturing processes of BMW plants. The BMW M GmbH possesses the status of an independently operating automobile manufacturer.

In the business year 2010, the BMW M GmbH achieved worldwide sales of approximately 17,000 vehicles. The BMW M GmbH currently employs around 500 people in the areas of development, administration and marketing.



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Specifications.

BMW M3 CRT.

BMW M3 CRT		
Body		
No. of doors/seats		4 / 4
Length/width/height (unladen)	mm	4614 / 1817 / 1416
Wheelbase	mm	2761
Track, front/rear	mm	1540 / 1540
Turning circle	m	11.7
Tank capacity	approx. l	63
Cooling system incl. heating	l	11.4
Engine oil ¹⁾	l	6.6
Weight, unladen, to DIN/EU	kg	1580 / 1655
Max load to DIN	kg	390
Max permissible weight	kg	1970
Max axle load, front/rear	kg	950 / 1045
Luggage comp. capacity	l	450
Air drag	c _x x A	0.31 x 2.23
Engine		
Configuration/No of cyls/valves		V / 8 / 4
Engine technology		High-revving concept with individual throttle butterflies, Double-Vanos, dynamically-optimised oil supply and ion current knock control
Effective capacity	cc	4361
Bore/stroke	mm	82.0 / 92.0
Compression ratio	:1	12.0
Fuel grade		ROZ 98 (min. 95)
Output	kW/hp	331 / 450
at	rpm	8300
Torque	Nm	440
at	rpm	3750
Electrical system		
Battery/Installation	Ah/-	70 / luggage comp.
Alternator	AW	180 / 2520



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BMW M3 CRT

Driving dynamics and safety

Suspension, front	Aluminium dual-joint spring strut suspension; small, positive steering roll radius; transverse force compensation; anti-dive	
Suspension, rear	Five-link axle in lightweight construction with rigid rear axle subframe, anti-squat and anti-dive	
Brakes, front	Six-piston fixed-calliper compound disc brakes	
Diameter	mm	378 x 32, vented and perforated
Brakes, rear	Six-piston fixed-calliper compound disc brakes	
Diameter	mm	380 x 28, vented and perforated
Driving stability systems	Standard: DSC incl. ABS and MDM (M Dynamic Mode), CBC (Cornering Brake Control), DBC (Dynamic Brake Control), Dry Braking function, Fading Compensation, Start-Off Assistant, variable M differential lock, coilover suspension with adjustable compression and rebound	
Safety equipment	Standard: airbags for driver and front passenger, head airbags for front and rear seats, three-point inertia-reel seatbelts on all seats (with belt stopper, belt tensioner and belt force limiter at the front), crash sensors, Tyre Defect Indicator	
Steering	Rack-and-pinion steering with hydraulic assistance and M-specific Servotronic function	
Steering ratio, overall	:1	12.5
Tyres, front/rear	245/35 R19 / 265/35 R19	
Rims, front/rear	9J x 19 EH2 cast aluminium / 10J x 19 EH2 cast aluminium	

Transmission

Type of gearbox	Seven-speed M double-clutch transmission with Drivelogic	
Gear ratios	I	:1 4.780
	II	:1 3.056
	III	:1 2.153
	IV	:1 1.678
	V	:1 1.390
	VI	:1 1.203
	VII	:1 1.000
	R	:1 4.454
Final drive	:1	3.150

Performance

Weight-to-power ratio	kg/kW	4.8
Output per litre	kW/l	75.9
Acceleration	0-100 km/h	s 4.4
	0-1000 m	s 22.5
Top speed	km/h	290

BMW EfficientDynamics

BMW EfficientDynamics standard features	Brake Energy Regeneration, gear shift indicator, on-demand operation of ancillary units, intelligent lightweight construction, optimised aerodynamic properties, map-controlled oil pump
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Fuel consumption EU

Urban	l/100km	18.4
Extra-urban	l/100km	9.3
Combined	l/100km	12.7
CO ₂	g/km	295
Emission rating		EU5

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

¹⁾ Oil change