



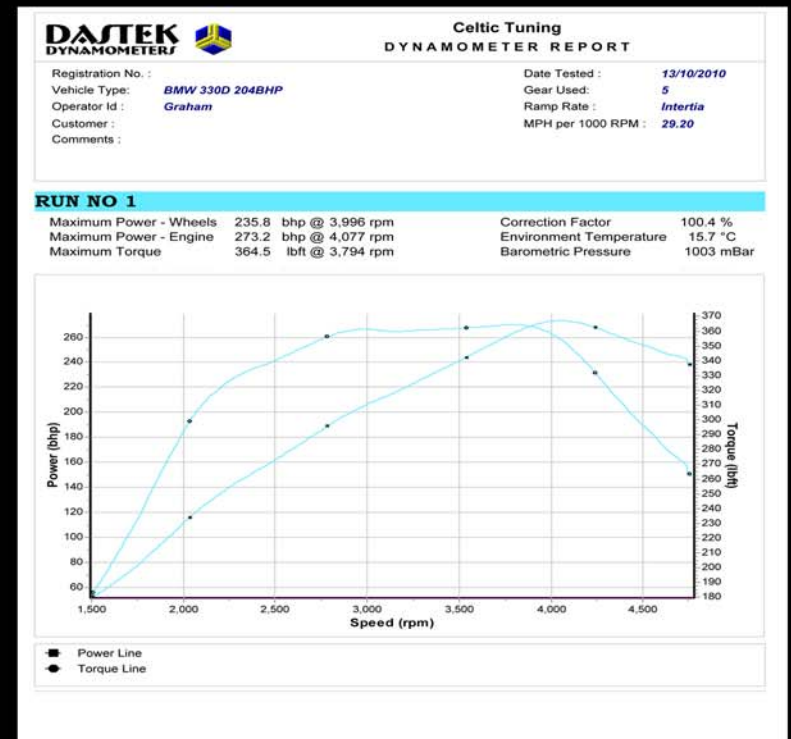
## BMW 330d e46 204bhp

The BMW E46 is the fourth generation of the 3 Series compact executive cars produced by BMW, produced from 1998 when it succeeded the BMW E36 until it was replaced by the fifth generation BMW E90 in 2005. BMW sold the E46 worldwide and became an enormous sales success with its record selling year being 2002 when it sold 561,249 examples world wide. The E46 housed a large variety of engines both petrol and diesel. The petrol range covers from 1.6 litres right up to 4.0 V8 in the M3 GTR and the diesel range has just two sizes of 2.0 and 3.0 with varying outputs. The engine on test here is the M57TUD30 unit which was introduced in 2002 and was in production until 2008. The power variants available in this unit are 204PS, 218PS and 245PS with single turbo and 272PS in twin turbo format. The unit was superseded with the M57TUD2D30 which is used in current day models. The 3.0 Turbo diesel engine on test utilises Bosch Common Rail 2 technology which operates at 1,600 bar injection pressure and multiple injections per cycle. The turbo is a Garrett VNT which is the market leader in terms of performance and reliability, with standard boost pressures set to 1.34 bar at peak it is a very good base unit for tuning. The engine management system is also of a high standard, being Bosch EDC16C31 it is a very flexible unit and one which allows good power to be achieved. As standard the unit outputs a hefty 204PS and 302lbft torque.

The performance of the vehicle once modified is truly impressive; with 273bhp and 364lbft on tap it puts out similar figures to the 3.0 Twin turbo unit but loses out just a little on torque. The 204PS unit as standard is no slouch, with 0-60mph coming up in 9.9 seconds and going on to reach 100mph in 25.6 seconds, it performs extremely well. With power hiked up to 273bhp it achieves the 0-60mph sprint in 7.7 seconds and goes on to 100mph in a rapid 21.8 seconds giving the 330d some tremendous speed and overtaking ability. As the unit is the same internally as the twin turbo unit it adds no major additional stresses to the engine as it is designed to take above and beyond what has been achieved in this test. The limit on this engine from here is the turbo, to get above the 300bhp figure it would need a hybrid turbo capable of operating at 1.9 bar. The power at 273bhp is also achieved with a constant 16:1 air/fuel ratio which means absolutely no additional smoke from the rear of the car and therefore perfectly MOT compliant. On tests the vehicle achieved economy savings in the region of 3-4mpg which for a 3.0 straight 6 engine is quite an achievement with the power it's producing.

For those wishing to extract every available bhp from the 3.0d engine, due to developing our own software in house we are able to provide figures far in excess of 300hp with the right mechanical set up. Our software upgrades are available for the entire BMW range including the very latest locked tricore processors from 2009>.

Speed in MPH	0-30	0-40	0-50	0-60	0-70	0-80	0-90	0-100
Original time in secs	3.0	5.1	6.6	9.9	12.0	16.2	19.6	25.6
Modified time in secs	2.8	4.2	5.5	7.7	10.0	13.1	16.0	21.8
Improvement (s) in secs	-0.2	-0.9	-1.1	-2.2	-2.0	-3.1	-3.6	-3.8



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