



2015 Corvette Z06 Rated at 650 Horsepower

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DETROIT – The all-new 2015 Corvette Z06 is the most powerful production car ever from General Motors and one of a few production cars available in the United States that delivers more than 600 horsepower.

The Z06's LT4 supercharged 6.2L V-8 engine is SAE-certified at 650 horsepower (485 kW) at 6,400 rpm and 650 lb-ft of torque (881 Nm) at 3,600 rpm.

"The LT4 Small Block sets a new benchmark for power and torque at GM," said Steve Kiefer, vice president, GM Powertrain Engineering. "The engine also puts the new Corvette Z06 on par with the most powerful supercars offered in America, while delivering performance with impeccable manners that make it suitable for daily driving."

Compared with other supercar engines, the LT4 is a veritable fountain of low-end torque, producing 457 lb-ft (619 Nm) just off idle and 625 lb-ft (847 Nm) by only 2,800 rpm. The V-12-powered Ferrari F12 Berlinetta, for example, produces about 28 percent less torque than the Z06, despite offering about 12 percent more horsepower – and its peak torque isn't achieved until 6,000 rpm. The LT4 maintains 90 percent of its peak torque, or 592 lb-ft (802 Nm), from 2,500 to 5,400 rpm.

The new LT4 engine eclipses the Porsche 911 Turbo S engine's peak power levels by 90 horsepower (67 kW) and 134 lb-ft of torque (182 Nm).

"Torque is the pulling power of an engine and the LT4's abundance of it at every rpm in the engine's speed range helps the 2015 Corvette Z06 accelerate quicker and respond nearly instantaneously," said Jordan Lee, chief engineer for Small Block engines. "It's the very definition of power on demand."

The new Z06 engine produces 40 percent more peak torque (180 lb-ft / 244 Nm) than the previous-generation's 7.0L LS7 engine – and 7.5 percent more than the supercharged 2013 Corvette ZR1's 604 lb-ft (819 Nm). At 3,200 rpm, the new LT4 surpasses the LS7 by 208 lb-ft of torque (252 Nm). On the horsepower side of the graph, the LT4's 650-hp rating is 29 percent greater than the LS7's 505 horsepower (376 kW), and 12 horses more than the ZR1's LS9 engine.

"The new LT4 engine builds on the design strengths of our previous supercharged engine and leverages the technologies introduced on the Corvette Stingray – direct injection, cylinder deactivation and continuously variable valve timing – to take Corvette performance to an all-new plateau," said Lee. "Our new, very compact supercharger also helps the engine make power more quickly, and perhaps more importantly, it helps produce more torque earlier in the rpm band."

"It's also worth mentioning that the LT4's supercar performance numbers are achieved with an engine that is nearly the same size as the very compact LT1 engine introduced in the 2014 Corvette Stingray," Lee said. "The power density of the LT4 makes it one of the smallest and lightest 650-hp engines in the industry."

LT4 details

The new LT4 engine is based on the same Gen 5 small block foundation as the Corvette Stingray's LT1 6.2L naturally aspirated engine, incorporating several unique features designed to support its higher output and the greater cylinder pressures created by forced induction, including:

- Rotocast A356T6 aluminum cylinder heads that are stronger and handle heat better than conventional aluminum heads
- Lightweight titanium intake valves
- Machined, forged powder metal steel connecting rods for reduced reciprocating mass
- High 10.0:1 compression ratio – for a forced-induction engine – enhances performance and efficiency and is enabled by direct injection
- Forged aluminum pistons with unique, stronger structure to ensure strength under high cylinder pressures
- Stainless steel exhaust manifolds and an aluminum balancer that are lighter than their LT1 counterparts
- Standard dry-sump oiling system with a dual-pressure-control oil pump.
- A new 1.7L supercharger spins at up to 20,000 rpm – 5,000 rpm more than the supercharger on the Corvette ZR1's engine. The rotors are smaller in diameter, which contributes to their higher-rpm capability – and enables them to produce power-enhancing boost earlier in the rpm band. That boost is achieved more efficiently via a more direct discharge port that creates less turbulence, reducing heat and speeding airflow into the engine.

"The Small Block's cam-in-block design heritage has always enabled very high performance and responsiveness in a small, compact package – an attribute amplified by the performance of our new supercharger's design," said Lee.

The LT4 is assembled at the new Performance Build Center at GM's Bowling Green Assembly Plant and at GM's Tonawanda engine plant in New York. It is matched with a standard seven-speed manual transmission or an all-new, paddle-shift eight-speed automatic transmission built in Toledo, Ohio.

Designed to deliver shift responses on par with the world's best dual-clutch transmissions, it is the first automatic offered in a Z06. It also makes the Z06 one of the few cars this powerful to offer the choice of a conventional manual transmission or an eight-speed automatic.

The 2015 Corvette Z06 goes on sale in the fourth quarter of 2014.