



2015 CHEVROLET CAMARO Z/28

Vehicle highlights:

- Aerodynamically optimized exterior developed for downforce
- All-aluminum, naturally aspirated LS7 engine rated at 505 hp
- One of the first production vehicles fitted with standard spool-valve dampers
- Capable of up to 1.08 g in cornering acceleration and 1.5 g in deceleration

2015 CHEVROLET CAMARO Z/28 IS THE MOST TRACK-CAPABLE EVER

The 2015 Camaro Z/28 is the most track-capable model in its history, building on the legacy of the original SCCA Trans Am-series contender introduced in 1967. While the new Camaro Z/28 is not intended to compete in a specific race series, it is solely focused on track capability. In fact, its unique exterior is designed like a race car to produce downforce that presses the car against the track for greater grip – up to 1.08 g in cornering acceleration – and faster lap times.

The aerodynamically optimized design helped the Camaro Z/28 log a 7:37.47 lap on Germany's legendary Nürburgring road course – four seconds faster than the Camaro ZL1, and faster than published times for the Porsche 911 Carrera S and the Lamborghini Murcielago LP640.

Additional contributors to the car's track performance included greater stopping power – the Z/28 features Brembo carbon ceramic brakes capable of 1.5 g in deceleration, and consistent brake feel, lap after lap – and reduced curb weight. The naturally aspirated Z/28 weighs 300 pounds less than the supercharged Camaro ZL1, with changes ranging from lightweight wheels to thinner rear-window glass. In fact, 100 percent of the un-sprung mass (suspension, wheels, tires and brake system) has been changed from the Camaro SS, dramatically enhancing the balance and overall driving feel of the Z/28.

"The Camaro Z/28 is an uncompromising performer that's bred for the track – and every one of its unique components supports the goal of faster lap times," said Mark Reuss, executive vice-president, global product development. "It takes the Z/28 back to its racing roots and adds to the strong lineup of Chevrolet performance cars."

The Z/28 is offered in five exterior colors – Red Hot, Black, Silver Ice Metallic, Ashen Gray Metallic and Summit White – and only a single option is available: a package that adds air conditioning and the six audio speakers that are standard on the Camaro SS. The standard Z/28 package includes one speaker.



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Exterior design and aerodynamics

With the driving goal focused on peak performance capability, engineers and designers looked for every opportunity to improve aerodynamics, powertrain cooling and brake-system cooling. As a result, the Z/28 produces 410 pounds more downforce than the Camaro SS at 150 mph.

The primary aerodynamic components include:

- **Rear spoiler with 'wickerbill'** – a small, vertical tab at the edge of the spoiler. Although an aesthetically minor change, it adds approximately 28 counts of drag, improving rear lift performance by 70 counts. That allows the Z/28 to handle turns at higher speeds and delivers greater overall high-speed stability.
- **Unique front fascia** features an airflow-optimized grille – including an open bowtie logo – for enhanced cooling and a modified fascia bottom that incorporates provisions for the brake cooling ducts.
- **Front splitter** that provides downforce at the front of the car, enhancing cornering capability and high-speed stability. It is designed to withstand 250 pounds of downforce at its tip and is matched with an aero closeout panel under the front of the engine compartment that also enhances aero characteristics.
- **Hood extractor** – a functional carbon fiber hood extractor provides increased engine cooling by allowing hot air an exit route. The design is similar to the extractor featured on the Camaro ZL1.
- **Rocker moldings and wheel flare moldings** provide aggressive styling and improved aerodynamic performance, while unique wheel flare moldings cover the Z/28's wide tires. Deflectors at the bottom-front corners of the front wheel flares contribute to the car's downforce-producing aerodynamics.
- **Front wheelhouse liners** with closeouts work with the vehicle underbody for optimal airflow.
- **Belly pan** that helps reduce front lift. Along with the aero benefit, it also contributes to drivetrain cooling, with modified NACA duct profiles designed to draw air into the underbody tunnel area, where the highly energized air provides extra cooling for underbody components.

Powertrain

The Camaro Z/28's 7.0L LS7 engine is rated at an SAE-certified 505 horsepower (376 kW) and 481 lb-ft of torque (652 Nm), it complements the lightweight vehicle components to give the car its enviable 7.6:1 power-to-weight ratio – and deliver the power to accelerate strongly out of corners and achieve high straightaway speeds.



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The LS7 was bred on the racetrack, with features designed for the high-rpm environment of the track, including a durable forged-steel crankshaft, lightweight titanium connecting rods and high-flow cylinder heads with lightweight titanium intake valves. It also features a racing-style dry-sump oiling system that helps ensure adequate oil pressure during high-load cornering.

A unique open air box intake system optimizes high-rpm airflow into the engine. It features a reusable K&N conical air filter and delivers the highest airflow performance of any production Camaro filter system. The air cleaner seals around bottom of the hood, reducing the chance recirculated hot air will be drawn into the engine.

The Z/28's dual-mode exhaust system is engineered to provide high-flow and muscular sound character under aggressive acceleration, while attenuating noise levels in cruising conditions. It actively controls valves that change the flow path of the exhaust. With the valves open, the system produces less back pressure and more power from the engine.

A TREMEC TR6060 six-speed, close-ratio manual transmission backs the LS7 engine. It has a combination of double-cone and triple-cone synchronizers on all gears. Double-cone synchronizers have two friction surfaces to affect gear acceleration and triple-cone synchronizers have three friction surfaces – the greater the friction surface, the easier the transmission is to shift.

The transmission is used with a 5.1-ratio short-throw shifter that provides quicker, more precise-feeling gear changes – similar to ZL1 and SS 1LE models.

Rear axle

Power conveyed through the transmission is distributed to the rear wheels via a high-performance, zero-preload limited-slip differential that enables the driver to apply more power and get through corners faster, by continuously adjusting the torque bias to maximize available traction. It features a concentric helical gear set that generates friction proportional to the input torque and allows continuous torque biasing and differentiation to be managed between the drive wheels (conventional limited-slip differentials use preloaded clutch plates and springs to create a fixed amount of friction that is always present). The axle ratio is 3.91.

The differential works in unison with Chevrolet's proprietary Performance Traction Management system, which allows drivers to adjust the level of throttle and brake intervention to match their capability and driving environment.



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The Z/28 uses a unique, GM-designed differential cooler that incorporates an integral heat exchanger, eliminating the need for an external pump, wiring, relays, temperature sensors and fan. The innovative system pumps overcooled transmission fluid to a heat exchanger inside the differential housing, which removes excess heat from the differential fluid, reducing temperatures by over 100 degrees F (38 C), helping the differential maintain cool, stable performance throughout the most aggressive road course sessions.

Chassis and suspension

The Z/28's performance focus is maximum cornering, braking and lap times. Comprehensive chassis and suspension changes, including a lower center of gravity, specific stabilizer bars, higher-rate coil springs and other chassis and suspension features have been optimized for the track – enabling more than 1.08 g in lateral acceleration and 1.5 g in deceleration. Racing-bred dampers, tires and carbon ceramic brakes play important roles in not only maximizing performance, but making it more predictable and consistent with every lap.

An updated lower control arm ride link “travel limiter” bushing, for example, offers 50-percent greater stiffness at high load than the SS, improving steering feel, brake force deflection steer and providing more consistent performance for continuous road-course driving.

Additionally, updated rear upper control arm bushings and lower trailing link bushings compared to SS models improve lateral stiffness during hard cornering, as well as toe-change compliance during braking. The stiffness rate of this part is increased 400 percent, compared to the comparable SS component. Similarly, 25-percent stiffer lower trailing links bushings (inner and outer) deliver improved lateral stiffness during hard cornering and reduced toe-change compliance during hard braking.

The stiffness rate of the Z/28's coil springs – the amount of energy required to compress them – is increased by 85 percent in the front and 65 percent in the rear. That reduces body movement, which allowed engineers to use smaller, lighter stabilizer bars to maximize grip during hard braking, cornering and acceleration. The solid stabilizer bars are 25mm in diameter in the front and 26mm in the rear – compared to the 28mm front and 27mm solid bars used on the Camaro SS 1LE.

The Z/28 is the first high-volume production road car to employ racing-derived DSSV® (Dynamic Suspensions Spool Valve) damper technology from Multimatic. The dampers rely upon a pair of self-piloted spool valves to control fluid through tuned port shapes rather than conventional deflected disc dampers. The design of the inverted-monotube front strut and aluminum-body monotube rear hydraulic dampers offers maximum response, stiffness and tuning optimized for the track, with the highest level of damper predictability, accuracy and repeatability.



Wheels, tires and brakes

A major contributor to the lateral performance of the Z/28 is the wheel-and-tire combination, featuring the widest front wheels/tires of any comparable sports coupe. Engineers incorporated a comparatively smaller, 19-inch package, with P305/30/ZR19 tires front and rear – mounted on 19x11-inch front wheels and 19x11.5-inch rear wheels – which contributed to lowering the center of gravity 33mm, for enhanced handling.

The forged aluminum wheels are lighter and stiffer than comparable SS wheels, and they're used with Pirelli PZero Trofeo R motorsport-compound tires. The tires' unique compound was developed for track use, and relatively few cutouts provides a large contact patch for maximum grip. They also offer a 29.5-pound weight advantage over Camaro SS tires.

Large, robust and track-capable Brembo® carbon ceramic matrix brakes deliver exceptional braking capability, with reduced weight – 20.7 pounds – compared to the Camaro SS. The brakes offer unmatched levels of brake feel, lap after lap, with tremendous fade resistance – and contribute to up to 1.5 g in deceleration force. The system includes large, 15.5 x 1.4-inch two-piece front rotors matched with fixed monobloc, six-piston front calipers, and 15.3 x 1.3-inch two-piece rear rotors with four-piston calipers. They also feature high-performance pad material with increased pad surface area, and electronic pad-wear sensors.

Because of the tremendous capability enabled by the wheels, tires and brakes, the Z/28's wheels are media-blasted to prevent the wheels rotating in the tires during driving that maximizes cornering and braking forces. The media-blasted finish on the rims creates more grip that holds the tires in place.

Performance Traction Management

Performance Traction Management (PTM) is an advanced system that integrates the chassis mode selection, Traction Control and Active Handling Systems, which are tuned specifically in the Z/28 for optimal road-course performance and consistency. PTM enables the driver to press the accelerator pedal to wide open at the exit of the corner and manages acceleration based on the given vehicle dynamics.

One of the sophisticated features integrated with PTM that help the Camaro Z/28 deliver faster laps on an undulating race track is dubbed the "flying car" logic by engineers. It is a feature for track use only that helps maintain the car's full power and momentum, even if the tires briefly lose their contact with terra firma in certain track conditions. Without it, PTM would interpret the force reduction on the tires as a loss of traction and trigger torque reduction in an attempt to restore it – an intervention that would likely slow the car and reduce momentum.



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PTM offers five performance levels, or modes, to accommodate a variety of driving conditions. The track-oriented “flying car” logic is available in all PTM modes, but it is most effective in Mode 5, which is calibrated for the fastest lap times.

Interior details

Inside, the Camaro Z/28 features trim in a distinctive, matte finish, a flat-bottom steering wheel and Recaro seats with microfiber inserts. The seats feature aggressive bolsters for high-performance driving, as well as seat cutouts inspired by the five-point harnesses found on racing seats. To save weight, both front seats incorporate manual adjustment.

The rear seats of the Z/28 have also been modified for weight reduction. Nine pounds (4 kg) were saved by eliminating the seat-back pass-through, as well as using high-density foam in place of the rigid structure of the seat back and steel mesh of the seat bottom.

Additional examples of weight savings include:

- Elimination of the tire-inflator kit, except for Rhode Island and Maryland, where it is required by law
- Removal of some interior sound deadener, as well as trunk carpet
- Use of a smaller, lighter battery
- Thinner rear-window glass – 3.2 mm vs. the standard 3.5 mm
- Elimination of high-intensity discharge, or HID, headlamps and fog lights
- No air conditioning except as part of the single option package.

Six months of OnStar Directions and Connections service is standard on Camaro Z/28. It uses GPS and cellular phone technology to automatically call for help in the event of crash. OnStar service also includes MyLink mobile apps, which offer vehicle information and OnStar services via the customer’s smartphone.

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2015 CHEVROLET CAMARO Z/28 SPECIFICATIONS

Overview

Model:	Chevrolet Camaro Z/28 coupe
Body style / driveline:	four-passenger, front-engine, rear-drive coupe
Construction:	unitized body frame, one- and two-sided galvanized steel
EPA vehicle class:	coupe
Manufacturing location:	Oshawa, Ontario, Canada

Engine

	7.0L V-8 (LS7)
Displacement (cu in / cc):	427 / 7008
Bore & stroke (in / mm):	4.125 x 4.00 / 104.8 x 101.6
Block material:	cast aluminum
Cylinder head material:	cast aluminum
Valvetrain:	overhead valve, two valves per cylinder
Fuel delivery:	SFI (sequential fuel injection)
Compression ratio:	11.0:1
Horsepower (hp / kW @ rpm):	505 / 376 @ 6100 (SAE certified)
Torque (lb-ft / Nm @ rpm):	481/ 652 @ 4800 (SAE certified)
Recommended fuel:	premium required
EPA-est. fuel economy (city / hwy):	13 / 19

Transmission

	Tremec TR6060 six-speed manual
Gear ratios (:1):	
First:	2.66
Second:	1.78
Third:	1.30
Fourth:	1.00
Fifth:	0.80
Sixth:	0.63
Reverse:	2.90
Final drive ratio:	3.91

Chassis / Suspension

Front:	double-ball-joint, multi-link strut; direct-acting, 25mm solid stabilizer bar; progressive-rate coil springs; inverted monotube shock absorber
Rear:	4.5-link independent; progressive-rate coil springs over monotube shock absorbers; 26mm solid stabilizer bar
Traction control:	StabiliTrak electronic stability control
Steering type:	electric power steering with variable-effort rack-and-pinion
Steering ratio:	16.1:1
Steering wheel turns, lock-to-lock:	2.5
Turning circle, curb-to-curb (ft / m):	39 / 11.9



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Brakes

Type:	four-wheel disc w/ ABS; Brembo carbon ceramic matrix ventilated two-piece front and rear rotors; six-piston monobloc front and four-piston rear calipers
Rotor diameter x thickness, front (in / mm):	15.5 x 1.4 / 394 x 36
Rotor diameter x thickness, rear (in / mm):	15.3 x 1.3 / 390 x 32

Wheels / Tires

Wheel size and type:	19 x 11-inch aluminum (front) 19 x 11.5-inch aluminum (rear)
Tires:	P305/30/ZR19 summer (front) – Pirelli PZero Trofeo R P305/30/ZR19 summer (rear) – Pirelli Pzero Trofeo R

Dimensions

Exterior

Wheelbase (in / mm):	112.3 / 2852
Overall length (in / mm):	192.3 / 4884
Overall width (in / mm):	76.9 / 1953
Overall height (in / mm):	52.4 / 1330
Track, front (in / mm):	66.14 / 1680
Track, rear (in / mm):	64.65 / 1642
Ground clearance: (in / mm):	3.5 / 90 (under car at catalytic converter) 4.3 / 110 (at front splitter)
Curb weight (lb / kg):	3820 / 1732 (without air cond.)
Weight balance (% front / rear):	TBD

Interior

Seating capacity (front / rear):	2 / 2
Headroom (in / mm):	front: 37.4 / 950 rear: 35.3 / 897
Legroom (in / mm):	front: 42.4 / 1077 rear: 29.9 / 757
Shoulder room (in / mm):	front: 56.9 / 1444 rear: 42.5 / 1080

Capacities

Cargo volume (cu ft / L):	11.3 / 320
Fuel tank (gal / L):	19 / 71.9
Engine oil (qt / L):	10.5 / 8.5

Note: Information shown is current at time of publication.