

Lexus IS F High-Performance Sedan Thrills and Sends Chills

August 17, 2012

The IS F pioneered Lexus' high performance portfolio when it was developed. Much of the IS F development took place at racetracks around the world, including Germany's legendary Nürburgring Nordschleife, Circuit Paul Ricard in France, Japan's Fuji Speedway and the Higashi-Fuji Technical Center in Japan. Fuji Speedway is the IS F's home circuit, and the shape of its turn one inspired the F logo design.

The IS F was the first Lexus to wear the brand's "F" marque when it was introduced for the 2008 model year. This high performance sport sedan now shares the "F" badge with the LFA supercar. The fun-to-drive IS F brings an exhilarating experience to the line-up with its high performance 5.0-liter V8 and deep, throaty exhaust note.

The forged crankshaft features journals polished to a mirror finish to minimize the friction generated between the connecting rods and the crankshaft. Forged sintered iron alloy connecting rods ensure high-rpm durability. High-flow cylinder heads designed by Yamaha have a lightweight valvetrain, including forged cam lobes on hollow, chain-driven camshafts, with the inside of the shafts serving as oil passages. Titanium valves are operated by roller rocker arms.

A dual air-intake system uses a primary intake passage for low and medium engine speeds. In the higher engine speed range (above 3,600 rpm), both the primary and secondary passages are opened, helping boost high-rpm power.

Lexus made a leap in valve-control technology with the Variable Valve Timing with intelligence by an electric motor (VVT-iE). An electric drive motor alters the intake camshaft phasing, which made it possible to expand VVT operational range to lower engine speeds, where engine oil pressure is usually not high enough to operate conventional VVT. The exhaust camshaft uses hydraulically controlled variable valve timing.

A scavenge pump forces oil from the cylinder heads back to the oil pan, ensuring a reliable oil supply even during cornering that exceeds one g. The low-restriction dual-exhaust system terminates in distinctive stacked quad diffusers.

The Lexus IS F is based on the robust IS platform, which was engineered from the start to allow a high dynamic envelope. Although using the basic double-wishbone front suspension and multi-link rear suspension configurations of the IS platform, the IS F features a multitude of track-proven modifications.

A specially calibrated version of Lexus' innovative Vehicle Dynamics Integrated Management (VDIM) system helps provide superior handling dynamics and traction control. Combining input from a variety of sensors, VDIM is designed to anticipate the onset of a vehicle skid or slide and help correct the situation with a combination of braking, steering and throttle control. VDIM integration provides precise management for Electric Power Steering (EPS), Vehicle Stability Control (VSC), traction control (TRAC), the Anti-lock Braking System (ABS), Brake Assist (BA), Electronic Brake force Distribution (EBD), and engine torque (via the electronically controlled throttle).

During cornering, VDIM suppresses any tendency for the inside wheel to spin, transmitting more power to the outside wheel to help maintain traction and momentum. When braking on a mixed-friction surface, VDIM will

direct steering assist in the direction that will help provide greater control.

The available Pre-Collision System (PCS) can help reduce collision damage. The package includes Dynamic Radar Cruise Control, which uses millimeter-wave radar to measure and maintain a pre-set distance from a vehicle traveling ahead. PCS relies on the radar sensor to detect obstacles in front of the car. The PCS computer, taking sensor inputs from vehicle speed, steering angle and yaw rate, is designed to determine whether a collision is unavoidable. In such a situation, PCS preemptively retracts front seat belts and pre-initializes BA so that increased braking will be applied the instant the driver depresses the pedal.

Based on the IS luxury sport sedan, the IS F is clearly differentiated when viewed from the front, rear and in profile. The hood's raised center section makes room for the V8 powerplant, and the front fenders were widened to envelop the 19-inch low-profile tires. Total grille area is increased to ensure adequate cooling for the 5.0-liter V8, and both upper and lower grilles feature a special wire-mesh pattern. The lower grille is flanked by large brake cooling ducts adjacent to standard fog lamps. The front fenders wear a discrete silver, black and blue "F" marque.

The car's wedge-like profile is accentuated by functional front fender air outlets with lower edges that transition into larger rocker panels and continue as a character line into the rear bumper. Four vertically stacked exhaust diffusers, two per side, are integrated into the rear bumper.

Navigation equipped vehicles feature Lexus Enform® with App Suite. The App Suite leverages the customers' mobile phone technology to provide a new level of connectivity and information management. Users can conduct local searches through Bing™, utilize voice-enabled apps to make restaurant reservations through OpenTable®, get movie tickets via MovieTickets.com, tap into internet radio, including Pandora® or iHeartRadio, search business reviews on Yelp and check in on Facebook places. A one-year trial subscription is included for the App Suite.

New for 2013

Interior

- Lexus Enform 2.0 ® with App Suite (one-year trial subscription included) on navigation equipped vehicles.
- Available Bluetooth® automatic phonebook download capabilities.
- Available HD Radio™ with iTunes tagging.

Exterior

- Ultra White replaces Starfire Pearl, Liquid Platinum replaces Mercury Metallic

Mechanical

- Refined suspension tuning

Engine/Transmission/Drivetrain/Performance

- The engine's high specific output (83 hp/liter) and high operating range (6,800 rpm redline) helps provide a rush of power at higher engine speeds, while remaining quite responsive in low-speed situations.
- The Lexus IS F features a 5.0-liter V8 engine that produces 416 horsepower at 6,600 rpm and 371 lb.-ft. of peak torque at 5,200 rpm.

- The world's first eight-speed Sport Direct-Shift automatic transmission combines the performance characteristics of an automated manual-type transmission with the smoothness and refinement of a planetary-type automatic transmission. It allows gear ratios that maximize torque up to the tire-grip limitations in the lower ranges while optimizing efficiency.
- The driver can shift manually, in either D or M modes, using either the console shift or steering-wheel-mounted paddle shifters.
- Shifts are quicker and more direct in M mode where the transmission will hold each gear to the 6,800-rpm redline, and upshifts are executed in just one-tenth of a second.
- At higher engine speeds, downshifts are accompanied by automated and precise throttle blips to match engine rpm to vehicle speed.
- The driver can select Normal, Sport or Snow driving modes with the flip of a switch.
- In Sport mode, VDIM allows higher dynamic thresholds before intervening and alters steering assist to increase steering feel. Sport mode helps provide optimal vehicle control on a track in areas where the skills of even top-level drivers are challenged.
- Artificial Intelligence-SHIFT (AI-SHIFT) complements the driver's Sport switch selection by automatically adapting the shifting based on road conditions and driver input.

Chassis/Body/Suspension/Tires/Brakes

- The IS F sits an inch lower on its suspension than the standard IS models, which lowers the center of gravity and helps provide a quicker handling response.
- Spring and damper rates are increased, and larger-diameter stabilizer bars are used.
- The rear-suspension control arms are specific to the IS F to optimize geometry for the 19-inch wheels.
- Monotube shock absorbers use a larger-diameter piston rod.
- Subframe suspension mounts are stiffer than on other IS models to help reduce sway and enhance control under acceleration and braking. The engine mounts are also stiffer for a more direct feel.
- Special jounce stoppers on both the front and rear suspension come into play early in the compression stroke to help reduce the sway angle when cornering and to reduce dive when braking.
- The IS F features 19-inch forged-alloy wheels by BBS® with a distinct dark-gray finish and an asymmetrical 10-spoke design.
- Michelin Pilot Sport PS2 and Bridgestone Potenza tires were each developed specifically for the IS F's 170-mph track capability.
- The front wheels are 19 x 8.5J, with 225/40R19 tires and 19 x 9.5J in the rear, with 255/35R19 tires.
- High-rigidity hub unit bearings are engineered for rigorous, high g-force track driving.
- The Torsen® rear differential helps provide additional traction in spirited driving.
- The IS F's Brembo brakes were designed to the specifications of the Lexus engineering team.
- The 14.2-inch ventilated, drilled front rotors are gripped by rigid, powerful six-piston aluminum calipers, while the 13.6-inch ventilated, drilled rear rotors use two-piston calipers.

Safety/Security Features

- Passive-safety technology in the IS F begins with a reinforced passenger compartment that helps protect the occupants with front-and-rear crush structures.
- In addition to advanced dual-stage front airbags and front seat-mounted side airbags, the Lexus Supplemental Restraint System (SRS) includes side-curtain airbags that extend from A-pillar to C-pillar, plus knee airbags for the driver and the front passenger.

Luxury/Comfort/Convenience

- The IS F interior features specially shaped and trimmed seats that help position the driver comfortably and securely.
- The standard SmartAccess keyless entry and push-button start allow the driver to keep the access fob in a pocket or purse.
- Standard amenities include 10-way power front seats; dual-zone automatic climate control, a pollen filter and smog detector; power moonroof with one-touch open/close and seven open-position settings; power tilt-and-telescoping steering wheel; three-position memory function for front seats, steering wheel and mirrors; all power windows with automatic up/down operation and jam protection; an auto-dimming rear-view mirror with a HomeLink® programmable garage door opener; automated rain-sensing wipers and heated auto-dimming outside mirrors with integrated puddle lamps.
- The standard Lexus Premium Audio System features a six-disc, in-dash CD changer, 13 speakers, USB/iPod® connectivity, streaming audio via Bluetooth® and an integrated SiriusXM Satellite Radio receiver (complimentary 90-day trial subscription included).

Luxury Options

- The IS F offers a 14-speaker Mark Levinson® Premium Surround Sound Audio System with discrete 5.1 multi-channel playback, 7.1-channel speaker architecture, and 10 amplifier channels providing 300 watts total output at less than 0.1 percent total harmonic distortion from 20 to 20,000 Hz (THD all channels driven).
- The available Intuitive Park Assist (IPA) system uses ultrasonic sensors to detect objects close to the car's front and rear bumpers, alerting the driver and showing distance to objects in the multi-information display within the speedometer.
- The optional Lexus Navigation system features Voice Command casual-language voice recognition, Bluetooth automatic phonebook download, and HD Radio™ with iTunes tagging.
- The rear back-up camera, included with the available navigation system, automatically projects an image of what its lens can detect behind the car onto the navigation screen when the transmission is in reverse.

Interior Design

- The interior of the IS F features an exclusive design treatment highlighted by aluminized composite trim, striking two-tone upholstery, aluminum-rimmed main gauges, unique steering-wheel treatment and other special surface treatments.
- The "F" logo is discretely showcased on the steering wheel, rear-center console and outer seat cushions.

Warranty

- 48-month/50,000-mile basic limited warranty with roadside assistance for 48 months/unlimited miles.
- 72 months/70,000 miles powertrain and restraint system coverage.
- 72 months corrosion perforation protection coverage, regardless of mileage.