



Lexus LS 600h

<http://www.sae.org/automag/globalvehicles/12-2006/1-114-12-10.pdf>

Power Train

- Full V8 powertrain, 5.0 L gas engine (29.7 mpg!)
- Electric hybrid (215 HP)
- 442 HP peak (combined)
- All wheel drive
- Dual variable valve timing (intake valve camshaft driven by electric motors not belt)
- Electronic continuously variable transmission

Suspension

- Adaptive pneumatic variable suspension system

Safety

- Pre-Collision System
 - Front Pre-crash: radar continuously monitors frontal distance and closing speed
 - Pre-emptive tightening of seatbelt if crash is imminent
 - Rear Pre-crash: radar monitors rear of car
 - Pre-emptive movement of front headrests if rear-crash is imminent
- Driver monitoring
 - Alert driver if head is turned an obstacle detected
 - Radar and image processing from stereo cameras
- Emergency steering assist
 - Improve steering and suspension response if an obstacle is sensed
- Adaptive cruise control
 - Throttle and/or brakes automatically adapted if obstacle detected
- Lane keeping assist
 - Lane departure warning
 - Audiovisual warning and corrective steering
 - Lane keeping corrective steering if lane departure sensed while in cruise control
- Anti-lock and electronically controlled brakes
- Brake Assist
 - Monitors brake pedal position
 - Preps master cylinder accordingly

“In some instances, drivers fail to push the brake pedal hard enough to engage the Anti-lock Braking System (ABS). Brake Assist senses a panic-stop scenario by judging how quickly and how forcefully the driver hits the brake pedal, automatically applying increased braking boost until the driver releases pedal pressure.”
- Vehicle Dynamics Integrated Management System
 - “enhances handling and traction control systems that normally react to an already unstable condition by anticipating tire slippage before a skid, slide or wheel spin occurs and make stabilizing corrections that maximize dynamic capability.” <http://www.theautochannel.com/news/2005/02/01/019127.html>
 - Integrates:
 - Vehicle Stability Control (VCS)
 - Traction Control (TRC)
 - Electronically Controlled Brakes (ECB)
 - Brake Assist (BA)
 - Anti-lock Brakes (ABS)
 - Electronic Throttle Control (ETC)
 - Electric Power Steering (EPS)
 - Variable Gear Ratio Steering (VGRS – more at lower speeds, less at higher speeds)

Comfort

- Body heat sensing-climate control system
 - IR sensors
 - Six, independent cabin matrix cells
- Low-beam LED headlights

Other References

- http://en.wikipedia.org/wiki/Lexus_LS
- <http://www.worldcarfans.com/news.cfm/newsID/2060929.006/page/1/lang/eng/country/jcf/lexus/lexus-ls600h-in-detail>