

# Road beat: 2015 Lexus RX450h electrons can push



The 2015 Lexus RX450h continues to be a stellar ride.  
Photos/Larry Weitzman

**By Larry Weitzman**

Besides the hybrid drive system, other than some badging and some other small details like a 2-gallon smaller gas tank, there are not a whole lot of differences between the RX350 and the RX450h, except for fuel economy, which is obviously better in the RX450h. Of course there is a price differential of about \$6,600 as well in favor of the RX350. Let's see how they line up.

RX as reported before is in its sixth year of its third generation and this third gen didn't fall very far from the

second gen tree. It remains Lexus' bestseller and for good reason. It is all Lexus in quality and design. It is sublimely quiet with this hybrid really acting like a bank vault. You haven't driven a quiet car until you've tried a Lexus hybrid, any of them will do for the ultimate quiet experience.



### **Specifications**

Price \$41,880 to about \$58,315

Engine-conventional

3.5L DOHC 24 valve V-6 245 hp @ 6,000 rpm

234 ft.-lb. of torque @ 4,800 rpm

Electric motor front axle 155 hp

Electric motor rear axle 67 hp

Sealed nickel metal hydride (Ni-MH) 50 hp

### **Transmission**

CVT

### **Configuration**

Transverse mounted front engine/front wheel drive/all wheel drive (rear axle is electrically powered)

### **Dimensions**

Wheelbase 107.9 inches  
Length 187.8 inches  
Height 66.3 inches  
Width 74.2 inches  
Weight (AWD) 4,652  
Track (f/r) 64.2/63.8 inches  
Ground clearance 6.9 inches  
GVWR 5,974 pounds  
Tow capacity 3,500 pounds  
Fuel capacity 17.2 gallons  
Cargo volume (second row  
up/second row folded)  
40.0/80.3 cubic feet  
Seat belts (passenger  
capacity) 5  
Wheels (std/opt)  
18X7.5/19X7.5 inch alloys  
Tires (std/opt)  
235/60X18/235/55X19  
Turning circle 40.0 feet  
Steering lock to lock 2.79  
turns  
Coefficient of drag 0.33  
**Performance** RX450h AWD  
0-60 mph 6.75 seconds  
50-70 mph 3.72 seconds  
50-70 mph uphill 5.75  
seconds  
Top Speed Electronically  
limited to 112 mph  
Fuel economy EPA rated at  
30/28/29  
city/highway/combined mpg  
(AWD). Expect 27-28 mpg in  
rural country driving with  
some stop and go and 30 plus  
mpg on the highway at legal

speeds.

The dimensions of the RX hybrid are essentially identical to the conventional model with a wheelbase of 108 inches and a length, width and height of 188, 74 and 66 inches, respectively; slightly on the small size of a mid-size SUV, except for its wide berth.

Its design is Lexus L'finesse and it is quite attractive or maybe I am just used to it as there seems to be hundreds of thousands on the streets and when you think about it, even 15-year-old models look clean, fresh and well taken care of.

Hybrid power means a combination of conventional gasoline engine plus an electric motor which powers the 450h via the gas engine, both or pure electric at speeds below about 30 mph. It can seamlessly do this via their trick CVT which uses a sun gear, planetary gears and a ring gear which mesh both power systems together absolutely perfectly. About the only thing you can feel only once in a while is the starting of the 3.5L DOHC 24 valve V-6. That powerplant makes 245 hp at 6,000 rpm and 234 pounds of twist at 4,600 rpm (205 hp). The normal V-6 does better (270 hp and 248 torque) even though the hybrid V-6 sports a 12.5:1 compression ratio. As an Atkinson cycle engine a late closing intake valve effectively lowers the compression ratio, making for a better expansion cycle ratio and therefore more efficiency. Anybody understand that?

Now here is where it gets interesting. The RX hybrid has three electric motors. One for running tranny gear ratios, engine starting and a generator. Motors two and three each perform the same function except the larger 155 hp drives the front axle and the third smaller motor generator (67 hp) drives the rear axle. The gas engine doesn't drive the rear axle, that's left to electric motor number three and it makes perfect sense. Who needs the extra weight and complexity and meshing system of a drive shaft and complex rear axle? The RX450h system will do the job and then some with its brilliant,

simple system. But don't think the total power of the RX hybrid is 467 hp or like the massively powerful Lexus RC-F. Because the maximum battery output is 50 hp, the combined power is limited to 295 hp (245 hp+50 hp). When the engine is under a load at full power, there is no surplus electrical energy to feed the electric motors or battery.

One of the reasons that Toyota/Lexus hybrid systems are basically fail-safe is that they tightly control battery recharge and discharge rates and levels.

Performance is very good knocking off 0-60 mph benchmark in 6.75 seconds. Passing times also reflect this level of performance with a level 50-70 mph run of 3.72 seconds and the same run up a 6 percent grade slowing the time by two seconds to 5.75 seconds. By themselves those are excellent numbers of a very high performance vehicle. But even with a 25 hp advantage over the regular RX350 AWD, the hybrid isn't as quick as the conventional AWD RX350 as the 450h carries a 300 pound weight penalty (4,652 pounds). The RX350 posted its three relevant numbers of 6.30, 3.59 and 4.66 seconds. Except for the hill climb pass the differences are insignificant and because the hill climb is still well under six seconds you could consider that insignificant as well. Why, the RX350 posted a phenomenal number in that department.

However, when it comes to fuel economy, the RX shines. EPA rates the 450h at 30/28/29 mpg. Most hybrids have a hard time meeting EPA numbers in real life tests. Not the 450h as it posted 30.3 mpg in the highway test and an overall number of 27.4 mpg with little stop and go where the RX achieves its best fuel economy as it can spend more time on pure electric mode. The average speed during my entire test period was an astounding 37 mph. Almost half of the test was a 60 mph road trip to South Lake Tahoe and with not much hybrid help returned 27.6 mpg in that sojourn.



This model is all about comfort.

While handling is not the 450h's strong suit, it is good. Suspension is state of the art, its track is wide at 64 inches and the optional 19 x 7.5 inch alloys are shod with 255/55 rubber. Steering is quick too at 2.79 turns lock to lock. However, turning circle is a bit wide at 40 feet. In routine and aggressive driving the 450h was predictable with no vices, but pushed beyond eight tenths and you could feel the vehicle rotate and start to move around on its underpinnings. But 99.99 percent of RX drivers won't ever push their cars like that and left to its own devices (lots of electronic intervention) it won't let you.

When it comes to ride quality, there is nothing more comfortable or quiet. I mean quiet. It's a true anechoic chamber. The solidity of this vehicle is amazing. It's not a floater but an absorber. Fabulous ride quality.

Braking performance is excellent; stopping the 450h in 42 feet from 40 mph. Discs are large (over a foot in diameter) and ventilated in front. It has practically if not every electronic intervention safety device know to humans. Certainly more than the space station return vehicle. Headlights are terrific.

Inside is sumptuous soft leather seating that literally ensconces your entire backside in comfort. These would make great office chairs. Ditto for rear seating. Shoulder room is

so wide it makes three across seating without complaints. Just as a note, the dreaded mouse was easy to use, but preset buttons are easier to use, much easier.

Instrumentation is good, no tach but everything else you such as a trip computer is easily accessible. All the interior materials are beyond first quality and all soft touch. The dash and doors materials are like the seats. Lexus does a great job and are second to none in these areas.

Pricing starts at \$48,645 plus \$910 for shipping from Detroit. My AWD RX350 tester stickered for about \$6,600 less. Shipping was the same although the Monroney said the 350 came from Japan. The 450h had about \$9,000 in options including \$3,060 that included leather, moonroof, BSM and a bunch more. The question becomes whether the hybrid is worth the extra \$6,600.

While your mileage is up by about 20 percent its only 5 to 6 mpg. If you drive 15,000 a year, you will save about 140 gallons a year or about \$450 annually. If you lease one for three years or so, your payments for the hybrid will probably exceed that number. Performance between the two is essentially the same, except the hybrid offers an exceptional quiet, even more so than the extremely quiet RX350. RX is not the best selling Lexus without reason. It's relatively inexpensive, not too big with huge utility, great performance and then there is the quiet and quality. You need to decide how much the extra quiet is worth.

*Larry Weitzman has been into cars since he was 5 years old. At 8 he could recite from memory the hp of every car made in the U.S. He has put in thousands of laps on racetracks all over the Western United States.*