



Tesla Model S

Power play

First impression | Competing at the top end of the market requires an incredible product. The well established brands set the bar at such a high level that it is almost impossible for newcomers to acquire a market share. Yet, a small new brand named "Tesla" sees a chance. Instead of offering a new flavour of an existing product, it offers new technology that the other brands don't dare to introduce. The "Tesla Model S" is a premium, electrically-powered limousine.

By going for a very large car, Tesla has two advantages. Batteries are so expensive that they raise the price of a small car to unacceptable levels. Compared to the price of a huge, high-class limousine the extra price for the batteries is relatively modest. A more practical reason is that a large car has the space to mount the batteries.

Sedan

Yet, according to European standards the Model S ("S" is for sedan) is a bit over the top. Due to its huge track width, this car hardly fits in a parking space (or there's no room left to exit the car). In dense city traffic with double-parked cars or bicycles, driving the Model S is also a nuisance.



Thanks to the soft shapes, sleek nose and low roofline the Model S appears less bulky than it actually is. Regrettably the low roofline seriously affects headroom; the engineers clearly designed the cabin for an American posture. A word of warning: without the panoramic sunroof, headroom is even worse.

The space in the rear is ample, but not of limousine quality; there's no room to stretch one's legs. Optionally, a second back seat can be ordered to accommodate two children in the boot.

Build quality is also typically American. The doors don't close with a reassuring solid clunk and the materials used are pretty yet brittle. That's why the test car felt more like a hand made concept car than a well made production vehicle. In this respect Tesla is far behind its German and Japanese counterparts.



To emphasise how innovative the technology in the Model S is, the dashboard is mainly constructed of displays. The screen in the centre console is even bigger than the television in many bedrooms! Using the buttons on the steering wheel the driver can arrange the information over the several displays. In the end this doesn't contribute to the ergonomics, but it does make the experience more exciting.

Performance

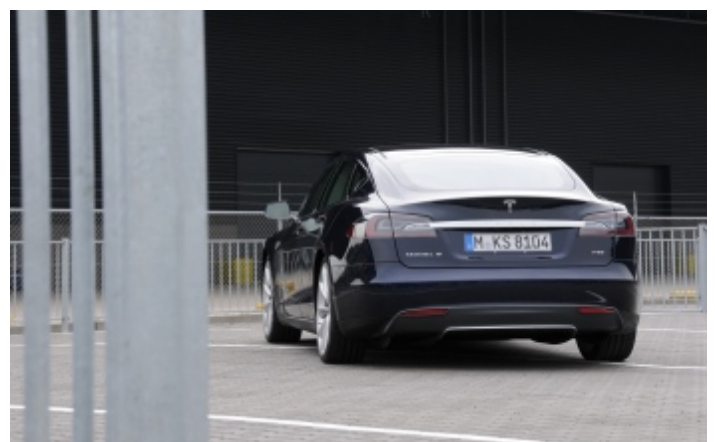
Once on the open road, the parking troubles and shortage of headroom are easily forgotten. With a car like this it's all about comfort, and in this respect the Model S obliterates its rivals. An electric motor is quieter, smoother and more torque strong than even the best petrol engine. On top of that, Tesla installed an exceptionally powerful electric motor, so that the Model S outperforms most petrol-powered rivals.

The "85 kW" driven here sprints from 0 to 62 mpg in

5.6 seconds. The "Performance" edition takes just 4.4 seconds. To illustrate: only a Mercedes-Benz S65 AMG can match these figures, yet it costs about four times as much and guzzles so much gas that even an oil sheikh would be ashamed.



The Model S doesn't produce any direct emissions and is charged using a wall socket or faster charger. It depends on the power source (wind, solar, nuclear) how much of an impact this has on the environment. However, an electric motor is always more efficient than an internal combustion engine. That's because the latter wastes a lot of energy producing unwanted by-products like heat and noise.



Range

The battery pack consisting of over 7,000 cells is mounted underneath the Model S. Together they have a capacity of 85 kWh. By comparison: that's about three times more than a Nissan Leaf, the world's most popular electric car.

Like all electric cars, the Model S recuperates energy while braking or freewheeling. What's special about the Tesla is that the user can choose how much kinetic energy is converted into electricity. This means the system either reconverts a lot of energy and immediately loses speed when releasing the throttle, or it gains less power and won't lose speed when idling. When braking, the system always regenerates as much as possible. During an emergency stop a special programme activates to reduce the braking distance, which is impressive.



In real life the Model S can cover about 400 km (250 miles) on a full charge. After that there's no emergency engine to fall back on. This range is significantly better than that of other electric cars, yet painfully small compared to conventional mile munchers. And there's the big problem: cars like these are bought primarily to cover huge distances, and 400 km isn't exactly a long journey.

Handling

The battery pack adds about 800 kg to the weight of the car. That's more than the total weight of a small city car or sports car. Still, Tesla managed to save

weight on just about every other part of the bodywork. On average, the Model S is just 100 to 200 kg heavier than a comparable vehicle equipped with a traditional engine.

Even better: the bulk of the weight is concentrated in the bottom, meaning the centre of gravity is favourably low. Another good thing: the weight is distributed almost evenly over the front and rear wheels.



When cornering fast, the Model S sticks to the road and will outperform the others once again. Thanks to its rear-wheel drive the feeling in the steering wheel is pure, since it isn't disturbed by the forces of the power train.

However, during a zig-zag or evasive manoeuvre at high speeds, the tyres (size 245/45R19) and electronic stability system don't stand a chance against the lateral forces, making this heavy weight skid and slide in every direction. In most other circumstances the extra pounds can hardly be noticed, and in fact the Model S is surprisingly agile for such a large car.

Conclusion

The relatively new brand "Tesla" goes head to head with the well established brands by introducing a big, premium sedan named the "Model S". The big difference is that this newcomer is electrically powered. Whether or not this makes the Model S a better car is a matter of choice.

As a long-distance limousine the Model S has several shortcomings. While its range is much larger than that of other electric vehicles, it is not enough for long journeys. To make matters worse, the cabin space isn't very generous for a car of this size. Compared to European and Japanese made products the build quality of the American product is poor.

As an innovative product, the Model S does convince. Thanks to its electric motor this Tesla is more comfortable, much faster and less harmful to the environment than a traditional car. The extra weight of the batteries is hardly noticeable; handling is as good as that of a traditional car. And the best thing is: thanks to its green credentials, the Model S is much cheaper than its competitors. ■



Specifications

Tesla Model S 85 kW

Size and weight



Length x width x height	497 x 197 x 145 cm
Wheelbase	296 cm
Kerb weight	2.108 kg
Trailer	unknown
Trailer - braked	unknown
Fuel capacity	unknown
Luggage space	150 l
Tyre size	245/45R19

Engine and performance

Capacity	unknown
Cylinders / valves	unknown
Max power	362 PS @ 6000 rpm
Max torque	440 Nm @ 1 rpm
Drive	rear wheels
Acceleration 0 - 62 mph	5.6 secs
Top speed	200 km/h
Average mileage	INF l / 100 km
Mileage urban	INF l / 100 km
Mileage extra urban	INF l / 100 km
CO2 emissions	unknown

Price

Price	Â£ 66,900
Price base model	Â£ 66,900