Tesla Model S

DUAL MOTOR ELECTRIC AWD AUTOMATIC

2023 ★★★★★ 97%

10.0 /10
Clean Air Index

9.4 /10
Energy Efficiency Index

9.7 /10
Greenhouse Gas Index

10.0 /10 Clean Air Tests

	Laboratory Test	NMHC	NO_x	NH_3	CO	PN
10.0/10	Cold Test	●	●	●	●	●
10.0/10	Warm Test	●	●	●	●	●
10.0/10	Highway	●	●	●	●	●
10.0/10	Cold Ambient Test	●	●	●	●	●
	Road Test					
10.0/10	On-Road Drive	●	●	●	●	●
5.0/5	On-Road Short Trip	●	●	●	●	●
8.0/8	On-Road Heavy Load	●	●	●	●	●
5.0/5	On-Road Light Load	●	●	●	●	●
2.0/2	Congestion	●	●	●	●	●

n.a. ● good ● adequate ● marginal ● weak ● poor

Comments

Thanks to its purely electric powertrain, the Model S naturally achieves the maximum score in this part of the assessment.

9.4 /10 Energy Efficiency Tests

	Laboratory Test	Energy		
10.0/10	Cold Test		→	18.7 kWh/100 km
10.0/10	Warm Test		→	19.0 kWh/100 km
9.4/10	Highway		→	24.5 kWh/100 km
8.5/10	Cold Ambient Test		→	30.8 kWh/100 km

	Consumption	Driving Range
Average	20.7 kWh/100 km	554 km
Worst-case	30.8 kWh/100 km	367 km

n.a. good adequate marginal weak poor

Comments

The energy efficiency of the Tesla Model S is high, despite the empty vehicle mass of 2.1 tons and gigantic power of 504 kW. Basically the same consumption values of ca. 18.8 kWh/100 km are determined in the Cold and Warm powertrain start WLTC+ tests, conducted at 23°C ambient temperature. Only 24.5 kWh are needed in the Highway Test with full-power acceleration phases. The electricity demand rises to 30.8 kWh/100 km in the Cold Ambient Test at -7°C, where the efficient but highly comfort oriented heating strategy has a significant impact on the measured energy consumption. Thanks to its high battery capacity and the efficient aerodynamics and powertrain, the Model S is able to achieve a driving range of 631 km in the On-Road Drive performed at 22°C.

9.7 /10 Greenhouse Gases Tests

	Greenhouse gases	CO_2	N_2O	CH_4
10.0/10	Cold Test			
10.0/10	Warm Test			
9.9/10	Highway			
8.9/10	Cold Ambient Test			

n.a. good adequate marginal weak poor

Comments

The Greenhouse Gas (GHG) Index is based on a Well-to-Wheel+ approach, meaning that the GHG emissions related to the supply of energy are added to those of the tailpipe. Since the Model S is a purely electric car, its GHG emissions originate only from the upstream processes of electricity supply. The values are ca. 53 g CO_2-eq./km in the standard WLTC+ tests and 87 g CO_2-eq./km in the Cold Ambient Test at -7°C. Overall, thanks to its efficient powertrain and the relatively low GHG of EU electricity production, the Model S achieves very high 9.7 out of 10 in this part of the assessment.

Our Verdict

The Tesla Model S is able to impress not only for its cutting-edge technology features, but also for its attention to energy efficiency, performance and driving range. The version tested here is the AWD Dual Motor version, with 100 kWh of battery capacity and impressive power and torque output (504 kW, 842 Nm). Regardless of its size and mass, the Model S sets an example for the segment of pure electric luxury cars by displaying high and consistent driving range (up to 630 km in the real-world On-Road Drive), smart heat management and high efficiency, supported by 89% grid-to-battery-output efficiency (determined by 11 kW charging method). In light of all that, the vehicle is able to easily collect all 5 Green stars and reach an average score of 97%, just 1% less than the Model 3 tested last year.

Disclaimer

Specification

Tested Car
5YJSA7E57PF52xxxx

Publication Date	Vehicle Class	Tyres	Emissions Class
11 2023	Executive Car	255/45 285/40R19	Euro 6 AX

Mass	Engine Size	System Power/Torque	Declared CO_2
2,095 kg	n.a.	504 kW/842 Nm	n.a.

Declared Battery Capacity	Declared Driving Range	Declared Consumption
100.0 kWh	Overall 634 km City 760 km	17.5 kWh/100 km

Heating Concept
Waste heat + Heat pump

Think before you print