

Tesla Model Y

REAR-WHEEL DRIVE ELECTRIC RWD AUTOMATIC



Sustainability Rating

2026



93%



**Clean
Air**

9.0 /10



**Energy
Efficiency**

8.9 /10



**Greenhouse
Gases**

10.0 /10

Driving Experience



**Consumption
& Range**

● GOOD



**Cold Winter
Performance**

● GOOD



**Charging
Capability**

● ADEQUATE

Our verdict

Tested here is the Tesla Model Y in its rear-wheel-drive version. The sustainability assessment is impressive and belies the fact that this is a 1.9 tonne SUV with a 60 kWh battery. The life-cycle calculations do not rely on the usual generic assumptions about the vehicle's production because Tesla supplied manufacturing data, which was reviewed by Green NCAP experts. The actions taken by Tesla to reduce the climate impact of vehicle and battery manufacturing are effective and help the car collect all 10 points in the Greenhouse Gas Index.

- › Scores well for brake and tyre abrasion due to smooth accelerator pedal tuning and extensive regenerative braking. Keeps production- and electricity-related emissions low.
- › Delivers low electricity consumption across most tests thanks to a highly efficient powertrain. Heating in cold weather increases the electricity demand due to a quick cabin heat-up. Records 15.2 and 12.7 kWh/100 km in the hot summer mixed on-road test and short urban trip, respectively.
- › Tesla decides to submit vehicle and battery manufacturing data for verification by Green NCAP, leading to the lowest greenhouse gas emissions published by Green NCAP so far. The total life cycle GHG emissions value of 95 g CO₂-eq./km is far below the lower threshold needed to score maximum points.

Disclaimer

Think before you print



Clean Air

9.0 /10

Comments

Being fully electric, the Tesla naturally doesn’t produce any exhaust pollutants. The score for tyre abrasion is above average, and the smooth accelerator pedal control is to be highlighted. Thanks to a very high share of electric braking, the use of friction braking is kept to a minimum and the brake abrasion result is very good. Production- and electricity supply-related emissions score a high 7.6/10.

Exhaust emissions

Exhaust pollutant emissions are produced from combustion engines. Although current emission legislation is very strict, this type of emission directly affects air quality, and not all vehicles perform equally well. [Read more](#)

GOOD ● 10.0 /10

In laboratory

GOOD ● 10.0 /10

Green NCAP performs a wide range of tests on cars in the laboratory. This is the best way to ensure controlled conditions and guarantee that all cars are tested in the same way, making their results comparable. [Read more](#)

	NMHC	NO _x	NH ₃	CO	PN	PM	Score
Legal test (WLTP)	●	●	●	●	●	●	8.0 /8
Warm weather	●	●	●	●	●	●	10.0 /10
Highway	●	●	●	●	●	●	10.0 /10
Winter cold start	●	●	●	●	●	●	10.0 /10
Winter warm start	●	●	●	●	●	●	10.0 /10

On road

GOOD ● 10.0 /10

An on-road driving test, using portable emissions measuring equipment complements Green NCAP's laboratory tests. [Read more](#)

	NMHC	NO _x	NH ₃	CO	PN	PM	Score
Real-world mixed drive	●	●	●	●	●	●	10.0 /10
Short city trip	●	●	●	●	●	●	10.0 /10
Congestion	●	●	●	●	●	●	2.0 /2

● good ● adequate ● marginal ● weak ● poor ● not applicable

Non-exhaust emissions

Driving a vehicle also produces emissions different from those of the exhaust pipe. Green NCAP evaluates vehicle properties that contribute to tyre and brake abrasion.

ADEQUATE



7.4

/10

Tyre wear

Tyre abrasion releases small particles during driving, and some vehicle properties have major impact on it. Heavier vehicles, wheel alignment causing increased slip angle, and aggressive acceleration responses all increase tyre wear and particle emissions. [Read more](#)

ADEQUATE



3.7

/6

	Result	Score
Influence of mass		1.2 /3
Wheel alignment		0.5 /1
Accelerator response		2.0 /2

Brake wear

Brake dust, produced by friction brakes, can be mitigated through filters, enclosed brake systems (like drums), or by reducing friction brake use with regenerative braking in electrified vehicles. Containment keeps dust inside the system, while recuperation lowers brake wear. However, heavier vehicles still generate more brake abrasion due to their greater stopping demands. [Read more](#)

ADEQUATE



5.1

/6

	Result	Score
Brake dust mitigation		0.0 /4
Brake dust containment		0.0 /6
Recuperative braking - warm test		5.1 /6



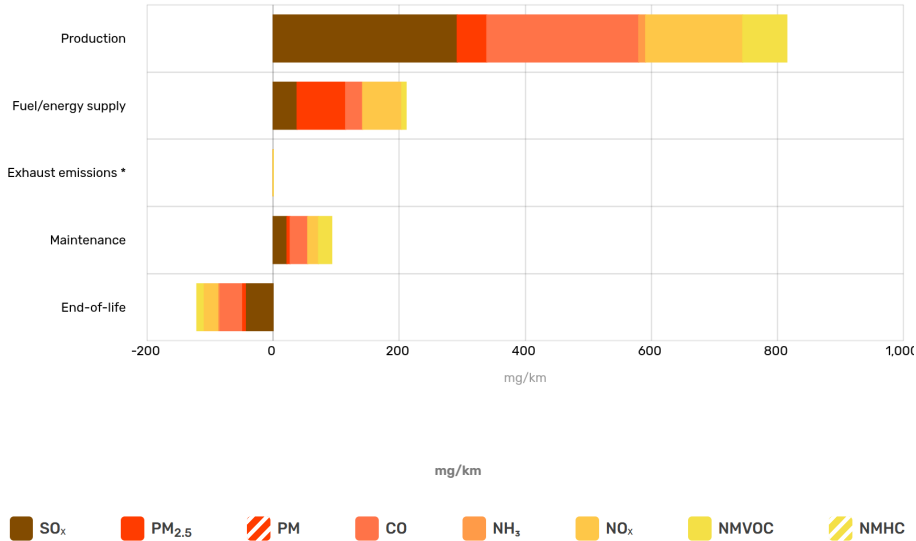
Additional Life Cycle Assessment information

Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime, 'from cradle to grave'. In this section, pollutants are estimated in the various stages of a vehicle's life other than use. The chart also displays the measured emissions related to usage, which are taken as an average from the tests and are scored separately in the 'Exhaust emissions' part above. The end-of-life approach uses results in negative values because the benefit of materials recovery and recycling exceeds the effort of obtaining and processing virgin raw materials.

ADEQUATE ● 7.6 /10

Pollutants

Most of the vehicle exhaust pollutant species are also emitted in others life cycle phases. These are health- and nature-damaging compounds, the amount of which should be reduced as well.



* Exhaust emissions are not contributing to the score in Additional Life Cycle Assessment information because they are scored in the Exhaust emissions section above



Energy Efficiency

8.9 /10

Comments

The tested Model Y demonstrates an efficient powertrain which, combined with good aerodynamic figures, leads to remarkable Highway consumption values. The energy demand recorded in the -7°C Winter Cold Start test is higher - 30.5 kWh/100 km - but a look at the impressive cabin heating performance explains where the energy goes. This is confirmed by the observation that the same test cycle - when it starts with a pre-warmed powertrain and cabin in the Winter Warm Start test - needs only 21.2 kWh/100 km. The on-road drive and the short urban trip were performed in hot (35°C!) and dry summer weather, and the recorded electricity demand was 15.2 and 12.7 kWh/100 km, respectively.

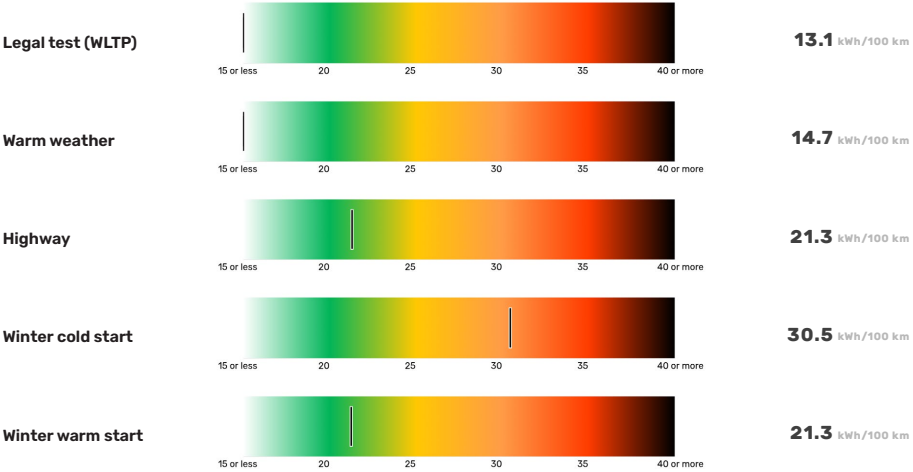
Energy demand

ADEQUATE ● 9.0 /10

Propulsion energy consumption in laboratory

GOOD ● 10.0 /10

The vehicle's measured consumption figures are displayed in the bar chart. The colour scheme positions the values relative to low and high figures in a typical range. The ranges are different for combustion engine and pure electric vehicles.



● good ● adequate ● marginal ● weak ● poor ● not applicable



Energy Efficiency

8.9 /10

Additional Life Cycle Assessment information

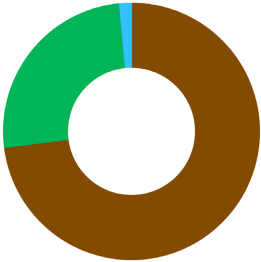
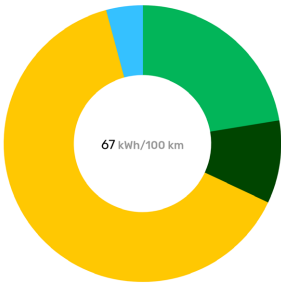
ADEQUATE ●

8.9 /10

Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime 'from cradle to grave'. In this section, the total vehicle life cycle primary energy demand is displayed. The scoring does not consider the direct propulsion energy use, because it is scored separately in the 'Propulsion energy consumption in laboratory'.

Total LCA energy consumption

Energy source share in total LCA consumption



Direct propulsion energy share is not shown, it is included in 'Fuel/energy supply'.

Rolling resistance

Rated here is the vehicle's resistance to movement at low speeds. Different factors have an impact on it, but the most significant one is mass.

ADEQUATE ●

7.9 /10



● good ● adequate ● marginal ● weak ● poor ● not applicable

Greenhouse Gases

10.0 /10

Comments

Greenhouse gases is the car’s top assessment category. It collected all 10 points thanks to Tesla’s transparency towards Green NCAP. The life cycle emissions calculation using the Tesla-provided and independently verified data resulted in the lowest value published by Green NCAP so far: 95 g CO₂-eq./km. The figure is significantly below the lower threshold of 110 g CO₂-eq./km needed to achieve the maximum score in this part of the assessment. The calculations consider the car’s manufacturing in Germany and the measures taken to reduce its GHG emissions, as well as the effort invested in lowering the impact of battery production. The maintenance emissions calculation is based on Green NCAP’s generic model and assumptions. The battery emissions were calculated with GREET Battery Module 2024 by Argonne National Laboratory using changed input data and additions by Green NCAP.

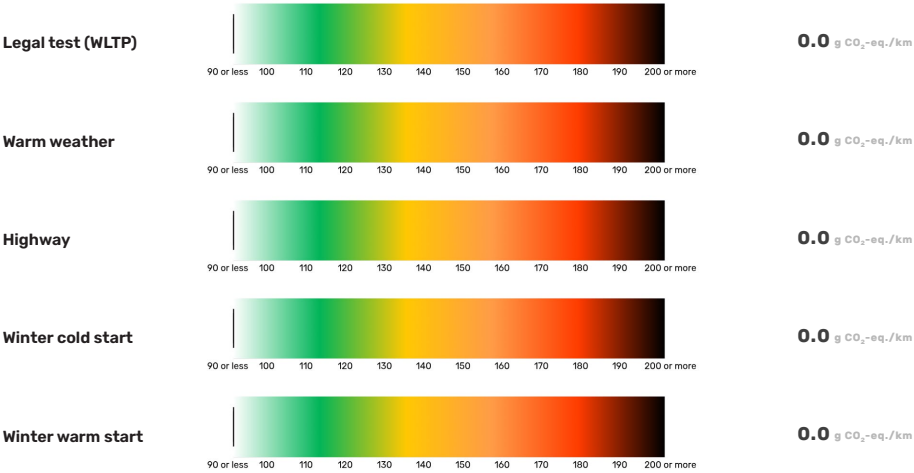
Exhaust GHG emissions

Combustion of conventional fuels releases greenhouse gases at the vehicle’s tailpipe. The most significant of these gases are the emissions of CO₂. Green NCAP’s assessment considers methane (CH₄) and laughing gas (N₂O) as well. Together, these are counted with their global warming potential to a sum known as CO₂ equivalent.

GOOD 10.0 /10

In laboratory

Green NCAP performs a wide range of tests on cars in the laboratory. This is the best way to ensure controlled conditions and guarantee that all cars are tested in the same way, making their results comparable. [Read more](#)



good adequate marginal weak poor not applicable

Greenhouse Gases

10.0 /10

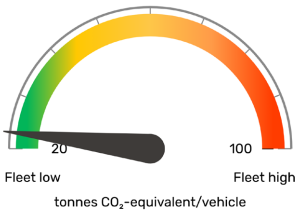
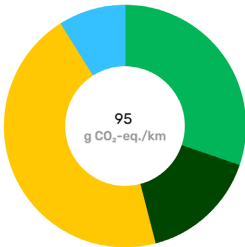
Additional Life Cycle Assessment information

Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime, 'from cradle to grave'. In this section, the total vehicle life cycle greenhouse gas emissions are displayed.

ADEQUATE ●

8.1 /10

Total LCA GHG emissions



Vehicle Life Cycle average emissions 23 (+/-)
(best 19 | worst 28)

- Production & recycling 30.3%
- Battery production 15.7%
- Tailpipe emissions * 0.0%
- Fuel/energy supply 45.1%
- Maintenance 8.9%

* The scoring does not consider the direct exhaust GHG emissions at the tailpipe, because they are scored separately in 'Exhaust GHG emissions' above.





Driving Experience



Consumption & Range

● GOOD



Cold Winter Performance

● GOOD



Charging Capability

● ADEQUATE

Green NCAP Comment

The tested Model Y became one of only two cars evaluated 'good' in both Consumption and Range and Cold Winter Performance so far.

- › The car shows good and adequate estimated real-world consumption values in different tests. With the 62.5 kWh large battery, the estimated driving ranges are all rated as adequate. The board computer consumption readings are accurate.
- › Significant driving range can be gained if the Model Y is preheated before the start of a cold winter trip and users are advised to do so. The heating performance of the car in -7°C cold start conditions is generally good and the target temperature of 16°C is reached in 4 to 8 minutes, depending on the seating position. The Model Y is one of the few cars tested so far to demonstrate cabin thermal insulation assessed as 'good' – the cabin only lost 5.2°C after the car was locked and left at -7°C for 30 minutes. The Model Y's standard equipment features many additional heating functions, including remote activation of seat and steering wheel heating.
- › With 88.7%, the standard home AC charging (from grid to battery output) receives an 'adequate' evaluation. Worth highlighting is the good performance at the fast charger, where charging the battery from 10 to 80% SoC takes less than 24 minutes. The average charging power is 115 kW, while the peak value is 187 kW. The battery preconditioning can be activated both manually and automatically. The car does not offer any bidirectional charging functionalities.



Consumption & Range

GOOD

Estimated actual consumption

GOOD

What consumption can be expected in real world conditions?

In-laboratory measured consumption values are only partially representative of real-world use. Green NCAP's estimates aim at providing more realistic figures, which are based on measured results, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	16.0	15.5	16.9	15.7	kWh/100 km
Cold Winter	31.5	22.9	23.1	25.9	kWh/100 km

Driving range

ADEQUATE

What driving range can be expected in real world conditions?

Of special importance to consumers is the real-world driving range of electric vehicles. Green NCAP estimates this based on measured data, modified by correction factors.

Conditions	Urban	Rural	Highway	Mixed	
Warm weather	442	457	420	449	km
Cold Winter	225	309	307	274	km

Accuracy of display

GOOD

Is the consumption figure on the display correct?



good adequate poor not applicable



Cold Winter Performance

GOOD 

Driving range benefit of pre-warming

GOOD 

How much further can you drive in winter, if the car is pre-warmed?

A cold vehicle has increased energy consumption at the start of its trip, mostly due to the cabin heating demand. Pre-warming the car while it is plugged, when possible, can significantly benefit its driving range in cold weather conditions. Green NCAP's winter tests are performed at -7°C.

Type	Driving Range Benefit	Result
Urban trip	+136 km	
Mixed trip	+101 km	

Cabin heating

GOOD 

Does the vehicle get warm quickly in winter?

This indicates the time needed to reach 16°C in seconds at different positions in the cabin after the cold vehicle has been started at -7°C ambient temperature.

	Front	Rear
Head area	249 s 	286 s 
Footwell	468 s 	

The rear footwell area left reached the temperature in 296 seconds and in the right in 562 seconds.



 good  adequate  poor  not applicable



Cold Winter Performance

GOOD 

Additional heating functions

What functions can be used to improve heating comfort?

Unlike a combustion car, which usually uses the engine's waste heat to provide warmth to the cabin, in electric vehicles, the energy needed comes from the battery. Therefore, there is a trade-off between thermal comfort and energy consumption. Some additional heating functions can deliver good thermal comfort performance at lower energy use compared to heating up the entire cabin. If they can be scheduled or remotely activated before a trip, while the vehicle is still plugged, both comfort and driving range can be notably improved.

	Y/N	Fitment
Heat pump		Standard
Seating heating front		Standard
Seating heating rear		Available for other versions
Steering wheel heating		Standard
Sheduled pre-heating of seats		Standard
Scheduled steering wheel pre-heating		Standard
Scheduled cabin air pre-heating		Standard
Smart cabin heating management		Standard

Cabin thermal insulation

How well does the cabin maintain its temperature?

GOOD 

Assessed here is the average cabin temperature drop after 30 minutes, starting from 18°C when the outside temperature is -7°C and the vehicle is inactive.





Charging Capabilities

ADEQUATE ●

Battery pre-conditioning

Does the vehicle have the ability to optimize the battery temperature for fast charging?

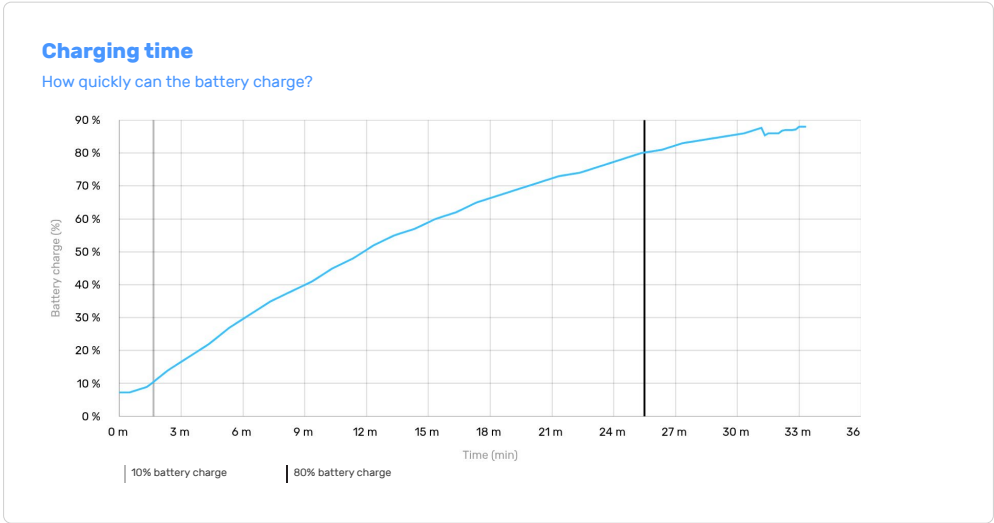
Fast charging is quicker when the battery temperature is in a certain range, and many vehicles possess the function to actively prepare for a coming fast charging event. Most use the charger destination in the navigational system to control the process, and some would offer a manual activation function.

	Manual	Automatic
Battery pre-conditioning	✓	✓

Fast charging

GOOD ●

Green NCAP's fast charging test verifies the vehicle's ability to recharge fast, which is crucial at long trips or tight schedules. Although constantly improving, not all vehicles offer the same capabilities.



● good ● adequate ● poor ● not applicable



Charging Capabilities

ADEQUATE

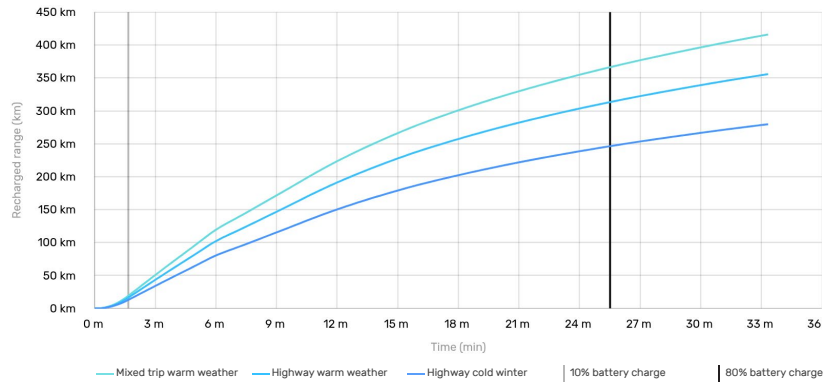
Fast charging

GOOD

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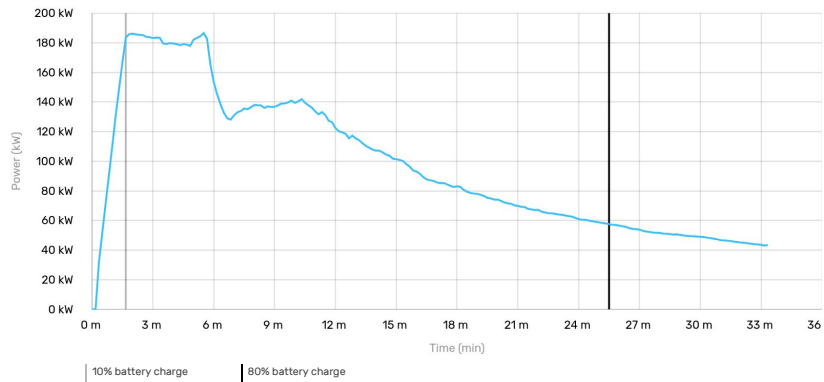
Recharged range gain per charging time

How long do you need to fast charge to drive a certain distance?



Charging power

How quickly does energy flow into the battery, depending on its charge level?





Charging Capabilities

ADEQUATE ●

Home charging efficiency

ADEQUATE ●

Is charging at home efficiently utilizing the energy withdrawn from the grid?

The assessed efficiency value is the grid-to-battery-output efficiency, which describes what share of the energy taken from the electricity grid is available for the vehicle to use for propulsion and other auxiliary functions. The value encompasses not only the charger efficiency but considers several other losses as well.

Home charging efficiency	89% ●
Maximum home charging power	11.0 kW

Bidirectional charging

POOR ●

How capable is the vehicle of supplying energy from its battery to other devices or systems?

Bi-directional charging is available in some vehicles and is gaining increasing popularity. It comes with different power and functionality levels. However, battery usage for purposes additional to regular vehicle driving and charging might be disadvantageous for its durability and manufacturers might introduce limitations to protect it.

Power output Not available		
Compatibility		
× Vehicle-to-Load (V2L) The inlet or the interior socket can provide AC power through an electrical domestic socket.	× Vehicle-to-Household (V2H) The vehicle can provide power to a household through a charger.	× Vehicle-to-Grid (V2G) The vehicle can return power to the grid.
Grid integration		
× Basic No integration (just a socket for a stand-alone load). No scheduling option. Very basic visualisation.	× Limited Energy management system through the vehicle app (timers availability and power monitoring). Dedicated interface in the car, with mobile app monitoring.	× Advanced Advanced settings available such as tariff and consumption control, linked to distributor energy prices. Advanced real time energy flow visualization. AI powered suggestions for optimal usage.



Specifications

Vehicle class
Small SUV

System power/torque
220 kW / 420 Nm

Engine size
n.a.

Declared consumption
13.1 kWh/100 km

Declared driving range
Overall 534 km
City 691 km

Declared CO₂
n.a.

Declared battery capacity
Usable (net) 62.5 kWh
Installed (gross) 62.5 kWh

Mass
1,914 kg

Heating concept
Waste heat & heat pump

Tyres
235/55R18

Emissions class
AX

Tested car
XP7YGCFR5TB88xxxx

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10 2026



