BYD Sealion 7

COMFORT ELECTRIC RWD AUTOMATIC

Sustainability Rating

2025 ★★★★☆ 73%

Clean Air
8.4 /10

Energy Efficiency
6.5 /10

Greenhouse Gases
7.2 /10

Driving Experience

Consumption & Range
ADEQUATE

Cold Winter Performance
ADEQUATE

Charging Capability
ADEQUATE

Our verdict

The BYD Sealion is a large SUV with a kerb weight of 2.2 tonnes and a 82.5 kWh battery, which makes its sustainability score a creditable result for a vehicle of this type. It convinces with reasonable consumption values and well balanced electric powertrain.

- The Sealion 7 eliminates exhaust emissions completely and gains points for limiting tyre abrasion through smooth acceleration, but is limited by its high mass and rear toe angle. It recovers brake energy very efficiently and thus minimizes brake abrasion. Some points are lost due to pollutant LCA for production and energy supply.
- The consumption values measured in lab are 19.9–31.3 kWh/100 km depending on the conditions. The Cold Winter tests performance is good and the real-world mixed drive used 21.45 kWh/100 km. The total life cycle primary energy demand is calculated at 82.4 kWh/100 km, including all LCA phases.
- The electric car emits no direct GHGs and production and energy supply dominate its climate impact. The total calculated LCA greenhouse gas emissions sum up to 163.5 g CO_2-eq./km, earning the Sealion a score of 7.2/10 in the GHG part of the assessment.

Disclaimer

Clean Air

8.4 /10

Comments

Due to the fully electric powertrain the Sealion 7 doesn't have any exhaust emissions. It collects half of the available points for tyre abrasion reduction, which is supported by a smooth accelerator pedal response, but the relatively high mass, as well as the high toe angle on the rear axle, limit the score. The car shows a very high brake energy recuperation rate, which assures a good result in brake abrasion mitigation. Due to the mass and battery size, the vehicle loses some assessment points in the additional LCA evaluation, which considers production, energy supply, maintenance and end-of-life treatment.

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)	not applicable	good	not applicable	good	not applicable	good	8.0/8
Warm weather	good	good	good	good	good	good	10.0/10
Highway	good	good	good	good	good	good	10.0/10
Winter cold start	good	good	good	good	good	good	10.0/10
Winter warm start	good	good	good	good	good	good	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	not applicable	good	not applicable	good	good	not applicable	10.0/10
Short city trip	not applicable	good	not applicable	good	good	not applicable	10.0/10
Congestion	not applicable	good	not applicable	not applicable	not applicable	not applicable	2.0/2

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

Clean Air

8.4 /10

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 6.4/10

Tyre wear

MARGINAL 2.9/6

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

	Result	Score
Influence of mass	weak	0.4/3
Wheel alignment	marginal	0.5/1
Accelerator response	good	2.0/2

Brake wear

ADEQUATE 4.7/6

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

	Result	Score
Brake dust mitigation	poor	0.0/4
Brake dust containment	poor	0.0/6
Recuperative braking - warm test	adequate	4.7/6

good adequate marginal weak poor not applicable

Clean Air

8.4 /10

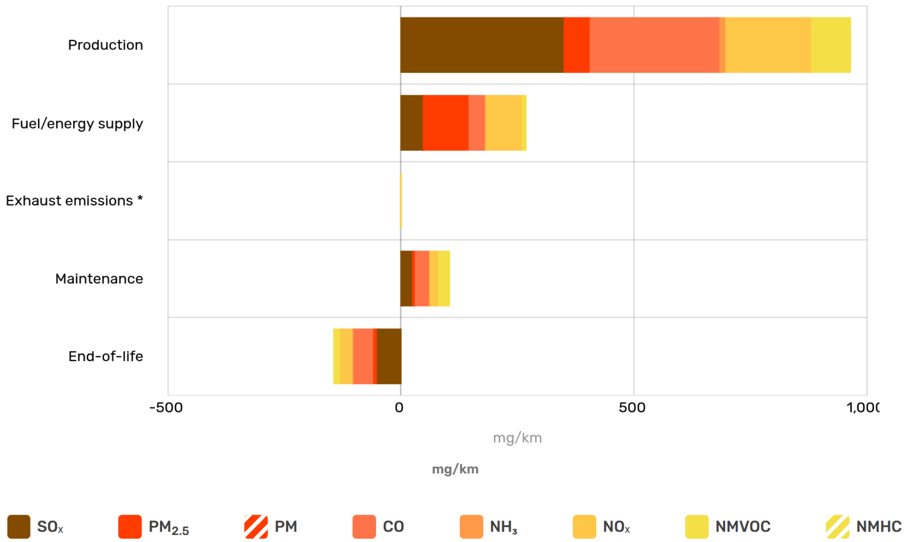
Additional Life Cycle Assessment information

MARGINAL **5.7**/10

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.

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**

good | adequate | marginal | weak | poor | not applicable

Energy Efficiency

6.5 /10

Comments

The legal test consumption value of 19.9 kWh/100 km suggests that the tested car is a rather large, heavy and luxurious vehicle. With 21.6 kWh/100 km in the Warm weather laboratory test, as well as 31.3 kWh/100 km in the dynamic high speed Highway Test, the Sealion shows typical values and does not impress. However, its consumption in the Cold Winter tests is obviously the result of efficient thermal management and componentry, which ensures high comfort for a modest energy increase. The real-world mixed drive On-road test needed 21.45 kWh/100 km, while 15.2 kWh/100 km was sufficient for the short urban trip. All the stated figures include the efficiency of the charging/discharging processes. This index's score is mainly based on the total primary energy demand, which is calculated as the sum of 25.6 kWh/100 km direct propulsion energy consumption and about 56.8 kWh/100 km from the other LCA phases.

Energy demand

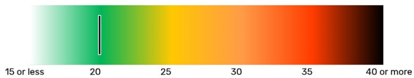
ADEQUATE **6.8**/10

Propulsion energy consumption in laboratory

ADEQUATE **8.9** /10

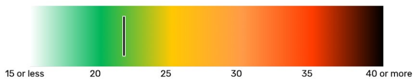
The vehicle's measured consumption figures are displayed in the bar chart. The colour scheme positions the values relative to low and high figures in a typical range. The ranges are different for combustion engine and pure electric vehicles.

Legal test (WLTP)



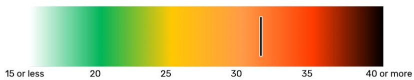
19.9 kWh/100 km

Warm weather



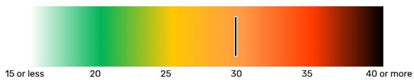
21.6 kWh/100 km

Highway



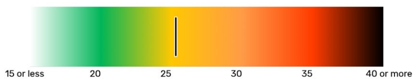
31.3 kWh/100 km

Winter cold start



29.5 kWh/100 km

Winter warm start



25.3 kWh/100 km

good · adequate · marginal · weak · poor · not applicable

Energy Efficiency

6.5 /10

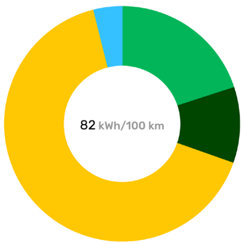
Additional Life Cycle Assessment information

ADEQUATE

7.2/10

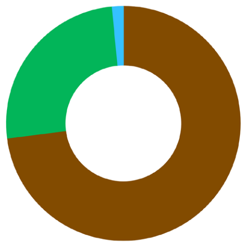
Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime 'from cradle to grave'. In this section, the total vehicle life cycle primary energy demand is displayed. The scoring does not consider the direct propulsion energy use, because it is scored separately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

Total LCA energy consumption



- Production & recycling 20.0%
- Battery production 10.4%
- Fuel/energy supply * 65.7%
- Maintenance 3.9%

Energy source share in total LCA consumption



- Fossil 73.0%
- Renewable 25.5%
- Other 1.5%

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.

WEAK

1.2/10

good | adequate | marginal | weak | poor | not applicable

Greenhouse Gases

7.2 /10

Comments

As an electric car, the Sealion 7 does not emit any greenhouse gases directly. Its climate impact comes from the processes of production and distribution, energy supply, maintenance and end-of-life treatment. The total life cycle greenhouse gas emissions are calculated to 163.5 g CO_2-eq./km, of which 115 are contributed by the vehicle production in China.

Exhaust GHG emissions

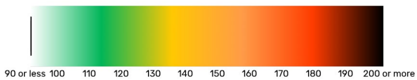
Combustion of conventional fuels releases greenhouse gases at the vehicle's tailpipe. The most significant of these gases are the emissions of CO_2. Green NCAP's assessment considers methane (CH_4) and laughing gas (N_2O) as well. Together, these are counted with their global warming potential to a sum known as CO_2 equivalent.

GOOD ● **10.0**/10

In laboratory

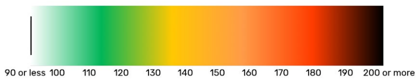
Green NCAP performs a wide range of tests on cars in the laboratory. This is the best way to ensure controlled conditions and guarantee that all cars are tested in the same way, making their results comparable. Read more

Legal test (WLTP)



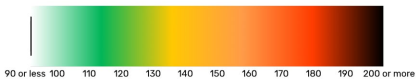
0.0 g CO_2-eq./km

Warm weather



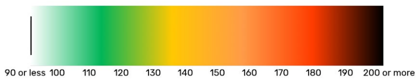
0.0 g CO_2-eq./km

Highway



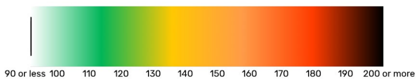
0.0 g CO_2-eq./km

Winter cold start



0.0 g CO_2-eq./km

Winter warm start



0.0 g CO_2-eq./km

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

Greenhouse Gases

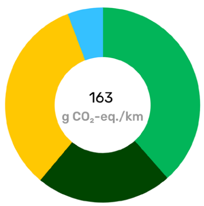
7.2 /10

Additional Life Cycle Assessment information

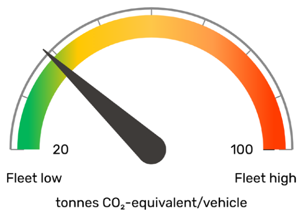
Life Cycle Assessment (LCA) investigates the environmental impact of a car over its entire lifetime, 'from cradle to grave'. In this section, the total vehicle life cycle greenhouse gas emissions are displayed.

WEAK ● **2.8** /10

Total LCA GHG emissions



- Production & recycling 38.5%
- Battery production 22.6%
- Tailpipe emissions * 0.0%
- Fuel/energy supply 33.1%
- Maintenance 5.7%



Vehicle Life Cycle average emissions **39** (+/-)
(best **34** | worst **42**)

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

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

Driving Experience

Consumption & Range

ADEQUATE

Cold Winter Performance

ADEQUATE

Charging Capability

ADEQUATE

Green NCAP Comment

The sealion 7 is rated as 'adequate' in all three sections of the Driving Experience assessment, demonstrating a good balance between consumption, range and functionalities.

- Green NCAP's estimation of the real-world consumption values results in a mixed picture of 'poor' and 'adequate' evaluations. While all estimated warm weather scenarios suffer due to relatively high consumption values, the cold weather energy demand is mainly in the adequate range, which suggests efficient thermal management. Thanks to the big battery, the Sealion earns a total 'good' mark for driving range, again mostly benefiting from its cold temperatures efficiency. However, BYD could easily improve the accuracy of the board computer consumption display, the readings of which strongly deviate from the measured figures.
- A significant driving range can be achieved in cold winter conditions, if the vehicle can be pre-conditioned before the trip while being plugged to the charger. The cabin heat-up performance of the Sealion 7 is excellent, providing high thermal comfort very quickly. Even the rear footwell is not neglected and less than 300 seconds are needed to reach 16°C. In the insulation test at ambient -7°C, the cabin lost 6°C after 30 minutes – a result evaluated as adequate. The vehicle's standard equipment with a number of efficient and thermal comfort enhancing functions is impressive.
- Although the tested car reached the declared maximum charging power of 150 kW in the beginning of the recharge, the measured fast charging time (10-80% SoC) was about 8 minutes longer than the officially declared 32 minutes and resulted in a poor note. With 85.3%, the 11 kW home charging grid-to-battery-output efficiency is slightly below the industry average, yet seen as adequate and similar to the values measured for other BYD vehicles previously tested by Green NCAP. As with many other BYD's, the Sealion also offers the possibility to charge external electric devices. The vehicle-to-load function allows the connection of consumers of up to 3.3 kW power and helps reach an 'adequate' evaluation in this part of the assessment.

Consumption & Range

ADEQUATE

Estimated actual consumption

ADEQUATE

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	21.5 (poor)	24.2 (poor)	25.4 (poor)	23.2 (poor)	kWh/100 km
Cold Winter	26.6 (adequate)	24.2 (adequate)	31.1 (poor)	27.4 (adequate)	kWh/100 km

Driving range

GOOD

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	431	382	365	400	km
Cold Winter	348	383	298	337	km

Accuracy of display

POOR

Is the consumption figure on the display correct?

good adequate poor not applicable

Cold Winter Performance

ADEQUATE

Driving range benefit of pre-warming

ADEQUATE

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	+121 km	adequate
Mixed trip	+53 km	adequate

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	269 s (good)	415 s (good)
Footwell	264 s (good)	

Replace contents of this cell. The rear footwell area left reached the temperature in 284 seconds and in the right in 248 seconds.

good | adequate | poor | not applicable

Cold Winter Performance

ADEQUATE

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.

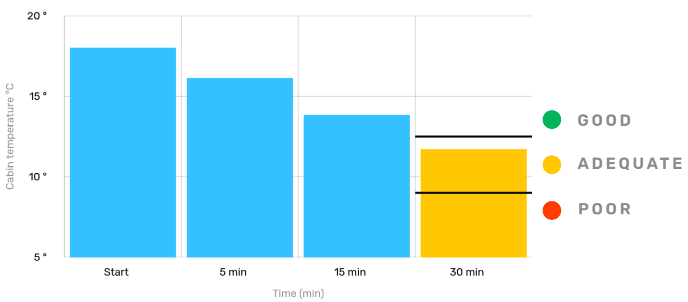
	Y/N	Fitment
Heat pump	✓	Standard
Seating heating front	✓	Standard
Seating heating rear	✓	Standard
Steering wheel heating	✓	Standard
Sheduled pre-heating of seats	✓	Standard
Scheduled steering wheel pre-heating	✓	Standard
Scheduled cabin air pre-heating	✓	Standard
Smart cabin heating management	✓	Standard

Cabin thermal insulation

ADEQUATE

How well does the cabin maintain its temperature?

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.



good adequate poor not applicable

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	✓	✓

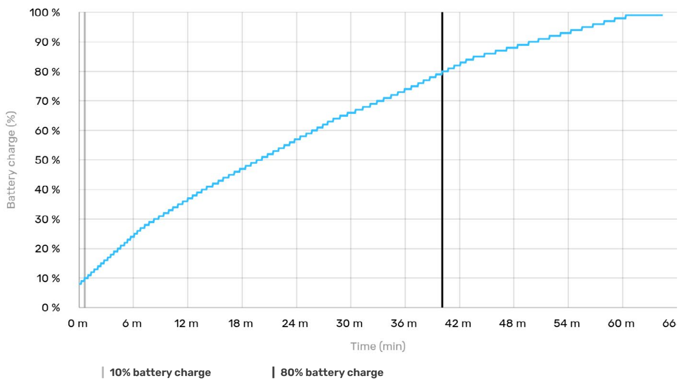
Fast charging

POOR

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.

Charging time

How quickly can the battery charge?



good adequate poor not applicable

Charging Capabilities

ADEQUATE

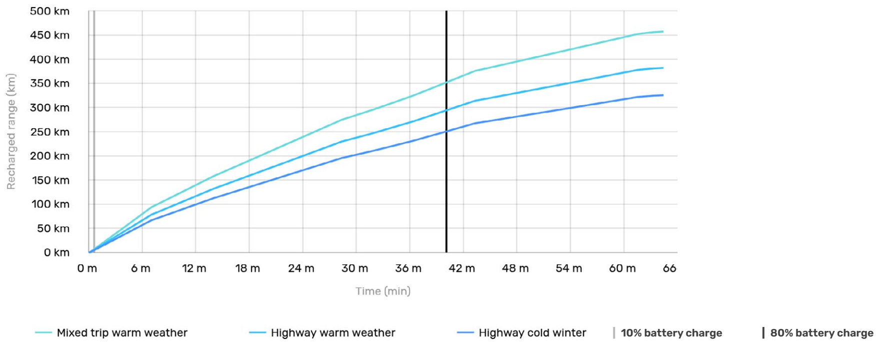
Fast charging

POOR

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.

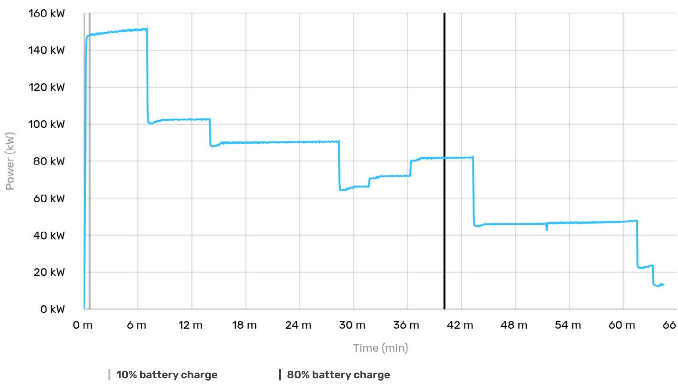
Recharged range gain per charging time

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?



good adequate poor not applicable

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	85%	
Maximum home charging power	11.0 kW	Standard

Bidirectional charging

ADEQUATE

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

3.3 kW

Fitment: Standard

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.

good · adequate · poor · not applicable

Specifications

Vehicle class
Large SUV

System power/torque
230 kW/380 Nm

Engine size
n.a.

Declared consumption
19.9 kWh/100 km

Declared driving range
Overall 482 km
City 630.6 km

Declared CO_2
n.a.

Declared battery capacity
Usable (net) 82.6 kWh
Installed (gross) 82.6 kWh

Mass
2,225 kg

Heating concept
Waste heat & PTC heater & heat pump

Tyres
235/50 255/45 R19

Emissions class
AX

Tested car
LGXCH4CD8S201xxxx

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