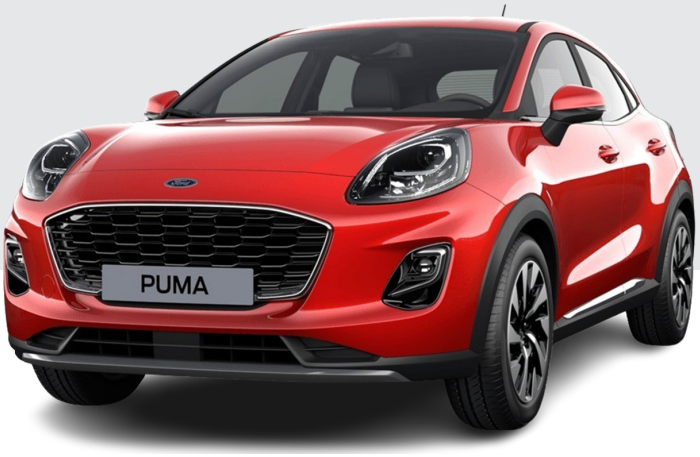
green ncap

Ford

2022

Ford Puma

1.0 EcoBoost Flexifuel Ethanol Mode E85 FWD manual



5.3 /10	5.3 /10	6.9 /10
Clean Air Index	Energy Efficiency Index	Greenhouse Gas Index

5.3 /10 Clean Air Tests

Laboratory Test	NMHC	NO_x	NH_3	CO	PN
5.2/10 Cold Test	adequate	adequate	poor	adequate	weak
6.8/10 Warm Test	good	adequate	marginal	good	marginal
4.8/10 Highway	good	good	poor	marginal	weak
0.0/10 Cold Ambient Test	poor	good	poor	poor	weak
Road Test					
7.3/10 On-Road Drive	n.a.	good	n.a.	adequate	marginal
2.9/5 On-Road Short Trip	n.a.	adequate	n.a.	adequate	weak
4.6/8 On-Road Heavy Load	n.a.	good	n.a.	adequate	weak
4.1/5 On-Road Light Load	n.a.	good	n.a.	good	adequate
2.0/2 Congestion	n.a.	good	n.a.	n.a.	n.a.

n.a. good adequate marginal weak poor

Comments

The Puma, tested on E85 ethanol fuel, experiences difficulties with ammonia (NH_3) emissions and particles. The car redeems itself in the additional robustness tests, where it scores well in the On-Road Light Load and in the Congestion tests. The Heavy Load test presents a challenge for particle emissions control. The Cold Ambient Test at -7°C is usually the hardest scenario for all vehicles and, indeed, this is where the Puma fails – the cold exhaust aftertreatment allows a high amount of unburnt fuel (NMHC) to pass by, NH_3 and CO are over the thresholds and particle number is high.

5.3 /10 Energy Efficiency Tests

Laboratory Test	Energy
5.9/10 Cold Test	
6.1/10 Warm Test	
4.0/10 Highway	
5.5/10 Cold Ambient Test	

	Consumption	Driving Range
Average	**8.2** l/100 km	**520** km
Worst-case	**9.7** l/100 km	**434** km

n.a. good adequate marginal weak poor

Comments

E85 fuel has a lower energy content per liter compared to petrol, so a higher volume is needed to supply the same amount of energy. The Cold and Warm lab tests and the On-Road-Drive require about 7.4 l/100 km. The Highway test increases the figure to 9.7 l/100 km and the Cold Ambient test uses 8 l/100 km. The Light Load Test is managed with 6.3 l/100 km. Overall the Energy Efficiency Index of 5.3 is typical for a petrol car of this size and configuration, and the use of E85 only marginally improves the results of the Flexifuel Puma in this category.

6.9 /10 Greenhouse Gases Tests

	Greenhouse gases	CO_2	N_2O	CH_4
7.4/10	Cold Test			
7.6/10	Warm Test			
5.7/10	Highway			
7.0/10	Cold Ambient Test			

n.a. good adequate marginal weak poor

Comments

The Greenhouse Gas Index is based on a Well-to-Wheel+ approach, meaning that the greenhouse gas emissions related to the supply of the energy are added to the tailpipe emissions. The big advantage of bio-ethanol (E85) as a fuel is its potential to reduce greenhouse gas emissions. However, the emissions related to the production of the ethanol can be substantial and should be added to the calculation. After summing up all greenhouse gas contributions, a total CO_2-equivalent of just 112 g/km is released in the Cold laboratory test. In the Highway test, the value increases to 143 g/km.

Our Verdict

Tested here is the Ford Puma, a compact crossover car, equipped with a 1 liter direct injection turbo engine. This car can be operated on a flexible mixture of petrol and ethanol, from pure petrol to almost pure ethanol. Green NCAP investigated the vehicle's environmental performance in two modes – a standard petrol mode with E10 and E85, a mixture of 85 vol.-% ethanol and 15 vol.-% petrol.
Using E85 as fuel, the Puma delivers generally good exhaust aftertreatment performance. However, the additional robustness Cold Ambient Test and On-Road Heavy Load Drive presented a major challenge and the final Clean Air Index dropped to 5.3. Improved control of ammonia and particles would boost the results. In the cold ambient test, the car exceeded the limits for non-methane hydrocarbons (NMHC), NH_3, CO, and was close to doing so for particle number. On the plus side, NO_x emissions are low in all tests. A higher amount of E85 fuel is needed to deliver the same amount of energy as petrol. With an index of 5.3/10, the overall energy efficiency is moderate and, at 6.3 l/100 km in a relaxed, low load Eco trip, slightly better than the standard petrol mode. The big advantage of the ethanol (E85) mode lies in the reduction of greenhouse gases. The Puma manages to keep its tailpipe emissions of laughing gas (N_2O) and methane (CH_4) low. The generally low amounts of CO_2-equivalent allow the E85-operated Puma to collect 6.9/10 point in the Greenhouse Gas Index, significantly better than the 3.7/10 in the standard E10 petrol mode. With a Weighted Overall Index of 5.8, the ethanol (E85) operated Ford Puma receives 3 Green stars and could achieve more if the Clean Air performance challenges were addressed.

Disclaimer

Specifications

Publication Date	Tested Car	Tyres	Emissions Class
12 2022	WF02XXERK2MR4xxxx	215/50 R18	Euro 6d AP
Mass	**Engine Size**	**Power/Torque**	**Declared CO_2**
1,244 kg	999 cc	91.9 kW/200 Nm	125 g/km

Declared Battery Capacity	Declared Driving Range	Declared Consumption
n.a.	n.a.	7.6 l/100 km

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