

URBEE 2 *(urban electric with IC engine as back-up and range extender)*

Preliminary Technical Specifications (Feb 2013)

Dimensions

Length	10 ft
Width	5 ft 2 in
Height	3 ft 6 in
Ground clearance	5 in nominal (variable)
Wheelbase	6 ft 7 in
Kerb weight (empty)	1200 lbs

Platform

Number of wheels	3
Wheel configuration	2 in front, single at rear
Steering	Rear-wheel steering, patented high-speed stability control
Weight distribution	66% front / 33% rear
Suspension	Arms with damped air, variable ride height, mild active suspension

Aerodynamics

Tear-drop shape, truncated Kamm tail, covered wheels, and smooth underside	
Cd (Coefficient of Drag)	0.15 (verified with aerodynamic simulation software)
FA (Frontal Area)	14 sq ft
Cd X FA	2.1

Wheels

Aluminum alloy	19 in rim dia.
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Tires

Tire overall diameter	26 in
Tire width	3.5 in

Brakes

Disc brakes	
Foot operated hydraulic service brake	
Light alloy calipers with spring-return pistons to eliminate parasitic drag	
Mechanical calipers parking brake	
Regenerative braking with alternator	

Accommodation

Seating for two adults and carry-on luggage	
Trunk space is a rear shelf behind seats and an additional, smaller space forward	
Maximum GVWR	1700 lbs
Allowable cargo	500 lbs (incl. occupants)

Powertrain

Type	Parallel / Series Hybrid (Electric / IC engine)
System:	Electric motors drive front wheels and acquire energy from batteries while a small piston engine runs alternator to charge battery bank; batteries can also be charged by built-in charger from standard wall plug (takes about 6 hours); piston engine can drive wheels directly.
Front motors	Two series-wound DC motors one driving each front wheel 4 hp/side (continuous) 8 hp/side (peak-intermittent)
Dual drive train	4.5:1 silent chain & sprocket
System voltage	36 volts
Battery bank	Stored energy 10.9 hp-hr total (20 hr rate) 5.5 hp-hr total (2 hr rate)
Accelerator	Electronic (chopped controller)
Charger	Built-in, needs 15A wall plug
Piston engine	4-cycle diesel
Engine specs.	5 hp (continuous) @ 2200 rpm 10 hp @ 3000 rpm
Fuel usage	Goal is: 0.81 litres/100km or 290 miles/U.S.Gallon
Exhaust	Muffler and catalytic converter
Fuel tank	10 U.S. Gallons
Alternator	42 volt

Cabin Heating and Cooling

Insulated cabin and battery compartments	
Cabin & battery cooling (electric fan)	
Cabin & battery heating (utilizing engine heat and/or electrical heating elements)	

Chassis, Safety, and Maintenance

'Exo-skeleton' safety-cage surrounds occupants	
Restraint system keeps occupants within cage	
Front, side & rear crush zones built into structure	
'Birdcage' chassis of welded, structural tubing	
All mechanicals sealed from outside dirt & grime	
All maintenance & repair done from above	

Ergonomics

Door and seat design allows easy entry and exit	
Steering wheel swivels out of way for entry/exit	