

Parameters	Custom components	Optional Materials	Manufacturing Place	Manufacturing Processes (1st option)	Manufacturing Processes (2nd option)	Piece	CAD model done
Model: diwheel	outer door body	mild steel / CFRP	1.5m * 0.05m * 1.5m	EDM	Resistive heating / UV or Microwave Light prii	2	YES
EU Type: L7e	door window	polycarbonate	1.5m * 0.1m * 1.5m	thermoforming	blow or injection molding	2	YES
Weight: 270 kg	stator rim	steel AISI 4130 / 316	1.75m * 0.1m * 1.75m	CNC		2	YES
Rotor: Axial Flux Permanent Magnet line in the driving wh rotor rim	rotor rim	steel AISI 4130 / 316	1.75m * 0.1m * 1.75m	CNC		2	YES
Motor: Electro-magnetic, Synchronous, 6 cores, in-wheel	disc brake for parking brake system	cast iron, kevlar, rubber and silica, bound together with resin	1.75m * 0.1m * 1.75m	CNC		6	YES
Peak Power/engine: 14.7 kW	tire	tread rubber, nylon belt, butyl rubber, steel bead, steel belt	1.75m * 0.1m * 1.75m	extrusion	ContiTech AG, Michelin Group, Goodyear Tire	2	YES
Peak torque/engine: 272 Nm	mudguard	plastic, carbon fiber	1.75m * 0.1m * 1.75m	thermoforming / reaction injection molding	Resistive heating / UV or Microwave Light prii	2	YES
Battery: 3.2V / 12 kWh / Lithium Iron Phosphate	chassis	mild steel / CFRP	1.75m * 1.2m * 1.75m	CNC + EDM	Resistive heating / UV or Microwave Light prii	1	YES
Range: 150 km	inner door body	mild steel / CFRP	1m * 0.05m * 1m	EDM	Resistive heating / UV or Microwave Light prii	2	YES
Brake type: Disc	battery box	steel	1m * 0.75m * 0.1m	CNC / EDM	DED / PBF	1	YES
Driving: Gyroscopic Handlebar	battery insulating foam	polyurethane	1m * 0.75m * 0.1m	injection molding		1	
Consumption: 80 Wh/km	windscreen	polycarbonate	2.5m * 0.1m * 1.5m	thermoforming	blow or injection molding	1	YES
Max Speed: 80 km/h	battery box door	steel	small	CNC	DED / PBF	1	YES
Driving wheels: 2 Hubless	battery door's hinge	steel	small	CNC	DED / PBF	1	YES
Assistance wheels: 2	seat suspension	steel SAE 6000 - series	small	CNC (winding) + heat treating	<a href="http://www.xcraftseats.com/x-system">www.xcraftseats.com/x-system</a>	1	YES
	handle	rubber	small	compression or injection molding	FDM	1	YES
"xxx / yyy" means: OR	handle bar	steel	small	CNC	DED / PBF	1	YES
	handle bar support tube	steel	small	CNC	DED / PBF	1	YES
	handle bar push button	plastic, Cu	small	FDM		1	YES
<b>We need</b>	latch	steel	small	CNC		2	YES
Mechanical drawing with tolerances	lock	steel	small	CNC		2	YES
CNC / EDM / PBF, FDM, compression or injection molding	seal strip for doors	steel AISI 304, rubber	small	rubber refining, extrusion vulcanization and post-processing		2	YES
Lamination of the stator	hinge	steel	small	CNC		2	YES
Winding	seal strip for windscreen	rubber	small	rubber refining, extrusion vulcanization and post-processing		1	YES
Parts procurement	seal strip for door window	rubber	small	rubber refining, extrusion vulcanization and post-processing		4	YES
Thermoforming of polycarbonate windscreen	stator core	SiFe 48%, NiFe48%, mild steel	small	lamination, CNC	DED / PBF	12	In progress
Spot welding	motor insulator	PTFE	small	FDM / marketplace		8	YES
Assembling the components	roller support shaft for wheels	steel	small	CNC		2	YES
Wiring circuits	windscreen wiper	plastic, steel, rubber	small	DED / PBF, FDM / compression or injection molding		1	
Break, crash, electronic tests	trunk	plastic	small	FDM		1	
Tire extrusion	cup holder	plastic	small	FDM		1	
Homologation as L7	tablet holder	plastic	small	FDM		1	In progress
	hand brake for parking brake system	steel	small	CNC	DED / PBF	1	
	repair and maintenance information	paper	small			1	
Documents related to homologation							
<a href="https://eur-lex.europa.eu/legal-content/with-new-technology-exemption">https://eur-lex.europa.eu/legal-content/with-new-technology-exemption</a>							
<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=cele">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=cele</a>	<b>Marketplace components</b>			<b>Manufacturer</b>		<b>Piece</b>	<b>CAD model done</b>
<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=cele">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=cele</a>	seat					1	YES
<a href="https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CEL">https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CEL</a>	rearview mirror					3	YES
<a href="https://ec.europa.eu/research/participants/documents/dov">https://ec.europa.eu/research/participants/documents/dov</a>	roller caster with spring for battery box					4	YES
<a href="https://single-market-economy.ec.europa.eu/sectors/autoi">https://single-market-economy.ec.europa.eu/sectors/autoi</a>	hall sensor					2	
	permanent magnet					x	
	roller bearing for wheels					72	YES
	roller bearing balls for wheels	Zirconium oxide (has very low magnetic permeability)				x	YES
	bearing door windows	steel AISI 52100				2	YES
	cable	to wheels and handlebar				x	
	coils (Cu)	2800m*0.914 mm				x	
	valve					2	YES
	battery modul (lithium iron phosphate)					x	
	driving-beam headlamp					2	
	passing-beam headlamp					2	
	front position lamp					2	
	rear position lamp					2	

		direction indicator lamp					4	
		rear stop lamp					2	
		hoverboard motherboard	put it inside the handlebar				1	
		ABS: anti-lock braking system	speed difference between of the wheels should be limited				2	
		Vehicle Control Unit	energy management system	Bosch, Continental, Delphi Technologies, Denso, Siemens VDO, Vector Informatik, ZF Friedrichshafen AG, Tesla, Infineon Technologies AG, NXP Semiconductors, LG Chem, Hitachi, Eaton			1	
			battery management system				1	
		DC/AC inverter					1	
		DC/DC converter					1	
		charger port					1	
		charging cable					1	
		electronic locking system	prevent vehicle from moving while charging				1	
		sun visor					1	
		USB port					1	
		fan and heating system		Valeo or Mahle			1	
		screws						x
		devices to prevent unauthorised use					1	
		on-board diagnostics					1	
		speedometer					1	
		odometer					1	
		battery discharge indicator					1	
		registration plate space					2	YES
		rear registration plate lamp					1	
		safety belt					1	
		anti tampering measures					1	
		audible warning devices					2	
		rear retro-reflector (non-triangular)					2	
		side retro-reflectors (non-triangular)					1	
		input socket					1	
		horn					1	