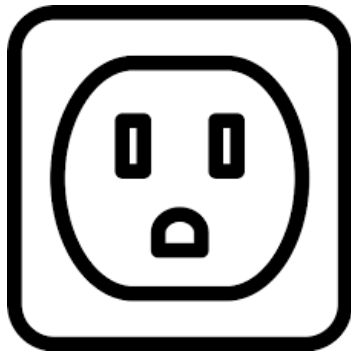


## Charging - in a perfect world on the top - more like reality below

Level one (AC)  
yes its a standard 110 outlet

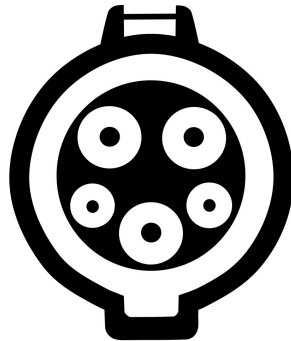
1.3 kw (kilowatt)  
10 hours (a good night sleep)  
13 kWh or 40 miles



Since fees are hard to collect for level 1 - often free. Bad news - slow and you have to bring your home charger with you. With no fees collected, some locations will be poorly maintained.

Level 2 (AC)  
uses a 220 volt connection

6.6 kw (some are higher)  
10 hours  
66 kWh or 200 miles



The usual rate is \$.21/kWh. Mostly, you will find a charger that is 6.6 kw. The charger may or may not tell you. Some charging stations that can do two cars at a time can give 6.6 kw to each - some share power and give 3.3 kw to each when two cars are connected.

DC Fast Charge (not AC)  
sometimes called Level 3  
Approaching gas station speed. Most 150 kw  
More than 100mi in 15 min  
10. Hr -comparison N/A

Newest up to 350 kw



The usual rate is \$.43/ kWh  
Charging speed will vary from car to car. ( a few )  
Ford Mach E 115 kw  
VW ID.4 120kw  
BMW i3 50 kw  
Porsche Taycan 400kw  
Don't worry - your car knows and tells the charger what to give.  
Also with all cars - the charging speed slows as the battery fills to avoid damage to battery and extend battery life.

Considering that most EVs use about 33 kWh to go 100 miles at Interstate speeds and no-one will drain a battery to zero. An EV with a 77 kWh battery will allow you to drive a little more than 2 hours at interstate speeds. (Based on 75% of battery used - drivers braver than me might go farther by driving from 100% - 5%) After two hours, most of us would appreciate a break for a rest room and a snack. At a DCFC location you could be back on the road in less than a half hour.

Note : at all levels (one, two and DCFC) The chargers list how much electricity can be delivered. But each car determines how much it will accept. e.g. I have a car that will only accept 10 amps at level one, even when plugged into a 12 amp or higher charger.

How do drivers find them ?

Newer cars include them on the navigation systems.

For myself, I like to look for chargers in the comfort of my home or at a restaurant or coffee shop.

Phone Apps. Plugshare finds the most. Chargepoint. ElectrifyAmerica, EVgo, Blink, Supercharger (Tesla), etc. If there is a charging service you like - there is probably an app.

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