What is the Electric Bike Top Speed?

Article Quicklinks

Micromobility, specifically the use of electric bicycles and scooters, is trending in urban transportation. Electric bikes are a faster, more efficient, and eco-friendly way to travel. However, not all e-bikes are created equal. They come in a variety of sizes and styles and can accommodate a multitude of e-bike accessories. Even if electric bike top speed does not play a role in deciding which e-bike you want, understanding your bike's speed capabilities is your safety and enjoyment. Whether your e-bike is for style or function, learn more about e-bike speeds, and find the one that is right for you.

E-Bike Classifications

E-bikes are divided into three classifications, but these divisions involve more than speed. There are two ways to power an e-bike. When the bike is running by motor only, it is called throttle-assist; when the power comes from motor and human power, it is called pedal-assist. These capabilities play a role in classification. The three-class system is not the same in all 50 states, but it is worth knowing and understanding.

Class 1

Class 1 electric bikes have no throttle. This means they operate on pedal-assist and reach speeds no higher than 20 mph. Pedal-assist bikes are controlled solely by the pedal. These have a single-charge battery and are best suited for shorter rides on flat roads.

Class 2

Class 2 electric bikes are similar to Class 1. They are marked by a maximum speed of 20 mph and also use pedal-assist. However, they also have a throttle; it is typically called a twist or thumb throttle and is located on the handlebars. These also have a single-charge battery and are best suited for modest distances, such as a work commute, and mildly hilly areas.

Class 3

Class 3 electric bikes are also called Speed Pedal Bikes. The motor power on a Class 3 bike is at least 500 watts, and they reach up to 28 mph. Under federal law, these are classified along with mopeds and must be registered at the DMV. For this reason, they also have to be driven on the road; the bike lane is off-limits and subject to fines. These have hydraulic brakes and a rechargeable battery. They are best suited for longer commutes, larger loads, and steep hills.

Race Track Mode

Race track mode, commonly used on electric dirt bikes, is not for commuters. The speed capability is unlimited. If you are looking for e-bike top speed, this is the one for you, but it has limitations. Their primary use is on race tracks and private property. Proper bodily gear, such as helmets and pads, is required and enforced by law. A dirt bike has a rechargeable battery and fat tires.

Factors Affecting Top Speed Capabilities

There are five components of every e-bike that affect speed capabilities. They vary by size and manufacturer, and the specs you want for your bike will depend on how you plan to use it.

- **Wheel Size:** The standard e-bike wheel is between 16 and 26 inches in diameter. Twenty-six-inch wheels are the most common because they handle curbs, speed bumps, and potholes better.
- **Motor Power:** The average e-bike has a 750-watt motor. Anything more than that is best suited for use on private property.
- **Tire Pressure:** Slightly lower pressure allows for shock absorption and a smoother ride.
- **Controller Amperage:** The controller amp sends power to the motor. Higher and lower amps deliver a relative amount of speed.
- **Battery and Voltage:** Like all motor vehicles, battery quality and voltage affect speed. Lead batteries typically do not last as long as lithium-ion batteries, and the average voltage is 36 to 48 volts.

Of course, there are external circumstances, such as temperature and wind, that can affect speed as well.

A Further Look at E-Bike Speed Regulations

Power and speed are regulated differently at the federal and state legislative levels. It is important to understand the laws in your state before you purchase an e-bike.

Federal Government Legislation

According to government classification, electric bikes and electric scooters are different. E-bikes are defined and regulated as motor vehicles. Federal law defines a low-speed e-bike as having two or three wheels, fully operable pedals, and a motor below 750 watts. Additionally, maximum speed is less than 20 mph on a level, paved road, and regulation only specifies operation under throttle-assist. The government regulates the manufacturing as well as first-time sales, whereas, the state has the discretion to regulate further.

State-Level Legislation

States generally focus on e-bike classifications and determine licensing and registration from there. Some states do not bother to define them at all, while others create entire systems to differentiate them from one another. For example, Ohio uses a Class 1, 2, and 3 system that defines different models based on motor capabilities, such as whether the motor requires pedal assistance. Mississippi has no system of classification and generally views them like standard bicycles.

Classifications can affect helmet laws and the legal age of operation. If you want to know about the state laws for your state, contact your local Department of Motor Vehicles (DMV) or simply search for it online. Most DMVs will have this information readily available.

Legislation is Evolving

As e-bikes continue to grow in popularity, federal and state laws are adapting. Because they have only begun to gain popularity in recent years, there remains some confusion over where they can and cannot be ridden. However, steps are being taken to create more clarity. The three-class system has been adopted by 44 out of 50 states and is still gaining traction.

Bike Safety Should Always Be Priority

Remember that unless you race bikes, top speed on an electric bike is not always what you want to optimize for. Safety should always be a priority, regardless of the mode of transportation that you choose.

Be sure you have the proper bike gear to stay comfortable and safe. If you know your commute requires you to travel at high speed in certain areas, consider investing in knee and elbow pads along with your helmet. Treat your bike with care and have it maintained regularly, roughly every 500 miles.

If you need an upgrade to a better electric bike check out our latest bikes at Zugo Bike