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Best electric bikes 2024

E-bikes tried and tested, including the best electric mountain bikes and road bikes under £1000.

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The best electric bikes help you go further, faster and for longer. They provide a smooth ride and make hills easier to climb.

Cheap electric bikes start from £500, but you can pay £5,000 or more.

We find other reviewers cover pricier models, so we've focused our testing to date on electric bikes around £2,500 or less from top brands such as Cube, Carrera, Trek, Giant and more.

We found five electric bikes that impressed enough to be Which? Best Buys and several we reckon are really Great Value.

Volt London Urban Electric Bike

Available from Volt (https://voltbikes.co.uk/e-bikes/urban/london) (£2,299)

Pros Log in or join Which? (https://join.which.co.uk/join/offers) to instantly reveal

Cons Log in or join Which? (https://join.which.co.uk/join/offers) to instantly reveal

Most recently tested April 2023

Manufacturer's claimed range Up to 60 miles

Weight 22.1kg

Rider heights 5ft 7in or more

Motor Bafang, rear-hub

Battery sizes/claimed charging time 504Wh/3-4 hours

Need to know SpinTech LCD display, torque sensor, five assistance levels and boost lever, single speed gear, hydraulic disc brakes, 27.5-inch wheels, kickstand, built-in front and rear lights, front luggage carrier, optional rear carrier for an additional £30

How we test electric bikes

We test e-bikes from key UK retailers such as Halfords, Decathlon and Argos.

We focus on lower-priced bikes (around £2,500 or under) from top brands, including Giant, Trek and Cube.

We buy all the electric-bikes we test and we regularly revisit the e-bikes on sale to see if there are new and popular models that need testing. When we find them, we do.

Motor and ride quality

- Our testers – of various ages, heights and genders – ride each bike and evaluate how smoothly it accelerates, how it responds to changes in how fast or hard you pedal, and how smoothly the power tapers off as you reach 15.5mph.
- They evaluate each bike for comfort (on and off-road), manoeuvrability and handling tight turns.
- They also rate each bike's display, motor controls, gears and brakes.
- We take each e-bike up Brooklands Museum's (https://www.brooklandsmuseum.com/explore/interactive-map) test hill – which has fixed gradients – to see how they handle shallow and steep inclines.
- The best electric bikes can climb very steep 25% gradients, and some are even able to hill start on them.
- The best electric bikes are comfortable to ride over potholes and rough ground, easy to handle, with clear displays and good controls – in other words, a joy to ride.

Acceleration and braking

- We accelerate the bikes multiple times over a set distance to see which are the quickest.
- We repeatedly measure how far each e-bike travels after the brakes are applied at 15.5mph.
- While brakes can be adjusted, our tests assess how good they are out-of-the-box.
- The best have responsive brakes with short stopping distances. They are also quieter, and the triggers don't need squeezing all the way in to activate.

Ease of use and build quality

- Each electric bike is rated for how easy it is to lift and carry short distances and how easy the battery is to take out and put back in.
- We also carry out an assessment on the overall quality of the e-bike, including the electrical cable management, comfort of handles and saddle materials and neatness of welding on the frames.

Why we don't test the range of electric bikes

There's no single value for the range of an electric bike that is accurate or useful for everyone.

Factors such as rider weight, motor assistance level, weather, wind speed and road conditions all affect how much you'll get out of your e-bike on any given day.

As a general rule of thumb, the bigger the battery, the further you'll go on a single charge.

We provide the manufacturers' claimed ranges, but with the following advice:

- Some only give an 'up-to' estimate. These are an absolute maximum and are usually based on ideal riding conditions (smooth surfaces, no wind etc.).
- Some give a range of possible distances: the shorter range is closer to what you should expect out of the bike if you cycle in hilly areas or in less ideal conditions.

Watch: How to buy the best electric bike

Motor position

Front hub motors allow you to more easily customise gears on the rear wheel, but can feel less natural as the motor pulls you forward, rather than pushing you.

Rear hub motors can feel more natural to ride as you'll feel pushed rather than pulled, but it makes the rear wheel hard to remove and, on average, is found on more expensive bikes.

Mid hub motors are often the most expensive choice, but feel the most natural to ride, have a more balanced weight distribution, and can easily change the wheels and are easier to remove.

Battery

Larger batteries cost more, but should get you further on a single charge. Batteries degrade over time, so check you can buy a replacement one and how much it costs.

Weight

Electric bikes tend to be around 10kg heavier than a regular model. A hybrid electric bike typically weighs 22-25kg. Some higher priced e-bikes have lighter frames and come in at 16-18kg on average.

Weight distribution is also important for how easy a bike is to lift. Mid hub motor e-bikes have better weight distribution, whereas rear-hub e-bikes with batteries placed over the back wheel are very back-heavy.

Display

The control display usually sits on the handlebars and allows you to adjust the assistance level as you go. Some displays only show battery level, while others give more information such as your speed and the distance travelled.

Assistance levels

Different e-bikes have slightly different setups, but most will offer an equivalent of low, medium and high-assistance modes. These usually equate to the motor matching your input, giving one and a half times your input, or doubling it.

Sensor

An electric bike can come with one, or a combination of, sensor types to determine how much power the motor should deliver to the bike and when.

Speed sensors measure how fast the bike is going, typically based on the speed of the wheel, and deliver power accordingly. Cadence measures how fast you're pedalling and delivers more power the slower you are.

A torque sensor measures how hard you're pushing on the pedals and delivers more assistance if needed. A bike with a torque sensor can engage the motor faster than a cadence or speed sensor, making it great for hill starts.

Frame size

Getting an oversized or undersized frame can ruin your enjoyment of a bike if you have to reach too far for the handlebars, or you simply can’t find a comfortable riding position.

We recommend you test-ride a bike before you buy or, at the very least, check the manufacturer's guidelines to find the right frame size.

Brakes

V-brakes are a common type and are easy to replace.

Cable (or cantilever) brakes only have a cable running between them, so they're less likely to get clogged with mud and are a good option for off-road cyclists.

Disc brakes are increasingly popular, their main advantage being increased stopping power in wet conditions.

Gears

If you only intend to ride on flat terrain, you can get away with an electric bike with a single gear (these tend to be lighter and cheaper), but if you live in an area with hills, you'll need one with several gears to get up them.

Are electric bikes legal in the UK?

Yes, as long as:

- You are over the age of 14
- The motor has a maximum power output of 250 watts
- The motor only propels you when you're pedalling
- The motor doesn't propel the bike when it's travelling more than 15.5mph

The e-bike must also show the motor's power output and/or the motor's manufacturer, plus the battery's voltage and/or the maximum speed of the bike.

If it meets these requirements (which all the electric bikes we've tested do) then you can cycle them anywhere normal non-electric bikes are allowed, like cycle paths.

Do you need a licence for an e-bike?

No, as long as it meets the requirements outlined above, it counts as an 'electrically assisted pedal cycle' (EPAC) and doesn't require a licence to ride. It also doesn't need to be registered, taxed or insured.

Are throttle e-bikes legal in the UK?

An e-bike with a throttle means it can propel you without pedalling.

Some e-bikes have a 'walk' button that propels the bike to a maximum of 3.7mph before you have to start pedalling.

In this case they still count as an EPAC and make it easier for riders that are less able to get going from a standing start.

But any throttle that propels you faster than this without pedalling means the e-bike is classed as a 'twist and go' EPAC.

These 'twist and go' EPACs require type approval (which the manufacturer or importer should do) and registering with the DVLA to be ridden legally.

You can tell if a 'twist and go' EPAC has been type approved, as it will have a plate showing its type approval number.

How much should you spend on a good electric bike?

The cheapest electric bikes start at around £500, and you can pay more than £5,000 for top-end electric mountain bikes.

Lower-priced e-bikes can take the strain out of shallow hills, but have motors that are a bit older, noisier and can sometimes – although not always – struggle with moderately steep hills.

The more premium e-bike features, such as a mid hub motor, lighter frames (e.g. carbon fibre) and larger batteries typically appear on pricier models.

How do you charge an electric bike battery?

Most electric bikes use lithium-ion (Li-ion) batteries, which can be charged at home.

Most Li-ion batteries discharge over time, even if the bike and battery are turned off.

Leaving a battery completely discharged can affect how long it can last before needing to be replaced, the long-term life of the battery, and some manufacturers won't cover the battery under warranty if it's been left in a discharged condition.

We advise you to charge the battery at least once a month, even if you're not using the bike.

It's also important to do so safely to avoid fire risks. While e-bike battery failures are low, the best practice when charging your e-bike battery is:

- Always unplug when it's fully charged - don't leave it charging overnight
- Use the manufacturer-approved charger and battery for the bike - don't go third-party
- Don't cover the charger or battery while it's plugged in - it could lead to overheating
- Don't leave the battery near other heat sources
- If you leave the battery outside during hot weather, leave it in a shaded and well-ventilated area to avoid overheating.
- Don't use the battery if it appears to be damaged
- If you spot any wear or tear on the charger, replace it with an official replacement charger from a reputable retailer

- In the event of a lithium-ion battery fire, don't try to put it out. Get out of the house and call 999

National Fire Chief Council (https://www.nationalfirechiefs.org.uk/E-bikes-and-e-scooters-fire-safety-guidance) – **for more battery charging and storage advice for e-bikes**