

Review: Bike-boosting Copenhagen Wheel finally hits the streets



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The Copenhagen Wheel is now available for purchase (Credit: Ben Coxworth/New Atlas)

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It was back in 2009 that we first heard about the Copenhagen Wheel. Developed by MIT's SENSEable City team in consultation with the City of Copenhagen, it was a motor-equipped rear bicycle wheel that could turn an existing human-powered bicycle into an e-bike. The years since saw some production delays, but as of this April it finally became commercially available. We recently tried the wheel out for ourselves, and think it was worth the wait.



The US version of the

Copenhagen Wheel (which is the one that we got) has a 350-watt motor powered by a 48V/279Wh lithium-ion battery, which takes four hours to charge. That motor kicks in whenever you pedal, adding a proportional amount of electrical assistance – a top motor-assisted speed of 20 mph (32 km/h) is possible, and there is no throttle-only mode. One charge of the battery is good for a range of up to 30 miles (48 km), although that will depend greatly on factors such as the hilliness of the ride.

The wheel is compatible with single-speed and 7, 8, 9 or 10-gear Shimano or SRAM drivetrains, coming with a cassette pre-installed. It *isn't* compatible with disc brakes (yet), and it also isn't recommended for use with carbon fiber frames. Unfortunately the test bike that we were planning on using didn't meet all of those criteria, but thankfully Edmonton's Hardcore Bikes came through with a loaner for us.



Mounting the wheel is almost as simple as just taking your existing rear wheel off and putting the Copenhagen Wheel back on it in its place. It does have a torque arm that has to be secured to the chainstay via an included steel hose clamp, and putting that clamp on did turn out to be quite a fiddly process – enough so that you'll probably just want to leave the Copenhagen Wheel installed indefinitely, as opposed to going back and forth between it and the original rear wheel as the mood strikes you.

There are other electric bike wheels that replace the *front* wheel, and putting them on certainly is simpler, as you don't have to bother with the chain and derailleur. One of the advantages of going with the rear wheel, however, is the fact that the Copenhagen Wheel uses its own torque/cadence sensors to detect when you're pedalling, so no peripheral devices are needed. By contrast, electric front wheels require a separate pedal sensor.



Additionally, there's no control unit that has to be mounted on your handlebars. Instead, you can switch between Eco, Standard and Turbo pedal-assist modes via an

iOS/Android app on your Bluetooth-paired smartphone, which can simply be stuffed in a bag or pocket. That app also allows you to do things such as tracking your cycling routes, monitoring battery life, and locking the wheel when the bike is left unattended.

And yes, we checked ... the motor *does* keep working once the phone is turned off. This means you won't be stuck pedalling an unpowered wheel if your phone's battery conks out mid-ride.

Once we got it on the road, we found that the Copenhagen Wheel performed flawlessly. Its motor kicked in smoothly and instantly whenever the pedals were in motion, giving us the feeling of constantly riding with a great tailwind. Going up hills was a breeze – no pun intended. And although the fast-accelerating Turbo mode certainly made for some fun riding, we found that even the battery-saving Eco mode provided a good boost.



It's possible to turn the motor off completely while riding, although we wouldn't recommend doing so unless you're travelling downhill. The 700C version of the wheel that we were using tips the scales at 20 lb (9 kg), which is a lot of weight to turn around

using just your legs. That may sound heavy, although a couple of the other electric wheels we've tested have actually weighed two or three pounds more.

Additionally, it's definitely worth noting that its build quality is good and solid. It doesn't rattle at all, even when going over bumps, which certainly can't be said of all of its competitors.

If you're interested in getting a Copenhagen Wheel of your own, it can be purchased now via the website of its manufacturer, Superpedestrian. It'll cost you US\$1,499, which *does* put it at the high end of such products – other electric bike wheels range from around \$995 to \$1,249.

Product page: [Superpedestrian](#)