

Lfp powerwall

As we can see in the photos, the new Tesla Powerwall is not as appealing as the currently used Powerwall 2, which has been present on the market for seven years or so. The info also points out that it's smaller at approximately 43-inch x 24-inch x 7-inch - two inches shorter, six inches narrower, and about one inch thicker.

There are many questions related to the new Tesla Powerwall 3 specs. The photo of the PW3 reveals that it's a 13.5-kilowatt-hour unit, which means that the nominal capacity might be the same (very similar) as in the case of the PW2.

There is an inverter inside and the power output is from 5.8 kVA to 11.5 kVA (basically close to 5.8 kW-11.5 kW of real power), depending on the current 24-48 amps at 240 volts. That's an increase compared to 5 kilowatts of continuous power output previously (7 kW peak for 10 seconds).

We guess that this is an LFP system because the new unit is heavier while offering a similar energy capacity. That's because the LFP battery cells are less energy-dense than the previously used high-nickel chemistry. The increased weight is probably partially compensated by an ability to charge the LFP cells to a higher state-of-charge and to maintain such a high state-of-charge without as big an impact on longevity, as in the case of NCM/NCA cells (similarly as in the case of the Tesla Model 3 LFP and NCA versions).

Another thing is that the PW3 is smaller - that's probably because of the use of a prismatic cell format (typical for LFP), rather than cylindrical battery cells (used previously). In general, the prismatic battery cells/modules are considered more efficient in terms of space utilization.

One of the TMC forum members (GigaGrunt) noted that the PW3 probably does not have liquid cooling like the PW2. The LFP batteries are safer and might cope better in higher temperatures, although they have issues at lower temperatures (especially fast charging at below-freezing temperatures). Powerwalls are not fast-charged like electric cars, so this is not a big issue. Air cooling, if confirmed, would also translate into weight and cost savings.

The LFP battery chemistry, despite its lower energy density, as compared to high-nickel cathode chemistries of lithium-ion batteries, have one big advantage - lower price per capacity unit. This is one of the key factors for Tesla, especially today when we see price wars in the EV business.

Building on the success of its predecessors, the Powerwall 3 introduces several key improvements that underscore Tesla's commitment to enhancing energy independence and sustainability for homeowners.

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Web: <https://www.sumthingtasty.co.za/contact-us/>

Email: energystorage2000@gmail.com

WhatsApp: 8613816583346

