

Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system designed to accelerate the world's transition to sustainable energy. Powerwall 3 can store solar or grid energy for later use when the sun goes down or when the electricity prices are high; lowering their electricity bills, reducing their reliance on the grid, and power their homes during a grid outage. Once installed, customers can manage their home energy system using the Tesla App and customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing up to 11.04 kW AC of continuous power per unit. It has the ability to store up to 13.5 kWh of energy and start heavy loads rated up to 185 A LRA, meaning a single Powerwall 3 can support the power needs of most homes. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



Powerwall 3 Technical Specifications

System Technical Specifications

| | | | |
|--|--|-----------|-----------|
| Model Number | 1707000-xx-y | | |
| Nominal Grid Voltage (Input & Output) | 230 VAC | | |
| Grid Type | Single phase | | |
| Frequency | 50 Hz | | |
| Nominal Battery Energy | 13.5 kWh AC ¹ | | |
| Nominal Output Power (AC) | 5 kW | 10 kW | 11.04 kW |
| Maximum Apparent Power | 5,000 VA | 10,000 VA | 11,040 VA |
| Maximum Continuous Current | 21.7 A | 43.5 A | 48 A |
| Overcurrent Protection Device | 32 A | 50 A | 63 A |
| Maximum Continuous Charge Power | 5 kW | | |
| Output Power Factor Rating | 0 - 1 (Grid Code configurable) | | |
| Maximum Output Fault Current | 160 A | | |
| Maximum Short-Circuit Current Rating | 10 kA | | |
| Load Start Capability | 185 locked rotor amps (LRA) | | |
| Power Scalability | Up to 4 Powerwall 3 units supported ² | | |
| Solar to Battery to Home/Grid Efficiency | 89% ^{1,3} | | |
| Solar to Home/Grid Efficiency | 97.5% | | |
| Supported Islanding Device | Backup Gateway 2 | | |
| Connectivity | Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G ⁴) | | |
| Hardware Interface | Dry contact relay, Dynamic Response Mode Interface, RS-485 for meters | | |
| AC Metering | Revenue Grade (+/- 0.5%) | | |
| Protections | Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), Integrated DC Isolator | | |
| Customer Interface | Tesla Mobile App | | |
| Warranty | 10 years | | |

Solar Technical Specifications

| | |
|---|---------------|
| Maximum Solar STC Input | 20 kW |
| Withstand Voltage | 600 V DC |
| PV DC Input Voltage Range | 60 — 550 V DC |
| PV DC MPPT Voltage Range | 60 — 480 V DC |
| MPPTs | 3 |
| Maximum Current per MPPT (I_{mp}) | 26 A |
| Maximum Short Circuit Current per MPPT (I_{sc}) | 30 A |

¹ Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

² The maximum number of Powerwall 3 units per installation may vary by market.

³ Typical solar shifting use case.

⁴ The customer is expected to provide internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

Powerwall 3 Technical Specifications

Environmental Specifications

| | |
|-------------------------|---|
| Operating Temperature | -20°C to 50°C ⁵ |
| Operating Humidity (RH) | Up to 100%, condensing |
| Storage Temperature | -20°C to 30°C, up to 95% RH, non-condensing, State of Energy (SOE): 25% initial |
| Maximum Elevation | 3000 m |
| Environment | Indoor and outdoor rated |
| Enclosure Rating | IP55 |
| Ingress Rating | IP67 (Battery & Power Electronics) IP55 (Wiring Compartment) |
| Pollution Rating | PD3 |
| Operating Noise @ 1 m | < 50 db(A) typical, < 62 db(A) maximum |

⁵ Powerwall 3 is designed to operate in all climates and in direct sunlight, from temperatures of -20°C to 50°C. Performance may be de-rated at operating temperatures above 40°C.

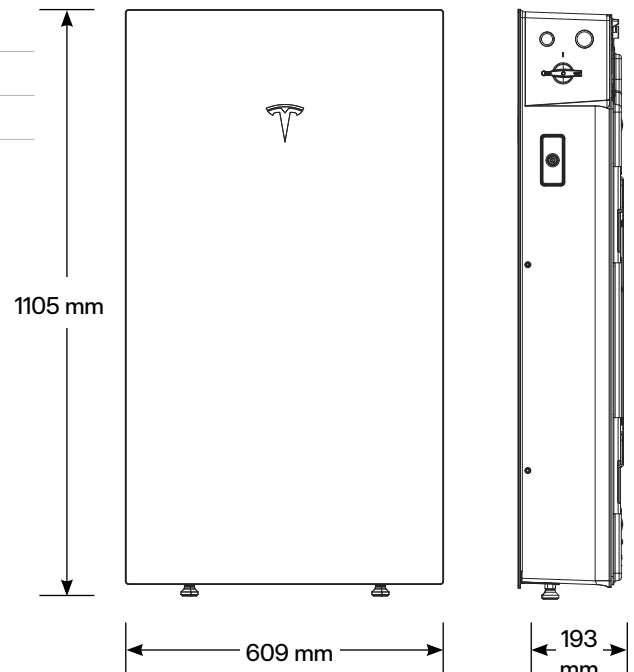
Compliance Information

| | |
|-----------------|---|
| Certifications | IEC 61000-6-1: 2016, IEC 61000-6-3: 2020, IEC 62477-1: 2022, IEC 62109-1: 2010, IEC 62109-2: 2011, IEC 62933-5-2: 2020, IEC 62619: 2022, UL 1973, UL 9540A, AS 4777.2 |
| Grid Connection | Australia and New Zealand |
| Emissions | FCC Part 15 Class B, ICES 003 |
| Environmental | RoHS Directive 2011/65/EU REACH Regulation EC 1907/2006 |
| Seismic | AC156, IEEE 693-2005 (high) |
| Fire Testing | Meets the unit level performance criteria of UL 9540A |

Mechanical Specifications

| | |
|------------------|----------------------------------|
| Dimensions | 1105 x 609 x 193 mm ⁶ |
| Weight | 130 kg |
| Mounting Options | Floor or wall mount |

⁶ These dimensions include the glass front cover being installed on Powerwall 3.



Backup Gateway 2 Specifications

Backup Gateway 2 provides energy management and monitoring for solar self-consumption, time-based control, and backup operation. When Powerwall 3 is in Backup mode, Backup Gateway 2 controls connection to the grid, detects outage, and provides backup power.

Electrical Specifications

| | | | |
|--|--|--|--|
| AC Voltage (Nominal) | 230 V (Line-to-Neutral) 400 V (Line-to-Line) | Maximum Input Short Circuit Current | 10 kA |
| Feed-In Type | Single Phase, Three Phase | Overvoltage Category | Category III |
| Grid Frequency | 50 Hz | AC Meter | Revenue accurate (+/- 0.2%) ⁷ |
| Maximum Overcurrent Protection Device | 100 A (single-phase service) 80 A (2- or 3-phase service) | Warranty | 10 years |

⁷ Revenue accurate when using Gateway internal site meter.

Compliance Information

| | |
|--------------------------------|--|
| Safety | IEC 62109-1, IEC 62053-22, IEC 61439-1, IEC 61439-3 |
| EMC and Radio Equipment | EMC Directive 2014/30/EU, Radio Equipment Directive 2014/53/EU, IEC 61000-6-1, IEC 61000-6-3, EN 55024, EN 300 328, EN 300 440, EN 301 489-1, EN 301 489-17, EN 301 489-52, EN 301 511, EN 301 893, EN 301 908-1 |
| Environmental | RoHS Directive 2011/65/EU, WEEE Directive 2012/19/EU, Battery Directive 2006/66/EC REACH Regulation EC 1907/2006 |
| Seismic | AC156, IEEE 693-2005 (high) |

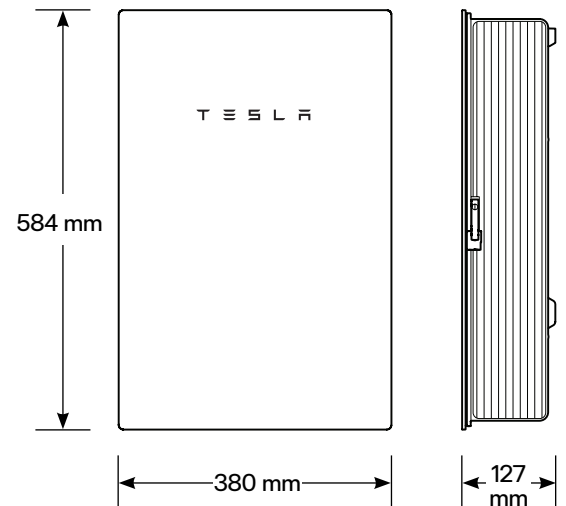
Environmental Specifications

| | |
|--------------------------------|----------------------------|
| Operating Temperature | -20°C to 50°C ⁸ |
| Operating Humidity (RH) | Up to 100%, condensing |
| Maximum Altitude | 3000 m |
| Ingress Rating | IP55 |
| Environmental Category | Indoor and outdoor rated |
| Wet Location Rating | Yes |
| Pollution Degree | PD2 |

⁸ Performance may be de-rated in extreme ambient temperatures.

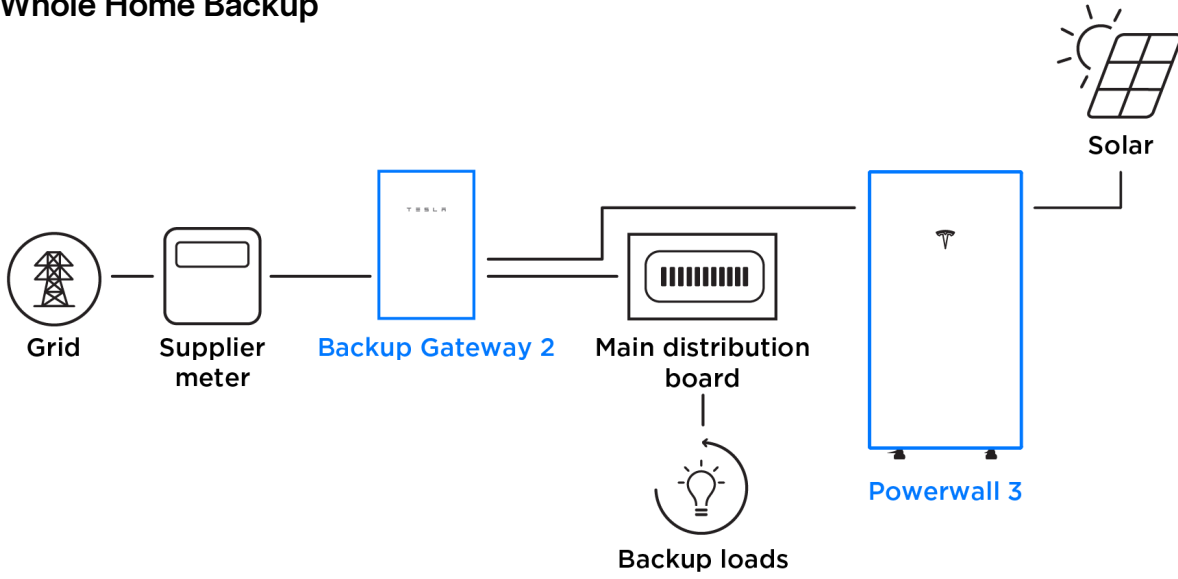
Mechanical Specifications

| | |
|---------------------------------|--|
| Dimensions | 584 x 380 x 127 mm |
| Weight | 11.4 kg |
| Breaker Space (DIN rail) | Main breaker: 1-, 2- or 3-pole Generation/Load breakers: 6 spaces |
| Mounting Options | Wall mount |



Powerwall 3 Example System Configurations

Whole Home Backup



Partial Home Backup

