

# 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
Maximum Continuous AC Output Current (Power at 230 V)	21.7 A (5 kW) 43.5 A (10 kW) 48 A (11.04 kW)
Overcurrent Protection Device	Configurable up to 63 A
Solar to Battery to Home/Grid Efficiency	89% <sup>1,2</sup>
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 <sup>3</sup> )
Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, 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

## Battery Technical Specifications

Nominal Battery Energy	13.5 kWh AC <sup>2</sup>
Maximum Continuous Discharge Power	Configurable up to 11.04 kW
Maximum Continuous Charge Power	5 kW
Output Power Factor Rating	0 - 1 (Grid Code configurable)
Maximum Continuous Current	Configurable up to 48 A
Maximum Output Fault Current	10 kA
Load Start Capability	185 locked rotor amps (LRA)
Power Scalability	Up to 4 Powerwall 3 units supported

## 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

<sup>1</sup> Typical solar shifting use case.

<sup>2</sup> Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

<sup>3</sup> 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 <sup>4</sup>
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

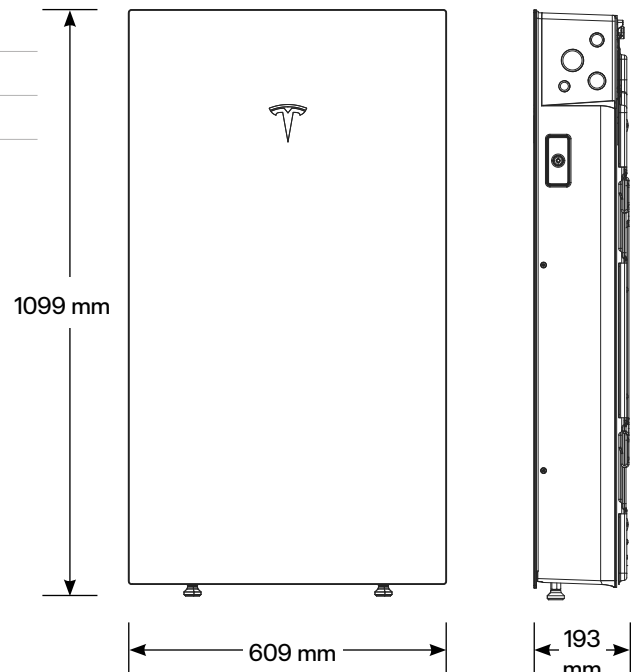
<sup>4</sup>Powerwall 3 is designed to operate in all climates and in direct sunlight, from temperatures of -20°C to 50°C. Performance may be de-rated at operating temperatures above 40°C.

## 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	1099 x 609 x 193 mm
Weight	130 kg
Mounting Options	Floor or wall mount



# 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

<b>AC Voltage (Nominal)</b>	230 V (Line-to-Neutral) 400 V (Line-to-Line)	<b>Maximum Input Short Circuit Current</b>	10 kA
<b>Feed-In Type</b>	Single Phase, Three Phase	<b>Overvoltage Category</b>	Category III
<b>Grid Frequency</b>	50 Hz	<b>AC Meter</b>	Revenue accurate (+/- 0.2%) <sup>5</sup>
<b>Maximum Overcurrent Protection Device</b>	100 A (single-phase service) 80 A (2- or 3-phase service)	<b>Warranty</b>	10 years

<sup>5</sup> Revenue accurate when using Gateway internal site meter.

## Compliance Information

<b>Safety</b>	IEC 62109-1, IEC 62053-22, IEC 61439-1, IEC 61439-3
<b>EMC and Radio Equipment</b>	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
<b>Environmental</b>	RoHS Directive 2011/65/EU, WEEE Directive 2012/19/EU, Battery Directive 2006/66/EC REACH Regulation EC 1907/2006
<b>Seismic</b>	AC156, IEEE 693-2005 (high)

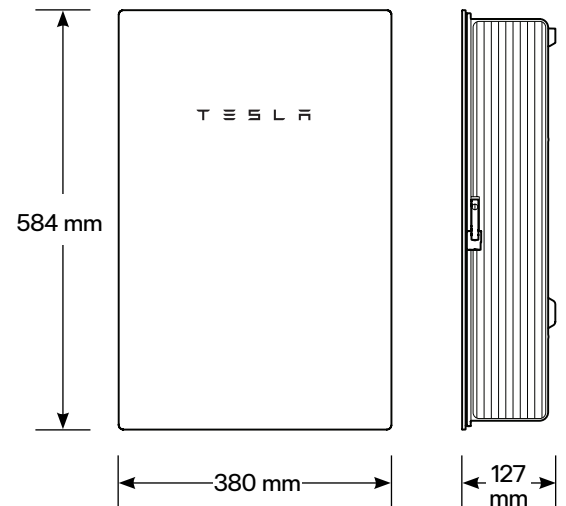
## Environmental Specifications

<b>Operating Temperature</b>	-20°C to 50°C <sup>6</sup>
<b>Operating Humidity (RH)</b>	Up to 100%, condensing
<b>Maximum Altitude</b>	3000 m
<b>Ingress Rating</b>	IP55
<b>Environmental Category</b>	Indoor and outdoor rated
<b>Wet Location Rating</b>	Yes
<b>Pollution Degree</b>	PD2

<sup>6</sup> Performance may be de-rated in extreme ambient temperatures.

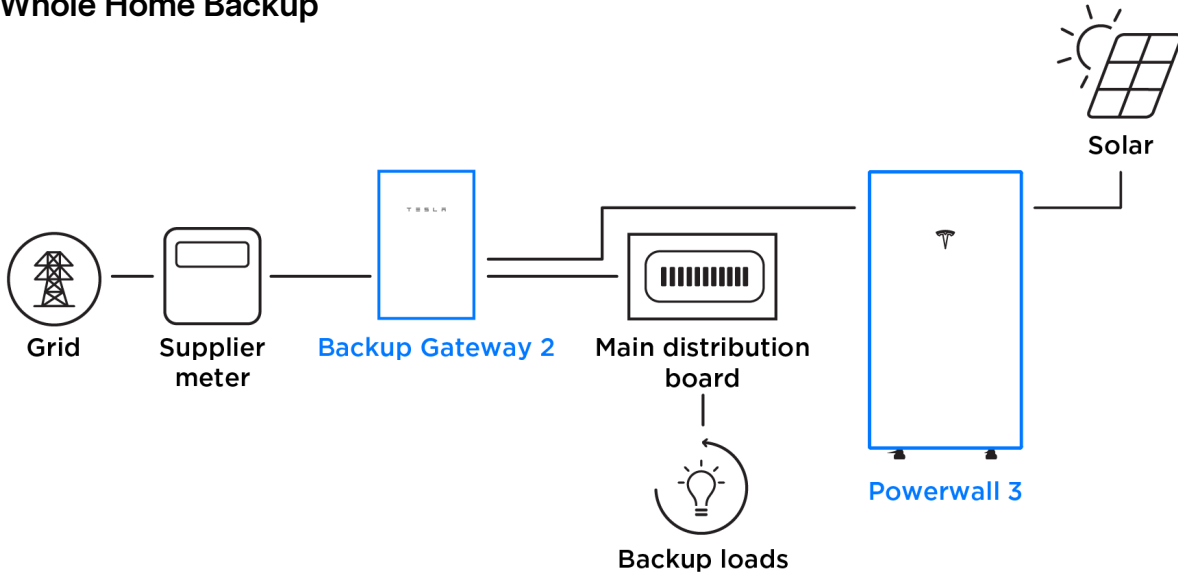
## Mechanical Specifications

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



# Powerwall 3 Example System Configurations

## Whole Home Backup



## Partial Home Backup

