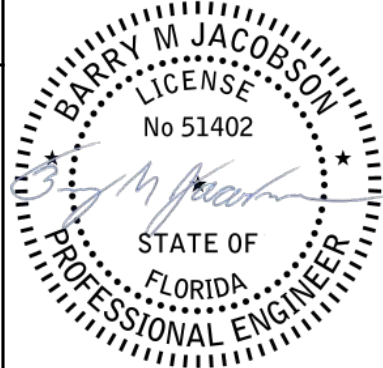
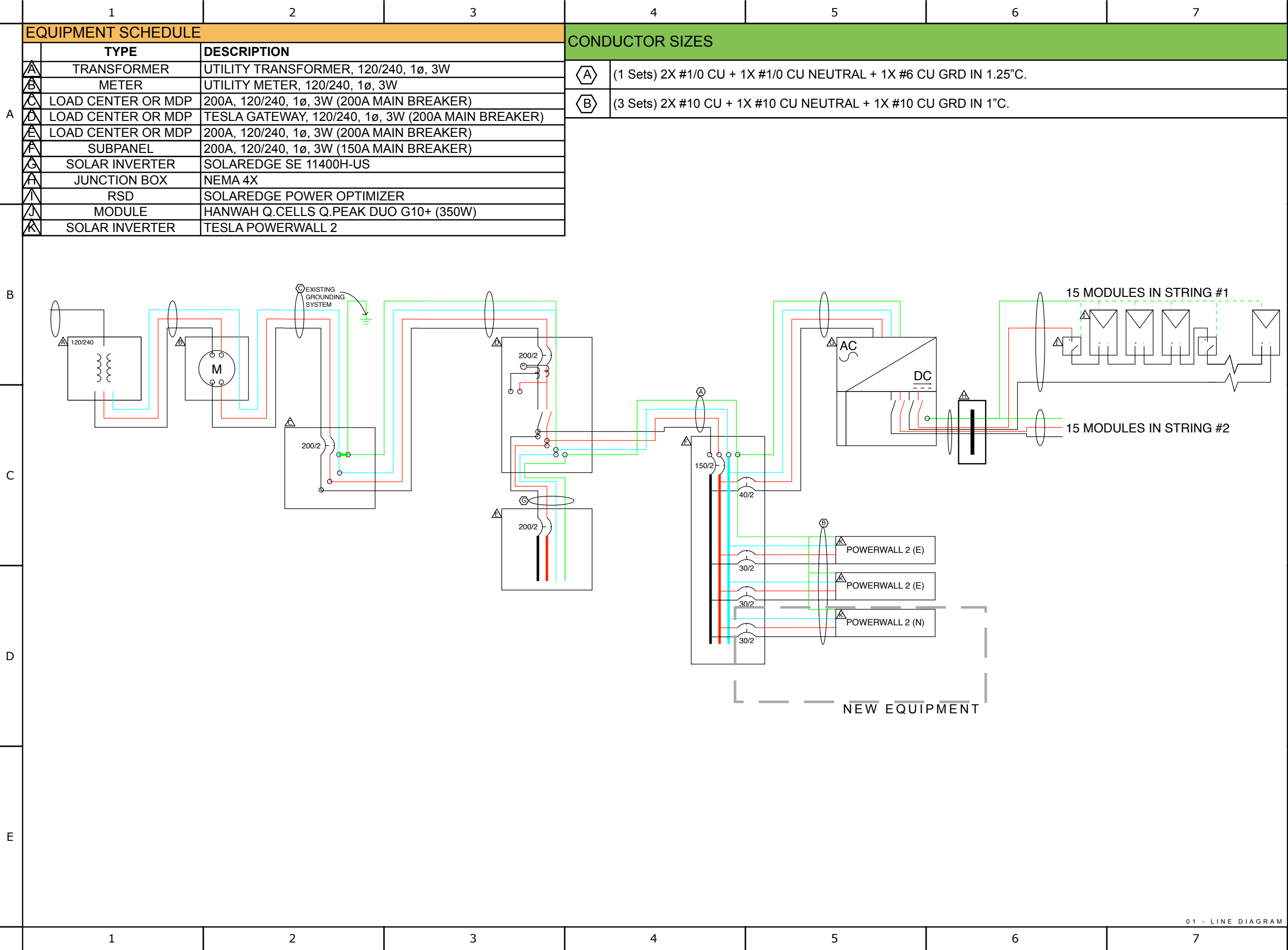


	1	2	3	4	5	6	7	Designed By:																									
A	FRANK FUNK 200 W SKYLINE LOOP FT WHITE, FL 32038			SOLAR CONTRACTOR: SOLAR IMPACT, INC 4509 NW 23RD AVE., STUITE 20 GAINESVILLE, FL 32606 352.338.8221 WWW.SOLARIMPACT.COM SOLAR CONTRACTOR LICENSE: CVC56761 EC13012442 PROJECT MANAGER: DILLON ESTES 352.219.3538 DILLON.ESTES@SOLARIMPACT.COM PROJECT DESIGNER: BRIAN LEVERETTE 352.727.0022 BRIAN.LEVERETTE@SOLARIMPACT.COM ENGINEER OF RECORD: BARRY M. JACOBSON PE#51402 SOLAR IMPACT, INC 352.338.8221 BARRY@SOLARIMPACT.COM	CLIENT: FRANK FUNK GENERAL CONTRACTOR: N/A AUTHORITY HAVING JURISDICTION: COLUMBIA COUNTY BUILDING DEPARTMENT UTILITY: CLAY ELECTRIC COOPERATIVE (CEC)			A	 4509 NW 23rd Ave. Suite.20 Gainesville, FL 32606 www.solarimpact.com 352.338.8221																								
B										B																							
C	THE PROJECT CONSISTS OF ADDING 1X TESLA POWERWALL 2 BATTERY TO AN EXISTING TESLA PHOTOVOLTAIC AND BATTERY SYSTEM.			G01: GENERAL NOTES E01: LINE DIAGRAM E02: ELECTRICAL CALCS E03: POWERWALL 2 DATA	2020 7TH EDITION FLORIDA BUILDING CODE : BUILDING 2020 7TH EDITION FLORIDA BUILDING CODE : RESIDENTIAL 2020 7TH EDITION FLORIDA BUILDING CODE : MECHANICAL 2020 7TH EDITION FLORIDA BUILDING CODE : PLUMBING 2020 7TH EDITION FLORIDA BUILDING CODE : FUEL GAS 2020 7TH EDITION FLORIDA BUILDING CODE : ENERGY CONSERVATION 2020 7TH EDITION FLORIDA BUILDING CODE : EXISTING BUILDING 2020 7TH EDITION FLORIDA BUILDING CODE : ACCESSIBILITY 2020 7TH EDITION FLORIDA FIRE PREVENTION CODE (NFPA) 2017 NATIONAL ELECTRIC CODE (NEC)	PARTICIPANTS			C	This item has been electronically signed and sealed by Barry M Jacobson on the date adjacent to the seal using a SHA authentication code. Printed copies of this document are not considered signed and sealed and the SHA authentication code must be verified on any electronic copies. 2023.03.22 14:56:01 -04'00'																							
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E	DOCUMENTS SIZED FOR 11"X17" PAPER							E	<table><tr><td>Project Name:</td><td>FRANK FUNK</td></tr><tr><td>Project Address:</td><td>200 W SKYLINE LOOP FT WHITE, FL 32038</td></tr></table>	Project Name:	FRANK FUNK	Project Address:	200 W SKYLINE LOOP FT WHITE, FL 32038																				
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	SUMMARY			PAGE INDEX	CODE REFERENCES	SITE LOCATION			<table><tr><td>PAGE TITLE:</td><td>PAGE #:</td></tr><tr><td>GENERAL NOTES</td><td>G01</td></tr></table>	PAGE TITLE:	PAGE #:	GENERAL NOTES	G01																				
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REV#	DATE	REVISION NOTES

Project Name:
FRANK FUNK

Project Address:
200 W SKYLINE LOOP
FT WHITE, FL 32038

PAGE TITLE:
LINE DIAGRAM

PAGE # :
E01

	1	2	3	4	5	6	7
A	LOCATION INFORMATION			CONDUCTOR, CONDUIT, & OCD SIZES 310.10(H)			
	Location	Gainesville AP		Conductor ID in Oneline		A	B
	Temp, Ambient High (ASHRAE 2%)	34.0 C		Current-carrying Conductor		#1/0	#6
	Temp, Ambient Low (ASHRAE Extreme)	-5.0 C		Insulation Type		THWN2	THWN2
	Temp, Module Test	25.0 C		Side of Service		Load	Load
	Temp, Delta Low	-30.0 C		Insulation Temp Rating		90 C	90 C
	Temp, Below Ground	25.0 C		Conductor Material		Copper	Copper
				Neutral Sizing		Current-Carrying Breaker	Current-Carrying Breaker
				Over-current Device Type			
				Min Current-Carrying Conductor Based on Ampacities		#1/0	#6
B	MODULE SPECIFICATIONS AND CALCULATIONS			Neutral, 310.10		#1/0	#6
	ITEM	MODULE 1		EGC, 250.122,250.28,250.102,310.10,690.45,690.47		#6	#10
	Module Manufacturer	Q Cells		Over-Current Device		150 A	60 A
	Module Model	Q.PEAK DUO G8+ 350		CURRENT SOURCE			
	Module Power STC	350 W		Current Type		AC	AC
	Module Operating Volt	34.24 VDC		Current Source		Inverters	Inverter 1
	Module Open-circuit Volt	40.7 VDC		Parallel Sources Combined		Not Combined	Not Combined
	Module Coeff Volt/Temp	-0.27 %/C		# Parallel Sources		1	3
				# Sets of Conductors		1	3
				# Conduits		1	1
C				# Sets Conductors per OCD		1	1
				# Conductors per Conduit		4	10
				# Current-Carrying Conductors per Conduit		2	6
				# Grounds per Conduit		1	1
				# Neutrals per Conduit		1	3
				# Sources per Conductor		1	1
	Module Max Volt (Voc*(1+Td*VTCoeff))	43.99 VDC		Source Maximum Current		119.5 A	47.5 A
	Module Operating Current	10.22 A		Conductor Maximum Current		119.5 A	47.5 A
	Module Short-Circuit Current	10.74 A		CONDITIONS OF USE CALCULATION 310.15 690.8(B)(2)(b)			
	Module Max-Current (Isc*125%)	13.42 A		Bottom of Conduit Distance Above Roof (or Below Ground)		#N/A	#N/A
D	INVERTER SPECIFICATIONS AND CALCULATIONS			Temperature Ambient High		34.0 C	34.0 C
	ITEM	INVERTER 1	INVERTER 2	Temperature Adjustment (roof/sun)		0.0 C	0.0 C
	Inverter Make	SolarEdge	Tesla	Total Temperature		34.0 C	34.0 C
	Inverter Model	SE11400H-US	Powerwall 2	Derate for Temp		96%	96%
	Inverter Qnty	1	3	Derate for Fill / Bundled		100%	80%
	Inverter Power	11,400 W	5,800 W	Conductor Ampacity, w/o derates		170 A	75 A
	Inverter Input Voltage, Max DC	480 VDC	50 VDC	Min Ampacity required >= I _{max} conductor*125% 690.8(B)(1)		149.3 A	59.3 A
	Inverter Input Voltage, Nominal DC	400 VDC	50 VDC	Conductor Ampacity, with derates and 240.4(D)		163.2 A	57.6 A
	Inverter Output Voltage, AC	240 VAC	240 VAC	Min Ampacity required >= I _{max} conductor 690.8(B)(2)		119.5 A	47.5 A
	Inverter Input Current, Max DC	30.5 ADC	#N/A	TERMINAL CALCULATION 110.14 310.15 690.8(B)(2)(a)			
E	Inverter Output Current, AC	47.5 AAC	24.0 AAC	Terminal Temp Rating		75 C	75 C
	Inverter Output Frequency	60 Hz	60 Hz	Conductor Ampacity at terminals		150.0 A	65.0 A
	Inverter Phase Qnty	1 Phase	1 Phase	Min Ampacity required >= I _{max} conductor*1.25 690.8(B)(1)		150.0 A	59.3 A
	Inverter UL Listing	UL1741	UL1741	OVER-CURRENT 690.8, 690.9, 240.4B			
	Inverter Grounding	Ungrounded	Ungrounded	# of Parallel Sources per OCD		1	1
	Modules in Series	15	0	Min Ampacity required >= # parallel sources*I _{max} source x 1.25		149.3 A	59.3 A
				Over-current Device		150.0 A	60.0 A
				CONDUIT ANNEX C, CHAPTER 9 TABLE 1, 376.22			
				Conduit Type		EMT	EMT
				Nipple (less than or equal to 24-inches)		Nipple	Not Nipple
			Conduit diameter		1"	1"	
			Max Allowable Conduit Fill		60%	40%	
			Conduit Fill		70%	55%	
			VOLTAGE DROP (WORST CASE), CHAPTER 9, TABLES 8 & 9				
			Conductor Length One-Way		4'	6'	
			Power Factor		1	1	
			Resistance		0.12 ohm/kft	0.49 ohm/kft	
			Reactance		0.055 ohm/kft	0.064 ohm/kft	
			Impedance		0.12 ohm/kft	0.49 ohm/kft	
			Source Operating Current		119.5 A	47.5 A	
			Conductor Operating Current,		119.5 A	47.5 A	
			Nominal Operating Voltage		240.0 V	240.0 V	
			Voltage Drop, total		0.11 V	0.27 V	
			Voltage Drop, percentage		0.04%	0.11%	
	1	2	3	4	5	6	7

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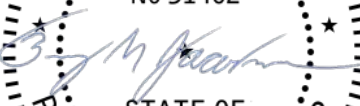


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REV#	DATE	REVISION NOTES

Project Name:

FRANK FUNK

Project Address:

200 W SKYLINE LOOP
FT WHITE, FL 32038

PAGE TITLE:

ELECTRICAL CALCULATIONS

PAGE #:

E02

1234567

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.



PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Total Energy ¹	14 kWh
Usable Energy ¹	13.5 kWh
Real Power, max continuous ²	5 kW (charge and discharge)
Real Power, peak (10s, off-grid/backup) ²	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10s, off-grid/backup)	7.2 kVA (charge and discharge)
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/- 1.0 adjustable
Power Factor Range (full-rated power)	+/- 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency ^{1,3}	90%
Warranty	10 years

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

²In Backup mode, grid charge power is limited to 3.3 kW.

³AC to battery to AC, at beginning of life.

COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)

TESLA

TESLA.COM/ENERGY

MECHANICAL SPECIFICATIONS

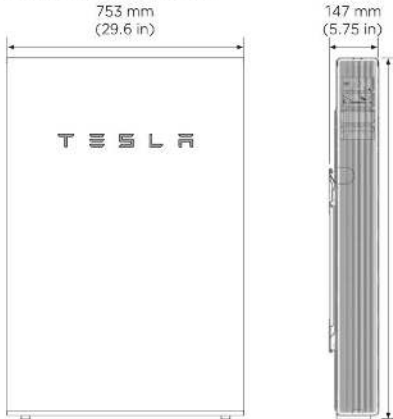
Dimensions ¹	1150 mm x 753 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight ¹	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

¹Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

753 mm
(29.6 in)

147 mm
(5.75 in)

1150 mm
(45.3 in)



ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to 50°C (-4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	-20°C to 30°C (-4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

1234567

01 - TESLA POWERWALL

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TESLA POWERWALL

PAGE #:

E03