Overall System	
Input to Inverter	CES Battery:
	• <b>DC Bus:</b> 600V
	<ul> <li>Control Panel: 240V, Split Phase</li> </ul>
Continuous Real Power	500kW
Rated Energy Capacity	250kWh
Fuse Ratings	DC String Fuses – 400A
	AC Control Panel Fuse – 30A
	Breakers – see electrical schematics
Battery Cells	
Manufacturer	XALT Energy
Technology	Superior Lithium-Polymer
Chemistry	NMC (Nickel Manganese Cobalt)
	Lithium Ion/Graphite Anode/Cathode
Capacity (Nominal @ C/3)	40Ah
Voltage (Nominal)	3.7V
Voltage (Lower Limit)	2.7V
Voltage (Upper Limit)	4.2V
Charge Current (Max. Continuous)	120A (3C)
Discharge Current (Max. Continuous)	320A (8C)
Pulse Current (Max. 10 sec. Duration)	480A (12C)
Self-discharge*	<1%/month
Cycle Life @ 1C/1C, to 80% of Capacity, 80% DOD	> 8,000 cycles
or 3.3-4.1V	
Internal Impedance (1kHz AC)	Less than 0.8mΩ
DC Resistance (10s @ 50% SOC)	1.35 mΩ
Peak Power Density (10 Sec., 50% SOC),	1724 W/Kg
Gravimetric	
Peak Power Density (10 Sec., 50% SOC), Volumetric	3353 W/L
Energy Density, Gravimetric	2.60kWh/Kg
Energy Density, Volumetric	5.90 kWh/L
Charge Temperature Range	0°C to+45°C
Discharge Temperature Range	-20°C to+60°C
Battery Modules	
Energy Capacity	5.3kWh
Configuration	12S3P
Voltage (Nominal)	44.4V
Voltage (Lower Limit)	38.4V
Voltage (Upper Limit)	49.2V
BMS Charge Current Cut-Off	120A
BMS Discharge Current Cut-Off	290A
Height	325mm
Length	660mm
Width	281mm
Weight	55Kg
Thermal Management	Air Cooled
Module Protection	Current limiting cell tabs
BMS Monitoring Parameters	Cell voltage (12) and temperature (6)
Battery Array	
Configuration	4 strings of 12 modules in series (12S4P)
DC Bus Voltage (Nominal)	533V

DC Bus Voltage (Upper Limit)  DC Bus Voltage (Lower Limit, Configurable Alert/Alarm)  Maximum Continuous Current  Protection  String fuse, contactors, disconnect switches  String Fusing  400A (3 modules per fuse)  String and Master BMS Monitoring Parameters  String current, string state-of-charge (SOC), remaining total kWh, status and alarms  Mechanical  Height  1,685 mm  Length 5,027 mm (with all doors open) 3,147 mm (with all doors open) 4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight  5200 kg  Mounting Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Environmental  Ambient Temperature  0°C to+45°C  Storage Temperature  Continuous: +25°C max <1 year: -20°C to+25°C <3 months: +25°C to+40°C <1 week: +40°C to+60°C  Relative Humidity 95% non-condensing  Cooling/Heating Active heating and cooling, forced air, ventilation		
Alert/Alarm)  Maximum Continuous Current  Protection  String fuse, contactors, disconnect switches  String Fusing  400A (3 modules per fuse)  String and Master BMS Monitoring Parameters  String current, string state-of-charge (SOC), remaining total kWh, status and alarms  Mechanical  Height  Length  5,027 mm (with all doors open) 3,147 mm (with all doors closed)  Width  4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  1-20°C to+60°C  Internal Operating Temperature  Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	DC Bus Voltage (Upper Limit)	605V
Maximum Continuous Current1150AProtectionString fuse, contactors, disconnect switchesString Fusing400A (3 modules per fuse)String and Master BMS Monitoring ParametersString current, string state-of-charge (SOC), remaining total kWh, status and alarmsMechanicalHeight1,685 mmLength5,027 mm (with all doors open)3,147 mm (with all doors closed)Width4,430 mm (with all doors open)2,236 mm (with all doors closed)Weight5200 kgMountingBase frame skidEnclosureNEMA3R, single cabinetEnvironmentalAmbient Temperature-20°C to+60°CInternal Operating Temperature0°C to+45°CStorage TemperatureContinuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C		461V
String Fusing  String and Master BMS Monitoring Parameters  String current, string state-of-charge (SOC), remaining total kWh, status and alarms  Mechanical  Height  Length  String current, string state-of-charge (SOC), remaining total kWh, status and alarms  Mechanical  Height  Length  String current, string state-of-charge (SOC), remaining total kWh, status and alarms  Mechanical  Height  1,685 mm  Length  4,430 mm (with all doors open)  2,236 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  -20°C to+60°C  Internal Operating Temperature  Continuous: +25°C max  < 1 year: -20°C to+25°C  < 3 months: +25°C to+40°C  < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing		1150A
String and Master BMS Monitoring Parameters  Mechanical  Height  Length  String with all doors open) 3,147 mm (with all doors closed)  Width  4,430 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  Internal Operating Temperature  String current, string state-of-charge (SOC), remaining state-of-charge (SOC), remaining state with all all all all sors open) 3,147 mm (with all doors open) 2,236 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  O°C to+60°C  Internal Operating Temperature  Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Protection	String fuse, contactors, disconnect switches
remaining total kWh, status and alarms  Mechanical  Height 1,685 mm  Length 5,027 mm (with all doors open) 3,147 mm (with all doors closed)  Width 4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight 5200 kg  Mounting Base frame skid Enclosure NEMA3R, single cabinet  Environmental  Ambient Temperature -20°C to+60°C  Internal Operating Temperature O°C to+45°C  Storage Temperature Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity 95% non-condensing	String Fusing	400A (3 modules per fuse)
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Length  5,027 mm (with all doors open) 3,147 mm (with all doors closed)  Width  4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  -20°C to+60°C  Internal Operating Temperature  0°C to+45°C  Storage Temperature  Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Mechanical	
3,147 mm (with all doors closed)  Width 4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight 5200 kg  Mounting Base frame skid  Enclosure NEMA3R, single cabinet  Environmental  Ambient Temperature -20°C to+60°C  Internal Operating Temperature 0°C to+45°C  Storage Temperature Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity 95% non-condensing	Height	1,685 mm
Width  4,430 mm (with all doors open) 2,236 mm (with all doors closed)  Weight  5200 kg  Mounting  Base frame skid  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  -20°C to+60°C  Internal Operating Temperature  0°C to+45°C  Storage Temperature  Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Length	5,027 mm (with all doors open)
2,236 mm (with all doors closed)  Weight 5200 kg  Mounting Base frame skid  Enclosure NEMA3R, single cabinet  Environmental  Ambient Temperature -20°C to+60°C  Internal Operating Temperature 0°C to+45°C  Storage Temperature Continuous: +25°C max		3,147 mm (with all doors closed)
Weight 5200 kg  Mounting Base frame skid  Enclosure NEMA3R, single cabinet  Environmental  Ambient Temperature -20°C to+60°C  Internal Operating Temperature 0°C to+45°C  Storage Temperature Continuous: +25°C max	Width	4,430 mm (with all doors open)
Mounting  Enclosure  NEMA3R, single cabinet  Environmental  Ambient Temperature  Internal Operating Temperature  Storage Temperature  Continuous: +25°C max  < 1 year: -20°C to+40°C  < 3 months: +25°C to+40°C  < 1 week: +40°C to+60°C  Relative Humidity  Base frame skid  NEMA3R, single cabinet  Continuous:  -20°C to+60°C    40°C to+60°C   55°C to+40°C   55°C to+40°C   55°C to+60°C		2,236 mm (with all doors closed)
Enclosure  Environmental  Ambient Temperature  Internal Operating Temperature  Storage Temperature  Continuous: +25°C max  < 1 year: -20°C to+40°C  < 3 months: +25°C to+40°C  < 1 week: +40°C to+60°C  Relative Humidity  NEMA3R, single cabinet  PROPORTION  CONTINUOUS: +25°C  < 3 months: +25°C to+40°C  < 1 week: +40°C to+60°C	Weight	5200 kg
Environmental  Ambient Temperature -20°C to+60°C  Internal Operating Temperature 0°C to+45°C  Storage Temperature Continuous: +25°C max	Mounting	Base frame skid
Ambient Temperature -20°C to+60°C Internal Operating Temperature 0°C to+45°C  Storage Temperature Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity 95% non-condensing	Enclosure	NEMA3R, single cabinet
Internal Operating Temperature  O°C to+45°C  Storage Temperature  Continuous: +25°C max  < 1 year: -20°C to+25°C  < 3 months: +25°C to+40°C  < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Environmental	
Storage Temperature  Continuous: +25°C max < 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Ambient Temperature	-20°C to+60°C
< 1 year: -20°C to+25°C < 3 months: +25°C to+40°C < 1 week: +40°C to+60°C  Relative Humidity  95% non-condensing	Internal Operating Temperature	0°C to+45°C
<pre>&lt; 3 months: +25°C to+40°C &lt; 1 week: +40°C to+60°C  Relative Humidity</pre>	Storage Temperature	Continuous: +25°C max
< 1 week: +40°C to+60°C  Relative Humidity 95% non-condensing		< 1 year: -20°C to+25°C
Relative Humidity 95% non-condensing		
		< 1 week: +40°C to+60°C
Cooling/Heating Active heating and cooling, forced air, ventilation	·	
	Cooling/Heating	Active heating and cooling, forced air, ventilation