



CLEVE HILL SOLAR PARK

ENVIRONMENTAL STATEMENT
VOLUME 4 - TECHNICAL APPENDIX A12.9
ENERGY STORAGE NOISE DATA

November 2018
Revision A

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GE Power



Reservoir Inverter Unit



GE Power



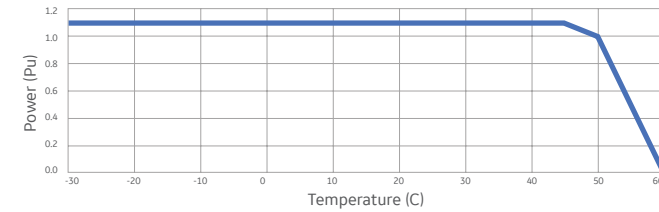
Reservoir Storage Unit

Energy Storage Inverter

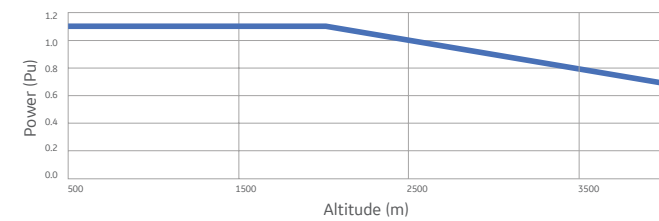
RIU-2750MV

AC Parameters	RIU-2750MV
Nominal Power (kWac, @45C)	2500 KW
Maximum Power (kVA, at 45C)	2750 kVA
Rated AC Operating Voltage(Vac)	550 V (10-35 kV)
Maximum Reactive Power (kVA, at 45C)	2500 kVA
AC Operating Voltage Range (%)	+/- 10%
Grid Frequency +/-5% (Hz)	50/60 Hz
Power Factor Range	-1.0 to 1.0
DC Parameters	
DC Input Range(Vdc)	800 - 1500V
Max DC Current (A)	3500A
BPU Coordination	Yes
Operational Parameters	
Max Efficiency	98.80%
CEC Efficiency	98.50%
Power consumption at stop	400 W
Max Power consumption	4.8 kW
Audible Noise	<70 dB@ 1M
Physical Parameters	
Dimensions (mm) (L X W X H)	6058 x 2438 x 2890 mm
Weight (kg)	15,700 kg
Ambient Temperature Range (C)	-30°C to 50°C (60C*)
Elevation (m)	<2000m (Nominal)
Weatherization	IP 54, NEMA 3R
Cable Entry	Bottom
Communications	
External Standard	RS-485, Ethernet
Response Time	<100 mSec
Equipment	
Ground Fault Monitoring	2 - Level
AC Circuit Breaker	Lockable
DC Loaded Switch	Fused
Integrated LV Auxiliary Power Supply	Yes
Features	
Anti-islanding	Yes
Reactive Power Compensation	Yes
Low Voltage Ride Through (LVRT)	Yes
High Voltage Ride through (HVRT)	Yes
Frequency Ride Through	Yes
Certifications & Compliance	
Certifications	UL 1741, IEC 62109
Compliance	SA/Rule 21, IEEE 1547 PRC-024, AS3000, IEC 62477

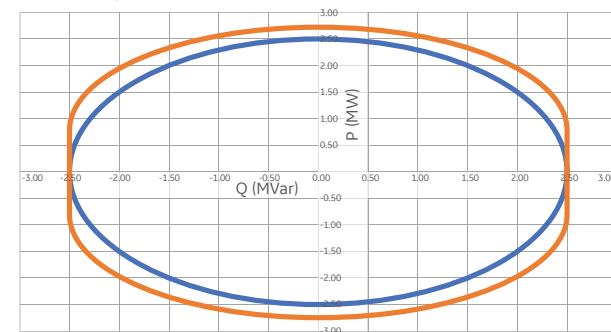
Temperature Rating



Altitude Rating



Nominal Capability Curve



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Modular, Scalable Solutions For Utility Scale Applications

RSU-4000 Series

Overview	RSU-4000/20	RSU-4000/16	RSU-4000/12
Overview	RSU-4000/20	RSU-4000/16	RSU-4000/12
Nameplate Energy Capacity (KWh.dc, usable)	4184	3347.2	2510.4
Individual Battery Blades - Factory Installed	20 of 20	16 of 20	12 of 20
Maximum Power - Factory Installed (KW.dc)	1200	960	720
Maximum DC Current - Factory Installed (A)	1600	1280	960
Available Augmentation Capacity (% BOL)	0%	25%	67%
Available Augmentation Capacity (kWh.dc)	N/A	836.8	1673.6
Key Features			
Battery Management System	GE Blade Protection Unit (BPU)		
Compatible Inverters	GE RIU-2750MV		
Remote Management	Reservoir Suite		
Solar DC Coupling	Yes (DC:AC Ratio <2.8)		
Integrated PV Combiner	Yes		
Integrated Lockable Disconnect	Module & Rack Level		
Augmentation Options for Lifecycle Management	Yes		
DC Bus Control	DC-IQ Intelligent Bus		
Battery LifeCycle Management	Digital Twin Life Optimization - Optional		
Unit Validation	Factory Built & Tested		
Design life (years)	25		
Battery Information			
Battery Chemistry	Lithium-Ion, NCM		
Battery Module Design	Energy		
Continuous C-Rate	<C/3		
Pulse C-Rate	<C/3		
Voltage Class	1500V		
Nominal DC Voltage (V)	1300		
Minimum DC Voltage (V)	770		
Mechanical Information			
Package Format	20' ISO w/Exterior Acces		
Dimensions (mm) (L X W X H)	6058 x 2438 x 2890 mm		
Weight (kg)	37k	31k	25k
Fully Integrated HVAC	Dual Self-Contained 3 Ton Units (High Efficiency 10. EER)		
- Hot Climate Upgrade	+33% Cooling Capacity		
- Cold Climate Upgrade	+ Electric Heating Package		
Fire Suppression - Aerosol	Optional		
Installation	Pad/Pier		
Cable Entry	Bottom		
Weatherization	NEMA 3R, IP54		
Design Conditions			
Min Operating Temperature (C)	-40°C		
Max operating Temperature (C)	50°C (55°C w/ hot climate upgrade)		
Maximum Altitude (m)	2000		
Maximum Relative Humidity (%)	95%, non-condensing		
Seismic Zone	UBC Zone-4		
Audible Noise	<60 dB at 3M		
Certifications & Compliance			
Certifications	UN38.3, UL 1973, UL 508C, CE		
Compliance	UL1642, UNDOT 38.3, IEC 62477-1, NFPA 70E, IEC 50110, ASTM4169, IEEE 605, IEEE C37.32		

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