

APPENDIX B: TECHNICAL REQUIREMENTS – UPS AND BATTERIES

1. TECHNICAL AND LOGISTICAL REQUIREMENTS

The UPS shall have the following required minimum performance:

1	MODEL DESCRIPTION		COMPLY YES OR NO. COMPLIANCE EVIDENCE.
1.1	Model Rating	300kVA	
1.2	UPS options	External battery cabinets System bypass module (SBM)	
1.3	UPS technology	Online-Double conversion with IDBT converters	
2	MECHANICAL INFORMATION		
2.1	UPS Dimensions	Must not exceed 2500 x 1500 x 2000 mm (width x depth x height)	
2.2	Weight	Must not exceed 1500kg	
2.3	External Battery Cabinet	<p>The room size is 6000x7400x3360mm</p> <p>The battery cabinet must be able to fit within the available space with enough movement for maintenance and monitoring of battery system.</p> <p>The existing cabinet has capacity to carry 192 batteries</p> <p>The system must provide for advanced battery charging management.</p>	

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		Install intelligent battery monitoring system	
2.4	UPS cable entry	From the bottom	
2.5	UPS cable output	From the top	
3	ENVIRONMENTAL INFORMATION		
3.1	Acoustic noise at 1m	<85 dBA	
3.2	Ambient UPS storage temperature	-15 to +40 degrees in protective package	
3.3	Battery ambient operating temperature	15 – 25 degrees	
3.4	Relative humidity range	Maintain a non-condensing environment (0-95%)	
4	EFFICIENCY		
4.1	Efficiency in double-conversion rated linear load between 25% and 100% load	93%-98%	
4.2	Heat dissipation in double conversion	Max 14 kW on full load	
4.3	Efficiency in rated linear load	99%	
5	ELECTRICAL CHARACTERISTICS – [INPUT]		
5.1	Rated input voltage	220/380V; 230/400V Voltage tolerance (-15%/+15%)	

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5.2	Rated input frequency	50 or 60 Hz (45 to 65 as tolerance)	
5.3	Number of input phases	3 phase	
5.4	Maximum input current	500A	
5.5	Back feed protection	Required	
6	ELECTRICAL CHARACTERISTICS - OUTPUT		
6.1	Number of outputs phases	3 phase	
6.2	Rated output frequency	50 or 60 Hz	
6.3	Rated output power	300 kVA/275 kW	
6.4	Transfer time to double-conversion	No break	
6.5	Storm detection	The unit must lock into double-conversion mode when three power line disturbances have forced the unit to double-conversion 3x in 1 hour	
6.6	High alert mode	The unit must be able to stay on double-conversion if there is a high alert for 1 hour after which the unit will automatically return to operate on normally.	
7	BYPASS		
7.1	Bypass input	230V	
7.2	Bypass output	3 phase + neutral	

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7.3	Type	Static	
7.4	Rating	300kVA	
7.5	Transfer time break	No break	
7.6	Internal static bypass ultra-rapid fuse	Configured according to bypass characteristics	
8	BATTERIES		
8.1	Battery technology	External battery system	
8.2	Battery quantity	The supplier to configure and supply enough capacity to support the recommended UPS model	
8.3	Battery voltage	480 V	
8.4	End of discharge voltage	172 V – 240V	
8.5	Battery time	480 minutes at 75% load	
8.6	Depth of Discharge	Minimum 80%	
8.7	Charging cycles	Minimum 5000	
8.8	Life cycle	At least 8 years	
9.	COMMUNICATION MANAGEMENT		
9.1	LCD Screen	Install touch screen – LCD user interface	
9.2	Alarm	Overload, abnormal AC input, low battery, UPS failure, over temperature and abnormal variation on voltage	
10	CABLES		

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10.1		Not more than 50 meters to avoid voltage loss	
10.2		4 Core plush earth	
10.3		150mm input cable and 70mm output cable	