

1. SYSTEM CONFIGURATION & APPLICATION CASES

Parameter / Case	Case 1 (100kVA)	Case 2 (40kVA)	Case 3 (60kVA Standard)	Case 4 (60kVA Compact)
Matched UPS Power	100 kVA / 80 kW	40 kVA / 32 kW	60 kVA / 48 kW	60 kVA / 48 kW
Backup Time Requirement	60 mins	60 mins	30 mins	15 mins
System Rating Configuration	480V 280Ah	480V 120Ah	480V 105Ah	480V 60Ah
Nominal System Energy	134.4 kWh	57.6 kWh	50.4 kWh	28.8 kWh
Nominal DC Bus Voltage	480 Vdc	480 Vdc	480 Vdc	480 Vdc
End of Discharge Voltage (EOD)	400 Vdc	400 Vdc	400 Vdc	400 Vdc
High Voltage Control Box	300A Main Switch / PDU	200A Main Switch / PDU	250A Main Switch / PDU	300A Main Switch / PDU
Indoor Sheet Metal Cabinet	700 × 1300 × 1800 mm	700 × 1300 × 1800 mm	700 × 1300 × 1800 mm	700 × 1300 × 1800 mm

2. SYSTEM STRUCTURE & BILL OF MATERIALS (BOM)

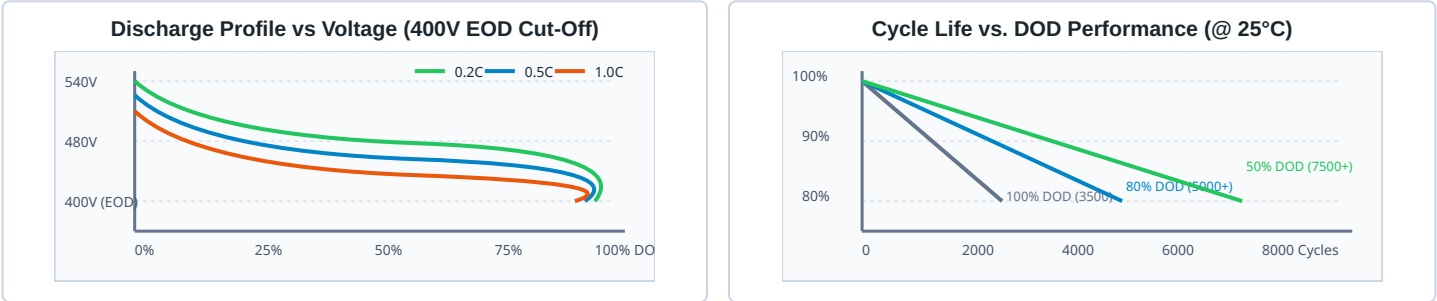
System Option	Item Description	Specification / Model	Qty per Cabinet	Sub-System Energy
Option 1: 480V 280Ah (134.4 kWh)	Battery Pack Module	1P15S 48V 280Ah (150 cells total)	10 Modules	13.44 kWh / Module
	High Voltage Box	300A Master Control Box with High-Speed DC Breaker & BMS	1 Unit	Central Control
	Cabinet & Accessories	Sheet Metal Cabinet (700×1300×1800mm) + Interconnect Wiring & Packaging	1 Set	Indoor IP20 Enclosure
Option 2: 480V 120Ah (57.6 kWh)	Battery Pack Module	1P15S 48V 120Ah (150 cells total)	10 Modules	5.76 kWh / Module
	High Voltage Box	200A Master Control Box with High-Speed DC Breaker & BMS	1 Unit	Central Control
	Cabinet & Accessories	Sheet Metal Cabinet (700×1300×1800mm) + Interconnect Wiring & Packaging	1 Set	Indoor IP20 Enclosure
Option 3: 480V 105Ah (50.4 kWh)	Battery Pack Module	1P15S 48V 105Ah (150 cells total)	10 Modules	5.04 kWh / Module
	High Voltage Box	250A Master Control Box with High-Speed DC Breaker & BMS	1 Unit	Central Control
	Cabinet & Accessories	Sheet Metal Cabinet (700×1300×1800mm) + Interconnect Wiring & Packaging	1 Set	Indoor IP20 Enclosure
Option 4: 480V 60Ah (28.8 kWh)	Battery Pack Module	1P15S 48V 60Ah (150 cells total)	10 Modules	2.88 kWh / Module
	High Voltage Box	300A Master Control Box with High-Speed DC Breaker & BMS	1 Unit	Central Control
	Cabinet & Accessories	Sheet Metal Cabinet (700×1300×1800mm) + Interconnect Wiring & Packaging	1 Set	Indoor IP20 Enclosure

3. ELECTRICAL & TECHNICAL PARAMETERS

Parameter Category	Specification Item	Technical Performance Value
Electrical Platform	Battery Chemistry & Cell Topology	Grade-A Prismatic LiFePO ₄ (1P15S per module × 10 modules in series = 150S1P)
	Operating Voltage Range	400.0 Vdc ~ 540.0 Vdc (EOD Cut-off: 400 Vdc / Max Charge: 540 Vdc)
	Recommended Float Charge Voltage	540.0 Vdc (3.60 V/cell)
	System Round-Trip Efficiency (RTE)	≥ 97.5% @ 0.5C rate, 25°C
BMS & Communication	Control & Protection Logic	3-Level BMS Architecture (Cell → Module → High Voltage Box Master BMS)
	Communication Protocols	RS485 / CAN2.0B / Ethernet (Modbus RTU / Modbus TCP)
	Protection Matrix	Over-voltage, Under-voltage, Short Circuit, Over-current, Multi-point Temp Alarm

Parameter Category	Specification Item	Technical Performance Value
Mechanical & Thermal	Enclosure Material & Protection Rating	Heavy-Duty Cold Rolled Sheet Metal / IP20 (Indoor Application)
	Operating Temperature Window	Discharge: -20°C to +60°C Charge: 0°C to +55°C
	Design Life & Service Cycle	15-Year Floating Design Life ≥ 5000 Cycles @ 80% DOD, 25°C

4. BATTERY PERFORMANCE CHARACTERISTICS



Engineering & Integration Note: All four system options feature uniform 700×1300×1800mm indoor sheet metal cabinets and 400Vdc EOD cut-off settings, ensuring standardized installation footprints and seamless integration with industrial high-voltage 480V UPS architectures.