

Datasheet – Off-Grid Solar Power System

System Configuration: 21kW Inverter / 30kWh Battery / 21.12kW Solar Array

Inverter System – Growatt SPF3500T (×6 in Parallel)

Parameter	Specification (Per Unit)
Model	Growatt SPF3500T
Rated Power	3.5kW × 6 units (Total: 21kW)
Output Voltage	110V / 220V Split Phase (configurable)
Output Waveform	Pure Sine Wave
AC Output Frequency	50Hz / 60Hz
Battery Voltage Range	40V – 60V DC
Solar Charger Type	MPPT (Built-in)
MPPT Input Voltage Range	60V – 145V DC
Max PV Array Power (per unit)	4500W
Max PV Input Current	18A
Max Charging Current	80A
Communication	RS485 / CAN / WiFi (optional)
Parallel Capability	Up to 6 units (already configured)
Dimensions (W×H×D)	~330×485×135 mm
Weight	~12kg per unit

Battery System – Growatt AXE5.0L (×6 Modules)

Parameter	Specification (Per Module)
Model	Growatt AXE 5.0L

Battery Type	LiFePO ₄ (Lithium Iron Phosphate)
Nominal Voltage	48V DC
Nominal Capacity	5.0kWh × 6 units (Total: 30kWh)
Usable Capacity	~28.5kWh (95% DOD typical)
Max Charging/Discharging	50A continuous per module
Operating Temperature	0°C – 50°C (charge), -10°C – 50°C (discharge)
Communication	CAN / RS485 (BMU required for parallel config)
Protection	BMS with over-voltage, under-voltage, temp
Dimensions (W×H×D)	~442×132×420 mm
Weight	~42kg per module
Installation Type	Stackable or rack-mount

Solar Panels – 440W Monocrystalline (×48 Panels)

Parameter	Specification (Per Panel)
Rated Power Output (Pmax)	440W
Cell Type	Monocrystalline PERC
Open Circuit Voltage (Voc)	~49.8V
Max Power Voltage (Vmp)	~41.7V
Max Power Current (Imp)	~10.55A
Module Efficiency	~20.2%
Operating Temp Range	-40°C to +85°C
Dimensions (W×H×D)	~1134×1722×35 mm
Weight	~23kg per panel
Connector Type	MC4 Compatible

Total Array Power

$440\text{W} \times 48 = 21,120\text{W}$

System Summary

Component	Quantity	Total Capacity / Power
Inverters	6	21kW AC Output
Batteries	6	30kWh Storage
Solar Panels	48	21,120W (21.12kW) PV Input