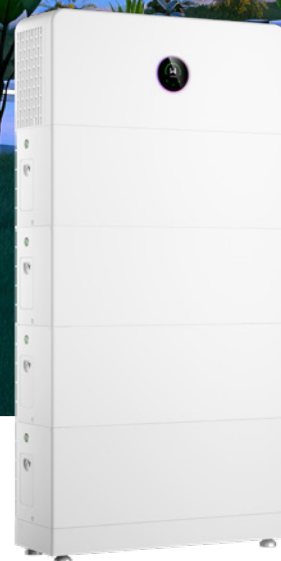


GOODWE

ESA Series

5-30kW/5-108kWh | Three Phase
AC-Coupled

The GoodWe ESA Series 5-30kW/5-108kWh is a three-phase All-in-One ESS that integrates the inverter, battery, and intelligent energy management into a single system. Its pre-wired, modular design unifies the inverter and battery, delivering an installation-friendly structure that streamlines setup and accelerates commissioning. With four battery module options-5, 6, 8, and 9kWh-up to 12 modules can be connected for a total storage capacity of 108kWh. Featuring simplified configuration, large expandable storage, and an AI-driven EMS for dynamic tariff optimization, the ESA Series 5-30kW/5-108kWh provides an efficient, flexible, and future-ready solution for both residential and small commercial use.



Optimized Performance

- Up to 1C charge/discharge for rapid energy cycling
- Smart fan cooling for quiet operation, noise <35dB



Flexible & Adaptable Applications

- Dual-port design for whole-home backup
- Flexible battery mixing with different capacity or old & new batteries
- Supports on- and off-grid parallel operation



Superb Safety & Reliability

- Advanced 6-layer safety protection
- IP66 protection for enhanced durability
- Heating mode ensures reliable performance even in -20°C



Smart Control & Monitoring

- Ready for AI-driven EMS
- Seamless switching to backup <4ms
- One-click upgrade & one-click configuration

Technical Data	GW5K- BTA-G20	GW6K- BTA-G20	GW8K- BTA-G20	GW9.999K- BTA-G20	GW12K- BTA-G20	GW15K- BTA-G20	GW20K- BTA-G20	GW25K- BTA-G20	GW29.999K- BTA-G20	
Battery Side										
Battery Type						Li-Ion				
Nominal Voltage (V)						750				
Voltage Range (V)						700 ~ 950				
Start-up Voltage (V)						720				
Number of Battery Inputs						1				
Max. Continuous Charging Current (A)	6.7	8.1	10.7	13.4	16.1	20.1	26.7	33.3	40.0	
Max. Continuous Discharging Current (A)	7.4	8.9	11.8	14.7	17.7	22.1	29.4	36.7	44.1	
Max. Charging Power (kW)	5.0	6.0	8.0	10.0	12.0	15.0	20.0	25.0	30.0	
Max. Discharging Power (kW)	5.5	6.6	8.8	11.0	13.2	16.5	22.0	27.5	33.0	
AC Side (On-Grid)										
Rated Power (kW)	5	6	8	9.999	12	15	20	25	29.999	
Max. Power (kW)	5	6	8	9.999	12	15	20	25	29.999	
Rated Apparent Power to Grid (kVA)	5	6	8	9.999	12	15	20	25	29.999	
Rated Apparent Power from Grid (kVA)	5	6	8	9.999	12	15	20	25	29.999	
Max. Apparent Power to Grid (kVA)	5	6	8	9.999	12	15	20	25	29.999	
Max. Apparent Power from Grid (kVA)	43.5	43.5	43.5	43.5	43.5	43.5	43.5	55.2	55.2	
Nominal Voltage (V)	220 / 380, 230 / 400, 3L / N / PE									
Voltage Range (V)	180 ~ 260 (According to local standard)									
Nominal Frequency (Hz)	50 / 60									
Frequency Range (Hz)	45 ~ 55 / 55 ~ 65									
Rated Current to Grid (A)	7.6 at 380V	9.1 at 380V	12.2 at 380V	15.2 at 380V	18.2 at 380V	22.8 at 380V	30.4 at 380V	37.9 at 380V	45.5 at 380V	
	7.3 at 400V	8.7 at 400V	11.6 at 400V	14.5 at 400V	17.4 at 400V	21.8 at 400V	29.0 at 400V	36.3 at 400V	43.5 at 400V	
Rated Current from Grid (A)	7.6 at 380V	9.1 at 380V	12.2 at 380V	15.2 at 380V	18.2 at 380V	22.8 at 380V	30.4 at 380V	37.9 at 380V	45.5 at 380V	
	7.3 at 400V	8.7 at 400V	11.6 at 400V	14.5 at 400V	17.4 at 400V	21.8 at 400V	29.0 at 400V	36.3 at 400V	43.5 at 400V	
Max. Current to Grid (A)	7.6 at 380V	9.1 at 380V	12.2 at 380V	15.2 at 380V	18.2 at 380V	22.8 at 380V	30.4 at 380V	37.9 at 380V	45.5 at 380V	
	7.3 at 400V	8.7 at 400V	11.6 at 400V	14.5 at 400V	17.4 at 400V	21.8 at 400V	29.0 at 400V	36.3 at 400V	43.5 at 400V	
Max. Current from Grid (A)	63	63	63	63	63	63	63	80	80	
Power Factor	0.8 leading ~ 0.8 lagging									
THDi	<3%									
Back-up Side										
Rated Output Apparent Power (kVA)	5	6	8	10	12	15	20	25	30	
Max. Output Apparent Power (kVA)	Off-grid: 5.5 (10.0, 10s), on-grid: 43.5	Off-grid: 6.6 (12, 10s), on-grid: 43.5	Off-grid: 8.8 (16.0, 10s), on-grid: 43.5	Off-grid: 11 (20.0, 10s), on-grid: 43.5	Off-grid: 13.2 (24, 10s), on-grid: 43.5	Off-grid: 16.5 (30, 10s), on-grid: 43.5	Off-grid: 22 (30.0, 10s), on-grid: 43.5	Off-grid: 27.5 (45.0, 10s), on-grid: 55.2	Off-grid: 33 (45.0, 10s), on-grid: 55.2	
Nominal Output Voltage (V)	220 / 380, 230 / 400, 3L / N / PE									
Nominal Output Frequency (Hz)	50 / 60									
Rated Output Current (A)	7.6 at 380V	9.1 at 380V	12.2 at 380V	15.2 at 380V	18.2 at 380V	22.8 at 380V	30.4 at 380V	37.9 at 380V	45.5 at 380V	
	7.3 at 400V	8.7 at 400V	11.6 at 400V	14.5 at 400V	17.4 at 400V	21.8 at 400V	29.0 at 400V	36.3 at 400V	43.5 at 400V	
Max. Output Current (A)	Off-grid: 11.4, on-grid: 63	Off-grid: 13.7, on-grid:63	Off-grid: 18.2, on-grid: 63	Off-grid: 22.8, on-grid:63	Off-grid: 27.3, on-grid: 63	Off-grid: 33.4, on-grid: 63	Off-grid: 33.4, on-grid: 63	Off-grid: 50.0, on-grid: 80	Off-grid: 50.0, on-grid: 80	
THDv (@Linear Load)						<3%				
On / Off-grid Switching Time (ms)						<4				
Efficiency										
Max. Efficiency	98.0%	98.0%	98.0%	98.1%	98.1%	98.1%	98.1%	98.2%	98.2%	
European Efficiency	96.4%	96.9%	97.1%	97.2%	97.2%	97.3%	97.3%	97.4%	97.4%	
CEC Efficiency						96.4%				
Max. Battery to AC Efficiency						98.0%				
Protection										
Residual Current Monitoring						Integrated				
Battery Reverse Polarity Protection						Integrated				
Anti-islanding Protection						Integrated				
AC Overcurrent Protection						Integrated				
AC Short Circuit Protection						Integrated				
AC Overvoltage Protection						Integrated				
AC Surge Protection						Type II				
Remote Shutdown						Integrated				
General Data										
Operating Temperature Range (°C)						-35 ~ +60				
Relative Humidity						0 ~ 100%				
Max. Operating Altitude (m)						4000 (>2000 derating)				
Cooling Method						Smart Fan Cooling				
User Interface						LED, WLAN + APP				
Communication with BMS						CAN				
Communication						RS485, WiFi + LAN + Bluetooth, 4G + Bluetooth (Optional)				
Communication Protocols						Modbus-RTU, Modbus-TCP				
Weight (kg)	34	34	34	34	34	34	34	38	38	
Dimension (W × H × D mm)						800 × 340 × 270				
Noise Emission (dB)	≤35	≤35	≤35	≤35	≤35	≤40	≤40	≤45	≤45	
Ingress Protection Rating						IP66				
Mounting Method						Wall / Floor Mounted				
Countrv of Manufacture						China				

*: Please visit GoodWe website for the latest certificates.

Technical Data		GW5.1-BAT-D-G20	GW8.3-BAT-D-G20	GW5.1-BAT-D-G21	GW8.3-BAT-D-G21	GW6.0-BAT-D-G20	GW9.0-BAT-D-G20
Battery Type		LFP (LiFePO ₄)					
Rated Energy (kWh)		5.12	8.32	5.12	8.32	6.0	9.0
Usable Energy (kWh)		5.0 ^{*1}	8.0 ^{*1}	5.0 ^{*1}	8.0 ^{*1}	5.8 ^{*2}	8.7 ^{*2}
Operating Voltage Range (V) (single phase system)		350 ~ 550					
Operating Voltage Range (V) (three phase system)		700 ~ 950					
Max. Input Current (System) (A)		12.0	19.0	12.0	19.0	7.1	10.7
Max. Output Current (System) (A)		13.2	21.0	13.2	21.0	7.9	11.8
Max. Input Power (System) (kW) ^{*3}		5.0	8.0	5.0	8.0	3.0	4.5
Max. Output Power (System) (kW) ^{*3}		5.0	8.0	5.0	8.0	3.0	4.5
Peak Output Power (System) (kW) ^{*3}		7.5 @10s	12 @10s	7.5 @10s	12 @10s	4.5 @ 10s	6.75 @ 10s
Charging Temperature Range (°C)		-18 ~ +55	-18 ~ +55	+2 ~ +55	+2 ~ +55	-20 ~ +55	-20 ~ +55
Discharging Temperature Range (°C)		-20 ~ +55					
Relative Humidity		4 ~ 100%					
Max. Operating Altitude (m)		4000					
Noise Emission (dB)		≤29	≤29	≤29	≤29	≤27	≤27
Communication		CAN	CAN	CAN	CAN	CAN & 485	CAN & 485
Weight (kg)		57.5 ± 1	79 ± 1	57.5 ± 1	79 ± 1	61 ± 1	77± 1
Ingress Protection		IP66					
Dimensions (W × H × D mm)		800 × 326 × 270					
Function Configuration		Heating (Optional); Aerosol fire extinguishing (Integrated)		Aerosol fire extinguishing (Integrated)		Heating (Integrated); Aerosol fire extinguishing (Integrated)	
Max. Storage time		12 months (-20°C ~ +35°C) 6 months (+35°C ~ +45°C)					
Scalability ^{*4}		12 pcs					
Mounting Method		Floor stacked / Wall-mounted				Floor stacked / Wall-mounted / Grounded	
Cycle Life ^{*5}		≥8000	≥8000	≥8000	≥8000	≥10000	≥10000
Standard and Certification	Safety	IEC62619, IEC60730, EN62477, IEC63056, IEC62040, CE, CEC, VDE2510				IEC62619, IEC60730, EN62477, IEC63056, IEC62040, CE, CEC, Regulation 2023 / 1542, VDE2510-50	
	EMC	CE, RCM					
	Transportation	UN38.3, ADR					

*1: Test conditions, 100% DOD (cell 2.85~3.6V voltage range), 0.2P charge & discharge at 25±2°C for battery system at the beginning of life. Usable energy is defined by its initial design value. Actual available energy may vary depending on charge/discharge rate, environmental conditions (e.g. temperature), transport and storage factors.

*2: Test conditions, 100% DOD (cell 2.87~3.61V voltage range), 0.4P charge & discharge at 25±2°C for battery system at the beginning of life. Usable energy is defined by its initial design value. Actual available energy may vary depending on charge/discharge rate, environmental conditions (e.g. temperature), transport and storage factors.

*3: Max. Input Power /Max. Output Power/Peak Output Power derating will occur related to Temperature and SOC.

*4: For single-column stacked installations, the maximum number of parallel units is 6.

*5: Based on test data under specific laboratory conditions.

*: Based on Lynx D G2 Series technology

*: Please visit GoodWe website for the latest certificates.