

GOODWE

ESA Series **5-30kW/5-108kWh**

Three Phase | All-in-One (HV)

Power in Silence. Life in Balance.

4S



Silent



Smart



Secure



Simple



Smart: 30%

Bill Savings
AI-driven EMS

Simple: 10-min

Installation
Plug. Power .Go

Silent: 30dB*

1st TÜV-certified low-noise
residential integrated system

Secure: 6-Layer

Protection
From cell to system

-20°C to 55°C

Operation¹
Reliable power, any weather

5-108kWh

Mix capacities.
Mix old & new batteries

IP66
protection

<4ms
Backup switching

STS Ready

Built for more scenarios

Up to **80A**
Bypass Current
Whole-home backup

200%
DC oversizing &
AC backup overload

¹: Optional functions or devices are purchased separately
*5~8kW | Operating noise as low as 30dB at 25°C ambient.

Technical Data											
GW5K- ETA-G20	GW6K- ETA-G20	GW8K- ETA-G20	GW9.999K- ETA-G20	GW10K- ETA-G20	GW12K- ETA-G20	GW15K- ETA-G20	GW20K- ETA-G20	GW25K- ETA-G20	GW29.999K- ETA-G20	GW30K- ETA-G20	
Battery Side											
Battery Type						LFP (LiFePO4)					
Nominal Voltage (V)						750					
Voltage Range (V)						700 ~ 950					
Start-up Voltage (V)						720					
Number of Battery Input						1					
Max. Continuous Charging Current (A)		6.7	8.1	10.7	13.4	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	14.7	17.7	22.1	29.4	36.7	44.1
Max. Charging Power (kW)		5.0	6.0	8.0	10.0	10.0	12.0	15.0	20.0	25.0	30.0
Max. Discharging Power (kW)		5.5	6.6	8.8	11.0	11.0	13.2	16.5	22.0	27.5	33.0
PV Side											
Max. Input Power (kW)		10	12	16	20	20	24	30	40	50	60
Max. Input Voltage (V) ¹						1000					
MPPT Operating Voltage Range (V) ²						120 ~ 950					
Start-up Voltage (V)						150					
Nominal Input Voltage (V)						750					
Max. MPPT Current (A)		21 / 21 / 21			21 / 21 / 21 / 21			21 / 21 / 42 / 42			
Max. MPPT Short Circuit Current (A)		26 / 26 / 26			26 / 26 / 26 / 26			26 / 26 / 52 / 52			
Number of MPPTs		3			4						
Number of Strings per MPPT		1 / 1 / 1			1 / 1 / 1 / 1			1 / 1 / 2 / 2			
AC Side (Grid Port)											
Rated Power (kW)		5	6	8	9.999	10	12	15	20	25	29.999
Max. Power (kW)		5	6	8	9.999	10	12	15	20	25	29.999
Rated Apparent Power to Grid (kVA)		5	6	8	9.999	10	12	15	20	25	29.999
Rated Apparent Power from Grid (kVA)		5	6	8	9.999	10	12	15	20	25	29.999
Max. Apparent Power to Grid (kVA) ³		5	6	8	9.999	10	12	15	20	25	29.999
Max. Apparent Power from Grid (kVA) ⁴		43.5	43.5	43.5	43.5	43.5	43.5	43.5	55.2	55.2	55.2
Nominal Voltage (V)						220 / 380, 230 / 400, 3L / N / PE					
Voltage Range (V) (According to local standard)						180 ~ 260					
Nominal Frequency (Hz)						50 / 60					
Frequency Range (Hz)						45 ~ 55 / 55 ~ 65					
Rated Current to Grid (A)		7.6@380V 7.3@400V	9.1@380V 8.7@400V	12.2@380V 11.6@400V	15.2@380V 14.5@400V	15.2@380V 14.5@400V	18.2@380V 17.4@400V	22.8@380V 21.8@400V	30.4@380V 29.0@400V	37.9@380V 36.3@400V	45.5@380V 43.5@400V
Rated Current from Grid (A)		7.6@380V 7.3@400V	9.1@380V 8.7@400V	12.2@380V 11.6@400V	15.2@380V 14.5@400V	15.2@380V 14.5@400V	18.2@380V 17.4@400V	22.8@380V 21.8@400V	30.4@380V 29.0@400V	37.9@380V 36.3@400V	45.5@380V 43.5@400V
Max. Current to Grid (A) ⁵		7.6@380V 7.3@400V	9.1@380V 8.7@400V	12.2@380V 11.6@400V	15.2@380V 14.5@400V	15.2@380V 14.5@400V	18.2@380V 17.4@400V	22.8@380V 21.8@400V	30.4@380V 29.0@400V	37.9@380V 36.3@400V	45.5@380V 43.5@400V
Max. Current from Grid (A) ^{4,5}		63	63	63	63	63	63	63	63	80	80
Power Factor						0.8 leading ... 0.8 lagging					
THDI						<3%					
AC Side (Back-up Port)											
Rated Apparent Power (kVA)		5	6	8	10	10	12	15	20	25	30
Max. Apparent Power (kVA) ⁶		Off-grid: 5.5 (10.0, 10s), on-grid: 43.5	Off-grid: 6.6 (12.0, 10s), on-grid: 43.5	Off-grid: 8.8 (16.0, 10s), on-grid: 43.5	Off-grid: 11.0 (20.0, 10s), on-grid: 43.5	Off-grid: 11.0 (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: 22.0 (30.0, 10s), on-grid: 43.5	Off-grid: 27.5 (45.0, 10s), on-grid: 55.2	Off-grid: 33.0 (45.0, 10s), on-grid: 55.2
Nominal Voltage (V)						220 / 380, 230 / 400, 3L / N / PE					
Nominal Frequency (Hz)						50 / 60					
Max. Current (A) ⁶		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: 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%	98.1%	98.2%	98.2%
European Efficiency		96.4%	96.9%	97.1%	97.2%	97.2%	97.2%	97.3%	97.3%	97.4%	97.4%
Max. Battery to AC Efficiency		98.0%									
Protection											
PV String Current Monitoring						Integrated					
PV Insulation Resistance Detection						Integrated					
Residual Current Monitoring						Integrated					
PV Reverse Polarity Protection						Integrated					
Battery Reverse Polarity Protection						Integrated					
Anti-islanding Protection						Integrated					
AC Overcurrent Protection						Integrated					
AC Short Circuit Protection						Integrated					
AC Overvoltage Protection						Integrated					
DC Switch						Integrated					
DC Surge Protection						Type II (Type I + II optional)					
AC Surge Protection						Type II					
Rapid Shutdown						Optional					
AFCI						Optional					
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	34	38	38
Dimension (W x H x D mm)						800 x 340 x 270					
Ingress Protection Rating						IP66					
Mounting Method						Wall/Floor Mounted					

*1: When the input voltage ranges from 950V to 1000V, the inverter will enter the standby mode, and the voltage returns to 950V to enter the normal operation state.

*2: Please refer to the user manual for the MPPT Voltage Range at nominal Power.

*3: According to the local grid regulation.

*4: GOODWE ESA series has internal bypass 63A passthrough ability to support whole home backup solution. If the customer don't want to do any breaker upgrade, the main breaker size in SolarGo(or SEMS+) can be set as previous breaker size.

*5: If the backup port is not used, select an appropriate circuit breaker based on the AC maximum output current.

*6: "Off grid" means the energy of backup output only comes from PV and battery. "On grid" means the energy of the backup output includes the energy from grid or generator (on-grid) side.

*: 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.