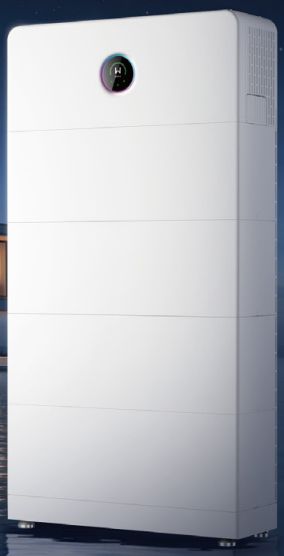
GOODWE

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

Silent: 30dB*

1st TÜV-certified low-noise residential integrated system

Secure: 6-Layer

Protection
From cell to system

Simple: 10-min

Installation
Plug. Power .Go

-20°C to 55°C

Operation[1]
Reliable power, any weather

STS Ready

Built for more scenarios

5-108kWh

Mix capacities.
Mix old & new batteries

IP66 protection

<4ms

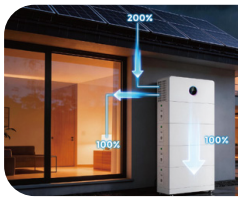
Backup switching

Up to 80A

Bypass Current
Whole-home backup

200%

DC oversizing &
AC backup overload



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

ESA Series / Power Module

GOODWE

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	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	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	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	33.0
PV Side											
Max. Input Power (kW)	10	12	16	20	20	24	30	40	50	60	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	30
Max. Power (kW)	5	6	8	9.999	10	12	15	20	25	29.999	30
Rated Apparent Power to Grid (kVA)	5	6	8	9.999	10	12	15	20	25	29.999	30
Rated Apparent Power from Grid (kVA)	5	6	8	9.999	10	12	15	20	25	29.999	30
Max. Apparent Power to Grid (kVA)*3	5	6	8	9.999	10	12	15	20	25	29.999	30
Max. Apparent Power from Grid (kVA)*4	43.5	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	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	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	45.5@380V 43.5@400V
Max. Current from Grid (A)*4*5	63	63	63	63	63	63	63	63	80	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	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	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	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%	98.2%
European Efficiency	96.4%	96.9%	97.1%	97.2%	97.2%	97.2%	97.3%	97.3%	97.4%	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	38
Dimension (W × H × D mm)	800 × 340 × 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 to950V 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 supprt 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.

GoodWe-Single page-20260616-EN-V2.1 Information may be subject to change without notice during product improving.

ESA Series / Battery Module*

GOODWE

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	
Standard and Certification – EMC	CE, RCM					
Standard and Certification – 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.