

GOODWE

ES Uniq Series

3-12kW | Single Phase | 1/2 MPPTs
Hybrid Inverter (LV)

GoodWe's ES Uniq Series inverter, available in 3-12kW capacities, are specifically designed for residential PV installations. It offers flexible compatibility with both on-grid and off-grid systems and support parallel connection of up to 6 inverters for easy system expansion. The ES Uniq inverters feature a user-friendly touch-screen LCD display for intuitive operation and monitoring, and can be combined with a range of battery capacities and brands, including GoodWe's Lynx A and Lynx U batteries.



Flexible & Adaptable Applications

- 3-in-1 Port: generator & smart loads & on-grid inverter
- Micro-grid operation with PV inverter
- Supports on- and off-grid parallel operation of up to 6 units



Superb Safety & Reliability

- AI-driven AFCI¹
- IP66 ingress protection



Higher Power Generation

- Max. 20A DC input current per string
- 200% PV input oversizing



Smart Control & Monitoring

- Smart load control
- Seamless switching to backup <4ms

1: Optional functions or devices are purchased separately.

Technical Data

GW3000-ES-C10

GW3600-ES-C10

GW5000-ES-C10

GW6000-ES-C10

GW8000-ES-C10

GW10K-ES-C10

GW12K-ES-C10

Battery Input Data

Battery Type ^{*1}	Li-Ion / Lead-acid						
Nominal Battery Voltage (V)	48						
Battery Voltage Range (V)	40 ~ 60						
Start-up Voltage (V)	44.2						
Number of Battery Input	1						
Max. Continuous Charging Current (A)	70	90	120	140	160	200	240
Max. Continuous Discharging Current (A)	70	90	120	140	160	200	240
Max. Charging Power (kW)	3.0 ^{*2}	3.6 ^{*2}	5.0 ^{*2}	6.0 ^{*2}	8.0 ^{*3}	10.0 ^{*3}	12.0 ^{*3}
Max. Discharging Power (kW)	3.3 ^{*2}	3.96 ^{*2}	5.5 ^{*2}	6.6 ^{*2}	8.8 ^{*3}	11.0 ^{*3}	13.2 ^{*3}

PV String Input Data

Max. Input Power (kW)	6.0	7.2	10.0	12.0	16.0	20.0	24.0
Max. Input Voltage (V) ^{*4}	600						
MPPT Operating Voltage Range (V) ⁵	60 ~ 550						
Start-up Voltage (V)	58						
Nominal Input Voltage (V)	360						
Max. Input Current per MPPT (A)	20	20	20	20	32 / 16 ^{*6}	32 / 32 ^{*6}	32 / 32 ^{*6}
Max. Short Circuit Current per MPPT (A)	26	26	26	26	48 / 24	48 / 48	48 / 48
Number of MPPT Trackers	1	2	2	2	2	2	2
Number of Strings per MPPT	1	1	1	1	2 / 1	2 / 2	2 / 2

AC Output Data (On-grid)

Nominal Output Power (kW)	3.0	3.6	5.0	6.0	8.0	10.0	12.0
Nominal Apparent Power Output to Utility Grid (kVA)	3.0	3.6	5.0	6.0	8.0	10.0	12.0
Max. AC Active Power (kW) ^{*7*}	3.3	3.96	5.5	6.6	8.8	11.0	13.2
Max. Apparent Power Output to Utility Grid (kVA) ^{*7*}	3.3	3.96	5.5	6.6	8.8	11.0	13.2
Max. Apparent Power from Utility Grid (kVA)	7.04	7.04	8.8	8.8	16.5	16.5	16.5
Nominal Output Voltage (V)	220 / 230 / 240						
Output Voltage Range (V)	170 ~ 280						
Nominal AC Grid Frequency (Hz)	50 / 60						
AC Grid Frequency Range (Hz)	45 ~ 55 / 55 ~ 65						
Max. AC Current Output to Utility Grid (A)	15	18	25	30	40	50	60
Max. AC Current From Utility Grid (A)	32	32	40	40	75	75	75
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)						
Max. Total Harmonic Distortion	<3%						

AC Output Data (Back-up)

Back-up Nominal Apparent Power (kVA)	3.0	3.6	5.0	6.0	8.0	10.0	12.0
Max. Output Apparent Power without Grid (kVA)	3.3 (6.0, 10s)	3.96 (7.2, 10s)	5.5 (10.0, 10s)	6.6 (12.0, 10s)	8.8 (16.0, 10s)	11.0 (20.0, 10s)	13.2 (24.0, 10s)
Max. Output Apparent Power with Grid (kVA)	7.04	7.04	8.8	8.8	16.5	16.5	16.5
Max. Output Current without Grid (A)	15	18	25	30	40	50	60
Max. Output Current with Grid (A)	32	32	40	40	75	75	75
Nominal Output Voltage (V)	220 / 230 / 240						
Nominal Output Frequency (Hz)	50 / 60						
Output THDv (@Linear Load)	<3%						

AC Data (Generator)

Nominal Apparent Power from AC generator (kVA)	3.0	3.6	5.0	6.0	8.0	10.0	12.0
Max. Apparent Power from AC generator (kVA)	3.3	3.96	5.5	6.6	8.8	11.0	13.2
Nominal Input Voltage (V)	220 / 230 / 240						
Input Voltage Range (V)	170 ~ 280						
Nominal AC generator Frequency (Hz)	50 / 60						
AC generator Frequency Range (Hz)	45 ~ 55 / 55 ~ 65						
Max. AC Current From AC generator (A)	32.0	32.0	40.0	40.0	50.0	54.5	54.5
Nominal AC Current From AC generator (A)	13.7 at 220V	16.4 at 220V	22.8 at 220V	27.3 at 220V	36.4 at 220V	45.5 at 220V	54.5 at 220V
	13.1 at 230V	15.7 at 230V	21.8 at 230V	26.1 at 230V	34.8 at 230V	43.5 at 230V	52.2 at 230V
	12.5 at 240V	15.0 at 240V	20.9 at 240V	25.0 at 240V	33.3 at 240V	41.7 at 240V	50.0 at 240V
Nominal Input Current (A)	13.7 at 220V	16.4 at 220V	22.8 at 220V	27.3 at 220V	36.4 at 220V	45.5 at 220V	54.5 at 220V
	13.1 at 230V	15.7 at 230V	21.8 at 230V	26.1 at 230V	34.8 at 230V	43.5 at 230V	52.2 at 230V
	12.5 at 240V	15.0 at 240V	20.9 at 240V	25.0 at 240V	33.3 at 240V	41.7 at 240V	50.0 at 240V

Efficiency

Max. Efficiency	97.6%
European Efficiency	96.2%
Max. Battery to AC Efficiency	95.5%
MPPT Efficiency	99.9%

Protection

PV String Current Monitoring	Integrated
PV Insulation Resistance Detection	Integrated
Residual Current Monitoring	Integrated
PV 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 III
AC Surge Protection	Type III
AFCI	Optional
Rapid Shutdown	Optional
Remote Shutdown	Integrated

General Data

Operating Temperature Range (°C)	-35 ~ +60						
Relative Humidity	0 ~ 95%						
Max. Operating Altitude (m)	3000						
Cooling Method	Natural Convection				Smart Fan Cooling		
User Interface	LCD, WLAN + APP						
Communication with BMS	CAN						
Communication	RS485, WiFi + LAN + Bluetooth						
Communication Protocols	Modbus-RTU, Modbus-TCP						
Weight (kg)	14.5	15.5	15.5	15.5	27.0	29.0	29.0
Dimension (W × H × D mm)	560 × 415 × 204				560 × 444.5 × 226		
Topology	Non-isolated						
Ingress Protection Rating	IP66						
Mounting Method	Wall Mounted						

*1: The Li-Ion battery usually contain two mainstream type: LFP and Ternary Lithium battery.

*2: When the PV input voltage is higher than 500V, the battery charging and discharging power will be gradually limited, and the power limitation will be lifted after the input voltage is lowered.

*3: When the PV input voltage is higher than 490V, the battery charging and discharging power will be gradually limited, and the power limitation will be lifted after the input voltage is lowered.

*4: When the input voltage is 560V-600V, the inverter will enter standby mode. The inverter will return to normal operation state when the voltage returns to the MPPT working voltage range.

*5: Please refer to the user manual for the MPPT Voltage Range at Nominal Power.

*6: The maximum input current per string is 16A. Or For the MPPT with two strings, the current of each string is 16A.

*7: For Sri Lanka, Max. Output Power (kW) is 3.0kW for GW3000-ES-C10, 3.6kW for GW3600-ES-C10, 5.0kW for GW5000-ES-C10, 6.0kW for GW6000-ES-C10, 8.0kW for GW8000-ES-C10, 10.0kW for GW10K-ES-C10, and 12.0kW for GW12K-ES-C10.

*8: For Brazil and Chile, the max. AC output power is Pn, such as the max. AC output power of GW8000-ES-C10 is 8000W (VA).

*: Please visit GoodWe website for the latest certificates.

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