

# Hybrid ESS Cabinet



## ESS-AELIO

50kW / 60kW  
100 / 200kWh



### High Performance

- Max. 200% PV oversizing input
- Global MPP scan for optimal energy harvest
- Single cabinet with up to 200kWh, expandable to MWh-scale capacity



### Assured Reliability

- Four-level fire safety protection
- IP66 for inverter, IP55 for cabinet
- Type II SPD on AC & DC side
- Smart IV curve scan for early panel diagnosis
- Optional AFCI protection
- Supporting three-phase unbalance output



### Smart Management

- AI-driven intelligent algorithms for high SOC and accuracy
- VPP ready with SolaXCloud (IEEE 2030.5, OpenADR)
- Supporting micro-grids and diverse scenarios
- Smart schedule, smart scene and 7x24h TOU
- Wireless meter compatibility



### Flexible Adaptability

- Supporting grid-connected and off-grid
- Expandable design with modular capacity options
- Max. 40A DC input current for high power solar panel

## ENERGY STORAGE SYSTEM

	AELIO-P50B100	AELIO-P50B200	AELIO-P60B100	AELIO-P60B200
<b>DC SIDE</b>				
Max. recommended PV array power	100 kWp		120 kWp	
Max. PV input voltage <sup>①</sup>	1000 V			
Start-up voltage	180 V			
Rated PV input voltage	650 V			
MPPT voltage range <sup>②</sup>	160 ~ 950 V			
No. of MPP trackers / strings per MPP tracker	5 / 2		6 / 2	
Max. input current per MPPT	40 A			
Isc PV array short circuit current per MPPT <sup>③</sup>	50 A			
<b>AC SIDE</b>				
Rated output power	50.0 kW		60.0 kW	
Rated output current	75.8 A @ 220 V 72.5 A @ 230 V		91.0 A @ 220 V 87.0 A @ 230 V	
Max. apparent power	55.0 kVA		66.0 kVA	
Max. output continuous current	83.4 A @ 220 V 79.8 A @ 230 V		100.0 A @ 220 V 95.7 A @ 230 V	
Nominal AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V			
Rated AC frequency	50 Hz / 60 Hz			
Adjustable power factor range	~1 (0.8 leading ~ 0.8 lagging)			
THDi (rated power)	< 3%			
<b>BATTERY SIDE</b>				
Battery type	LFP / 280 Ah			
Rated battery capacity	100 kWh	200 kWh	100 kWh	200 kWh
Rated battery voltage	358.4 V	716.8 V	358.4 V	716.8 V
Battery voltage range	296.8 ~ 408.8 V	596.3 ~ 817.6 V	296.8 ~ 408.8 V	596.3 ~ 817.6 V
Rated charge / discharge current	140 A			
<b>GENERAL</b>				
Dimensions (with inverter) (W × H × D)	1310 × 2300 × 1140 mm	2070 × 2420 × 1200 mm	1310 × 2300 × 1140 mm	2070 × 2420 × 1200 mm
Dimensions (without inverter) (W × H × D)	1020 × 2300 × 1140 mm	1680 × 2420 × 1200 mm	1020 × 2300 × 1140 mm	1680 × 2420 × 1200 mm
Weight (with inverter)	1600 kg	2800 kg	1600 kg	2800 kg
Weight (without inverter)	1500 kg	2700 kg	1500 kg	2700 kg
Operation temperature range	-30 ~ 55°C	-30 ~ 50°C	-30 ~ 55°C	-30 ~ 50°C
Relative humidity	0 ~ 100% RH (non-condensing)			
Max. operation altitude	3000 m			
Cooling concept	Smart air cooling			
Ingress protection	Cabinet: IP55; Inverter: IP66			
Fire protection	Aerosol / Water			
Topology	Non-isolated			
Certifications	IEC62619, IEC63056:2000, IEC61000, IEC62477-1, UN38.3, IEC 60730, IEC 60529, IEC 60068, VDE 2510-50, IEC62040, UL9540A			

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter

② Input voltage exceeding the MPPT voltage range may trigger inverter protection

③ Isc current for single PV input string is 35A

## INVERTER

### X3-AELIO-50K

### X3-AELIO-60K

PV INPUT		
Max. recommended PV array power	100 kWp	120 kWp
Max. PV input voltage <sup>①</sup>	1000 V	
Rated PV input voltage	650 V	
MPPT voltage range <sup>②</sup>	160 ~ 950 V	
Start-up voltage	180 V	
No. of MPP trackers / strings per MPP tracker	5 / 2	6 / 2
Max. input current per MPPT	40 A	
Max. input short circuit current per MPPT	50 A	
AC INPUT & OUTPUT (ON-GRID)		
Rated output power	50.0 kW	60.0 kW
Rated output current	75.8 A @ 220 V 72.5 A @ 230 V	91.0 A @ 220 V 87.0 A @ 230 V
Max. output apparent power	55.0 kVA	66.0 kVA
Max. output continuous current	83.4 A @ 220 V 79.8 A @ 230 V	100.0 A @ 220 V 95.7 A @ 230 V
Rated AC voltage	3 / N / PE, 220 / 380 V 3 / N / PE, 230 / 400 V	
Rated AC frequency	50 Hz / 60 Hz	
AC frequency range <sup>③</sup>	50 ± 5 Hz / 60 ± 5 Hz	
Adjustable power factor range	~1 (0.8 leading ~ 0.8 lagging)	
THDi (rated power)	< 3%	
BATTERY		
Battery type	LFP	
Battery voltage range	180 ~ 820 V	
Max. charge / discharge current	160 A (80 A × 2)	
EPS (OFF-GRID) OUTPUT		
Rated EPS output voltage, frequency	3 / N / PE, 220 / 380 V, 50 Hz / 60 Hz 3 / N / PE, 230 / 400 V, 50 Hz / 60 Hz	
Rated EPS output power	50.0 kVA	60.0 kVA
Max. EPS output power	75 kVA, 10s	90 kVA, 10s
Switchover time	< 10 ms	
EFFICIENCY		
Max. efficiency	98.0%	
European efficiency	97.2%	
GENERAL		
Ingress protection	IP66	
Operating temperature range	-35 ~ 60°C (derating +45°C)	
Max. operation altitude	3000 m	
Relative humidity	0 ~ 100% RH (condensing)	
Overvoltage category	Mains: III, Battery: II, PV: II	

## INVERTER

### X3-AELIO-50K

### X3-AELIO-60K

GENERAL		
Dimensions (W × H × D)	670 × 820 × 257 mm	
Net weight	< 100 kg	< 105 kg
Cooling concept	Smart air cooling	
Communication interfaces	RS485-Meter, RS485-Monitor, RS485-Parallel (daisy-chain), CAN-BMS, CAN-Parallel (daisy-chain), USB, DI×2, DO×1, RCR (DI×4), DRM	
Topology	Non-isolated	
Certifications and approvals	CE, VDE4105, G99, AS4777, EN50549, CEI 0-21, IEC61727, PEA/MEA, NRS-097-2-1, RD1699, TOR	
PROTECTION		
Over / under voltage protection	Yes	
DC isolation protection	Yes	
DC reverse-polarity protection	Yes	
Grid monitoring	Yes	
DC injection monitoring	Yes	
Back feed current monitoring	Yes	
Residual current detection	Yes	
Over temperature protection	Yes	
Active anti-islanding method	Frequency shift	
Surge protection (DC / AC)	DC: Type II, AC: Type II	
Arc-fault circuit interrupter (AFCI)	Optional	
AC auxiliary power supply (APS)	Built-in	

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter

② Input voltage exceeding the MPPT voltage range may triggers inverter protection

③ The AC frequency range may vary from different country codes

## BATTERY PACK

### TB-HR140

Battery type	LFP 280Ah
Battery capacity	14.3 kWh
Battery configuration	1P16S
Rated battery voltage	51.2 V
Battery voltage range	40 ~ 58.4 V
Weight	115 kg
Charge / discharge rate	≤ 0.5 C
Dimensions (W × H × D)	461 × 228 × 778 mm
Ingress protection	IP20