



## Lead to lithium batteries Series



福建华振新能源科技有限公司

Fujian Huazhen New Energy Technology Co. Ltd.

Version: V2.3



### Product Overview

Hi-performance Rechargeable Lithium Iron Batteries specially designed for solar photovoltaic off-grid and back-up applications with integrated Battery Management System-BMS. Specially designed for optimal and fast photovoltaic off-grid solar charging and to directly replace traditional SLA (Sealed Lead-Acid) Batteries. Reduce replacement and total costs.



### LiFePO4 lithium-ion battery

- ★ Higher capacity
- ★ Wider operating temperature range
- ★ Very Low Self-Discharge
- ★ Lighter weight
- ★ Long cycle life



### Superior Safety

- ★ Maintenance free
- ★ Protection level IP54
- ★ Built in battery management system BMS
- ★ Full Protections integrated
- ★ Modular Design enables to connect in parallel and series

MODEL	HZF-12.8-7-SA	HZF-12.8-9-SA	HZF-12.8-12-SA	HZF-12.8-18-SA	HZF-12.8-20-SA	HZF-12.8-26-SA
Type	Lithium Iron Phosphate-LFP-LiFePO <sub>4</sub>					
Nominal Voltage	12.8V					
Nominal Capacity	7Ah	9Ah	12Ah	18Ah	20Ah	26Ah
Nominal Energy	89.6Wh	115.2Wh	153.6Wh	230.4Wh	256Wh	332.8Wh
Internal Resistance	≤80mΩ	≤80mΩ	≤30mΩ	≤25mΩ		
Efficiency	99%					
Cycle Life @ 0.2C – 100%DoD / 80%DoD	≥2000 cycles / ≥4000 cycles					
Terminals type	F2			M6		
Dimensions (mm) (L*W*H)	151x65x94		151x98x94	181*77*165		174.5x166x124
Net Weight (kg)	Approx 0.953	Approx 1.06	Approx 1.47	Approx 2.25	Approx 2.0	Approx 3.12
Max. Charge Voltage	14.6V					
Standard Charge Current	1.4A	1.8A	2.4A	3.6A	4A	5.2A
Max.Charge Current	3.5A	4.5A	6A	9A	10A	13A
Discharge Cut-off Voltage	10V					
Standard Discharge Current	3.5A	4.5A	6A	9A	10A	13A
Max.Continuous Discharge Current	7A	9A	12A	18A	20A	26A
Self Discharge	< 3% in 30 days					
Storage Temperature	0°C to 45°C					
Case/IP	Black Plastic/IP54					
Charge Temperature	0°C to 45°C					
Discharge Temperature	-10°C to 50°C					
Blue tooth function	Not supported					
Maximum number of batteries in series	4S (The default battery BMS is not supported and requires customization of a battery BMS that can be connected in series)					
Protection function	Over charge, Over discharge, Over current,Over temp, Short, balanced					

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No.1045,Tangbian,Jishan Village,Xingtai Industrial Zone,Changtai County,Zhangzhou City,Fujian Province,P.R.China

MODEL	HZF-12.8-50-SA	HZF-12.8-100-SA	HZF-12.8-150-SA	HZF-12.8-200-SA	HZF-25.6-50-SA	HZF-25.6-100-SA
Type	Lithium Iron Phosphate-LFP-LiFePO <sub>4</sub>					
Nominal Voltage	12.8V			25.6V		
Nominal Capacity	50Ah	100Ah	150Ah	200Ah	50Ah	100Ah
Nominal Energy	640Wh	1280Wh	1920Wh	2560Wh	1280Wh	2560Wh
Internal Resistance	≤20mΩ	≤15mΩ				
Efficiency	99%					
Cycle Life @ 0.2C – 100%DoD / 80%DoD	≥2000 cycles / ≥4000 cycles					
Terminals type	M6	M8				
Dimensions (mm) (L*W*H)	227x143x212	330x171x214	359x174x218	521x241x222	359x174x218	521x241x222
Net Weight (kg)	Approx 7.0	Approx 11.7	Approx 19.0	Approx 22.5	Approx 13.7	Approx 22.0
Max. Charge Voltage	14.6V			29.2V		
Standard Charge Current	10A	25A	30A	60A	10A	25A
Max.Charge Current	25A	50A	75A	100A	25A	50A
Discharge Cut-off Voltage	10V			20V		
Standard Discharge Current	25A	50A	50A	60A	25A	50A
Max.Continuous Discharge Current	50A	100A	100A	100A	50A	100A
Self Discharge	< 3% in 30 days					
Storage Temperature	0°C to 45°C					
Case/IP	Black Plastic/IP54					
Charge Temperature	0°C to 45°C					
Discharge Temperature	-10°C to 50°C					
Blue tooth function	Optional					
Maximum number of batteries in series	4S			2S		
	The default battery BMS is not supported and requires customization of a battery BMS that can be connected in series					
Protection function	Over charge, Over discharge, Over current, Over temp, Short, balanced					

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## Product data sheet

MODEL	HZF-12.8-24-PA	HZF-12.8-50-PA	HZF-12.8-50-PB	HZF-12.8-100-SD	HZF-25.6-200-SA	HZF-12.8-50-SB	
Type	Lithium Iron Phosphate-LFP-LiFePO <sub>4</sub>						
Nominal Voltage	12.8V			25.6V	12.8V		
Nominal Capacity	24Ah	50Ah	100Ah	200Ah	50Ah		
Nominal Energy	307.2Wh	640Wh	1280Wh	5120Wh	640Wh		
Internal Resistance	≤20mΩ	≤10mΩ	≤15mΩ	≤8mΩ	≤20mΩ		
Efficiency	99%						
Cycle Life @ 0.2C – 100%DoD / 80%DoD	≥2000 cycles / ≥4000 cycles						
Terminals type	M6		M8			M6	
Dimensions (mm) (L*W*H)	181*77*165	198*165*175	229*138*208	305*169*210	520*268*222	227*143*212	
Net Weight (kg)	Approx 2.9	Approx 6.2		Approx 11.1	Approx 38.8	Approx 7.0	
Max. Charge Voltage	14.6V			29.2V	14.6V		
Standard Charge Current	4.8A	10A	25A	60A	10A		
Max.Charge Current	12A	25A	50A	100A	25A		
Discharge Cut-off Voltage	10V			20V	10V		
Standard Discharge Current	12A	25A	50A	60A	25A		
Max.Continuous Discharge Current	24A	60A	100A	100A	50A		
Self Discharge	< 3% in 30 days						
Storage Temperature	0°C to 45°C						
Case/IP	Black Plastic/IP54						
Charge Temperature	0°C to 45°C						
Discharge Temperature	-10°C to 50°C						
Blue tooth function	Not supported	Optional				Not supported	
Maximum number of batteries in series	4S			2S		Not supported	
	The default battery BMS is not supported and requires customization of a battery BMS that can be connected in series						
Protection function	Over charge, Over discharge, Over current,Over temp, Short, balanced						

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## Product data sheet

MODEL	HZF-12.8-100-SB	HZF-12.8-100-SE	HZF-12.8-150-SB	HZF-12.8-150-SD	HZF-12.8-200-SB	HZF-12.8-200-SD
Type	Lithium Iron Phosphate-LFP-LiFePO <sub>4</sub>					
Nominal Voltage	12.8V					
Nominal Capacity	100Ah		150Ah		200Ah	
Nominal Energy	1280Wh		1920Wh		2560Wh	
Internal Resistance	≤15mΩ		≤10mΩ		≤8mΩ	
Efficiency	99%					
Cycle Life @ 0.2C – 100%DoD / 80%DoD	≥2000 cycles / ≥4000 cycles					
Terminals type	M8					
Dimensions (mm) (L*W*H)	330*170*221		359*174*218		521*241*222	
Net Weight (kg)	Approx 11.7	Approx 11.7	Approx 19.0	Approx 19.0	Approx 22.5	Approx 22.5
Max. Charge Voltage	14.6V					
Standard Charge Current	25A		30A		60A	
Max.Charge Current	50A		75A		100A	
Discharge Cut-off Voltage	10V					
Standard Discharge Current	50A		75A		60A	
Max.Continuous Discharge Current	100A		100A		100A	
Self Discharge	< 3% in 30 days					
Storage Temperature	0°C to 45°C					
Case/IP	Black Plastic/IP54					
Charge Temperature	0°C to 45°C					
Discharge Temperature	-10°C to 50°C					
Blue tooth function	Not supported	Equip	Not supported	Equip	Not supported	Equip
Maximum number of batteries in series	Not supported	4S	Not supported	4S	Not supported	4S
Electricity display screen	Not supported	Equip	Not supported	Equip	Not supported	Equip
Weak current switch	Not supported	Equip	Not supported	Equip	Not supported	Equip
Protection function	Over charge, Over discharge, Over current,Over temp, Short, balanced					

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## Product data sheet

MODEL	HZF-25.6-120-PA	HZF-12.8-20-SB				
Type	Lithium Iron Phosphate-LFP-LiFePO <sub>4</sub>					
Nominal Voltage	25.6V	12.8V				
Nominal Capacity	120Ah	20Ah				
Nominal Energy	3072Wh	256Wh				
Internal Resistance	≤10mΩ	≤25mΩ				
Efficiency	99%					
Cycle Life @ 0.2C – 100%DoD / 80%DoD	≥2000 cycles / ≥4000 cycles					
Terminals type	M8	M6				
Dimensions (mm) (L*W*H)	521x241x222	181x77x165				
Net Weight (kg)	Approx 28.8	Approx 2.0				
Max. Charge Voltage	29.2V	14.6V				
Standard Charge Current	24A	4A				
Max.Charge Current	60A	10A				
Discharge Cut-off Voltage	10V	10V				
Standard Discharge Current	60A	10A				
Max.Continuous Discharge Current	100A	30A				
Self Discharge	< 3% in 30 days					
Storage Temperature	0°C ~45°C					
Case/IP	Black Plastic/IP54					
Charge Temperature	0°C ~ 45°C					
Discharge Temperature	-10°C ~ 50°C					
Blue tooth function	Equip	Not supported				
Maximum number of batteries in series	2S	4S				
Electricity display screen	Equip	Not supported				
Weak current switch	Optional	Not supported				
Protection function	Over charge, Over discharge, Over current,Over temp, Short, balanced					

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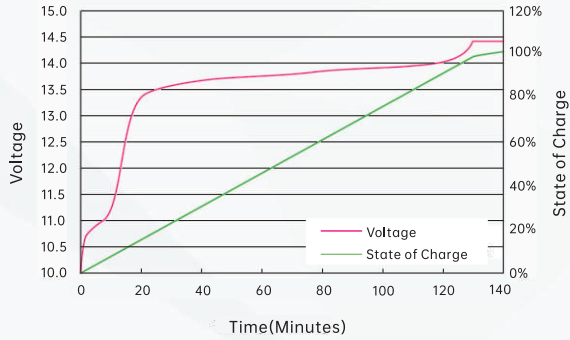
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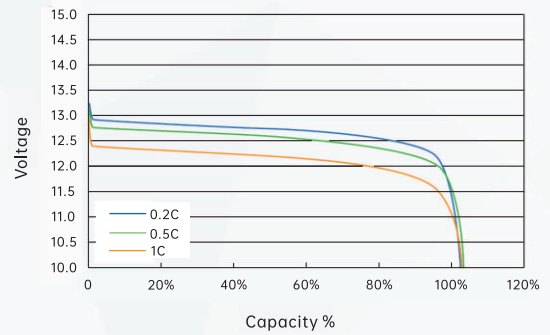
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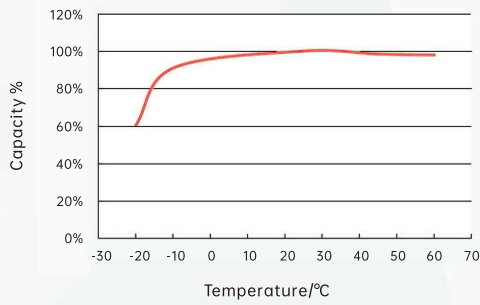
Charging Characteristics(0.5C@25°C)



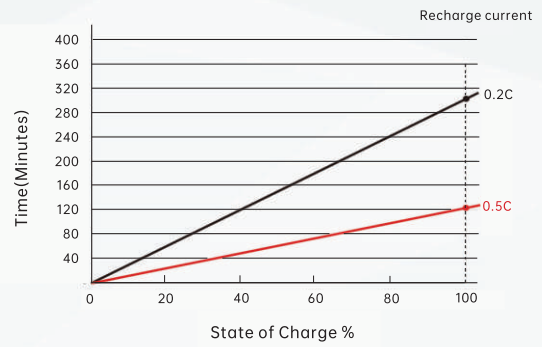
Discharging Characteristics(0.2C,0.5C,1C@25°C)



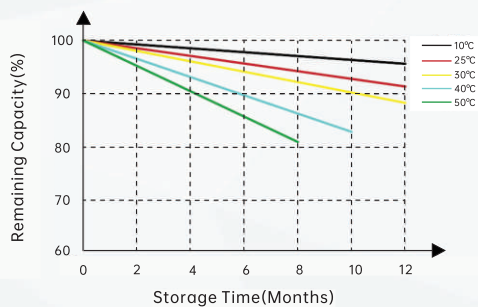
Different Temperature Capacity Curve



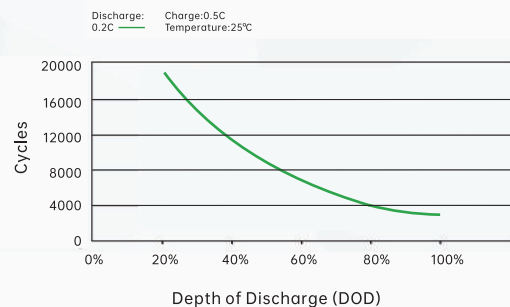
Typical Charge Time Curve



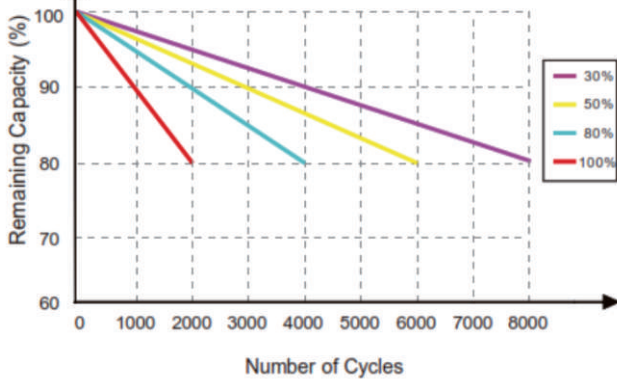
Different Temperature Self Discharge Curve



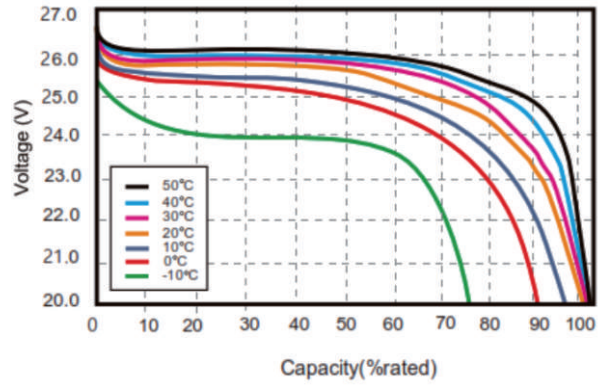
Different DOD Discharge Cycle Life Curve



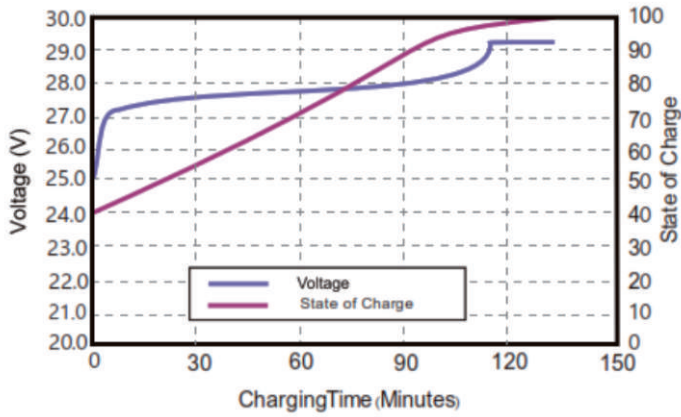
CYCLE LIFE vs. DEPTH OF DISCHARGE (DOD)  
 DISCHARGE @ 0.1C, 25°C



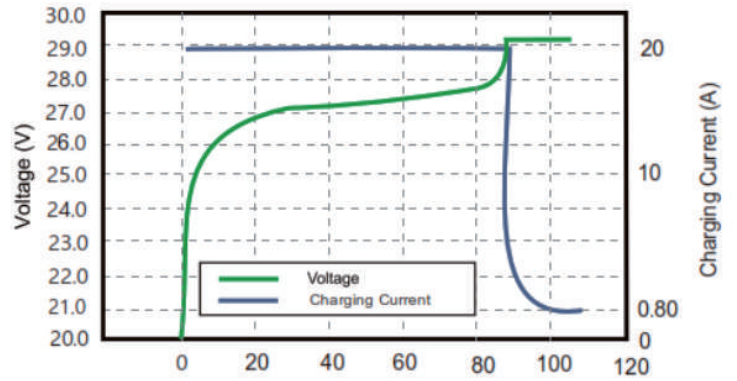
DISCHARGE CAPACITY at VARIOUS TEMPERATURE  
 DISCHARGE @ 1C



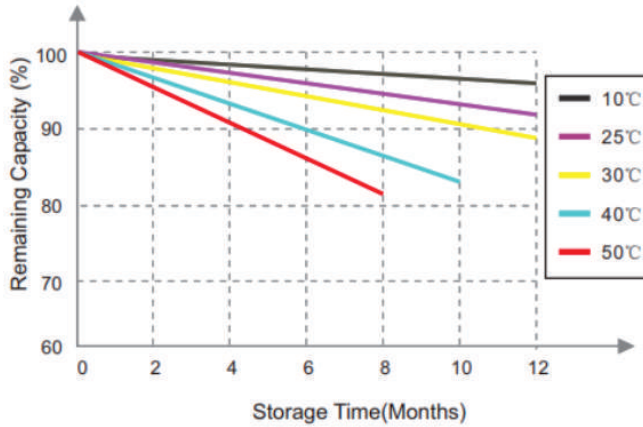
STATE OF CHARGE CURVE @ 0.5C, 25°C



CHARGING CHARACTERISTICS @ 0.5C, 25°C

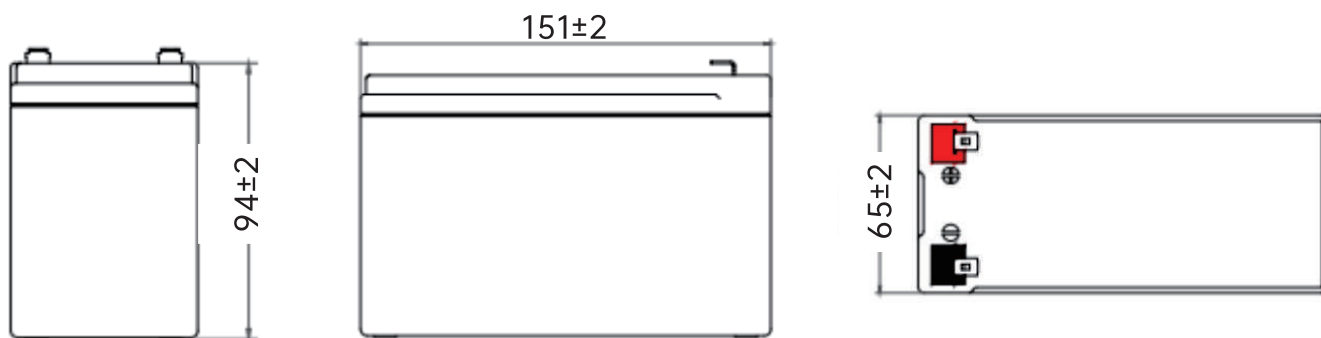


Different Temperature Self Discharge Curve

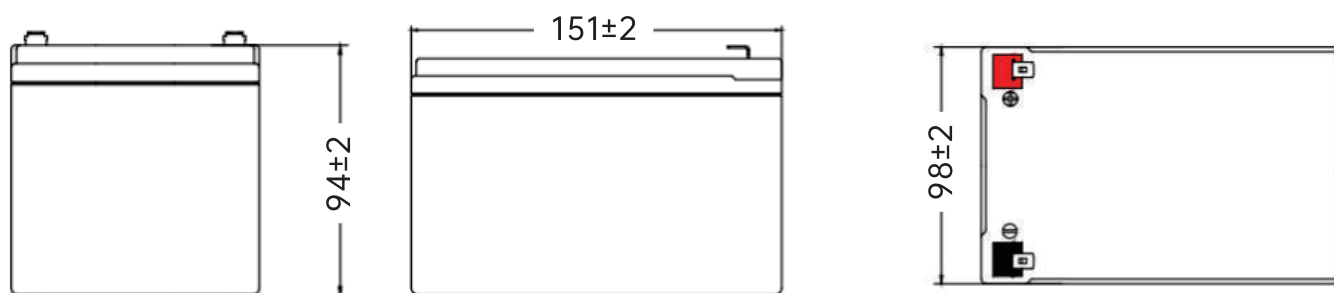


Specifications – Dimensions (mm)

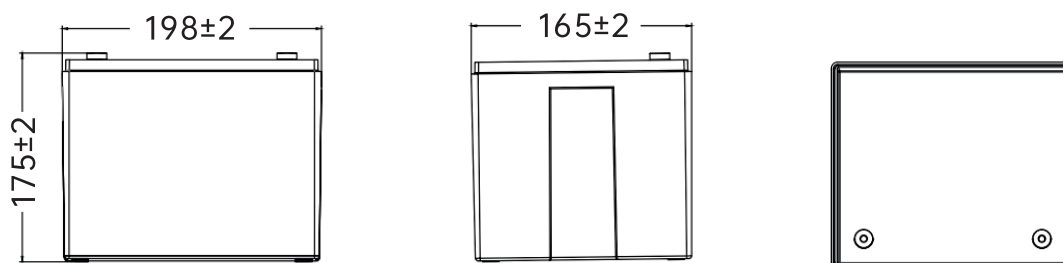
HZF-12.8-7-SA/HZF-12.8-9-SA



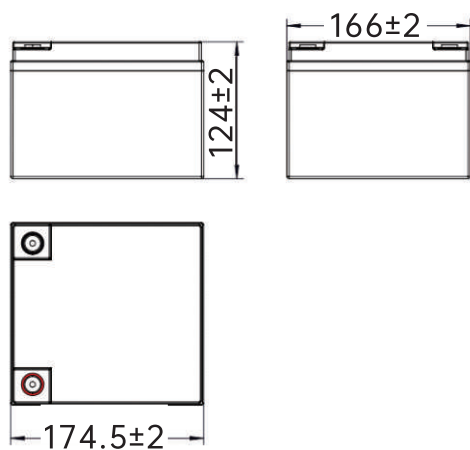
HZF-12.8-12-SA



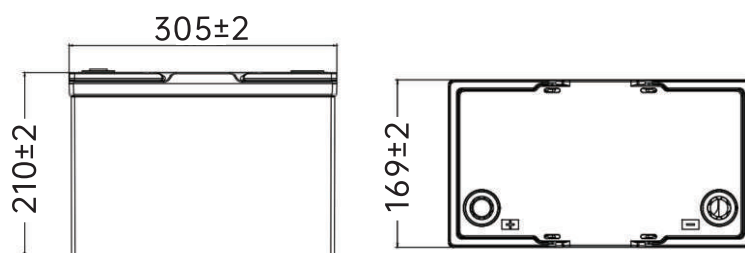
HZF-12.8-50-PA



HZF-12.8-26-SA

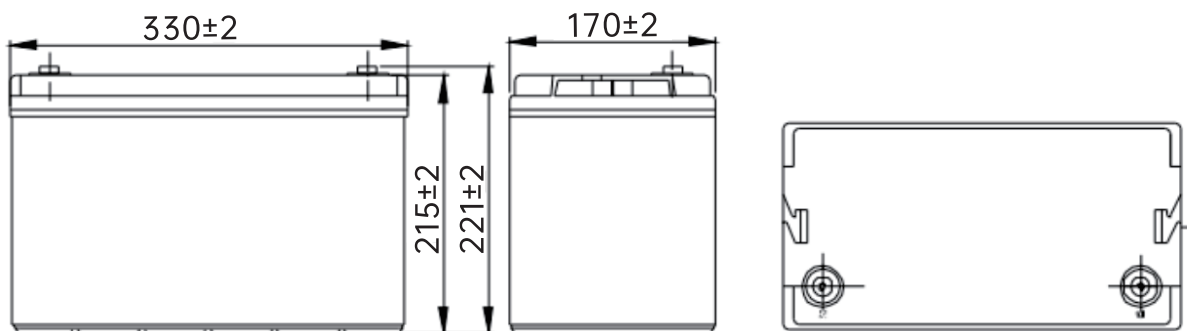


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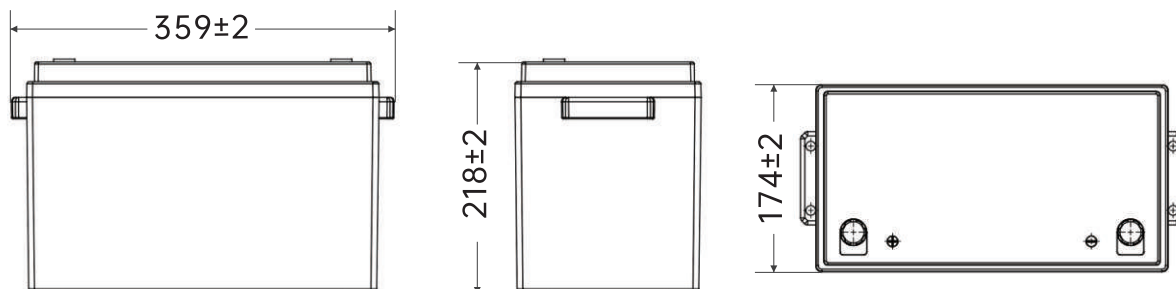


Specifications – Dimensions (mm)

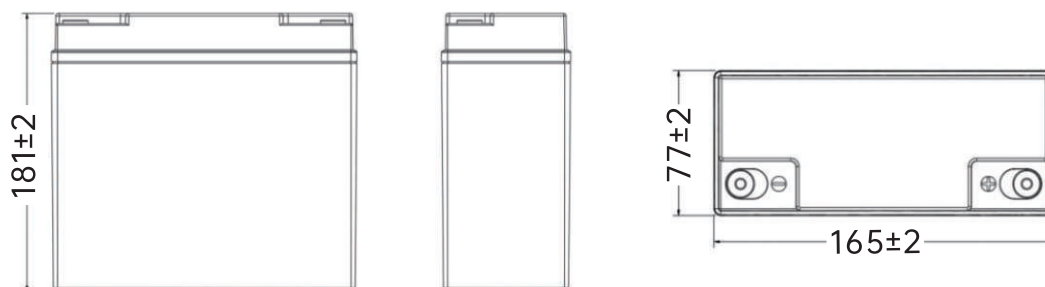
HZF-12.8-100-SA



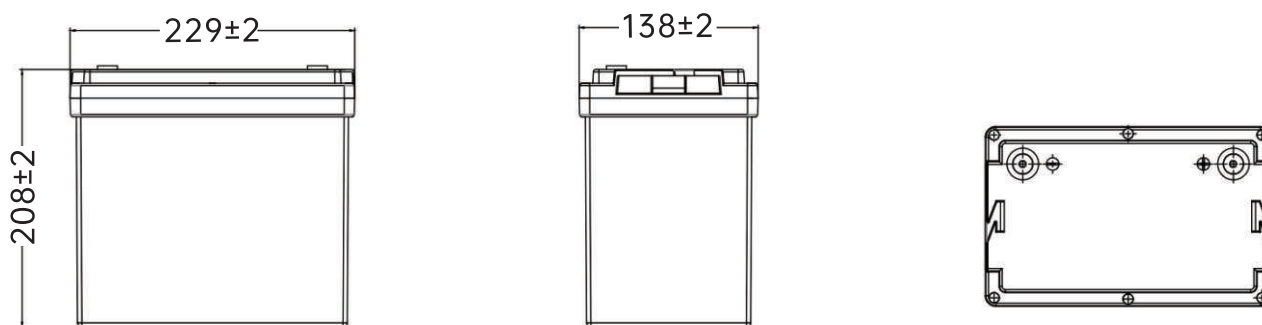
HZF-12.8-150-SA/HZF-25.6-50-SA



HZF-12.8-18-SA/HZF-12.8-20-SA/HZF-12.8-20-SB/HZF-12.8-24-PA



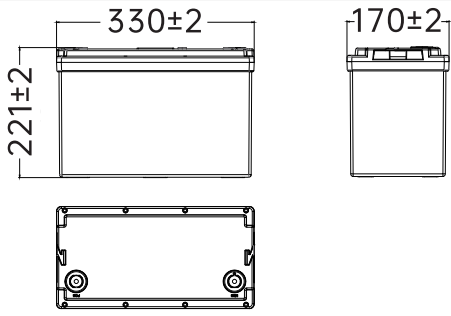
HZF-12.8-50-PB



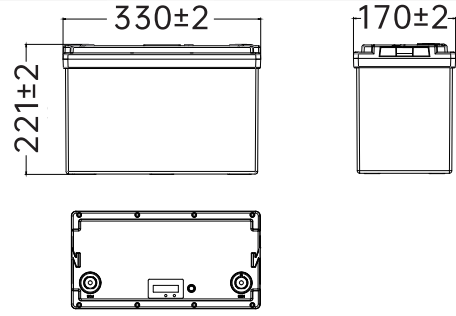


Specifications – Dimensions (mm)

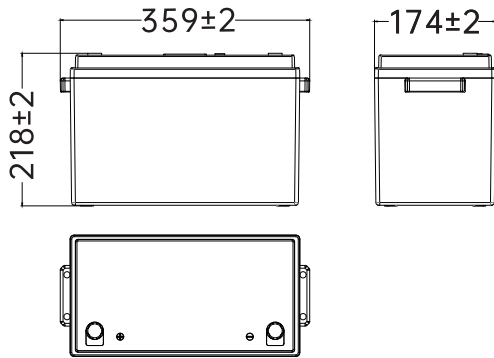
HZF-12.8-100-SB



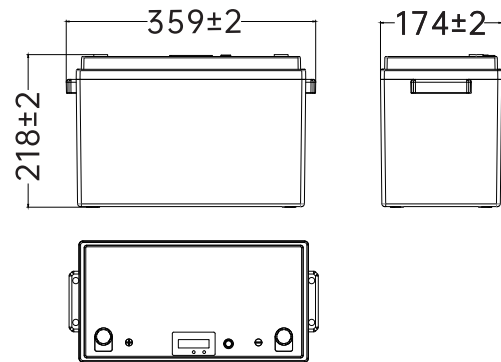
HZF-12.8-100-SE



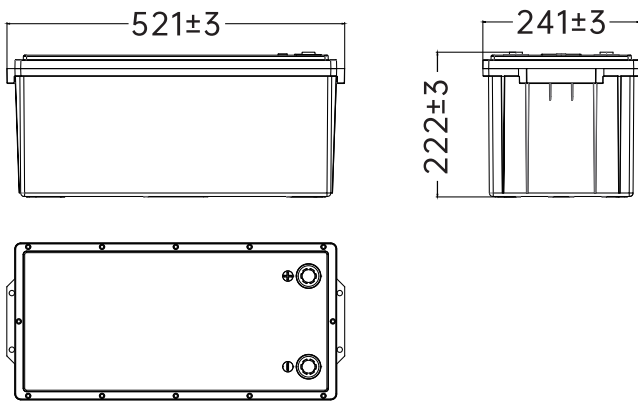
HZF-12.8-150-SB



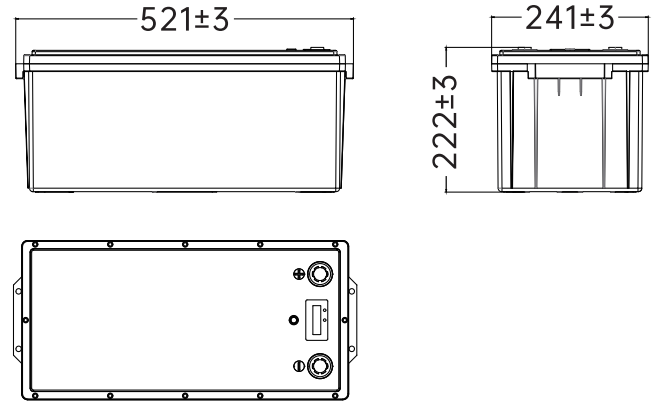
HZF-12.8-150-SD



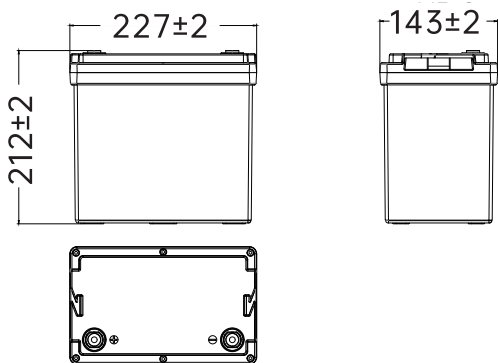
HZF-12.8-200-SB/HZF-12.8-200-SA/  
HZF-25.6-100-SA



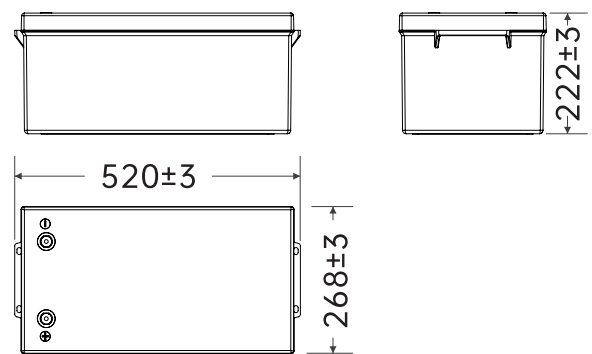
HZF-12.8-200-SD/HZF-25.6-120-PA



HZF-12.8-50-SA/HZF-12.8-50-SB



HZF-25.6-200-SA



HZF-12.8-7-SA/HZF-12.8-9-SA



HZF-12.8-12-SA



HZF-12.8-17-SA/HZF-12.8-20-SA/  
HZF-12.8-20-SB/HZF-12.8-24-PA



HZF-12.8-26-SA



HZF-12.8-50-SA/HZF-12.8-50-PB



HZF-12.8-100-SA



HZF-12.8-150-SA/HZF-25.6-50-SA



HZF-12.8-100-SD



HZF-12.8-200-SD



HZF-12.8-50-PA



HZF-12.8-200-SA/HZF-25.6-100-SA  
HZF-12.8-200-SB



HZF-25.6-120-PA



HZF-25.6-200-SA



HZF-12.8-150-SD



HZF-12.8-100-SB



HZF-12.8-100-SE



HZF-12.8-150-SB

