



SPIRAL BATTERY

SP12-110



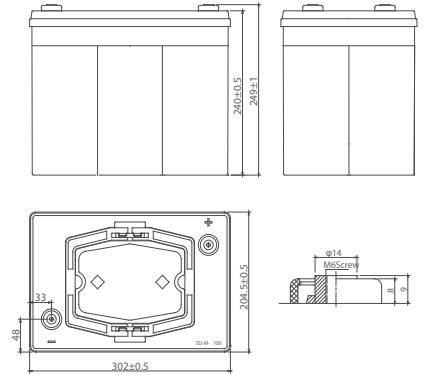
Main Applications

- ▶ UPS
- ▶ Communication station
- ▶ Solar energy storage
- ▶ Smart grid
- ▶ Different standby power supply

Benefits

- ▶ Applicable in $-45^{\circ}\text{C} \sim 75^{\circ}\text{C}$
- ▶ The cycle life of 100% DOD reaches more than 350 times
- ▶ The designed float life is 15 years
- ▶ The time of high rate discharge is two times more than ordinary battery

Dimensions



Technical Parameters

Nominal Voltage	12 V
Capacity	110 Ah @ 20hr to 1.80 V per cell @ 25°C (77°F)
Weight	32 kg (70.55 lbs)
Dimensions	Length:302 mm (11.89 in) Width:204.5 mm (8.05 in) Height: 240 mm (9.45 in) Total height:249 mm (9.80 in)
Internal Resistance (full charged)	2.3 mΩ
Short- circuit Current	2985 A
Self Discharge @25°C(77°F)	Less than 8% after 90 days storage
Operating Temperature Range	Discharge: $-45^{\circ}\text{C} \sim 75^{\circ}\text{C}$ ($-49^{\circ}\text{F} \sim 167^{\circ}\text{F}$) Charge: $-20^{\circ}\text{C} \sim 50^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 122^{\circ}\text{F}$) Storage: $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$ ($-4^{\circ}\text{F} \sim 104^{\circ}\text{F}$)
Recommended Operating Temperature	$15^{\circ}\text{C} \sim 35^{\circ}\text{C}$
Recommended Charging Current	10 A~40 A
Charging Voltage @25°C(77°F)	Float: 2.25 V/cell, Temps coefficient -3mV/ cell·°C Cycle: 2.40 V/cell
Terminal	M6
Capacity Affected by Temperature(C_{10})	105% @ 40°C (104°F) 95% @ 0°C (32°F) 80% @ -20°C (-4°F)

Certification

- ISO 9001
- ISO 14001
- ISO 18001

Technical Features

- ▶ With ultra-thin high purity lead frame design, a higher charge efficiency with trickle current is achieved
- ▶ With unique spiral wound design, the dehydration and bulging deformation of the battery are avoided in high-temperature
- ▶ Excellent fast charging performance, more than 95% of electricity is gained within 40 minutes
- ▶ Good battery consistency, available more strings in parallel



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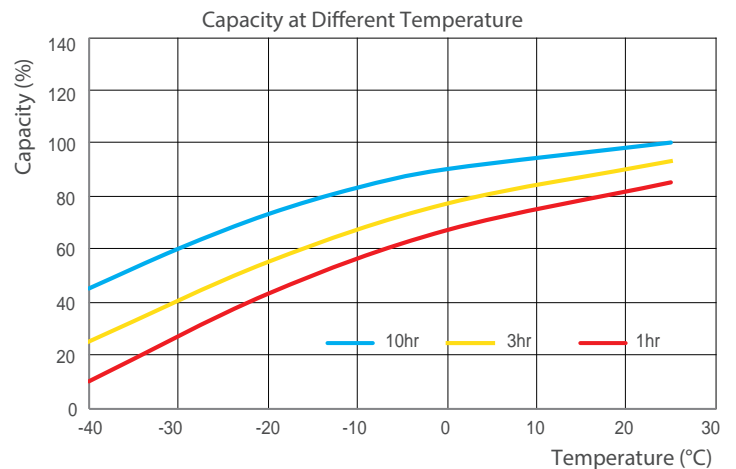
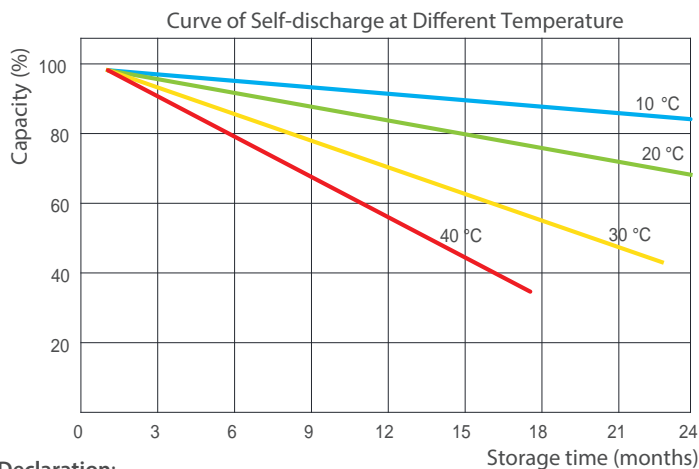
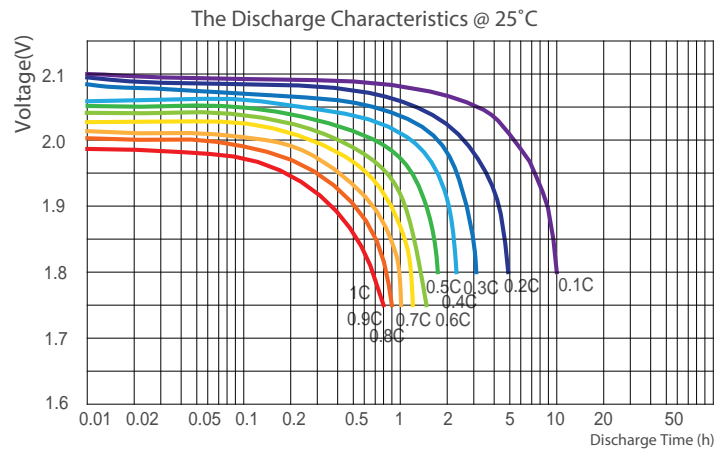
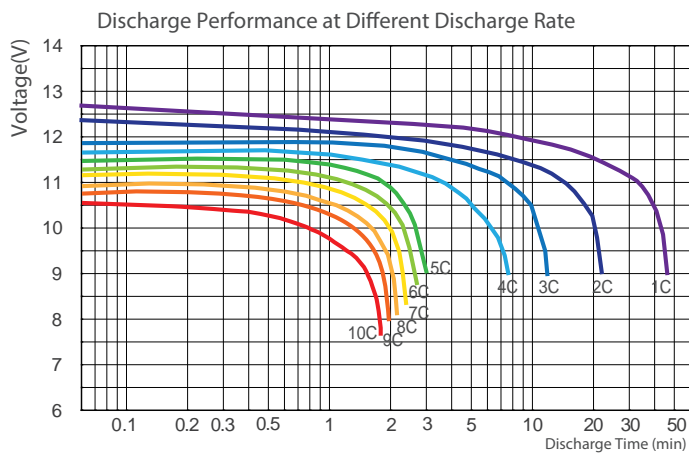
Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

F.V/Time	2min	5min	10min	15min	20min	30min	45min	1hr	2hr	3hr	4hr	5hr
1.85V	400.2	315.0	225.0	186.0	152.0	118.8	89.4	69.8	35.5	25.8	20.0	17.9
1.75V	520.1	396.0	275.0	201.0	171.0	130.0	95.4	72.8	37.9	27.1	21.1	18.7
1.65V	640.3	435.0	290.0	216.0	187.2	139.2	99.1	74.7	39.8	28.9	22.5	19.3

Constant Power Discharge Characteristics Unit: W/cell (25°C, 77°F)

F.V/Time	2min	5min	10min	15min	20min	30min	45min	1hr	2hr	3hr	4hr	5hr
1.85V	736.7	583.3	420.0	350.0	300.8	227.3	163.1	118.8	66.8	52.6	40.6	33.0
1.75V	933.3	716.7	516.7	391.7	319.8	250.2	181.1	138.6	73.0	54.5	42.1	34.8
1.65V	1100.0	816.7	550.0	433.3	340.4	261.5	188.8	140.6	74.3	55.1	43.3	35.7

Performance curve



***Declaration:**

This information is generally descriptive only and is not intended to make or imply any representation, guarantee or warranty with respect to any cells and batteries. Cell and battery designs/specifications are subject to modification without notice.