



PT. SELATAN JADI JAYA

FACTORY :
Jl.Raya Panjunan No.8
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FORCE SERIES VRLA (12V80 AH)



Product Specification

Nominal Voltage	12V
Nominal Capacity (20HR)	80 AH
Dimensions	Length 260±2mm (10.24 inches)
	Width 170±2mm (6.69 inches)
	Container Height 211±2mm (8.30 inches)
	Total Height (with terminal) 215±2mm (8.46 inches)
Approx Weight	Approx 25.10 kg (55.33 lbs)
Terminal	F12 (M6) Terminal
Container & Cover Material	ABS Copolymer (UL-94 HB)
Lead Material	Purity Lead 99.995%
Sulfuric Acid	Distilled Sulfuric Acid (Zero metal content)
Separator	AGM
	80.0 AH/4.0A (20hr, 1.80V/cell, 25°C/77°F)
Rated Capacity	74.6AH/7.46A (10hr, 1.80V/cell, 25°C/77°F)
	68.0AH/13.6A (5hr, 1.75V/cell, 25°C/77°F)
	61.05AH/20.35A (3hr, 1.75V/cell, 25°C/77°F)
	50.2AH/50.24A (1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	1200A (5s)
Internal Resistance	Approx 8.0mΩ
Operating Temp. Range	Discharge : -15~50°C (5~122°F)
	Charge : 0~40°C (32~104°F)
Nominal Operating Temp. Range	Storage : -15~40°C (5~104°F) 25±3°C (77±5°F)
Cycle Use	Initial Charging Current less than 24A. Voltage 14.4V~15.0V at 25°C (77°F) Temp.Coefficient -30mV/°C
	No limit on Initial Charging Current Voltage 13.5V~13.8V at 25°C (77°F) Temp.Coefficient -20mV/°C
Standby Use	40°C (104°F) 103%
	25°C (77°F) 100%
	0°C (32°F) 86%
Capacity affected by Temperature	Force series batteries may be stored for up to 6 months at 25°C(77°F) and then a refreshing charge is required. For higher temperatures the time interval will be shorter.
Self Discharge	

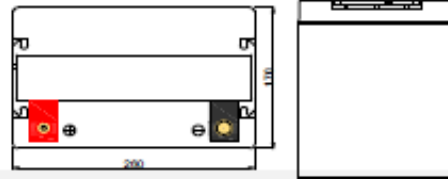
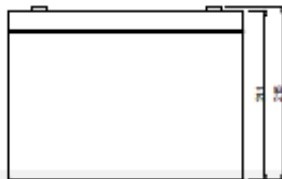
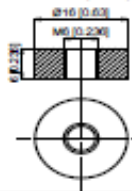
Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply
- DC power supply
- Auto control system

Dimensions

▲ F12(M6) Terminal

Unit : mm (inches)



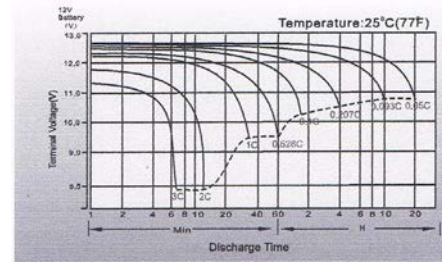
Constant Current Discharge (Ampere) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	220.0	156.5	128.1	107.50	79.87	58.60	46.07	27.42	19.99	15.96	13.36	11.32	8.88	7.31	3.94
1.80V/cell	251.2	167.9	137.5	115.38	82.61	59.01	46.39	27.61	20.13	16.08	13.65	11.55	9.06	7.46	4.00
1.75V/cell	263.4	169.8	139.1	116.68	83.54	59.67	46.91	27.92	20.35	16.26	13.60	11.75	9.20	7.58	4.08
1.70V/cell	285.2	178.4	146.1	122.56	87.75	62.68	49.27	28.29	20.62	16.47	13.78	11.88	9.32	7.67	4.12
1.65V/cell	332.1	204.1	154.7	124.00	88.78	63.41	49.85	28.62	20.86	16.66	13.94	12.02	9.43	7.76	4.17
1.60V/cell	338.3	205.6	155.9	124.91	89.44	63.88	50.22	28.83	21.01	16.78	14.04	12.11	9.50	7.82	4.19

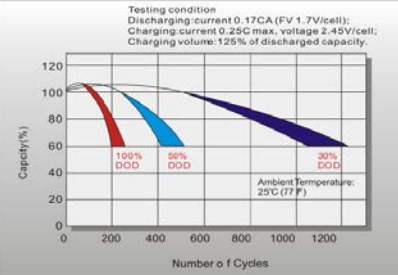
Constant Power Discharge (Watts/cell) at 25°C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	418.1	298.6	246.8	202.3	152.1	112.7	91.59	54.85	40.63	32.76	27.77	24.14	19.16	14.81	8.01
1.80V/cell	477.3	341.0	282.3	215.0	161.6	119.7	97.34	58.29	43.18	34.27	28.56	24.83	19.55	15.11	8.09
1.75V/cell	487.3	348.1	287.7	219.5	165.0	122.2	99.37	59.50	44.08	34.98	29.15	25.35	19.96	15.30	8.22
1.70V/cell	527.7	376.9	289.9	237.6	171.0	123.9	98.52	56.83	41.18	32.69	27.24	24.32	19.15	15.38	8.28
1.65V/cell	597.7	373.6	287.4	235.5	169.5	122.8	97.46	56.33	40.82	32.40	27.00	24.11	19.44	15.53	8.34
1.60V/cell	608.9	380.5	292.7	239.9	172.6	125.1	99.27	57.38	41.58	33.00	27.50	24.55	19.80	15.64	8.38

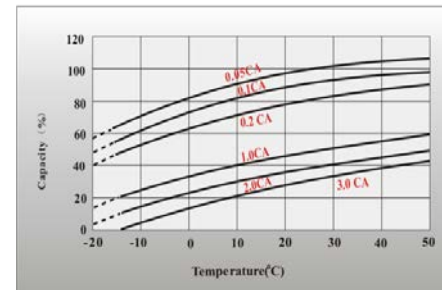
Discharge Characteristics



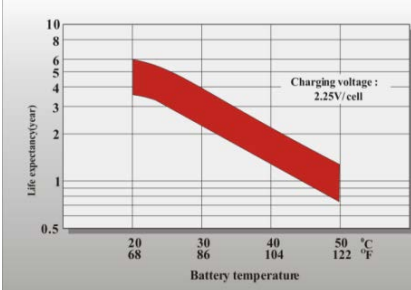
Cycle Life in Relation to Depth of Discharge



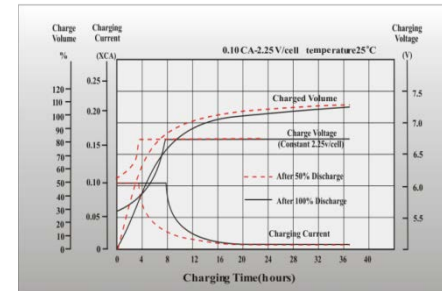
Temperature Effects in Relation to Battery Capacity



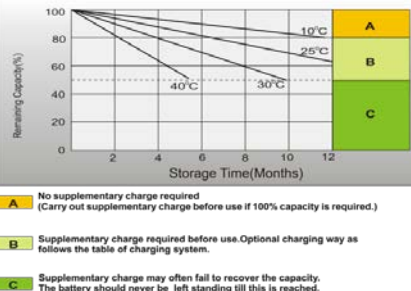
Effect of Temperature on Long Term Float Life



Float Charging Characteristics



Self Discharge Characteristics



State of Charge (SOC)

Open Circuit Voltage (V/cell)	Open Circuit Voltage (12V Battery)	Open Circuit Voltage (6V Battery)	State of Charge (% of full charge capacity)
2.14-2.15	12.84-12.90	6.42-6.46	100
2.12-2.13	12.72-12.78	6.36-6.39	90
2.11	12.66	6.33	80
2.09	12.54	6.27	70
2.07	12.42	6.21	60
2.05	12.30	6.15	50

Charging System

D o D	Current Limit (A)	Constant Voltage (V)	Fully Charged Time (h)
20	0.15C ₁₀	13.5-13.8 vpc (12V)	10
	0.20C ₁₀	6.75-6.9 vpc (6V)	8
50	0.15C ₁₀	13.5-13.8 vpc (12V)	15
	0.20C ₁₀	6.75-6.9 vpc (6V)	12
80	0.15C ₁₀	13.5-13.8 vpc (12V)	16
	0.20C ₁₀	6.75-6.9 vpc (6V)	14
100	0.15C ₁₀	13.5-13.8 vpc (12V)	20
	0.20C ₁₀	6.75-6.9 vpc (6V)	18