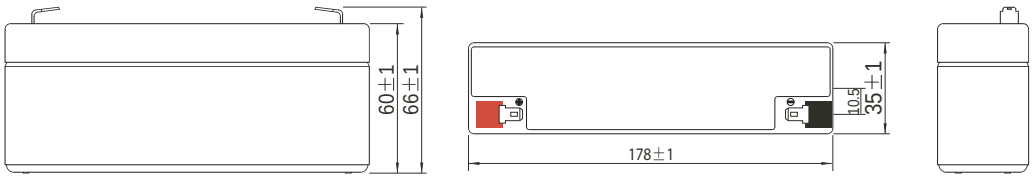
NRG POWER

12V - 2,3Ah

NP 12-2,3 is a general purpose VRLA battery with 5 years floating design life, meet with IEC 60896-21, 60896-22, JIS standard. With heavy duty grid, thickness plates, special additives, NP series have long and reliable standby service life.

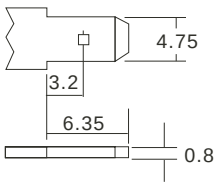
Physical Charactiristics		Technical Characteristics	
Nominal Voltage	12V	**Internal Resistance**	Approx. 90 mΩ
Nominal Capacity (20hrs)	2.3 Ah	**Recommended Charging Current at 20C**	0.69 A
Dimension LxWxH	178 x 35 x 66 +/-2mm	**Float charging Voltage**	13,5 to 13,8 VDC/unit Average at 20C
Weight	Approx 0,96 kg	**Equalization and Cycle Service**	14,4 to 15,0 VDC/unit Average at 20C
Standard Terminal	T1	**Max Discharge Current**	34,5A (5sec)

Dimensions



Terminal: T1

Unit: mm



Container Material : A.B.S. UL94-HB

Constant Current & Power Discharge Characteristics: A (25C) / Watts/cell (25C)

Final Voltage \ Time		5min	10min	15min	20min	30min	45min	1Hr	2Hr	3Hr	4Hr	5Hr	6Hr	8Hr	10Hr	20Hr
1,85V/cell	A	4.42	3.08	2.54	2.20	1.77	1.36	1.11	0.679	0.517	0.425	0.361	0.312	0.248	0.207	0.114
1,80V/cell	A	5.43	3.67	2.94	2.49	1.96	1.48	1.20	0.721	0.544	0.447	0.376	0.326	0.258	0.214	0.115
1,75V/cell	A	6.43	4.15	3.25	2.71	2.09	1.57	1.26	0.752	0.563	0.461	0.386	0.334	0.265	0.218	0.116
1,70V/cell	A	7.30	4.58	3.51	2.91	2.19	1.63	1.31	0.783	0.581	0.472	0.396	0.342	0.269	0.222	0.118
1,65V/cell	A	8.05	4.93	3.72	3.06	2.29	1.70	1.37	0.806	0.596	0.482	0.405	0.349	0.273	0.225	0.120
1,60V/cell	A	8.45	5.13	3.87	3.15	2.35	1.74	1.40	0.831	0.610	0.494	0.413	0.356	0.279	0.229	0.121
1,85V/cell	W	8.33	5.86	4.88	4.27	3.45	2.66	2.19	1.34	1.03	0.848	0.722	0.627	0.500	0.416	0.230
1,80V/cell	W	10.1	6.93	5.61	4.79	3.79	2.89	2.34	1.42	1.07	0.886	0.748	0.650	0.515	0.428	0.231
1,75V/cell	W	11.8	7.76	6.13	5.17	4.02	3.05	2.45	1.47	1.11	0.908	0.764	0.662	0.526	0.434	0.232
1,70V/cell	W	13.3	8.46	6.58	5.51	4.19	3.15	2.54	1.52	1.14	0.925	0.778	0.674	0.530	0.439	0.235
1,65V/cell	W	14.5	8.99	6.87	5.73	4.33	3.25	2.63	1.56	1.16	0.940	0.792	0.684	0.536	0.443	0.237
1,60V/cell	W	14.9	9.24	7.08	5.84	4.41	3.29	2.67	1.60	1.18	0.957	0.803	0.694	0.545	0.448	0.237

Capacity factors with different temperature

BATTERY TYPE		-20C	-10C	0C	5C	10C	20C	25C	30C	40C	45C
GEL BATTERY	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM BATTERY	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

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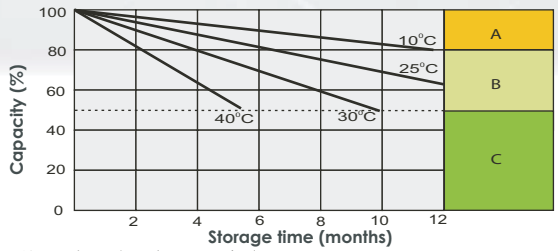
NP 12V 2,3Ah

Storage characteristics

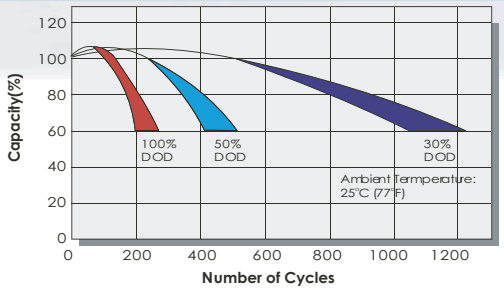


A — No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)

B — Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8~10 hours at limited current 0.05CA.

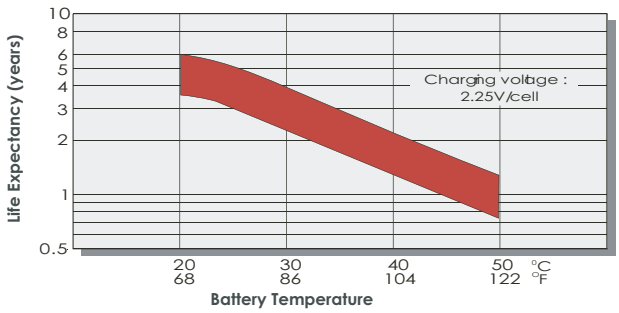
C — Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.

Cycle Life in Relation to depth of discharge

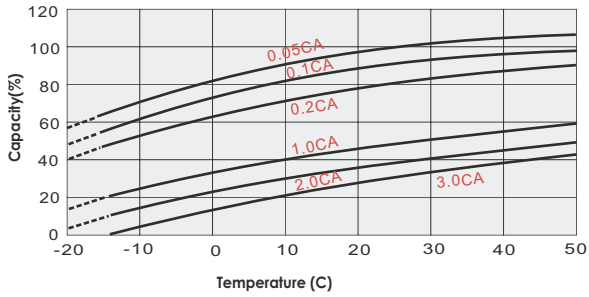


Testing condition
Discharging: Current 0.17C (FV 1,7V/cell)
Charging: Current 0.25C max, voltage 2,45V/cell
Charging volume: 125% of discharged capacity

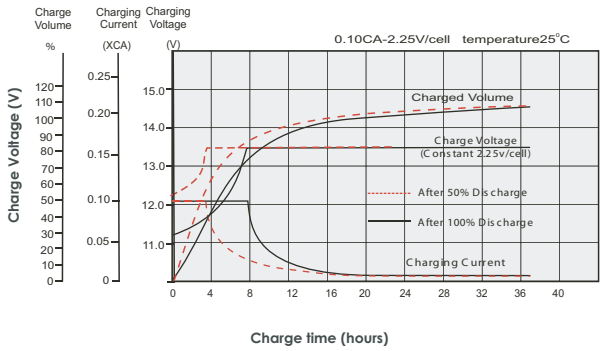
Effect of temperature on long term float life



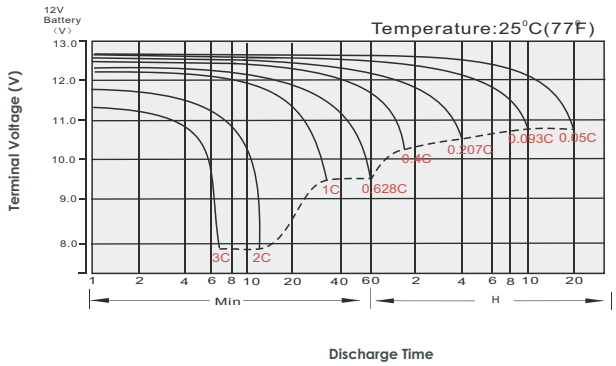
Temperature effects in relation to battery capacity



Float Charging Characteristics



Discharge characteristics curve



Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1,75V	1,70V	1,60V
Discharge Current (A)	(A) ⩽ 0.2C	0.2C<(A)<1.0C	(A) ⩾ 1.0C

Charge the batteries at least once every six months, if they are stored at 25C
Charging Method:

Constant Voltage	-0.2Cx2h=2.4~2.45V/Cellx24h, Max.Current 0.3CA
Constant Current	-0.2Cx2h+0.1CAx12h
Fast	-0.2Cx2h+0.3CAx4.0h

Maintenance & Cautions

Float Service:
* Every month, recommend inspection every battery voltage
* Every three months, recommend equalization charge for one time.

Equalization charge method:
Discharge: 100% rate capacity discharge
Charge: Max. current 0.3CA, constant voltage 2,4-2,45V/Cell charge 24h
* Effect of temperature on float charge voltage: -3mV/C/Cell
* Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage.

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