

SPECIFICATIONS

Rated Voltage	12V	
Nominal Capacity	50Ah (C ₂₀ , 1.80V/cell)	
Dimension	Length	229 mm (9.02 inches)
	Width	138 mm (5.43 inches)
	Container Height	205 mm (8.07 inches)
	Total Height	211 mm (8.31 inches)
Approx Weight	16.1 kg (35.5 lbs)	
Terminal	T6(M6)	
Container Material	ABS (UL94 HB or V-0 optional)	
Short-circuit current	1150A	
Internal Resistance (25°C)	Approx 12.1 mΩ (Fully charged)	
Operating Temp.Range	Discharge	-20~60°C (-4~140°F)
	Charge	-20~40°C (-4~104°F)
	Storage	-20~50°C (-4~122°F)
Nominal Operating Temp. Range	25±3°C (77±5°F)	
Max.Charging Current (25°C)	0.25C	
Charge voltage (25°C)	Standby Use	Cycle Use
	2.23-2.27V/cell	2.35-2.40V/cell
	Temp. Coefficient	-3mV/cell/°C
Effect of temp. to capacity	40°C (104°F)	103 %
	25°C (77°F)	100 %
	0°C (32°F)	86 %
Self Discharge	≤2.5% per month at 25°C (77°F). LPG series batteries may be stored up to 9 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.	



APPLICATIONS

- Telecommunications
- Solar system
- Wind power system
- Engine starting
- Wheelchair, Floor cleaning machines, Golf trolley, Boats

STANDARDS

- IEC60896 Certified
- Classified as "Long Life" according to Eurobat
- UL, CE Certified
- Manufactured in IATF16949, ISO45001, ISO 9001 and ISO 14001 certified production facilities

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

F.V/Time	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	64.5	55.9	44.0	39.8	29.1	23.0	17.4	13.5	10.2	8.39	7.37	6.49	5.31	4.61	2.38
1.80V/cell	73.2	63.3	49.7	43.3	30.8	25.4	18.4	14.9	11.2	9.12	7.76	6.85	5.53	4.70	2.50
1.75V/cell	79.4	68.6	53.7	44.2	31.9	28.5	20.2	16.0	11.7	9.39	8.00	7.08	5.63	4.85	2.57
1.70V/cell	83.0	72.0	56.4	44.5	32.4	29.4	20.8	16.3	11.8	9.39	8.10	7.10	5.67	4.84	2.61
1.67V/cell	87.3	75.0	58.4	45.8	33.0	30.0	21.2	16.7	12.0	9.56	8.23	7.20	5.72	4.89	2.63
1.60V/cell	90.3	77.3	60.0	46.4	33.5	30.9	21.7	16.9	12.2	9.74	8.41	7.30	5.77	4.94	2.66

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

F.V/Time	10min	15min	20min	30min	45min	1h	1.5h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	121.3	105.8	83.6	76.0	56.0	44.7	33.9	26.4	20.0	16.5	14.6	12.8	10.6	9.15	4.57
1.80V/cell	135.7	118.4	93.6	82.1	58.9	49.1	35.8	29.0	21.8	17.9	15.3	13.4	10.9	9.30	4.78
1.75V/cell	144.8	126.4	99.9	83.1	60.7	54.6	38.9	30.9	22.6	18.3	15.6	13.9	11.1	9.59	4.92
1.70V/cell	148.9	131.0	103.8	82.9	61.1	55.9	39.6	31.3	22.9	18.2	15.8	13.9	11.1	9.49	4.99
1.67V/cell	154.7	135.0	106.6	84.7	61.9	56.8	40.3	31.8	23.2	18.5	16.0	14.1	11.2	9.59	5.03
1.60V/cell	156.9	136.9	108.2	85.1	62.2	58.0	40.9	32.3	23.3	18.8	16.3	14.2	11.3	9.68	5.08

- 12 years design life (25°C)
- Gelled electrolyte for superior thermal management, long float life
- Efficient gas recombination decreases gassing/water and extends battery life

- Robust design - resilient in harsh conditions
- Proof against deep discharge - greater long-term energy delivery and cycle life

Discharge Characteristics

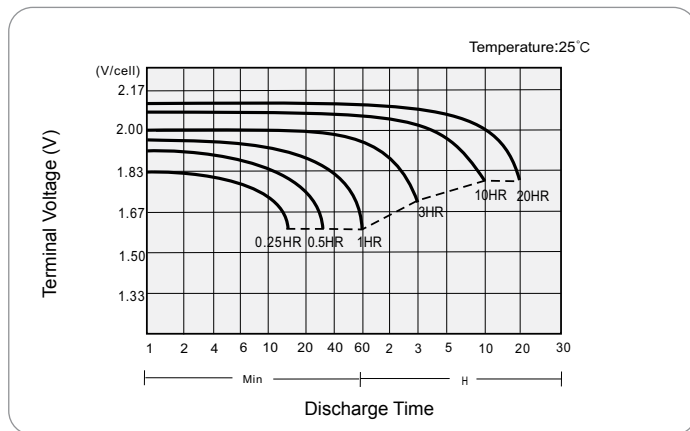


Figure 1 is a line graph showing the charge characteristics of a battery at 25°C. The x-axis represents Charging Time in hours, ranging from 0 to 20. The left y-axis has three scales: Charge Volume in percent (0 to 120), Charging Current in Amperes (0 to 0.15), and Charge Voltage in Volts per cell (0 to 2.45). The graph contains three data series: 'Charged Volume' (solid black line), 'Charge Voltage' (dashed red line), and 'Charging Current' (solid black line). The 'After 50% Discharge' condition is represented by dashed red lines, and the 'After 100% Discharge' condition is represented by solid black lines. The 100% discharge condition shows a higher charging voltage and lower charging current compared to the 50% discharge condition.

Charging Time (hours)	Charged Volume (%) - 50% Discharge	Charged Volume (%) - 100% Discharge	Charge Voltage (V/cell) - 50% Discharge	Charge Voltage (V/cell) - 100% Discharge	Charging Current (A) - 50% Discharge	Charging Current (A) - 100% Discharge
0	0	0	2.05	2.00	0.15	0.15
2	10	10	2.35	2.30	0.10	0.10
4	20	20	2.35	2.30	0.05	0.05
6	30	30	2.35	2.30	0.02	0.02
8	40	40	2.35	2.30	0.01	0.01
10	50	50	2.35	2.30	0.005	0.005
12	60	60	2.35	2.30	0.002	0.002
14	70	70	2.35	2.30	0.001	0.001
16	80	80	2.35	2.30	0.0005	0.0005
18	90	90	2.35	2.30	0.0002	0.0002
20	100	100	2.35	2.30	0.0001	0.0001

A line graph showing the relationship between the Number of Cycles (X-axis) and the Degree of Deterioration (DoD) in percentage (Y-axis). The X-axis ranges from 0 to 4000 with major grid lines every 400 units. The Y-axis ranges from 0 to 100 with major grid lines every 10 units. A red curve starts at approximately (600, 80) and decreases as the number of cycles increases, reaching approximately (3700, 20).

Number of Cycles	DoD (%)
600	80
1200	50
1600	40
2400	30
3700	20

The graph illustrates the relationship between storage time and available capacity for three different temperatures. The y-axis represents 'Available capacity (%)' from 0 to 120 in increments of 20. The x-axis represents 'Storage Time (months)' from 0 to 25 in increments of 5. Three lines are plotted: a blue line for 10°C, an orange line for 20°C, and a yellow line for 30°C. All lines start at 100% capacity at 0 months. The 10°C line shows a gradual decline, reaching approximately 65% at 25 months. The 20°C line shows a moderate decline, reaching approximately 55% at 25 months. The 30°C line shows the steepest decline, reaching approximately 50% at 15 months and ending at approximately 40% at 25 months.

Storage Time (months)	Available capacity (%) at 10°C	Available capacity (%) at 20°C	Available capacity (%) at 30°C
0	100	100	100
5	90	95	85
10	80	85	70
15	75	75	50
20	70	65	-
25	65	55	40

NITRO

VALVE REGULATED GEL BATTERY

NDCG12-50I