

# the power of tomorrow

CLEAN ENERGY DEFINES THE WORLD THAT WE LIVE IN TODAY AND TOMORROW.  
LEAD CRYSTAL® TECHNOLOGY CREATES POWER THAT IS CLEAN SAFE AND  
HIGH PERFORMING FOR A BETTER FUTURE

**LEAD  
CRYSTAL®  
BATTERIES**

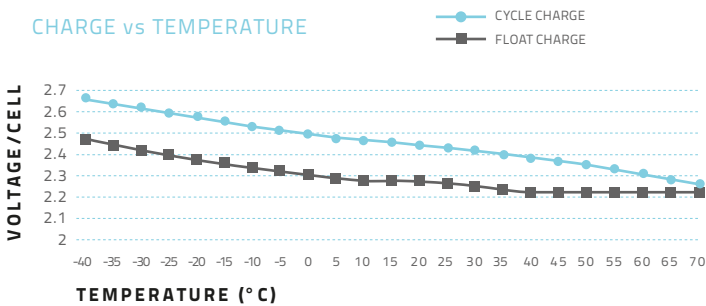
POWERED BY  
**Betta Batteries**



## DISCHARGE CURRENT AND END VOLTAGE

Discharge current (A)	End voltage (V)
0.05C or below or Intermittent discharge	1.9
0.05C of current close to it	1.85
0.1C of current close to it	1.8
0.2C of current close to it	1.75
From 0.2C to 0.5C	1.7
From 0.5C to 1C	1.6
From 1C to 3C	1.5
Current in excess of 3C	1.3

## CHARGE vs TEMPERATURE



## CHARGE vs TEMPERATURE CHART

temperature	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Cycle Charge	2.66	2.64	2.62	2.60	2.58	2.56	2.54	2.52	2.50	2.48	2.47	2.47	2.45	2.45	2.43	2.41	2.39	2.37	2.35	2.33	2.31	2.29	2.27
Float Charge	2.46	2.44	2.42	2.40	2.38	2.36	2.34	2.32	2.31	2.30	2.29	2.29	2.29	2.27	2.26	2.24	2.23	2.23	2.23	2.23	2.23	2.23	2.23

## CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES (25°C)

End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	8107.20	5172	3408	2565	2097	1251	909.00	706.50	600.00	516.00	390.00	315.00	265.50	165.90	139.00
1.67V	6977.88	4689	3159	2430	2031	1194	864.00	699.00	570.00	510.00	384.00	309.00	265.50	165.90	139.00
1.70V	6666.12	4545	3060	2400	1962	1176	846.00	693.00	567.00	507.00	381.00	306.00	265.50	165.60	138.60
1.75V	6059.88	4254	2940	2307	1899	1131	822.00	675.00	549.00	495.00	375.00	303.00	263.10	165.60	138.30
1.80V	5357.88	3897	2829	2223	1818	1092	810.00	663.00	537.00	483.00	366.00	300.00	257.40	165.00	137.70
1.83V	4677.12	3561	2613	2066	1719	1044	780.00	636.00	513.00	465.00	354.00	291.00	250.50	164.40	133.80
1.85V	3998.88	3225	2400	1911	1623	999	750.00	612.00	492.00	450.00	342.00	282.90	243.30	164.10	129.90

## DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL (25°C)

End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	13442.89	9051.05	6194.98	4722.01	3912.01	2387.99	1740.00	1352.95	1152.00	1010.99	765.00	623.51	522.00	324.00	271.80
1.67V	12008.88	8439.01	5799.01	4518.00	3810.00	2313.59	1698.00	1346.99	1116.00	999.00	749.85	609.00	522.00	324.00	271.80
1.70V	11621.66	8219.86	5640.03	4470.01	3701.96	2253.01	1628.99	1337.99	1094.99	992.98	747.39	603.00	522.00	324.00	271.50
1.75V	10728.07	7727.92	5453.98	4332.03	3600.02	2178.13	1590.01	1317.00	1068.00	978.00	732.00	596.91	522.00	324.00	271.20
1.80V	9725.97	7122.02	5267.94	4193.97	3464.97	2106.00	1572.00	1293.06	1041.00	963.00	720.00	591.00	507.00	321.00	270.60
1.83V	8589.12	6593.91	4919.96	3929.99	3290.98	2027.99	1518.00	1251.00	1005.00	936.00	696.02	575.99	495.00	321.00	263.71
1.85V	7451.99	6065.79	4571.98	3666.01	3120.01	1949.97	1464.01	1205.99	966.00	909.00	672.00	561.00	483.00	318.00	257.10

## SPECIFICATION

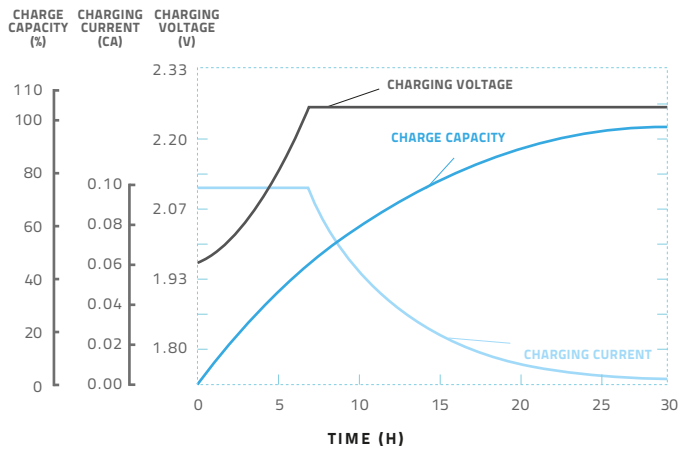
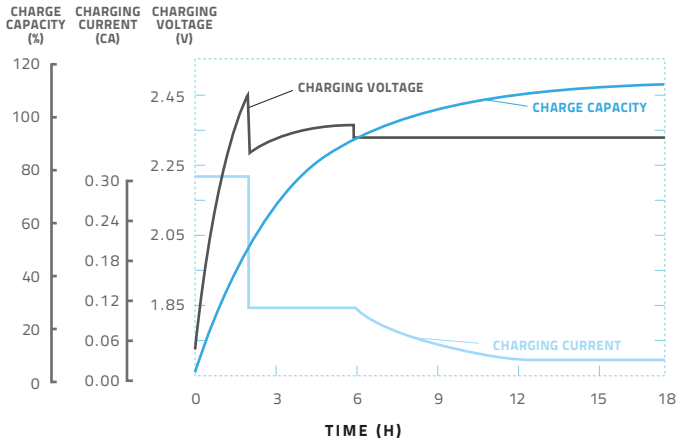
Nominal Voltage	2V		
Rated Capacity (10 hour rate)	3000AH		
Dimension	Total Height (top of terminal)	348 mm	13.7"
	Height	342mm	13.46"
	Length	712 mm	28.03"
	Width	353 mm	13.9"
Weight	Approximately 192 kg / 423.28 lbs		
Capacity	120 hour rate (30A)	3600 AH	
	25° C	20 hour rate (165A)	3300 AH
		10 hour rate (300A)	3000 AH
Internal Resistance	Fully charged Battery (25° C)	0.05mΩ	
Self-Discharge 25° C	Capacity after 3 month storage	95%	
	Capacity after 6 month storage	85%	
	Capacity after 12 month storage	80%	
Max Discharge Current 25° C	30000A (5S)		
Terminal	Standard	F4	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 900A 2.45V/ (25° C)	
	Float	2.27V/ (25° C)	

CYCLE CHARGE CHARACTERISTIC (25°C)

FLOATING CHARGE CHARACTERISTIC (25°C)

REGULAR CYCLE CHARGE CHARACTERISTICS 77°F (25°C)

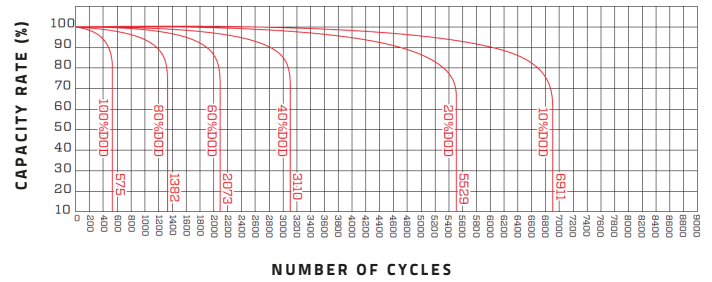
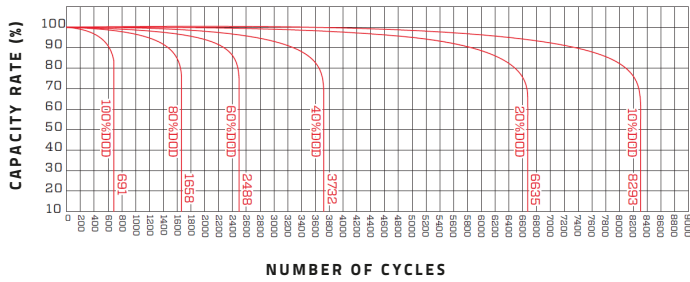
FLOATING CHARGE CHARACTERISTICS 77°F (25°C)



CYCLE LIFE CURVE GRAPH

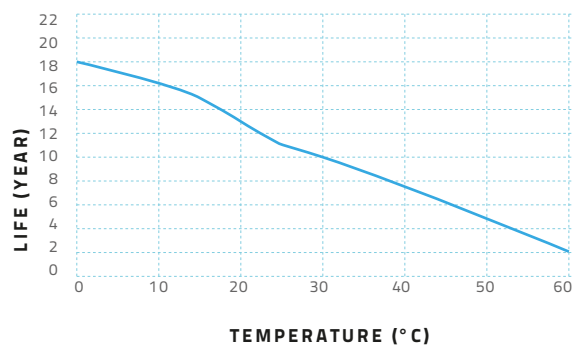
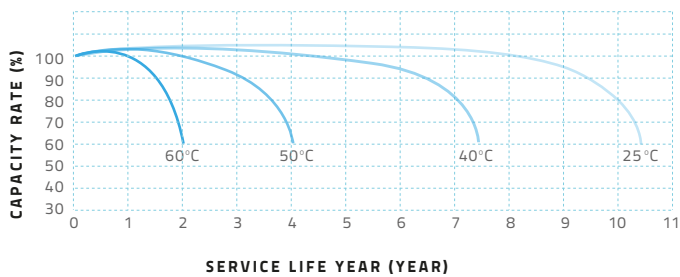
CYCLE LIFE CURVE GRAPH (25°C)

CYCLE LIFE CURVE GRAPH (40°C)

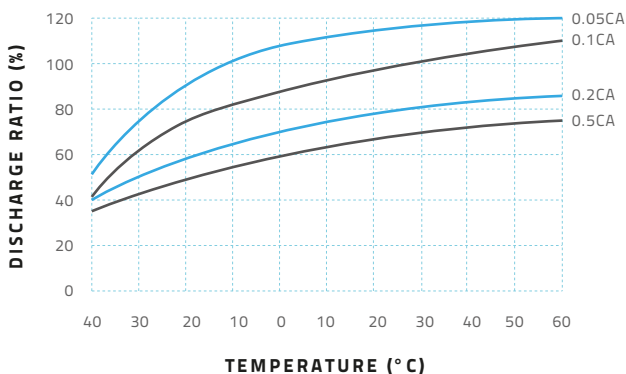


TEMPERATURE & FLOAT SERVICE LIFE

Float Service Life Curve Graph



TEMPERATURE & DISCHARGE CAPACITY





CNFJ-3000 2V/3000Ah

## LEAD CRYSTAL®: CHANGING THE FUTURE

**Performance** Robust, resilient, high performing. Lead Crystal® batteries can be discharged deeper, cycled more often (also in extreme temperatures) and have a longer service life. They recover to full rated capacity over and over again.

**Technology** A unique micro-porous high absorbent mat (AGM), high-purity lead calcium selenium plates, safe SiO<sub>2</sub> electrolyte solution that solidifies into a white crystalline powder when charged/discharged.

**Cleaner & safe** Less acid, no cadmium, no antimony. Lead Crystal® batteries are up to 99% recyclable and are classified as non-hazardous goods for transport.

**Markets** Lead Crystal® batteries are being used in telecoms, ups, petrochem/marine, defence, renewable energy, health care, manufacturing, transportation and electric motion (wheelchairs, golf carts & trolleys).



[www.leadcrystalbatteries.com](http://www.leadcrystalbatteries.com)