

# 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**

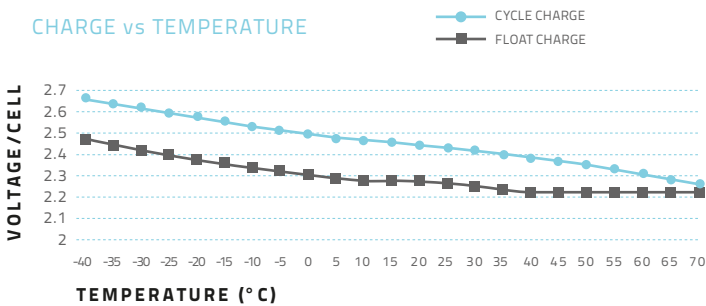
POWERED BY  
**Betta Batteries**



## 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	4053.60	2586.0	1704.0	1282.5	1048.5	625.50	454.50	353.25	300.00	258.00	195.00	157.50	132.75	82.95	69.50
1.67V	3488.94	2344.5	1579.5	1215.0	1015.5	597.00	432.00	349.50	285.00	255.00	192.00	154.50	132.75	82.95	69.50
1.70V	3333.06	2272.5	1530.0	1200.0	981.00	588.00	423.00	346.50	283.50	253.50	190.50	153.00	132.75	82.80	69.30
1.75V	3029.94	2127.0	1470.0	1153.5	949.50	565.50	411.00	337.50	274.50	247.50	187.50	151.50	131.55	82.80	69.15
1.80V	2678.94	1948.5	1414.5	1111.5	909.00	546.00	405.00	331.50	268.50	241.50	183.00	150.00	128.70	82.50	68.85
1.83V	2338.56	1780.5	1306.5	1033.0	859.50	522.00	390.00	318.00	256.50	232.50	177.00	145.50	125.25	82.20	66.90
1.85V	1999.44	1612.5	1200.0	955.50	811.50	499.50	375.00	306.00	246.00	225.00	171.00	141.45	121.65	82.05	64.95

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

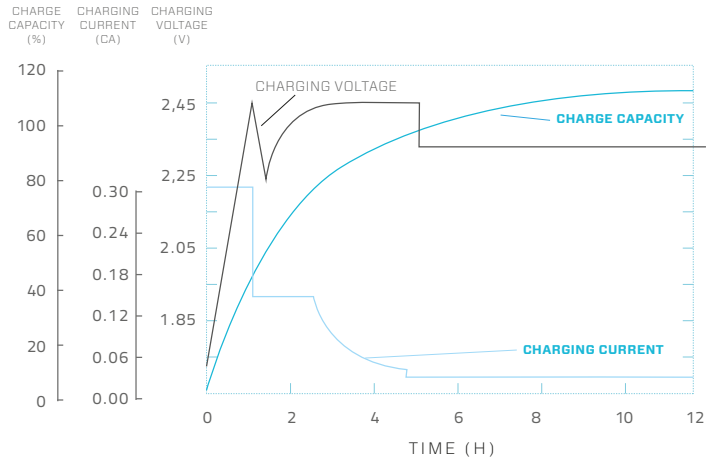
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	6721.44	4525.52	3097.49	2361.01	1956.00	1194.00	870	676.47	576.00	505.50	382.50	311.75	261.00	162.00	135.90
1.67V	6004.44	4219.50	2899.51	2259.00	1905.00	1156.79	849	673.50	558.00	499.50	374.93	304.50	261.00	162.00	135.90
1.70V	5810.83	4109.93	2820.02	2235.00	1850.98	1126.51	814.5	669.00	547.50	496.49	373.70	301.50	261.00	162.00	135.75
1.75V	5364.03	3863.96	2726.99	2166.02	1800.01	1089.07	795	658.50	534.00	489.00	366.00	298.46	261.00	162.00	135.60
1.80V	4862.98	3561.01	2633.97	2096.99	1732.49	1053.00	786	646.53	520.50	481.50	360.00	295.50	253.50	160.50	135.30
1.83V	4294.56	3296.95	2459.98	1965.00	1645.49	1013.99	759	625.50	502.50	468.00	348.01	287.99	247.50	160.50	131.85
1.85V	3725.99	3032.89	2285.99	1833.01	1560.00	974.99	732	603.00	483.00	454.50	336.00	280.50	241.50	159.00	128.55

## SPECIFICATION

Nominal Voltage	2V		
Rated Capacity (10 hour rate)	1500 AH		
Dimension	Total Height (top of terminal)	347 mm	13.66"
	Height	342mm	13.46"
	Length	401 mm	15.79"
	Width	351 mm	13.82"
Weight	Approximately 98.5 kg / 217.15 lbs		
Capacity	120 hour rate (15A)	1800 AH	
	25°C	20 hour rate (82.5A)	1650 AH
		10 hour rate (150A)	1500 AH
Internal Resistance	Fully charged Battery (25°C)	0.10mΩ	
Self-Discharge	Capacity after 3 month storage	95%	
	Capacity after 6 month storage	85%	
	Capacity after 12 month storage	80%	
Max Discharge Current	15000A (5S)		
Terminal	Standard	F4	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 450A 2.45V/ (25°C)	
	Float	2.27V/ (25°C)	

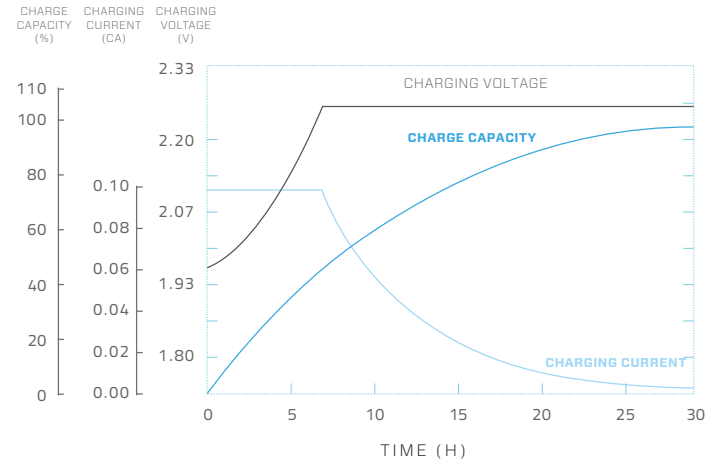
**CYCLE CHARGE CHARACTERISTIC (25°C)**

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



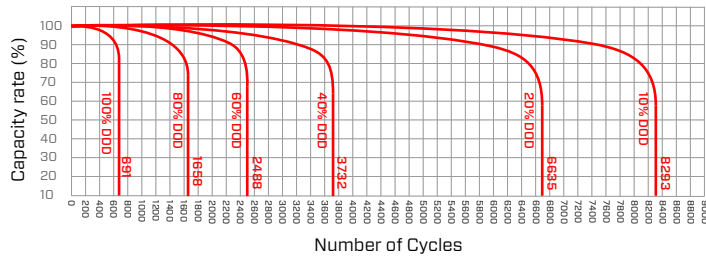
**FLOATING CHARGE CHARACTERISTIC (25°C)**

FLOATING CHARGE CHARACTERISTICS 77°F (25°C)

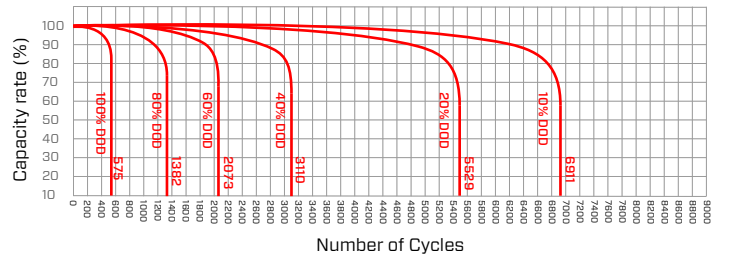


**CYCLE LIFE CURVE GRAPH**

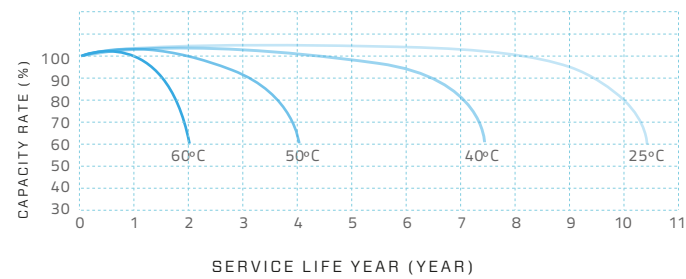
Cycle life curve graph (25°C) 2V



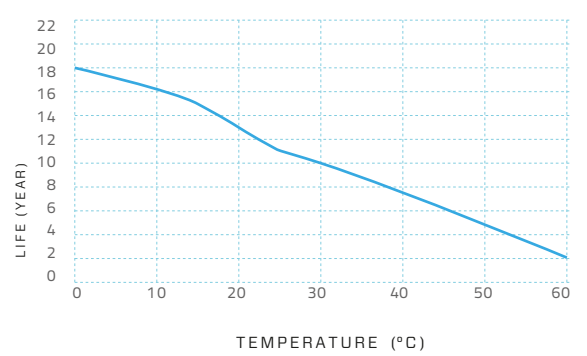
Cycle life curve graph (40°C) 2V



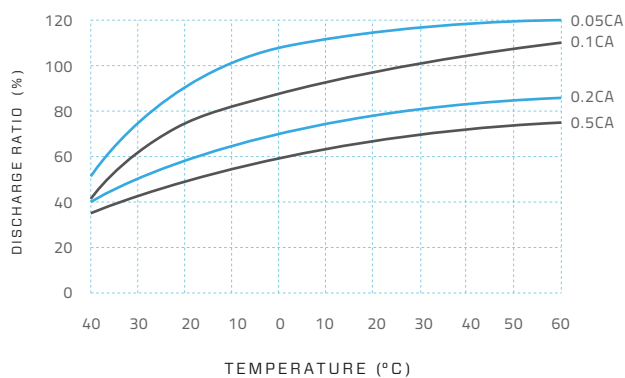
**TEMPERATURE & FLOAT SERVICE LIFE**



**FLOAT SERVICE LIFE CURVE GRAPH**



**TEMPERATURE & DISCHARGE CAPACITY**





CNFJ-1500 2V/1500Ah

## 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)