



# Energy Evolved.

## Lead Crystal Energy Solutions

Next-generation lead crystal battery systems for a sustainable future. High-performance, high-safety, and 99% recyclable.

**LEAD  
CRYSTAL<sup>®</sup>**  
BATTERIES



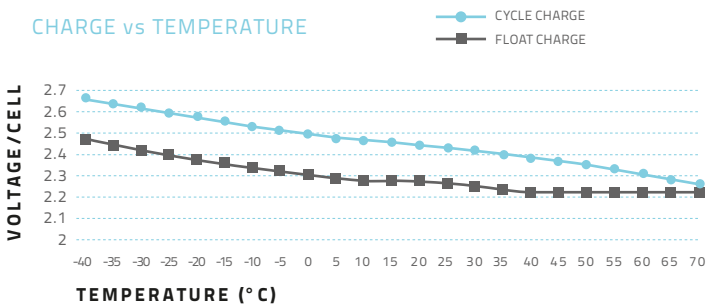
## DISCHARGE CURRENT AND END VOLTAGE

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

## SPECIFICATION

Nominal Voltage	2V		
Rated Capacity (10 hour rate)	300 AH		
Dimension	Total Height (top of terminal)	335 mm	13.19"
	Height	330 mm	12.99"
	Length	176 mm	6.93"
	Width	154 mm	6.06"
Weight	Approximately 22 kg / 48.50 lbs		
Capacity	120 hour rate (3.0A)	360 AH	
	25° C	20 hour rate (16.5A)	330 AH
		10 hour rate (30A)	300 AH
Internal Resistance	Fully charged Battery (25° C)	0.45mΩ	
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	3000A (5S)		
Terminal	Standard	F4	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 90A 2.45V/ (25° C)	
	Float	2.27V/ (25° C)	

## 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 (voltage/cell)	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)

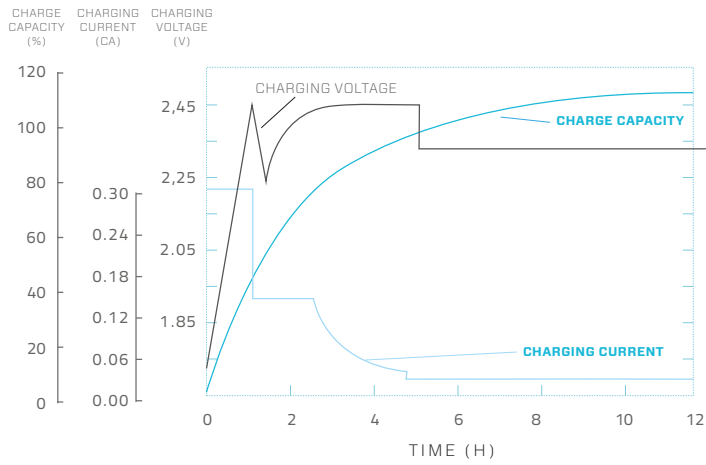
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	810.72	517.20	340.80	256.50	209.70	125.10	90.90	70.65	60.00	51.60	39.00	31.50	26.55	16.59	13.90
1.67V	697.79	468.90	315.90	243.00	203.10	119.40	86.40	69.90	57.00	51.00	38.40	30.90	26.55	16.59	13.90
1.70V	666.61	454.50	306.00	240.00	196.20	117.60	84.60	69.30	56.70	50.70	38.10	30.60	26.55	16.56	13.86
1.75V	605.99	425.40	294.00	230.70	189.90	113.10	82.20	67.50	54.90	49.50	37.50	30.30	26.31	16.56	13.83
1.80V	535.79	389.70	282.90	222.30	181.80	109.20	81.00	66.30	53.70	48.30	36.60	30.00	25.74	16.50	13.77
1.83V	467.71	356.10	261.30	206.60	171.90	104.40	78.00	63.60	51.30	46.50	35.40	29.10	25.05	16.44	13.38
1.85V	399.89	322.50	240.00	191.10	162.30	99.90	75.00	61.20	49.20	45.00	34.20	28.29	24.33	16.41	12.99

## 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	1344.29	905.10	619.50	472.20	391.20	238.80	174.00	135.29	115.20	101.10	76.50	62.35	52.20	32.40	27.18
1.67V	1200.89	843.90	579.90	451.80	381.00	231.36	169.80	134.70	111.60	99.90	74.99	60.90	52.20	32.40	27.18
1.70V	1162.17	821.99	564.00	447.00	370.20	225.30	162.90	133.80	109.50	99.30	74.74	60.30	52.20	32.40	27.15
1.75V	1072.81	772.79	545.40	433.20	360.00	217.81	159.00	131.70	106.80	97.80	73.20	59.69	52.20	32.40	27.12
1.80V	972.60	712.20	526.79	419.40	346.50	210.60	157.20	129.31	104.10	96.30	72.00	59.10	50.70	32.10	27.06
1.83V	858.91	659.39	492.00	393.00	329.10	202.80	151.80	125.10	100.50	93.60	69.60	57.60	49.50	32.10	26.37
1.85V	745.20	606.58	457.20	366.60	312.00	195.00	146.40	120.60	96.60	90.90	67.20	56.10	48.30	31.80	25.71

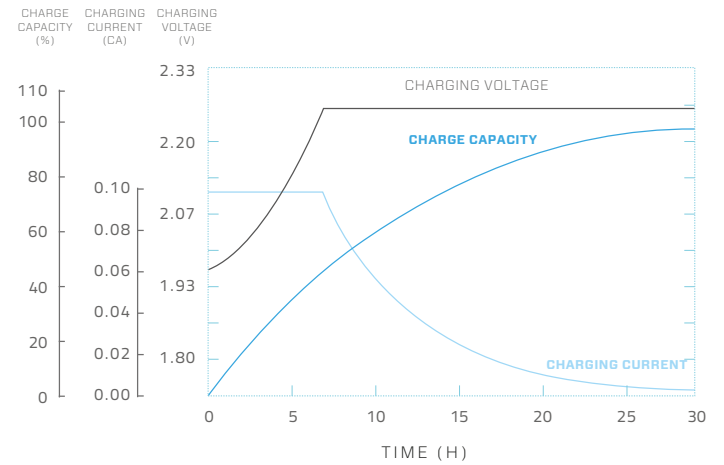
**CYCLE CHARGE CHARACTERISTIC (25°C)**

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



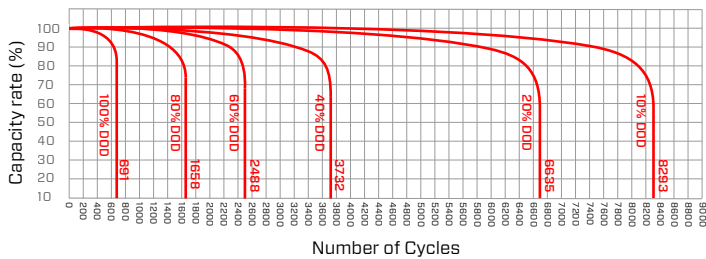
**FLOATING CHARGE CHARACTERISTIC (25°C)**

FLOATING CHARGE CHARACTERISTICS 77°F (25°C)

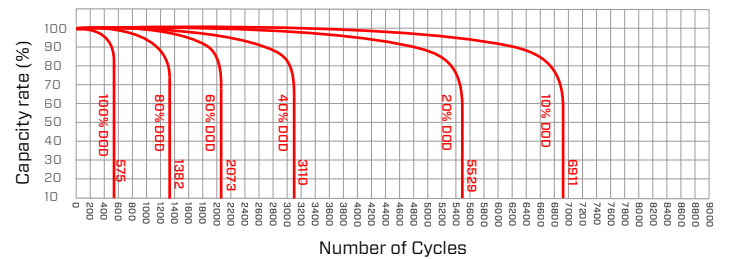


**CYCLE LIFE CURVE GRAPH**

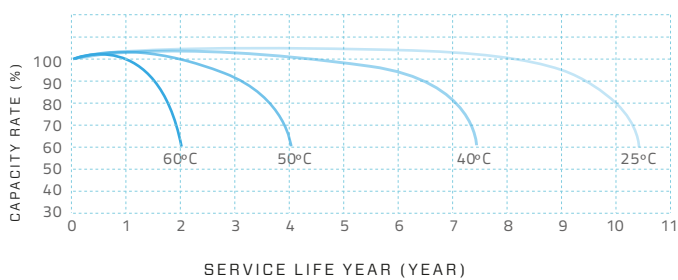
Cycle life curve graph (25°C) 2V



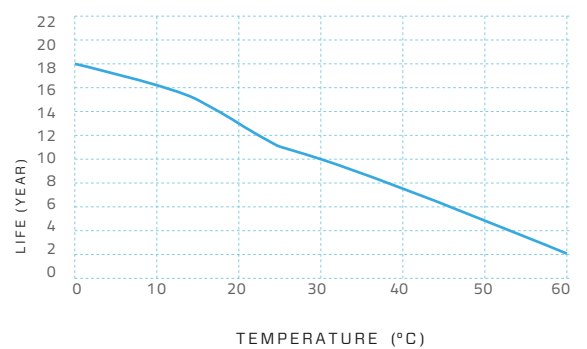
Cycle life curve graph (40°C) 2V



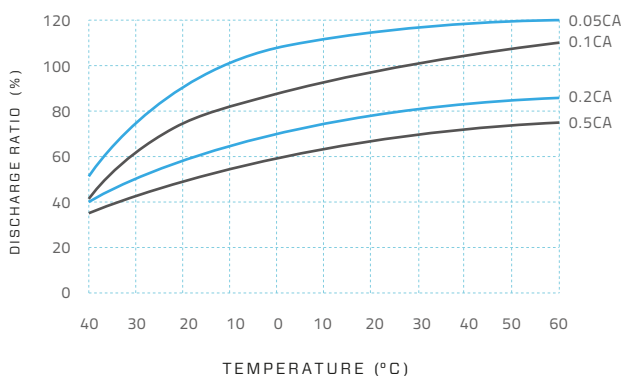
**TEMPERATURE & FLOAT SERVICE LIFE**



**FLOAT SERVICE LIFE CURVE GRAPH**



**TEMPERATURE & DISCHARGE CAPACITY**



CNFJ-300 2V / 300 A



## Energy Evolved.

**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 & Safer:** 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).



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