

# 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

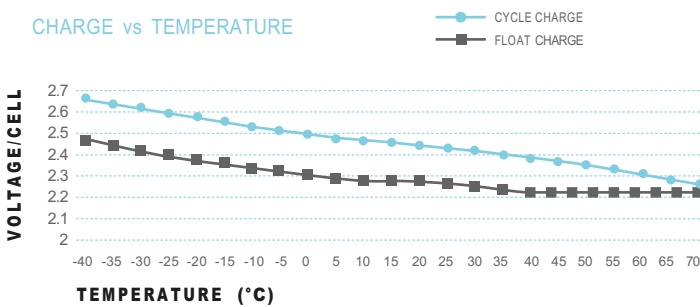
# LEAD CRYSTAL<sup>®</sup> BATTERIES



## 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

## 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	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	270.24	172.40	113.60	85.50	69.90	41.70	30.30	23.55	20.00	17.20	13.00	10.50	8.85	5.53	4.63
1.67V	232.60	156.30	105.30	81.00	67.70	39.80	28.80	23.30	19.00	17.00	12.80	10.30	8.85	5.53	4.63
1.70V	222.20	151.50	102.00	80.00	65.40	39.20	28.20	23.10	18.90	16.90	12.70	10.20	8.85	5.52	4.62
1.75V	202.00	141.80	98.00	76.90	63.30	37.70	27.40	22.50	18.30	16.50	12.50	10.10	8.77	5.52	4.61
1.80V	178.60	129.90	94.30	74.10	60.60	36.40	27.00	22.10	17.90	16.10	12.20	10.00	8.58	5.50	4.59
1.83V	155.90	118.70	87.10	68.87	57.30	34.80	26.00	21.20	17.10	15.50	11.80	9.70	8.35	5.48	4.46
1.85V	133.30	107.50	80.00	63.70	54.10	33.30	25.00	20.40	16.40	15.00	11.40	9.43	8.11	5.47	4.33

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

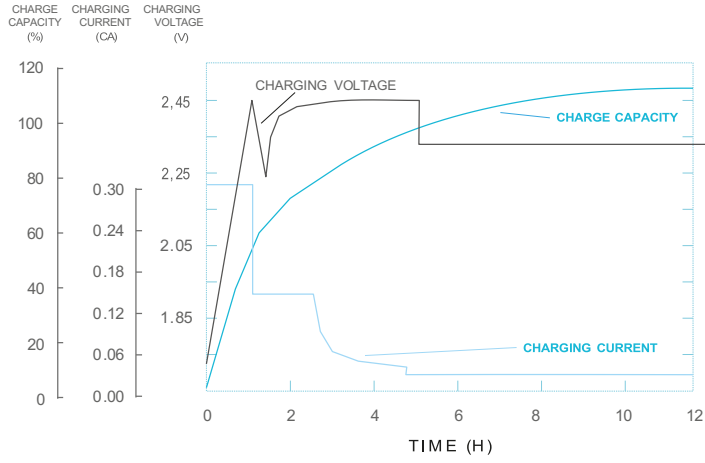
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	448.10	301.70	206.50	206.50	130.40	79.60	58.00	45.10	38.40	33.70	25.50	20.78	17.40	10.80	9.06
1.67V	400.30	281.30	193.30	193.30	127.00	77.12	56.60	44.90	37.20	33.30	25.00	20.30	17.40	10.80	9.06
1.70V	387.39	274.00	188.00	188.00	123.40	75.10	54.30	44.60	36.50	33.10	24.91	20.10	17.40	10.80	9.05
1.75V	357.60	257.60	181.80	181.80	120.00	72.60	53.00	43.90	35.60	32.60	24.40	19.90	17.40	10.80	9.04
1.80V	324.20	237.40	175.60	175.60	115.50	70.20	52.40	43.10	34.70	32.10	24.00	19.70	16.90	10.70	9.02
1.83V	286.30	219.80	164.00	164.00	109.70	67.60	50.60	41.70	33.50	31.20	23.20	19.20	16.50	10.70	8.79
1.85V	248.40	202.19	152.40	152.40	104.00	65.00	48.80	40.20	32.20	30.30	22.40	18.70	16.10	10.60	8.57

## SPECIFICATION

Nominal Voltage	2V		
Rated Capacity (10 hour rate)	100 AH		
Dimension	Total Height (top of terminal)	210 mm	8.27"
	Height	205 mm	8.07"
	Length	172 mm	6.77"
	Width	72 mm	2.83"
Weight	Approximately 5.8 kg / 12.78lbs		
Capacity	120 hour rate (1.0A)	120 AH	
	25°C 20 hour rate (5.4A)	108 AH	
	10 hour rate (10A)	100 AH	
Internal Resistance	Fully charged Battery (25°C)	0.6mΩ	
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	1000A (5S)		
Terminal	Standard	F3	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 30A 2.45V/ (25°C)	
	Float	2.27V/ (25°C)	

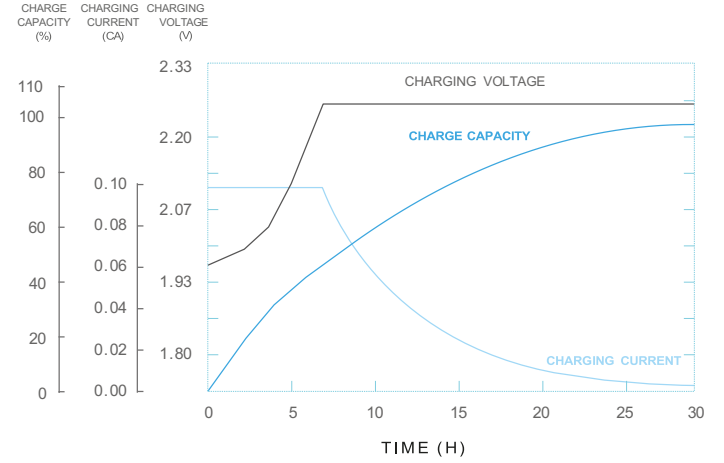
**CYCLE CHARGE CHARACTERISTIC (25°C)**

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



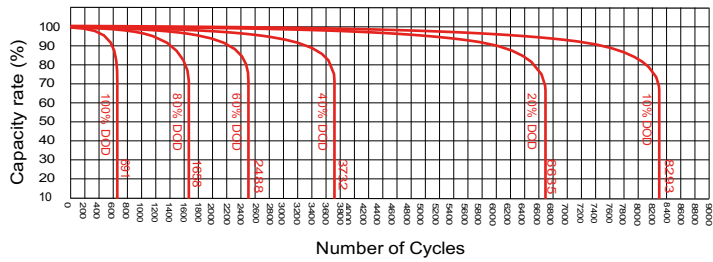
**FLOATING CHARGE CHARACTERISTIC (25°C)**

FLOATING CHARGE CHARACTERISTICS 77°F (25°C)

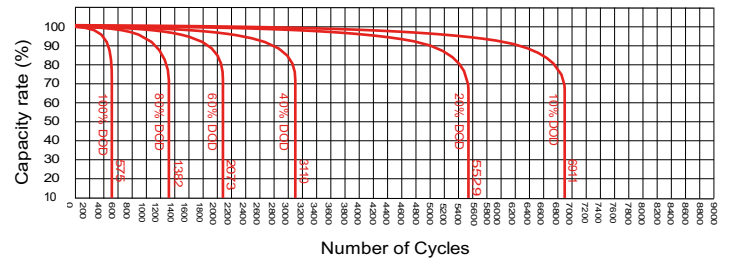


**CYCLE LIFE CURVE GRAPH**

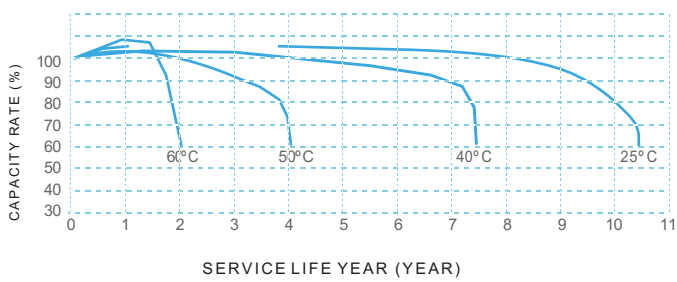
Cycle life curve graph (25°C) 2V



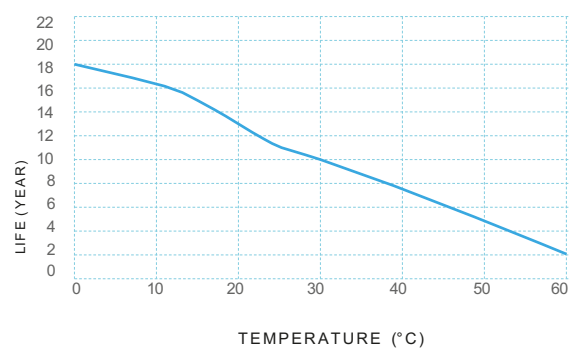
Cycle life curve graph (40°C) 2V



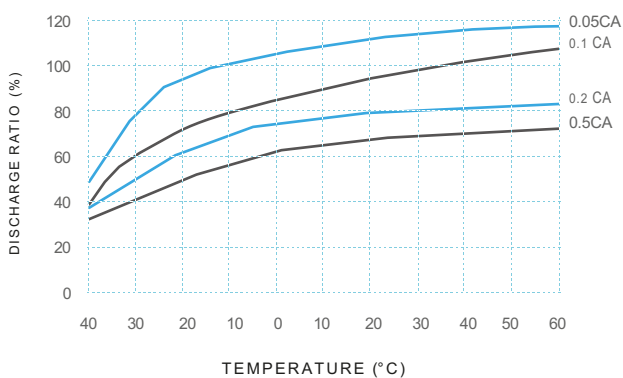
**TEMPERATURE & FLOAT SERVICE LIFE**



**FLOAT SERVICE LIFE CURVE GRAPH**



**TEMPERATURE & DISCHARGE CAPACITY**



## CNFJ-100 2V/100Ah

### 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).

