

# 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

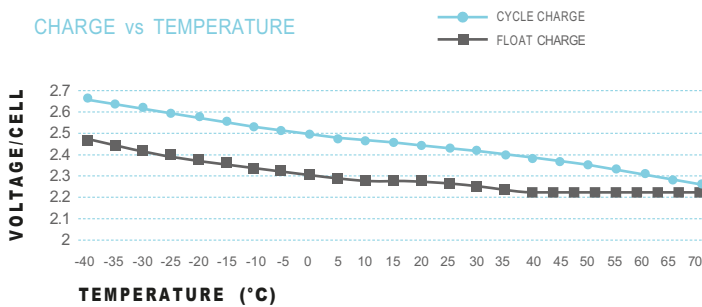
# LEAD CRYSTAL<sup>®</sup> BATTERIES



## 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	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	5404.8	3448	2272	1710	1398	834	606	471	400	344	260	210	177	110.6	92.67
1.67V	4651.92	3126	2106	1620	1354	796	576	466	380	340	256	206	177	110.6	92.67
1.70V	4444.08	3030	2040	1600	1308	784	564	462	378	338	254	204	177	110.4	92.4
1.75V	4039.92	2836	1960	1538	1266	754	548	450	366	330	250	202	175.4	110.4	92.2
1.80V	3571.92	2598	1886	1482	1212	728	540	442	358	322	244	200	171.6	110	91.8
1.83V	3118.08	2374	1742	1377.33	1146	696	520	424	342	310	236	194	167	109.6	89.2
1.85V	2665.92	2150	1600	1274	1082	666	500	408	328	300	228	188.6	162.2	109.4	86.6

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

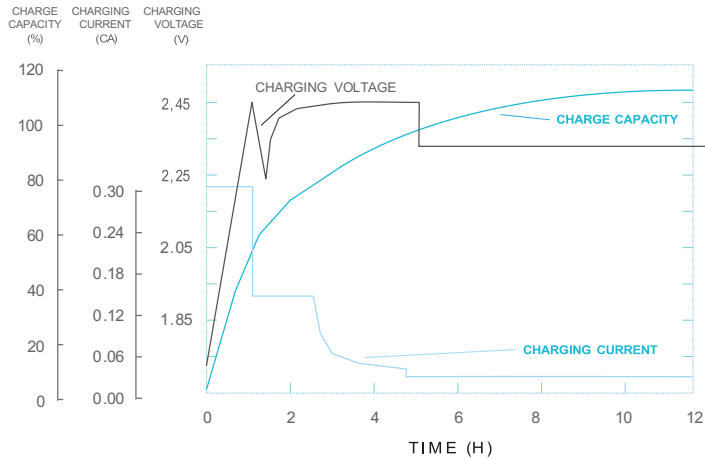
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	8961.92	6034.03	4129.99	3148.01	2608	1592	1160	901.96	768	674	510	415.67	348	216	181.2
1.67V	8005.92	5626	3866.01	3012	2540	1542.39	1132	897.99	744	666	499.9	406	348	216	181.2
1.70V	7747.77	5479.91	3760.02	2980.01	2467.98	1502.01	1086	892	730	661.99	498.26	402	348	216	181
1.75V	7152.05	5151.94	3635.99	2888.02	2400.01	1452.09	1060	878	712	652	488	397.94	348	216	180.8
1.80V	6483.98	4748.02	3511.96	2795.98	2309.98	1404	1048	862.04	694	642	480	394	338	214	180.4
1.83V	5726.08	4395.94	3279.97	2619.99	2193.99	1351.99	1012	834	670	624	464.01	383.99	330	214	175.8
1.85V	4967.99	4043.86	3047.98	2444.01	2080	1299.98	976	804	644	606	448	374	322	212	171.4

## SPECIFICATION

Nominal Voltage	2V		
Rated Capacity (10 hour rate)	2000AH		
Dimension	Total Height (top of terminal)	347 mm	13.66"
	Height	342mm	13.46"
	Length	491 mm	19.33"
	Width	351 mm	13.82"
Weight	Approximately 125 kg / 275.57 lbs		
Capacity 25°C	120 hour rate (20A)	2400 AH	
	20 hour rate (110A)	2200 AH	
	10 hour rate (100A)	2000 AH	
Internal Resistance	Fully charged Battery (25°C)	0.09mΩ	
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	20000A (5S)		
Terminal	Standard	F4	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 600A 2.45V/ (25°C)	
	Float	2.27V/ (25°C)	

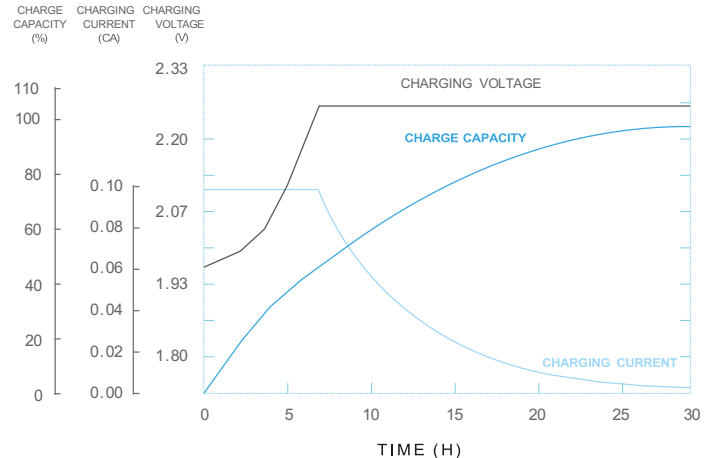
**CYCLE CHARGE CHARACTERISTIC (25°C)**

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



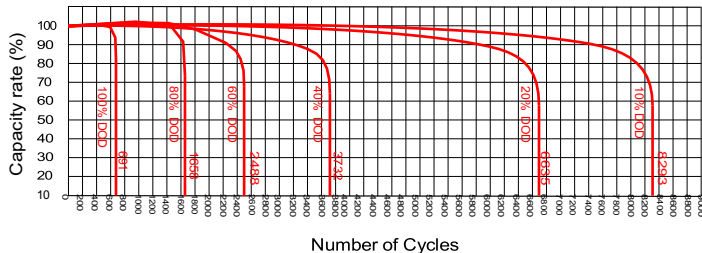
**FLOATING CHARGE CHARACTERISTIC (25°C)**

FLOATING CHARGE CHARACTERISTICS 77°F (25°C)

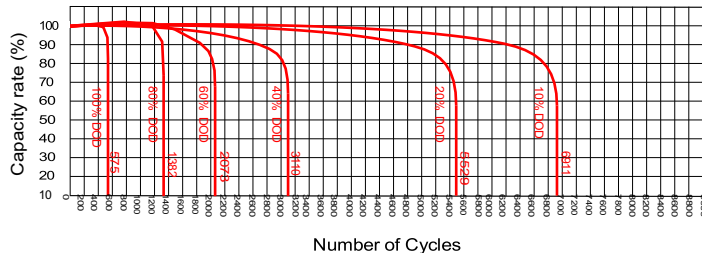


**CYCLE LIFE CURVE GRAPH**

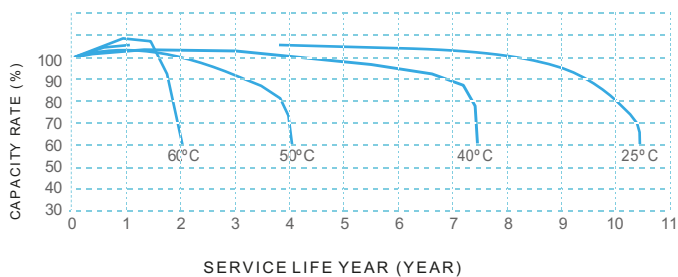
Cycle life curve graph (25°C) 2V



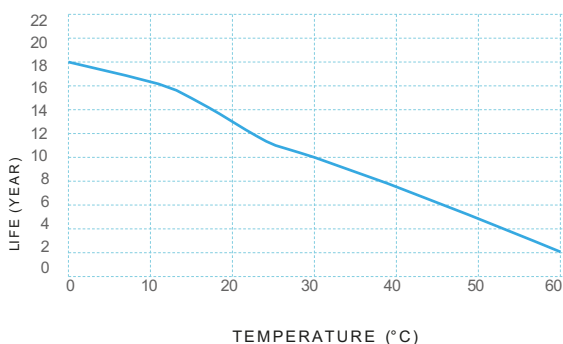
Cycle life curve graph (40°C) 2V



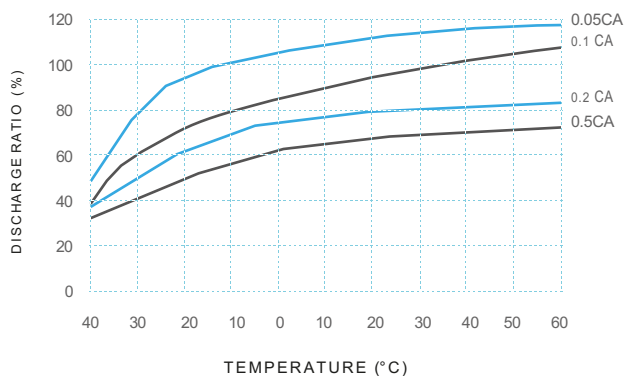
**TEMPERATURE & FLOAT SERVICE LIFE**



**FLOAT SERVICE LIFE CURVE GRAPH**



**TEMPERATURE & DISCHARGE CAPACITY**



## CNFJ-2000 2V/2000Ah

### 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).

