

# 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	11.4
0.05C of current close to it	11.1
0.1C of current close to it	10.8
0.2C of current close to it	10.5
From 0.2C to 0.5C	10.2
From 0.5C to 1C	9.6
From 1C to 3C	9.0
Current in excess of 3C	7.8

## SPECIFICATION

Nominal Voltage	12V		
Rated Capacity (10 hour rate)	26 AH		
Dimension	Total Height (top of terminal)	125mm	4.92"
	Height	125mm	4.92"
	Length	176mm	6.93"
	Width	166mm	6.54"

Weight	Approximately 7.8 kg / 17.19 lbs		
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Capacity 25°C	120 hour rate (0.25A)	31AH
	20 hour rate (1.45A)	29AH
	10 hour rate (2.6A)	26AH

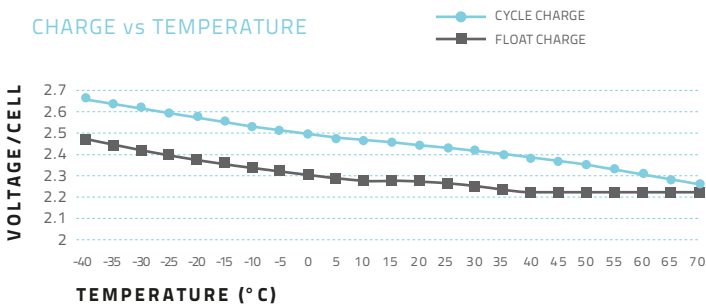
Internal Resistance	Fully charged Battery (25°C)	8.5mΩ
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Self-Discharge 25°C	Capacity after 3 month storage	95%
	Capacity after 6 month storage	85%
	Capacity after 12 month storage	80%

Max Discharge Current 25°C	260A(5S)
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Terminal	Standard	F5
	Optional	
Charging (Constant Voltage)	Cycle	Initial Charging Current 7.8A 14.7V/ (25°C)
	Float	13.6V/ (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)

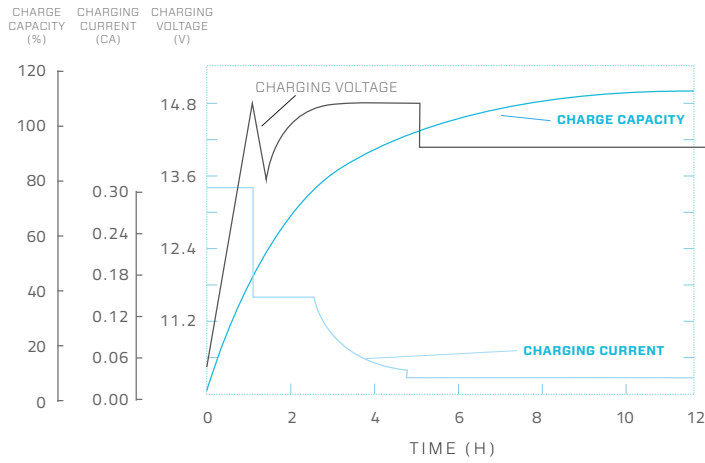
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	95.41	50.49	30.51	22.24	17.91	10.26	7.45	5.85	4.99	4.24	3.23	2.69	2.26	1.47	1.20
1.67V	88.67	48.84	30.06	22.09	17.88	10.22	7.32	5.82	4.91	4.21	3.23	2.66	2.25	1.47	1.20
1.70V	87.77	48.09	29.75	21.79	17.73	10.13	7.27	5.79	4.84	4.16	3.22	2.66	2.25	1.46	1.19
1.75V	80.40	46.58	29.46	21.64	17.43	9.93	7.24	5.71	4.79	4.13	3.20	2.63	2.24	1.45	1.19
1.80V	72.13	43.58	28.25	21.04	16.98	9.78	7.21	5.70	4.73	4.09	3.19	2.60	2.22	1.41	1.19
1.83V	68.95	39.98	27.80	20.29	16.23	9.69	6.93	5.46	4.63	3.94	3.12	2.49	2.13	1.39	1.17
1.85V	64.62	38.77	26.00	19.54	15.78	9.30	6.75	5.38	4.51	3.81	3.08	2.46	2.10	1.38	1.16

## 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	159.43	88.66	57.10	41.62	33.48	19.38	14.17	11.23	9.48	8.14	6.28	5.20	4.37	2.92	2.39
1.67V	151.77	87.31	54.79	41.32	33.51	19.38	13.99	11.21	9.48	8.13	6.28	5.18	4.37	2.92	2.39
1.70V	150.87	86.70	54.77	41.32	33.21	19.23	13.96	11.17	9.33	8.07	6.24	5.14	4.33	2.90	2.39
1.75V	140.50	85.65	54.83	41.32	33.06	19.08	13.93	11.15	9.30	8.01	6.21	5.10	4.33	2.90	2.37
1.80V	128.93	81.29	53.65	40.57	32.91	19.08	13.91	11.12	9.24	8.01	6.19	5.08	4.33	2.83	2.37
1.83V	124.42	74.68	53.20	39.37	31.56	18.93	13.52	10.74	9.14	7.75	6.19	4.93	4.25	2.80	2.36
1.85V	115.25	73.03	49.44	37.87	30.65	18.48	13.15	10.61	8.88	7.60	5.95	4.88	4.18	2.76	2.34

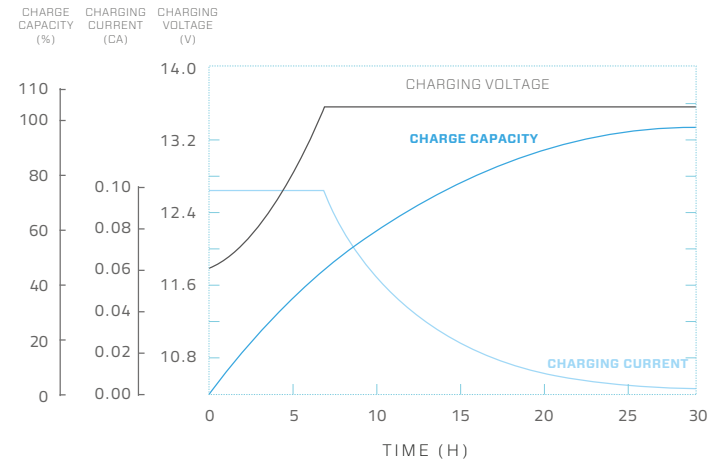
**CYCLE CHARGE CHARACTERISTIC (25°C)**

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



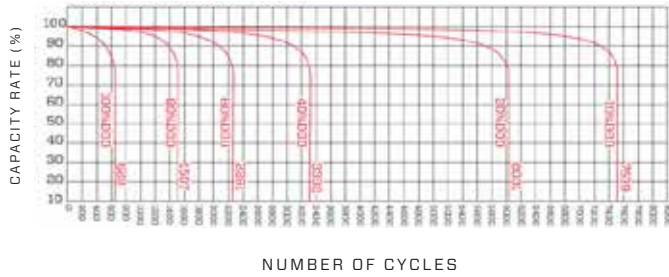
**FLOATING CHARGE CHARACTERISTIC (25°C)**

FLOATING CHARGE CHARACTERISTICS 77°F (25°C)

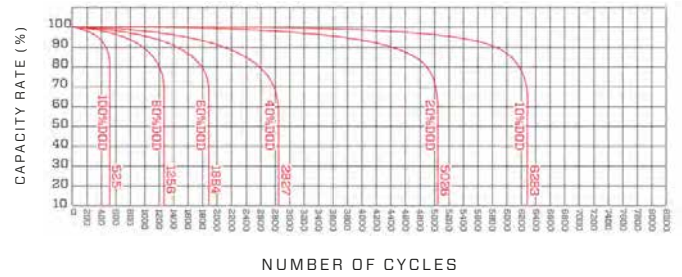


**CYCLE LIFE CURVE GRAPH**

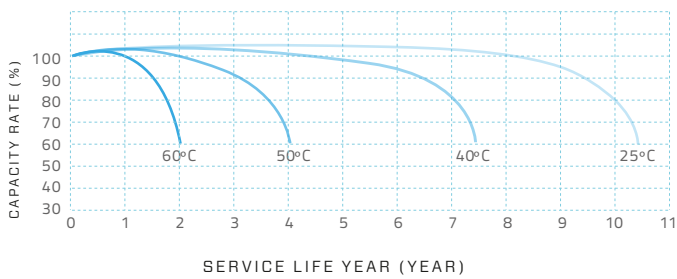
CYCLE LIFE CURVE GRAPH (25°C)



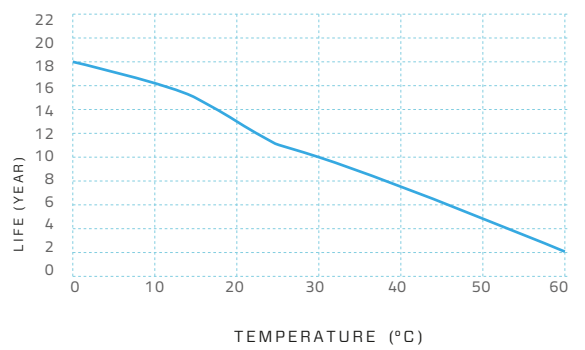
CYCLE LIFE CURVE GRAPH (40°C)



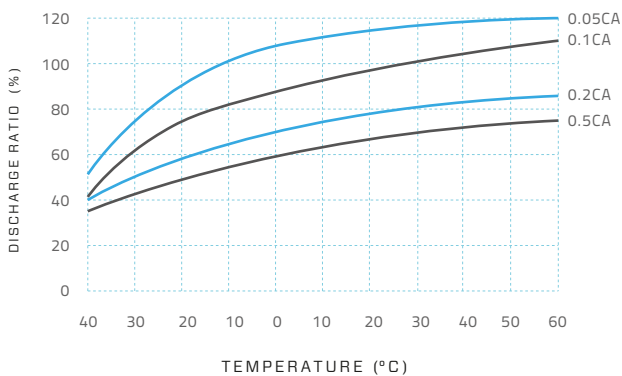
**TEMPERATURE & FLOAT SERVICE LIFE**



**Float Service Life Curve Graph**



**TEMPERATURE & DISCHARGE CAPACITY**





## 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).

