

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**

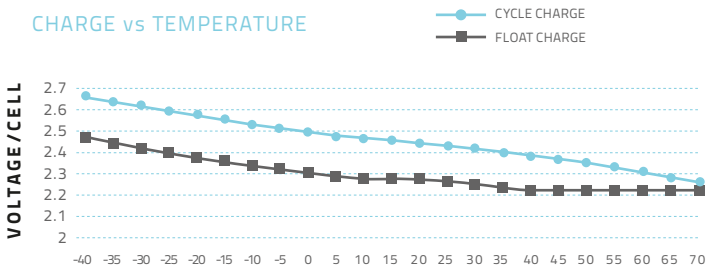
POWERED BY
Betta Batteries



SPECIFICATION

Nominal Voltage	12V		
Rated Capacity (3 hour rate)	100 AH		
Dimension	Total Height (top of terminal)	219 mm	8.62"
	Height	219 mm	8.62"
	Length	331 mm	13.03"
	Width	176 mm	6.93"
Weight	Approximately 34 kg / 74.89 lbs		
Capacity 25°C	10 hour rate (11.5A)	115 AH	
	5 hour rate (22A)	110 AH	
	2 hour rate (44A)	88 AH	
Internal Resistance	Fully charged Battery (25°C)	=<6.5mΩ	
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	M8	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 20A 14.7V (25°C)	
	Float	13.7V (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)

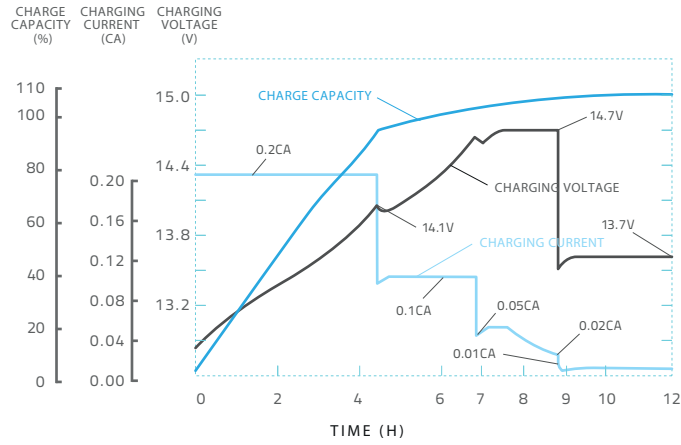
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	310	198	130	98.3	67.8	45.4	34.5	27.5	23.0	21.0	15.8	12.0	10.6	6.61	5.33
1.67V	267	179	121	93.1	67.0	44.8	33.7	26.9	22.5	20.1	15.2	11.8	10.4	6.50	5.33
1.70V	255	174	117	92.0	66.4	44.2	33.3	26.3	22.2	19.3	14.8	11.7	10.3	6.44	5.31
1.75V	232	163	112	88.4	65.9	43.7	32.9	25.8	21.8	18.5	14.3	11.6	10.2	6.33	5.30
1.80V	205	149	108	85.2	65.5	43.1	32.2	25.4	21.3	18.5	14.0	11.5	10.0	6.21	5.28
1.83V	179	136	100	79.2	63.8	42.5	31.4	24.3	20.9	17.8	13.5	11.1	9.60	6.15	5.13
1.85V	153	123	92.0	73.2	62.1	41.9	30.2	23.4	20.4	17.2	13.1	10.8	9.33	6.10	4.98

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

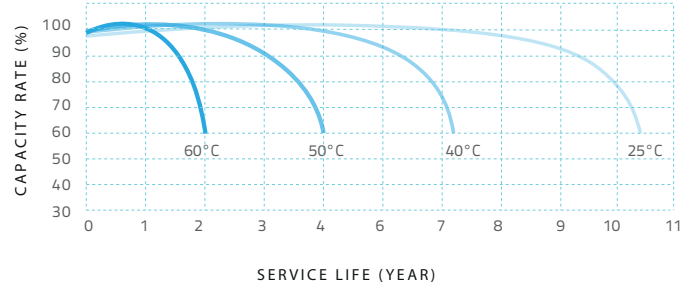
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	512	345	236	180	125	91.1	64.1	51.6	43.9	38.6	29.2	23.8	19.9	12.4	10.4
1.67V	458	321	221	172	125	88.2	64.0	51.4	43.0	38.1	28.6	23.2	19.9	12.4	10.4
1.70V	443	313	215	170	124	85.9	62.4	51.0	42.4	37.9	28.5	23.0	19.9	12.4	10.4
1.75V	409	294	208	165	124	83.1	61.5	50.2	42.1	37.3	27.9	22.8	19.9	12.4	10.3
1.80V	370	271	200	160	124	80.3	60.9	49.3	41.5	36.7	27.5	22.5	19.3	12.2	10.3
1.83V	327	251	187	149	123	77.3	60.5	47.7	41.2	35.7	26.5	22.0	18.9	12.2	10.1
1.85V	284	231	174	139	123	74.4	60.0	46.0	40.6	34.7	25.6	21.4	18.4	12.1	9.81

CHARGE CHARACTERISTIC 77°F (25°C)

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

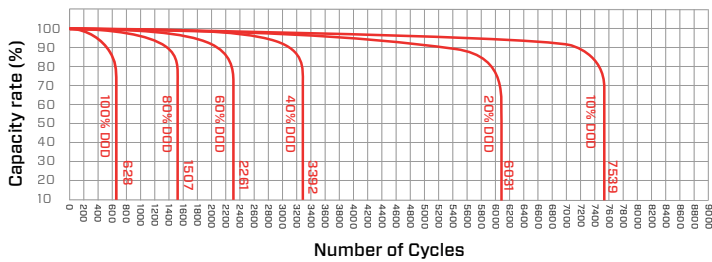


TEMPERATURE AND FLOAT SERVICE LIFE

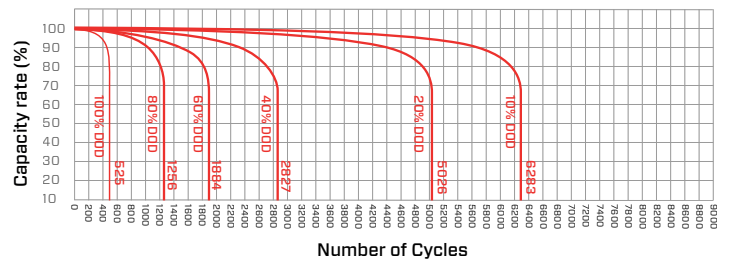


CYCLE LIFE CURVE GRAPH

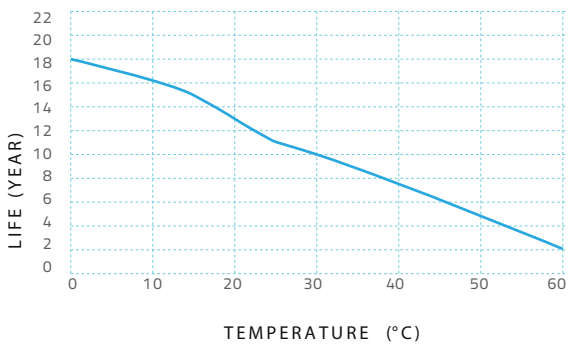
Cycle life curve graph (25°C) 12V



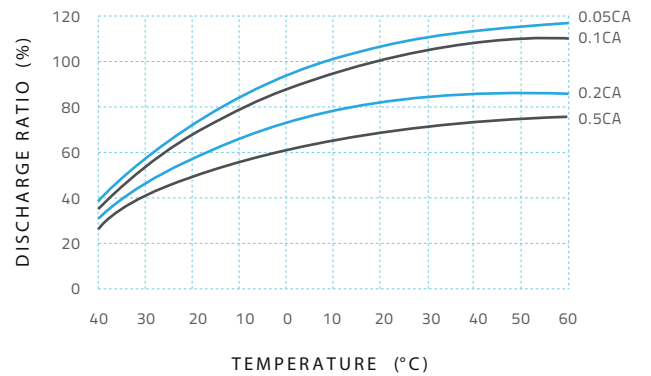
Cycle life curve graph (40°C) 12V



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 SiO₂ 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).

