

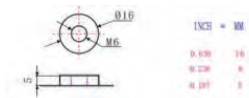
the power of tomorrow

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

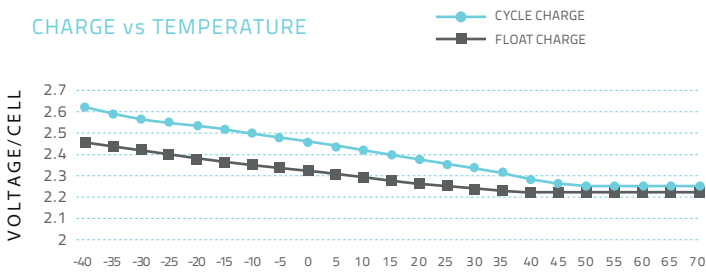
Betta Batteries



SPECIFICATION

Nominal Voltage	12V		
Rated Capacity (3 hour rate)	40 AH		
Dimension	Total Height (top of terminal)	175 mm	6.88"
	Height	175 mm	6.88"
	Length	222 mm	8.74"
	Width	120 mm	4.72"
Weight	Approximately 12.5 kg / 27.55 lbs		
Capacity 25°C	10 hour rate (4.5A)	45 AH	
	5 hour rate (8.5A)	42.5 AH	
	2 hour rate (16A)	32 AH	
Internal Resistance	Fully charged Battery (25°C)	≈<9.0mΩ	
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	400A (5S)		
Terminal	Standard	F3	
	Optional		
Charging (Constant Voltage)	Cycle	Initial Charging Current 8A or small 14.6V~14.7V (25°C)	
	Float	13.6V~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	2.61	2.59	2.57	2.55	2.53	2.51	2.49	2.47	2.45	2.43	2.41	2.39	2.37	2.35	2.33	2.31	2.29	2.27	2.25	2.25	2.25	2.25	2.25
Float Charge	2.45	2.43	2.42	2.40	2.39	2.37	2.36	2.34	2.33	2.31	2.30	2.28	2.27	2.25	2.24	2.22	2.21	2.21	2.21	2.21	2.21	2.21	2.21

CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES (25°C)

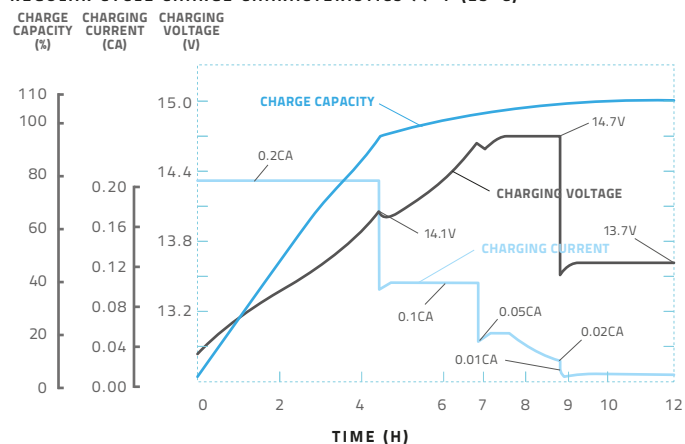
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	121	77.6	51.1	38.5	26.6	16.6	13.5	10.7	9.00	8.21	6.19	4.73	3.98	2.49	2.09
1.67V	104	70.3	47.4	36.5	26.2	16.4	13.2	10.5	8.78	7.88	5.96	4.64	3.98	2.49	2.09
1.70V	100	68.2	45.9	36.0	26.0	16.2	13.1	10.2	8.66	7.54	5.79	4.59	3.98	2.48	2.08
1.75V	90.9	63.8	44.1	34.6	25.8	16.0	12.9	10.1	8.48	7.26	5.63	4.55	3.95	2.48	2.07
1.80V	80.4	58.5	42.4	33.3	25.7	15.8	12.6	9.95	8.33	7.20	5.49	4.50	3.86	2.48	2.07
1.83V	70.2	53.4	39.2	31.0	25.0	15.5	12.3	9.54	8.16	6.98	5.31	4.37	3.76	2.47	2.01
1.85V	60.0	48.4	36.0	28.7	24.3	15.3	11.8	9.18	7.99	6.75	5.13	4.24	3.65	2.46	1.95

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

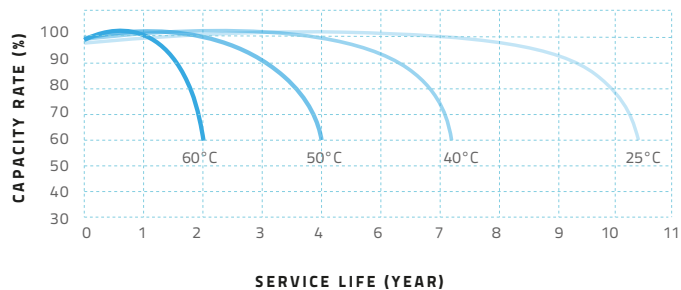
End Voltage per cell	5min	15min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	200	135	92.5	70.6	49.1	33.2	25.1	20.3	17.3	15.2	11.5	9.35	7.83	4.86	4.08
1.67V	179	125	86.3	67.0	49.0	32.2	25.0	20.2	16.7	15.0	11.2	9.13	7.83	4.86	4.08
1.70V	173	122	84.0	66.5	48.8	31.4	24.4	20.1	16.4	14.9	11.2	9.04	7.83	4.86	4.07
1.75V	159	115	81.2	64.4	48.7	30.3	24.0	19.8	16.0	14.7	11.0	8.95	7.83	4.86	4.07
1.80V	145	106	78.5	62.7	48.5	29.3	23.8	19.4	15.6	14.4	10.8	8.87	7.60	4.81	4.06
1.83V	127	98.0	73.4	58.7	48.3	28.3	23.6	18.8	15.1	14.0	10.4	8.64	7.42	4.81	3.96
1.85V	110	90.2	68.2	54.7	48.2	27.1	23.5	18.1	14.5	13.6	10.1	8.42	7.24	4.77	3.86

CHARGE CHARACTERISTIC 77°F (25°C)

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

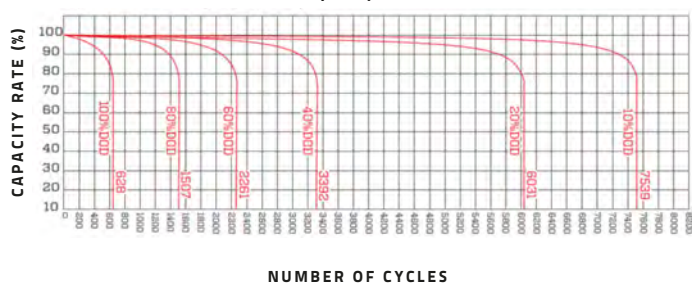


TEMPERATURE AND FLOAT SERVICE LIFE

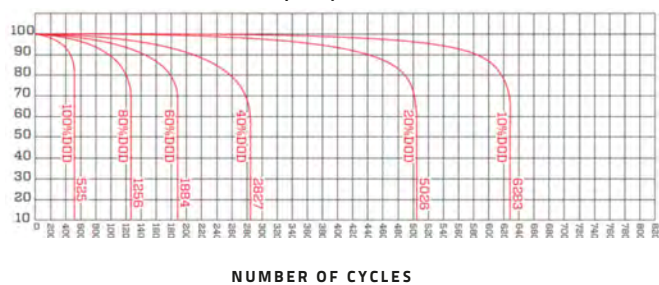


CYCLE LIFE CURVE GRAPH

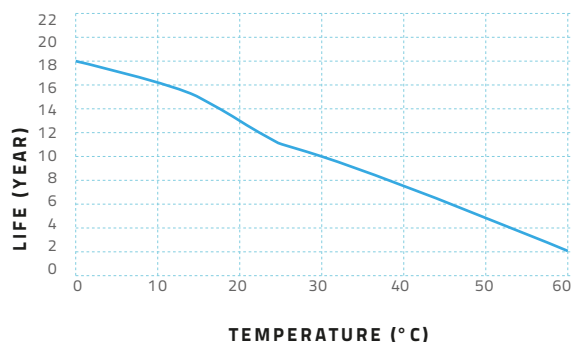
CYCLE LIFE CURVE GRAPH (25°C)



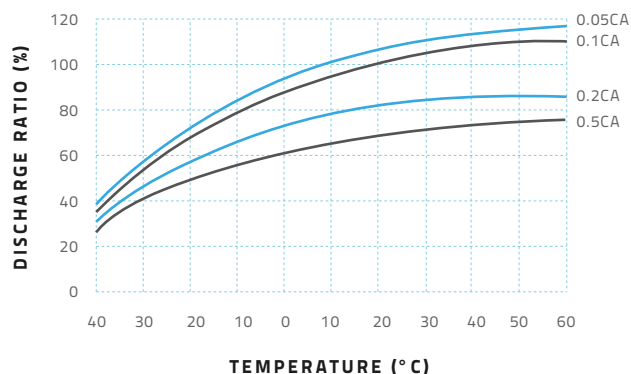
CYCLE LIFE CURVE GRAPH (40°C)



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).

