

CB12-26GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

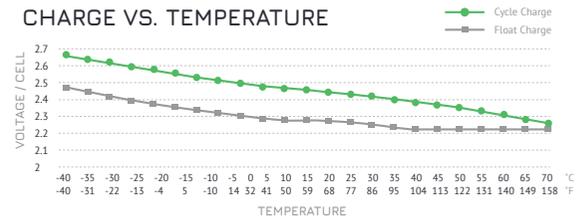
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	26Ah
WEIGHT	~ 7.8 kg / 17.2 lbs
DIMENSIONS	Height: 125 mm (4.9") Length: 175 mm (6.9") Width: 166 mm (6.5")
CAPACITY 25 °C (77 °F)	120 hour rate (250mA) - 30Ah 20 hour rate (1.45A) - 29Ah 10 hour rate (2.6A) - 26Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	260 A (5s)
TERMINAL	M5 (10)
(CHARGING) CYCLE	Initial Charging Current 7.8A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-26GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

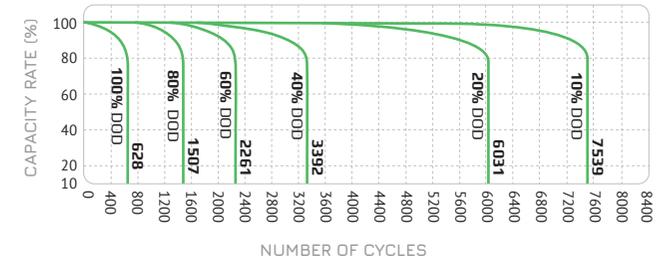
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	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

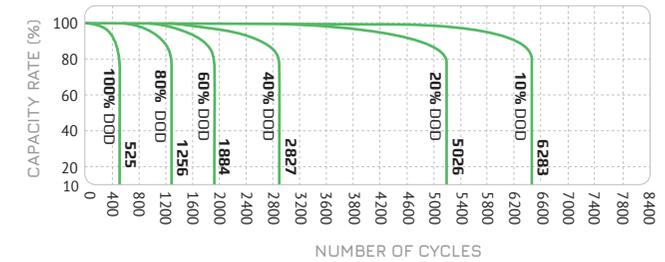
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	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

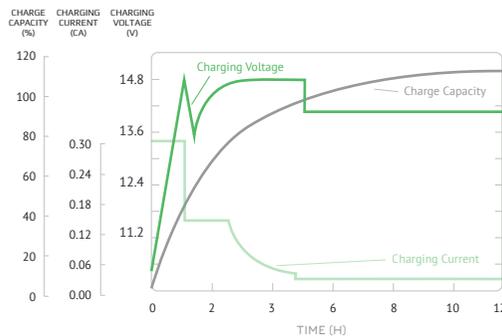
CYCLE LIFE CURVE GRAPH 25°C (77°F).



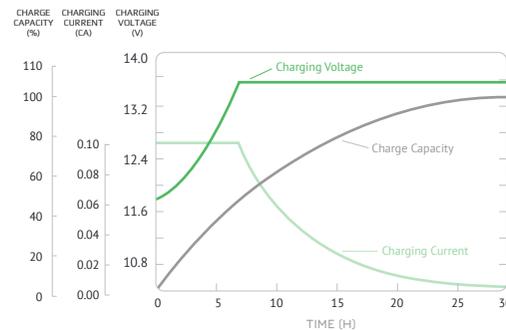
CYCLE LIFE CURVE GRAPH 40°C (104°F).



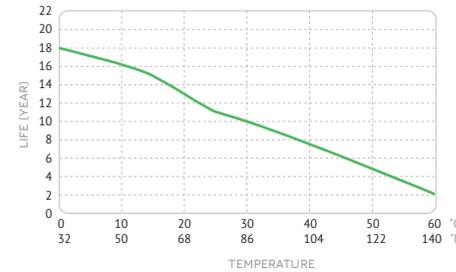
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



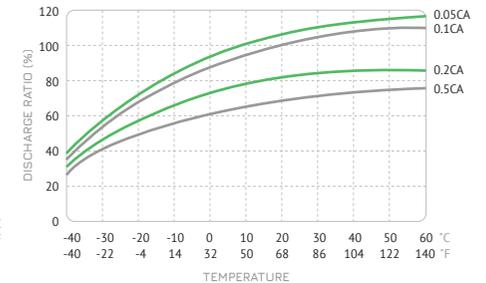
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-24GS

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TECHNICAL SPECIFICATIONS



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FULL RECOVERY

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THE SAFEST

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UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

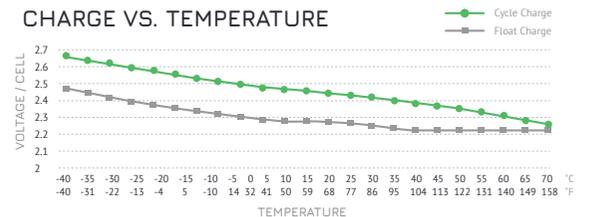
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	24Ah
WEIGHT	~ 7.8 kg / 17.2 lbs
DIMENSIONS	Height: 125 mm (4.9") Length: 175 mm (6.9") Width: 166 mm (6.5")
CAPACITY 25 °C (77 °F)	120 hour rate (240mA) - 28.8Ah 20 hour rate (1.35A) - 27Ah 10 hour rate (2.4A) - 24Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	240 A (5s)
TERMINAL	M5 (10)
(CHARGING) CYCLE	Initial Charging Current 7.2A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-24GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

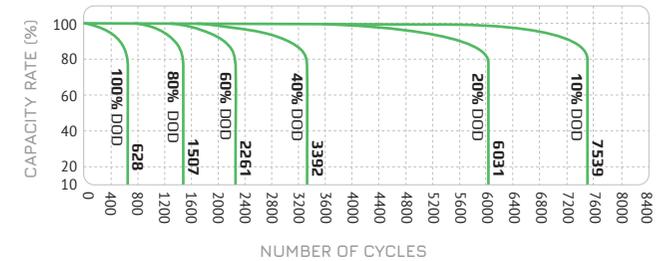
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	88.07	46.61	28.16	20.53	16.54	9.47	6.88	5.40	4.60	3.91	2.98	2.48	2.08	1.36	1.11
1.67V	81.85	45.08	27.74	20.39	16.51	9.43	6.76	5.37	4.54	3.88	2.98	2.46	2.08	1.35	1.10
1.70V	81.01	44.39	27.47	20.12	16.37	9.35	6.71	5.34	4.47	3.84	2.97	2.46	2.07	1.35	1.10
1.75V	74.22	43.00	27.19	19.98	16.09	9.17	6.69	5.27	4.43	3.82	2.95	2.43	2.06	1.34	1.10
1.80V	66.59	40.22	26.08	19.42	15.68	9.03	6.66	5.26	4.37	3.77	2.94	2.40	2.05	1.30	1.10
1.83V	63.65	36.90	25.67	18.73	14.98	8.95	6.40	5.04	4.27	3.63	2.88	2.30	1.97	1.28	1.08
1.85V	59.64	35.79	24.00	18.04	14.57	8.59	6.23	4.97	4.16	3.51	2.84	2.28	1.94	1.27	1.08

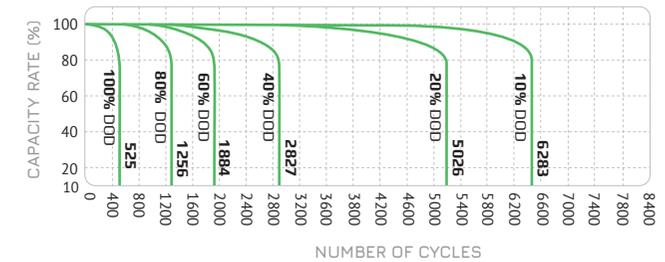
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	147.17	81.84	52.71	38.42	30.91	17.89	13.08	10.36	8.75	7.52	5.80	4.80	4.04	2.69	2.21
1.67V	140.10	80.59	50.58	38.15	30.93	17.89	12.91	10.35	8.75	7.50	5.80	4.79	4.04	2.69	2.21
1.70V	139.26	80.03	50.55	38.15	30.65	17.75	12.89	10.31	8.61	7.45	5.76	4.74	3.99	2.68	2.21
1.75V	129.69	79.06	50.61	38.14	30.52	17.62	12.86	10.29	8.59	7.39	5.73	4.71	3.99	2.68	2.19
1.80V	119.01	75.04	49.52	37.45	30.38	17.62	12.84	10.26	8.53	7.39	5.71	4.69	3.99	2.61	2.19
1.83V	114.85	68.94	49.10	36.34	29.13	17.48	12.48	9.92	8.43	7.16	5.71	4.55	3.93	2.58	2.18
1.85V	106.39	67.41	45.64	34.96	28.30	17.06	12.14	9.79	8.20	7.02	5.49	4.51	3.86	2.55	2.16

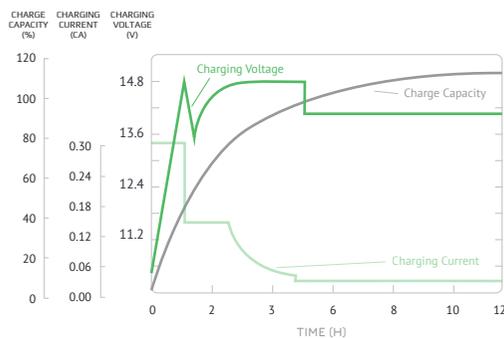
CYCLE LIFE CURVE GRAPH 25°C (77°F).



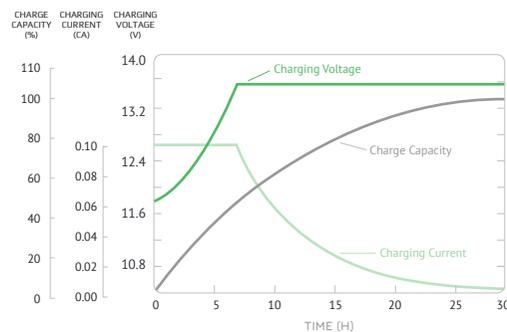
CYCLE LIFE CURVE GRAPH 40°C (104°F).



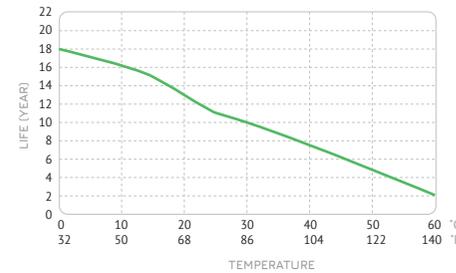
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



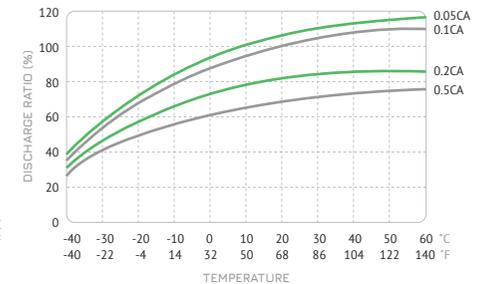
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-22GS

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A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

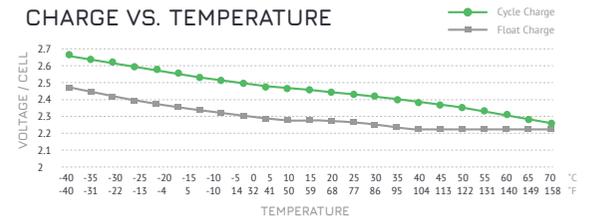
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	22Ah
WEIGHT	~ 6.9 kg / 15.2 lbs
DIMENSIONS	Height: 170 mm (6.7") Length: 181 mm (7.1") Width: 76 mm (3")
CAPACITY 25 °C (77 °F)	120 hour rate (220mA)- 26.4Ah 20 hour rate (1.2A) - 24Ah 10 hour rate (2.2A) - 22Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 10mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	220 A (5s)
TERMINAL	M5 (10)
(CHARGING) CYCLE	Initial Charging Current 6.6A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-22GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

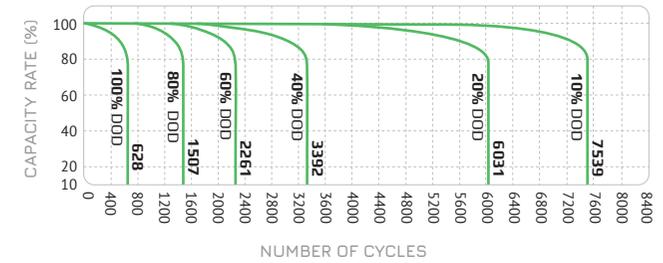
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	80.73	42.72	25.81	18.82	15.16	8.68	6.31	4.95	4.22	3.59	2.73	2.28	1.91	1.24	1.02
1.67V	75.03	41.32	25.43	18.69	15.13	8.65	6.19	4.92	4.16	3.56	2.73	2.25	1.91	1.24	1.01
1.70V	74.26	40.69	25.18	18.44	15.01	8.57	6.15	4.90	4.09	3.52	2.72	2.25	1.90	1.24	1.01
1.75V	68.03	39.42	24.93	18.31	14.75	8.41	6.13	4.83	4.06	3.50	2.71	2.23	1.89	1.23	1.01
1.80V	61.04	36.87	23.91	17.80	14.37	8.28	6.10	4.82	4.01	3.46	2.70	2.20	1.88	1.19	1.01
1.83V	58.34	33.83	23.53	17.17	13.73	8.20	5.86	4.62	3.92	3.33	2.64	2.11	1.81	1.18	0.99
1.85V	54.67	32.81	22.00	16.53	13.35	7.87	5.71	4.55	3.82	3.22	2.61	2.09	1.78	1.16	0.99

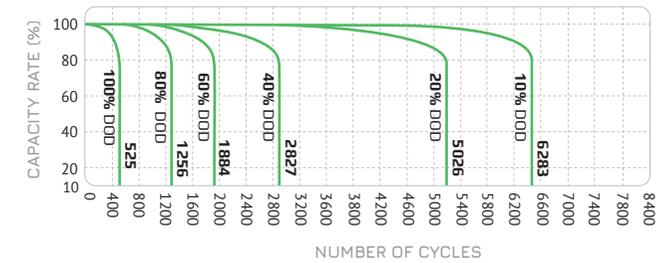
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	134.90	75.02	48.32	35.22	28.33	16.40	11.99	9.50	8.02	6.89	5.31	4.40	3.70	2.47	2.02
1.67V	128.42	73.87	46.36	34.97	28.35	16.40	11.84	9.49	8.02	6.88	5.31	4.39	3.70	2.47	2.02
1.70V	127.66	73.37	46.34	34.97	28.10	16.28	11.81	9.45	7.90	6.83	5.28	4.35	3.66	2.45	2.02
1.75V	118.88	72.47	46.39	34.97	27.97	16.15	11.79	9.43	7.87	6.78	5.25	4.32	3.66	2.45	2.01
1.80V	109.10	68.79	45.39	34.33	27.85	16.15	11.77	9.41	7.82	6.78	5.24	4.30	3.66	2.39	2.01
1.83V	105.28	63.19	45.01	33.31	26.70	16.02	11.44	9.09	7.73	6.56	5.24	4.17	3.60	2.37	2.00
1.85V	97.52	61.79	41.83	32.04	25.94	15.64	11.13	8.98	7.51	6.43	5.04	4.13	3.53	2.34	1.98

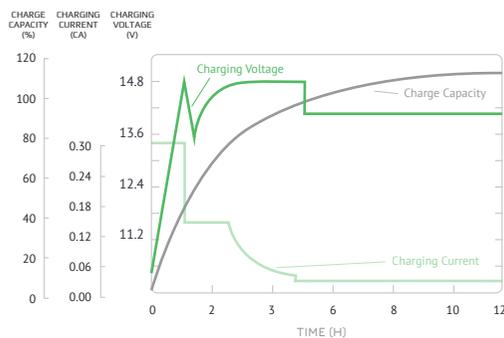
CYCLE LIFE CURVE GRAPH 25°C (77°F).



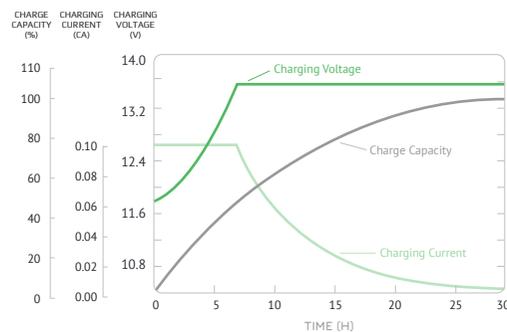
CYCLE LIFE CURVE GRAPH 40°C (104°F).



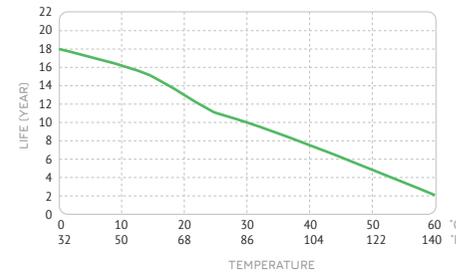
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



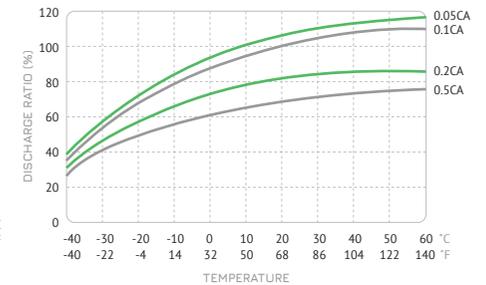
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-18GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

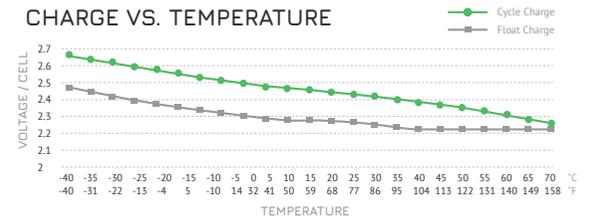
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	18Ah
WEIGHT	~ 5.9 kg / 13 lbs
DIMENSIONS	Height: 170 mm (6.7") Length: 181 mm (7.1") Width: 76 mm (3")
CAPACITY 25 °C (77 °F)	120 hour rate (120mA) - 14.4Ah 20 hour rate (1A) - 20Ah 10 hour rate (1.8A) - 18Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 12mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	180 A (5s)
TERMINAL	M5 (10)
(CHARGING) CYCLE	Initial Charging Current 5.4A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-18GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

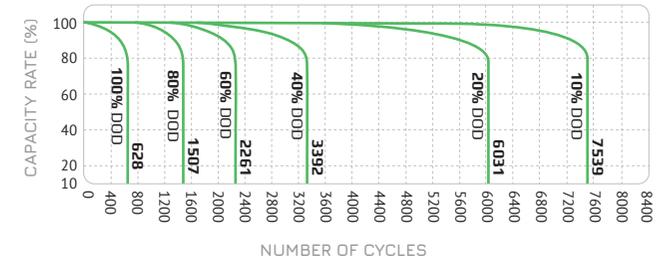
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	66.05	34.96	21.12	15.40	12.40	7.11	5.16	4.05	3.45	2.93	2.24	1.86	1.56	1.02	0.83
1.67V	61.39	33.81	20.81	15.29	12.38	7.08	5.07	4.03	3.40	2.91	2.23	1.84	1.56	1.01	0.83
1.70V	60.76	33.29	20.60	15.09	12.28	7.01	5.04	4.01	3.35	2.88	2.23	1.84	1.56	1.01	0.83
1.75V	55.66	32.25	20.39	14.98	12.07	6.88	5.01	3.96	3.32	2.86	2.22	1.82	1.55	1.01	0.83
1.80V	49.94	30.17	19.56	14.57	11.76	6.77	4.99	3.94	3.28	2.83	2.21	1.80	1.54	0.97	0.82
1.83V	47.74	27.68	19.25	14.05	11.24	6.71	4.80	3.78	3.20	2.73	2.16	1.73	1.48	0.96	0.81
1.85V	44.73	26.84	18.00	13.53	10.92	6.44	4.67	3.72	3.12	2.64	2.13	1.71	1.46	0.95	0.81

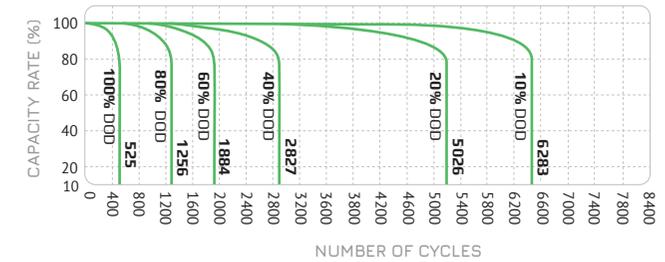
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	110.38	61.38	39.53	28.82	23.18	13.42	9.81	7.77	6.56	5.64	4.35	3.60	3.03	2.02	1.65
1.67V	105.07	60.44	37.93	28.61	23.20	13.42	9.69	7.76	6.56	5.63	4.35	3.59	3.03	2.02	1.65
1.70V	104.45	60.03	37.92	28.61	22.99	13.32	9.66	7.73	6.46	5.59	4.32	3.56	3.00	2.01	1.65
1.75V	97.27	59.30	37.96	28.61	22.89	13.21	9.64	7.72	6.44	5.54	4.30	3.53	3.00	2.01	1.64
1.80V	89.26	56.28	37.14	28.09	22.78	13.21	9.63	7.70	6.40	5.54	4.29	3.52	3.00	1.96	1.64
1.83V	86.14	51.70	36.83	27.26	21.85	13.11	9.36	7.44	6.33	5.37	4.29	3.41	2.94	1.94	1.63
1.85V	79.79	50.56	34.23	26.22	21.22	12.80	9.10	7.34	6.15	5.26	4.12	3.38	2.89	1.91	1.62

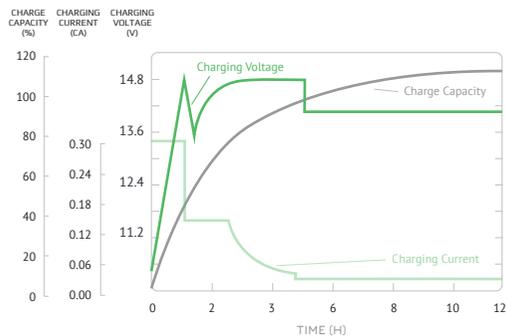
CYCLE LIFE CURVE GRAPH 25°C (77°F).



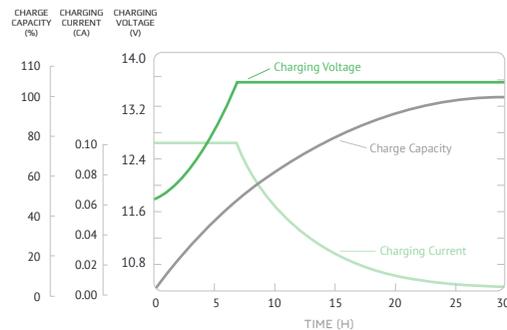
CYCLE LIFE CURVE GRAPH 40°C (104°F).



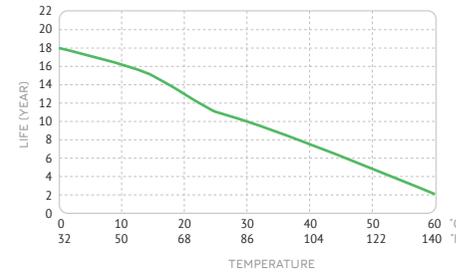
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



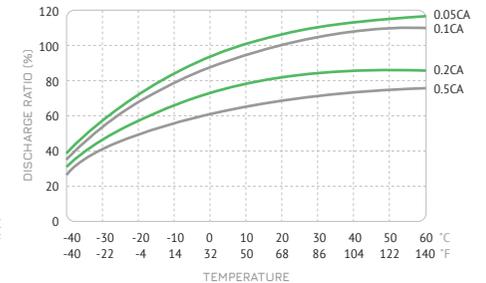
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-200GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

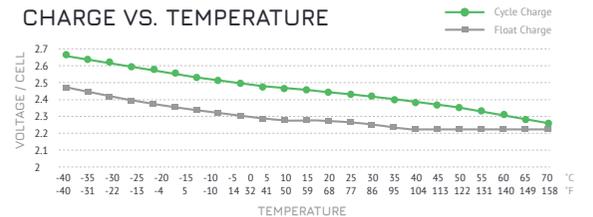
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	200Ah
WEIGHT	~ 62 kg / 136.7 lbs
DIMENSIONS	Height: 224 mm (8.8") Length: 522 mm (20.6") Width: 240 mm (9.5")
CAPACITY 25 °C (77 °F)	120 hour rate (2.0A) - 240Ah 20 hour rate (11A) - 220Ah 10 hour rate (20A) - 200Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 3.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	2000 A (5s)
TERMINAL	M8 (20)
(CHARGING) CYCLE	Initial Charging Current 60A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-200GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

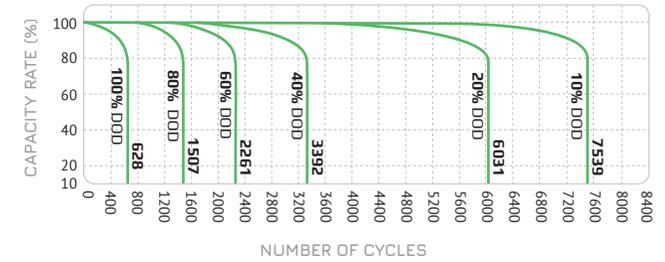
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	733.92	388.40	234.68	171.09	137.80	78.95	57.34	44.97	38.36	32.60	24.86	20.69	17.37	11.31	9.24
1.67V	682.08	375.68	231.20	169.92	137.56	78.61	56.30	44.74	37.80	32.37	24.82	20.46	17.34	11.27	9.20
1.70V	675.12	369.92	228.88	167.63	136.42	77.92	55.95	44.51	37.22	32.02	24.74	20.46	17.28	11.24	9.19
1.75V	618.48	358.32	226.60	166.48	134.10	76.42	55.72	43.95	36.88	31.79	24.62	20.23	17.20	11.19	9.18
1.80V	554.88	335.20	217.32	161.84	130.64	75.26	55.49	43.82	36.42	31.45	24.51	20.00	17.11	10.81	9.16
1.83V	530.40	307.52	213.88	156.08	124.86	74.57	53.29	41.97	35.61	30.29	23.99	19.19	16.42	10.69	9.04
1.85V	497.04	298.24	200.00	150.29	121.38	71.56	51.91	41.39	34.68	29.29	23.70	18.96	16.18	10.58	8.96

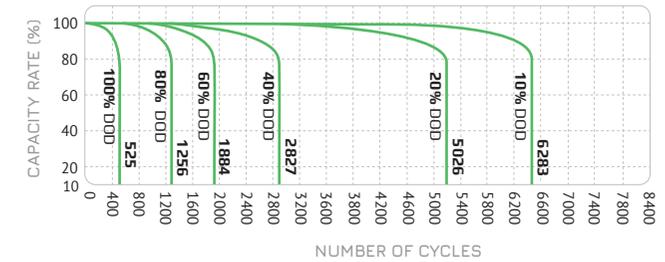
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	1226.39	681.99	439.25	320.19	257.57	149.11	109.00	86.35	72.94	62.65	48.32	40.00	33.64	22.43	18.38
1.67V	1167.46	671.58	421.49	317.88	257.77	149.11	107.62	86.23	72.94	62.54	48.32	39.88	33.64	22.42	18.38
1.70V	1160.52	666.96	421.28	317.88	255.44	147.96	107.38	85.91	71.78	62.07	47.97	39.53	33.29	22.31	18.38
1.75V	1080.77	658.86	421.75	317.87	254.30	146.80	107.16	85.77	71.55	61.61	47.74	39.27	33.29	22.31	18.26
1.80V	991.78	625.34	412.66	312.09	253.15	146.80	107.04	85.54	71.09	61.61	47.62	39.07	33.29	21.73	18.26
1.83V	957.09	574.49	409.20	302.85	242.74	145.65	104.03	82.65	70.28	59.65	47.62	37.91	32.71	21.50	18.15
1.85V	886.58	561.76	380.29	291.31	235.81	142.18	101.14	81.61	68.31	58.49	45.78	37.57	32.13	21.27	18.03

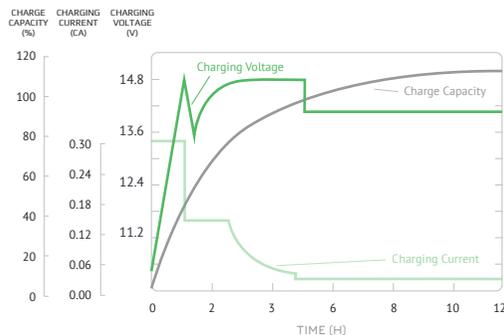
CYCLE LIFE CURVE GRAPH 25°C (77°F).



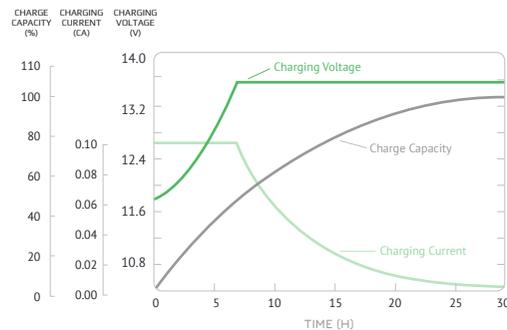
CYCLE LIFE CURVE GRAPH 40°C (104°F).



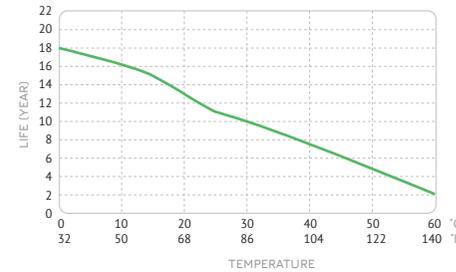
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



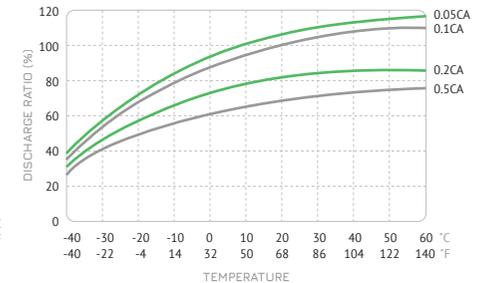
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-180GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE



Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO₂ electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS

SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	180Ah
WEIGHT	~ 59 kg / 130.1 lbs
DIMENSIONS	Height: 224 mm (8.8") Length: 522 mm (20.6") Width: 240 mm (9.5")
CAPACITY 25 °C (77 °F)	120 hour rate (1.8A) - 216Ah 20 hour rate (9.5A) - 190Ah 10 hour rate (18A) - 180Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25 °C (77 °F)	< 3mΩ
SELF DISCHARGE 25 °C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	1800 A (5s)
TERMINAL	M8 (20)
(CHARGING) CYCLE	Initial Charging Current 54A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

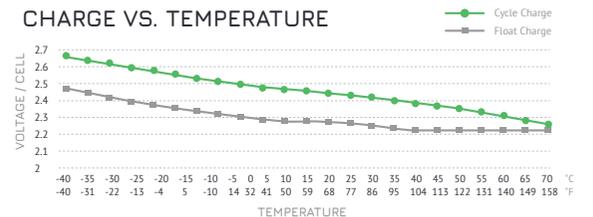
Extreme temperature resistance. Operates from -40 °C (40 °F) to +65 °C (149 °F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25 °C (50% DoD).

CHARGE VS. TEMPERATURE



DATASHEET - CB12-180GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

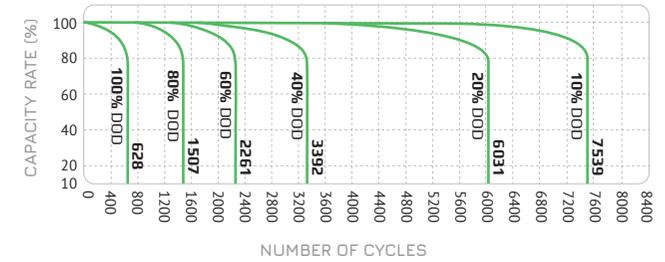
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	660.53	349.56	211.21	153.98	124.02	71.06	51.61	40.47	34.52	29.34	22.37	18.62	15.63	10.18	8.31
1.67V	613.87	338.11	208.08	152.93	123.80	70.75	50.67	40.27	34.02	29.13	22.34	18.42	15.61	10.14	8.28
1.70V	607.61	332.93	205.99	150.86	122.78	70.13	50.36	40.05	33.50	28.82	22.27	18.42	15.56	10.11	8.27
1.75V	556.63	322.49	203.94	149.83	120.69	68.77	50.15	39.55	33.19	28.61	22.16	18.21	15.48	10.07	8.26
1.80V	499.39	301.68	195.59	145.66	117.57	67.73	49.94	39.43	32.77	28.30	22.06	18.00	15.40	9.73	8.24
1.83V	477.36	276.77	192.49	140.47	112.37	67.11	47.96	37.77	32.05	27.26	21.59	17.27	14.77	9.62	8.13
1.85V	447.34	268.42	180.00	135.26	109.24	64.40	46.72	37.25	31.22	26.36	21.33	17.06	14.57	9.52	8.06

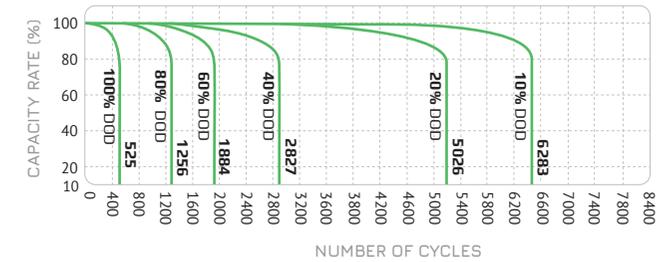
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	1103.75	613.79	395.32	288.17	231.82	134.20	98.10	77.71	65.64	56.39	43.49	36.00	30.27	20.18	16.54
1.67V	1050.71	604.42	379.34	286.09	231.99	134.20	96.85	77.61	65.64	56.28	43.49	35.89	30.27	20.18	16.54
1.70V	1044.47	600.26	379.16	286.09	229.90	133.16	96.65	77.32	64.60	55.87	43.17	35.58	29.96	20.08	16.54
1.75V	972.69	592.97	379.58	286.09	228.87	132.12	96.44	77.19	64.40	55.45	42.96	35.34	29.96	20.08	16.44
1.80V	892.61	562.80	371.39	280.88	227.83	132.12	96.33	76.98	63.98	55.45	42.86	35.16	29.96	19.56	16.44
1.83V	861.38	517.04	368.28	272.56	218.47	131.08	93.63	74.38	63.25	53.68	42.86	34.12	29.44	19.35	16.33
1.85V	797.92	505.59	342.26	262.18	212.23	127.96	91.03	73.45	61.48	52.64	41.20	33.81	28.92	19.14	16.23

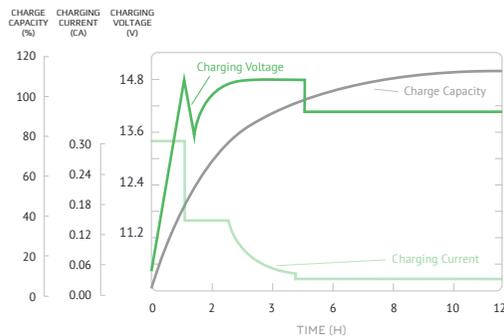
CYCLE LIFE CURVE GRAPH 25°C (77°F).



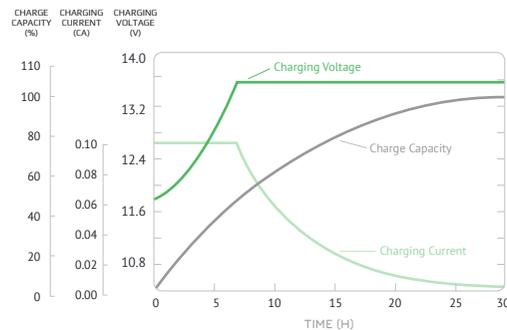
CYCLE LIFE CURVE GRAPH 40°C (104°F).



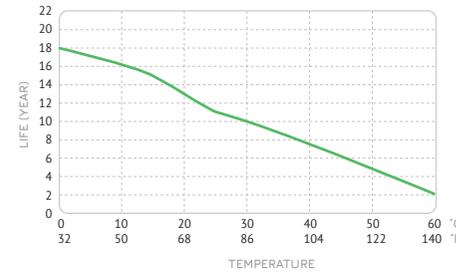
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



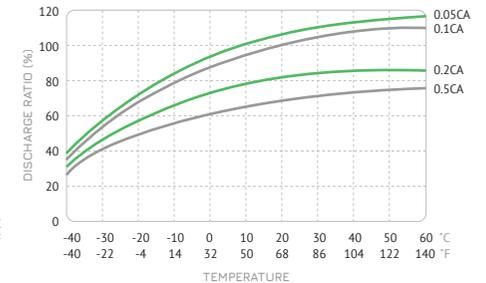
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-150GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE



Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO₂ electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS

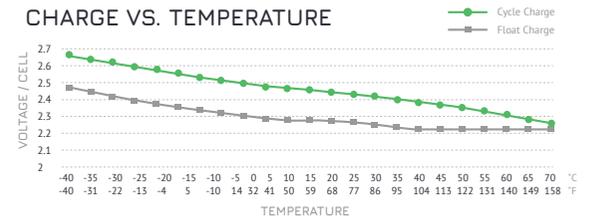
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	150Ah
WEIGHT	~ 46.5 kg / 102.5 lbs
DIMENSIONS	Height: 241 mm (9.5") Length: 484 mm (19.1") Width: 170 mm (6.7")
CAPACITY 25 °C (77 °F)	120 hour rate (1.5A) - 180Ah 20 hour rate (8.1A) - 162Ah 10 hour rate (15A) - 150Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25 °C (77 °F)	< 4mΩ
SELF DISCHARGE 25 °C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	1500 A (5s)
TERMINAL	M8 (20)
(CHARGING) CYCLE	Initial Charging Current 45A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40 °C (40 °F) to +65 °C (149 °F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25 °C (50% DoD).

DATASHEET - CB12-150GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

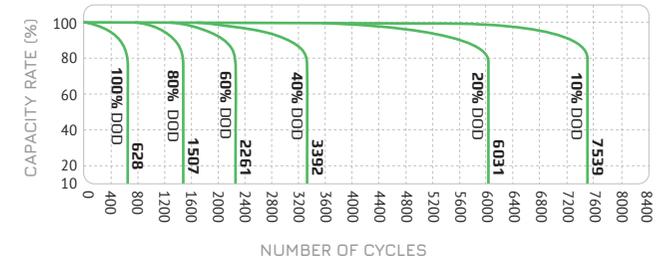
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	550.44	291.30	176.01	128.32	103.35	59.21	43.01	33.73	28.77	24.45	18.64	15.52	13.03	8.48	6.93
1.67V	511.56	281.76	173.40	127.44	103.17	58.96	42.23	33.56	28.35	24.28	18.62	15.35	13.01	8.45	6.90
1.70V	506.34	277.44	171.66	125.72	102.32	58.44	41.97	33.38	27.92	24.02	18.55	15.35	12.96	8.43	6.89
1.75V	463.86	268.74	169.95	124.86	100.58	57.31	41.79	32.96	27.66	23.84	18.47	15.17	12.90	8.39	6.88
1.80V	416.16	251.40	162.99	121.38	97.98	56.45	41.62	32.86	27.31	23.58	18.38	15.00	12.83	8.11	6.87
1.83V	397.80	230.64	160.41	117.06	93.65	55.92	39.97	31.47	26.71	22.72	17.99	14.39	12.31	8.02	6.78
1.85V	372.78	223.68	150.00	112.72	91.04	53.67	38.93	31.04	26.01	21.97	17.78	14.22	12.14	7.93	6.72

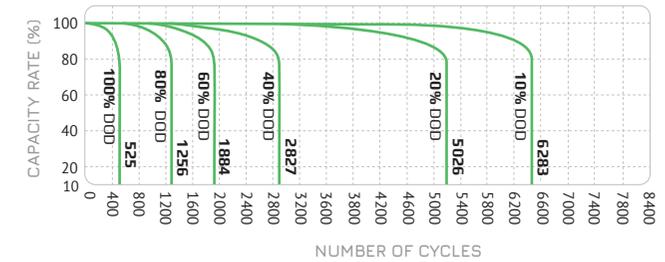
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	919.79	511.49	329.44	240.14	193.18	111.83	81.75	64.76	54.70	46.99	36.24	30.00	25.23	16.82	13.78
1.67V	875.59	503.69	316.12	238.41	193.33	111.83	80.71	64.67	54.70	46.90	36.24	29.91	25.23	16.82	13.78
1.70V	870.39	500.22	315.96	238.41	191.58	110.97	80.54	64.43	53.84	46.55	35.98	29.65	24.97	16.73	13.78
1.75V	810.58	494.15	316.31	238.41	190.73	110.10	80.37	64.33	53.66	46.21	35.80	29.45	24.97	16.73	13.70
1.80V	743.84	469.00	309.49	234.07	189.86	110.10	80.28	64.15	53.32	46.21	35.72	29.30	24.97	16.30	13.70
1.83V	717.82	430.86	306.90	227.14	182.06	109.23	78.02	61.99	52.71	44.73	35.72	28.44	24.53	16.13	13.61
1.85V	664.93	421.32	285.22	218.48	176.86	106.63	75.86	61.21	51.24	43.87	34.33	28.18	24.10	15.95	13.52

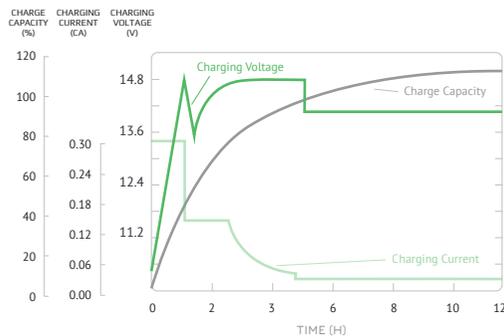
CYCLE LIFE CURVE GRAPH 25°C (77°F).



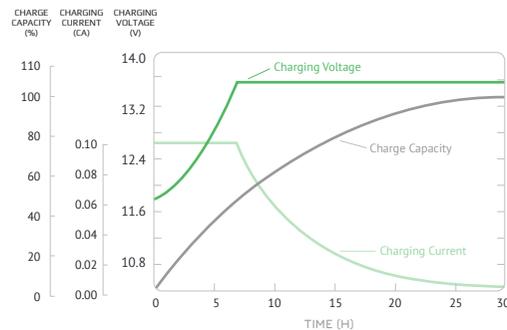
CYCLE LIFE CURVE GRAPH 40°C (104°F).



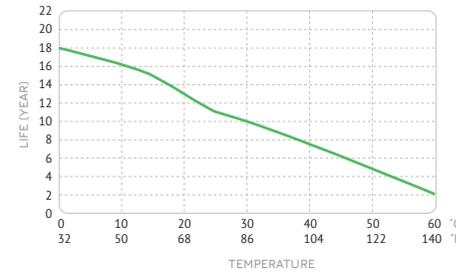
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



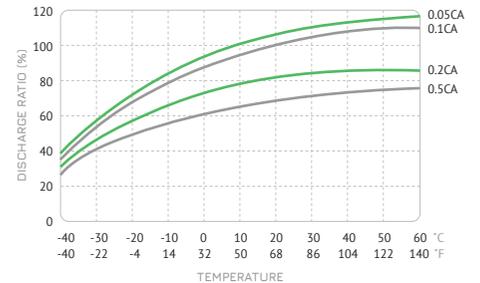
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



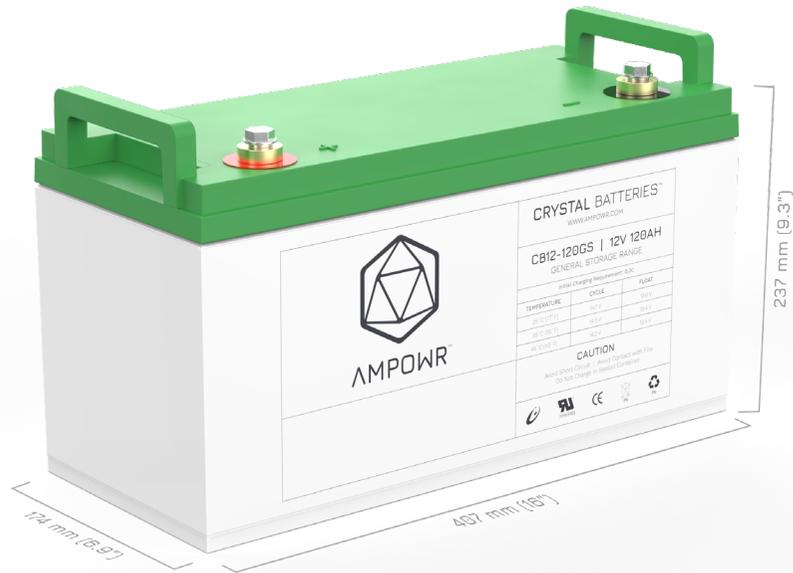
CB12-120GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

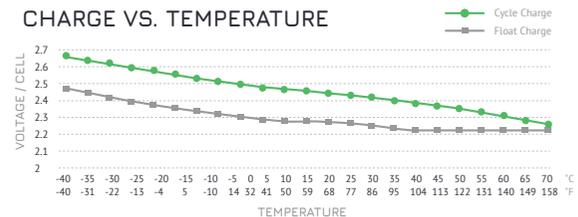
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	120Ah
WEIGHT	~ 36.5 kg / 80.5 lbs
DIMENSIONS	Height: 237 mm (9.3") Length: 407 mm (16") Width: 174 mm (6.9")
CAPACITY 25 °C (77 °F)	120 hour rate (1.2A) - 144Ah 20 hour rate (6.6A) - 132Ah 10 hour rate (12A) - 120Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 6mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	1200 A (5s)
TERMINAL	M8 (20)
(CHARGING) CYCLE	Initial Charging Current 36A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-120GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

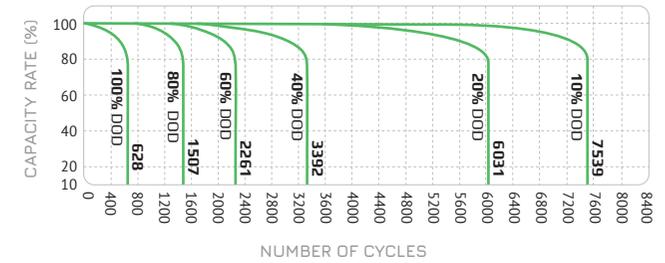
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	440.35	233.04	140.81	102.66	82.68	47.37	34.40	26.98	23.01	19.56	14.91	12.42	10.42	6.78	5.54
1.67V	409.25	225.41	138.72	101.95	82.54	47.17	33.78	26.84	22.68	19.42	14.89	12.28	10.40	6.76	5.52
1.70V	405.07	221.95	137.33	100.58	81.85	46.75	33.57	26.70	22.33	19.21	14.84	12.28	10.37	6.74	5.51
1.75V	371.09	214.99	135.96	99.89	80.46	45.85	33.43	26.37	22.13	19.08	14.77	12.14	10.32	6.71	5.51
1.80V	332.93	201.12	130.39	97.10	78.38	45.16	33.30	26.29	21.85	18.87	14.71	12.00	10.27	6.49	5.49
1.83V	318.24	184.51	128.33	93.65	74.92	44.74	31.98	25.18	21.36	18.17	14.39	11.51	9.85	6.42	5.42
1.85V	298.22	178.94	120.00	90.18	72.83	42.94	31.14	24.83	20.81	17.57	14.22	11.38	9.71	6.35	5.38

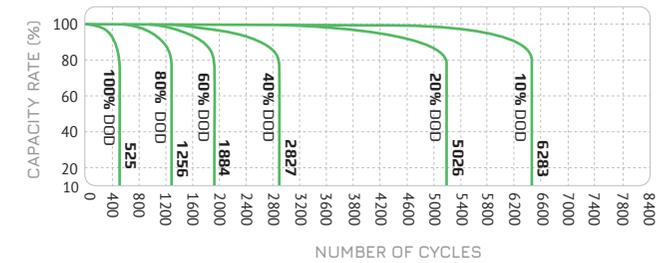
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	735.84	409.19	263.55	192.11	154.54	89.47	65.40	51.81	43.76	37.59	28.99	24.00	20.18	13.46	11.03
1.67V	700.48	402.95	252.89	190.73	154.66	89.47	64.57	51.74	43.76	37.52	28.99	23.93	20.18	13.45	11.03
1.70V	696.31	400.17	252.77	190.73	153.27	88.77	64.43	51.55	43.07	37.24	28.78	23.72	19.97	13.39	11.03
1.75V	648.46	395.32	253.05	190.72	152.58	88.08	64.29	51.46	42.93	36.97	28.64	23.56	19.97	13.39	10.96
1.80V	595.07	375.20	247.59	187.25	151.89	88.08	64.22	51.32	42.65	36.97	28.57	23.44	19.97	13.04	10.96
1.83V	574.25	344.69	245.52	181.71	145.65	87.39	62.42	49.59	42.17	35.79	28.57	22.75	19.63	12.90	10.89
1.85V	531.95	337.06	228.18	174.78	141.48	85.31	60.69	48.96	40.99	35.09	27.47	22.54	19.28	12.76	10.82

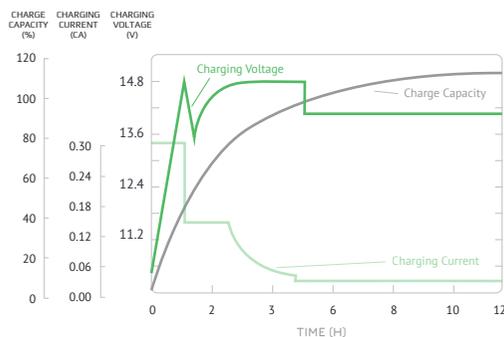
CYCLE LIFE CURVE GRAPH 25°C (77°F).



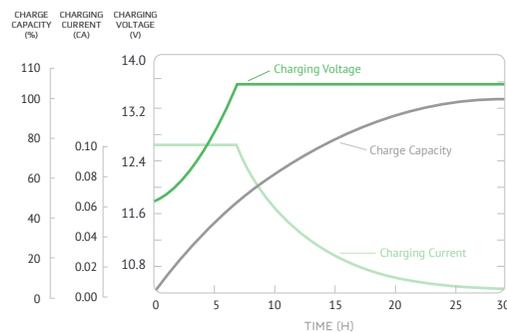
CYCLE LIFE CURVE GRAPH 40°C (104°F).



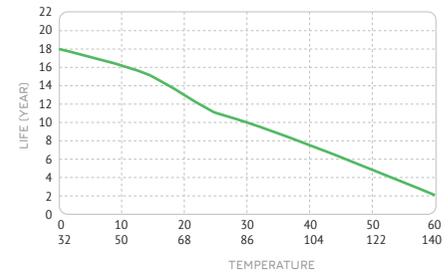
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



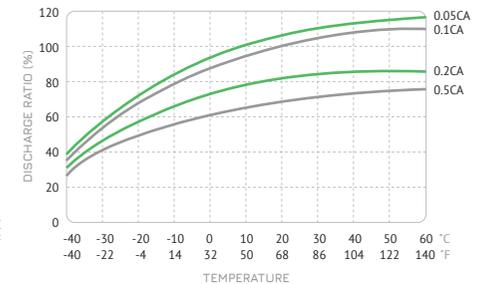
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



DATASHEET

CB12-100GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO₂ electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

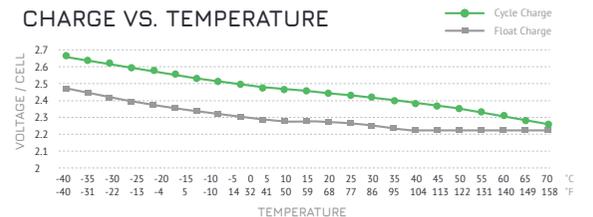
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	100Ah
WEIGHT	~ 31.5 kg / 69.5 lbs
DIMENSIONS	Height: 220 mm (8.7") Length: 327 mm (12.9") Width: 172 mm (6.8")
CAPACITY 25 °C (77 °F)	120 hour rate (1.2A) - 120Ah 20 hour rate (5.5A) - 110Ah 10 hour rate (10A) - 100Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 6mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	1000 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 30A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-100GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

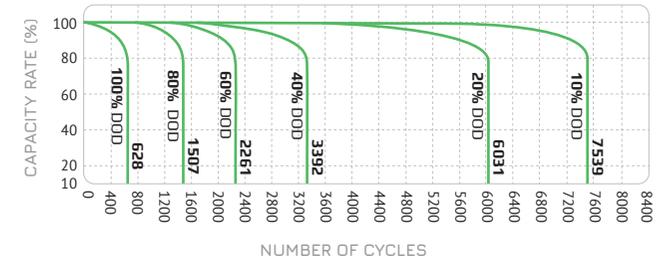
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	366.96	194.20	117.34	85.55	68.90	39.48	28.67	22.49	19.18	16.30	12.43	10.35	8.68	5.65	4.62
1.67V	341.04	187.84	115.60	84.96	68.78	39.31	28.15	22.37	18.90	16.19	12.41	10.23	8.67	5.64	4.60
1.70V	337.56	184.96	114.44	83.81	68.21	38.96	27.98	22.25	18.61	16.01	12.37	10.23	8.64	5.62	4.60
1.75V	309.24	179.16	113.30	83.24	67.05	38.21	27.86	21.97	18.44	15.90	12.31	10.12	8.60	5.60	4.59
1.80V	277.44	167.60	108.66	80.92	65.32	37.63	27.75	21.91	18.21	15.72	12.25	10.00	8.56	5.40	4.58
1.83V	265.20	153.76	106.94	78.04	62.43	37.28	26.65	20.98	17.80	15.14	11.99	9.60	8.21	5.35	4.52
1.85V	248.52	149.12	100.00	75.15	60.69	35.78	25.95	20.69	17.34	14.64	11.85	9.48	8.09	5.29	4.48

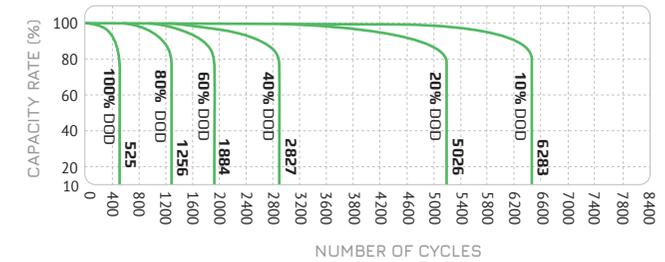
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	613.20	341.00	219.62	160.09	128.79	74.56	54.50	43.17	36.47	31.33	24.16	20.00	16.82	11.21	9.19
1.67V	583.73	335.79	210.74	158.94	128.88	74.56	53.81	43.12	36.47	31.27	24.16	19.94	16.82	11.21	9.19
1.70V	580.26	333.48	210.64	158.94	127.72	73.98	53.69	42.96	35.89	31.04	23.99	19.77	16.65	11.15	9.19
1.75V	540.38	329.43	210.88	158.94	127.15	73.40	53.58	42.88	35.78	30.81	23.87	19.63	16.65	11.15	9.13
1.80V	495.89	312.67	206.33	156.05	126.57	73.40	53.52	42.77	35.54	30.81	23.81	19.54	16.65	10.87	9.13
1.83V	478.54	287.24	204.60	151.42	121.37	72.82	52.02	41.32	35.14	29.82	23.81	18.96	16.36	10.75	9.07
1.85V	443.29	280.88	190.15	145.65	117.90	71.09	50.57	40.80	34.16	29.24	22.89	18.78	16.07	10.63	9.02

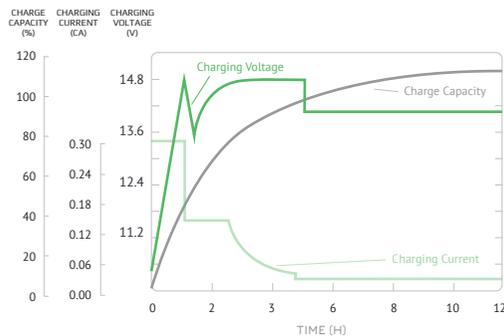
CYCLE LIFE CURVE GRAPH 25°C (77°F).



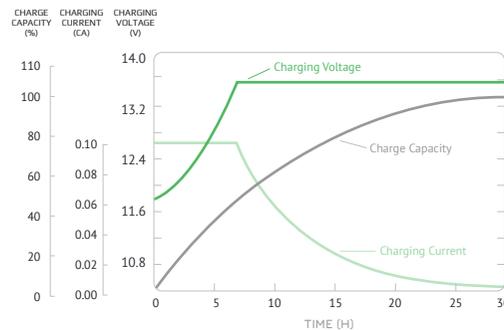
CYCLE LIFE CURVE GRAPH 40°C (104°F).



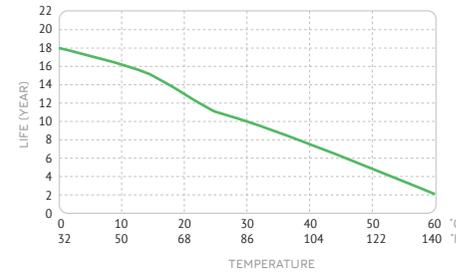
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



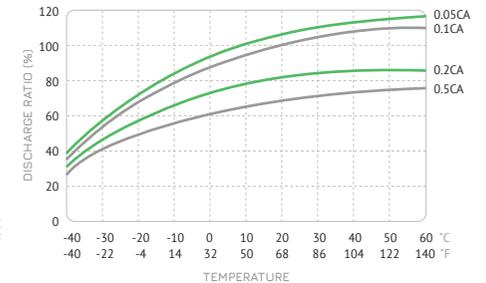
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-90GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO₂ electrolyte developed to completely replace traditional sulphuric acid solutions.



TECHNICAL SPECIFICATIONS

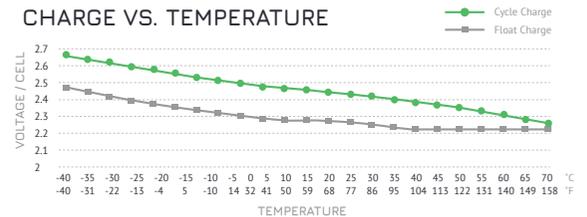
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	90Ah
WEIGHT	~ 27 kg / 59.5 lbs
DIMENSIONS	Height: 216 mm (8.5") Length: 307 mm (12.1") Width: 168 mm (6.6")
CAPACITY 25 °C (77 °F)	120 hour rate (0.9A) - 108Ah 20 hour rate (5.0A) - 100Ah 10 hour rate (9A) - 90Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25 °C (77 °F)	< 6.3mΩ
SELF DISCHARGE 25 °C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	900 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 27A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



- CRYSTAL TECHNOLOGY**
Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.
- BETTER USAGE PERFORMANCE**
Charges up to three times faster than conventional alternatives. Excellent high-current discharge.
- FULL RECOVERY**
Crystal Batteries™ can be 100% discharged and restored to full capacity.
- PROVEN TRACK RECORD**
Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.

- THE SAFEST**
No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.
- UP TO 99% RECYCLABLE**
A sustainable circular economy, less acid, no antimony or cadmium.
- EXTREME TEMPERATURES**
Extreme temperature resistance. Operates from -40 °C (40 °F) to +65 °C (149 °F).
- LONG BATTERY LIFE**
A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25 °C (50% DoD).

DATASHEET - CB12-90GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

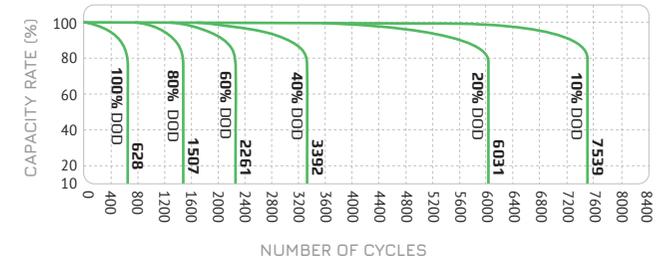
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	330.26	174.78	105.61	76.99	62.01	35.53	25.80	20.24	17.26	14.67	11.18	9.31	7.82	5.09	4.16
1.67V	306.94	169.06	104.04	76.46	61.90	35.38	25.34	20.13	17.01	14.57	11.17	9.21	7.80	5.07	4.14
1.70V	303.80	166.46	103.00	75.43	61.39	35.06	25.18	20.03	16.75	14.41	11.13	9.21	7.78	5.06	4.14
1.75V	278.32	161.24	101.97	74.92	60.35	34.39	25.07	19.78	16.60	14.31	11.08	9.10	7.74	5.04	4.13
1.80V	249.70	150.84	97.79	72.83	58.79	33.87	24.97	19.72	16.39	14.15	11.03	9.00	7.70	4.86	4.12
1.83V	238.68	138.38	96.25	70.24	56.19	33.55	23.98	18.88	16.02	13.63	10.79	8.64	7.39	4.81	4.07
1.85V	223.67	134.21	90.00	67.63	54.62	32.20	23.36	18.62	15.61	13.18	10.67	8.53	7.28	4.76	4.03

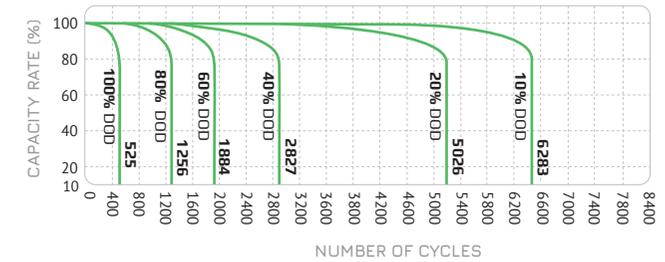
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	551.88	306.90	197.66	144.08	115.91	67.10	49.05	38.86	32.82	28.19	21.74	18.00	15.14	10.09	8.27
1.67V	525.36	302.21	189.67	143.05	116.00	67.10	48.43	38.80	32.82	28.14	21.74	17.95	15.14	10.09	8.27
1.70V	522.23	300.13	189.58	143.05	114.95	66.58	48.32	38.66	32.30	27.93	21.59	17.79	14.98	10.04	8.27
1.75V	486.35	296.49	189.79	143.04	114.44	66.06	48.22	38.60	32.20	27.72	21.48	17.67	14.98	10.04	8.22
1.80V	446.30	281.40	185.70	140.44	113.92	66.06	48.17	38.49	31.99	27.72	21.43	17.58	14.98	9.78	8.22
1.83V	430.69	258.52	184.14	136.28	109.23	65.54	46.81	37.19	31.63	26.84	21.43	17.06	14.72	9.68	8.17
1.85V	398.96	252.79	171.13	131.09	106.11	63.98	45.51	36.72	30.74	26.32	20.60	16.91	14.46	9.57	8.11

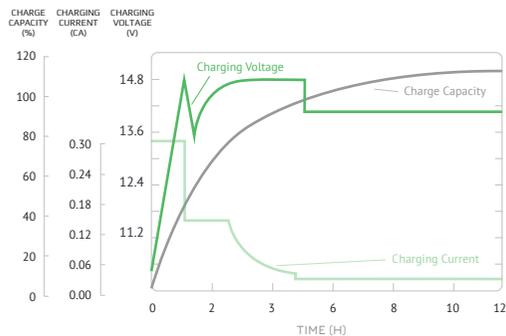
CYCLE LIFE CURVE GRAPH 25°C (77°F).



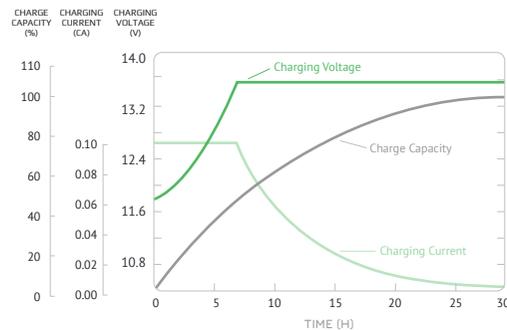
CYCLE LIFE CURVE GRAPH 40°C (104°F).



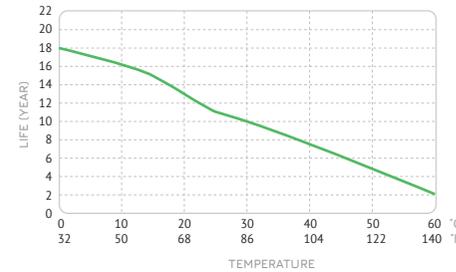
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



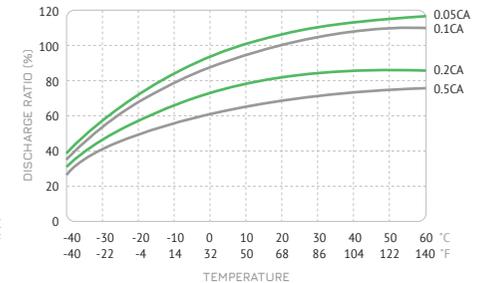
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-70GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



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Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



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Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

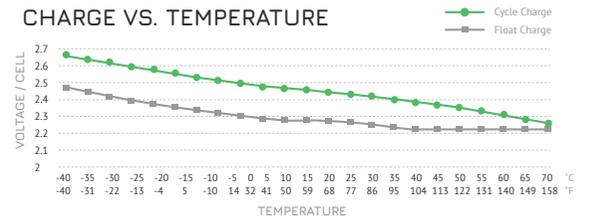
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	70Ah
WEIGHT	~ 22.3 kg / 49.2 lbs
DIMENSIONS	Height: 215 mm (8.5") Length: 260 mm (10.2") Width: 169 mm (6.7")
CAPACITY 25 °C (77 °F)	120 hour rate (0.7A) - 84Ah 20 hour rate (3.9A) - 78Ah 10 hour rate (7A) - 70Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 7mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	700 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 21A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-70GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

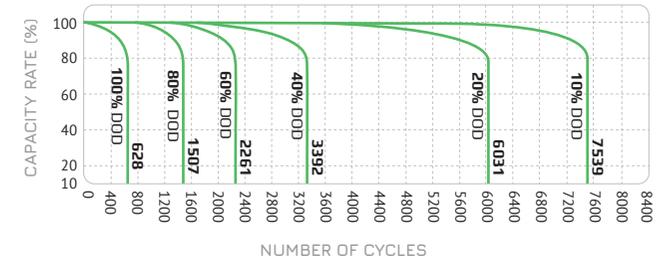
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	256.87	135.94	82.14	59.88	48.23	27.63	20.07	15.74	13.42	11.41	8.70	7.24	6.08	3.96	3.23
1.67V	238.73	131.49	80.92	59.47	48.15	27.51	19.71	15.66	13.23	11.33	8.69	7.16	6.07	3.95	3.22
1.70V	236.29	129.47	80.11	58.67	47.75	27.27	19.58	15.58	13.03	11.21	8.66	7.16	6.05	3.93	3.22
1.75V	216.47	125.41	79.31	58.27	46.94	26.75	19.50	15.38	12.91	11.13	8.62	7.08	6.02	3.92	3.21
1.80V	194.21	117.32	76.06	56.64	45.72	26.34	19.42	15.34	12.75	11.01	8.58	7.00	5.99	3.78	3.20
1.83V	185.64	107.63	74.86	54.63	43.70	26.10	18.65	14.69	12.46	10.60	8.40	6.72	5.75	3.74	3.16
1.85V	173.96	104.38	70.00	52.60	42.48	25.05	18.17	14.48	12.14	10.25	8.30	6.64	5.66	3.70	3.14

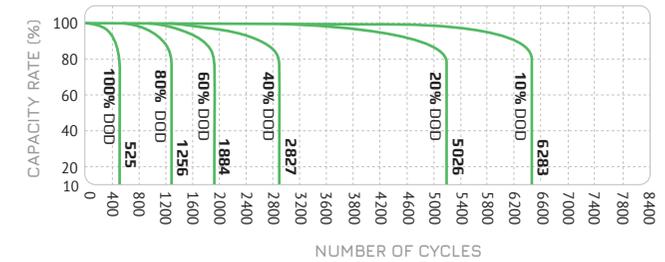
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	429.24	238.70	153.74	112.07	90.15	52.19	38.15	30.22	25.53	21.93	16.91	14.00	11.77	7.85	6.43
1.67V	408.61	235.05	147.52	111.26	90.22	52.19	37.67	30.18	25.53	21.89	16.91	13.96	11.77	7.85	6.43
1.70V	406.18	233.43	147.45	111.26	89.41	51.78	37.58	30.07	25.12	21.73	16.79	13.84	11.65	7.81	6.43
1.75V	378.27	230.60	147.61	111.26	89.01	51.38	37.50	30.02	25.04	21.56	16.71	13.74	11.65	7.81	6.39
1.80V	347.12	218.87	144.43	109.23	88.60	51.38	37.46	29.94	24.88	21.56	16.67	13.67	11.65	7.61	6.39
1.83V	334.98	201.07	143.22	106.00	84.96	50.98	36.41	28.93	24.60	20.88	16.67	13.27	11.45	7.53	6.35
1.85V	310.30	196.62	133.10	101.96	82.53	49.76	35.40	28.56	23.91	20.47	16.02	13.15	11.25	7.44	6.31

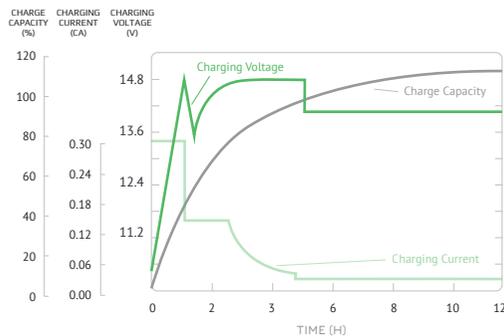
CYCLE LIFE CURVE GRAPH 25°C (77°F).



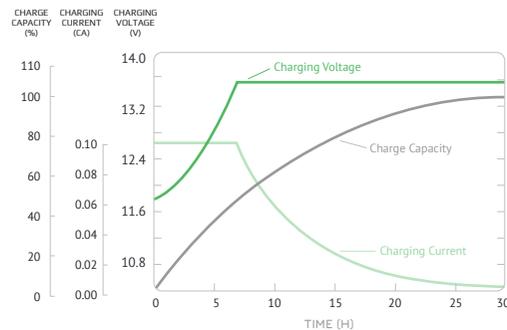
CYCLE LIFE CURVE GRAPH 40°C (104°F).



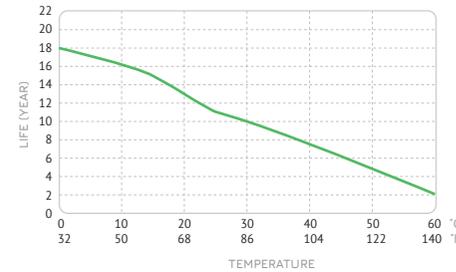
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



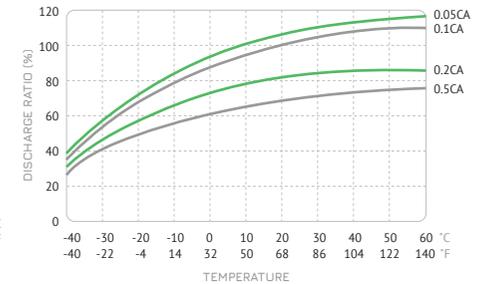
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



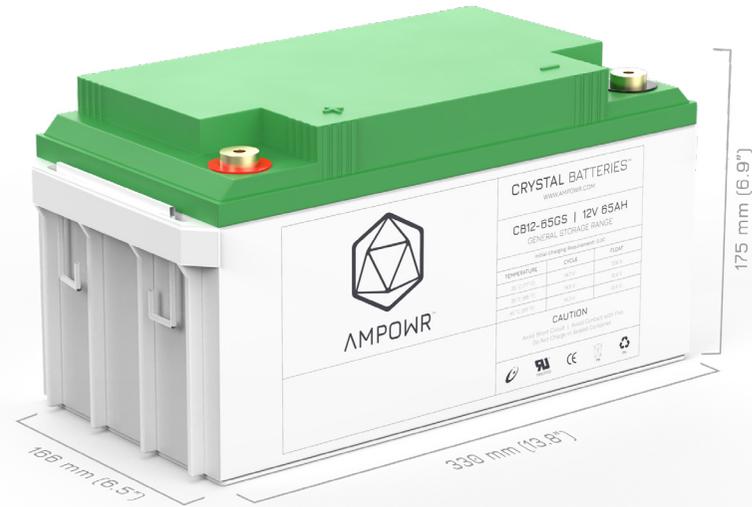
CB12-65GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

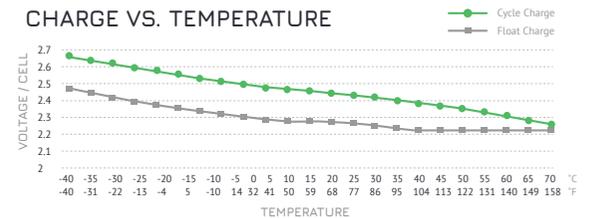
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	65Ah
WEIGHT	~ 21 kg / 46.3 lbs
DIMENSIONS	Height: 175 mm (6.9") Length: 330 mm (13.8") Width: 166 mm (6.5")
CAPACITY 25 °C (77 °F)	120 hour rate (0.65A) - 78Ah 20 hour rate (3.6A) - 72Ah 10 hour rate (6.5A) - 65Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 7.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	650 A (5s)
TERMINAL	M8 (20)
(CHARGING) CYCLE	Initial Charging Current 19.5A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-65GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

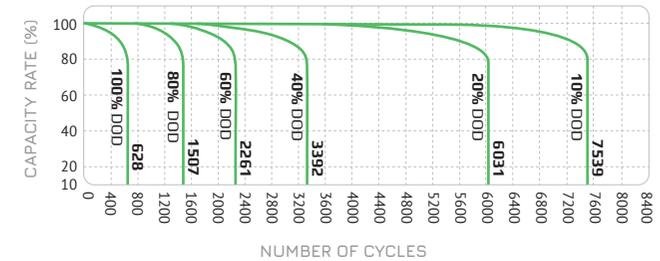
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	238.52	126.23	76.27	55.61	44.79	25.66	18.64	14.62	12.47	10.60	8.08	6.73	5.64	3.67	3.00
1.67V	221.68	122.10	75.14	55.22	44.71	25.55	18.30	14.54	12.29	10.52	8.07	6.65	5.64	3.66	2.99
1.70V	219.41	120.22	74.39	54.48	44.34	25.32	18.18	14.46	12.10	10.41	8.04	6.65	5.62	3.65	2.99
1.75V	201.01	116.45	73.65	54.11	43.58	24.84	18.11	14.28	11.99	10.33	8.00	6.58	5.59	3.64	2.98
1.80V	180.34	108.94	70.63	52.60	42.46	24.46	18.04	14.24	11.84	10.22	7.97	6.50	5.56	3.51	2.98
1.83V	172.38	99.94	69.51	50.73	40.58	24.23	17.32	13.64	11.57	9.84	7.80	6.24	5.33	3.48	2.94
1.85V	161.54	96.93	65.00	48.85	39.45	23.26	16.87	13.45	11.27	9.52	7.70	6.16	5.26	3.44	2.91

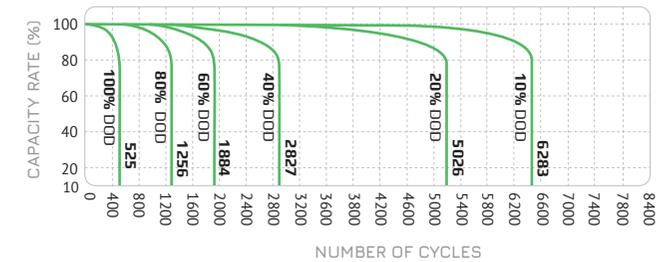
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	398.58	221.65	142.76	104.06	83.71	48.46	35.43	28.06	23.70	20.36	15.70	13.00	10.93	7.29	5.97
1.67V	379.42	218.26	136.98	103.31	83.77	48.46	34.98	28.03	23.70	20.32	15.70	12.96	10.93	7.29	5.97
1.70V	377.17	216.76	136.92	103.31	83.02	48.09	34.90	27.92	23.33	20.17	15.59	12.85	10.82	7.25	5.97
1.75V	351.25	214.13	137.07	103.31	82.65	47.71	34.83	27.87	23.25	20.02	15.52	12.76	10.82	7.25	5.94
1.80V	322.33	203.24	134.11	101.43	82.27	47.71	34.79	27.80	23.10	20.02	15.48	12.70	10.82	7.06	5.94
1.83V	311.05	186.71	132.99	98.43	78.89	47.33	33.81	26.86	22.84	19.38	15.48	12.32	10.63	6.99	5.90
1.85V	288.14	182.57	123.59	94.67	76.64	46.21	32.87	26.52	22.20	19.01	14.88	12.21	10.44	6.91	5.86

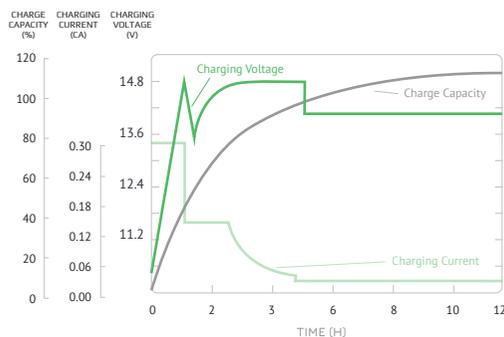
CYCLE LIFE CURVE GRAPH 25°C (77°F).



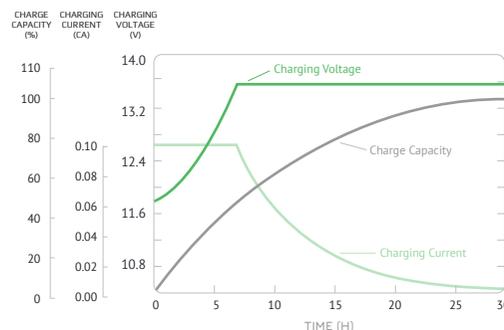
CYCLE LIFE CURVE GRAPH 40°C (104°F).



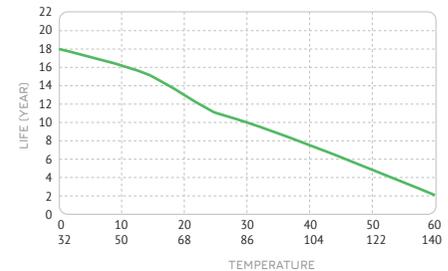
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



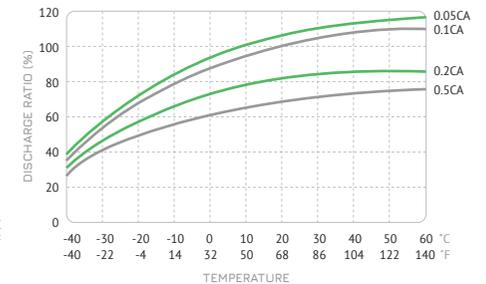
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-40GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

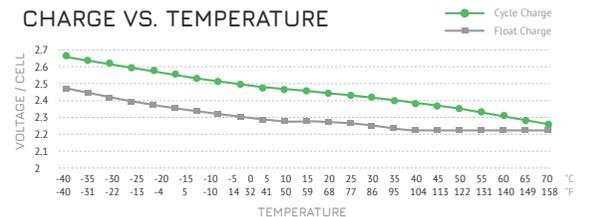
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	40Ah
WEIGHT	~ 13 kg / 28.7 lbs
DIMENSIONS	Height: 176 mm (6.9") Length: 196 mm (7.7") Width: 166 mm (6.5")
CAPACITY 25 °C (77 °F)	120 hour rate (0.4A) - 48Ah 20 hour rate (2.2A) - 44Ah 10 hour rate (4A) - 40Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	400 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 12A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-40GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

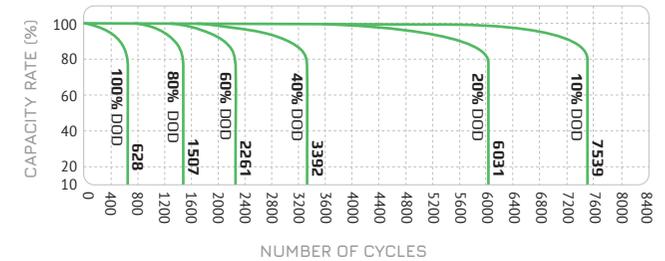
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	146.78	77.68	46.94	34.22	27.56	15.79	11.47	8.99	7.67	6.52	4.97	4.14	3.47	2.26	1.85
1.67V	136.42	75.14	46.24	33.98	27.51	15.72	11.26	8.95	7.56	6.47	4.96	4.09	3.47	2.25	1.84
1.70V	135.02	73.98	45.78	33.53	27.28	15.58	11.19	8.90	7.44	6.40	4.95	4.09	3.46	2.25	1.84
1.75V	123.70	71.66	45.32	33.30	26.82	15.28	11.14	8.79	7.38	6.36	4.92	4.05	3.44	2.24	1.84
1.80V	110.98	67.04	43.46	32.37	26.13	15.05	11.10	8.76	7.28	6.29	4.90	4.00	3.42	2.16	1.83
1.83V	106.08	61.50	42.78	31.22	24.97	14.91	10.66	8.39	7.12	6.06	4.80	3.84	3.28	2.14	1.81
1.85V	99.41	59.65	40.00	30.06	24.28	14.31	10.38	8.28	6.94	5.86	4.74	3.79	3.24	2.12	1.79

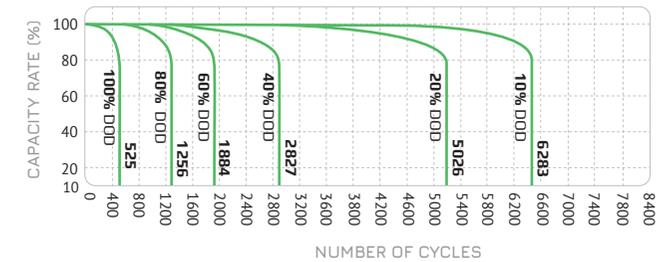
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	245.28	136.40	87.85	64.04	51.51	29.82	21.80	17.27	14.59	12.53	9.66	8.00	6.73	4.49	3.68
1.67V	233.49	134.32	84.30	63.58	51.55	29.82	21.52	17.25	14.59	12.51	9.66	7.98	6.73	4.48	3.68
1.70V	232.10	133.39	84.26	63.58	51.09	29.59	21.48	17.18	14.36	12.41	9.59	7.91	6.66	4.46	3.68
1.75V	216.15	131.77	84.35	63.57	50.86	29.36	21.43	17.15	14.31	12.32	9.55	7.85	6.66	4.46	3.65
1.80V	198.36	125.07	82.53	62.42	50.63	29.36	21.41	17.11	14.22	12.32	9.52	7.81	6.66	4.35	3.65
1.83V	191.42	114.90	81.84	60.57	48.55	29.13	20.81	16.53	14.06	11.93	9.52	7.58	6.54	4.30	3.63
1.85V	177.32	112.35	76.06	58.26	47.16	28.44	20.23	16.32	13.66	11.70	9.16	7.51	6.43	4.25	3.61

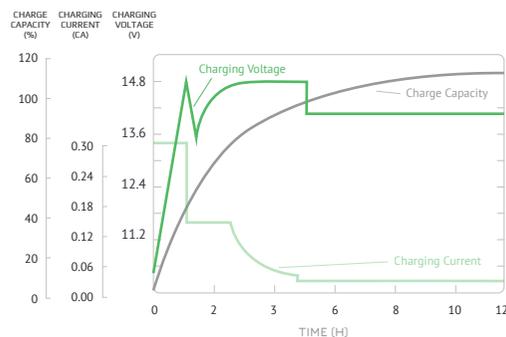
CYCLE LIFE CURVE GRAPH 25°C (77°F).



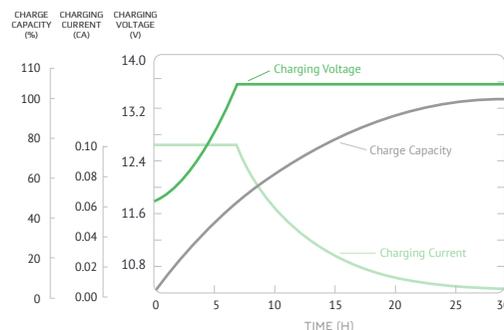
CYCLE LIFE CURVE GRAPH 40°C (104°F).



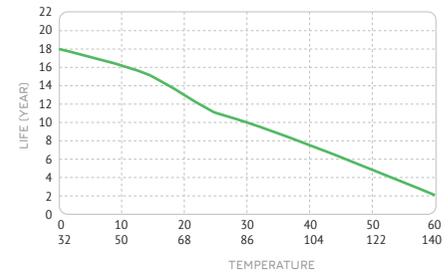
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



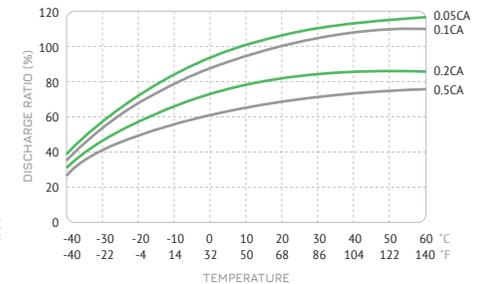
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-35GS

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The patented Crystal technology uses a unique advanced formula, a new type of composite SiO₂ electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY
Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.

BETTER USAGE PERFORMANCE
Charges up to three times faster than conventional alternatives. Excellent high-current discharge.

FULL RECOVERY
Crystal Batteries™ can be 100% discharged and restored to full capacity.

PROVEN TRACK RECORD
Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.

THE SAFEST
No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.

UP TO 99% RECYCLABLE
A sustainable circular economy, less acid, no antimony or cadmium.

EXTREME TEMPERATURES
Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).

LONG BATTERY LIFE
A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

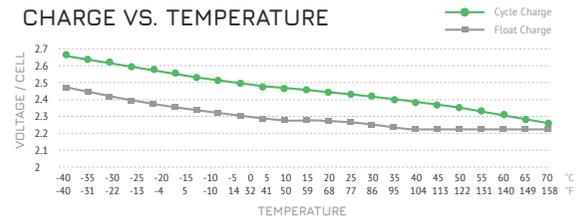
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	35Ah
WEIGHT	~ 12 kg / 26.5 lbs
DIMENSIONS	Height: 176 mm (6.9") Length: 194 mm (7.6") Width: 132 mm (5.2")
CAPACITY 25 °C (77 °F)	120 hour rate (0.35A) - 42Ah 20 hour rate (2A) - 40Ah 10 hour rate (3.5A) - 35Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	350 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 10.5A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-35GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

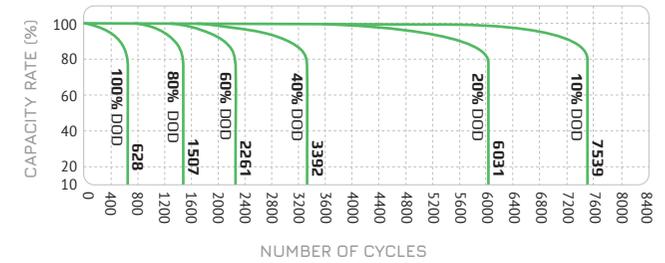
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	128.44	67.97	41.07	29.94	24.12	13.82	10.03	7.87	6.71	5.71	4.35	3.62	3.04	1.98	1.62
1.67V	119.36	65.74	40.46	29.74	24.07	13.76	9.85	7.83	6.62	5.66	4.34	3.58	3.03	1.97	1.61
1.70V	118.15	64.74	40.05	29.33	23.87	13.64	9.79	7.79	6.51	5.60	4.33	3.58	3.02	1.97	1.61
1.75V	108.23	62.71	39.66	29.13	23.47	13.37	9.75	7.69	6.45	5.56	4.31	3.54	3.01	1.96	1.61
1.80V	97.10	58.66	38.03	28.32	22.86	13.17	9.71	7.67	6.37	5.50	4.29	3.50	2.99	1.89	1.60
1.83V	92.82	53.82	37.43	27.31	21.85	13.05	9.33	7.34	6.23	5.30	4.20	3.36	2.87	1.87	1.58
1.85V	86.98	52.19	35.00	26.30	21.24	12.52	9.08	7.24	6.07	5.13	4.15	3.32	2.83	1.85	1.57

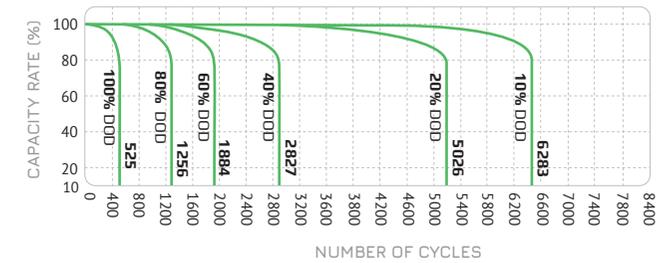
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	214.62	119.35	76.87	56.03	45.08	26.09	19.08	15.11	12.76	10.96	8.46	7.00	5.89	3.92	3.22
1.67V	204.31	117.53	73.76	55.63	45.11	26.09	18.83	15.09	12.76	10.94	8.46	6.98	5.89	3.92	3.22
1.70V	203.09	116.72	73.72	55.63	44.70	25.89	18.79	15.03	12.56	10.86	8.39	6.92	5.83	3.90	3.22
1.75V	189.13	115.30	73.81	55.63	44.50	25.69	18.75	15.01	12.52	10.78	8.35	6.87	5.83	3.90	3.20
1.80V	173.56	109.43	72.22	54.62	44.30	25.69	18.73	14.97	12.44	10.78	8.33	6.84	5.83	3.80	3.20
1.83V	167.49	100.53	71.61	53.00	42.48	25.49	18.21	14.46	12.30	10.44	8.33	6.63	5.72	3.76	3.18
1.85V	155.15	98.31	66.55	50.98	41.27	24.88	17.70	14.28	11.96	10.24	8.01	6.57	5.62	3.72	3.16

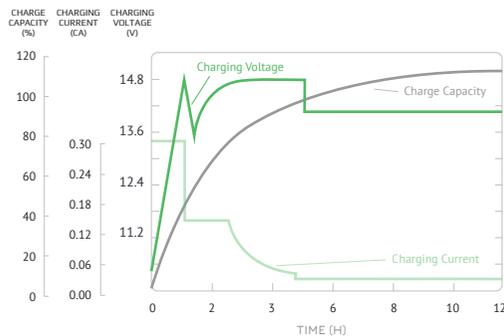
CYCLE LIFE CURVE GRAPH 25°C (77°F).



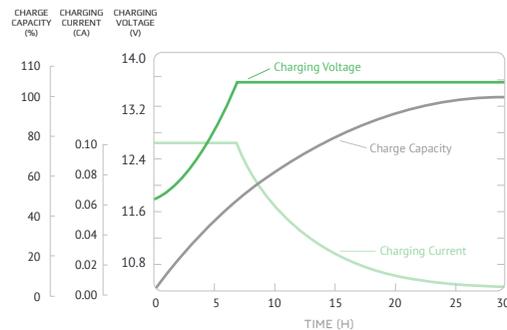
CYCLE LIFE CURVE GRAPH 40°C (104°F).



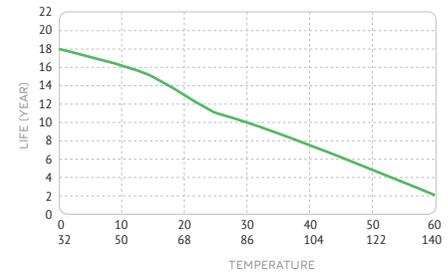
REGULAR CHARGE CHARACTERISTICS 25°C (77°F).



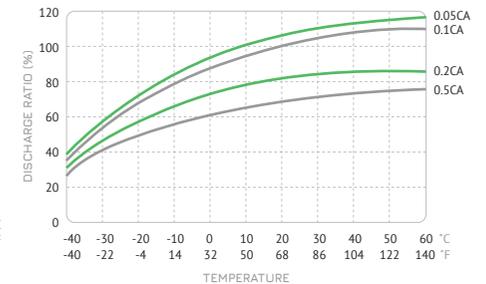
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-28GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

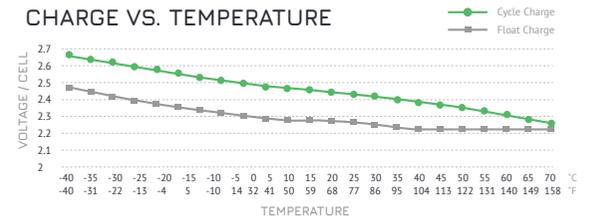
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	28Ah
WEIGHT	~ 8.5 kg / 18.7 lbs
DIMENSIONS	Height: 125 mm (4.9") Length: 175 mm (6.9") Width: 166 mm (6.5")
CAPACITY 25 °C (77 °F)	120 hour rate (0.28A) - 33.6Ah 20 hour rate (1.6A) - 32Ah 10 hour rate (2.8A) - 28Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	280 A (5s)
TERMINAL	M5 (10)
(CHARGING) CYCLE	Initial Charging Current 8.4A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-28GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

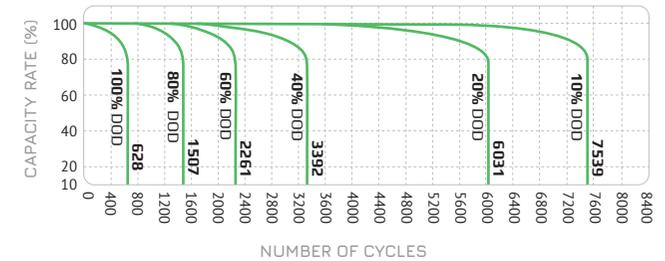
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	102.75	54.38	32.86	23.95	19.29	11.05	8.03	6.30	5.37	4.56	3.48	2.90	2.43	1.58	1.29
1.67V	95.49	52.60	32.37	23.79	19.26	11.01	7.88	6.26	5.29	4.53	3.48	2.86	2.43	1.58	1.29
1.70V	94.52	51.79	32.04	23.47	19.10	10.91	7.83	6.23	5.21	4.48	3.46	2.86	2.42	1.57	1.29
1.75V	86.59	50.16	31.72	23.31	18.77	10.70	7.80	6.15	5.16	4.45	3.45	2.83	2.41	1.57	1.29
1.80V	77.68	46.93	30.42	22.66	18.29	10.54	7.77	6.13	5.10	4.40	3.43	2.80	2.40	1.51	1.28
1.83V	74.26	43.05	29.94	21.85	17.48	10.44	7.46	5.88	4.99	4.24	3.36	2.69	2.30	1.50	1.27
1.85V	69.59	41.75	28.00	21.04	16.99	10.02	7.27	5.79	4.86	4.10	3.32	2.65	2.27	1.48	1.25

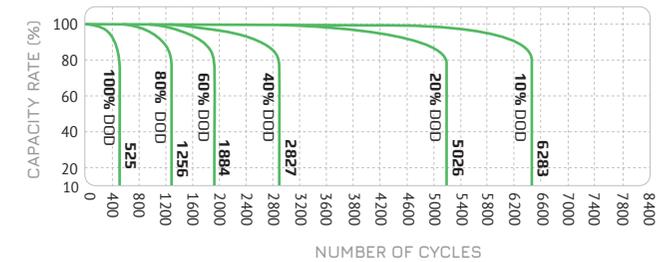
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	171.69	95.48	61.49	44.83	36.06	20.88	15.26	12.09	10.21	8.77	6.76	5.60	4.71	3.14	2.57
1.67V	163.44	94.02	59.01	44.50	36.09	20.88	15.07	12.07	10.21	8.75	6.76	5.58	4.71	3.14	2.57
1.70V	162.47	93.37	58.98	44.50	35.76	20.71	15.03	12.03	10.05	8.69	6.72	5.53	4.66	3.12	2.57
1.75V	151.31	92.24	59.05	44.50	35.60	20.55	15.00	12.01	10.02	8.63	6.68	5.50	4.66	3.12	2.56
1.80V	138.85	87.55	57.77	43.69	35.44	20.55	14.99	11.98	9.95	8.63	6.67	5.47	4.66	3.04	2.56
1.83V	133.99	80.43	57.29	42.40	33.98	20.39	14.56	11.57	9.84	8.35	6.67	5.31	4.58	3.01	2.54
1.85V	124.12	78.65	53.24	40.78	33.01	19.90	14.16	11.43	9.56	8.19	6.41	5.26	4.50	2.98	2.52

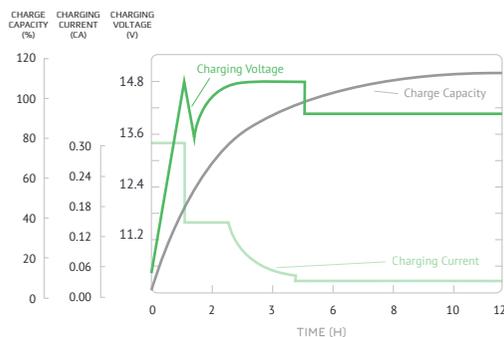
CYCLE LIFE CURVE GRAPH 25°C (77°F).



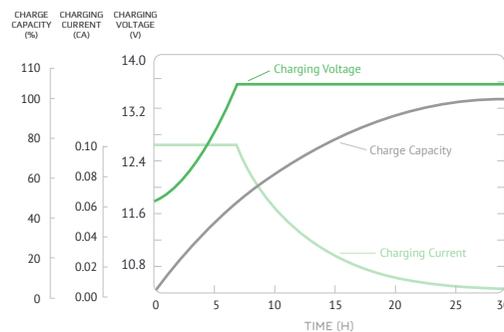
CYCLE LIFE CURVE GRAPH 40°C (104°F).



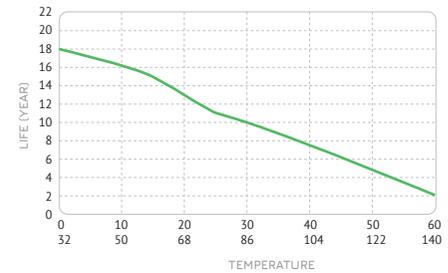
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



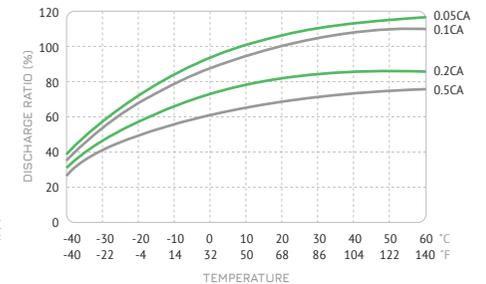
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-14GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE



Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS

- CRYSTAL TECHNOLOGY**
 Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.
- BETTER USAGE PERFORMANCE**
 Charges up to three times faster than conventional alternatives. Excellent high-current discharge.
- FULL RECOVERY**
 Crystal Batteries™ can be 100% discharged and restored to full capacity.
- PROVEN TRACK RECORD**
 Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.

- THE SAFEST**
 No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.
- UP TO 99% RECYCLABLE**
 A sustainable circular economy, less acid, no antimony or cadmium.
- EXTREME TEMPERATURES**
 Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).
- LONG BATTERY LIFE**
 A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

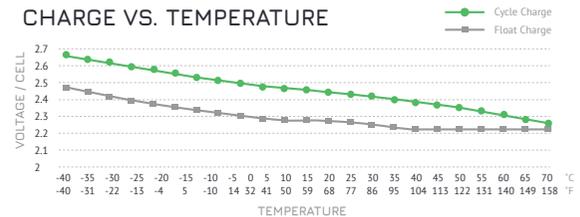
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	14Ah
WEIGHT	~ 4.2 kg / 9.4 lbs
DIMENSIONS	Height: 105 mm (4.1") Length: 151 mm (5.9") Width: 99 mm (3.9")
CAPACITY 25 °C (77 °F)	120 hour rate (141mA) - 16.9Ah 20 hour rate (775mA) - 15.5Ah 10 hour rate (1.4A) - 14Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 12mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	120 A (5s)
TERMINAL	M5 (8)
(CHARGING) CYCLE	Initial Charging Current 4.2A 14.7V / 25°C (77°F)
(CHARGING) FLOAT	13.6V / 25°C (77°F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-14GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

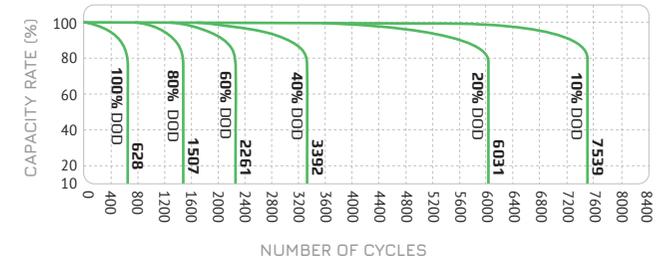
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	51.37	27.19	16.43	11.98	9.65	5.53	4.01	3.15	2.68	2.28	1.74	1.45	1.22	0.79	0.65
1.67V	47.75	26.30	16.18	11.89	9.63	5.50	3.94	3.13	2.65	2.27	1.74	1.43	1.21	0.79	0.64
1.70V	47.26	25.89	16.02	11.73	9.55	5.45	3.92	3.12	2.61	2.24	1.73	1.43	1.21	0.79	0.64
1.75V	43.29	25.08	15.86	11.65	9.39	5.35	3.90	3.08	2.58	2.23	1.72	1.42	1.20	0.78	0.64
1.80V	38.84	23.46	15.21	11.33	9.14	5.27	3.88	3.07	2.55	2.20	1.72	1.40	1.20	0.76	0.64
1.83V	37.13	21.53	14.97	10.93	8.74	5.22	3.73	2.94	2.49	2.12	1.68	1.34	1.15	0.75	0.63
1.85V	34.79	20.88	14.00	10.52	8.50	5.01	3.63	2.90	2.43	2.05	1.66	1.33	1.13	0.74	0.63

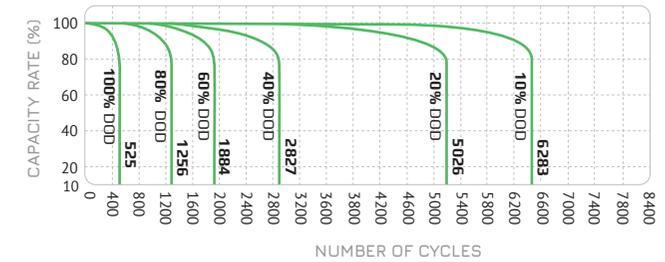
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	85.85	47.74	30.75	22.41	18.03	10.44	7.63	6.04	5.11	4.39	3.38	2.80	2.35	1.57	1.29
1.67V	81.72	47.01	29.50	22.25	18.04	10.44	7.53	6.04	5.11	4.38	3.38	2.79	2.35	1.57	1.29
1.70V	81.24	46.69	29.49	22.25	17.88	10.36	7.52	6.01	5.02	4.35	3.36	2.77	2.33	1.56	1.29
1.75V	75.65	46.12	29.52	22.25	17.80	10.28	7.50	6.00	5.01	4.31	3.34	2.75	2.33	1.56	1.28
1.80V	69.42	43.77	28.89	21.85	17.72	10.28	7.49	5.99	4.98	4.31	3.33	2.73	2.33	1.52	1.28
1.83V	67.00	40.21	28.64	21.20	16.99	10.20	7.28	5.79	4.92	4.18	3.33	2.65	2.29	1.51	1.27
1.85V	62.06	39.32	26.62	20.39	16.51	9.95	7.08	5.71	4.78	4.09	3.20	2.63	2.25	1.49	1.26

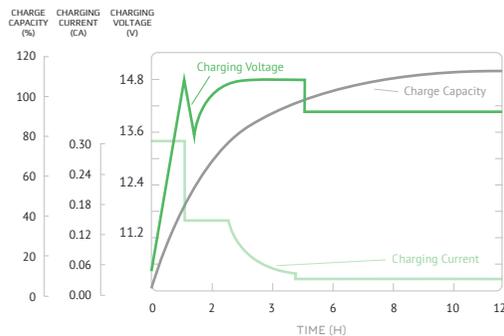
CYCLE LIFE CURVE GRAPH 25°C (77°F).



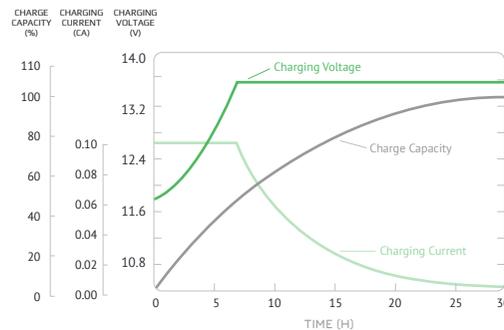
CYCLE LIFE CURVE GRAPH 40°C (104°F).



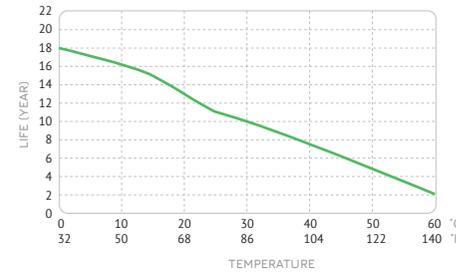
REGULAR CHARGE CHARACTERISTICS 25°C (77°F).



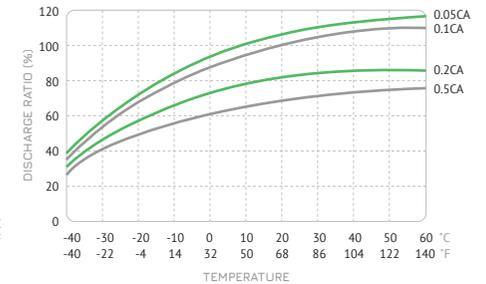
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-10GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

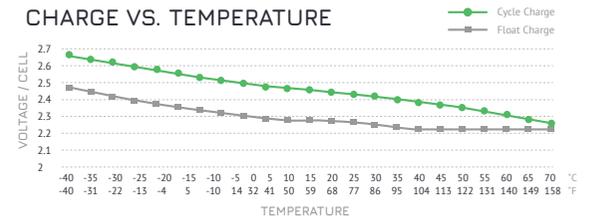
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	10Ah
WEIGHT	~ 3.5 kg / 7.7 lbs
DIMENSIONS	Height: 102 mm (4") Length: 151 mm (5.9") Width: 99 mm (3.9")
CAPACITY 25 °C (77 °F)	120 hour rate (110mA) - 13.2Ah 20 hour rate (600mA) - 12Ah 10 hour rate (1.0A) - 10Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 12.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	100 A (5s)
TERMINAL	F2 (250)
(CHARGING) CYCLE	Initial Charging Current 3A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-10GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

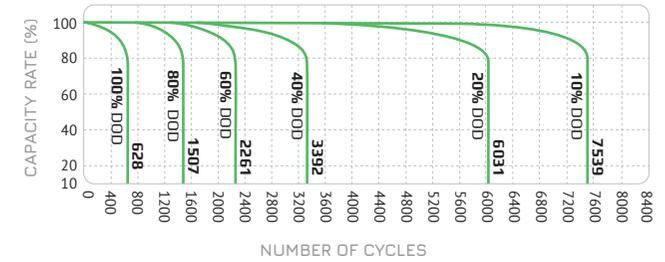
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	36.70	19.42	11.73	8.55	6.89	3.95	2.87	2.25	1.92	1.63	1.24	1.03	0.87	0.57	0.46
1.67V	34.10	18.78	11.56	8.50	6.88	3.93	2.82	2.24	1.89	1.62	1.24	1.02	0.87	0.56	0.46
1.70V	33.76	18.50	11.44	8.38	6.82	3.90	2.80	2.23	1.86	1.60	1.24	1.02	0.86	0.56	0.46
1.75V	30.92	17.92	11.33	8.32	6.71	3.82	2.79	2.20	1.84	1.59	1.23	1.01	0.86	0.56	0.46
1.80V	27.74	16.76	10.87	8.09	6.53	3.76	2.77	2.19	1.82	1.57	1.23	1.00	0.86	0.54	0.46
1.83V	26.52	15.38	10.69	7.80	6.24	3.73	2.66	2.10	1.78	1.51	1.20	0.96	0.82	0.53	0.45
1.85V	24.85	14.91	10.00	7.51	6.07	3.58	2.60	2.07	1.73	1.46	1.19	0.95	0.81	0.53	0.45

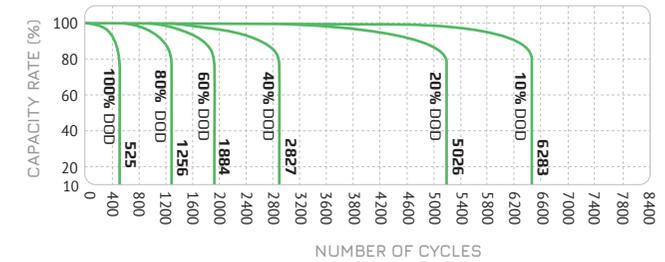
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	61.32	34.10	21.96	16.01	12.88	7.46	5.45	4.32	3.65	3.13	2.42	2.00	1.68	1.12	0.92
1.67V	58.37	33.58	21.07	15.89	12.89	7.46	5.38	4.31	3.65	3.13	2.42	1.99	1.68	1.12	0.92
1.70V	58.03	33.35	21.06	15.89	12.77	7.40	5.37	4.30	3.59	3.10	2.40	1.98	1.66	1.12	0.92
1.75V	54.04	32.94	21.09	15.89	12.72	7.34	5.36	4.29	3.58	3.08	2.39	1.96	1.66	1.12	0.91
1.80V	49.59	31.27	20.63	15.60	12.66	7.34	5.35	4.28	3.55	3.08	2.38	1.95	1.66	1.09	0.91
1.83V	47.85	28.72	20.46	15.14	12.14	7.28	5.20	4.13	3.51	2.98	2.38	1.90	1.64	1.08	0.91
1.85V	44.33	28.09	19.01	14.57	11.79	7.11	5.06	4.08	3.42	2.92	2.29	1.88	1.61	1.06	0.90

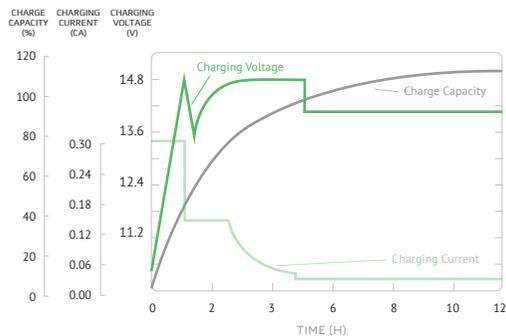
CYCLE LIFE CURVE GRAPH 25°C (77°F).



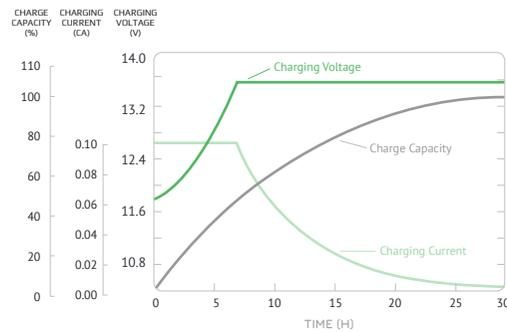
CYCLE LIFE CURVE GRAPH 40°C (104°F).



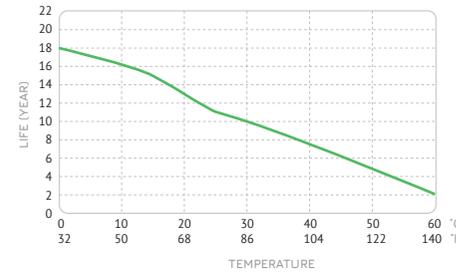
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



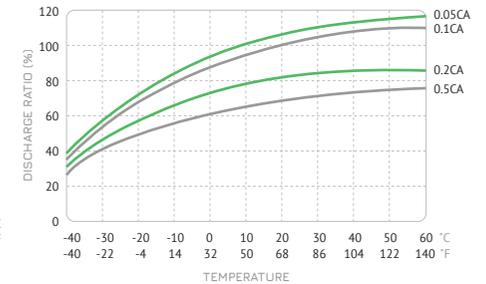
FLOATING CHARGE CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-12GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

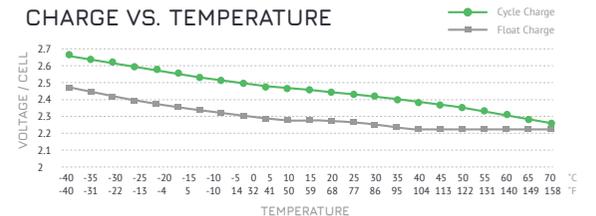
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	12Ah
WEIGHT	~ 4.1 kg / 9 lbs
DIMENSIONS	Height: 102 mm (4") Length: 151 mm (5.9") Width: 99 mm (3.9")
CAPACITY 25 °C (77 °F)	120 hour rate (120mA) - 14.4Ah 20 hour rate (660mA) - 13.2Ah 10 hour rate (1.2A) - 12Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 12mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	120 A (5s)
TERMINAL	M5 (8)
(CHARGING) CYCLE	Initial Charging Current 3.6A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-12GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

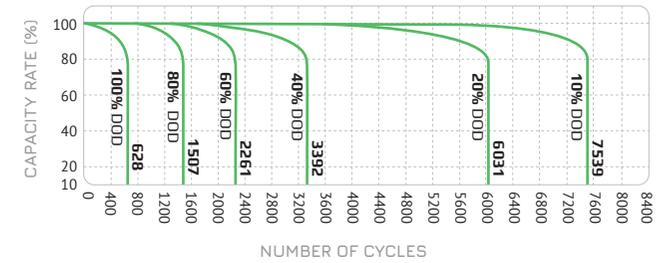
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	44.04	23.30	14.08	10.27	8.27	4.74	3.44	2.70	2.30	1.96	1.49	1.24	1.04	0.68	0.55
1.67V	40.92	22.54	13.87	10.20	8.25	4.72	3.38	2.68	2.27	1.94	1.49	1.23	1.04	0.68	0.55
1.70V	40.51	22.20	13.73	10.06	8.19	4.68	3.36	2.67	2.23	1.92	1.48	1.23	1.04	0.67	0.55
1.75V	37.11	21.50	13.60	9.99	8.05	4.58	3.34	2.64	2.21	1.91	1.48	1.21	1.03	0.67	0.55
1.80V	33.29	20.11	13.04	9.71	7.84	4.52	3.33	2.63	2.18	1.89	1.47	1.20	1.03	0.65	0.55
1.83V	31.82	18.45	12.83	9.36	7.49	4.47	3.20	2.52	2.14	1.82	1.44	1.15	0.98	0.64	0.54
1.85V	29.82	17.89	12.00	9.02	7.28	4.29	3.11	2.48	2.08	1.76	1.42	1.14	0.97	0.63	0.54

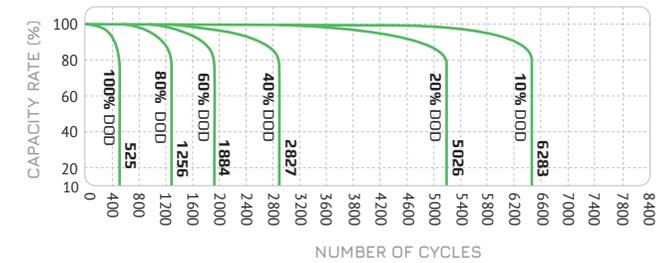
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	73.58	40.92	26.35	19.21	15.45	8.95	6.54	5.18	4.38	3.76	2.90	2.40	2.02	1.35	1.10
1.67V	70.05	40.29	25.29	19.07	15.47	8.95	6.46	5.17	4.38	3.75	2.90	2.39	2.02	1.35	1.10
1.70V	69.63	40.02	25.28	19.07	15.33	8.88	6.44	5.15	4.31	3.72	2.88	2.37	2.00	1.34	1.10
1.75V	64.85	39.53	25.31	19.07	15.26	8.81	6.43	5.15	4.29	3.70	2.86	2.36	2.00	1.34	1.10
1.80V	59.51	37.52	24.76	18.73	15.19	8.81	6.42	5.13	4.27	3.70	2.86	2.34	2.00	1.30	1.10
1.83V	57.43	34.47	24.55	18.17	14.56	8.74	6.24	4.96	4.22	3.58	2.86	2.27	1.96	1.29	1.09
1.85V	53.19	33.71	22.82	17.48	14.15	8.53	6.07	4.90	4.10	3.51	2.75	2.25	1.93	1.28	1.08

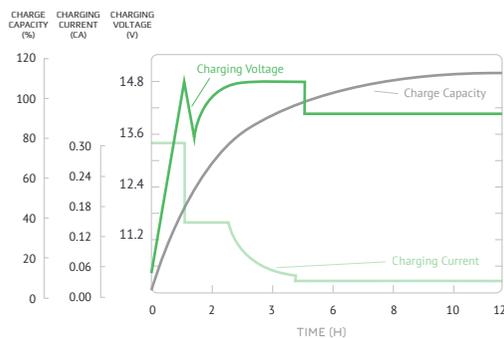
CYCLE LIFE CURVE GRAPH 25°C (77°F).



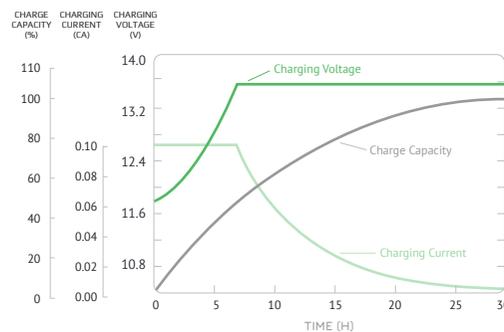
CYCLE LIFE CURVE GRAPH 40°C (104°F).



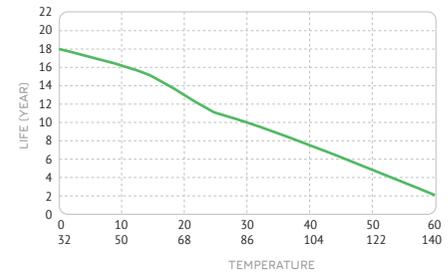
REGULAR CHARGE CHARACTERISTICS 25°C (77°F).



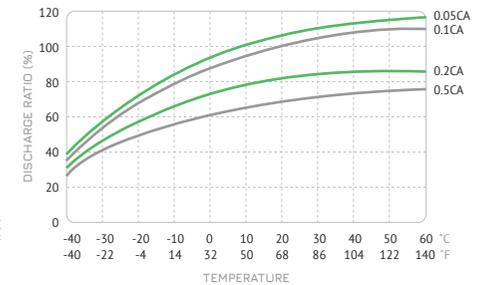
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-7.2GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

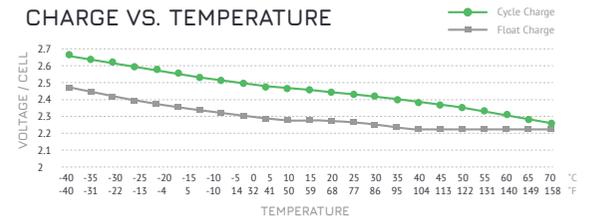
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	7.2Ah
WEIGHT	~ 2.2 kg / 4.6 lbs
DIMENSIONS	Height: 102 mm (4") Length: 151 mm (5.9") Width: 65 mm (2.6")
CAPACITY 25 °C (77 °F)	120 hour rate (70mA) - 8.4Ah 20 hour rate (390mA) - 7.8Ah 10 hour rate (720mA) - 7.2Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 30mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	72 A (5s)
TERMINAL	F2 (250)
(CHARGING) CYCLE	Initial Charging Current 2.16A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-7.2GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

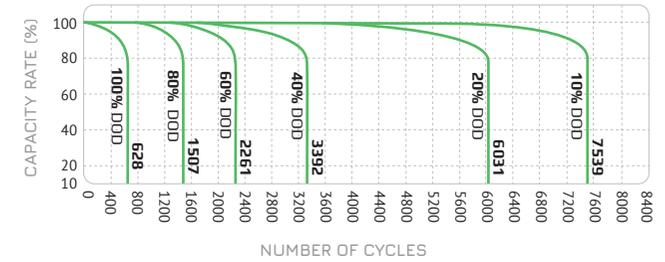
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	26.42	13.98	8.45	6.16	4.96	2.84	2.06	1.62	1.38	1.17	0.89	0.74	0.63	0.41	0.33
1.67V	24.55	13.52	8.32	6.12	4.95	2.83	2.03	1.61	1.36	1.17	0.89	0.74	0.62	0.41	0.33
1.70V	24.30	13.32	8.24	6.03	4.91	2.81	2.01	1.60	1.34	1.15	0.89	0.74	0.62	0.40	0.33
1.75V	22.27	12.90	8.16	5.99	4.83	2.75	2.01	1.58	1.33	1.14	0.89	0.73	0.62	0.40	0.33
1.80V	19.98	12.07	7.82	5.83	4.70	2.71	2.00	1.58	1.31	1.13	0.88	0.72	0.62	0.39	0.33
1.83V	19.09	11.07	7.70	5.62	4.49	2.68	1.92	1.51	1.28	1.09	0.86	0.69	0.59	0.38	0.33
1.85V	17.89	10.74	7.20	5.41	4.37	2.58	1.87	1.49	1.25	1.05	0.85	0.68	0.58	0.38	0.32

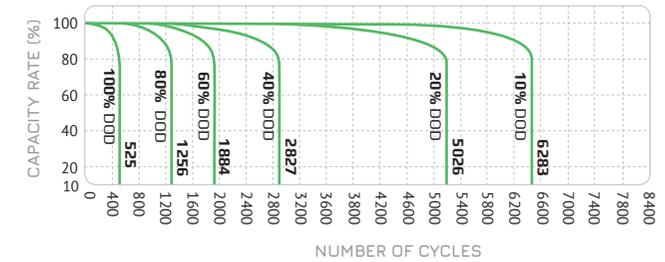
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	44.15	24.55	15.81	11.53	9.27	5.37	3.92	3.11	2.63	2.26	1.74	1.44	1.21	0.81	0.66
1.67V	42.03	24.18	15.17	11.44	9.28	5.37	3.87	3.10	2.63	2.25	1.74	1.44	1.21	0.81	0.66
1.70V	41.78	24.01	15.17	11.44	9.20	5.33	3.87	3.09	2.58	2.23	1.73	1.42	1.20	0.80	0.66
1.75V	38.91	23.72	15.18	11.44	9.15	5.28	3.86	3.09	2.58	2.22	1.72	1.41	1.20	0.80	0.66
1.80V	35.70	22.51	14.86	11.24	9.11	5.28	3.85	3.08	2.56	2.22	1.71	1.41	1.20	0.78	0.66
1.83V	34.46	20.68	14.73	10.90	8.74	5.24	3.75	2.98	2.53	2.15	1.71	1.36	1.18	0.77	0.65
1.85V	31.92	20.22	13.69	10.49	8.49	5.12	3.64	2.94	2.46	2.11	1.65	1.35	1.16	0.77	0.65

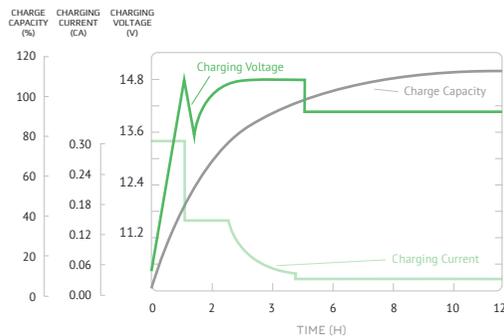
CYCLE LIFE CURVE GRAPH 25°C (77°F).



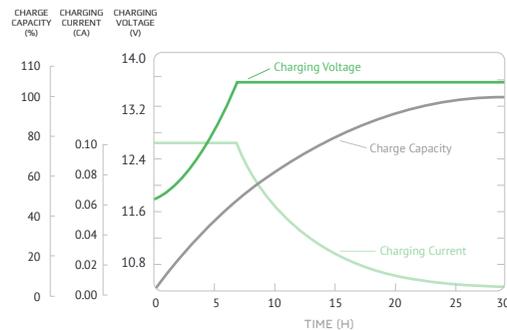
CYCLE LIFE CURVE GRAPH 40°C (104°F).



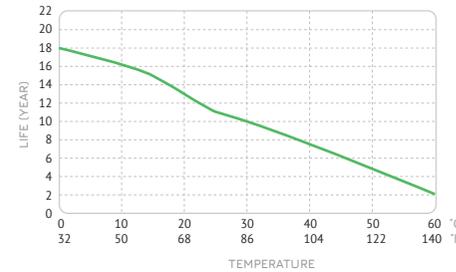
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



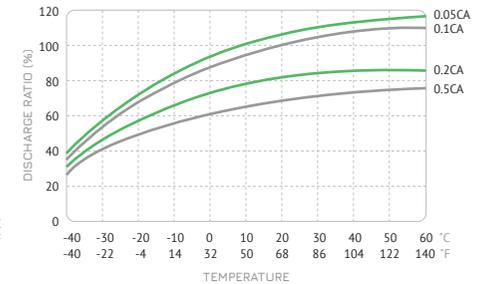
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB6-200GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

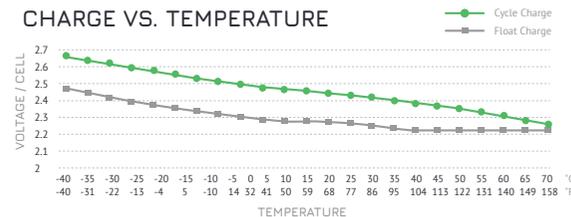
SPECIFICATION

NOMINAL VOLTAGE	6V
RATED CAPACITY (10 HOUR RATE)	200Ah
WEIGHT	~ 30.5 kg / 67.2 lbs
DIMENSIONS	Height: 230 mm (9.1") Length: 323 mm (12.7") Width: 178 mm (7")
CAPACITY 25 °C (77 °F)	120 hour rate (2.0A) - 240Ah 20 hour rate (10.8A) - 216Ah 10 hour rate (20A) - 200Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 1.5mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	2000 A (5s)
TERMINAL	M8 (18)
(CHARGING) CYCLE	Initial Charging Current 60A 7.4V / 25°C (77 °F)
(CHARGING) FLOAT	6.8V / 25°C (77 °F)

DISCHARGE CURRENT AND END VOLTAGE

DISCHARGE CURRENT (A)	End voltage (V)
0.05C OR BELOW OR INTERMITTENT DISCHARGE	5.70
0.05C OF CURRENT CLOSE TO IT	5.55
0.1C OF CURRENT CLOSE TO IT	5.40
0.2C OF CURRENT CLOSE TO IT	5.25
FROM 0.2C TO 0.5C	5.10
FROM 0.5C TO 1C	4.80
FROM 1C TO 3C	4.50
CURRENT IN EXCESS OF 3C	3.90

CHARGE VS. TEMPERATURE



DATASHEET - CB6-200GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

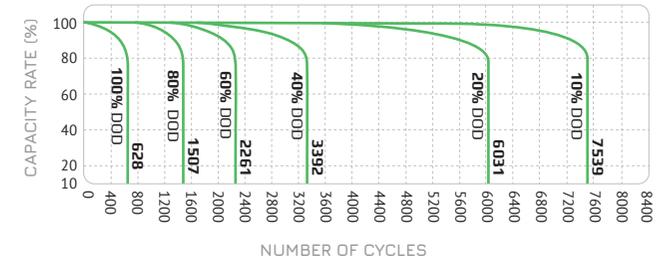
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	733.92	388.40	234.68	171.09	137.80	78.95	57.34	44.97	38.36	32.60	24.86	20.69	17.37	11.31	9.24
1.67V	682.08	375.68	231.20	169.92	137.56	78.61	56.30	44.74	37.80	32.37	24.82	20.46	17.34	11.27	9.20
1.70V	675.12	369.92	228.88	167.63	136.42	77.92	55.95	44.51	37.22	32.02	24.74	20.46	17.28	11.24	9.19
1.75V	618.48	358.32	226.60	166.48	134.10	76.42	55.72	43.95	36.88	31.79	24.62	20.23	17.20	11.19	9.18
1.80V	554.88	335.20	217.32	161.84	130.64	75.26	55.49	43.82	36.42	31.45	24.51	20.00	17.11	10.81	9.16
1.83V	530.40	307.52	213.88	156.08	124.86	74.57	53.29	41.97	35.61	30.29	23.99	19.19	16.42	10.69	9.04
1.85V	497.04	298.24	200.00	150.29	121.38	71.56	51.91	41.39	34.68	29.29	23.70	18.96	16.18	10.58	8.96

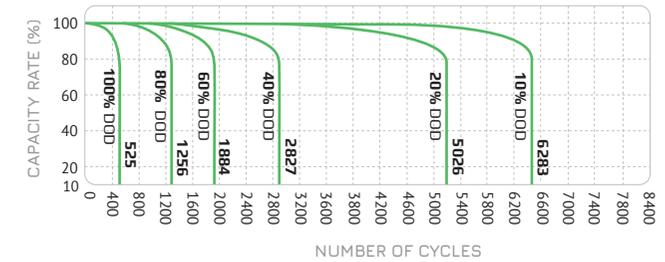
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	1226.4	682.0	439.2	320.2	257.6	149.1	109.0	86.3	72.9	62.7	48.3	40.0	33.6	22.4	18.4
1.67V	1167.5	671.6	421.5	317.9	257.8	149.1	107.6	86.2	72.9	62.5	48.3	39.9	33.6	22.4	18.4
1.70V	1160.5	667.0	421.3	317.9	255.4	148.0	107.4	85.9	71.8	62.1	48.0	39.5	33.3	22.3	18.4
1.75V	1080.8	658.9	421.8	317.9	254.3	146.8	107.2	85.8	71.6	61.6	47.7	39.3	33.3	22.3	18.3
1.80V	991.8	625.3	412.7	312.1	253.1	146.8	107.0	85.5	71.1	61.6	47.6	39.1	33.3	21.7	18.3
1.83V	957.1	574.5	409.2	302.8	242.7	145.6	104.0	82.6	70.3	59.6	47.6	37.9	32.7	21.5	18.1
1.85V	886.6	561.8	380.3	291.3	235.8	142.2	101.1	81.6	68.3	58.5	45.8	37.6	32.1	21.3	18.0

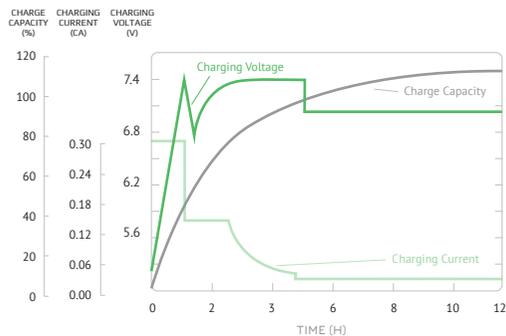
CYCLE LIFE CURVE GRAPH 25°C (77°F).



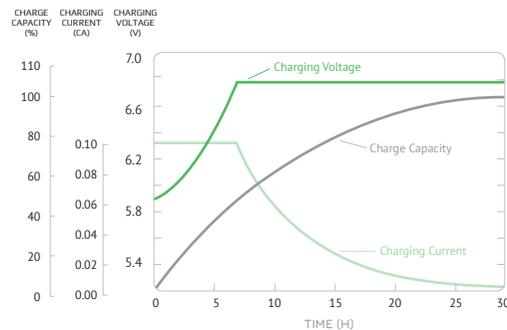
CYCLE LIFE CURVE GRAPH 40°C (104°F).



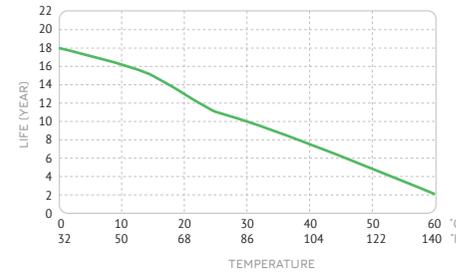
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



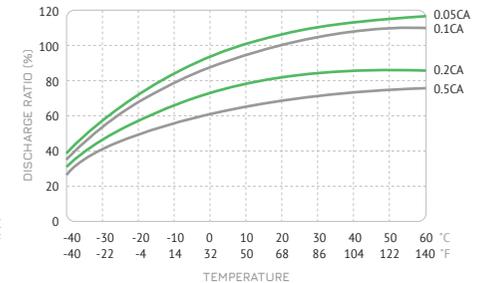
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB6-160GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



- CRYSTAL TECHNOLOGY**
 Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.
- BETTER USAGE PERFORMANCE**
 Charges up to three times faster than conventional alternatives. Excellent high-current discharge.
- FULL RECOVERY**
 Crystal Batteries™ can be 100% discharged and restored to full capacity.
- PROVEN TRACK RECORD**
 Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.

- THE SAFEST**
 No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.
- UP TO 99% RECYCLABLE**
 A sustainable circular economy, less acid, no antimony or cadmium.
- EXTREME TEMPERATURES**
 Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).
- LONG BATTERY LIFE**
 A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

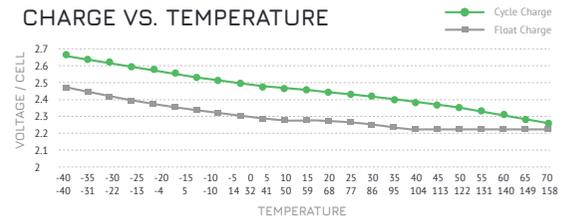
SPECIFICATION

NOMINAL VOLTAGE	6V
RATED CAPACITY (10 HOUR RATE)	160Ah
WEIGHT	~ 25.5 kg / 56.2 lbs
DIMENSIONS	Height: 230 mm (9.1") Length: 298 mm (11.7") Width: 172 mm (6.8")
CAPACITY 25 °C (77 °F)	120 hour rate (1.6A) - 192Ah 20 hour rate (8.75A) - 175Ah 10 hour rate (16A) - 160Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 2mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	1600 A (5s)
TERMINAL	M8 (19)
(CHARGING) CYCLE	Initial Charging Current 48A 7.4V / 25 °C (77 °F)
(CHARGING) FLOAT	6.8V / 25 °C (77 °F)

DISCHARGE CURRENT AND END VOLTAGE

DISCHARGE CURRENT (A)	End voltage (V)
0.05C OR BELOW OR INTERMITTENT DISCHARGE	5.70
0.05C OF CURRENT CLOSE TO IT	5.55
0.1C OF CURRENT CLOSE TO IT	5.40
0.2C OF CURRENT CLOSE TO IT	5.25
FROM 0.2C TO 0.5C	5.10
FROM 0.5C TO 1C	4.80
FROM 1C TO 3C	4.50
CURRENT IN EXCESS OF 3C	3.90

CHARGE VS. TEMPERATURE



DATASHEET - CB6-160GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

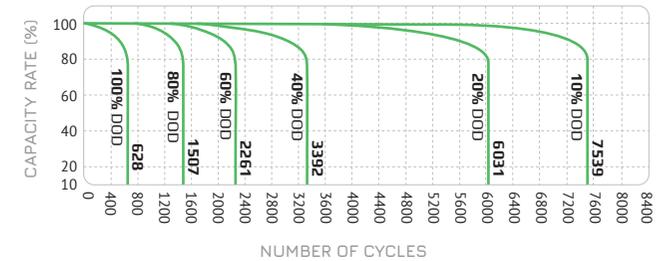
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	587.14	310.72	187.74	136.87	110.24	63.16	45.87	35.98	30.68	26.08	19.88	16.56	13.89	9.04	7.39
1.67V	545.66	300.54	184.96	135.94	110.05	62.89	45.04	35.79	30.24	25.90	19.86	16.37	13.87	9.02	7.36
1.70V	540.10	295.94	183.10	134.10	109.14	62.34	44.76	35.60	29.78	25.62	19.79	16.37	13.83	8.99	7.35
1.75V	494.78	286.66	181.28	133.18	107.28	61.13	44.58	35.16	29.50	25.43	19.70	16.19	13.76	8.95	7.34
1.80V	443.90	268.16	173.86	129.47	104.51	60.21	44.39	35.05	29.13	25.16	19.61	16.00	13.69	8.65	7.32
1.83V	424.32	246.02	171.10	124.86	99.89	59.65	42.63	33.57	28.49	24.23	19.19	15.35	13.13	8.56	7.23
1.85V	397.63	238.59	160.00	120.23	97.10	57.25	41.53	33.11	27.75	23.43	18.96	15.17	12.95	8.46	7.17

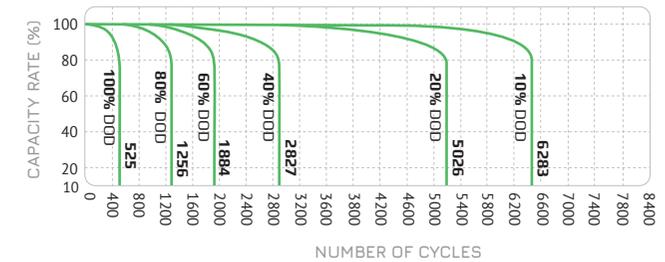
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	981.11	545.59	351.40	256.15	206.06	119.29	87.20	69.08	58.35	50.12	38.65	32.00	26.91	17.94	14.70
1.67V	933.97	537.27	337.19	254.30	206.21	119.29	86.09	68.99	58.35	50.03	38.65	31.90	26.91	17.94	14.70
1.70V	928.42	533.56	337.03	254.30	204.35	118.36	85.91	68.73	57.43	49.66	38.38	31.62	26.63	17.85	14.70
1.75V	864.62	527.09	337.40	254.30	203.44	117.44	85.72	68.61	57.24	49.29	38.19	31.41	26.63	17.85	14.61
1.80V	793.43	500.27	330.13	249.67	202.52	117.44	85.63	68.43	56.87	49.29	38.10	31.26	26.63	17.38	14.61
1.83V	765.67	459.59	327.36	242.28	194.19	116.52	83.22	66.12	56.22	47.72	38.10	30.33	26.17	17.20	14.52
1.85V	709.26	449.41	304.23	233.04	188.65	113.74	80.91	65.29	54.65	46.79	36.62	30.05	25.71	17.01	14.43

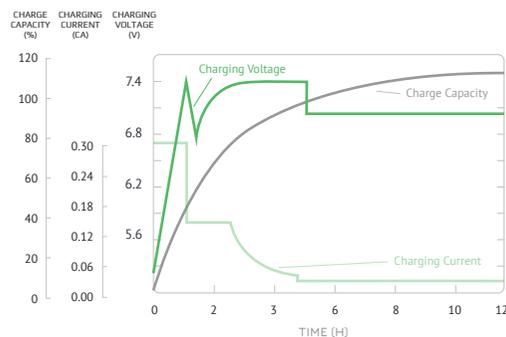
CYCLE LIFE CURVE GRAPH 25°C (77°F).



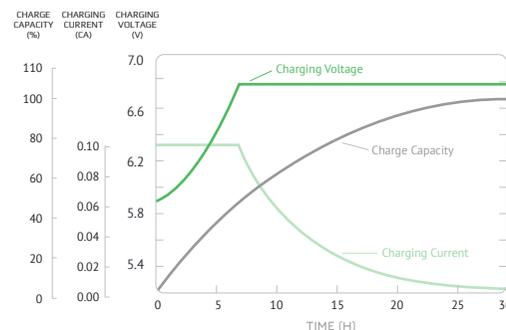
CYCLE LIFE CURVE GRAPH 40°C (104°F).



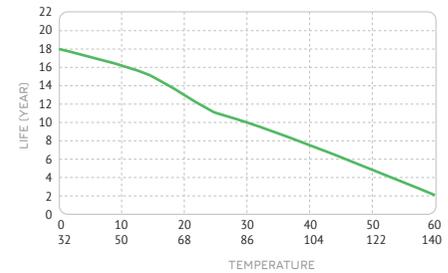
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



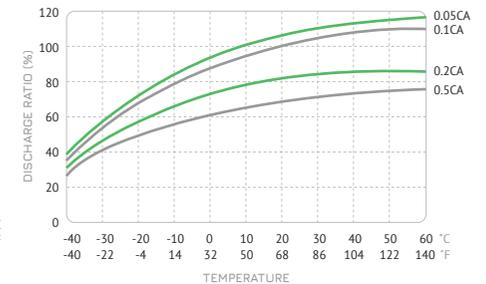
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB6-12GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

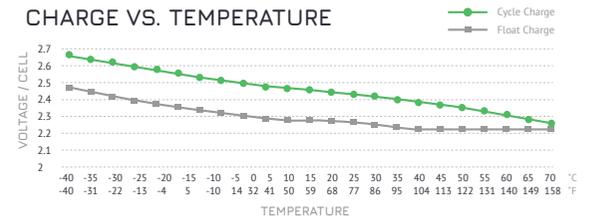
SPECIFICATION

NOMINAL VOLTAGE	6V
RATED CAPACITY (10 HOUR RATE)	12Ah
WEIGHT	~ 2.1 kg / 4.6 lbs
DIMENSIONS	Height: 100mm (3.9") Length: 151mm (5.9") Width: 50mm (2")
CAPACITY 25 °C (77 °F)	120 hour rate (120mA) - 14.4Ah 20 hour rate (660mA) - 13.2Ah 10 hour rate (1.2A) - 12Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	120 A (5s)
TERMINAL	F2 (250)
(CHARGING) CYCLE	Initial Charging Current 3.6A 7.4V / 25 °C (77 °F)
(CHARGING) FLOAT	6.8V / 25 °C (77 °F)

DISCHARGE CURRENT AND END VOLTAGE

DISCHARGE CURRENT (A)	End voltage (V)
0.05C OR BELOW OR INTERMITTENT DISCHARGE	5.70
0.05C OF CURRENT CLOSE TO IT	5.55
0.1C OF CURRENT CLOSE TO IT	5.40
0.2C OF CURRENT CLOSE TO IT	5.25
FROM 0.2C TO 0.5C	5.10
FROM 0.5C TO 1C	4.80
FROM 1C TO 3C	4.50
CURRENT IN EXCESS OF 3C	3.90

CHARGE VS. TEMPERATURE



DATASHEET - CB6-12GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

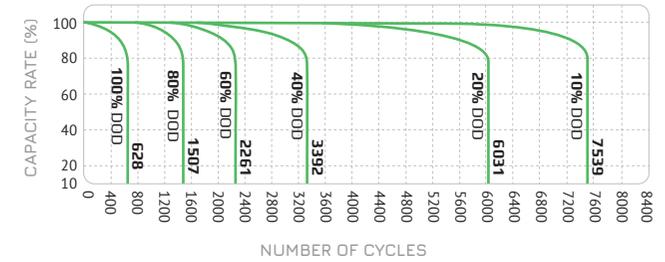
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	44.035	23.304	14.081	10.266	8.268	4.737	3.440	2.698	2.301	1.956	1.491	1.242	1.042	0.678	0.554
1.67V	40.925	22.541	13.872	10.195	8.254	4.717	3.378	2.684	2.268	1.942	1.489	1.228	1.040	0.676	0.552
1.70V	40.507	22.195	13.733	10.058	8.185	4.675	3.357	2.670	2.233	1.921	1.484	1.228	1.037	0.674	0.551
1.75V	37.109	21.499	13.596	9.989	8.046	4.585	3.343	2.637	2.213	1.908	1.477	1.214	1.032	0.671	0.551
1.80V	33.293	20.112	13.039	9.710	7.838	4.516	3.330	2.629	2.185	1.887	1.471	1.200	1.027	0.649	0.549
1.83V	31.824	18.451	12.833	9.365	7.492	4.474	3.198	2.518	2.136	1.817	1.439	1.151	0.985	0.642	0.542
1.85V	29.822	17.894	12.000	9.018	7.283	4.294	3.114	2.483	2.081	1.757	1.422	1.138	0.971	0.635	0.538

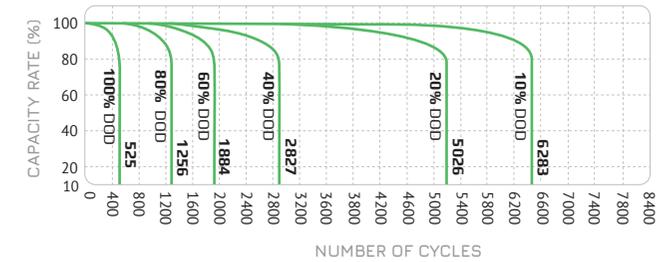
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	73.583	40.919	26.355	19.211	15.454	8.947	6.540	5.181	4.376	3.759	2.899	2.400	2.018	1.346	1.103
1.67V	70.048	40.295	25.289	19.073	15.466	8.947	6.547	5.174	4.376	3.752	2.899	2.393	2.018	1.345	1.103
1.70V	69.631	40.017	25.277	19.073	15.327	8.877	6.443	5.155	4.307	3.724	2.878	2.372	1.997	1.339	1.103
1.75V	64.846	39.532	25.305	19.072	15.258	8.808	6.429	5.146	4.293	3.697	2.864	2.356	1.997	1.339	1.096
1.80V	59.507	37.520	24.759	18.725	15.189	8.808	6.422	5.132	4.265	3.697	2.857	2.344	1.997	1.304	1.096
1.83V	57.425	34.469	24.552	18.171	14.565	8.739	6.242	4.959	4.217	3.579	2.857	2.275	1.963	1.290	1.089
1.85V	53.195	33.706	22.818	17.478	14.148	8.531	6.069	4.896	4.099	3.509	2.747	2.254	1.928	1.276	1.082

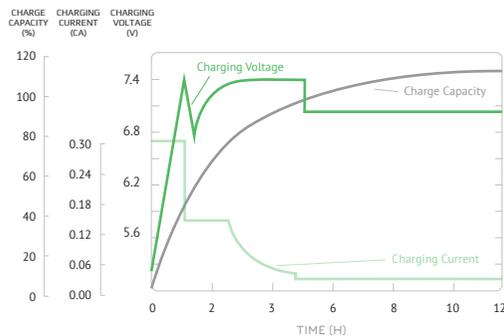
CYCLE LIFE CURVE GRAPH 25°C (77°F).



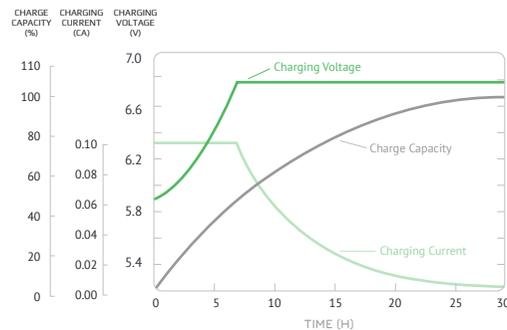
CYCLE LIFE CURVE GRAPH 40°C (104°F).



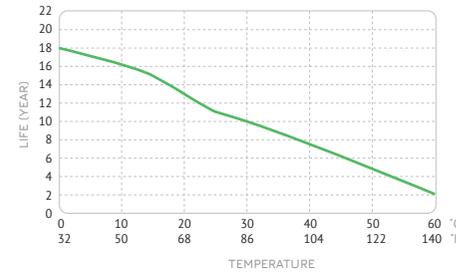
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



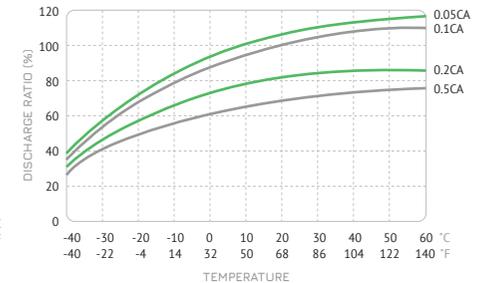
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-55GS

CRYSTAL BATTERY™ - GS GENERAL STORAGE

Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

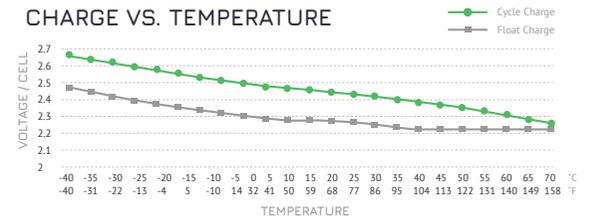
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	55Ah
WEIGHT	~ 16.9 kg / 37.3 lbs
DIMENSIONS	Height: 215 mm (8.5") Length: 229 mm (9") Width: 138 mm (5.4")
CAPACITY 25 °C (77 °F)	120 hour rate (0.55A) - 66Ah 20 hour rate (3.0A) - 60Ah 10 hour rate (5.5A) - 55Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25°C (77 °F)	550 A (5s)
TERMINAL	M6 (16)
(CHARGING) CYCLE	Initial Charging Current 16.5A 14.7V / 25°C (77 °F)
(CHARGING) FLOAT	13.6V / 25°C (77 °F)

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

CHARGE VS. TEMPERATURE



DATASHEET - CB12-55GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

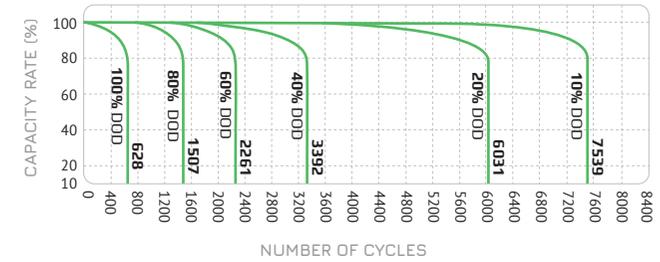
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	201.83	106.81	64.54	47.05	37.90	21.71	15.77	12.37	10.55	8.97	6.84	5.69	4.78	3.11	2.54
1.67V	187.57	103.31	63.58	46.73	37.83	21.62	15.48	12.30	10.40	8.90	6.83	5.63	4.77	3.10	2.53
1.70V	185.66	101.73	62.94	46.10	37.52	21.43	15.39	12.24	10.24	8.81	6.80	5.63	4.75	3.09	2.53
1.75V	170.08	98.54	62.32	45.78	36.88	21.01	15.32	12.08	10.14	8.74	6.77	5.56	4.73	3.08	2.52
1.80V	152.59	92.18	59.76	44.51	35.92	20.70	15.26	12.05	10.01	8.65	6.74	5.50	4.71	2.97	2.52
1.83V	145.86	84.57	58.82	42.92	34.34	20.51	14.66	11.54	9.79	8.33	6.60	5.28	4.51	2.94	2.49
1.85V	136.69	82.02	55.00	41.33	33.38	19.68	14.27	11.38	9.54	8.05	6.52	5.21	4.45	2.91	2.46

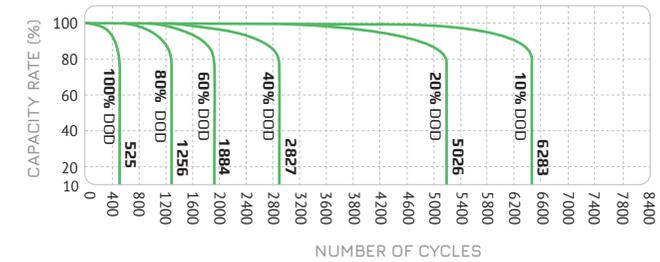
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	337.26	187.55	120.79	88.05	70.83	41.01	29.98	23.75	20.06	17.23	13.29	11.00	9.25	6.17	5.05
1.67V	321.05	184.69	115.91	87.42	70.89	41.01	29.59	23.71	20.06	17.20	13.29	10.97	9.25	6.17	5.05
1.70V	319.14	183.41	115.85	87.42	70.25	40.69	29.53	23.63	19.74	17.07	13.19	10.87	9.15	6.13	5.05
1.75V	297.21	181.19	115.98	87.42	69.93	40.37	29.47	23.59	19.68	16.94	13.13	10.80	9.15	6.13	5.02
1.80V	272.74	171.97	113.48	85.83	69.62	40.37	29.44	23.52	19.55	16.94	13.10	10.74	9.15	5.98	5.02
1.83V	263.20	157.98	112.53	83.28	66.75	40.05	28.61	22.73	19.33	16.40	13.10	10.43	9.00	5.91	4.99
1.85V	243.81	154.49	104.58	80.11	64.85	39.10	27.81	22.44	18.79	16.08	12.59	10.33	8.84	5.85	4.96

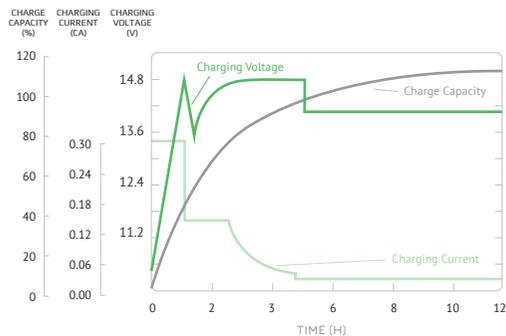
CYCLE LIFE CURVE GRAPH 25°C (77°F).



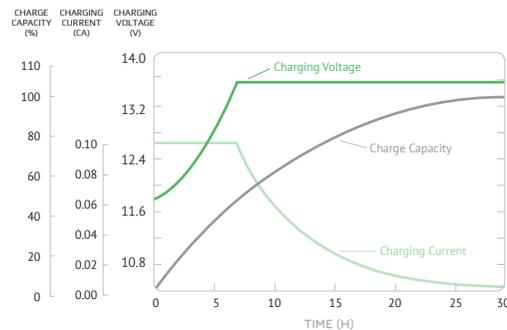
CYCLE LIFE CURVE GRAPH 40°C (104°F).



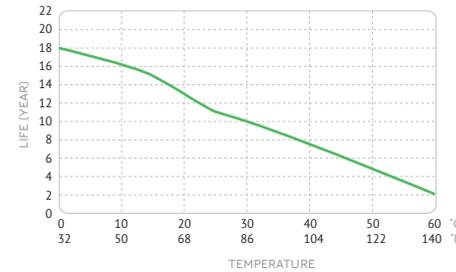
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



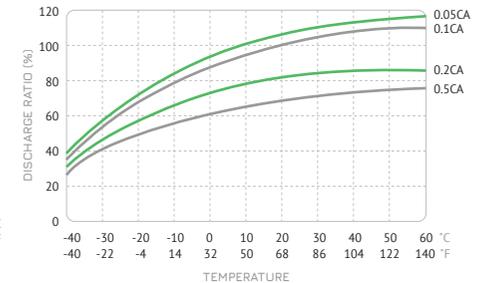
FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB12-7.2HGS

CRYSTAL BATTERY™ - GS GENERAL STORAGE



Crystal Batteries™ are a unique technology that overcomes conventional battery problems by having a nearly solid-state electrolyte. This allows the battery to be discharged deeper, cycle more often, has a longer lifetime and can withstand extreme temperatures.

The patented Crystal technology uses a unique advanced formula, a new type of composite SiO2 electrolyte developed to completely replace traditional sulphuric acid solutions.

TECHNICAL SPECIFICATIONS

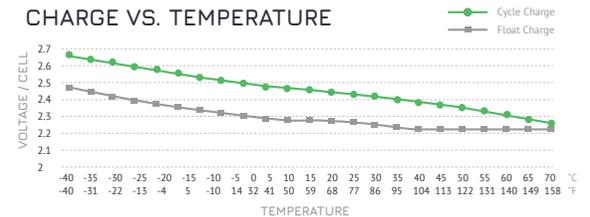
SPECIFICATION

NOMINAL VOLTAGE	12V
RATED CAPACITY (10 HOUR RATE)	9Ah
WEIGHT	~ 2.54 kg / 5.6 lbs
DIMENSIONS	Height: 102 mm (4") Length: 151 mm (5.9") Width: 65 mm (2.6")
CAPACITY 25 °C (77 °F)	10 hour rate (0.9A) - 9Ah 5 hour rate (1.44A) - 7.2Ah 2 hour rate (3A) - 6Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25 °C (77 °F)	< 24mΩ
SELF DISCHARGE 25 °C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	90A (5s)
TERMINAL	F2 (250)
(CHARGING) CYCLE	Initial Charging Current 2.7A 14.7V / 25 °C (77 °F)
(CHARGING) FLOAT	13.6V / 25 °C (77 °F)

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

CHARGE VS. TEMPERATURE



CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



BETTER USAGE PERFORMANCE

Charges up to three times faster than conventional alternatives. Excellent high-current discharge.



FULL RECOVERY

Crystal Batteries™ can be 100% discharged and restored to full capacity.



PROVEN TRACK RECORD

Crystal Batteries™ have been successfully used in the telecom, industrial EV and storage markets.



THE SAFEST

No risk of thermal runaway, spontaneous combustion, no leakage, and fewer harmful chemicals.



UP TO 99% RECYCLABLE

A sustainable circular economy, less acid, no antimony or cadmium.



EXTREME TEMPERATURES

Extreme temperature resistance. Operates from -40 °C (40 °F) to +65 °C (149 °F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25 °C (50% DoD).

DATASHEET - CB12-7.2HGS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

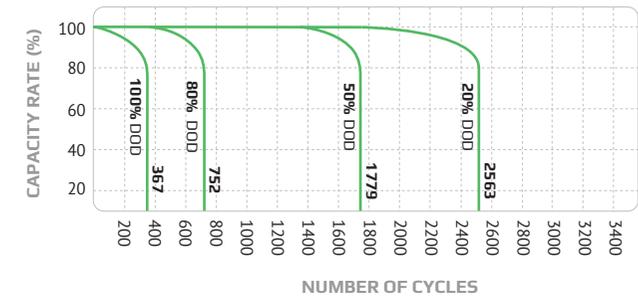
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	33.0	17.4	10.5	6.69	5.50	3.31	2.37	1.92	1.61	1.40	1.11	0.931	0.781	0.508	0.415
1.67V	30.6	16.9	10.4	6.64	5.45	3.23	2.33	1.91	1.58	1.38	1.10	0.920	0.780	0.507	0.414
1.70V	30.3	16.6	10.2	6.54	5.40	3.15	2.31	1.90	1.55	1.37	1.10	0.920	0.777	0.505	0.413
1.75V	27.8	16.1	10.1	6.49	5.33	3.08	2.30	1.87	1.53	1.36	1.10	0.910	0.774	0.503	0.413
1.80V	24.9	15.0	9.70	6.28	5.12	3.00	2.29	1.87	1.50	1.35	1.09	0.900	0.769	0.486	0.412
1.83V	23.8	13.8	9.60	6.02	4.88	2.96	2.19	1.78	1.46	1.30	1.07	0.877	0.738	0.481	0.406
1.85V	22.3	13.4	9.00	5.76	4.75	2.92	2.03	1.76	1.43	1.28	1.06	0.864	0.728	0.476	0.403

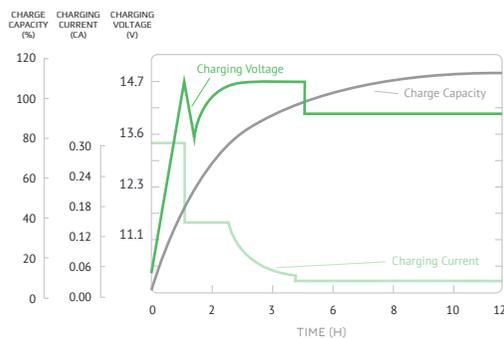
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	71.7	37.5	24.6	13.4	10.7	6.24	4.56	3.61	3.05	2.62	2.02	1.67	1.40	0.939	0.770
1.67V	70.0	36.6	24.1	13.3	10.7	6.24	4.50	3.61	3.05	2.61	2.02	1.67	1.40	0.939	0.770
1.70V	68.5	35.8	23.6	13.3	10.6	6.19	4.48	3.59	3.00	2.59	2.00	1.65	1.39	0.934	0.769
1.75V	65.3	34.1	22.5	13.3	10.6	6.14	4.43	3.59	2.99	2.58	1.99	1.64	1.39	0.934	0.765
1.80V	59.8	31.2	20.8	13.0	10.5	6.14	4.37	3.58	2.97	2.58	1.99	1.63	1.39	0.910	0.765
1.83V	57.5	30.1	19.8	12.6	10.1	6.09	4.30	3.46	2.94	2.49	1.99	1.60	1.37	0.900	0.760
1.85V	52.5	27.4	18.1	12.1	9.87	5.95	4.23	3.41	2.86	2.44	1.91	1.59	1.34	0.891	0.755

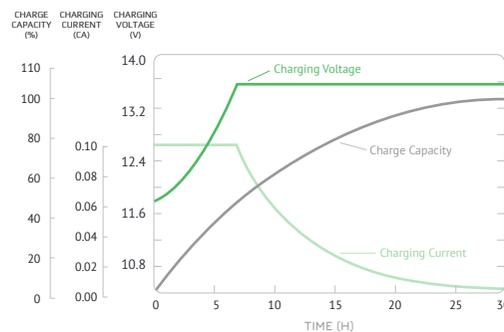
CYCLE LIFE CURVE GRAPH 25°C (77°F).



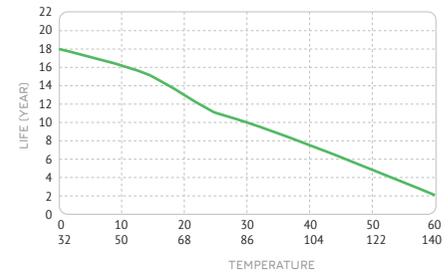
REGULAR CHARGE CHARACTERISTICS 25°C (77°F).



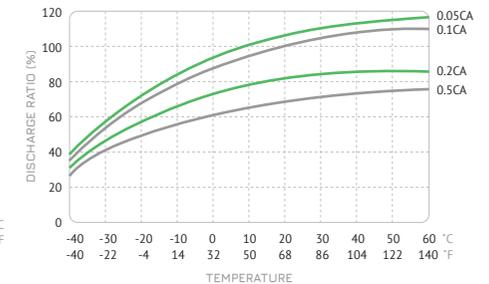
FLOATING CHARGE CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.



CB6-10GS

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CRYSTAL TECHNOLOGY

Our unique electrolyte crystallizes on the battery plates, giving the batteries their powerful features.



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UP TO 99% RECYCLABLE

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Extreme temperature resistance. Operates from -40°C (40°F) to +65°C (149°F).



LONG BATTERY LIFE

A float service life of up to 11 years. Up to 3,100 charge / discharge cycles at 25°C (50% DoD).

TECHNICAL SPECIFICATIONS

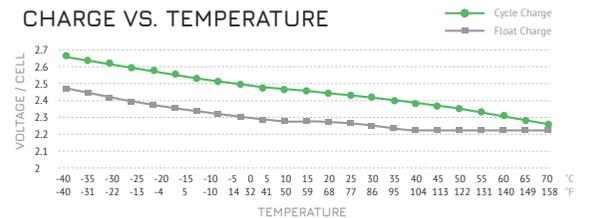
SPECIFICATION

NOMINAL VOLTAGE	6V
RATED CAPACITY (10 HOUR RATE)	10Ah
WEIGHT	~ 1.75 kg / 3.9 lbs
DIMENSIONS	Height: 100 mm (3.9") Length: 151 mm (5.9") Width: 47 mm (2")
CAPACITY 25 °C (77 °F)	120 hour rate (90mA) - 10.8Ah 20 hour rate (600mA) - 12Ah 10 hour rate (1A) - 10Ah
INTERNAL RESISTANCE - FULLY CHARGED BATTERY 25°C (77 °F)	< 8mΩ
SELF DISCHARGE 25°C (77 °F) (STORAGE CAPACITY)	Capacity after 3 month - 95% Capacity after 6 month - 85% Capacity after 12 month - 80%
MAX DISCHARGE CURRENT 25 °C (77 °F)	100 A (5s)
TERMINAL	F2 (250)
(CHARGING) CYCLE	Initial Charging Current 3A 7.4V / 25 °C (77 °F)
(CHARGING) FLOAT	6.8V / 25 °C (77 °F)

DISCHARGE CURRENT AND END VOLTAGE

DISCHARGE CURRENT (A)	End voltage (V)
0.05C OR BELOW OR INTERMITTENT DISCHARGE	5.70
0.05C OF CURRENT CLOSE TO IT	5.55
0.1C OF CURRENT CLOSE TO IT	5.40
0.2C OF CURRENT CLOSE TO IT	5.25
FROM 0.2C TO 0.5C	5.10
FROM 0.5C TO 1C	4.80
FROM 1C TO 3C	4.50
CURRENT IN EXCESS OF 3C	3.90

CHARGE VS. TEMPERATURE



DATASHEET - CB6-10GS

CELL CHARGE VOLTAGE VS. TEMPERATURE CHART

Temperature (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Temperature (°F)	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149	158
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	2.42	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

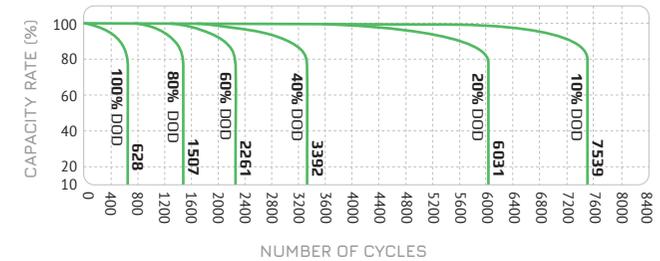
CONSTANT CURRENT DISCHARGE CHARACTERISTICS: UNITS AMPERES 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	36.696	19.420	11.734	8.555	6.890	3.948	2.867	2.249	1.918	1.630	1.243	1.035	0.868	0.565	0.462
1.67V	34.104	18.784	11.560	8.496	6.878	3.931	2.815	2.237	1.890	1.619	1.241	1.023	0.867	0.564	0.460
1.70V	33.756	18.496	11.444	8.381	6.821	3.896	2.798	2.225	1.861	1.601	1.237	1.023	0.864	0.562	0.460
1.75V	30.924	17.916	11.330	8.324	6.705	3.821	2.786	2.197	1.844	1.590	1.231	1.012	0.860	0.560	0.459
1.80V	27.744	16.670	10.866	8.092	6.532	3.763	2.775	2.191	1.821	1.572	1.225	1.000	0.856	0.540	0.458
1.83V	26.520	15.376	10.694	7.804	6.243	3.728	2.665	2.098	1.780	1.514	1.199	0.960	0.821	0.535	0.452
1.85V	24.852	14.912	10.000	7.515	6.069	3.578	2.595	2.069	1.734	1.464	1.185	0.948	0.809	0.529	0.448

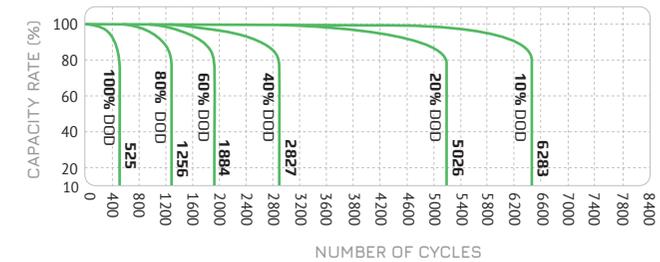
DISCHARGE DATA WITH CONSTANT POWER UNITS: WATTS PER CELL 25°C (77°F)

End Cell Voltage	5 min	15 min	30 min	45 min	1h	2h	3h	4h	5h	6h	8h	10h	12h	20h	24h
1.60V	61.320	34.100	21.962	16.009	12.879	7.456	5.450	4.317	3.647	3.133	2.416	2.000	1.682	1.121	0.919
1.67V	58.373	33.579	21.074	15.894	12.888	7.456	5.381	4.312	3.647	3.127	2.416	1.994	1.682	1.121	0.919
1.70V	58.026	33.348	21.064	15.894	12.772	7.398	5.369	4.296	3.589	3.104	2.399	1.977	1.665	1.115	0.919
1.75V	54.038	32.943	21.088	15.894	12.715	7.340	5.358	4.288	3.578	3.081	2.387	1.963	1.665	1.115	0.913
1.80V	49.589	31.267	20.633	15.605	12.657	7.340	5.352	4.277	3.554	3.081	2.381	1.954	1.665	1.087	0.913
1.83V	47.854	28.724	20.460	15.142	12.137	7.282	5.202	4.132	3.514	2.928	2.381	1.896	1.636	1.075	0.907
1.85V	44.329	28.088	19.015	14.565	11.790	7.109	5.057	4.080	3.416	2.924	2.289	1.878	1.607	1.063	0.902

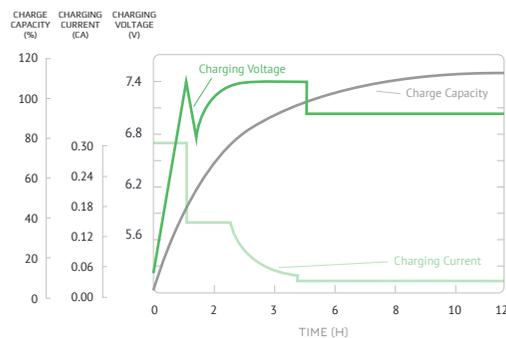
CYCLE LIFE CURVE GRAPH 25°C (77°F).



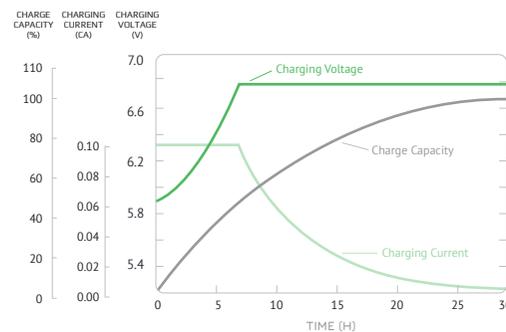
CYCLE LIFE CURVE GRAPH 40°C (104°F).



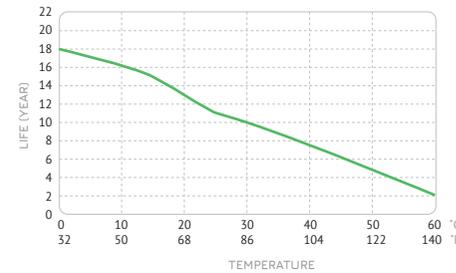
REGULAR CYCLE CHARGE CHARACTERISTICS 25°C (77°F).



FLOATING CHARACTERISTICS 25°C (77°F).



FLOAT SERVICE LIFE CURVE GRAPH.



TEMPERATURE & DISCHARGE CAPACITY.

