

CANBAT BATTERIES

VRLA-AGM



www.canbat.ca

- **CBL SERIES – GENERAL PURPOSE**
- **CDC SERIES – DEEP CYCLE**
- **CXL SERIES – EXTENDED LIFE**
- **CHR SERIES – HIGH RATE / UPS**
- **CFT SERIES – FRONT TERMINAL**

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Canadian Battery Manufacturer

CANBAT VRLA-AGM BATTERY FEATURES

INTRODUCTION

Canbat VRLA-AGM batteries are Valve-Regulated Lead-Acid batteries with Absorbed Glass Mat (AGM) separators. This is a matured technology invented more than half a century ago. Canbat is now able to design, build and market high quality, long life VRLA-AGM batteries from 2V to 24V, and 0.5AH to 3500AH. Canbat produces batteries from scratch and is capable of engineering tools and molds upon our customer's request. Canbat is now one of the most trusted Canadian battery brands.

APPLICATIONS

Canbat VRLA-AGM batteries are designed and categorized into six series for different applications as listed below:

- CBL series, General Purpose Applications:**
 - All Purpose Battery Needs
 - UPS
 - EPS
 - Emergency Light
 - Signal
 - Security System
 - Electronic Equipment
 - DC Power Supply
 - Tele-communication
 - Power System
 - Network Communication
- CDC series, Deep Cycle Applications:**
 - Electric Tools
 - Lawn Mowers
 - Golf Trolleys
 - Portable Apparatus
 - Electric Toys
 - Illumination Light
 - Wheel chairs
 - Medical Equipment
- CXL series, Extended Life Standby Applications:**
 - UPS
 - EPS
 - Emergency Light
 - Railway Signal
 - Electronic Apparatus
 - Communication DC Power
 - Tele-Communication
 - Power System Communication
 - Network Communication
 - Marine
- CHR series, High Rate Discharging /UPS Applications:**
 - UPS(High rate)
 - High Power Backup
 - Starting System
 - Power Tools
 - Emergency Lighting
 - Electric Starting
- CFT series, Front Terminal / Telecom Applications:**
 - For Standard 19 Inch or 23 Inch Power Cabinets
 - Network Connection Equipment
 - UPS
 - Power Station Systems
 - Railway and Marine Systems

DEFINITIONS OF VRLA-AGM BATTERY

A VRLA-AGM battery is an electric storage lead-acid battery.

- Sealed with special compound epoxy and using pressure controlled vent valves.
- Starved electrolyte design - acid solution is absorbed in separators.
- Using a recombination reaction to prevent the escape of hydrogen and oxygen gases.
- Non-spillable - can be operated in any position however upside down installation is not recommended.
- Maintenance free. But connections must be retorqued and the batteries should be cleaned periodically.

A VRLA-AGM battery uses recombinant technology. The oxygen produced from the positive plates of the battery is absorbed by the negative plates. This suppresses the generation of hydrogen at the negative plates. The recombination of oxygen and hydrogen leads to Water (H O), retaining the electrolyte amount within the battery. Water filling is never required. should never be opened as this would damage the battery with additional oxygen from the air. The warranty will be void if the battery is opened.

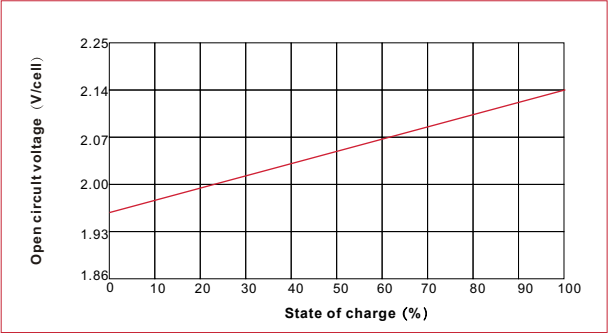
FEATURES

- Maintenance-free, no water adding required
- Sealed Valve-Regulated
- Spill proof / leak proof
- Deep discharge protection
- Plate grids from lead-calcium alloy, free of antimony
- No corrosion
- Installs vertically or horizontally
- Low gassing (unless overcharged)
- Good cycling and stationary performance
- Good high rate discharges
- Long shelf life
- Rugged and vibration-resistant

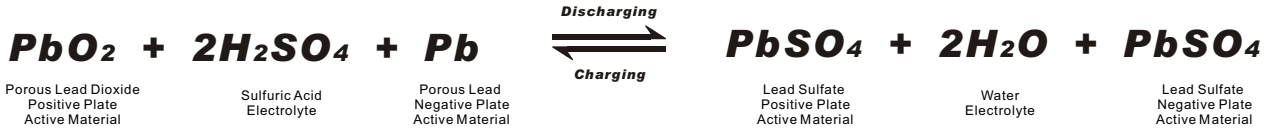
Charge Voltages and Temperature Ranges

Temp (°F)	Boost Charge(V/cell)		Float Charge(V/cell)		Temp (°C)
	Optimum	Maximum	Optimum	Maximum	
≥120	2.23	2.28	2.15	2.18	≥49
110-120	2.27	2.32	2.17	2.22	43-49
100-110	2.28	2.33	2.18	2.23	38-43
90-100	2.30	2.35	2.20	2.25	32-38
80-90	2.32	2.37	2.22	2.27	27-32
70-80	2.35	2.40	2.25	2.30	21-27
60-70	2.38	2.43	2.28	2.33	16-21
50-60	2.40	2.45	2.30	2.35	10-16
40-50	2.43	2.48	2.33	2.38	4-10
30-40	2.46	2.51	2.34	2.39	(-1)-4
20-30	2.49	2.54	2.36	2.41	(-6)-(-1)
10-20	2.53	2.58	2.38	2.43	(-12)-(-6)
≤10	2.58	2.63	2.39	2.44	≤-12

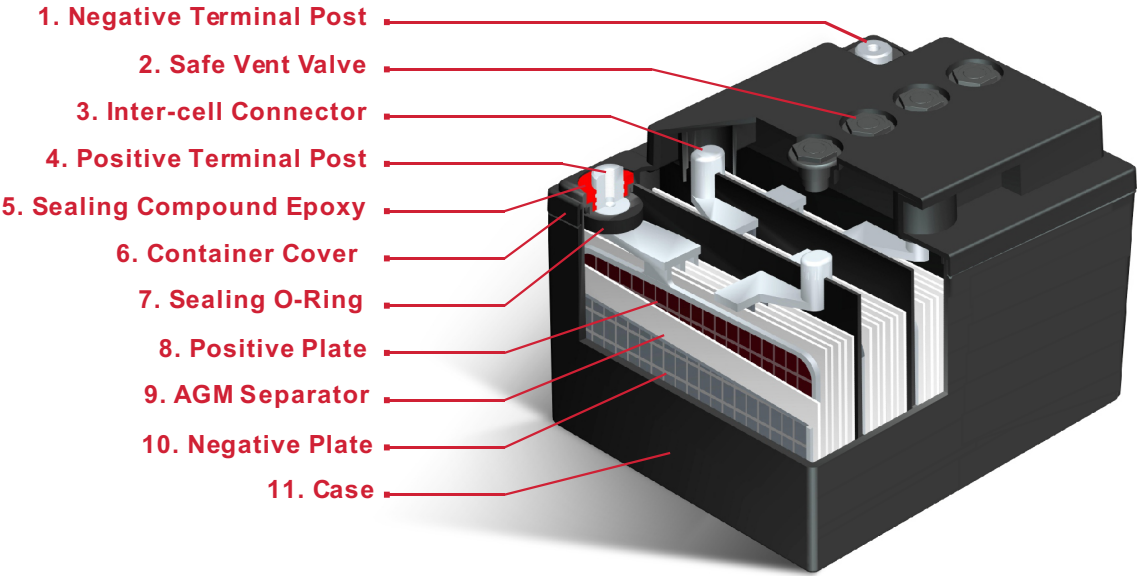
State of charge vs. Open circuit voltage



BATTERY OPERATION THEORY



VRLA BATTERY CONSTRUCTION



Battery Terminal Options

For the positioning on each battery model, please check the specification on www.canbat.ca

Unit:mm[inch]

**FASTON TYPE (Copper) quick disconnect tabs;
silver coating for better conductivity**



**FASTON TYPE (Copper) quick disconnect tabs;
silver coating for better conductivity**



Lead
Torque: 3.9 ~ 5.4 N*m(34.39 ~ 47.75 in*lbs)



Brass Coated With Tin; Threaded Insert 8mm STUD
Torque: 11~14.7 N*m(97.28 ~ 130.0 in*lbs)



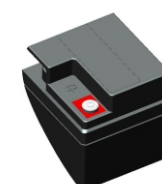
Brass Coated With Tin
Torque: 3.9 ~ 5.4 N*m (34.39 ~ 47.75 in*lbs)



Brass Coated With Tin



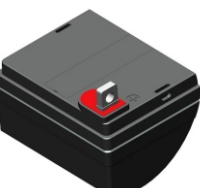
Brass Coated With Tin; Threaded Insert 5mm STUD
Torque: 2.0 ~ 3.0 N*m (17.69 ~ 26.53 in*lbs)



Brass Coated With Tin; Threaded Insert 6mm STUD
Torque: 3.9 ~ 5.4 N*m(34.39 ~ 47.75 in*lbs)



Lead
Torque: 3.9 ~ 5.4 N*m(34.39 ~ 47.75 in*lbs)



Brass Coated With Tin; Threaded Insert 6mm STUD
Torque: 3.9 ~ 5.4 N*m (34.39 ~ 47.75 in*lbs)



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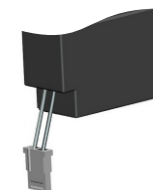
Lead
Torque: 11 ~ 14.7 N*m(97.28 ~ 130.0 in*lbs)



Spring Steel
Fully Collapsible



Toy Battery Connector H-Connector



MAINTENANCE-FREE, SEALED WITH AGM SEPARATOR

CBL SERIES
GENERAL PURPOSE



General Features

- ♦ Using oxygen recombination technology: maintenance-free
- ♦ PbCaSn alloy for plate grids: less gassing, less self-discharging
- ♦ High quality AGM separator: extend cycle life and prevent micro short circuit
- ♦ ABS material: increases the strength of the battery container. (Flame-retardant ABS is optional)
- ♦ High purity raw material: ensures low self discharge rate
- ♦ Silver-coated copper terminals (T1, T2 terminal), brass insert terminals and lead terminals improve the electric conductivity

CBL Models and Parameters (Small size)

Typical Applications

- ♦ All purpose ♦ Uninterruptible Power Supply (UPS) ♦ Electric Power System (EPS)
- ♦ Emergency backup power supply ♦ Emergency light ♦ Railway signal ♦ Aircraft signal
- ♦ Alarm and security system ♦ Electronic apparatus and equipment ♦ Communication power supply
- ♦ DC power supply ♦ Auto control system

Model	Nominal Voltage (V)	Rated Capacity (Ah)						Approx Dimension						Approx Weight		Terminal type
		20HR	10HR	5HR	1HR			Length		Width						
		1.80V/cell	1.80V/cell	1.75V/cell	1.60V/cell	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CBL3.5-4	4	3.50	3.26	2.94	2.12	90.0	3.54	34.0	1.34	59.0	2.32	65.0	2.56	0.45	0.99	T1
CBL4.5-4	4	4.50	4.19	3.78	2.73	52.5	2.07	48.0	1.89	94.0	3.70	100.0	3.94	0.60	1.32	T1
CBL5.0-4	4	5.00	4.65	4.20	3.04	91.0	3.58	50.0	1.97	74.0	2.91	74.0	2.91	0.66	1.46	T1
CBL8.0-4	4	8.00	7.44	6.80	5.02	91.0	3.58	50.0	1.97	101.0	3.98	101.0	3.98	0.97	2.14	T2
CBL10-4	4	10.0	9.30	8.50	6.28	101.5	4.00	50.0	1.97	94.0	3.70	100.0	3.94	1.14	2.51	T2
CBL1.0-6	6	1.00	0.93	0.84	0.607	51.0	2.01	42.0	1.65	51.0	2.01	57.0	2.24	0.25	0.55	T1
CBL1.2-6	6	1.20	1.12	1.01	0.728	97.0	3.82	24.0	0.94	51.5	2.03	57.5	2.26	0.29	0.64	T1
CBL2.0-6	6	2.00	1.86	1.68	1.21	43.0	1.69	37.0	1.46	76.0	2.99	76.0	2.99	0.34	0.75	/
CBL2.8-6	6	2.80	2.60	2.35	1.70	66.0	2.60	33.0	1.30	97.0	3.82	103.0	4.06	0.57	1.26	T1
CBL3.2-6	6	3.20	2.98	2.69	1.94	134.0	5.28	34.0	1.34	60.0	2.36	66.0	2.60	0.67	1.48	T1
CBL4.0-6	6	4.00	3.72	3.36	2.43	70.0	2.76	47.0	1.85	100.0	3.94	106.0	4.17	0.74	1.63	T1
CBL4.5-6	6	4.50	4.19	3.78	2.73	70.0	2.76	47.0	1.85	100.0	3.94	106.0	4.17	0.81	1.79	T1
CBL5.0-6	6	5.00	4.65	4.20	3.04	169.0	6.65	35.0	1.38	70.0	2.76	74.0	2.91	0.95	2.09	T1
CBL5.4-6	6	5.40	5.02	4.53	3.28	70.0	2.76	47.0	1.85	100.0	3.94	106.0	4.17	0.80	1.76	T1
CBL6.0-6	6	6.00	5.58	5.05	3.64	70.0	2.76	47.0	1.85	100.0	3.94	106.0	4.17	0.90	1.98	T1
CBL7.0-6	6	7.00	6.51	5.95	4.40	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.12	2.47	T2
CBL7.2-6	6	7.20	6.70	6.12	4.52	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.20	2.65	T2
CBL7.5-6	6	7.50	6.98	6.40	4.71	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.26	2.78	T2

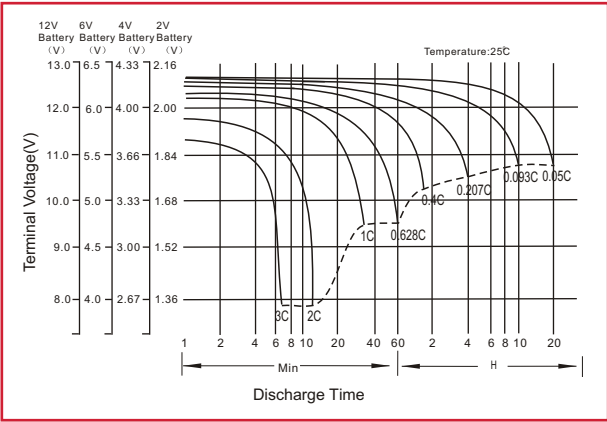
CBL Models (Small size)

Model	Nominal Voltage (V)	Rated Capacity (Ah)				Approx Dimension								Approx Weight		Terminal type
		20HR	10HR	5HR	1HR	Length		Width		Height		Total Height				
		1.80V/cell	1.80V/cell	1.75V/cell	1.60V/cell	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CBL7.8-6	6	7.80	7.25	6.63	4.90	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.28	2.82	T2
CBL8.5-6	6	8.50	7.91	7.25	5.34	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.20	2.65	T2
CBL8.5-6T	6	8.50	7.91	7.25	5.34	98.0	3.86	56.0	2.20	118.0	4.65	120.0	4.72	1.52	3.35	T2
CBL10-6	6	10.0	9.30	8.50	6.28	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	1.62	3.57	T2
CBL12-6	6	12.0	11.2	10.2	7.54	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	1.80	3.97	T2
CBL13-6	6	13.0	12.1	11.1	8.16	108.0	4.25	70.0	2.76	140.0	5.51	140.0	5.51	2.24	4.94	NTI/PT2
CBL14-6	6	14.0	13.0	11.9	8.79	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	2.05	4.52	T2
CBL20-6	6	20.0	18.6	17.0	12.6	157.0	6.18	83.0	3.27	125.0	4.92	125.0	4.92	3.21	7.08	T3
CBL36-6	6	36.0	33.5	30.6	22.6	161.0	6.34	87.0	3.43	163.0	6.42	169.0	6.65	5.50	12.1	T2
CBL3.2-8	8	3.20	2.98	2.69	1.94	134.0	5.28	36.5	1.44	63.0	2.48	69.0	2.72	0.75	1.65	T1
CBL0.8-12	12	0.80	0.74	0.67	0.486	96.0	3.78	25.0	0.98	62.0	2.44	62.0	2.44	0.36	0.79	/
CBL1.2-12	12	1.20	1.12	1.01	0.728	97.0	3.82	43.0	1.69	52.0	2.05	58.0	2.28	0.57	1.26	T1
CBL1.9-12	12	1.90	1.77	1.60	1.15	178.0	7.01	35.0	1.38	60.0	2.36	66.0	2.60	0.88	1.94	T1
CBL2.2-12	12	2.20	2.05	1.85	1.34	70.0	2.76	48.0	1.89	98.0	3.86	104.0	4.09	0.80	1.76	T1
CBL2.3-12	12	2.30	2.14	1.93	1.40	178.0	7.01	35.0	1.38	60.0	2.36	66.0	2.60	0.97	2.14	T1
CBL2.8-12	12	2.80	2.60	2.35	1.70	132.0	5.20	33.0	1.30	98.0	3.86	104.0	4.09	1.18	2.60	T1
CBL2.9-12	12	2.90	2.70	2.44	1.76	79.0	3.11	56.0	2.20	99.0	3.90	105.0	4.13	1.10	2.43	T1
CBL3.2-12	12	3.20	2.98	2.69	1.94	134.0	5.28	67.0	2.64	60.5	2.38	66.5	2.62	1.35	2.98	T1
CBL4.0-12L	12	4.00	3.72	3.36	2.43	195.0	7.68	47.0	1.85	70.0	2.76	76.0	2.99	1.60	3.53	T1
CBL4.0-12	12	4.00	3.72	3.36	2.43	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.45	3.20	T1
CBL4.5-12	12	4.50	4.19	3.78	2.73	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.48	3.26	T1
CBL5.0-12	12	5.00	4.65	4.20	3.04	151.0	5.94	53.0	2.09	93.0	3.66	99.0	3.90	1.75	3.86	T1
CBL5.4-12	12	5.40	5.02	4.54	3.28	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.65	3.64	T1
CBL6.0-12	12	5.80	5.58	5.05	3.64	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.88	4.15	T1
CBL6.0-12T	12	6.00	5.58	5.05	3.64	140.0	5.51	48.0	1.89	102.0	4.02	103.0	4.06	1.68	3.70	NTI/PT2
CBL6.5-12	12	6.50	6.05	5.55	4.08	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.06	4.54	T1
CBL7.0-12E	12	6.20	5.71	4.88	3.90	151.0	6.00	65.0	2.60	93.5	3.70	99.0	3.90	1.82	4.01	T2
CBL7.0-12	12	7.00	6.53	5.80	4.26	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.18	4.81	T2
CBL7.2-12	12	7.20	6.72	6.00	4.38	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.35	5.18	T2
CBL7.5-12	12	7.50	7.00	6.25	4.56	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.35	5.18	T2
CBL7.8-12	12	7.80	7.28	6.50	4.74	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.50	5.51	T2
CBL8.5-12	12	8.50	7.93	7.15	5.31	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.45	5.40	T2
CBL9.0-12	12	9.00	8.31	7.55	6.24	151.0	5.90	65.0	2.60	93.5	3.68	99.0	3.90	2.66	5.87	T2
CBL10-12	12	10.0	9.30	8.50	6.28	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	3.25	7.17	T2
CBL10-12T	12	10.0	9.30	8.50	6.28	151.0	5.94	65.0	2.56	111.0	4.37	117.0	4.61	3.20	7.06	T2
CBL12-12	12	12.0	11.2	10.2	7.54	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	3.50	7.72	T2
CBL14-12	12	14.0	13.0	11.9	8.79	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	4.05	8.93	T2
CBL15-12	12	15.0	14.0	12.8	9.42	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	4.70	10.4	T3
CBL18-12	12	18.0	16.7	15.3	11.3	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	5.40	11.9	T3
CBL20-12	12	20.0	18.6	17.0	12.6	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	5.78	12.7	T12
CBL24-12	12	24.0	22.3	20.4	15.1	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	7.20	15.9	T3
CBL24-12T	12	24.0	22.3	20.4	15.1	164.0	6.50	125.0	4.92	175.0	6.89	175.0	6.89	8.45	18.6	T12
CBL26-12	12	26.0	24.2	22.1	16.3	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	7.80	17.2	T12
CBL28-12	12	28.0	26.0	23.8	17.6	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	8.40	18.5	T3
CBL28-12T	12	28.0	26.0	23.8	17.6	164.0	6.50	125.0	4.92	175.0	6.89	175.0	6.89	9.10	20.1	T3
CBL30-12	12	29.0	27.0	24.7	18.2	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	8.60	19.0	T3
CBL30-12T	12	30.0	27.9	25.5	18.8	195.0	7.68	130.0	5.12	164.0	6.46	178.0	7.01	9.70	21.4	T5
CBL33-12	12	33.0	30.7	28.1	20.7	195.0	7.68	130.0	5.12	164.0	6.46	178.0	7.01	10.5	23.2	T5
CBL35-12	12	35.0	32.6	29.8	22.0	195.0	7.68	130.0	5.12	164.0	6.46	178.0	7.01	11.2	24.7	T5

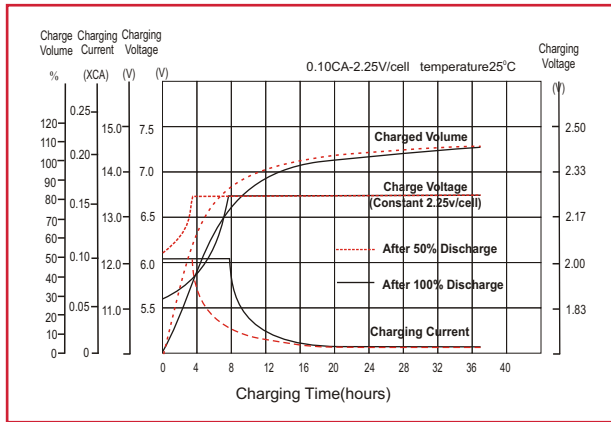
Specifications subject to change without notice.

CBL Performance Characteristics (Small size)

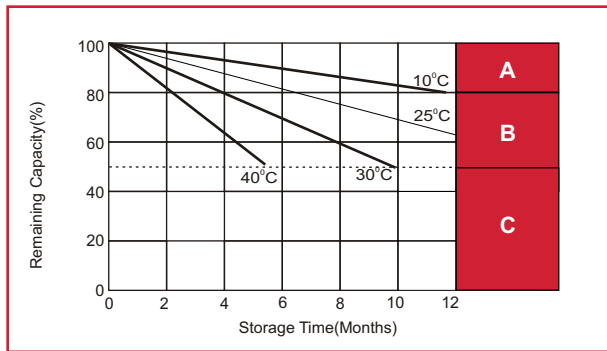
DISCHARGE CHARACTERISTICS



CHARGING CHARACTERISTICS(STANDBY USE)

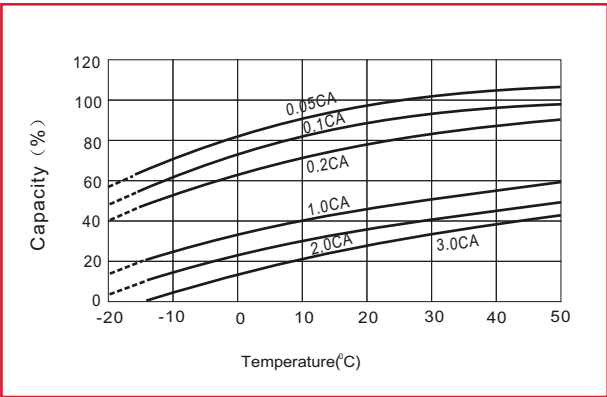


SELF DISCHARGE CHARACTERISTICS

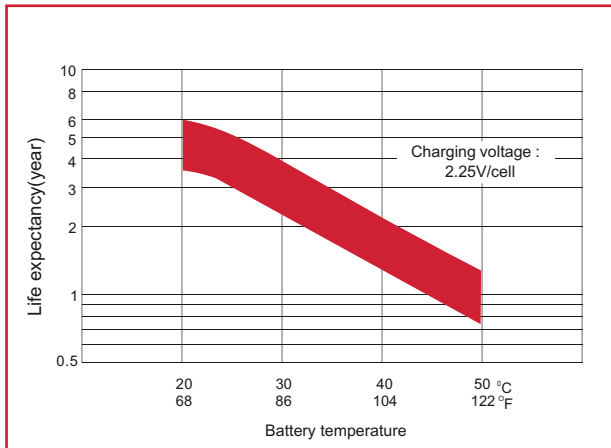


- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8-10hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

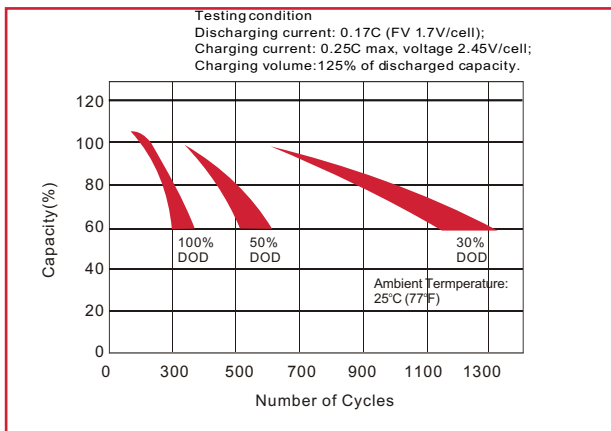
TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



CYCLE SERVICE LIFE IN RELATION TO THE DEPTH OF DISCHARGE



CBL Models and Parameters (Middle size)

Typical Applications

- ♦ All purpose ♦ Uninterruptible Power Supply (UPS) ♦ Electric Power System (EPS)
- ♦ Emergency backup power supply ♦ Emergency light ♦ Railway signal ♦ Aircraft signal
- ♦ Alarm and security system ♦ Electronic apparatus and equipment ♦ Communication power supply
- ♦ DC power supply ♦ Auto control system

Model	Nominal Voltage (V)	Rated Capacity(Ah)				Approx Dimension								Approx Weight		Terminal type
		20HR	10HR	5HR	1HR	Length		Width		Height		Total Height		kg	lbs	
						1.80V/cell	1.80V/cell	1.75V/cell	1.60V/cell	mm	in.	mm	in.			
CBL60-6	6	62.4	60.0	51.5	36.6	185.0	7.28	112.0	4.41	205.0	8.07	205.0	8.07	9.10	20.1	T2
CBL150-6	6	156.0	150.0	129.0	91.5	260.0	10.2	180.0	7.09	247.0	9.72	253.0	9.96	21.2	46.7	T7
CBL200-6	6	210.0	200.0	172.0	122.0	306.0	12.0	168.0	6.61	222.0	8.74	228.0	8.98	28.2	62.2	T8
CBL38-12	12	40.0	38.0	32.7	23.2	197.0	7.76	165.0	6.50	170.0	6.69	170.0	6.69	12.2	26.9	T6
CBL40-12	12	40.0	38.5	33.1	23.5	255.0	10.0	97.0	3.82	203.0	7.99	203.0	7.99	12.5	27.6	T7
CBL45-12	12	46.8	45.0	38.7	27.5	197.0	7.76	165.0	6.50	170.0	6.69	170.0	6.69	14.2	31.3	T6
CBL50-12	12	52.0	50.0	43.0	30.5	257.0	10.1	132.0	5.20	200.0	7.87	200.0	7.87	15.7	34.6	T6
CBL55-12	12	57.2	55.0	47.3	33.6	229.0	9.02	138.0	5.43	205.0	8.07	211.0	8.31	16.2	35.7	T6
CBL60-12	12	62.4	60.0	51.5	36.6	260.0	10.2	168.0	6.61	208.0	8.19	214.0	8.43	18.5	40.8	T6
CBL65-12	12	65.0	62.1	53.6	37.5	348.0	13.7	167.0	6.57	178.0	7.01	178.0	7.01	19.2	42.3	T6
CBL70-12	12	72.8	70.0	60.0	42.7	348.0	13.7	167.0	6.57	178.0	7.01	178.0	7.01	21.6	47.6	T6
CBL75-12	12	78.0	75.0	64.5	45.8	260.0	10.2	168.0	6.61	208.0	8.19	214.0	8.43	22.5	49.6	T6
CBL80-12	12	83.2	80.0	69.0	48.8	260.0	10.2	168.0	6.61	208.0	8.19	214.0	8.43	24.0	52.9	T6
CBL90-12	12	93.6	90.0	77.5	54.9	330.0	13.0	173.0	6.81	212.0	8.35	220.0	8.66	28.0	61.7	T11
CBL100-12	12	104.0	100.0	86.0	61.0	330.0	13.0	173.0	6.81	212.0	8.35	220.0	8.66	30.8	67.9	T11
CBL100-12E	12	103.0	100.0	83.0	59.4	330.0	12.99	173.0	6.81	212.0	8.35	220.0	8.66	27.9	61.5	T11
CBL120-12	12	124.8	120.0	103.2	73.2	408.0	16.1	177.0	6.97	225.0	8.86	225.0	8.86	34.3	75.6	T11
CBL135-12	12	140.4	135.0	116.0	82.4	345.0	13.6	172.0	6.77	274.0	10.8	280.0	11.0	41.2	90.8	T11
CBL150-12	12	156.0	150.0	129.0	91.5	483.0	19.0	170.0	6.69	238.5	9.39	238.5	9.39	43.5	95.9	T11
CBL180-12	12	187.2	180.0	155.0	109.8	532.0	20.9	207.0	8.15	214.0	8.43	220.0	8.66	54.0	119.1	T11
CBL200-12	12	208.0	200.0	172.0	122.0	522.0	20.6	240.0	9.45	218.0	8.58	224.0	8.82	60.2	132.7	T11
CBL250-12	12	260.0	250.0	215.0	152.5	522.0	20.6	268.0	10.6	220.0	8.66	226.0	8.90	73.0	161.0	T11

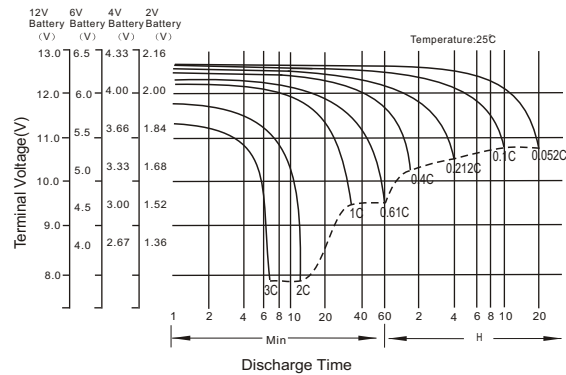
- ♦ Premium Quality Standards
- ♦ Superior Cycle Life
- ♦ Wide Selection



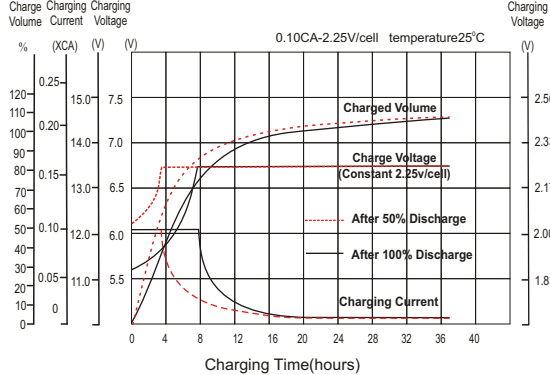
Specifications subject to change without notice.

CBL Performance Characteristics (Middle size)

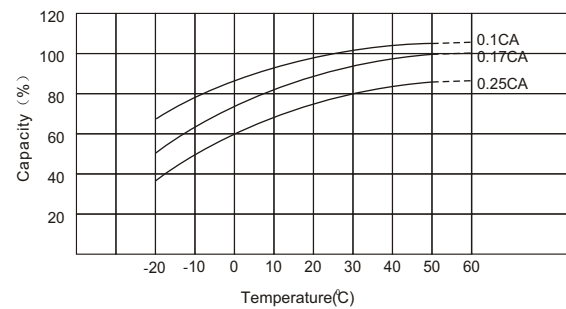
DISCHARGE CHARACTERISTICS



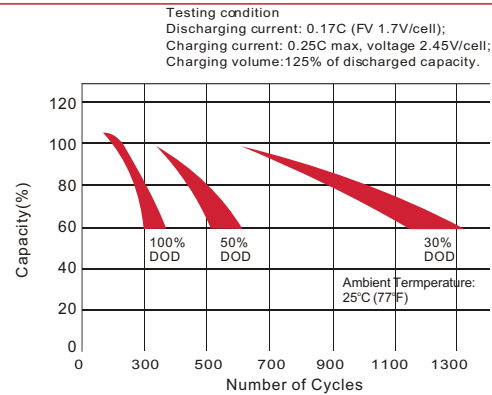
CHARGING CHARACTERISTICS(STANDBY USE)



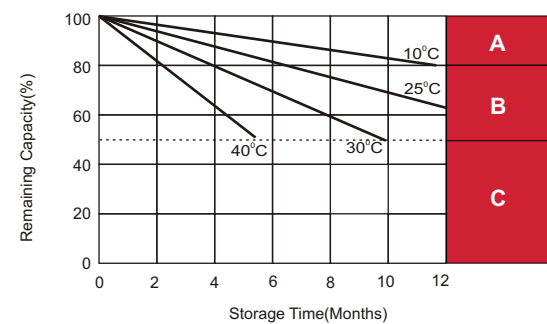
TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



CYCLE SERVICE LIFE IN RELATION TO THE DEPTH OF DISCHARGE



SELF DISCHARGE CHARACTERISTICS



- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8~10hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

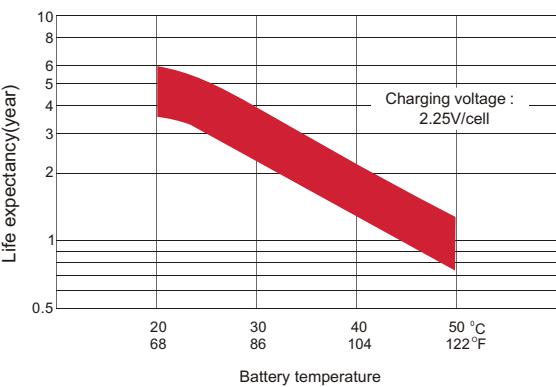
CBL II Models and Parameters (2V Series)

Typical Applications

- ◆ Tele-communication central station (wired or cellular)
- ◆ Power system communication, military communication, etc.
- ◆ Network communication including: data transmission, television signal transmission, etc.
- ◆ Uninterruptible Power System (UPS- for Telecom)

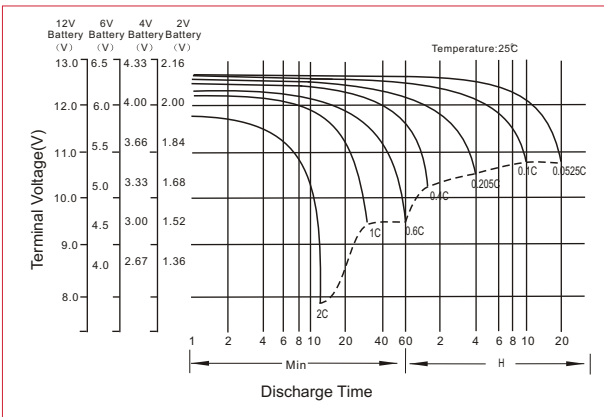
Model	Nominal Voltage (V)	Rated Capacity (Ah)				Approx Dimension								Approx Weight		Terminal type
		20HR	10HR	5HR	1HR	Length		Width		Height		Total Height				
						1.80V/cell	1.80V/cell	1.75V/cell	1.60V/cell	mm	in.	mm	in.	mm	in.	
CBL65-2	2	68.2	65.0	56.5	39.5	170.0	6.69	72.0	2.83	205.0	8.07	212.0	8.35	4.6	10.1	T6
CBL100-2	2	105.0	100.0	87.0	60.7	170.0	6.69	72.0	2.83	205.0	8.07	214.0	8.43	5.8	12.8	T6
CBL120-2	2	126.0	120.0	104.5	72.8	170.0	6.69	98.0	3.86	205.0	8.07	214.0	8.43	7.4	16.3	T7
CBL150-2	2	157.6	150.0	130.5	91.1	170.0	6.69	98.0	3.86	205.0	8.07	214.0	8.43	8.4	18.5	T7
CBL200-2	2	210.0	200.0	174.0	121.4	170.0	6.69	110.0	4.33	328.0	12.91	350.0	13.78	12.7	28.0	T11
CBL250-2	2	262.0	250.0	217.5	151.8	170.0	6.69	110.0	4.33	328.0	12.91	350.0	13.78	13.8	30.4	T11
CBL300-2	2	316.0	300.0	261.0	182.1	170.0	6.69	150.0	5.91	330.0	12.99	350.0	13.78	17.7	39.0	T11
CBL350-2	2	368.0	350.0	304.5	212.5	170.0	6.70	150.0	5.90	328.0	12.91	350.0	13.78	19.3	42.6	T11
CBL400-2	2	420.0	400.0	348.0	242.8	210.0	8.27	175.0	6.89	330.0	12.99	350.0	13.78	24.3	53.6	T11
CBL450-2	2	472.0	450.0	391.5	273.2	210.0	8.27	175.0	6.89	330.0	12.99	350.0	13.78	27.0	59.5	T11
CBL500-2	2	526.0	500.0	435.0	303.5	240.0	9.45	175.0	6.89	327.5	12.89	347.5	13.68	29.0	63.9	T11
CBL600-2	2	630.0	600.0	522.0	364.2	300.0	11.8	175.0	6.89	330.0	12.99	350.0	13.78	35.7	78.7	T11
CBL800-2	2	840.0	800.0	696.0	485.6	410.0	16.1	175.0	6.90	330.0	12.99	350.0	13.78	50.4	111.1	T11
CBL1000-2	2	1050.0	1000.0	870.0	607.0	475.0	18.7	175.0	6.90	328.0	12.91	350.0	13.78	60.0	132.3	T11
CBL1200-2	2	1260.0	1200.0	1044.0	728.4	475.0	18.7	175.0	6.89	328.0	12.91	350.0	13.78	66.4	146.4	T11
CBL1500-2	2	1576.0	1500.0	1305.0	910.5	403.0	15.9	354.0	13.9	339.0	13.35	349.0	13.74	96.0	211.7	T11
CBL2000-2	2	2100.0	2000.0	1740.0	1214.0	490.0	19.3	350.0	13.8	339.0	13.35	349.0	13.74	121.0	266.8	T11
CBL2500-2	2	2626.0	2500.0	2175.0	1517.5	490.0	19.3	350.0	13.8	339.0	13.35	349.0	13.74	133.6	294.6	T11
CBL3000-2	2	3150.0	3000.0	2610.0	1821.0	709.0	27.9	350.0	13.8	337.0	13.27	347.0	13.66	180.0	396.9	T11

EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE

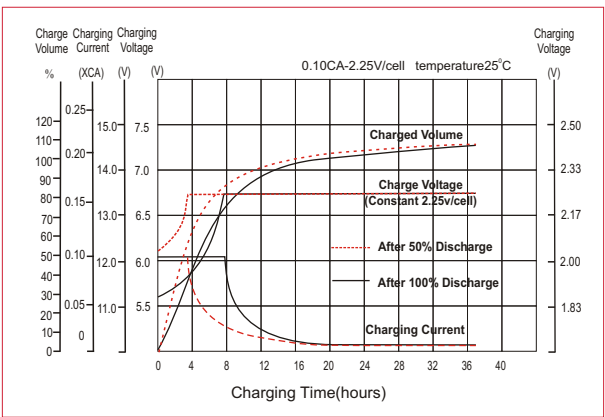


CBL II Performance Characteristics

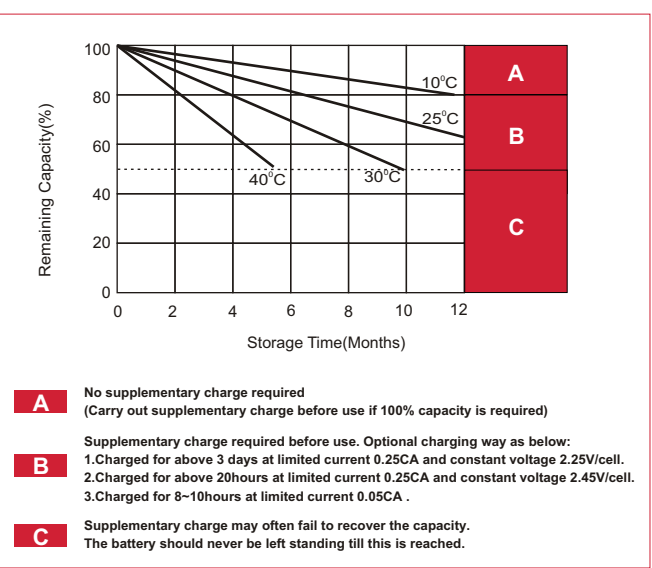
DISCHARGE CHARACTERISTICS



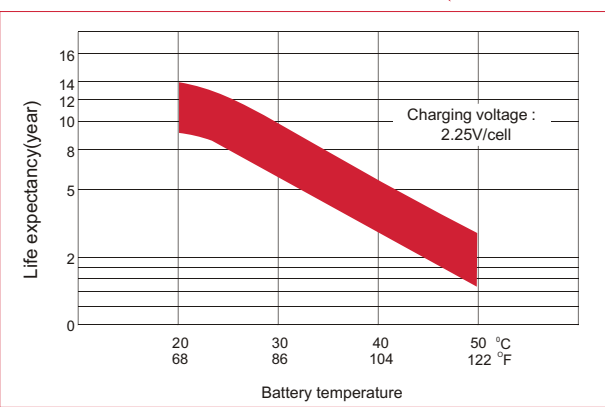
CHARGING CHARACTERISTICS (STANDBY USE)



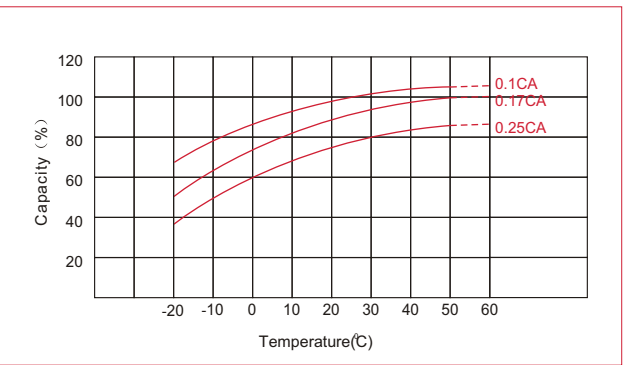
SELF DISCHARGE CHARACTERISTICS



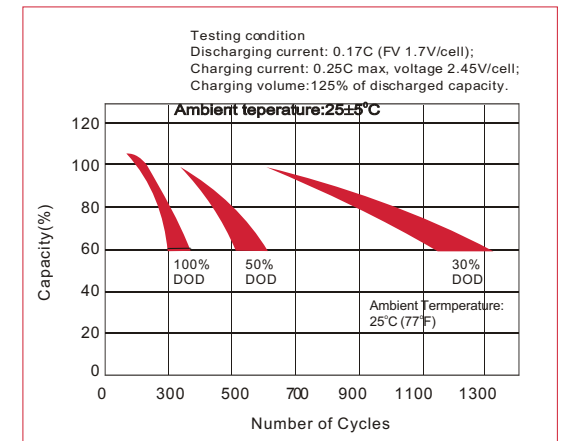
EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



CYCLE SERVICE LIFE IN RELATION TO THE DEPTH OF DISCHARGE



CDC SERIES DEEP CYCLE



General Features

- Using oxygen recombination technology: maintenance-free
- Special grid alloy: less gassing, less self-discharging
- For longer cycle life: special paste formula, over dimensioned negative plate, optimized manufacturing process , additives for deep discharge
- Thermal management system (optional)
- Special anti-vibration design (optional)
- High quality AGM separator: extend cycle life and prevent micro short circuit
- ABS material: increases the strength of the battery container. (Flame-retardant ABS is optional)

CDC Models and Parameters

Typical Applications

- Electric tools
- Vehicle in place of walking
- Lawn mowers
- Golf trolleys and golf carts
- Portable apparatus, lights and instruments;
- Electric toys
- Illumination lights
- Fire alarms
- Portable power
- Wheelchairs
- Medical equipments.

Model	Nominal Voltage (V)	Rated Capacity(AH)	Approx Dimension								Approx Weight		Terminal type
		10HR	Length		Width		Height		Total Height				
		1.80V/cell	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CDC5.6-6	6	5.0	70.0	2.76	47.0	1.85	100.0	3.94	106.0	4.17	0.90	1.98	T2
CDC13-6	6	13.0	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	2.05	4.52	T2
CDC3.2-12	12	3.2	134.0	5.28	67.0	2.64	60.5	2.38	66.5	2.62	1.35	2.98	T1
CDC5-12	12	5.0	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.80	3.97	T1
CDC7.2-12	12	7.2	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.50	5.51	T2
CDC8.0-12	12	8.0	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.45	5.40	T2
CDC12-12	12	12.0	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	4.00	8.82	T2
CDC18-12	12	18.0	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	6.05	13.34	T3
CDC20-12	12	20.0	166.5	6.56	175.0	6.89	125.0	4.92	125.0	4.92	6.9	15.21	T3
CDC24-12	12	24.0	165.0	6.50	125.0	4.92	175.0	6.89	175.0	6.89	8.70	19.18	T3-A
CDC26-12	12	26.0	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	9.35	20.61	T3
CDC33-12	12	33.0	195.0	7.68	130.0	5.12	164.0	6.46	182.0	7.17	11.65	25.69	T5
CDC40-12	12	38.0	197.0	7.76	165.0	6.50	170.0	6.69	170.0	6.69	13.50	29.67	T6
CDC50-12	12	50.0	257.0	10.12	132.0	5.20	200.0	7.87	200.0	7.87	17.70	38.80	T6
CDC55-12	12	55.0	229.0	9.02	138.0	5.43	210.0	8.27	230.0	9.06	17.25	39.02	T9
CDC75-12	12	75.0	260.0	10.20	168.0	6.61	208.0	8.19	214.0	8.43	22.70	50.04	T6
CDC100-12	12	100.0	330.0	12.99	173.0	6.81	212.0	8.35	220.0	8.66	30.40	67.02	T11
CDC120-12	12	120.0	408.0	16.06	177.0	6.97	225.0	8.86	225.0	8.86	37.60	82.91	T11
CDC150-12	12	150.0	483.0	19.02	170.0	6.69	238.5	9.39	238.5	9.39	43.50	95.92	T11
CDC200-12	12	200.0	522.0	20.55	240.0	9.45	218.0	8.58	224.0	8.82	61.50	135.58	T11



CXL SERIES EXTENDED LIFE



- ### General Features

 - ◆ Special grid alloy and high purity raw material ensure less gassing, less self-discharging
 - ◆ Grid refining technology and the thicker plates are used to extend the battery standby life and reduce the plate grid corrosion speed
 - ◆ Lower acid density, excess of electrolyte and larger distance between plates to keep battery at low temperature and slow down plate grid corrosion speed
 - ◆ Using oxygen recombination technology: maintenance-free
 - ◆ ABS material: increases the strength of the battery container. (Flame-retardant ABS is optional)
 - ◆ Unique vent valve design: controls water loss and prevents air and sparks from entering

CXL Models and Parameters (4V, 6V, 12V Series)

Typical Applications

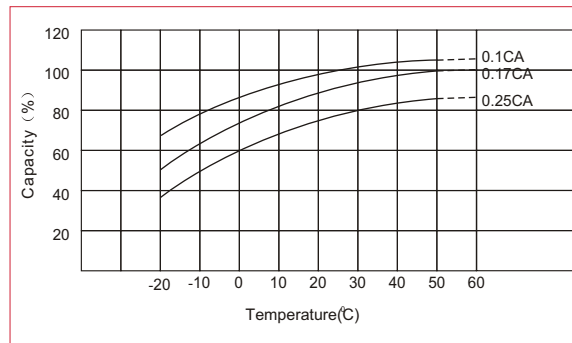
- ◆ UPS and EPS
 - ◆ Marine and power station
 - ◆ Communication power supply, DC power supply
- ◆ Emergency light
 - ◆ Alarm and security system
- ◆ Railway signal and aircraft signal system
 - ◆ Electronic apparatus and equipment

Model	Nominal Voltage (V)	Rated Capacity (AH)				Approx Dimension								Approx Weight		Terminal type
		20HR	10HR	5HR	1HR	Length		Width		Height		Total Height				
						1.80V/cell	1.80V/cell	1.75V/cell	1.60V/cell	mm	in.	mm	in.	mm	in.	
CXL8.0-4	4	8.48	8.00	6.94	4.92	102.0	4.02	44.0	1.73	95.0	3.74	101.0	3.98	1.01	2.23	T2
CXL6.5-6	6	6.89	6.50	5.64	4.00	151.0	5.94	34.0	1.34	94.0	3.70	100.0	3.94	1.26	2.78	T2
CXL9.0-6	6	9.54	9.00	7.81	5.54	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	1.70	3.75	T2
CXL11-6	6	11.7	11.0	9.54	6.77	151.0	5.94	51.0	2.01	94.0	3.70	100.0	3.94	1.90	4.19	T2
CXL18-6	6	19.1	18.0	15.6	11.1	157.0	6.18	83.0	3.27	125.0	4.92	125.0	4.92	3.21	7.08	T3
CXL4.5-12	12	4.78	4.50	3.90	2.77	151.0	5.94	53.0	2.09	93.0	3.66	99.0	3.90	1.90	4.19	T1
CXL7.0-12	12	7.42	7.00	6.05	4.31	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.45	5.40	T1
CXL9.0-12	12	9.00	7.00	6.50	5.24	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.75	6.06	T2
CXL12-12	12	12.7	12.0	10.4	7.38	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	3.85	8.49	T2
CXL18-12	12	19.1	18.0	15.6	11.1	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	5.70	12.57	T3
CXL22-12	12	23.3	22.0	19.4	13.2	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	5.90	13.01	T3
CXL24-12	12	25.4	24.0	20.8	14.8	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	7.80	17.20	T12
CXL26-12	12	27.6	26.0	22.6	16.0	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	8.40	18.52	T3
CXL28-12H	12	29.6	28.0	24.3	17.2	164.0	6.45	125.0	4.92	175.0	6.89	175.0	6.89	9.10	20.07	T3-A
CXL28-12	12	29.6	28.0	24.3	17.2	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	8.60	18.96	T3

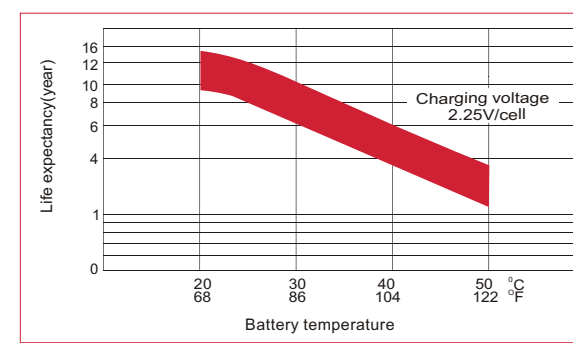
CXL Models and Parameters (4V, 6V, 12V Series)

Model	Nominal Voltage (V)	Rated Capacity (AH)				Approx Dimension								Approx Weight		Terminal type
						Length		Width		Height		Total Height				
		20HR	10HR	5HR	1HR	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CXL38-12	12	40.6	38.0	33.1	23.6	197	7.76	165	6.50	170	6.69	170	6.69	13.2	29.11	T6
CXL45-12	12	45.0	42.0	36.6	26.0	197	7.76	165	6.50	170	6.69	170	6.69	14.5	31.97	T6
CXL55-12	12	58.8	55.0	47.9	34.1	229	9.02	138	5.43	210	8.27	230	9.06	17.7	39.03	T9
CXL60-12	12	64.2	60.0	52.2	37.2	260	10.24	168	6.61	210	8.27	216	8.50	20.7	44.10	T6
CXL65-12	12	69.6	65.0	56.5	40.3	348	13.70	167	6.57	178	7.01	178	7.01	21.2	46.75	T6
CXL70-12	12	75.0	70.0	60.9	43.4	348	13.70	167	6.57	178	7.01	178	7.01	24.0	52.92	T6
CXL75-12	12	80.2	75.0	65.5	46.5	260	10.24	168	6.61	208	8.19	214	8.43	22.7	50.05	T6
CXL90-12	12	96.4	90.0	78.5	55.8	306	12.05	168	6.61	208	8.19	230	9.06	27.1	59.76	T14
CXL100-12	12	107.0	100.0	87.0	62.0	330	12.99	173	6.81	212	8.35	220	8.66	32.0	70.56	T11
CXL120-12	12	128.4	120.0	104.5	74.4	408	16.06	177	6.97	225	8.86	225	8.86	36.6	80.70	T11
CXL140-12	12	149.8	140.0	122.0	86.8	345	13.58	172	6.77	274	10.79	280	11.02	45.5	100.3	T11
CXL150-12	12	160.5	150.0	130.5	93.0	483	19.02	170	6.69	238.5	9.39	238.5	9.39	47.2	104.08	T11
CXL200-12	12	214.0	200.0	174.0	124.0	522	20.55	240	9.45	218	8.58	224	8.82	64.0	141.12	T11
CXL250-12	12	268.0	250.0	217.5	155.0	522	20.55	268	10.55	220	8.66	226	8.90	74.0	163.17	T11

TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



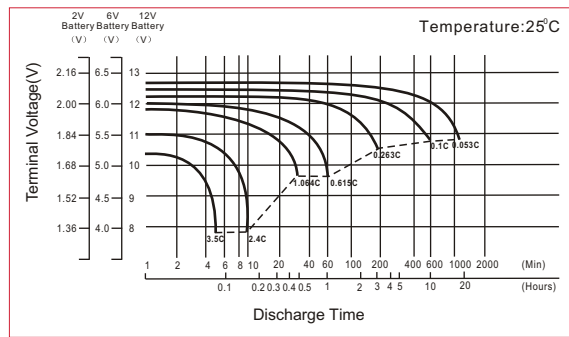
CXL II Models and Parameters (2V Series)

Typical Applications

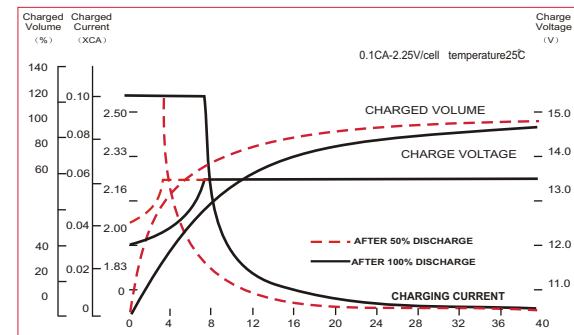
- ◆ Tele-communication central station (wired or cellular)
- ◆ Power system communication, military communication, etc.
- ◆ Network communication including: data transmission, television signal transmission, etc.
- ◆ Uninterruptable Power System (UPS- for Telecom)
- ◆ EPS

CXL Performance Characteristics (4V, 6V, 12V Series)

DISCHARGE CHARACTERISTICS



CHARGING CHARACTERISTICS



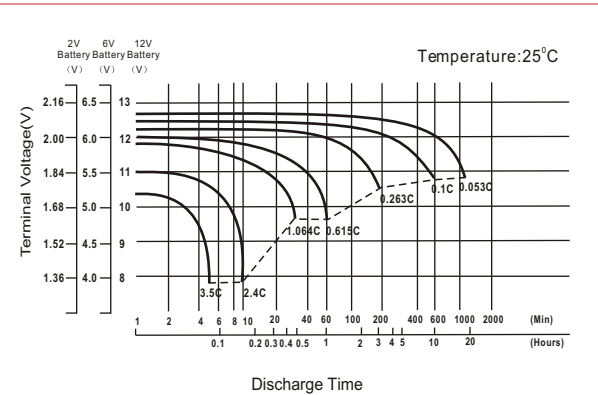
SELF DISCHARGE CHARACTERISTICS AND COMPLEMENTARY CHARGE METHODS

- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8~10 hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

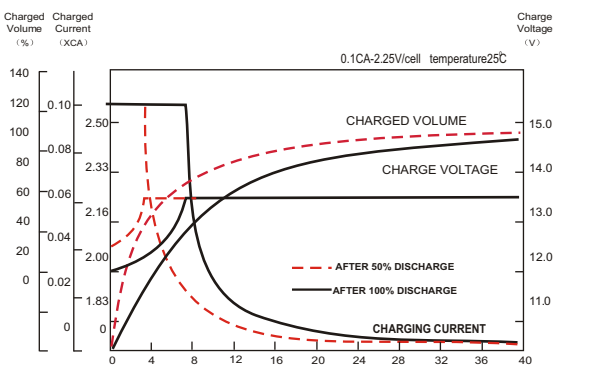
Model	Nominal Voltage (V)	Rated Capacity (AH)				Approx Dimension								Approx Weight		Terminal type
						Length		Width		Height		Total Height				
		20HR	10HR	5HR	1HR	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CXL100-2	2	106.8	100.0	88.5	60.1	170	6.69	72	2.83	205	8.07	214	8.35	5.9	13.01	T6
CXL150-2	2	160.0	150.0	133.0	90.1	170	6.69	98	3.86	205	8.07	214	8.35	8.4	18.74	T7
CXL200-2	2	214.0	200.0	177.5	120.1	170	6.69	110	4.33	328	12.91	350	13.78	13.7	30.21	T11
CXL250-2	2	266.0	250.0	222.0	150.2	170	6.69	110	4.33	328	12.91	350	13.78	14.5	31.97	T11
CXL300-2	2	320.0	300.0	266.0	180.2	170	6.69	150	5.91	330	12.99	350	13.78	18.8	41.45	T11
CXL400-2	2	426.0	400.0	355.0	240.3	210	8.27	175	6.89	330	12.99	350	13.78	26.4	58.21	T11
CXL500-2	2	534.0	500.0	443.5	300.3	240	9.45	175	6.89	328	12.89	348	13.68	30.5	67.25	T11
CXL600-2	2	640.0	600.0	532.5	360.4	300	11.80	175	6.89	330	13.00	350	13.80	36.6	84.2	T11
CXL800-2	2	854.0	800.0	710.0	480.5	410	16.10	175	6.89	330	13.00	350	13.80	50.4	111.13	T11
CXL1000-2	2	1068.0	1000.0	887.5	600.7	475	18.70	175	6.89	328	12.90	350	13.80	60.0	132.3	T11
CXL1200-2	2	1280.0	1200.0	1065.0	720.8	475	18.70	175	6.89	328	12.91	350	13.78	66.4	146.41	T11
CXL1500-2	2	1600.0	1500.0	1331.0	901.0	403	15.87	354	13.94	339	13.35	349	13.74	97.8	215.7	T11
CXL2000-2	2	2134.0	2000.0	1775.0	1201.3	490	19.29	350	13.78	339	13.35	349	13.74	121.0	266.81	T11
CXL2500-2	2	2668.0	2500.0	2218.5	1501.6	490	19.29	350	13.78	339	13.35	349	13.74	150.5	331.9	T11
CXL3000-2	2	3202.0	3000.0	2662.0	1802.0	709	27.91	350	13.78	337	13.30	347	13.66	180.0	396.9	T11

CXL II Performance Characteristics

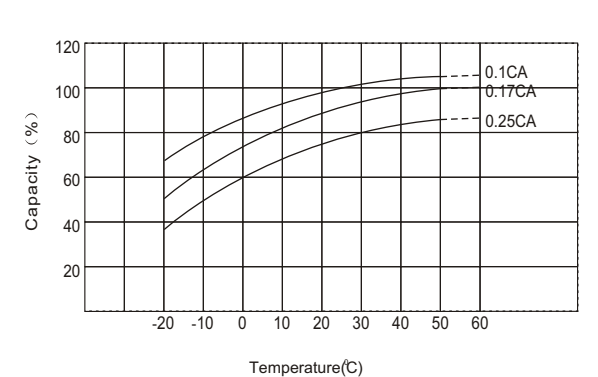
DISCHARGE CHARACTERISTICS



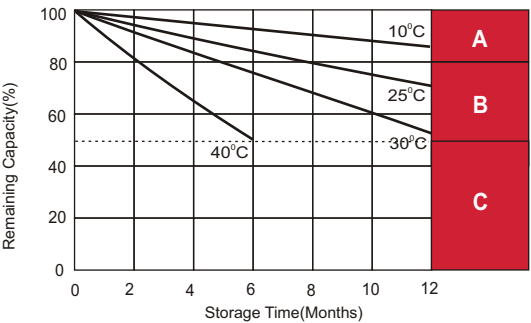
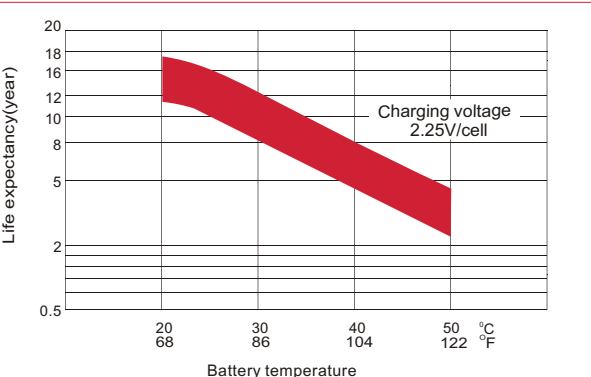
CHARGING CHARACTERISTICS



TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



SELF DISCHARGE CHARACTERISTICS AND COMPLEMENTARY CHARGE METHODS

- No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required)
- A** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8-10 hours at limited current 0.05CA .
- B** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.
- C**

CHR SERIES -HIGH RATE / UPS



General Features

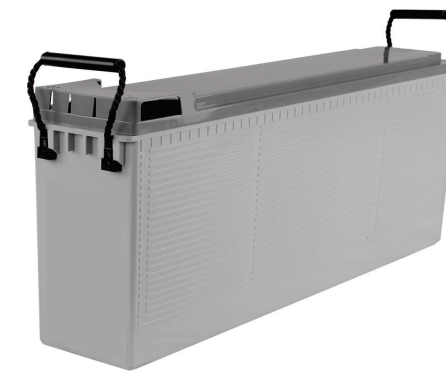
- ◆ Silver-coated copper terminals (T1, T2 terminal), brass insert terminals and lead terminals improve the electric conductivity
- ◆ Thin plate technology, special grid design, unique paste formula and plate curing process optimize high rate performance
- ◆ High quality AGM separators with less electrical resistance improve high current discharging properties
- ◆ ABS material: increase the strength of battery container (Flame-retardant ABS is optional)

CHR Models and Parameters

Typical Applications

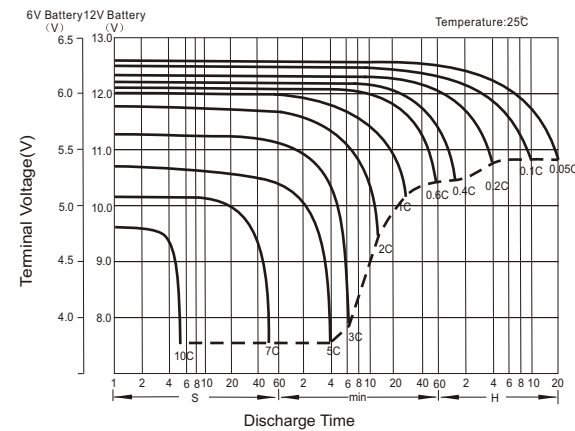
- ◆ UPS (High rate)
- ◆ High power backup supply
- ◆ Emergency power supply
- ◆ Starting system
- ◆ Power tools
- ◆ Emergency lighting
- ◆ Electric starting

Model	Nominal Voltage (V)	Watts in 15min (W/cell)	Rated Capacity (AH)			Approx Dimension								Approx Weight		Terminal type
						Length		Width		Height		Total Height				
			8HR	5HR	1HR	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
		1.67V/cell	1.80V/cell	1.75V/cell	1.60V/cell											
CHR2.2-12	12	8.19	2.06	1.90	1.59	178.0	7.01	35.0	1.38	60.0	2.36	66.0	2.60	0.97	2.14	T1
CHR3.212	12	12.5	3.14	2.90	2.43	134.0	5.28	67.0	2.64	60.5	2.38	66.5	2.62	1.35	2.98	T1
CHR5.4-12	12	20.7	4.85	4.47	3.74	90.0	3.54	70.0	2.76	101.0	3.98	107.0	4.21	1.80	3.97	T1
CHR6.0-12	12	25.6	6.00	5.54	4.64	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.18	4.81	T2
CHR7.0-12	12	28.4	7.00	6.46	5.41	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.50	5.51	T2
CHR7.6-12	12	32.2	7.60	7.04	5.89	151.0	5.94	65.0	2.56	93.5	3.68	99.0	3.90	2.45	5.40	T2
CHR9.0-12	12	33.3	7.65	7.10	5.96	151.0	5.94	65.0	2.60	93.5	3.68	99.0	3.90	2.66	5.87	T2
CHR12-12	12	49.8	12.0	10.5	8.77	151.0	5.94	98.0	3.86	95.0	3.74	101.0	3.98	4.05	8.93	T2
CHR17-12	12	63.4	17.0	16.0	12.3	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	5.78	12.74	T12
CHR18-12	12	67.4	18.0	17.0	13.0	181.5	7.15	77.0	3.03	167.5	6.59	167.5	6.59	6.00	13.23	T3
CHR20-12	12	81.4	20.0	18.5	13.9	181.5	7.15	77.0	3.03	166.0	6.54	166.0	6.54	6.90	15.21	T12
CHR24-12	12	99.8	24.0	21.8	16.9	166.0	6.54	175.0	6.89	125.0	4.92	125.0	4.92	8.60	18.96	T3
CHR35-12	12	120.1	33.3	30.3	22.9	195.0	7.68	130.0	5.12	164.0	6.46	180.0	7.09	10.5	23.15	T10
CHR38-12	12	126.3	36.6	32.8	25.3	197.0	7.76	165.0	6.50	170.0	6.69	170.0	6.69	13.2	29.11	T6
CHR65-12	12	221.2	65.0	55.5	41.8	348.0	13.70	167.0	6.57	178.0	7.01	178.0	7.01	21.2	46.75	T6
CHR72-12	12	237.7	72.0	65.5	46.2	260.0	10.24	168.0	6.61	208.0	8.19	214.0	8.43	22.5	49.61	T6
CHR100-12	12	356.1	100.0	89.5	68.2	330.0	12.99	173.0	6.81	212.0	8.35	220.0	8.66	30.8	67.91	T11
CHR120-12	12	483.8	120.0	105.0	85.3	408.0	16.06	177.0	6.97	225.0	8.86	225.0	8.86	37.6	82.91	T11
CHR150-12	12	487.5	150.0	131.0	100.4	483.0	19.02	170.0	6.69	238.5	9.39	238.5	9.39	43.5	95.92	T11
CHR200-12	12	675.8	200.0	174.5	136.0	522.0	20.55	240.0	9.45	218.0	8.58	224.0	8.82	62.6	138.03	T11
CHR250-12	12	783.3	250.0	218.0	165.5	522.0	20.55	268.0	10.55	220.0	8.66	226.0	8.90	73.0	161.0	T11
CHR200-6	6	675.8	200.0	174.5	136.0	322.0	12.68	178.0	7.01	228.0	8.98	234.0	9.21	30.5	67.25	T11

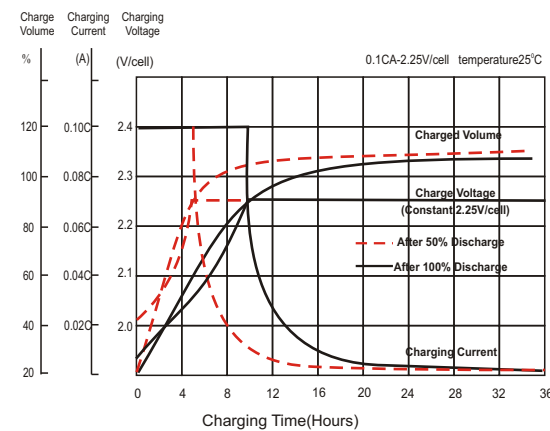


CHR Performance Characteristics

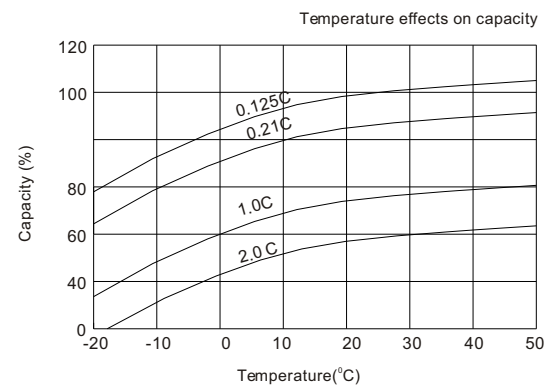
DISCHARGE CHARACTERISTICS



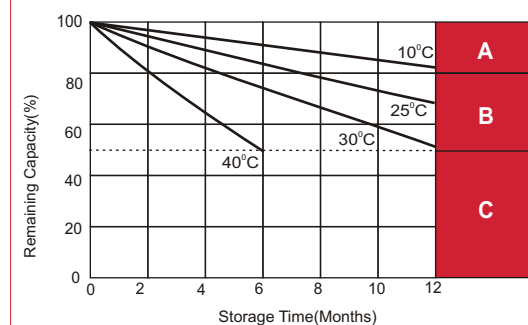
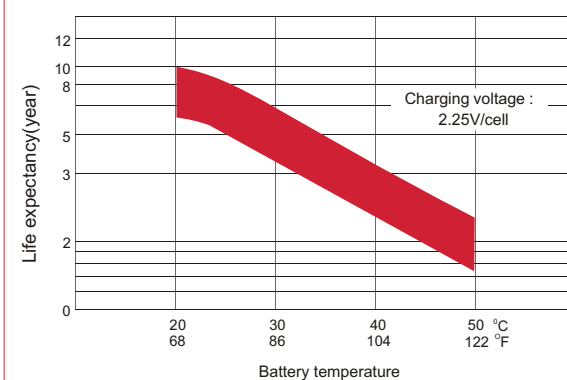
CHARGING CHARACTERISTICS



TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



SELF DISCHARGE CHARACTERISTICS AND COMPLEMENTARY CHARGE METHODS

- A** No supplementary charge required
(Carry out supplementary charge before use if 100% capacity is required)
- B** Supplementary charge required before use. Optional charging way as below:
1.Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
2.Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
3.Charged for 8~10 hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.

CFT SERIES FRONT TERMINAL

General Features

- Specifically ideal for 19 inch or 23 inch power cabinets
- Front terminals make the installation, maintenance and supervision easy
- Shield designs protect terminals from short circuit and show good appearance
- Unique vent valve design: reduces water loss and prevents air or sparks from entering
- Thick plates, special formula of paste and plate making process for a long service life
- ABS material: increases the strength of the battery container (Flame-retardant ABS is optional)

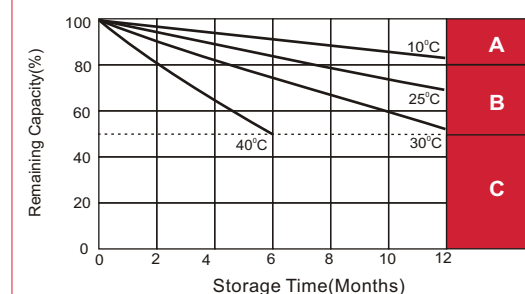
CFT Models and Parameters

Typical Applications

- For standard 19 inch or 23 inch power cabinets
- Network connection equipment of communication system
- Power system of special network or local area network
- UPS, standby power supply
- Power station systems
- Railway and marine systems

Model	Nominal Voltage (V)	Rated Capacity(AH)				Approx Dimension								Approx Weight		Terminal Type
		10HR	8HR	5HR	1HR	Length		Width		Height		Total Height				
		1.80V/cell	1.80V/cell	1.75V/cell	1.67V/cell	mm	in.	mm	in.	mm	in.	mm	in.	kg	lbs	
CFT40-12	12	41.5	40.0	37.8	27.7	277	10.9	106	4.17	222	8.74	222	8.74	15.1	33.3	T6
CFT55-12	12	55.0	53.0	48.2	35.9	277	10.9	106	4.17	222	8.74	222	8.74	17.3	38.1	T6
CFT70-12	12	70.0	67.4	61.5	45.7	564	22.2	114	4.49	187	7.36	187	7.36	25.5	56.2	T6
CFT75-12	12	75.0	72.2	65.5	49.5	564	22.2	114	4.49	187	7.36	187	7.36	26.0	57.3	T6
CFT90-12	12	94.4	90.4	82.0	61.4	508	20.0	110	4.33	238.5	9.39	238.5	9.39	32.0	70.6	T13
CFT90-12T	12	94.4	90.4	82.0	61.4	394	15.5	110	4.33	285	11.2	285	11.2	32.6	71.9	T6
CFT100-12A	12	100.0	95.2	87.0	64.4	508	20.0	110	4.33	238.5	9.39	238.5	9.39	35.0	77.2	T13
CFT100-12B	12	100.0	96.8	89.0	65.0	545	21.5	110	4.33	233	9.17	233	9.17	35.6	78.5	T13
CFT100-12H	12	100.0	95.2	87.0	64.4	394	15.5	110	4.33	285	11.2	285	11.2	34.5	76.1	T6
CFT125-12	12	125.0	119.2	108.5	79.9	552	21.7	110	4.33	288	11.3	287	11.3	41.5	91.5	T6
CFT150-12A	12	150.0	142.4	130.5	97.5	552	21.7	110	4.33	288	11.3	287	11.3	46.6	102.3	T6
CFT150-12B	12	150.0	142.4	130.5	97.5	545	21.5	110	4.33	280	11.0	280	11.0	46.0	101.4	T13
CFT170-12D	12	170.0	161.6	148.0	110.5	550	21.7	126	4.96	280	11.0	280	11.0	54.0	119.1	T13

CFT Performance Characteristics

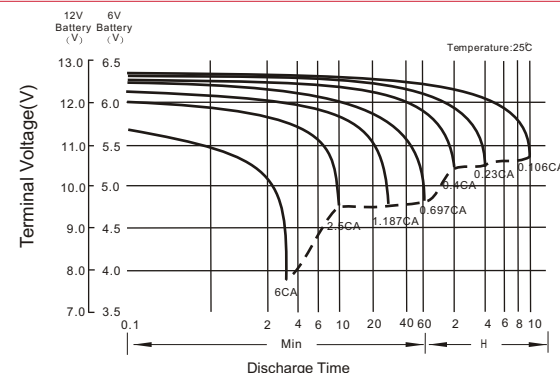


SELF DISCHARGE CHARACTERISTICS AND COMPLEMENTARY CHARGE METHODS

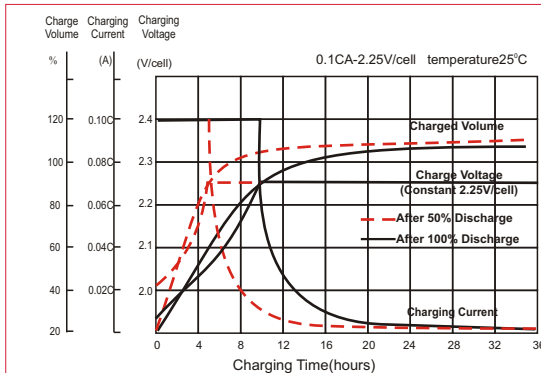
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3.Charged for 8~10 hours at limited current 0.05CA .
- C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

BATTERY CARE AND MAINTENANCE

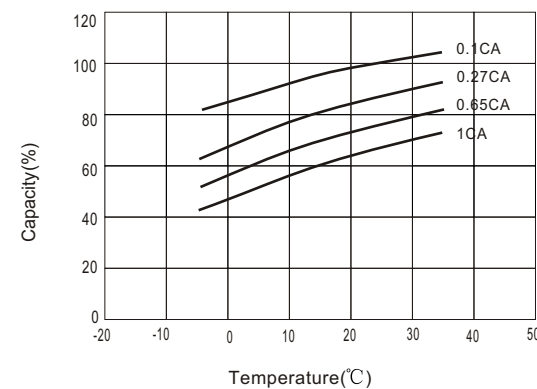
DISCHARGE CHARACTERISTICS



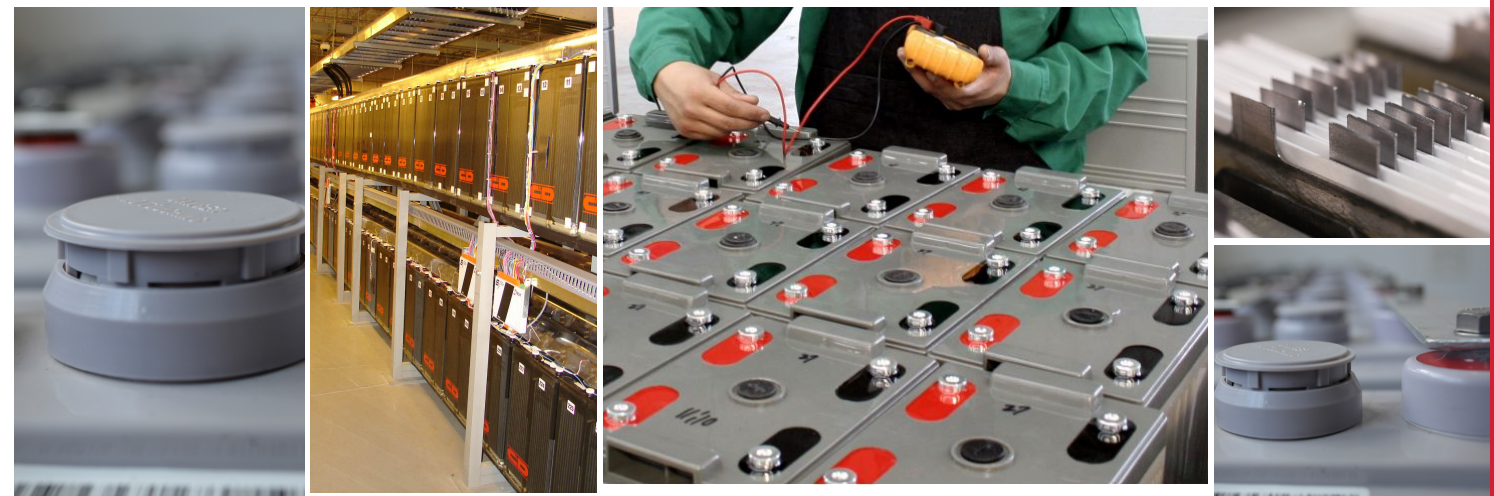
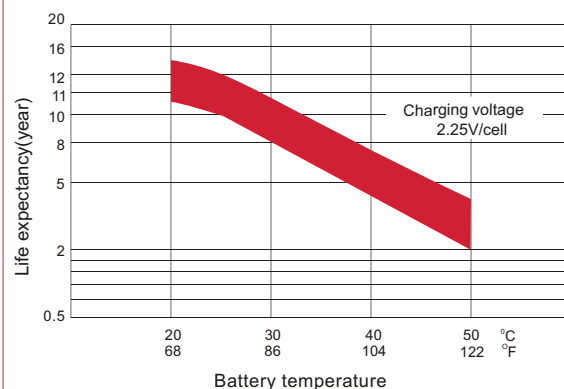
CHARGING CHARACTERISTICS



TEMPERATURE EFFECTS IN RELATION TO BATTERY CAPACITY



EFFECT OF TEMPERATURE ON LONG TERM FLOAT DESIGNED LIFE



Top-charge and precautions

Any VRLA-AGM battery will be damaged by continually undercharging or overcharging (Capacity is reduced and life is shortened), although Canbat Batteries accept a charge very well due to their low internal resistance. Overcharging is extremely harmful to any VRLA battery because of the sealed design. Overcharging dries out the electrolyte by driving the oxygen and hydrogen out of the battery through the pressure relief valves which will lead to less capacity and shorter lifetime. If a battery is continually undercharged, a barrier layer of sulfate will build up on the positive plate which will impact recharging acceptability. Premature plate shedding can also happen. Performance is reduced and life is shortened.

It is critical that a charger be used that limits voltage. The charger must be temperature-compensated to prevent under or overcharging due to ambient temperature changes. The warranty is void if improperly charged. Use a good constant potential, temperature-compensated, voltage-regulated charger. Constant current chargers should never be used on VRLA batteries. Canbat manufactures a number of premium quality chargers that not only charge your batteries, but also maintain them to ensure maximum cycle life.

Battery storage

If the battery has high temperature or poor ventilation during storage and delivery, the self-discharge will increase. It is important to store the battery in a well ventilated area, away from fire or any heat supply. When storing the battery, take it off the charger and keep it in a dry and cool place. Please supplement charge before use when the battery has been stored for a long period of time.

Cautions:

- 1) Keep batteries in a place, where children can not reach.
- 2) Do not attempt to disassemble, revise, damage, impact, or dispose of batteries. The battery can leak, overheat, or explode.
- 3) Do not dispose of the batteries in water or fire and do not heat the batteries.
- 4) Do not short batteries.
- 5) Do not put your face near the top of batteries. Please wear gloves and eye protection when you measure or repair batteries.
- 6) There is sulfuric acid in the battery. Do not allow your skin, clothes, and especially your eyes to make contact with the sulfuric acid. If your eyes make contact with the sulfuric acid, please wash with a lot of clean water, and consult a physician immediately.
- 7) The suitable temperature is $-15^{\circ}\text{C} \sim +50^{\circ}\text{C}$, but the battery will have a longer life in the temperature from $+20^{\circ}\text{C} \sim +30^{\circ}\text{C}$. The operation circumstances are defined as: discharging temperature range $-15^{\circ}\text{C} \sim +50^{\circ}\text{C}$; charging temperature range $0^{\circ}\text{C} \sim +40^{\circ}\text{C}$.

CANBAT BATTERIES

Canbat Batteries is a Canadian manufacturer and exporter of high quality VRLA batteries. The company is honored to serve its worldwide customers in America, Europe, Africa, Asia and in the Middle East market. Our goal is to provide superior battery products for the widest range of applications from renewable energy to automotive solution and from emergency lights to telecom. For more information, please visit our website www.canbat.ca or email us at info@canbat.ca