



# ZS General Range

**ZEN 50**

12V52Ah/C<sub>20</sub>



## ZENVO ZS

This range is the most common standard and the first generation delicate product which is designed with AGM (Absorbent Glass Mat) technology, high performance plates and electrolyte. The definition of ZS is coming from General purpose. Therefore, this product range has possessed various applications for common power backup system.

## Applications

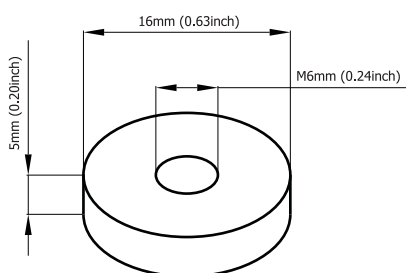
- Alarm System
- Cable Television
- Communication Equipment
- Control Equipment
- Security System
- Emergency Lighting System
- Medical Equipment
- UPS
- Power Tool
- Emergency Power System
- Stand-by Electric Power Control System

## General Features

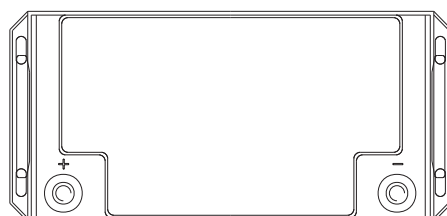
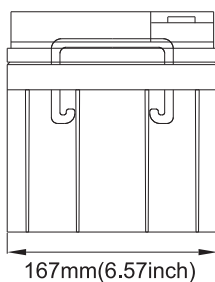
- Sealed and maintenance free operation
- Non-Spillable construction design
- ABS containers and covers (UL94HB, UL94V-0) optional
- Safety valve installation for explosion proof
- High quality and high reliability
- Exceptional deep discharge recovery performance
- Low self discharge characteristic
- Flexibility design for multiple install positions

## Construction

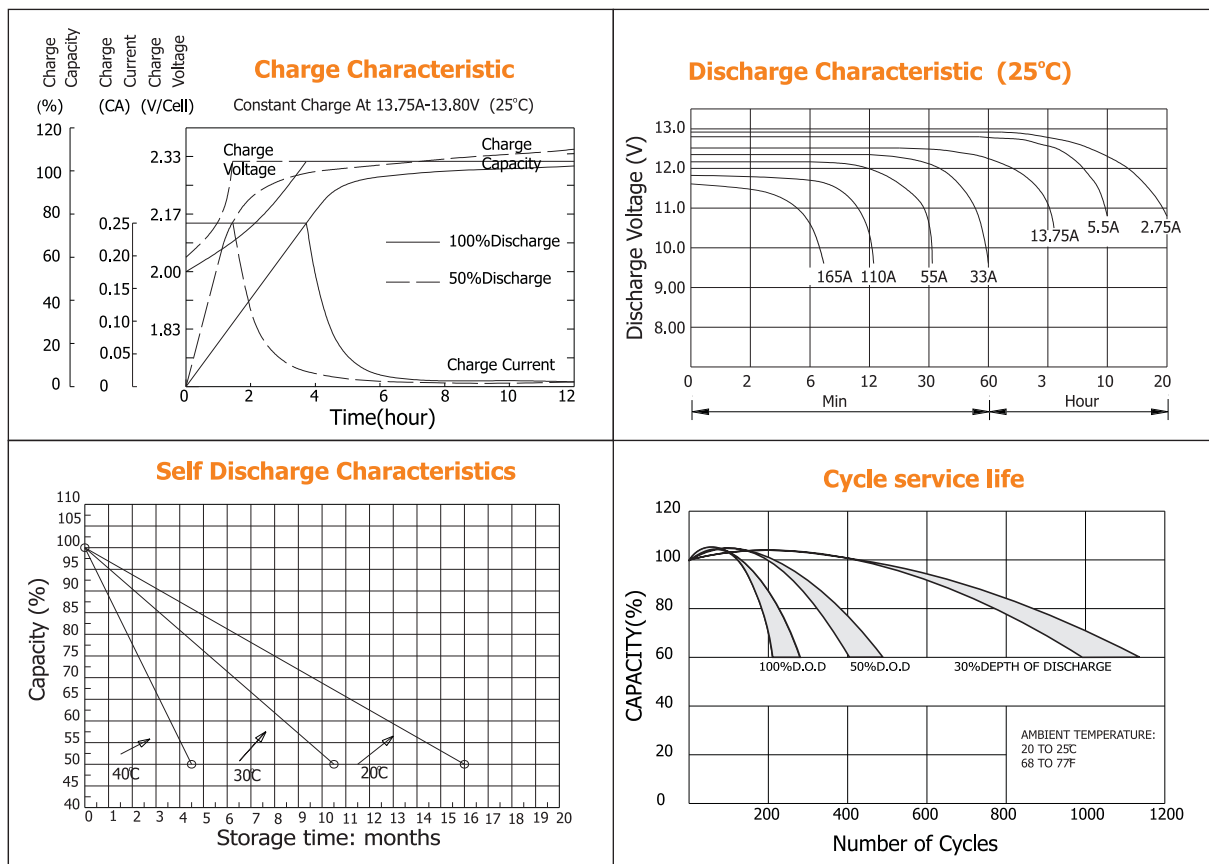
- Component : Raw material
- Positive : Lead dioxide
- Negative : Lead
- Container : ABS
- Cover : ABS
- Sealant : Epoxy Resin
- Safety valve : EPDR
- Terminal : Copper
- Separator : Fiber glass
- Electrolyte : Sulfuric acid



**Standard Terminal Dimensions**  
(Optional terminal please check terminal information page)



Battery Model	ZEN 50			
Designed Floating Life	10 Years			
Capacity(25°C)	20HR(2.75A,1.75V)	10HR(5.2A,1.75V)	5HR(8.8A,1.75V)	1HR(33A,1.75V)
	55.0Ah	52.0Ah	44.0Ah	33.0Ah
Dimensions	Length	Width	Height	Total Height
	350mm(13.78inch)	166mm(6.54inch)	176mm(6.93inch)	176mm(6.93inch)
Approx. Weight	19.2Kg (42.24 lbs)			
Internal Resistance	Full charged at 25°C: 0.006 Ohm			
Self Discharge	3% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-15V(-30mV/°C), max. Current: 16A		13.6-13.8V(-20mV/°C)	



### Constant current discharge ratings-Ampers (Amp) at 25°C

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	193	132	96.3	57.8	36.3	15.0	10.5	5.83	2.90
1.67V	173	120	93.5	56.1	36.2	15.0	10.4	5.74	2.89
1.70V	164	116	90.2	55.0	36.1	15.0	10.4	5.70	2.89
1.75V	146	107	85.3	53.9	35.8	14.9	10.3	5.60	2.88
1.80V	132	100	81.4	52.3	35.3	14.8	10.2	5.50	2.77
1.85V	100	82.0	70.4	48.1	34.9	14.7	10.2	5.41	2.72

### Constant power discharge ratings-Watts (W) at 25°C

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	3HR	5HR	10HR	20HR
1.60V	317	219	171	109	71.5	28.8	20.1	11.7	5.80
1.67V	301	216	169	107	69.1	28.8	20.1	11.5	5.78
1.70V	281	211	166	104	67.3	28.8	20.1	11.4	5.78
1.75V	262	197	156	101	66.7	28.4	19.9	11.2	5.75
1.80V	235	183	147	98.5	65.6	28.0	19.5	11.0	5.55
1.85V	188	152	128	90.2	65.0	27.9	19.3	10.8	5.41



# ZS-DP Lead-Carbon

**ZEN 100**

12V100Ah/C<sub>20</sub>



## Zenvo Zen Super-DP

This range (deep cycle Lead-Carbon) use function activated carbon and graphene as carbon materials, with heavy strong grids that are made up of a different chemical for the plates, active paste material and an electrolyte stronger slightly than normal battery electrolyte. It enhances a superior performance of high power output and more than 900 life cycles at 80% DOD. It is more suitable for application of PSOC.

## Applications

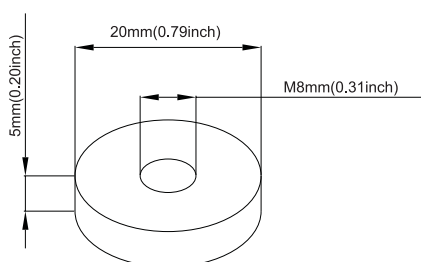
- Solar Power Generation
- Energy Storage System
- Wheel Chair
- Wind Energy Storage System
- Home Energy Storage System
- Smart Power & Micro-Grid System
- Generation and Hybrid Energy
- Medical Equipment
- Distributed Energy Storage System

## General Features

- Better discharge characteristics than normal VRLA batteries
- Non-Spillable construction design
- ABS containers and covers(UL94HB, UL94V-0) optional
- Safety valve installation for explosion proof
- Higher safety & reliable construction
- Extra durability and deep cycle ability for heavy demand applications
- Low self discharge characteristic
- Flexibility design for multiple install positions

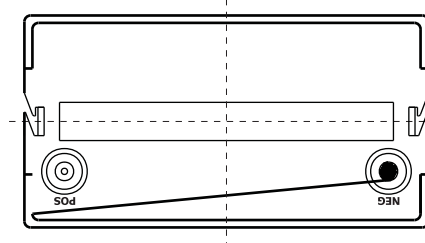
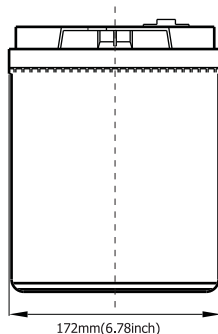
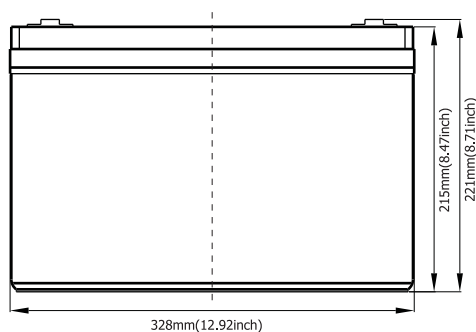
## Construction

- Component : Raw material
- Positive : Lead dioxide
- Negative : Lead
- Container : ABS
- Cover : ABS
- Sealant : Epoxy Resin
- Safety valve : EPDR
- Terminal : Lead
- Separator : Fiber glass
- Electrolyte : Sulfuric acid

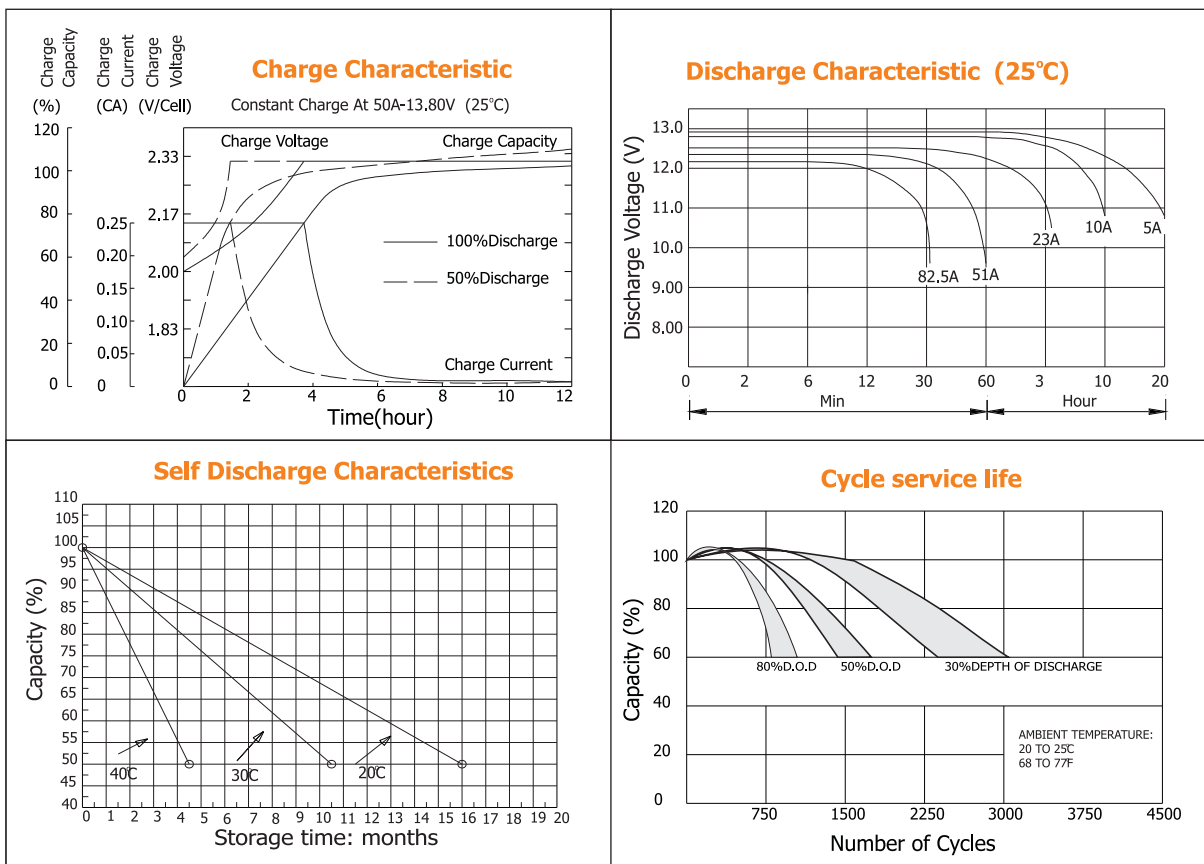


## Standard Terminal Dimensions

(Optional terminal please check terminal information page)



Battery Model	ZEN 100			
Designed Cycle Life	> 900 cycles 80% DOD @ -0.5CA to 9.6V			
Capacity(25°C)	20HR(5.1A,1.75V)	10HR(10A,1.75V)	5HR(15.3A,1.75V)	1HR(51.1A,1.75V)
	102Ah	100Ah	76.5Ah	51.1Ah
Dimensions	Length	Width	Height	Total Height
	330mm(13.0inch)	172mm(6.77inch)	215mm(8.46inch)	221mm(8.70inch)
Approx. Weight	29.2Kg (64.24 lbs)			
Internal Resistance	Full charged at 25°C: 0.005 Ohm			
Self Discharge	3% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-15V(-30mV/°C), max. Current: 25A		13.6-13.8V(-20mV/°C)	



### Constant current discharge ratings - Amperes (Amp) at 25°C

F.V/Time	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR	48HR	72HR
1.60 V	56	33	24	19	16	11.3	10.5	5.3	2.2	1.5
1.67 V	54	32	24	19	16	11.1	10.4	5.2	2.2	1.5
1.70 V	53	31	23	19	16	10.9	10.2	5.2	2.2	1.5
1.75 V	51	30	23	18	15	10.7	10.0	5.1	2.1	1.5
1.80 V	49	29	22	17	15	10.5	9.5	4.9	2.1	1.4
1.85 V	45	27	20	16	14	10.2	9.0	4.8	2.0	1.4

### Constant power discharge ratings - Watts (W) at 25°C

F.V/Time	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR	48HR	72HR
1.60V	104	62	46	37	31	22	19.0	10.3	4.4	3.0
1.67V	103	61	46	36	31	21	18.8	10.2	4.4	3.0
1.70V	101	60	45	36	30	21	18.6	10.0	4.3	2.9
1.75V	97	58	44	35	21	21	18.3	9.9	4.2	2.9
1.80V	93	56	42	34	29	20	17.8	9.6	4.1	2.8
1.85V	86	52	40	32	28	19	17.1	9.2	4.0	2.7





# ZS -DC Lead-Carbon

## ZEN 150

12V150Ah/C<sub>20</sub>



### ZENVO ZS-DC

This range (deep cycle Lead-Carbon) use function activated carbon and graphene as carbon materials, with heavy strong grids that are made up of a different chemical for the plates, active paste material and an electrolyte stronger slightly than normal battery electrolyte. It enhances a superior performance of high power output and more than 2000 life cycles at 80% DOD. It is more suitable for application of PSOC.

### Applications

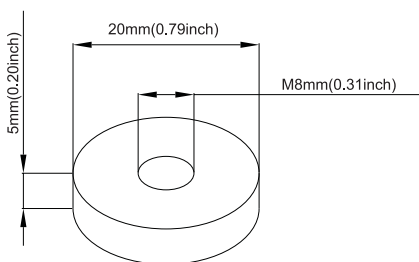
- Solar Power Generation
- Energy Storage System
- Wheel Chair
- Wind Energy Storage System
- Home Energy Storage System
- Smart Power & Micro-Grid System
- Generation and Hybrid Energy
- Medical Equipment
- Distributed Energy Storage System

### General Features

- Better discharge characteristics than normal VRLA batteries
- Non-Spillable construction design
- ABS containers and covers(UL94HB, UL94V-0) optional
- Safety valve installation for explosion proof
- Higher safety & reliable construction
- Extra durability and deep cycle ability for heavy demand applications
- Low self discharge characteristic
- Flexibility design for multiple install positions

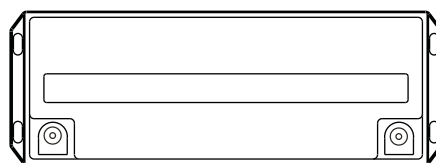
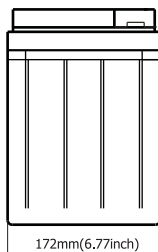
### Construction

- Component : Raw material
- Positive : Lead dioxide
- Negative : Lead
- Container : ABS
- Cover : ABS
- Sealant : Epoxy Resin
- Safety valve : EPDR
- Terminal : Lead
- Separator : Fiber glass
- Electrolyte : Sulfuric acid

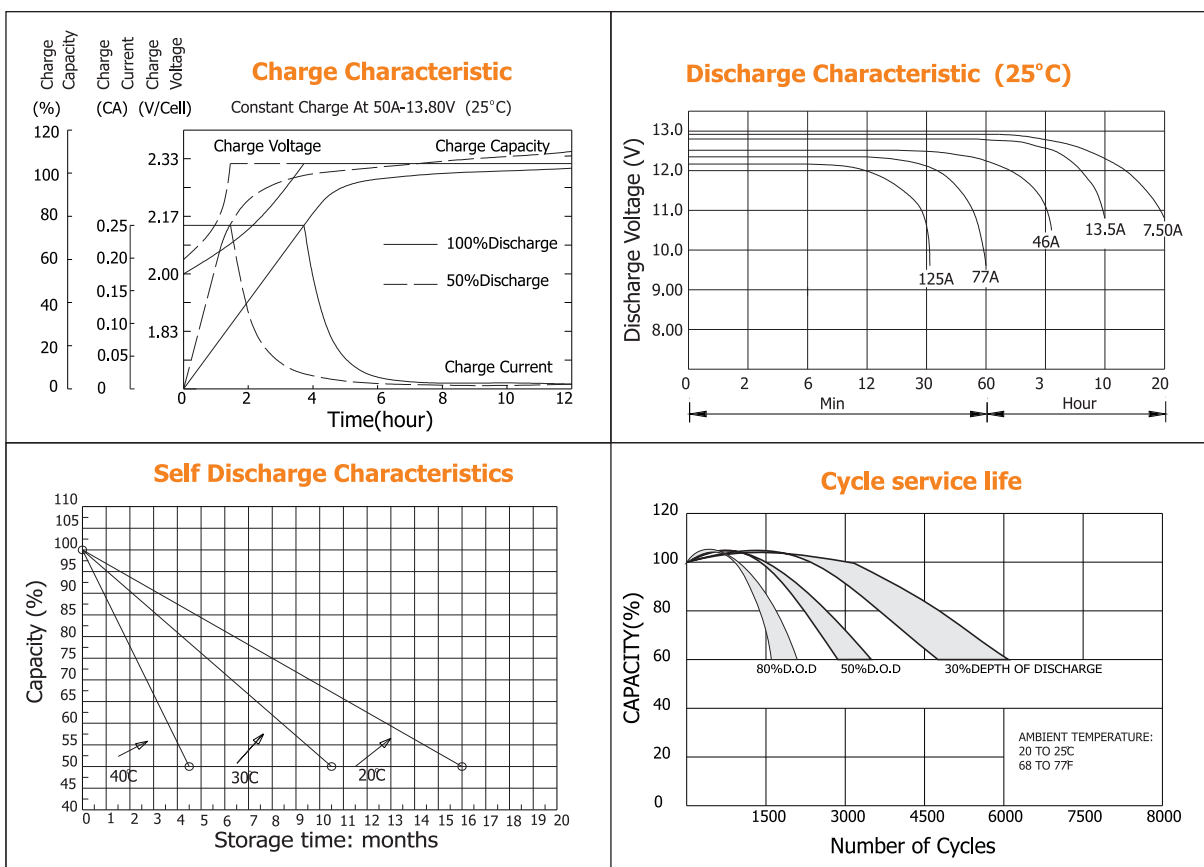


### Standard Terminal Dimensions

(Optional terminal please check terminal information page)



Battery Model	ZEN 150			
Designed Cycle Life	> 2000 cycles 80% DOD @ -0.5CA to 9.6V			
Capacity(25°C)	20HR(7.5A,1.75V)	10HR(13.5A,1.75V)	5HR(23.0A,1.75V)	1HR(77A,1.75V)
	150Ah	135Ah	115Ah	77Ah
Dimensions	Length	Width	Height	Total Height
	485mm(19.1inch)	172mm(6.77inch)	240mm(9.45inch)	240mm(9.45inch)
Approx. Weight	45Kg (99.2 lbs)			
Internal Resistance	Full charged at 25°C:0.004 Ohm			
Self Discharge	3% of capacity declined per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-15V(-30mV/°C), max. Current: 37.5A		13.6-13.8V(-20mV/°C)	



### Constant current discharge ratings - Amperes (Amp) at 25°C

F.V/Time	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR	48HR	72 HR	100HR
160V	83	49	36	29	24	16.5	14.5	7.9	3.4	2.3	1.69
167V	82	48	36	28	24	16.3	14.3	7.8	3.3	2.3	1.67
170V	80	47	35	28	24	16.1	14.1	7.8	3.3	2.2	1.65
175V	77	45	34	27	23	15.8	13.9	7.7	3.2	2.2	1.62
180V	73	43	33	26	22	15.3	13.5	7.5	3.1	2.1	1.57
185V	67	40	31	25	21	14.6	13.0	7.3	3.0	2.1	1.51

### Constant power discharge ratings - Watts (W) at 25°C

F.V/Time	1 HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR	48HR	72HR
160V	156	92	69	55	47	32	28.5	15.4	6.6	4.5
167V	154	91	69	55	46	32	28.3	15.3	6.5	4.5
170V	151	90	67	54	46	32	27.9	15.1	6.5	4.4
175V	146	87	66	53	45	31	27.4	14.8	6.3	4.3
180V	139	84	63	51	43	30	26.7	14.4	6.2	4.2
185V	130	78	60	48	41	29	25.6	13.9	5.9	4.1

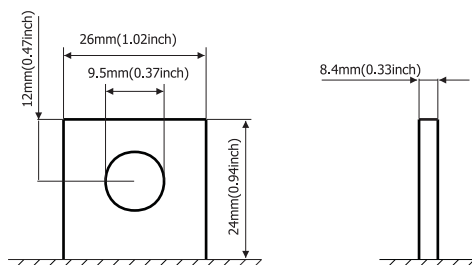




# ZS General Range

**ZEN 200**

12V200Ah/C<sub>20</sub>



**Standard Terminal Dimensions**  
(Optional terminal please check terminal information page)

## ZENVO ZS-D

This range (deep cycle) is designed specially to have a large amount of stored current discharged between charging sessions, with heavy non-porous battery plate that is made up of a different chemical for the plates, active paste material and an electrolyte stronger slightly than normal battery electrolyte. It enhances a superior performance of high power output and excellent deep cycle life for energy applications.

## Applications

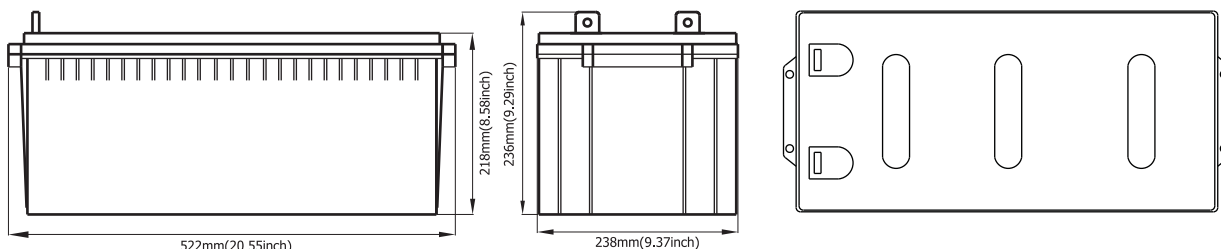
- Electric Powered Vehicle
- Golf Cars and Buggy
- Wheel Chair
- Power Tool
- PVs
- Electric Powered Toy
- Control System
- Vacuum Cleaner
- Medical Equipment
- UPS

## General Features

- Better discharge characteristics than normal VRLA batteries
- Non-Spillable construction design
- ABS containers and covers (UL94HB, UL94V-0) optional
- Safety valve installation for explosion proof
- Higher safety & reliable construction
- Extra durability and deep cycle ability for heavy demand applications
- Low self discharge characteristic
- Flexibility design for multiple install positions

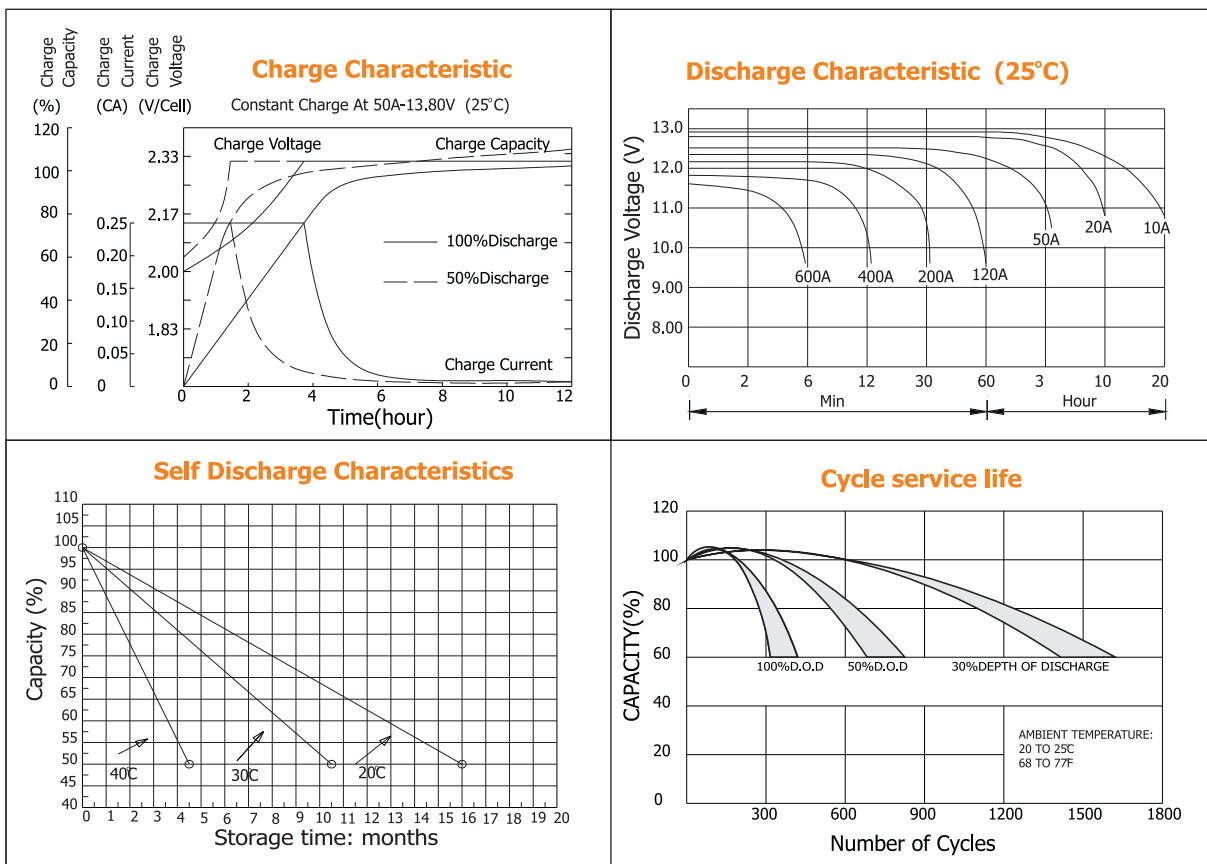
## Construction

- Component : Raw material
- Positive : Lead dioxide
- Negative : Lead
- Container : ABS
- Cover : ABS
- Sealant : Epoxy Resin
- Safety valve : EPDR
- Terminal : Lead
- Separator : Fiber glass
- Electrolyte : Sulfuric acid



Battery Model	ZEN 200			
Designed Cycle Life	> 350 cycles @ -0.5CA to 9.6V			
Capacity(25°C)	20HR(10.1A,1.75V)	10HR(20A,1.75V)	5HR(37A,1.75V)	1HR(120A,1.75V)
	202Ah	200Ah	185Ah	120Ah
Dimensions	Length	Width	Height	Total Height
	522mm(20.55inch)	238mm(9.37inch)	218mm(8.58inch)	236mm(9.29inch)
Approx. Weight	60Kg (132.0 lbs)			
Internal Resistance	Full charged at 25°C :0.0038 Ohm			
Self Discharge	Self discharge < 3% per month at (25°C)			
Capacity Affected by Temp.(20HR)	40°C	25°C	0°C	-15°C
	102%	100%	85%	65%
Charge Voltage(25°C)	Cycle use		Float use	
	14.4-14.8V(-30mV/°C), max. Current: 50A		13.6-13.8(-20mV/°C)	





### Constant current discharge ratings - Amperes (Amp) at 25°C

F.V/Time	10MIN	15MIN	30MIN	1 HR	3 HR	5 HR	8 HR	10HR	20HR
1.60V	410	329	200	124	546	382	25.2	21.0	10.5
1.67V	385	319	194	123	544	378	24.9	20.8	10.4
1.70V	368	306	190	122	544	378	24.8	20.5	10.3
1.75V	355	290	186	120	540	375	24.5	20.1	10.1
1.80V	326	266	181	118	538	372	24.1	20.0	10.1
1.85V	270	235	166	117	536	36.9	23.8	19.4	9.48

### Constant power discharge ratings - Watts (W) at 25°C

F.V/Time	10 MIN	15 MIN	30 MIN	1 HR	3 HR	5 HR	8 HR	10 HR	20 HR
1.60V	700	575	376	247	105	73.0	49.3	42.4	21.1
1.67V	690	570	369	238	105	73.0	48.9	41.8	21.0
1.70V	670	552	359	233	105	73.0	48.7	41.5	21.0
1.75V	628	530	349	231	103	72.2	48.0	40.7	20.9
1.80V	590	495	340	226	102	71.0	47.2	40.0	20.2
1.85V	506	440	311	224	101	70.0	46.5	39.3	19.0

