



Haze Battery Company Ltd

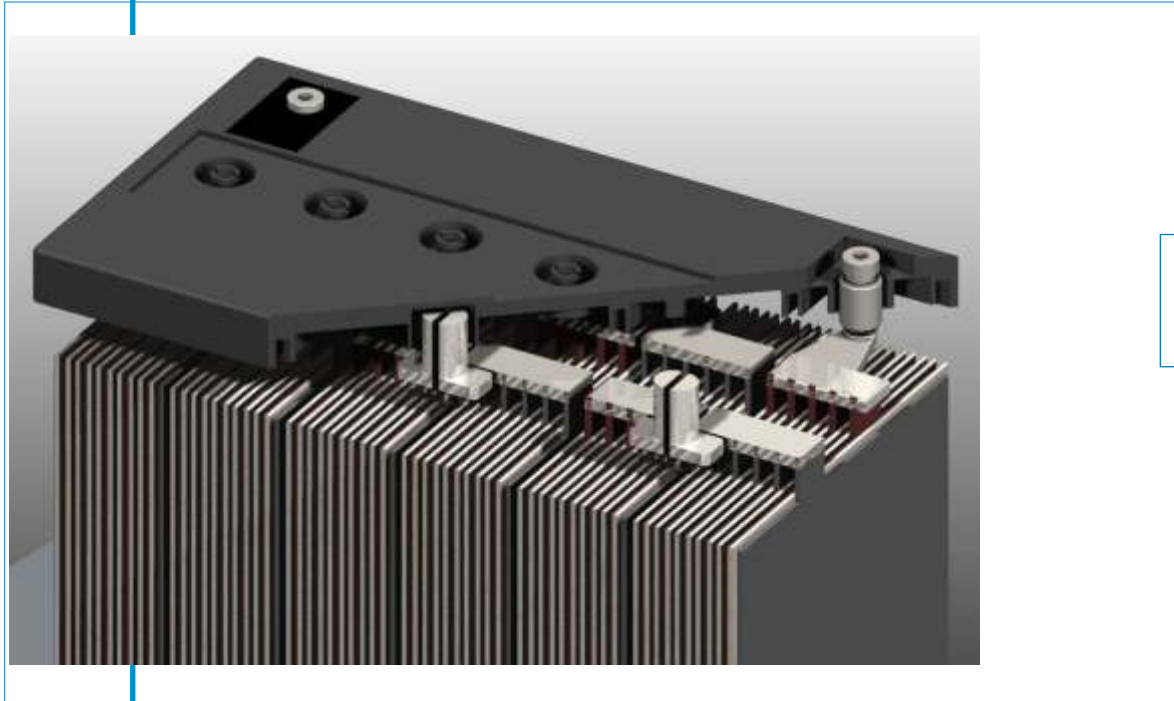


Sealed Lead Acid 6 & 12 Volt  
Monobloc  
AGM Range

**CONSTRUCTION** - AGM battery construction is as shown in the diagram below. The positive and negative grids are cast from a calcium / tin lead alloy to reduce grid growth and corrosion. The active material is manufactured from high purity lead (99.9999%) to minimise the negative effects of impurities.

Separator is a mat of random woven acid resistant glass fibres, which acts as a sponge - soaking up and immobilising the electrolyte whilst maintaining good acid to plate contact and availability during discharge. "S wrapping" is employed to eliminate the risk of short circuits due to massing and debris at the bottom of the cell.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



AGM construction with case removed and cover cut away to show internal battery parts.

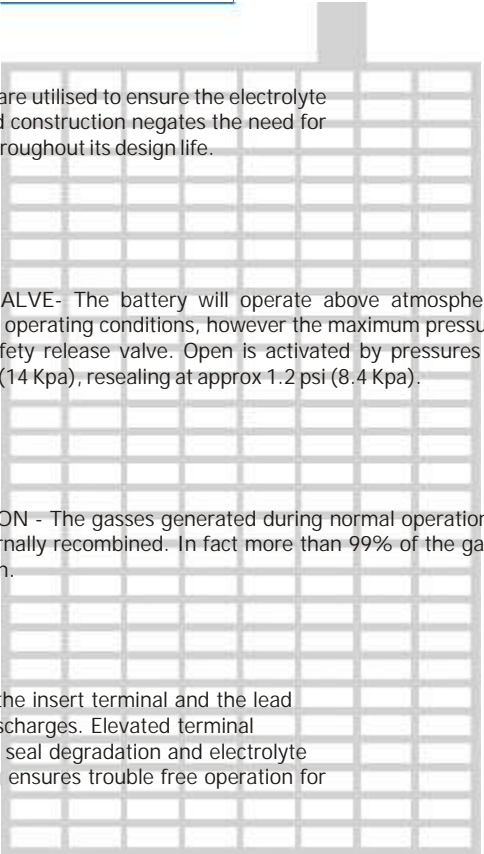
**ELECTROLYTE FILLING** - Special production and QC systems are utilised to ensure the electrolyte saturation is optimised for each battery. The battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.



**SAFETY RELEASE VALVE** - The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety release valve. Open is activated by pressures in excess of approx. 2 psi (14 Kpa), resealing at approx 1.2 psi (8.4 Kpa).

**GAS RECOMBINATION** - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

**TERMINAL CONSTRUCTION** - The contact quality between the insert terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. Haze design and assembly technique for terminal casting ensures trouble free operation for the design life of the battery.



## AGM Vs Gel

Each battery has advantages and disadvantages, it is therefore important to choose the right battery for the application.

### Advantages of AGM Batteries:

- Lower initial cost when compared to Gelled Electrolyte cells.
- Ideal for starting and stationary applications.
- Superior performance for shorter duration / higher current discharges.
- Smaller size battery can be used for higher rate discharges.

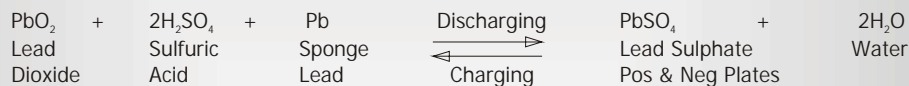


## Applications

- Float service
- Uninterruptible Power Supplies
- Medical
- Telecommunications
- Switch Gear
- Photovoltaic
- Solar
- Wind
- Control Systems
- Cellular Radio Stations
- Cathodic Protection
- Navigation Aids
- Marine equipment
- Electric Power Systems

Discharge Time	Capacity temperature correction Factor to be applied to Data at 20 Degrees C								
	0 °C	5 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C
5 minutes to 59 minutes	0.8	0.86	0.91	0.96	1	1.037	1.063	1.085	1.1
1 Hour to 100 Hours	0.86	0.9	0.93	0.97	1	1.028	1.05	1.063	1.07

CHEMICAL REACTION- The chemical reaction for the Discharge / Recharge process is represented by the following formula:



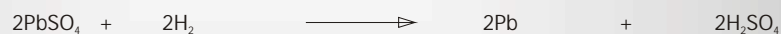
Under normal float charge conditions the oxygen passes through the separator from the positive to the negative plate where it reacts with the negative active material to form lead oxide.



In the acid conditions the lead oxide reacts with the sulfuric acid to form lead sulphate.

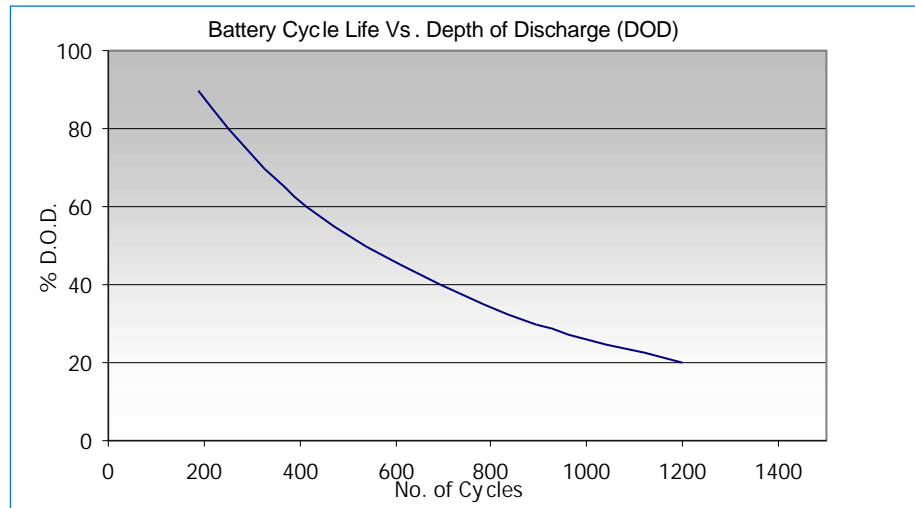


The lead sulphate formed on the negative is then reduced to lead and sulfuric acid by the evolving hydrogen.



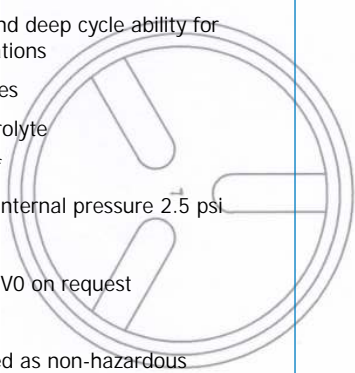
If the equations are resolved and like terms cancelled out on both sides of the equation the result is:





### Innovative Features

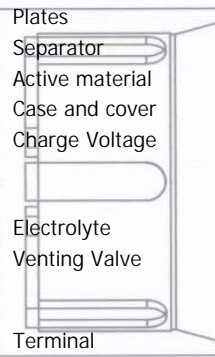
- Completely maintenance free, sealed construction eliminates the need for watering
- Increased durability and deep cycle ability for heavy demand applications
- Fully tank formed plates
- Analytical Grade electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position usage
- ABS Case and cover - VO on request
- Low self discharge
- FAA and IATA approved as non-hazardous
- Built to comply with IEC 896-2, DIN 43534, BS 6290 Pt4, Eurobat.



### Specifications

Nominal Voltage  
Design Life  
Operating Temperature  
Grid alloy

6 & 12 Volts  
12 Years @ 20 °C  
-10 °C to 45 °C  
Calcium / Tin lead alloy



Flat Pasted  
Absorbant Glass Mat  
Very high purity lead  
ABS (VO on request)  
Float 2.27 - 2.30 VPC @20 °C Cycling  
2.40 @20 °C

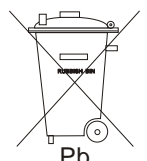
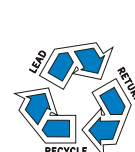
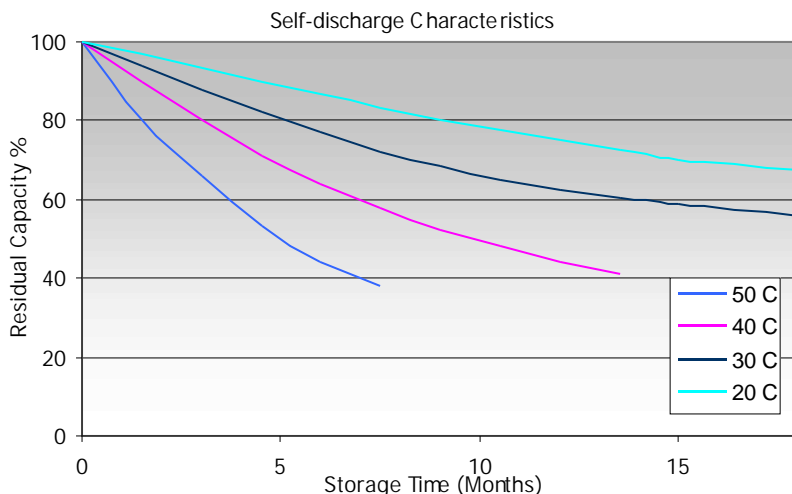
Torque setting

Max. 2.4 VPC Max ripple 0.05C (A)  
Sulphuric acid Analytical grade purity  
EPDM Rubber 1.5 to 2 psi (10.5 - 14 KPa) release pressure. Resealing at 1 psi (7 KPa)

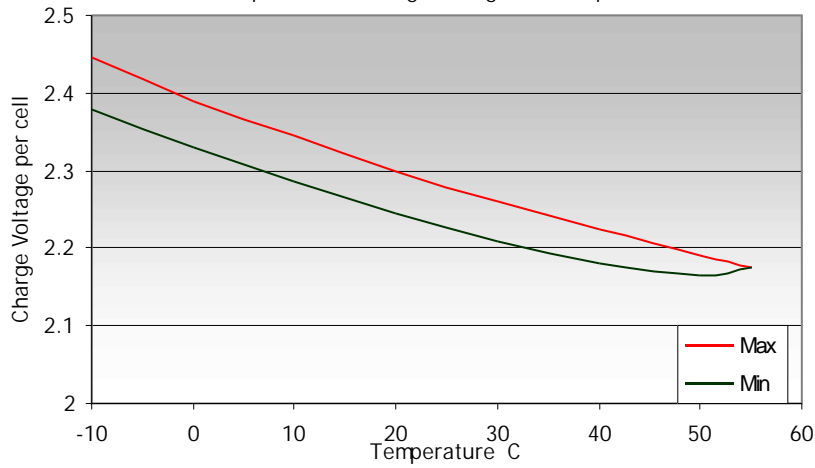
Cables

Various types Epoxy sealed by extended mechanical paths  
The recommended torque value for all types is 5-7 Nm  
Insulated cables / connectors supplied on request.

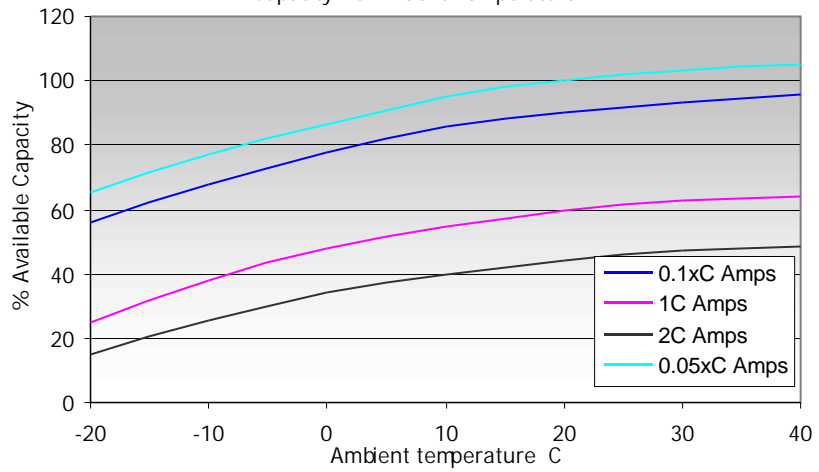
Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.



Relationship Between Charge Voltage and Temperature



Capacity Vs Ambient Temperature



### CHARGING CHARACTERISTICS

Floating - The optimum float voltage for a battery is temperature dependant, at 15 - 24°C the recommended value is 2.27 - 2.30V. It is recommended that battery installation sites are temperature controlled, however float voltage can be increased or decreased to compensate for temperature variations. Adjustment is calculated at +/- 3 mV per degree C.

Operating Temperature	Recommended Applied Float Voltage VPC
0-9	2.33 - 2.35
10-14	2.30 - 2.33
15-19	2.27 - 2.30
20-24	2.27 - 2.30
25-29	2.25 - 2.27
30-34	2.23 - 2.25
35-40	2.21 - 2.23

#### Terminal Options (left to right)

- ▶ Lead Flag
- ▶ Automotive
- ▶ J Type
- ▶ Copper Flag
- ▶ J Type Adapter
- ▶ Insert

Insert are made from brass with copper, nickel and silver plating giving excellent mechanical, electrical and corrosion resistant properties.

The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of  $C_{20}/4$ .



Battery Model	Time in Minutes - Amps to 1.85 VPC											
	5	10	15	20	25	30	35	40	45	50	60	90
HZB12-15T	46.0	33.8	27.3	23.3	19.9	17.4	15.5	14.0	12.7	11.6	10.1	7.6
HZB12-18	46.3	34.4	28.1	23.6	20.4	17.9	15.8	14.2	12.8	11.8	10.2	7.7
HZB12-26	76.5	55.9	44.6	37.0	31.8	27.9	24.8	22.3	20.4	18.6	16.3	11.8
HZB12-28	78.5	57.4	45.7	38.0	32.6	28.6	25.5	22.8	20.9	19.1	16.7	12.1
HZB12-33	96	72.8	57.1	46.7	40.3	35.6	31.5	28.5	25.9	23.8	20.3	14.2
HZB12-44	118	94	75.5	62.4	53.2	46.3	41.3	37.2	34.0	31.4	27.1	19.0
HZB12-55	142	114	92	74.7	62.4	54.3	48.7	44.3	40.9	38.1	33.2	23.6
HZB12-70J	164	132	109	93	80.2	71.2	64.0	58.7	54.4	51.3	45.0	31.4
HZB12-70	168	134	111	95	81.8	72.6	65.3	59.9	55.6	52.3	45.9	32.0
HZB12-80	183.6	142	116	100	88.3	77.9	71.2	66.2	61.3	58.1	50.9	36.5
HZB12-90	206	161	133	114	99	89.1	80.2	73.1	67.2	62.4	55.4	40.1
HZB12-100	227	182	151	129	111	99	88.8	81.3	75.1	70.2	61.3	43.5
HZB12-110	248	201	166	142	124	112	99	89.9	81.3	74.6	64.6	47.5
HZB12-120	265	217	182	155	138	123	110	102	92.2	84.8	75.2	54.3
HZB12-135	257	208	188	169	154	139	127	117	108	101	87.8	63.0
HZB12-150	284	246	210	186	166	152	137	126	115	106	93.3	68.0
HZB12-160	292	254	222	196	180	163	147	135	125	116	104	75.3
HZB12-200	325	284	246	217	196	181	168	156	144	135	119	85.6
HZB12-230	359	310	265	238	218	202	186	175	161	153	139	100
HZB6-110	252	205	169	145	127	114	101	91.7	82.9	76.1	65.9	48.4
HZB6-160	304	264	231	204	187	169	153	140	130	120	108	78.3
HZB6-200	325	284	246	217	196	181	168	156	144	135	119	85.6

Battery Model	Time in Minutes - Amps to 1.80 VPC											
	5	10	15	20	25	30	35	40	45	50	60	90
HZB12-15T	51.9	36.6	29.1	24.5	20.8	18.3	16.1	14.4	13.1	12.0	10.3	7.8
HZB12-18	52.2	36.9	30.0	25.2	21.3	18.5	16.2	14.5	13.1	12.0	10.5	7.9
HZB12-26	81.5	59.0	46.7	38.2	32.8	28.7	25.5	22.9	20.9	19.2	16.6	12.0
HZB12-28	83.6	60.5	47.9	39.2	33.6	29.4	26.2	23.4	21.4	19.6	17.0	12.3
HZB12-33	107	79.3	59.8	49.8	42.1	36.8	32.8	29.3	26.7	24.5	21.0	14.5
HZB12-44	128	105	83.0	67.3	57.1	49.2	43.6	38.9	35.2	32.4	28.0	19.5
HZB12-55	157	132	104	81.2	67.2	57.8	51.6	46.6	43.0	39.4	34.4	24.0
HZB12-70J	183	151	122	100	84.4	74.5	66.7	60.7	56.9	53.2	45.4	31.5
HZB12-70	187	154	124	102	86.1	76.0	68.1	62.0	58.1	54.3	46.3	32.1
HZB12-80	195	162	134	113	95.8	84.5	77.1	70.5	65.7	60.7	53.2	37.1
HZB12-90	236	198	160	134	112	97.5	85.9	77.6	71.1	65.5	57.2	41.1
HZB12-100	276	212	169	140	119	105	93.8	85.2	78.9	72.9	63.5	44.6
HZB12-110	311	242	191	158	137	120	105	95.4	86.9	79.4	68.2	48.5
HZB12-120	329	260	207	173	149	131	117	106	97.9	90.0	78.0	55.7
HZB12-135	318	240	206	180	161	145	133	122	112	104	91.0	65.1
HZB12-150	356	284	237	205	182	163	147	135	123	114	99.4	69.4
HZB12-160	395	318	259	225	198	179	164	150	139	127	111	77.9
HZB12-200	408	335	277	246	218	200	184	172	159	151	134	93.9
HZB12-230	430	351	293	265	237	217	199	183	172	162	144	103
HZB6-110	317	247	194	161	140	123	108	97.3	88.6	81.0	69.6	49.5
HZB6-160	403	324	269	234	206	186	171	156	144	132	115	81.1
HZB6-200	408	335	277	246	218	200	184	172	159	151	134	93.9

Battery Model	Time in Minutes - Amps to 1.75 VPC											
	5	10	15	20	25	30	35	40	45	50	60	90
HZB12-15T	55.0	39.3	30.3	25.4	21.6	18.7	16.6	14.8	13.5	12.3	10.7	8.0
HZB12-18	55.9	39.9	30.8	26.0	21.9	18.8	16.6	14.8	13.4	12.2	10.7	8.0
HZB12-26	85.5	62.0	48.4	39.3	33.7	29.4	26.1	23.4	21.3	19.6	17.0	12.1
HZB12-28	87.7	63.6	49.6	40.3	34.6	30.2	26.8	24.0	21.9	20.1	17.4	12.4
HZB12-33	112	81.9	62.4	51.1	42.9	37.6	33.1	29.6	26.9	24.8	21.2	14.7
HZB12-44	135	111	87.2	69.3	58.5	50.5	44.2	39.3	35.6	32.8	28.1	19.7
HZB12-55	165	137	107	84.0	69.3	59.8	52.6	47.7	43.6	40.2	34.5	24.1
HZB12-70J	195	163	131	106	89.7	77.6	69.2	63.2	58.3	54.2	46.2	32.0
HZB12-70	199	166	134	108	91.5	79.2	70.6	64.5	59.4	55.3	47.1	32.7
HZB12-80	208	176	147	123	104	90.5	80.8	73.5	68.5	63.7	54.8	37.6
HZB12-90	251	206	167	139	116	100	87.7	79.4	73.0	67.2	58.4	41.3
HZB12-100	294	229	177	144	123	107	95.7	87.0	79.9	74.4	64.0	44.9
HZB12-110	321	259	202	167	142	123	108	97.4	88.3	80.6	69.0	48.9
HZB12-120	339	276	215	179	154	135	119	108	100	91.6	78.9	56.0
HZB12-135	355	254	214	185	165	148	134	124	115	107	92.4	65.9
HZB12-150	389	310	254	217	191	171	154	141	128	118	101.7	70.1
HZB12-160	423	340	275	238	209	187	170	156	143	131	113.3	79.3
HZB12-200	444	366	306	268	237	213	194	179	167	156	137.9	94.7
HZB12-230	458	377	313	279	250	226	206	188	177	166	146.7	104.9
HZB6-110	328	264	206	170	145	125	110	99	90	82	70.4	49.9
HZB6-160	432	354	280	248	217	194	177	162	149	137	117.8	82.5
HZB6-200	444	366	306	268	237	213	194	179	167	156	137.9	94.7

Battery Model	Time in Minutes - Amps to 1.70 VPC											
	5	10	15	20	25	30	35	40	45	50	60	90
HZB12-15T	57.7	40.6	31.3	26.0	21.9	19.0	16.9	15.2	13.8	12.6	11.0	8.1
HZB12-18	58.9	41.4	32.0	26.5	22.3	19.2	16.9	15.1	13.7	12.6	11.0	8.2
HZB12-26	88.9	64.2	50.2	40.5	34.4	30.1	26.6	23.9	21.8	19.9	17.2	12.3
HZB12-28	91.2	65.8	51.4	41.5	35.3	30.9	27.3	24.6	22.3	20.4	17.7	12.6
HZB12-33	114	83.4	63.4	52.5	44.0	38.5	33.6	30.1	27.2	25.0	21.5	14.8
HZB12-44	141	114	89.1	71.2	59.3	51.0	44.6	39.7	36.2	33.3	28.7	20.0
HZB12-55	175	142	109	85.9	70.2	60.4	53.2	48.2	44.5	41.0	35.5	24.0
HZB12-70J	206	174	136	111	92.6	80.6	71.1	64.0	59.0	54.6	46.8	32.5
HZB12-70	210	178	139	113	94.5	82.2	72.6	65.3	60.2	55.7	47.8	33.1
HZB12-80	224	190	156	129	107	93.0	82.3	74.9	69.3	64.4	55.6	38.2
HZB12-90	268	216	171	143	119	101.7	89.1	80.6	73.9	68.2	59.2	42.4
HZB12-100	311	239	182	148	126	109	97	88.5	81.3	75.2	65.0	45.9
HZB12-110	336	262	206	171	145	125	110	98.7	89.3	81.8	69.8	49.9
HZB12-120	357	281	222	182	157	137	122	111	102	93	80.7	57.1
HZB12-135	376	264	218	191	168	152	138	127	118	110	96	69.3
HZB12-150	418	329	267	227	198	176	158	144	131	121	104	72.0
HZB12-160	443	358	292	247	212	189	173	158	145	133	115	80.2
HZB12-200	460	378	315	279	248	221	198	182	168	158	140	96.3
HZB12-230	479	393	326	290	257	230	210	191	179	167	147	106
HZB6-110	342	268	210	174	148	127	112	101	91.1	83.5	71.2	50.9
HZB6-160	452	365	297	257	221	197	180	165	150	138	119	83.4
HZB6-200	460	378	315	279	248	221	198	182	168	158	140	96.3

Battery Model	Time in Hours					Amps to 1.85 VPC					
	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	6.04	4.24	3.31	2.75	2.34	2.03	1.81	1.63	1.49	1.29	0.85
HZB12-18	6.09	4.36	3.35	2.75	2.32	2.03	1.80	1.62	1.49	1.25	0.86
HZB12-26	9.42	6.97	5.45	4.49	3.51	3.11	2.78	2.50	2.28	1.95	1.30
HZB12-28	9.67	7.15	5.59	4.60	3.62	3.20	2.86	2.57	2.35	2.01	1.34
HZB12-33	10.8	7.33	5.75	4.80	4.16	3.68	3.34	3.01	2.76	2.40	1.60
HZB12-44	14.7	9.9	7.50	6.16	5.26	4.60	4.16	3.80	3.49	2.99	1.95
HZB12-55	18.2	12.6	9.73	8.00	6.83	6.03	5.39	4.84	4.43	3.79	2.55
HZB12-70J	23.8	16.1	12.3	10.0	8.54	7.49	6.66	6.03	5.53	4.72	3.15
HZB12-70	24.3	16.4	12.5	10.2	8.72	7.64	6.80	6.16	5.64	4.82	3.21
HZB12-80	27.9	18.8	14.5	12.0	10.2	8.93	7.88	7.04	6.40	5.50	3.65
HZB12-90	31.3	21.7	16.6	13.5	11.5	10.0	8.87	7.99	7.31	6.28	4.14
HZB12-100	33.7	23.4	18.1	14.9	12.7	11.2	10.0	9.04	8.23	7.06	4.59
HZB12-110	37.1	25.6	19.6	16.0	13.9	12.4	11.0	9.9	9.00	7.70	5.12
HZB12-120	42.0	29.1	22.0	17.9	15.3	13.4	12.1	11.0	10.0	8.60	5.59
HZB12-135	48.9	32.8	24.7	20.2	17.0	15.0	13.4	12.1	11.1	9.50	6.16
HZB12-150	52.2	35.4	27.2	22.3	19.1	16.8	15.0	13.6	12.4	10.6	6.94
HZB12-160	58.8	40.4	31.2	25.6	21.8	19.3	17.1	15.4	14.1	12.0	7.69
HZB12-200	67.0	47.1	36.7	30.0	25.6	22.4	20.0	18.1	16.6	14.2	9.29
HZB12-230	78.6	54.5	42.2	34.8	30.0	26.2	23.3	21.1	19.4	16.5	10.7
HZB6-110	37.8	26.1	20.0	16.3	14.2	12.6	11.2	10.1	9.18	7.85	5.22
HZB6-160	61.2	42.0	32.4	26.6	22.7	20.1	17.8	16.0	14.7	12.5	8.00
HZB6-200	67.0	47.1	36.7	30.0	25.6	22.4	20.0	18.1	16.6	14.2	9.29

Battery Model	Time in Hours					Amps to 1.80 VPC					
	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	6.20	4.40	3.41	2.82	2.40	2.10	1.86	1.67	1.52	1.32	0.87
HZB12-18	6.26	4.43	3.42	2.84	2.41	2.10	1.87	1.67	1.53	1.28	0.88
HZB12-26	9.51	7.02	5.48	4.51	3.60	3.19	2.86	2.58	2.34	1.99	1.33
HZB12-28	9.76	7.20	5.62	4.63	3.71	3.28	2.95	2.66	2.41	2.05	1.37
HZB12-33	11.1	7.57	5.96	4.97	4.28	3.81	3.46	3.12	2.83	2.46	1.63
HZB12-44	15.2	10.2	7.78	6.38	5.42	4.74	4.31	3.91	3.59	3.08	2.02
HZB12-55	18.5	12.9	9.98	8.24	7.07	6.23	5.54	5.00	4.58	3.92	2.64
HZB12-70J	24.1	16.5	12.5	10.2	8.72	7.63	6.76	6.10	5.60	4.82	3.20
HZB12-70	24.6	16.8	12.8	10.4	8.90	7.79	6.90	6.22	5.72	4.92	3.27
HZB12-80	28.3	19.1	14.8	12.1	10.4	9.14	8.06	7.26	6.59	5.69	3.79
HZB12-90	31.9	22.1	16.9	13.8	11.7	10.3	9.18	8.29	7.57	6.51	4.31
HZB12-100	34.5	23.9	18.4	15.1	13.0	11.5	10.3	9.33	8.51	7.31	4.77
HZB12-110	37.9	26.1	20.1	16.6	14.4	12.7	11.3	10.2	9.31	7.96	5.31
HZB12-120	43.3	29.7	22.6	18.4	15.7	13.9	12.5	11.4	10.4	8.90	5.80
HZB12-135	50.2	34.0	25.7	20.8	17.7	15.4	13.8	12.5	11.5	9.79	6.38
HZB12-150	53.5	36.2	27.8	22.8	19.6	17.2	15.4	14.1	12.8	10.9	7.20
HZB12-160	60.8	41.3	31.7	26.1	22.6	19.9	17.8	16.0	14.6	12.4	7.96
HZB12-200	72.0	49.8	38.7	31.2	26.5	22.9	20.7	18.8	17.2	14.7	9.64
HZB12-230	80.0	55.2	42.9	35.6	30.7	27.0	24.1	21.8	20.0	17.1	11.1
HZB6-110	38.6	26.6	20.5	16.9	14.7	13.0	11.5	10.4	9.49	8.12	5.42
HZB6-160	63.2	43.0	33.0	27.1	23.5	20.7	18.5	16.6	15.2	12.9	8.28
HZB6-200	72.0	49.8	38.7	31.2	26.5	22.9	20.7	18.8	17.2	14.7	9.64

Battery Model	Time in Hours					Amps to 1.75 VPC					
	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	6.37	4.47	3.45	2.85	2.43	2.11	1.88	1.70	1.54	1.34	0.88
HZB12-18	6.32	4.49	3.48	2.87	2.44	2.11	1.88	1.69	1.54	1.29	0.89
HZB12-26	9.60	7.06	5.51	4.54	3.65	3.23	2.89	2.60	2.36	2.01	1.33
HZB12-28	9.85	7.24	5.65	4.66	3.76	3.33	2.98	2.68	2.43	2.07	1.37
HZB12-33	11.2	7.66	5.99	4.99	4.29	3.83	3.47	3.13	2.85	2.47	1.64
HZB12-44	15.3	10.3	7.88	6.45	5.48	4.83	4.37	3.95	3.63	3.11	2.03
HZB12-55	18.6	13.0	10.12	8.32	7.11	6.26	5.59	5.02	4.61	3.94	2.65
HZB12-70J	24.3	16.6	12.6	10.3	8.79	7.68	6.82	6.15	5.64	4.87	3.24
HZB12-70	24.8	17.0	12.8	10.5	8.97	7.84	6.96	6.28	5.75	4.97	3.31
HZB12-80	28.5	19.3	14.9	12.2	10.5	9.21	8.16	7.28	6.66	5.72	3.81
HZB12-90	32.2	22.3	17.1	14.0	11.9	10.4	9.22	8.32	7.61	6.53	4.32
HZB12-100	35.0	24.2	18.6	15.2	13.1	11.6	10.3	9.36	8.56	7.34	4.78
HZB12-110	38.2	26.2	20.2	16.7	14.5	12.8	11.4	10.3	9.36	8.01	5.33
HZB12-120	43.8	30.0	22.8	18.6	15.8	13.9	12.6	11.4	10.4	8.94	5.82
HZB12-135	51.0	34.4	25.9	21.0	17.8	15.6	13.9	12.6	11.5	9.88	6.42
HZB12-150	53.9	36.5	27.9	23.0	19.8	17.4	15.5	14.1	12.9	10.9	7.27
HZB12-160	61.1	41.7	31.8	26.2	22.7	20.1	17.9	16.1	14.7	12.5	8.01
HZB12-200	72.8	50.2	38.9	31.6	26.7	23.2	20.8	18.8	17.3	14.8	9.67
HZB12-230	80.6	55.6	43.2	35.8	30.9	27.2	24.2	21.9	20.2	17.2	11.2
HZB6-110	39.0	26.8	20.6	17.0	14.8	13.0	11.6	10.5	9.55	8.17	5.44
HZB6-160	63.5	43.4	33.1	27.3	23.6	20.9	18.6	16.8	15.3	13.0	8.33
HZB6-200	72.8	50.2	38.9	31.6	26.7	23.2	20.8	18.8	17.3	14.8	9.67

Battery Model	Time in Hours					Amps to 1.70 VPC					
	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	6.54	4.58	3.53	2.93	2.49	2.16	1.93	1.74	1.59	1.36	0.89
HZB12-18	6.49	4.62	3.58	2.95	2.49	2.16	1.92	1.73	1.58	1.33	0.90
HZB12-26	9.68	7.11	5.56	4.58	3.73	3.29	2.93	2.64	2.41	2.04	1.35
HZB12-28	9.93	7.29	5.71	4.70	3.84	3.38	3.02	2.72	2.48	2.11	1.39
HZB12-33	11.3	7.84	6.19	5.14	4.42	3.92	3.56	3.21	2.91	2.52	1.66
HZB12-44	15.5	10.6	8.03	6.60	5.65	4.96	4.48	4.05	3.74	3.20	2.09
HZB12-55	19.0	13.4	10.42	8.57	7.32	6.40	5.70	5.16	4.72	4.06	2.73
HZB12-70J	24.6	16.8	12.8	10.5	8.98	7.85	6.98	6.28	5.81	4.99	3.32
HZB12-70	25.2	17.1	13.1	10.7	9.17	8.01	7.13	6.41	5.92	5.09	3.38
HZB12-80	29.0	19.7	15.1	12.4	10.7	9.34	8.31	7.46	6.86	5.89	3.92
HZB12-90	33.2	23.0	17.7	14.4	12.3	10.7	9.46	8.53	7.84	6.73	4.45
HZB12-100	35.9	24.5	18.9	15.6	13.5	11.8	10.6	9.59	8.82	7.56	4.93
HZB12-110	39.0	27.0	20.8	17.1	14.9	13.2	11.7	10.6	9.64	8.25	5.49
HZB12-120	44.2	30.3	23.2	19.0	16.3	14.3	12.9	11.7	10.8	9.21	6.00
HZB12-135	52.8	35.3	26.7	21.6	18.3	16.0	14.3	12.9	11.9	10.18	6.61
HZB12-150	55.2	37.2	28.8	23.7	20.3	17.8	16.0	14.5	13.2	11.3	7.44
HZB12-160	62.0	42.6	33.2	27.2	23.4	20.6	18.4	16.5	15.0	12.9	8.25
HZB12-200	73.7	50.9	39.2	32.1	27.3	23.8	21.3	19.3	17.8	15.2	9.96
HZB12-230	81.8	56.4	44.1	36.5	31.5	27.8	24.8	22.4	20.6	17.7	11.5
HZB6-110	39.8	27.6	21.3	17.5	15.2	13.5	11.9	10.8	9.83	8.41	5.60
HZB6-160	64.5	44.3	34.5	28.3	24.3	21.5	19.2	17.2	15.6	13.4	8.58
HZB6-200	73.7	50.9	39.2	32.1	27.3	23.8	21.3	19.3	17.8	15.2	9.96

Battery Model	Time in Hours Ah to 1.85 VPC											
	1.5	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	11.4	12.1	12.7	13.3	13.8	14.0	14.2	14.5	14.7	14.9	15.5	17.0
HZB12-18	11.6	12.2	13.1	13.4	13.8	13.9	14.2	14.4	14.6	14.9	15.0	17.2
HZB12-26	17.7	18.8	20.9	21.8	22.4	21.1	21.8	22.2	22.5	22.8	23.4	26.0
HZB12-28	18.1	19.3	21.5	22.4	23.0	21.7	22.4	22.9	23.2	23.5	24.1	26.7
HZB12-33	21.3	21.6	22.0	23.0	24.0	24.9	25.8	26.7	27.1	27.6	28.8	32.0
HZB12-44	28.5	29.3	29.8	30.0	30.8	31.5	32.2	33.3	34.2	34.9	35.9	38.9
HZB12-55	35.4	36.4	37.7	38.9	40.0	41.0	42.2	43.1	43.6	44.3	45.5	50.9
HZB12-70J	47.0	47.5	48.3	49.0	49.9	51.3	52.4	53.3	54.3	55.3	56.6	62.9
HZB12-70	48.0	48.5	49.3	50.0	50.9	52.3	53.5	54.4	55.4	56.4	57.8	64.2
HZB12-80	54.7	55.8	56.4	58.0	59.8	61.0	62.5	63.0	63.4	64.0	66.0	73.1
HZB12-90	60.2	62.6	65.1	66.5	67.6	68.9	70.0	71.0	71.9	73.1	75.3	82.9
HZB12-100	65.2	67.3	70.2	72.5	74.7	76.3	78.6	80.2	81.4	82.3	84.7	91.9
HZB12-110	71.2	74.1	76.8	78.4	80.1	83.2	86.6	88.0	89.1	90.0	92.4	102.3
HZB12-120	81.5	84.0	87.2	87.8	89.6	91.6	94.0	97	99	100	103	112
HZB12-135	94.5	98	98	99	101	102	105	107	109	111	114	123
HZB12-150	102	104	106	109	111	114	117	120	122	124	127	139
HZB12-160	113	118	121	125	128	131	135	137	139	141	144	154
HZB12-200	128	134	141	147	150	154	157	160	163	166	170	186
HZB12-230	151	157	164	169	174	180	183	186	190	194	198	214
HZB6-110	72.6	75.6	78.3	80.0	81.7	84.9	88.4	89.8	90.9	91.8	94.2	104
HZB6-160	118	122	126	130	133	136	141	142	144	147	150	160
HZB6-200	128	134	141	147	150	154	157	160	163	166	170	186

Battery Model	Time in Hours Ah to 1.80 VPC											
	1.5	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	11.7	12.4	13.2	13.6	14.1	14.4	14.7	14.9	15.0	15.2	15.9	17.4
HZB12-18	11.9	12.5	13.3	13.7	14.2	14.5	14.7	15.0	15.0	15.3	15.4	17.7
HZB12-26	17.9	19.0	21.1	21.9	22.6	21.6	22.3	22.9	23.2	23.4	23.9	26.7
HZB12-28	18.4	19.5	21.6	22.5	23.1	22.2	23.0	23.6	23.9	24.1	24.6	27.4
HZB12-33	21.8	22.1	22.7	23.9	24.8	25.7	26.7	27.7	28.1	28.3	29.5	32.7
HZB12-44	29.3	30.3	30.6	31.1	31.9	32.5	33.2	34.5	35.2	35.9	37.0	40.3
HZB12-55	36.0	36.9	38.8	39.9	41.2	42.4	43.6	44.3	45.0	45.8	47.0	52.7
HZB12-70J	47.2	48.1	49.4	50.0	51.2	52.3	53.4	54.1	54.9	56.0	57.8	64.1
HZB12-70	48.2	49.1	50.4	51.0	52.2	53.4	54.5	55.2	56.0	57.2	59.0	65.4
HZB12-80	55.7	56.6	57.4	59.0	60.7	62.2	64.0	64.5	65.3	65.9	68.3	75.7
HZB12-90	61.6	63.7	66.4	67.7	69.2	70.3	72.0	73.4	74.7	75.7	78.1	86.1
HZB12-100	66.9	69.0	71.8	73.6	75.5	78.2	80.5	82.4	84.0	85.1	87.7	95.4
HZB12-110	72.8	75.7	78.3	80.2	82.8	86.2	89.1	90.3	92.0	93.1	95.5	106.2
HZB12-120	83.5	86.5	89.0	90.4	92.0	94.0	97.1	100	102	104	107	116
HZB12-135	97.6	100	102	103	104	106	108	110	112	115	118	128
HZB12-150	104	107	109	111	114	118	121	123	127	128	130	144
HZB12-160	117	122	124	127	131	136	139	142	144	146	149	159
HZB12-200	141	144	149	155	156	159	161	165	169	172	177	193
HZB12-230	154	160	166	172	178	184	189	193	196	200	205	222
HZB6-110	74.3	77.2	79.9	81.8	84.5	87.9	90.9	92.1	93.8	94.9	97.4	108
HZB6-160	122	126	129	132	136	141	145	148	149	152	155	166
HZB6-200	141	144	149	155	156	159	161	165	169	172	177	193

Battery Model	Time in Hours Ah to 1.75 VPC											
	1.5	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	11.9	12.7	13.4	13.8	14.3	14.6	14.8	15.1	15.3	15.4	16.0	17.6
HZB12-18	12.0	12.6	13.5	13.9	14.3	14.6	14.8	15.1	15.2	15.4	15.5	17.8
HZB12-26	18.2	19.2	21.2	22.0	22.7	21.9	22.6	23.1	23.4	23.6	24.1	26.7
HZB12-28	18.6	19.7	21.7	22.6	23.3	22.5	23.3	23.8	24.1	24.3	24.9	27.4
HZB12-33	22.0	22.3	23.0	24.0	25.0	25.8	26.8	27.8	28.2	28.5	29.7	32.8
HZB12-44	29.5	30.5	31.0	31.5	32.2	32.9	33.8	34.9	35.6	36.3	37.3	40.6
HZB12-55	36.2	37.2	39.1	40.5	41.6	42.6	43.8	44.7	45.2	46.1	47.3	53.0
HZB12-70J	48.0	48.5	49.9	50.3	51.5	52.8	53.8	54.6	55.4	56.4	58.4	64.8
HZB12-70	49.0	49.5	50.9	51.3	52.5	53.8	54.9	55.7	56.5	57.5	59.6	66.1
HZB12-80	56.4	56.9	58.0	59.4	61.2	62.9	64.5	65.3	65.5	66.6	68.6	76.1
HZB12-90	62.0	64.3	66.8	68.5	70.0	71.5	72.8	73.8	74.9	76.1	78.4	86.3
HZB12-100	67.4	70.0	72.5	74.3	75.8	78.8	80.9	82.7	84.2	85.6	88.1	95.7
HZB12-110	73.4	76.4	78.7	80.8	83.3	87.2	89.5	91.1	93.0	93.6	96.1	107
HZB12-120	84.0	87.5	90.0	91.0	93.0	94.8	97.6	101	103	104	107	116
HZB12-135	98.8	102	103	103	105	107	109	111	114	115	119	128
HZB12-150	105	108	110	111	115	119	122	124	127	129	131	145
HZB12-160	119	122	125	127	131	136	141	143	145	147	150	160
HZB12-200	142	146	151	156	158	160	163	167	169	173	177	193
HZB12-230	157	161	167	173	179	186	191	194	197	202	206	223
HZB6-110	74.9	77.9	80.3	82.4	84.9	88.9	91.3	92.9	94.9	95.5	98.0	109
HZB6-160	124	127	130	132	136	142	147	149	151	153	156	167
HZB6-200	142	146	151	156	158	160	163	167	169	173	177	193

Battery Model	Time in Hours Ah to 1.70 VPC											
	1.5	2	3	4	5	6	7	8	9	10	12	20
HZB12-15T	12.2	13.1	13.8	14.1	14.6	14.9	15.1	15.4	15.6	15.9	16.3	17.8
HZB12-18	12.2	13.0	13.9	14.3	14.8	14.9	15.1	15.4	15.5	15.8	16.0	18.0
HZB12-26	18.4	19.4	21.3	22.3	22.9	22.4	23.0	23.4	23.8	24.1	24.5	27.0
HZB12-28	18.9	19.9	21.9	22.8	23.5	23.0	23.7	24.1	24.5	24.8	25.3	27.9
HZB12-33	22.3	22.6	23.5	24.8	25.7	26.5	27.5	28.5	28.9	29.1	30.3	33.3
HZB12-44	30.0	31.0	31.7	32.1	33.0	33.9	34.7	35.8	36.5	37.4	38.4	41.8
HZB12-55	37.0	38.0	40.3	41.7	42.8	43.9	44.8	45.6	46.4	47.2	48.7	54.6
HZB12-70J	48.7	49.3	50.4	51.2	52.4	53.9	55.0	55.9	56.5	58.1	59.8	66.3
HZB12-70	49.7	50.3	51.4	52.2	53.5	55.0	56.1	57.0	57.7	59.2	61.1	67.7
HZB12-80	57.3	58.0	59.0	60.3	62.0	64.0	65.4	66.5	67.2	68.6	70.7	78.4
HZB12-90	63.6	66.4	69.0	70.7	71.8	73.6	74.6	75.6	76.8	78.4	80.7	88.9
HZB12-100	68.8	71.8	73.6	75.8	78.1	80.8	82.9	84.8	86.3	88.2	90.8	98.6
HZB12-110	74.8	78.0	81.1	83.4	85.7	89.4	92.4	93.7	95.1	96.4	99.0	109.8
HZB12-120	85.7	88.3	91.0	92.6	95.1	97.6	100	103	106	108	111	120
HZB12-135	104	106	106	107	108	110	112	114	116	119	122	132
HZB12-150	108	110	112	115	118	122	125	128	130	132	135	149
HZB12-160	120	124	128	133	136	140	145	147	149	150	154	165
HZB12-200	144	147	153	157	161	164	167	170	174	178	183	199
HZB12-230	158	164	169	176	182	189	195	199	202	206	213	230
HZB6-110	76	80	83	85	87	91	94	96	97	98	101	112
HZB6-160	125	129	133	138	142	146	150	153	155	156	160	172
HZB6-200	144	147	153	157	161	164	167	170	174	178	183	199





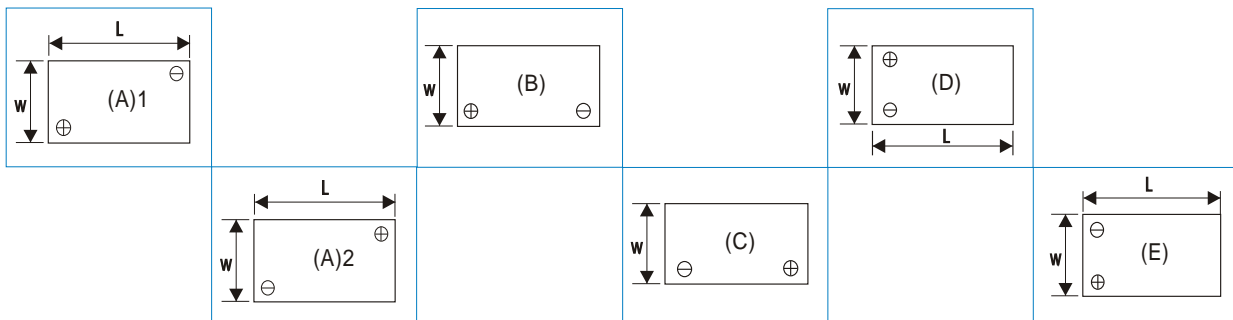




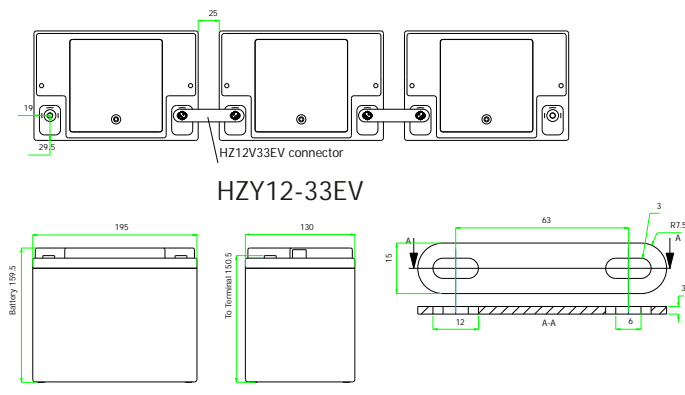
Central Gassing - Haze produce some models with a integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealing prevents any escaping gas from exiting the enclosure. Central gassing allows a tube carrying the emissions to pass through a seal to atmosphere. Haze are adding this feature to a number of sizes, if you require this feature please contact us for an up-to-date list of models included.



Battery Model	Qty Per Box	Dimensions (mm) & weight (kg)				Dimensions (Inches) & weight (lbs)				Terminal Layout	BCI Group Size	Internal Resistance mOhms	Maximum Charge Current	CCA at 0 °C	Short Circuit Amps
		Length	Width	Height	Weight	Length	Width	Height	Weight						
HZB12-15T	2	200	76	123	5.14	7.87	2.99	4.84	11.4	C - M5	-	18	4	265	750
HZB12-18	2	181	76	167	6.25	7.13	2.99	6.57	13.8	C - M5	-	17.1	4.5	270	732
HZB12-26	1	166	176	126	9.2	6.54	6.93	4.96	20.3	C - M5	-	11	6.5	300	900
HZB12-28	1	166	125	175	9.4	6.54	4.92	6.89	20.8	C - M5	-	11	7	305	910
HZB12-33	1	195	130	160	10.9	7.68	5.12	6.30	24.1	B - M6	U1	8.5	8	320	1100
HZB12-44	1	197	165	170	13.6	7.76	6.50	6.69	30.1	C - M6	-	7.5	11	350	1400
HZB12-55	1	228	137	207	17.5	8.98	5.39	8.15	38.7	B - M6	22NF	6.5	14	380	1700
HZB12-70J	1	350	167	179	22.1	13.78	6.57	7.05	48.8	Flag 1/4" C - M6	-	5	18	550	2100
HZB12-70	1	259	168	208	21.5	10.20	6.61	8.19	47.5	B - M6	24	5	18	550	2100
HZB12-80	1	259	168	208	23.7	10.20	6.61	8.19	52.4	B - M6	24	5	20	620	2400
HZB12-90	1	305	168	208	29	12.01	6.61	8.19	64.1	B - M6	27	4	22	680	2650
HZB12-100	1	305	168	208	30	12.01	6.61	8.19	66.3	B - M6	27	4	25	780	2900
HZB12-110	1	332	174	213	32.2	13.07	6.85	8.39	71.2	B - M6	31	4	27	960	3000
HZB12-120	1	408	176	227	35	16.06	6.93	8.94	77.4	B - M6	-	3	30	1020	3300
HZB12-135	1	340	173	280	39.6	13.39	6.81	11.02	87.5	C - M6	-	2.73	35	1160	3750
HZB12-150	1	482	170	242	44.2	18.98	6.69	9.53	97.7	B - M6	-	2.5	38	1300	4200
HZB12-160	1	530	209	214	52.2	20.87	8.23	8.43	115.4	E - M8	4D	2	40	1440	4700
HZB12-200	1	520	240	220	66	20.47	9.45	8.66	145.9	E - M8	-	<2	50	1670	5400
HZB12-230	1	521	269	203	70	20.51	10.59	7.99	154.7	E - M8	8D	<2	57	1870	5900
HZB6-110	1	193	168	205	16	7.60	6.61	8.07	35.4	A1 - M6	-	4	27	1010	3200
HZB6-160	1	298	171	226	26	11.73	6.73	8.90	57.5	A2 - M6	-	2	40	1290	4600
HZB6-200	1	318	170	225	31	12.52	6.69	8.86	68.5	A2 - M8	-	<2	50	1600	5000



Terminal Layout details



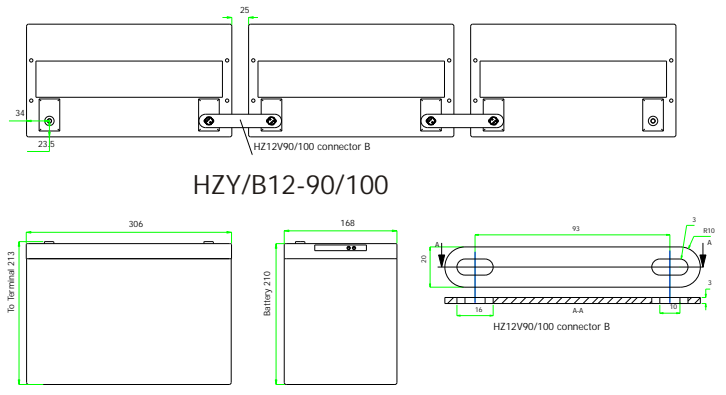
HZY12-33EV

Battery installations have many variables : space available, autonomy times, load carrying requirements etc.

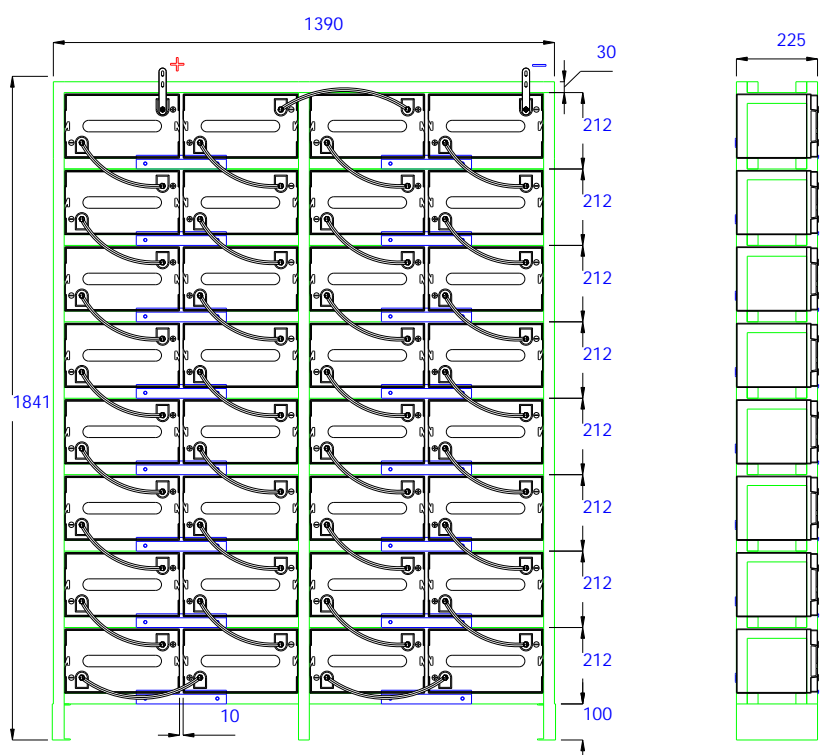
Haze Engineering department is at the customers disposal to find the best solution, provide dimensioned layout drawings and wiring diagrams.

A tailor made solution to meet the customers requirements.

All drawings are submitted for customer approval to ensure trouble free installation.



HZY/B12-90/100



Racking is available to suit available space and required configuration.

Special cables and / or standard connectors can be provided on request along with wiring diagrams.

A range of terminal covers are available to cover large and small batteries and cables or connectors.

The example rack shown is for HZB/Y6-200.



WorldWide



#### VRLA Product Range

- 4, 6 & 12 Volt AGM 1.3 to 230AH
- 6 & 12 Volt Gel 7.5 to 230AH
- 12 Volt Front Access AGM
- 12 Volt Front Access Gel
- 2 Volt AGM & Gel 50 to 3850AH

**Website: [www.hazebattery.com](http://www.hazebattery.com)**  
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