



Haze Battery Company Ltd

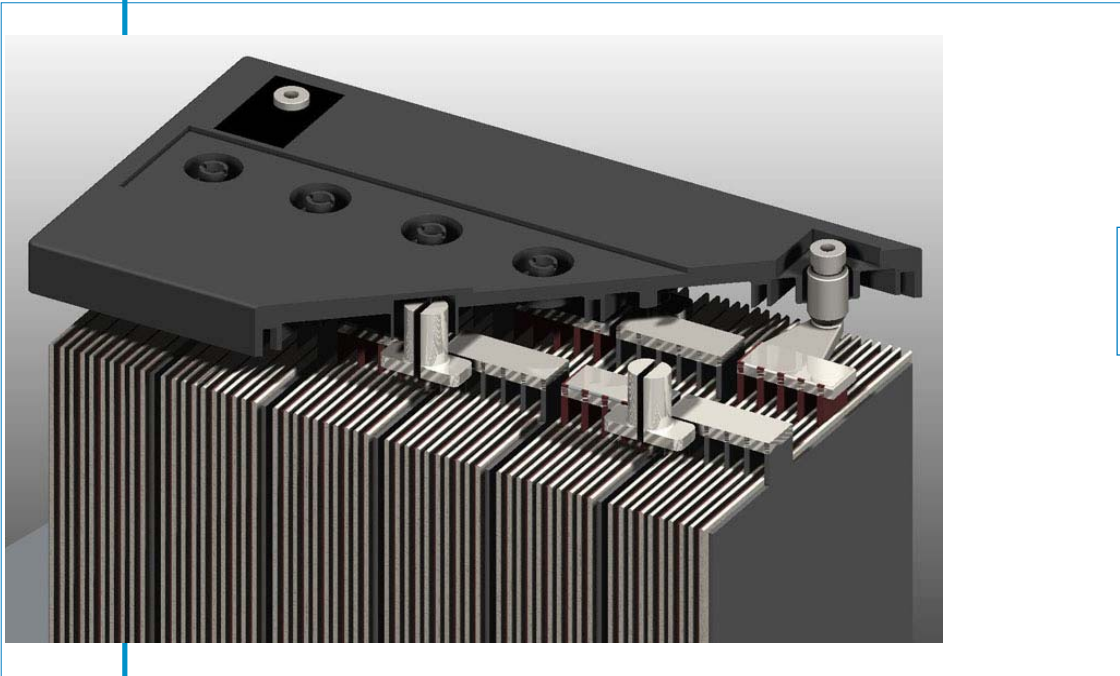


**Sealed Lead Acid 6 & 12 Volt
Monobloc
AGM Range**

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.

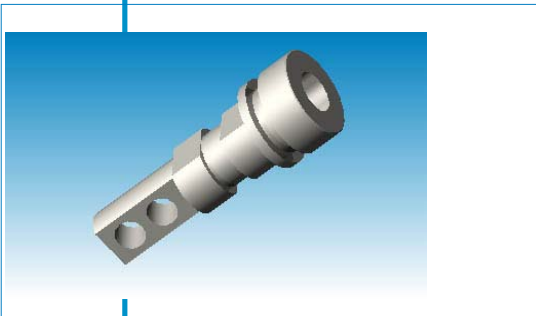
Separator is a mat of random woven acid resistant glass fibres, which acts as a sponge - soaking up and immobilising the electrolyte whilst maintaining good acid to plate contact and availability during discharge. "S wrapping" is employed to eliminate the risk of short circuits due to mossing and debris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

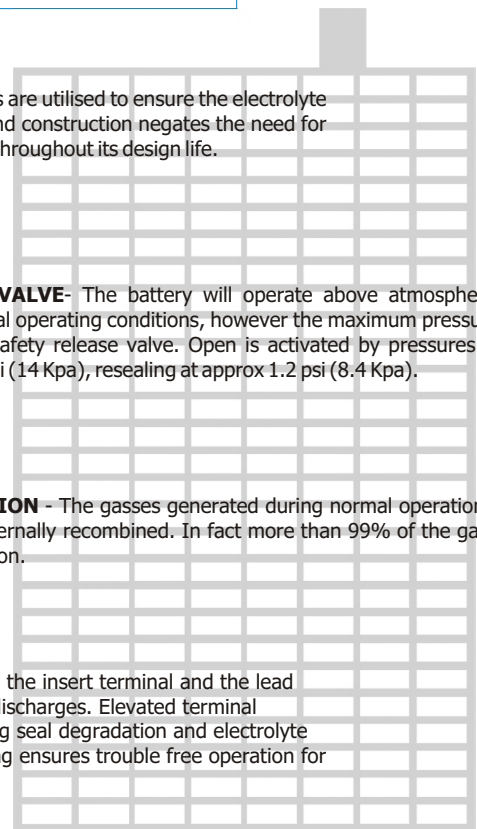
ELECTROLYTE FILLING - Special production and QC systems are utilised to ensure the electrolyte saturation is optimised for each battery. The battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.



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.



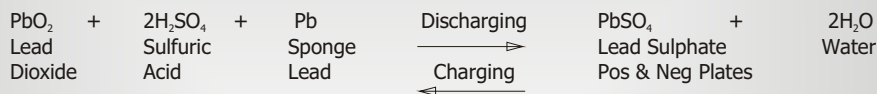
Applications

- 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

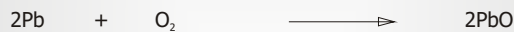
Capacity temperature correction Factor to be applied to Data at 20 Degrees C

Discharge Time	-30 °C	-20 °C	-10 °C	0 °C	5 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C	50 °C
5 minutes to 59 minutes	0.23	0.417	0.605	0.778	0.86	0.91	0.96	1	1.037	1.063	1.085	1.1	1.116
1 Hour to 100 Hours	0.277	0.464	0.647	0.816	0.886	0.93	0.97	1	1.028	1.05	1.063	1.07	1.078

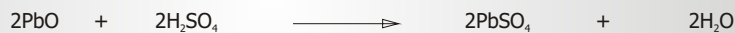
CHEMICAL REACTION- The chemical reaction for the Discharge / Recharge process is represented by the following formula:



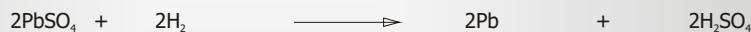
Under normal float charge conditions the oxygen passes through the separator from the positive to the negative plate where it reacts with the negative active material to form lead oxide.



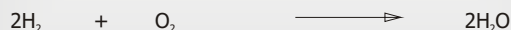
In the acid conditions the lead oxide reacts with the sulfuric acid to form lead sulphate.



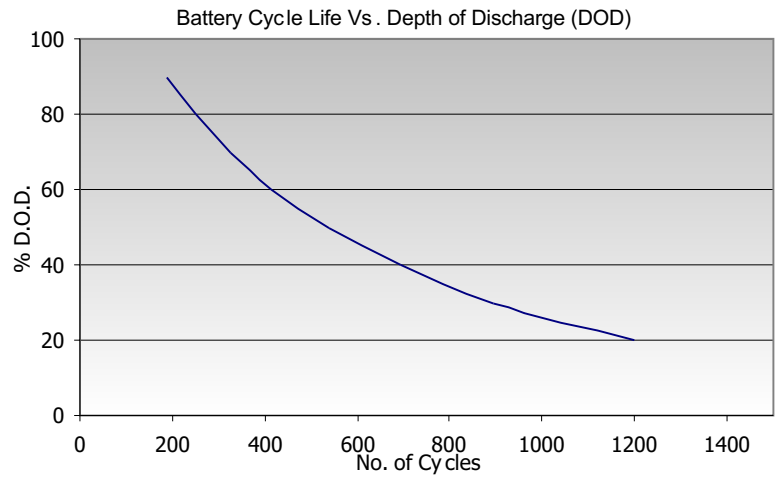
The lead sulphate formed on the negative is then reduced to lead and sulfuric acid by the evolving hydrogen.



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

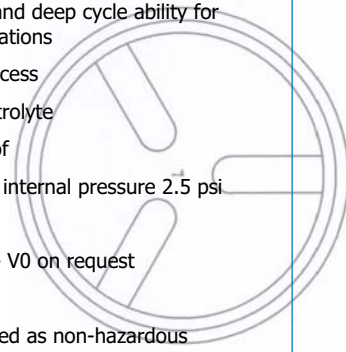


This reaction summarises what is meant by GAS RECOMBINATION. The process can never be 100% efficient, normal recombination efficiency is 95 - 99%.



Innovative Features

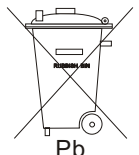
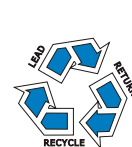
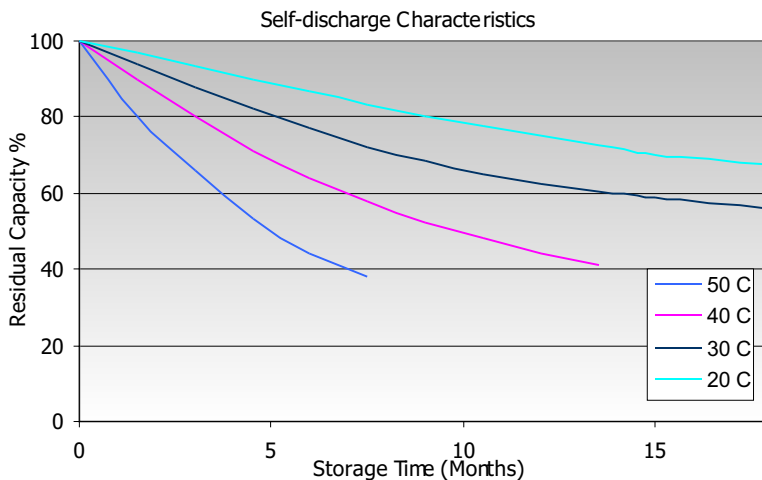
- Completely maintenance free, sealed construction eliminates the need for watering
- Increased durability and deep cycle ability for heavy demand applications
- Special formation process
- Analytical Grade electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position 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.



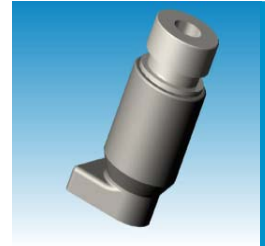
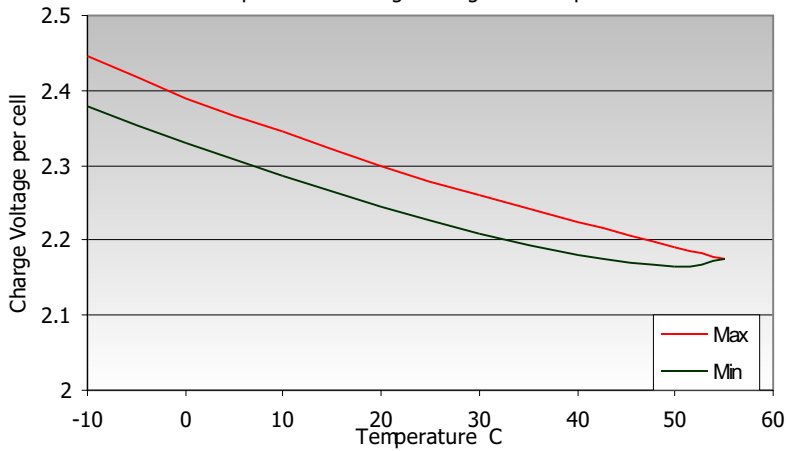
Specifications

Nominal Voltage	6 & 12 Volts
Design Life	12 Years @ 20 °C
Operating Temperature	-10 °C to 45 °C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	Absorbant Glass Mat
Active material	Very high purity lead
Case and cover	ABS (VO on request)
Charge Voltage	Float 2.27 - 2.30 VPC @20 °C Cycling 2.40 @20 °C
Electrolyte	Max. 2.4 VPC Max ripple 3.5%
Venting Valve	Charging V
Terminal	Sulphuric acid Analytical grade purity
Torque setting	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.

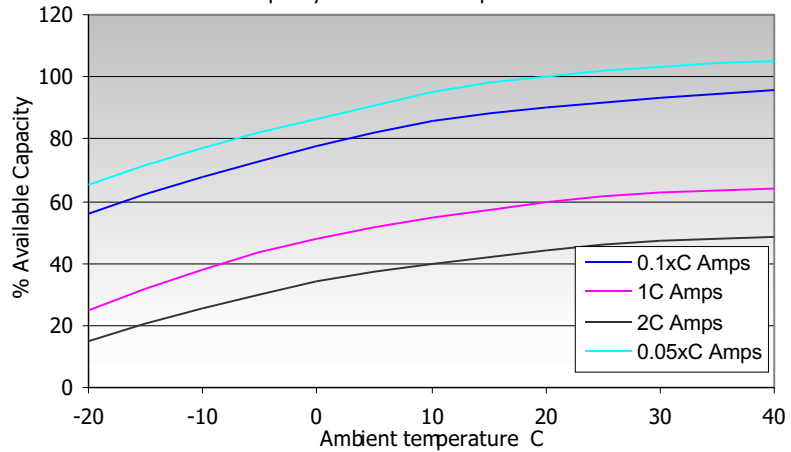
Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.



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.

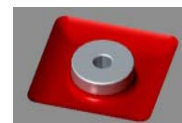
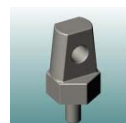
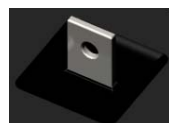
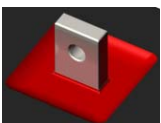
Operating Temperature	Recommended Applied Float Voltage VPC
0-9	2.33 - 2.35
10-14	2.30 - 2.33
15-19	2.27 - 2.30
20-24	2.27 - 2.30
25-29	2.25 - 2.27
30-34	2.23 - 2.25
35-40	2.21 - 2.23

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 Mo del	Time in Minutes - Amps to 1.85 VPC										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	46.3	33.2	27.0	22.9	19.9	17.5	15.6	14.1	12.9	10.3	7.6
HZB12-26	66.6	48.8	39.6	32.9	28.1	24.7	22.0	19.8	18.0	14.4	10.4
HZB12-28	78.5	57.1	45.5	38.3	32.9	28.8	25.6	23.0	21.0	16.7	12.1
HZB12-33	96	71.0	56.6	47.5	40.6	35.5	31.5	28.3	25.7	19.9	13.9
HZB12-44	118	83	68.7	58.9	51.7	45.9	41.1	37.3	34.2	26.9	18.9
HZB12-55	142	109	89	74.6	64.0	56.3	50.3	45.4	41.6	33.1	23.4
HZB12-60	149	102	81	67	58.8	51.9	46.6	42.5	39.3	32.6	25.2
HZB12-70J	164	132	111	94	81.3	71.8	64.5	58.7	53.8	42.9	30.1
HZB12-70	168	134	112	97	84.0	74.5	66.7	60.5	55.3	44.1	31.1
HZB12-80	176.4	142	116	100	88.3	78.8	72.2	66.2	61.3	49.4	35.3
HZB12-90	206	161	133	114	99	89.1	80.2	73.1	67.2	54.5	40.1
HZB12-100	227	182	152	130	112	99	89.5	81.6	75.1	59.7	42.5
HZB12-110	248	201	168	144	125	111	99	89.9	82.3	65.5	47.1
HZB12-115	260	192	156	134	120	107	98	89.8	82.7	67.9	50.5
HZB12-120	265	217	183	159	138	123	110	101	92.2	74.3	53.2
HZB12-135	257	208	187	169	154	139	127	117	108	87.8	63.0
HZB12-150	284	241	210	186	167	152	137	126	115	92.0	65.3
HZB12-160	292	250	221	200	181	165	151	138	128	103.7	73.9
HZB12-200	325	280	245	221	203	186	172	159	148	120	85.6
HZB12-230	359	304	264	238	218	202	186	175	164	138	100
HZB6-110	252	210	178	153	133	117	104	93.5	85.3	67.6	48.4
HZB6-160	304	264	236	210	188	169	154	142	132	107	77.1
HZB6-200	325	274	246	225	205	188	173	161	150	122	86.6

Battery Mo del	Time in Hours				
	2	3	4	5	6
HZB12-18	6.01	4.31	3.35	2.75	2.35
HZB12-26	8.34	6.03	4.75	3.92	3.34
HZB12-28	9.64	7.00	5.52	4.57	3.91
HZB12-33	10.7	7.45	5.82	4.84	4.17
HZB12-44	14.6	10.1	7.73	6.33	5.39
HZB12-55	18.1	12.6	9.78	8.04	6.87
HZB12-60	20.5	14.9	11.7	9.7	8.23
HZB12-70J	23.3	16.1	12.3	10.1	8.53
HZB12-70	24.0	16.5	12.6	10.3	8.75
HZB12-80	27.3	18.8	14.5	11.9	10.1
HZB12-90	31.5	22.0	17.0	13.9	11.8
HZB12-100	33.3	23.3	18.1	14.8	12.7
HZB12-110	36.7	25.6	19.8	16.2	13.9
HZB12-115	40.9	29.6	23.6	19.6	16.8
HZB12-120	41.6	29.0	22.3	18.2	15.5
HZB12-135	49.4	34.7	26.9	21.9	18.6
HZB12-150	50.7	35.3	27.2	22.4	19.2
HZB12-160	57.8	40.4	31.2	25.6	21.9
HZB12-200	67.0	47.6	37.4	31.1	26.8
HZB12-230	76.5	54.5	42.2	34.8	29.8
HZB6-110	37.9	26.4	20.5	16.8	14.4
HZB6-160	60.2	41.9	32.4	26.6	22.7
HZB6-200	67.7	47.5	36.9	30.3	25.9

Battery Mo del	Time in Minutes - Amps to 1.80 VPC										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	52.2	36.2	28.7	24.0	20.7	18.1	16.1	14.5	13.3	10.6	7.8
HZB12-26	72.1	51.5	41.2	34.0	29.0	25.3	22.5	20.2	18.4	14.6	10.6
HZB12-28	83.6	60.2	47.7	39.5	33.7	29.4	26.2	23.6	21.5	17.0	12.3
HZB12-33	105	75.1	59.3	49.3	42.1	36.7	32.4	29.1	26.3	20.4	14.2
HZB12-44	128	90	72.6	61.9	53.8	47.4	42.4	38.4	35.1	27.7	19.5
HZB12-55	157	118	95	78.0	66.9	58.7	52.3	47.3	43.1	34.2	24.0
HZB12-60	164	106	83	69	59.9	53.3	48.0	43.8	40.6	33.4	25.9
HZB12-70J	183	146	119	100	85.3	75.1	67.3	60.9	55.6	44.1	31.1
HZB12-70	187	143	118	101	87.8	77.2	68.9	62.5	57.2	45.4	32.1
HZB12-80	195	156	125	106	92.9	83.0	75.1	69.3	63.7	50.9	36.1
HZB12-90	236	173	141	120	105	92.8	83.3	75.9	69.7	56.2	41.1
HZB12-100	276	205	166	138	119	105	93.8	85.2	77.7	61.7	43.7
HZB12-110	290	224	182	153	132	116	104	93.6	85.6	67.9	48.5
HZB12-115	295	215	170	145	128	114	103	94.1	86.4	70.1	51.9
HZB12-120	316	245	199	168	146	128	115	104	95.5	76.3	54.4
HZB12-135	318	240	205	180	161	145	133	122	112	91.0	65.1
HZB12-150	356	275	233	203	180	160	145	131	120	94.4	67.0
HZB12-160	367	291	251	220	196	176	159	145	133	107	76.0
HZB12-200	408	325	276	246	220	200	183	168	156	125	89.1
HZB12-230	418	335	288	255	232	212	195	183	171	142	103
HZB6-110	302	232	189	159	138	120	107	96.3	87.7	69.2	49.3
HZB6-160	380	310	261	227	200	179	162	149	137	111	79.3
HZB6-200	408	324	276	246	220	200	184	171	158	127	90.7

Battery Mo del	Time in Hours				
	2	3	4	5	6
HZB12-18	6.18	4.41	3.45	2.83	2.41
HZB12-26	8.41	6.12	4.82	3.96	3.38
HZB12-28	9.79	7.09	5.59	4.62	3.97
HZB12-33	11.0	7.63	5.97	4.95	4.28
HZB12-44	15.1	10.4	7.99	6.54	5.57
HZB12-55	18.6	13.0	10.06	8.26	7.07
HZB12-60	20.9	15.1	11.9	9.8	8.35
HZB12-70J	23.9	16.4	12.6	10.2	8.70
HZB12-70	24.7	16.9	13.0	10.6	8.98
HZB12-80	27.8	19.1	14.8	12.1	10.3
HZB12-90	32.1	22.4	17.4	14.2	12.1
HZB12-100	34.2	23.8	18.4	15.1	13.0
HZB12-110	37.9	26.2	20.3	16.7	14.3
HZB12-115	41.7	30.1	23.8	19.7	17.0
HZB12-120	42.5	29.5	22.7	18.5	15.8
HZB12-135	50.7	35.5	27.5	22.4	19.0
HZB12-150	51.9	36.0	27.8	22.8	19.5
HZB12-160	59.4	41.2	31.8	26.1	22.4
HZB12-200	69.3	49.0	38.4	32.0	27.6
HZB12-230	80.0	55.4	42.9	35.4	30.4
HZB6-110	38.6	26.9	20.8	17.1	14.6
HZB6-160	61.8	43.0	33.3	27.3	23.4
HZB6-200	70.5	49.5	38.4	31.4	26.8

Battery Mo del	Time in Minutes - Amps to 1.75 VPC										
	5	10	15	20	25	30	35	40	45	60	90
HZB12-18	55.9	37.8	29.8	24.8	21.3	18.6	16.5	14.8	13.5	10.8	7.9
HZB12-26	75.7	53.5	42.4	34.8	29.5	25.8	23.0	20.7	18.8	14.9	10.7
HZB12-28	87.7	62.4	49.0	40.5	34.4	30.0	26.6	24.0	21.9	17.3	12.4
HZB12-33	112	77.8	60.9	50.3	42.7	37.2	32.9	29.6	26.7	20.7	14.4
HZB12-44	135	93.5	75.1	63.4	54.8	48.3	43.2	39.1	35.6	28.0	19.7
HZB12-55	165	123	97.3	80.0	68.2	59.8	53.3	48.2	43.9	34.7	24.4
HZB12-60	176	111	86	70.7	61.2	54.4	48.9	44.6	41.2	34.1	26.3
HZB12-70J	195	154	124	103	88.2	77.3	68.9	62.4	56.9	44.9	31.6
HZB12-70	199	148	122	104	90.0	79.2	70.6	64.2	58.8	46.3	32.6
HZB12-80	208.4	163	132	111	96.7	86.2	77.7	71.3	65.2	51.7	36.7
HZB12-90	251	182	147	124	108	95.0	85.5	77.7	71.5	57.7	41.8
HZB12-100	294	217	173	142	122	107	95.7	87.0	79.5	62.9	44.5
HZB12-110	321	238	192	161	137	120	107	96.5	87.6	69.0	49.2
HZB12-115	328	228	181	152	133	117	106	96.0	88.2	71.5	52.6
HZB12-120	339	260	207	174	150	132	118	107	97.6	77.9	55.5
HZB12-135	355	254	212	187	165	149	136	125	115	92.4	66.2
HZB12-150	389	293	246	212	186	165	148	134	122	96.1	68.0
HZB12-160	414	318	266	230	203	181	163	148	136	108	77.7
HZB12-200	444	342	292	258	231	208	190	174	160	128	90.7
HZB12-230	458	355	298	263	239	216	199	186	175	145	104
HZB6-110	323	244	197	165	142	123	109	98.3	89.3	70.4	50.1
HZB6-160	419	331	276	238	209	186	167	152	141	113	80.6
HZB6-200	444	347	292	258	231	209	193	177	163	131	92.2

Battery Mo del	Time in Hours				
	2	3	4	5	6
HZB12-18	6.31	4.49	3.51	2.88	2.45
HZB12-26	8.49	6.18	4.86	4.00	3.40
HZB12-28	9.88	7.17	5.65	4.66	4.00
HZB12-33	11.1	7.76	6.05	5.03	4.35
HZB12-44	15.3	10.5	8.13	6.65	5.67
HZB12-55	18.9	13.2	10.25	8.44	7.23
HZB12-60	21.3	15.2	12.0	9.9	8.42
HZB12-70J	24.3	16.7	12.7	10.4	8.80
HZB12-70	25.1	17.2	13.3	10.8	9.17
HZB12-80	28.3	19.5	15.1	12.3	10.5
HZB12-90	32.7	22.8	17.6	14.4	12.3
HZB12-100	34.8	24.2	18.7	15.4	13.2
HZB12-110	38.4	26.7	20.7	17.0	14.6
HZB12-115	42.1	30.4	24.1	19.9	17.1
HZB12-120	43.2</				

	Amps to 1.85 VPC				
	7	8	10	12	20
2.04	1.81	1.49	1.26	0.81	
2.92	2.60	2.13	1.81	1.15	
3.41	3.03	2.47	2.10	1.33	
3.68	3.33	2.78	2.40	1.57	
4.73	4.21	3.49	2.99	1.95	
6.03	5.36	4.45	3.82	2.55	
7.20	6.41	5.28	4.49	2.80	
7.46	6.63	5.48	4.71	3.11	
7.64	6.79	5.61	4.78	3.17	
8.80	7.84	6.47	5.55	3.65	
10.3	9.11	7.48	6.38	4.14	
11.1	9.9	8.18	6.98	4.50	
12.2	10.9	9.04	7.73	5.08	
14.7	13.0	10.69	9.05	5.63	
13.5	12.1	10.0	8.60	5.59	
16.2	14.4	11.8	10.03	6.46	
16.8	14.9	12.3	10.6	6.94	
19.2	17.1	14.1	12.0	7.69	
23.5	21.0	17.5	15.0	9.50	
26.2	23.4	19.4	16.5	10.7	
12.6	11.2	9.26	7.94	5.24	
20.0	17.7	14.6	12.5	8.00	
22.6	20.1	16.6	14.2	9.29	

Battery Model	Time in Hours Ah to 1.85 VPC										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.4	12.0	12.9	13.4	13.8	14.1	14.3	14.5	14.9	15.2	16.3
HZB12-26	15.6	16.7	18.1	19.0	19.6	20.1	20.5	20.8	21.3	21.7	23.0
HZB12-28	18.1	19.3	21.0	22.1	22.9	23.5	23.9	24.2	24.7	25.2	26.7
HZB12-33	20.8	21.4	22.3	23.3	24.2	25.0	25.8	26.6	27.8	28.8	31.5
HZB12-44	28.4	29.2	30.2	30.9	31.6	32.4	33.1	33.7	34.9	35.9	38.9
HZB12-55	35.0	36.2	37.8	39.1	40.2	41.2	42.2	42.9	44.5	45.8	50.9
HZB12-60	37.8	41.0	44.6	46.8	48.3	49.4	50.4	51.3	52.8	53.8	56.0
HZB12-70J	45.2	46.6	48.2	49.3	50.3	51.2	52.2	53.0	54.8	56.5	62.2
HZB12-70	46.7	48.0	49.5	50.5	51.5	52.5	53.5	54.3	56.1	57.4	63.4
HZB12-80	52.9	54.6	56.4	58.0	59.3	60.6	61.6	62.7	64.7	66.6	73.1
HZB12-90	60.2	62.9	65.9	67.9	69.4	70.9	72.0	72.9	74.8	76.6	82.9
HZB12-100	63.8	66.5	69.8	72.2	74.2	76.2	77.9	79.1	81.8	83.7	89.9
HZB12-110	70.6	73.4	76.8	79.0	81.2	83.4	85.6	87.2	90.4	92.8	102
HZB12-115	75.8	81.7	88.8	94.3	97.8	101	103	104	107	109	113
HZB12-120	79.8	83.1	87.1	89.3	91.1	92.9	94.7	96.6	100	103	112
HZB12-135	94.5	98.8	104	108	110	112	114	115	118	120	129
HZB12-150	97.9	101	106	109	112	115	118	120	123	127	139
HZB12-160	111	116	121	125	128	131	134	137	141	144	154
HZB12-200	128	134	143	150	155	161	165	168	175	180	190
HZB12-230	151	157	164	169	174	179	183	187	194	198	214
HZB6-110	72.6	75.8	79.3	81.8	84.0	86.2	88.4	89.6	92.6	95.3	105
HZB6-160	116	120	126	130	133	136	140	142	146	150	160
HZB6-200	130	135	142	147	152	155	158	161	166	170	186

	Amps to 1.80 VPC				
	7	8	10	12	20
2.10	1.86	1.53	1.30	0.84	
2.96	2.62	2.15	1.83	1.17	
3.47	3.08	2.52	2.14	1.36	
3.78	3.40	2.85	2.46	1.61	
4.87	4.34	3.60	3.08	2.01	
6.19	5.52	4.57	3.93	2.62	
7.31	6.53	5.36	4.56	2.86	
7.60	6.75	5.60	4.82	3.20	
7.84	6.96	5.75	4.92	3.25	
9.01	8.00	6.63	5.68	3.79	
10.5	9.38	7.72	6.60	4.26	
11.4	10.1	8.40	7.15	4.63	
12.5	11.2	9.25	7.91	5.22	
14.8	13.2	10.80	9.17	5.69	
13.8	12.4	10.3	8.81	5.76	
16.6	14.7	12.0	10.23	6.63	
17.1	15.3	12.7	10.9	7.16	
19.6	17.5	14.4	12.3	7.96	
24.3	21.7	18.0	15.4	9.80	
26.7	23.9	19.8	17.0	11.0	
12.8	11.4	9.46	8.12	5.37	
20.4	18.2	15.1	12.8	8.27	
23.4	20.8	17.2	14.7	9.64	

Battery Model	Time in Hours Ah to 1.80 VPC										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.6	12.4	13.2	13.8	14.2	14.4	14.7	14.9	15.3	15.6	16.7
HZB12-26	15.9	16.8	18.4	19.3	19.8	20.3	20.7	21.0	21.5	22.0	23.4
HZB12-28	18.4	19.6	21.3	22.4	23.1	23.8	24.3	24.6	25.2	25.7	27.2
HZB12-33	21.3	21.9	22.9	23.9	24.8	25.7	26.5	27.2	28.5	29.5	32.2
HZB12-44	29.2	30.2	31.1	32.0	32.7	33.4	34.1	34.7	36.0	37.0	40.2
HZB12-55	36.0	37.2	38.9	40.2	41.3	42.4	43.3	44.2	45.7	47.2	52.5
HZB12-60	38.8	41.9	45.3	47.6	49.0	50.1	51.2	52.2	53.6	54.7	57.2
HZB12-70J	46.6	47.8	49.3	50.3	51.2	52.2	53.2	54.0	56.0	57.8	64.1
HZB12-70	48.1	49.3	50.8	51.9	52.9	53.9	54.9	55.7	57.5	59.0	65.0
HZB12-80	54.1	55.6	57.4	59.0	60.5	62.0	63.1	64.0	66.3	68.2	75.7
HZB12-90	61.6	64.2	67.3	69.6	71.1	72.6	73.8	75.0	77.2	79.2	85.2
HZB12-100	65.6	68.3	71.3	73.6	75.7	77.8	79.5	81.0	84.0	85.8	92.6
HZB12-110	72.8	75.7	78.6	81.0	83.3	85.6	87.6	89.3	92.5	94.9	104.3
HZB12-115	77.8	83.3	90.3	95.4	98.6	102	104	105	108	110	114
HZB12-120	81.6	84.9	88.4	90.6	92.6	94.8	96.8	99	103	106	115
HZB12-135	97.6	101	107	110	112	114	116	117	120	123	133
HZB12-150	101	104	108	111	114	117	120	122	127	130	143
HZB12-160	114	119	124	127	131	134	138	140	144	148	159
HZB12-200	134	139	147	153	160	166	170	174	180	185	196
HZB12-230	154	160	166	172	177	183	187	191	198	204	220
HZB6-110	74.0	77.2	80.7	83.2	85.5	87.8	89.8	91.4	94.6	97.4	107
HZB6-160	119	124	129	133	137	140	143	146	151	154	165
HZB6-200	136	141	148	154	157	161	164	166	172	177	193

	Amps to 1.75 VPC				
	7	8	10	12	20
2.14	1.89	1.55	1.32	0.85	
2.98	2.65	2.17	1.85	1.18	
3.49	3.10	2.54	2.16	1.37	
3.85	3.45	2.88	2.48	1.63	
4.96	4.42	3.66	3.15	2.05	
6.33	5.64	4.66	4.00	2.68	
7.39	6.59	5.40	4.60	2.89	
7.69	6.84	5.67	4.87	3.24	
8.00	7.10	5.86	5.01	3.31	
9.17	8.15	6.74	5.78	3.84	
10.7	9.54	7.83	6.69	4.33	
11.5	10.3	8.55	7.32	4.75	
12.8	11.4	9.43	8.08	5.33	
14.9	13.3	10.91	9.26	5.74	
14.1	12.6	10.4	8.94	5.82	
16.9	15.0	12.3	10.53	6.81	
17.4	15.5	12.8	11.1	7.32	
20.0	17.8	14.7	12.6	8.19	
24.6	22.0	18.4	15.7	10.03	
27.1	24.2	20.2	17.3	11.2	
13.1	11.6	9.64	8.27	5.49	
20.8	18.5	15.3	13.1	8.49	
23.7	21.0	17.4	14.9	9.83	

Battery Model	Time in Hours Ah to 1.75 VPC										
	1.5	2	3	4	5	6	7	8	10	12	20
HZB12-18	11.8	12.6	13.5	14.0	14.4	14.7	15.0	15.1	15.5	15.9	17.0
HZB12-26	16.1	17.0	18.5	19.5	20.0	20.4	20.9	21.2	21.7	22.2	23.6
HZB12-28	18.6	19.8	21.5	22.6	23.3	24.0	24.5	24.8	25.4	25.9	27.4
HZB12-33	21.6	22.2	23.3	24.2	25.2	26.1	26.9	27.6	28.8	29.8	32.5
HZB12-44	29.6	30.5	31.6	32.5	33.3	34.0	34.7	35.4	36.6	37.7	40.9
HZB12-55	36.5	37.7	39.5	41.0	42.2	43.4	44.3	45.1	46.6	48.0	53.5
HZB12-60	39.4	42.5	45.7	48.0	49.4	50.5	51.7	52.7	54.0	55.3	57.8
HZB12-70J	47.5	48.6	50.0	50.8	51.8	52.8	53.8	54.7	56.7	58.4	64.8
HZB12-70	48.9	50.2	51.7	53.0	54.0	55.0	56.0	56.8	58.6	60.1	66.2
HZB12-80	55.0	56.5	58.6	60.3	61.7	63.1	64.2	65.2	67.4	69.3	76.8
HZB12-90	62.7	65.3	68.5	70.5	72.2	73.9	75.1	76.3	78.3	80.3	86.6
HZB12-100	66.8	69.5	72.5	74.7	76.8	78.9	80.6	82.3	85.5	87.8	95.0
HZB12-110	73.8	76.7	80.0	82.7	85.2	87.6	89.6	91.1	94.3	97.0	107
HZB12-115	78.9	84.2	91.2	96.5	100	102	105	106	109	111	115
HZB12-120	83.2	86.4	89.8	92.2	94.2	96.4	98.6	100	104	107	116
HZB12-135	99	104	109	112	114	116	119	120	123	126	136
HZB12-150	102	105	110	113	116	119	122	124	128	133	146
HZB12-160	117	121	126	130	133	137	140	142	147	151	164
HZB12-200	136	141	149	156	162	168	172	176	184	189	201
HZB12-230	156	162	168	174	180	185	190	194	202	207	225
HZB6-110	75.2	78.2	81.8	84.5	86.9	89.3	91.4	92.9	96.4	99	110
HZB6-160	121	126	131	135	139	142	146	148	153	157	170
HZB6-200	138	143	151	156							

Battery Model	Time in Minutes - Watts per cell to 1.85 VPC												
	5	10	15	20	25	30	35	40	45	1	1.5	2	3
HZB12-18	86.2	61.6	50.5	43.1	37.4	32.9	29.5	26.6	24.5	19.7	14.6	11.7	8.37
HZB12-26	126	91.0	73.9	61.6	53.0	46.6	41.5	37.5	34.3	27.6	20.1	16.1	11.8
HZB12-28	146	107	85.7	71.5	61.4	54.1	48.4	43.7	39.9	32.0	23.3	18.7	13.7
HZB12-33	185	136	107	89.2	76.6	67.4	60.2	54.2	49.4	39.1	27.5	21.3	14.9
HZB12-44	220	176	142	117	100	87.7	78.4	70.8	64.8	51.5	36.6	28.4	19.7
HZB12-55	265	210	171	141	120	105	93.7	85.0	78.1	62.6	45.1	35.1	24.5
HZB12-60	269	190	156	134	118	105	94.9	86.3	79.8	64.9	49.2	40.1	30.0
HZB12-70J	306	246	205	176	153	136	123	112	103	83.2	59.1	45.6	31.4
HZB12-70	312	251	209	177	154	137	124	113	105	84.4	60.3	46.7	32.1
HZB12-80	323	266	224	191	169	151	138	126	118	96.0	69.1	53.6	36.8
HZB12-90	383	301	249	214	187	169	152	139	129	105	77.1	60.7	42.3
HZB12-100	422	339	283	242	210	187	169	155	143	116	83.9	65.6	45.8
HZB12-110	461	370	311	268	234	208	187	169	155	124	89.8	70.8	49.7
HZB12-115	494	376	302	255	221	198	179	163	152	124	93.9	75.5	54.1
HZB12-120	493	402	341	296	261	233	209	190	176	142	103	80.7	56.3
HZB12-135	478	389	352	315	286	263	242	223	208	171	125	98.5	68.4
HZB12-150	529	437	388	350	314	287	262	239	221	178	128	100	69.7
HZB12-160	544	474	416	374	339	308	283	262	243	200	145	114	79.2
HZB12-200	606	524	467	420	384	354	329	305	286	237	170	133	93.1
HZB12-230	652	560	497	448	411	381	354	328	309	258	190	149	106
HZB6-110	470	384	328	280	247	218	195	177	162	129	92.2	72.3	50.8
HZB6-160	566	471	427	383	353	320	293	272	253	206	147	115	81.0
HZB6-200	606	530	466	417	376	345	321	298	277	229	167	131	91.9

Battery Model	Time in Hours - Watts per cell to 1.85 VPC											
	4	5	6	7	8	10	12	20				
HZB12-18	6.52	5.38	4.58	4.02	3.58	2.96	2.53	1.65				
HZB12-26	9.41	7.86	6.81	6.04	5.43	4.54	3.90	2.57				
HZB12-28	10.9	8.91	7.53	6.52	5.78	4.72	4.02	2.59				
HZB12-33	11.6	9.58	8.25	7.27	6.52	5.45	4.69	3.09				
HZB12-44	15.1	12.4	10.5	9.20	8.21	6.78	5.81	3.74				
HZB12-55	19.1	15.8	13.5	11.9	10.6	8.83	7.58	4.98				
HZB12-60	24.1	20.1	17.3	15.1	13.5	11.1	9.54	6.20				
HZB12-70J	24.2	19.8	16.9	14.7	13.0	10.8	9.27	6.02				
HZB12-70	24.7	20.2	17.3	15.1	13.4	11.0	9.44	6.15				
HZB12-80	28.3	23.3	19.9	17.4	15.5	12.8	11.0	7.18				
HZB12-90	32.6	26.6	22.7	19.8	17.7	14.6	12.5	8.09				
HZB12-100	35.6	29.3	25.1	22.1	19.8	16.4	14.1	9.17				
HZB12-110	38.5	31.7	27.1	23.8	21.3	17.7	15.2	10.0				
HZB12-115	42.3	34.9	30.1	26.6	23.8	19.8	17.0	11.2				
HZB12-120	43.0	35.7	30.4	26.7	23.9	19.9	17.1	11.2				
HZB12-135	52.5	42.6	36.0	31.2	27.5	22.5	19.1	12.3				
HZB12-150	53.9	44.3	37.8	33.1	29.6	24.6	21.1	13.9				
HZB12-160	61.2	50.2	43.1	37.8	33.8	27.9	23.8	15.3				
HZB12-200	72.5	59.8	50.6	44.4	39.6	33.0	28.1	18.4				
HZB12-230	82.7	68.6	58.9	51.8	46.3	38.6	33.1	21.5				
HZB6-110	39.2	32.4	27.8	24.3	21.7	18.0	15.4	10.1				
HZB6-160	63.0	52.0	44.7	39.3	35.2	29.2	24.9	16.0				
HZB6-200	71.6	59.1	50.6	44.4	39.6	33.1	28.4	18.5				

Battery Model	Time in Minutes - Watts per cell to 1.80 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	95.7	66.7	53.6	45.2	38.9	34.1	30.4	27.6	25.2	20.3	15.0	12.0	8.58	
HZB12-26	132	94.9	76.0	62.9	54.1	47.5	42.3	38.3	35.0	28.0	20.4	16.3	12.0	
HZB12-28	153	111	88.5	72.8	62.7	55.1	49.2	44.4	40.6	32.4	23.5	18.8	13.8	
HZB12-33	196	140	110	91.9	78.6	68.9	61.5	55.2	50.4	39.9	28.0	21.7	15.1	
HZB12-44	234	189	150	123	104	90.9	81.0	73.0	66.7	53.0	37.5	28.9	20.0	
HZB12-55	288	226	179	147	125	109	97.3	87.9	80.7	64.0	45.9	35.8	25.1	
HZB12-60	298	209	168	142	124	110	98.5	89.6	82.6	66.9	50.7	41.5	30.5	
HZB12-70J	335	264	218	183	159	141	127	115	106	85.0	60.1	46.2	31.8	
HZB12-70	342	271	221	188	163	144	129	118	108	86.7	61.3	47.2	32.4	
HZB12-80	357	286	239	203	176	156	143	131	121	98.1	70.3	54.2	37.2	
HZB12-90	432	325	266	227	198	176	158	144	133	108	78.5	61.8	43.0	
HZB12-100	488	370	301	254	220	195	175	160	147	119	85.5	66.8	46.6	
HZB12-110	542	415	337	286	246	218	195	175	160	127	91.5	71.8	50.3	
HZB12-115	534	394	318	268	233	207	186	170	157	128	96.3	77.3	55.3	
HZB12-120	569	442	368	314	273	243	218	198	182	147	105	82.2	57.1	
HZB12-135	583	442	381	335	300	274	251	231	215	175	128	100.0	69.3	
HZB12-150	634	492	428	378	336	302	275	250	230	184	132	103	71.2	
HZB12-160	688	549	466	405	364	327	298	273	253	205	149	116	80.5	
HZB12-200	727	581	508	452	407	374	343	318	297	243	175	137	95.6	
HZB12-230	756	615	532	476	434	399	369	341	318	264	193	151	107	
HZB6-110	546	427	351	297	257	227	202	182	166	131	93.9	73.6	51.7	
HZB6-160	708	553	480	422	378	341	311	286	266	213	152	118	83.0	
HZB6-200	749	604	511	451	407	374	343	318	295	239	173	135	94.7	

Battery Model	Time in Hours - Watts per cell to 1.80 VPC											
	4	5	6	7	8	10	12	20				
HZB12-18	6.69	5.52	4.71	4.12	3.67	3.03	2.58	1.69				
HZB12-26	9.55	7.97	6.92	6.14	5.52	4.61	3.95	2.62				
HZB12-28	11.0	9.01	7.62	6.61	5.86	4.78	4.07	2.64				
HZB12-33	11.8	9.73	8.35	7.36	6.62	5.53	4.78	3.17				
HZB12-44	15.3	12.6	10.7	9.35	8.35	6.91	5.91	3.86				
HZB12-55	19.5	16.1	13.8	12.1	10.8	9.00	7.72	5.13				
HZB12-60	24.5	20.5	17.6	15.4	13.7	11.3	9.72	6.37				
HZB12-70J	24.5	20.1	17.1	14.9	13.1	11.0	9.43	6.19				
HZB12-70	24.9	20.4	17.4	15.2	13.6	11.2	9.61	6.33				
HZB12-80	28.7	23.6	20.2	17.2	15.8	13.0	11.2	7.37				
HZB12-90	33.1	27.1	23.1	20.2	17.9	14.8	12.7	8.32				
HZB12-100	36.1	29.8	25.6	22.5	20.1	16.7	14.3	9.34				
HZB12-110	39.0	32.1	27.6	24.2	21.7	18.0	15.5	10.3				
HZB12-115	43.1	35.5	30.6	27.0	24.2	20.1	17.3	11.4				
HZB12-120	43.7	36.3	31.0	27.2	24.3	20.2	17.4	11.5				
HZB12-135	53.1	43.1	36.4	31.6	27.9	22.8	19.4	12.5				
HZB12-150	55.0	45.2	38.6	33.8	30.2	25.1	21.5	14.2				
HZB12-160	62.3	51.2	43.9	38.6	34.5	28.5	24.4	15.7				
HZB12-200	74.4	61.5	52.0	45.7	40.8	33.9	29.0	18.9				
HZB12-230	83.6	69.5	59.7	52.7	47.2	39.4	33.7	22.1				
HZB6-110	40.1	33.1	28.3	24.9	22.3	18.5	15.9	10.5				
HZB6-160	64.6	53.3	45.7	40.2	36.0	30.0	25.6	16.5				
HZB6-200	73.9	60.7	52.0	45.6	40.9	34.0	29.2	19.2				

Battery Model	Time in Minutes - Watts per cell to 1.75 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	101	69.2	55.4	46.3	39.6	34.7	31.0	27.9	25.6	20.5	15.3	12.2	8.78	
HZB12-26	137	98.3	78.2	64.4	55.1	48.3	43.0	38.9	35.5	28.4	20.5	16.4	12.1	
HZB12-28	159	114	90.4	74.0	63.5	55.9	49.9	45.0	41.1	32.9	23.7	19.0	13.9	
HZB12-33	201	143	113	93.3	79.6	69.7	62.1	55.8	50.9	40.2	28.2	21.9	15.3	
HZB12-44	245	194	153	125	106	92.4	82.3	74.1	67.5	53.5	37.8	29.3	20.2	
HZB12-55	299	233	183	150	127	111	98.7	89.2	81.7	64.8	46.4	36.1	25.3	
HZB12-60	315	218	175	147	127	113	100.9	91.6	84.3	68.6	51.8	42.3	31.0	
HZB12-70J	353	279	226	189	163	145	130	118	108	86.3	60.8	46.8	32.2	
HZB12-70	360	284	227	191	166	146	131	119	110	88.0	62.0	47.7	32.7	
HZB12-80	384	302	251	208	181	161	145	133	124	100	70.8	54.7	37.6	
HZB12-90	455	340	277	235	203	180	161	147	135	109	79.5	62.6	43.4	
HZB12-100	533	389	312	262	227	199	179	163	151	121	86.5	67.4	47.1	



Watts Per Cell Data

Amps & Ampere Hour Data

Battery Model	Time in Minutes - Amps to 1.65 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	60.0	40.2	31.3	25.9	22.1	19.2	17.1	15.4	14.0	11.2	8.2	6.5	4.7	
HZB12-26	82.8	56.6	44.4	36.3	30.7	26.7	23.7	21.2	19.3	15.2	10.9	8.6	6.3	
HZB12-28	96.0	66.6	51.4	41.9	35.5	30.9	27.5	24.7	22.4	17.7	12.7	10.1	7.3	
HZB12-33	116	82.7	63.8	52.1	44.1	38.2	33.9	30.3	27.4	21.2	14.7	11.4	7.9	
HZB12-44	144	98	78	65.2	56.3	49.6	44.4	40.2	36.6	28.6	20.1	15.5	10.8	
HZB12-55	180	132	102	83.0	70.5	61.5	54.9	49.5	45.1	35.8	25.0	19.4	13.5	
HZB12-60	184	114	88	72.9	62.6	55.5	49.7	45.4	42.1	34.8	26.8	21.7	15.6	
HZB12-70J	214	167	131	107	91.4	79.7	71.0	64.2	58.6	46.0	32.2	24.8	17.1	
HZB12-70	219	157	128	108	93.1	81.9	73.1	66.2	60.3	47.6	33.4	25.6	17.6	
HZB12-80	246.9	180	142	119	102	89.8	80.6	73.5	67.2	53.1	37.5	28.9	20.0	
HZB12-90	278	202	157	131	112	99.0	89.3	81.6	74.9	59.7	43.1	33.9	23.6	
HZB12-100	328	232	181	148	126	110	98.6	89.4	81.6	64.6	45.7	35.6	24.7	
HZB12-110	355	253	201	166	141	123	110	98.6	89.6	70.4	50.3	39.3	27.4	
HZB12-115	361	249	191	159	137	121	109	98.8	90.6	73.4	53.7	42.9	30.8	
HZB12-120	374	276	218	181	155	136	121	110	100	80.0	56.6	44.0	30.5	
HZB12-135	392	280	229	199	175	156	142	131	120	96.7	69.0	53.9	37.5	
HZB12-150	435	317	265	224	195	171	153	137	125	98.6	69.7	54.2	37.5	
HZB12-160	466	345	282	240	210	186	167	152	140	111	79.2	61.4	42.9	
HZB12-200	474	369	312	271	241	217	197	180	166	131	92.9	72.3	51.3	
HZB12-230	509	376	314	277	249	226	207	193	181	148	107	83	57	
HZB6-110	362	263	208	172	147	128	113	102	92.3	72.2	51.5	40.0	27.9	
HZB6-160	480	357	292	248	216	193	173	158	146	117	82.9	64.4	44.7	
HZB6-200	494	371	309	270	240	217	199	182	168	134	94.9	73.6	51.3	

Battery Model	Time in Minutes - Amps to 1.60 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	61.9	41.2	32.0	26.3	22.5	19.6	17.3	15.6	14.3	11.3	8.3	6.6	4.7	
HZB12-26	86.6	58.1	45.4	36.9	31.1	27.0	23.9	21.4	19.5	15.4	11.0	8.7	6.3	
HZB12-28	100.4	68.8	52.4	42.8	36.3	31.4	27.7	24.9	22.6	17.9	12.8	10.2	7.4	
HZB12-33	121	85.2	65.0	53.1	44.7	38.7	34.3	30.7	27.7	21.3	14.8	11.5	8.0	
HZB12-44	149	101	79	66.0	56.7	50.0	44.8	40.5	36.9	28.9	20.3	15.7	10.9	
HZB12-55	189	136	104	84.2	71.4	62.2	55.4	50.0	45.6	36.1	25.3	19.5	13.6	
HZB12-60	188	116	89	73.5	62.9	55.9	50.0	45.7	42.3	35.1	27.1	21.8	15.7	
HZB12-70J	226	172	134	109	92.4	80.5	71.7	64.8	59.1	46.4	32.4	25.0	17.2	
HZB12-70	230	161	130	110	94.5	82.8	73.9	66.9	60.8	48.0	33.6	25.8	17.7	
HZB12-80	263.9	188	146	122	105	91.6	81.9	74.7	68.0	53.7	37.8	29.2	20.2	
HZB12-90	301	209	163	134	115	101	91.0	83.0	75.9	60.5	43.5	34.3	23.9	
HZB12-100	347	239	185	151	128	112	99.8	90.5	82.7	65.1	46.1	35.9	24.9	
HZB12-110	371	260	204	169	143	125	111	99.5	90.4	71.0	50.7	39.6	27.6	
HZB12-115	366	253	193	161	139	122	110	99.5	91.5	73.9	54.0	43.1	31.0	
HZB12-120	393	285	222	184	157	138	123	111	101	80.5	57.1	44.3	30.7	
HZB12-135	416	292	235	203	178	159	144	132	121	97.4	69.5	54.2	37.8	
HZB12-150	455	331	271	229	199	173	154	139	127	99.7	70.3	54.7	37.9	
HZB12-160	490	357	288	245	213	188	170	154	141	112	79.8	61.9	43.2	
HZB12-200	501	383	319	277	245	220	200	183	167	132	93.6	72.9	51.7	
HZB12-230	532	386	320	281	253	229	210	196	182	150	108	83	58	
HZB6-110	378	270	212	174	149	129	114	103	93.2	72.9	51.9	40.3	28.1	
HZB6-160	503	369	298	252	220	196	175	160	147	118	83.7	65.0	45.1	
HZB6-200	523	381	317	275	245	221	202	185	170	135	96.0	74.4	51.8	

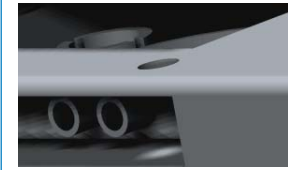
Battery Model	Time in Minutes - Watts per cell to 1.65 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	107	72.8	57.9	48.0	41.0	35.8	31.9	28.7	26.2	21.0	15.6	12.5	9.0	
HZB12-26	148	103	81.2	66.5	56.8	49.7	44.3	39.9	36.4	28.9	20.8	16.7	12.2	
HZB12-28	170	120	93.8	76.7	65.4	57.4	51.1	46.1	42.1	33.6	24.1	19.2	14.1	
HZB12-33	210	148	116	95.4	81.3	71.0	63.1	56.8	51.7	40.7	28.6	22.1	15.5	
HZB12-44	257	202	158	129	109	94.5	83.8	75.4	68.7	54.6	38.5	29.8	20.5	
HZB12-55	322	244	189	154	130	114	101	91.2	83.4	66.1	47.3	36.8	25.8	
HZB12-60	349	234	184	153	131	116	103	93.6	86.4	70.0	52.8	43.0	31.6	
HZB12-70J	384	298	237	196	168	149	133	121	111	88.0	61.8	47.6	32.6	
HZB12-70	391	305	240	198	171	150	134	122	112	89.7	63.1	48.5	33.3	
HZB12-80	442	331	267	221	191	167	151	138	128	103	72.3	55.7	38.2	
HZB12-90	506	365	292	243	209	185	166	151	139	113	81.5	63.9	44.5	
HZB12-100	587	410	325	271	233	205	183	167	154	123	88.3	68.7	47.8	
HZB12-110	634	466	370	308	264	231	205	185	169	133	95.6	74.6	52.0	
HZB12-115	637	441	345	286	247	219	197	180	166	135	101	80.3	56.8	
HZB12-120	669	494	397	332	287	254	228	207	190	152	109	84.6	58.6	
HZB12-135	709	512	421	364	321	290	265	244	226	183	132	103	71.1	
HZB12-150	778	587	488	418	363	323	291	262	242	192	136	106	72.9	
HZB12-160	833	632	522	442	390	348	316	288	265	213	154	120	82.7	
HZB12-200	888	670	566	494	442	402	368	340	317	256	183	143	99.7	
HZB12-230	899	693	590	515	463	422	387	356	331	274	199	155	110	
HZB6-110	647	492	387	319	272	239	211	189	172	136	96.6	75.6	53.3	
HZB6-160	858	631	531	460	407	365	331	302	279	224	159	123	86.7	
HZB6-200	876	676	566	493	437	397	364	335	311	254	182	142	99.0	

Battery Model	Time in Minutes - Watts per cell to 1.60 VPC													
	5	10	15	20	25	30	35	40	45	60	90	120	180	
HZB12-18	109	74.5	59.0	48.9	41.7	36.3	32.4	29.2	26.7	21.3	15.8	12.6	9.0	
HZB12-26	154	106	82.5	67.3	57.3	50.1	44.7	40.3	36.7	29.2	21.0	16.8	12.3	
HZB12-28	176	122	95.2	77.9	66.5	58.1	51.7	46.6	42.6	33.9	24.3	19.4	14.2	
HZB12-33	215	152	117	96.5	82.2	71.7	63.7	57.3	52.2	41.1	28.9	22.3	15.6	
HZB12-44	265	206	160	130	110	95.6	84.7	76.1	69.3	55.0	38.8	30.0	20.6	
HZB12-55	336	250	192	155	131	115	102	92.3	84.3	66.7	47.7	37.0	26.0	
HZB12-60	360	239	186	155	133	117	104	94.5	87.1	70.4	53.1	43.4	31.9	
HZB12-70J	402	305	242	199	170	150	135	122	111	88.7	62.3	47.9	32.8	
HZB12-70	410	313	245	201	173	153	137	124	114	90.5	63.7	48.8	33.4	
HZB12-80	470	344	274	226	193	170	154	139	129	104	72.9	56.0	38.5	
HZB12-90	536	376	297	246	212	187	168	153	141	114	82.3	64.4	44.8	
HZB12-100	617	420	330	275	236	207	185	168	155	124	89.0	69.0	48.1	
HZB12-110	661	477	377	311	267	233	207	187	170	134	96.2	75.0	52.4	
HZB12-115	648	447	348	288	249	220	198	181	168	136	102	80.9	57.2	
HZB12-120	700	506	405	338	291	257	231	209	191	153	110	85.0	58.8	
HZB12-135	755	534	434	372	328	295	270	248	230	185	133	104	71.5	
HZB12-150	810	617	503	429	369	329	294	266	245	194	138	106	73.4	
HZB12-160	880	650	532	450	395	352	319	291	267	214	154	120	83.2	
HZB12-200	934	689	584	507	451	411	375	344	321	259	184	144	101	
HZB12-230	938	713	603	522	468	427	392	361	335	277	200	157	111	
HZB6-110	674	507	396	325	277	242	213	190	173	137	97.2	76.0	53.7	
HZB6-160	910	650	542	468	413	370	3							

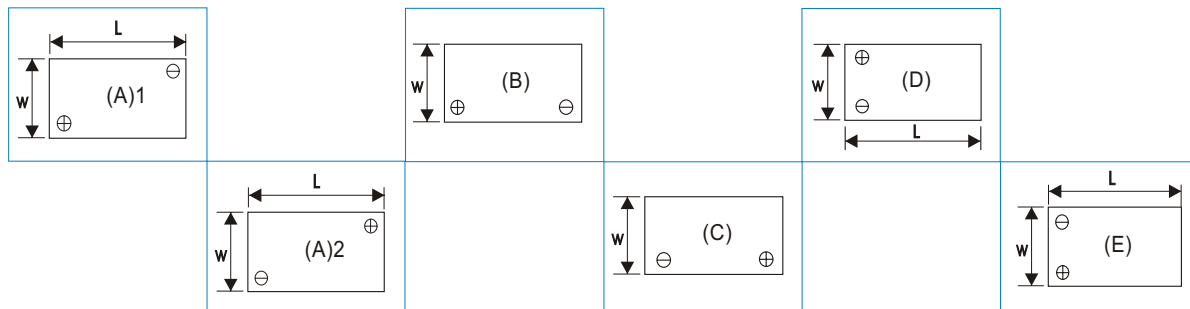


Central Gassing - Haze produce some models with a integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealing prevents any escaping gas from exiting the enclosure. Central gassing allows a tube carrying the emissions to pass through a seal to atmosphere.

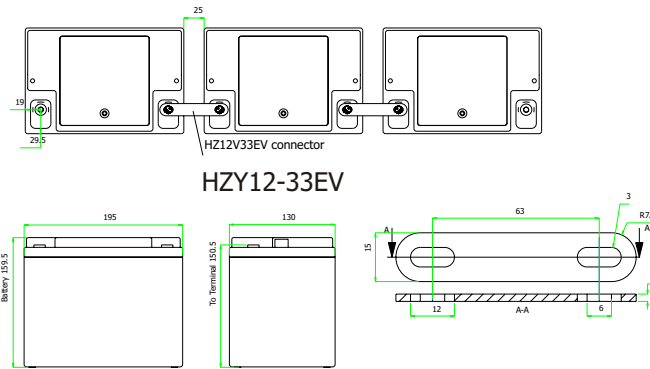
Haze are adding this feature to a number of sizes, if you require this feature please contact us for an up-to-date list of models included.



Battery Model	Qty Per Box	Dimensions (mm) & weight (kg)				Dimensions (Inches) & weight (lbs)				Terminal Layout	BCI Group Size	Internal Resistance mOhms	Conductance Values +/- 25%	Maximum Charge Current	CCA at 0 °C	Short Circuit Amps
		Length	Width	Height	Weight	Length	Width	Height	Weight							
HZB12-18	2	181	76	167	5.45	7.13	2.99	6.57	12.0	C - M5	-	11	400	4.5	270	732
HZB12-26	1	178	168	124	8	7.01	6.61	4.88	17.7	C - M5	-	6.5	420	6.5	300	900
HZB12-28	1	166	125	175	9	6.54	4.92	6.89	19.9	C - M5	-	7	450	7	305	910
HZB12-33	1	195	130	160	10.4	7.68	5.12	6.30	23.0	B - M6	U1	7	500	8	320	1100
HZB12-44	1	198	167	157	13.3	7.80	6.57	6.18	29.4	C - M6	-	6.2	670	11	350	1400
HZB12-55	1	229	138	213	17	9.02	5.43	8.39	37.6	B - M6	22NF	6.5	600	14	380	1700
HZB12-60	1	228	139	217	18.6	8.98	5.47	8.54	41.1	B - M6	-	5.7	680	15	410	1750
HZB12-70J	1	349	168	175	21	13.74	6.61	6.89	46.4	C - M6	-	5	900	18	550	2100
HZB12-70	1	260	168	211	24.3	10.24	6.61	8.31	53.7	B - M6	24	5	1000	18	550	2100
HZB12-80	1	260	168	211	25.8	10.24	6.61	8.31	57.0	B - M6	24	5	1150	20	620	2400
HZB12-90	1	306	168	211	30.1	12.05	6.61	8.31	66.5	B - M6	27	4	900	22	680	2650
HZB12-100	1	306	168	211	28.8	12.05	6.61	8.31	63.6	B - M6	27	4	1300	25	780	2900
HZB12-110	1	329	173	209	32.5	12.95	6.81	8.23	71.8	B - M6	31	4	1200	27	960	3000
HZB12-115	1	349	174	216.5	37.7	13.74	6.85	8.52	83.3	B - M6	-	3.6	1230	28.5	980	3100
HZB12-120	1	408	176	227	35.8	16.06	6.93	8.94	79.1	B - M6	-	3	1250	30	1020	3300
HZB12-135	1	340	173	283	40.6	13.39	6.81	11.14	89.7	B - M6	-	2.73	1300	35	1160	3750
HZB12-150	1	482	170	242	44	18.98	6.69	9.53	97.2	B - M6	-	2.5	1300	38	1300	4200
HZB12-160	1	530	209	214	55	20.87	8.23	8.43	121.6	E - M6	4D	2	1750	40	1440	4700
HZB12-200	1	520	240	220	60.9	20.47	9.45	8.66	134.6	E - M8	-	<2	2050	50	1670	5400
HZB12-230	1	521	269	203	74	20.51	10.59	7.99	163.5	E - M8	8D	<2	2150	57	1870	5900
HZB6-110	1	193	168	205	17.9	7.60	6.61	8.07	39.6	A - M6	-	4	1300	27	1010	3200
HZB6-160	1	298	171	226	26.4	11.73	6.73	8.90	58.3	A - M6	-	2	1500	40	1290	4600
HZB6-200	1	323	178	225	31.8	12.72	7.01	8.86	70.3	A - M8	-	<2	2050	50	1600	5000



Terminal Layout details

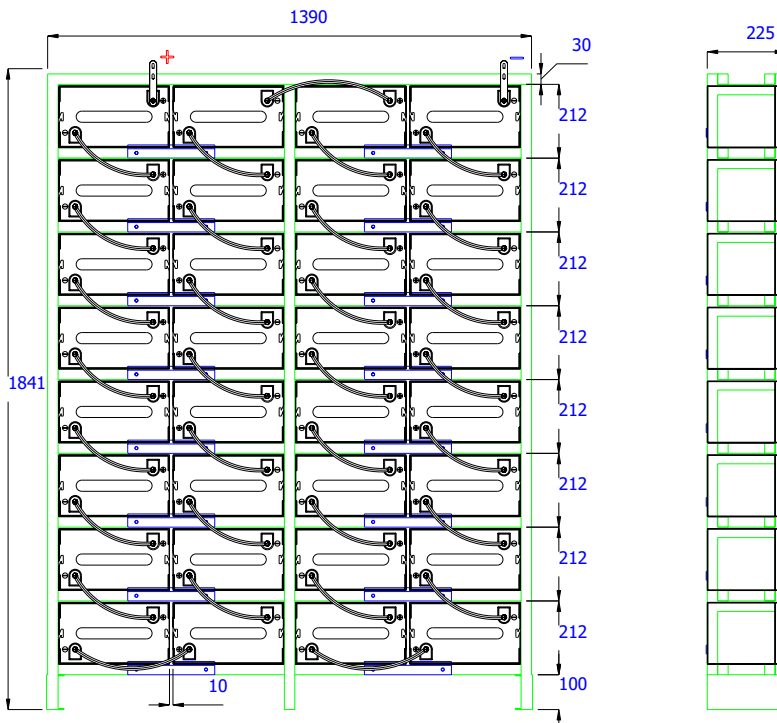
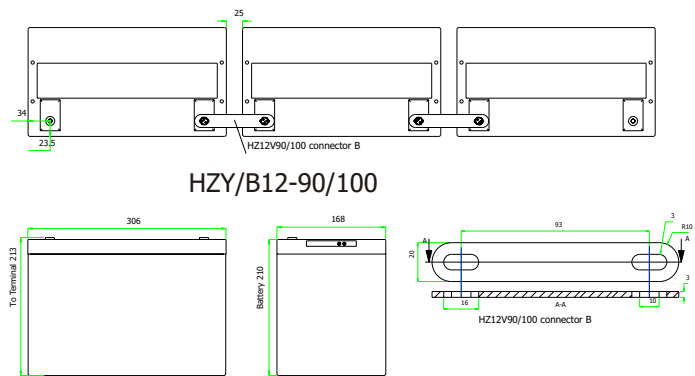


Battery installations have many variables : space available, autonomy times, load carrying requirements etc.

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.



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.



210307

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

EV Gel

EV AGM

Marine Gel

Solar