



Haze Battery Company Ltd



**Sealed Lead Acid 2 Volt Bloc
Gelled Electrolyte Range**

CONSTRUCTION - Gel battery construction is as shown in the diagram. 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 a high purity lead (99.9999%) to minimize the negative effects of impurities.

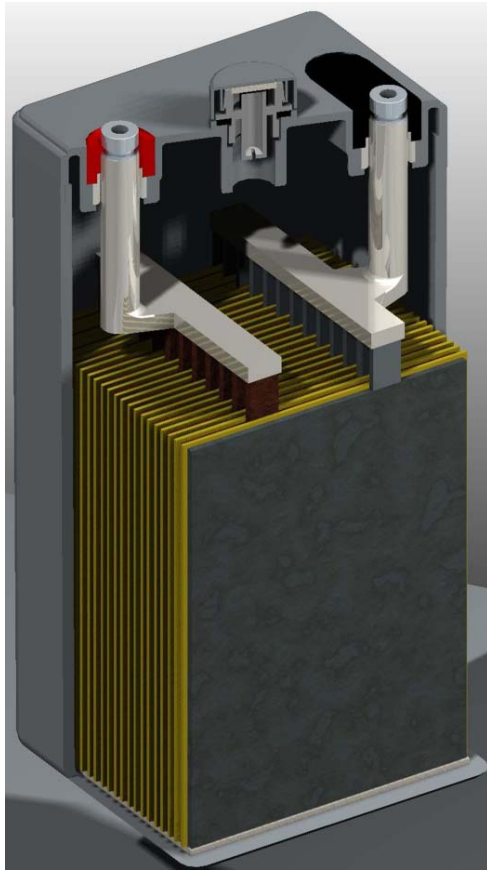
Separator is manufactured by a world leader in the field, utilizing the latest German technology. The base material is a microporous duroplastic exhibiting excellent high temperature stability and mechanical strength, resulting in very good resistance to vibration and mechanical shock. The integrity of the battery will be maintained under extreme conditions.

The purpose of the separator is to maintain a constant distance between the positive and negative plates, totally eliminating the possibility of short circuits whilst allowing the active materials to fully react with the gelled electrolyte.

The separator also has an open construction, which allows little resistance to the flow of the electrolyte during filling.

A thin layer (typically 0.4mm) of non-woven glass mat is an integral part of the separator and is placed against the positive plate for improved surface contact.

A compression platform at the bottom of the cell allows expansion and contraction of the plates.



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

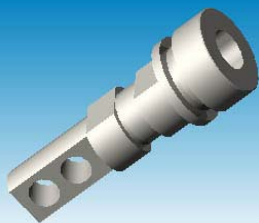
ELECTROLYTE FILLING - Gelled electrolyte is introduced to the cell by means of custom-built vacuum filling machines it is vitally important that the electrolyte achieves full penetration of the separator and plates therefore; vacuum cycling is utilized after the filling process. To ensure each cell has the correct amount of gel, they are first overfilled, the extra gel is then removed. 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).

Flame Arrester - All models above and including HZB2-150 have a built in flame arrester in the valve assembly.

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.



Gel Vs AGM

Each battery has its advantages and disadvantages, it is therefore important to choose the right battery for the application. Advantages of Gel Batteries:

- Full recovery from deep discharge, even when the battery is not recharged immediately.
- Ideal for repeat cycling daily use.
- Excellent performance over long discharges
- Good tolerance to higher temperature applications
- Suitable where mains power is unstable
- Zero stratification due to immobilized electrolyte
- No equalization charge necessary
- Reduced self-discharge
- Limiting design protects the positive plates to greatly improve cycle life
- Thicker plates for reduced grid corrosion and increased cycle life
- Improved charge acceptance due to low internal resistance
- High resistance to water loss with the right charging set up
- Ultra stable polymer separator with glass mat for increased performance
- High resistance to shorting due to superior mechanical strength of the polymer separator
- Increased tolerance to poor charging parameters
- Can be discharged even when full recharge has not been achieved, without loss of battery capacity



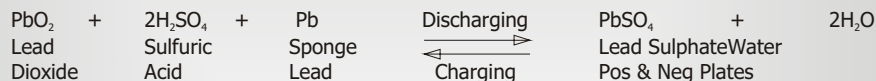
Applications

- Cycling / Float service
 - Residential
 - Telecommunications
 - Refrigeration
 - Photovoltaic
 - Solar
 - Wind
 - Engine Starting
 - Electric Vehicle
 - Water Pumping
 - Cathodic Protection
 - Boats
 - General Marine
 - Navigation Aids
- Many other deep cycle applications

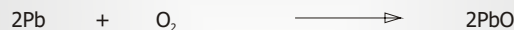
Capacity temperature correction Factor to be applied to Data at 20 Degrees C

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

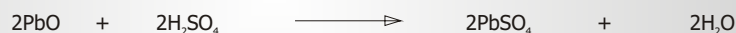
CHEMICAL REACTION- The chemical reaction for the Discharge / Recharge process is represented by the following formula:



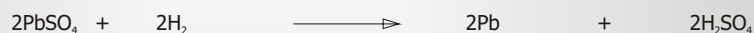
Under normal float charge conditions the oxygen passes through the separator from the positive to the negative plate where it reacts with the negative active material to form lead oxide.



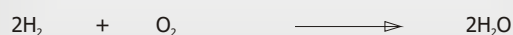
In the acid conditions the lead oxide reacts with the sulfuric acid to form lead sulphate.



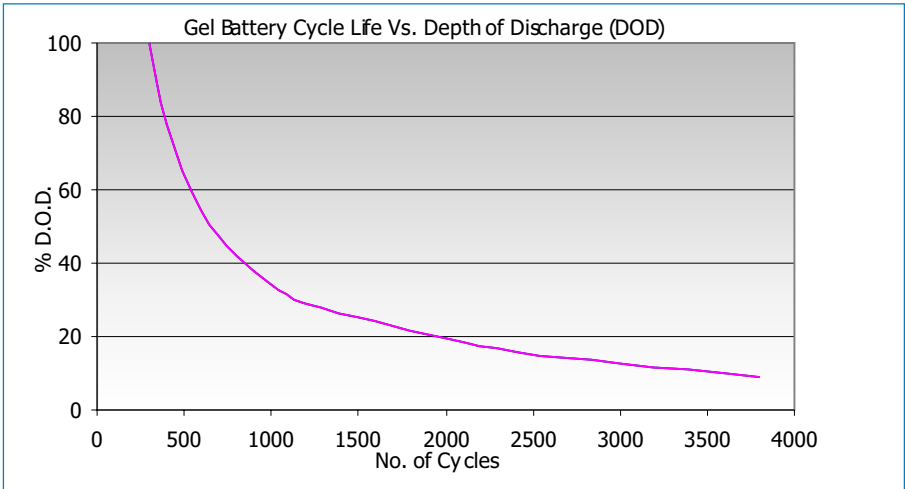
The lead sulphate formed on the negative is then reduced to lead and sulfuric acid by the evolving hydrogen.



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

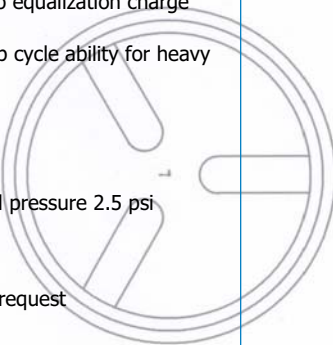


This reaction summarises what is meant by GAS RECOMBINATION. The process can never be 100% efficient, normal recombination efficiency is 95 - 99%.



Innovative Features

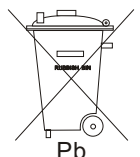
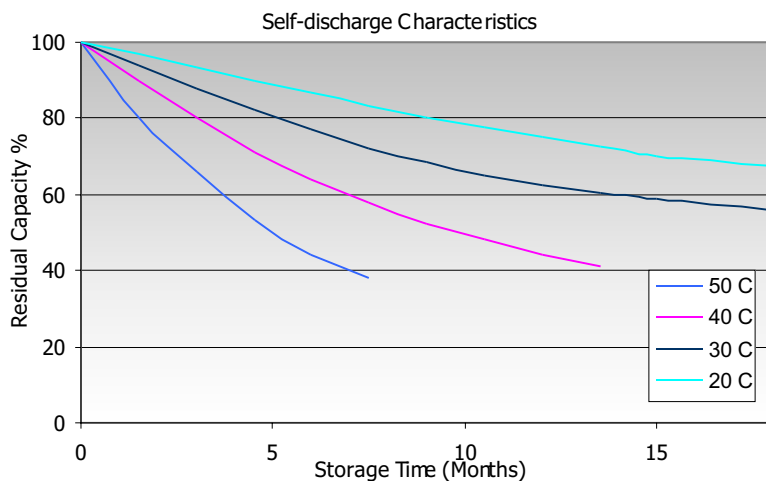
- Completely maintenance free, sealed
- Construction eliminates the need for watering
- Electrolyte will not stratify, no equalization charge required
- Increased durability and deep cycle ability for heavy demand applications
- Special formation process
- Gelled thixotropic electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position usage
- Multi-cell container
- ABS Case and cover - VO on request
- Low self discharge
- Utilising the latest in German technology
- FAA and IATA approved as non-hazardous
- Built to comply with IEC 896-2, DIN 43534, BS 6290 Pt4, Eurobat.



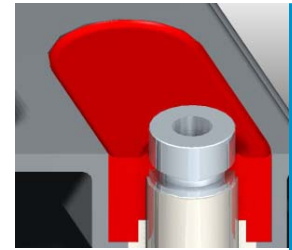
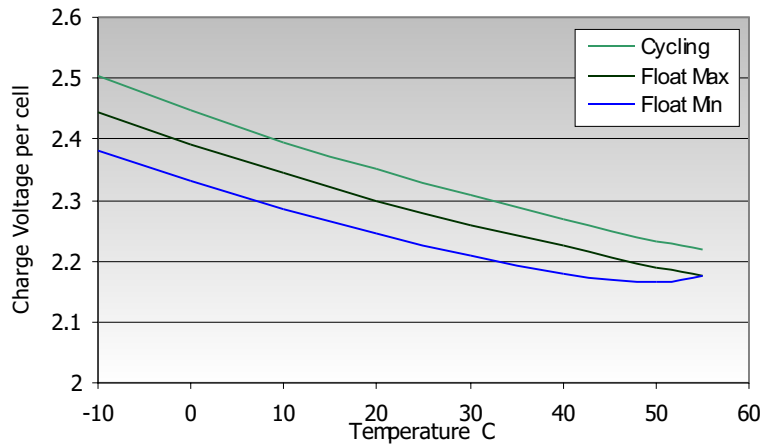
Specifications

Nominal Voltage	2 Volts
Design Life	15 Years
Operating Temperature	-20 °C to 50 °C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	Microporous Duroplastic
Active material	Very high purity lead
Case and cover	ABS (VO on request)
Charge Voltage	Float - See table, Cycling 2.4 @20 °C
	Max. 2.4 VPC Max ripple 3.5
	Charging V
Electrolyte	Sulphuric acid Analytical grade purity
Venting Valve	EPDM Rubber 1.5 to 2 psi (10.5 - 14 KPa) release pressure. Resealing at 1 psi (7 KPa)
Terminal	Various types Epoxy sealed by extended mechanical paths
Torque setting	The recommended torque value for all types is 5-7 Nm
Cables	Insulated cables / connectors supplied on request.

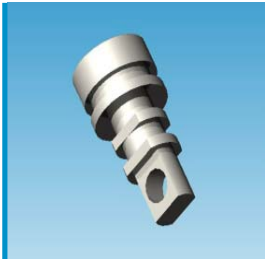
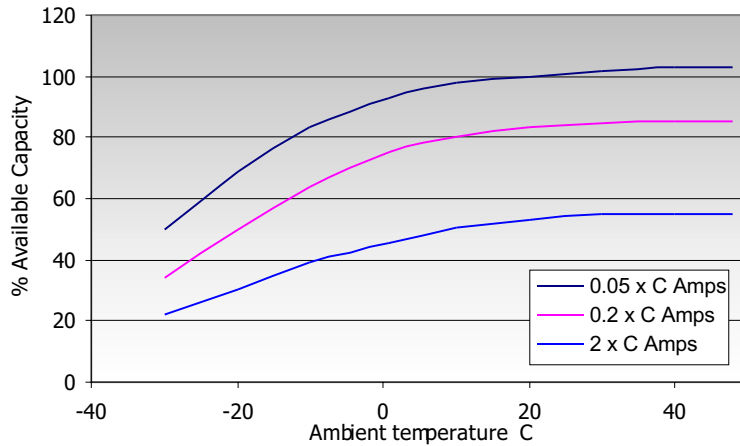
Haze Battery Company keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.



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

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 $C_{20}/4$.



HAZE Amps & Ampere Hour Data

Battery Model	Time in Minutes - Amps to 1.85 VPC						
	15	20	25	30	45	60	90
HZY2-50	65.6	57.3	51.1	45.4	34.4	27.8	20.1
HZY2-100	137	117	103	92.8	70.5	56.9	41.2
HZY2-150	193	166	146	130	98.8	80.8	59.6
HZY2-200	209	189	175	161	129	108	80.5
HZY2-250	254	236	218	202	162	135	100
HZY2-300	301	276	254	236	193	161	121
HZY2-375	380	347	319	296	240	199	149
HZY2-400	411	374	347	320	258	216	162
HZY2-450	470	428	392	360	290	243	181
HZY2-500	522	478	441	407	323	267	201
HZY2-575	572	532	495	460	368	302	228
HZY2-600	603	559	518	482	387	323	241
HZY2-625	644	584	542	503	403	337	251
HZY2-750	748	702	653	606	489	405	303
HZY2-800	808	748	695	646	516	427	321
HZY2-1000	1004	927	866	800	645	534	402
HZY2-1250	1280	1169	1082	996	807	669	502
HZY2-1500	1532	1406	1303	1202	968	805	607
HZY2-1875	1931	1767	1615	1488	1193	997	746
HZY2-2000	2008	1847	1703	1582	1290	1078	802
HZY2-2500	2420	2241	2083	1956	1600	1333	1011
HZY2-3000	2916	2718	2529	2348	1915	1591	1209
HZY2-3850	3760	3474	3215	2984	2432	2040	1539

Battery Model	Time in Minutes - Amps to 1.80 VPC						
	15	20	25	30	45	60	90
HZY2-50	71.1	61.6	54.5	48.3	37.0	29.8	21.6
HZY2-100	147	126	110	97.7	74.0	59.3	43.3
HZY2-150	208	178	157	140	106	85.8	63.7
HZY2-200	229	203	187	173	139	114	85.1
HZY2-250	281	255	236	217	174	143	107
HZY2-300	337	303	277	256	208	172	128
HZY2-375	418	379	343	316	255	212	159
HZY2-400	449	408	375	344	276	228	171
HZY2-450	520	472	432	393	312	257	193
HZY2-500	586	521	474	437	347	285	214
HZY2-575	639	582	532	490	396	325	244
HZY2-600	671	612	560	520	416	344	255
HZY2-625	709	642	591	545	433	357	267
HZY2-750	852	774	710	656	521	427	318
HZY2-800	898	819	754	694	555	456	340
HZY2-1000	1122	1020	941	866	694	569	427
HZY2-1250	1408	1272	1169	1068	859	710	530
HZY2-1500	1684	1533	1408	1294	1041	857	642
HZY2-1875	2116	1902	1757	1606	1283	1058	789
HZY2-2000	2245	2016	1831	1702	1379	1145	848
HZY2-2500	2806	2529	2316	2142	1734	1423	1067
HZY2-3000	3367	3024	2779	2562	2053	1699	1278
HZY2-3850	4308	3886	3550	3290	2651	2181	1643

Battery Model	Time in Minutes - Amps to 1.75 VPC						
	15	20	25	30	45	60	90
HZY2-50	74.4	64.4	56.7	50.6	38.4	30.8	22.2
HZY2-100	154	131	114	103	77.6	62.0	44.9
HZY2-150	220	188	166	147	112	91.0	67.0
HZY2-200	248	219	200	184	148	121	89.6
HZY2-250	304	276	251	230	184	151	112
HZY2-300	367	325	295	269	216	179	133
HZY2-375	452	404	367	335	270	223	166
HZY2-400	492	442	399	364	291	239	179
HZY2-450	560	501	454	412	328	272	201
HZY2-500	627	559	502	458	364	301	223
HZY2-575	692	618	566	522	419	342	253
HZY2-600	718	652	597	549	439	361	269
HZY2-625	763	683	622	566	448	371	277
HZY2-750	916	822	751	690	552	452	336
HZY2-800	968	870	797	734	584	482	357
HZY2-1000	1228	1098	1002	918	729	600	446
HZY2-1250	1508	1347	1224	1122	903	745	554
HZY2-1500	1792	1620	1488	1362	1087	893	668
HZY2-1875	2268	2046	1858	1696	1359	1118	837
HZY2-2000	2404	2157	1968	1806	1448	1200	888
HZY2-2500	3048	2730	2479	2270	1817	1494	1112
HZY2-3000	3624	3249	2959	2712	2179	1795	1344
HZY2-3850	4560	4098	3718	3430	2757	2277	1707

Battery Model	Time in Minutes - Amps to 1.70 VPC						
	15	20	25	30	45	60	90
HZY2-50	77.8	66.7	58.2	51.6	39.1	31.3	22.7
HZY2-100	159	134	117	104	78.8	63.1	45.8
HZY2-150	227	193	169	151	114	92.8	68.3
HZY2-200	260	227	206	190	151	123	91.4
HZY2-250	319	286	258	236	188	154	115
HZY2-300	388	341	307	279	223	183	136
HZY2-375	479	423	385	348	279	230	171
HZY2-400	519	457	414	378	300	246	183
HZY2-450	591	523	468	425	335	277	205
HZY2-500	661	579	523	472	374	306	228
HZY2-575	732	646	589	539	428	349	258
HZY2-600	762	685	621	568	449	371	274
HZY2-625	802	710	643	582	458	379	283
HZY2-750	960	852	779	710	563	461	342
HZY2-800	1028	913	828	756	600	491	364
HZY2-1000	1280	1134	1039	945	744	610	455
HZY2-1250	1568	1392	1253	1150	919	758	565
HZY2-1500	1876	1686	1529	1392	1105	911	681
HZY2-1875	2376	2118	1910	1746	1391	1142	854
HZY2-2000	2512	2220	2009	1848	1484	1224	906
HZY2-2500	3184	2832	2551	2336	1863	1537	1141
HZY2-3000	3860	3408	3060	2786	2236	1841	1371
HZY2-3850	4760	4227	3818	3494	2808	2331	1749

Battery Model	Time in Hours				Amps to 1.70 VPC				
	2	3	4	5	6	8	10	12	24
HZY2-50	18.0	13.2	10.7	9.03	7.86	6.31	5.20	4.43	2.41
HZY2-100	36.6	27.1	21.8	18.4	16.1	12.9	10.61	9.02	4.92
HZY2-150	55.1	40.8	32.8	27.8	24.1	19.3	15.9	13.6	7.39
HZY2-200	73.7	54.4	43.8	37.1	32.2	25.8	21.3	18.2	9.91
HZY2-250	92.1	67.9	54.9	46.3	40.0	32.2	26.6	22.6	12.3
HZY2-300	109	81.8	66.2	56.1	48.6	38.5	31.9	27.1	14.7
HZY2-375	138	102	82.4	69.9	60.5	48.4	40.0	34.0	18.5
HZY2-400	147	110	87.7	74.2	64.2	51.6	42.6	36.1	19.8
HZY2-450	166	122	98.5	83.2	72.2	58.0	47.9	40.7	22.3
HZY2-500	184	136	110	93.3	80.5	64.6	53.3	45.3	24.7
HZY2-575	210	157	126	106	92	73.6	60.8	51.6	28.1
HZY2-600	221	164	132	111	96	77.4	63.9	54.3	29.7
HZY2-625	230	171	137	116	100	80.7	66.6	56.7	30.9
HZY2-750	276	207	166	140	121	96.7	79.8	67.9	37.0
HZY2-800	295	219	176	149	129	103	85.3	72.5	39.5
HZY2-1000	367	275	221	186	161	129	106	90.6	49.5
HZY2-1250	460	344	277	234	202	161	133	113	61.8
HZY2-1500	552	413	332	279	241	194	160	136	74.2
HZY2-1875	690	517	416	349	301	242	200	169	92.7
HZY2-2000	736	551	442	373	323	258	213	181	98.9
HZY2-2500	920	689	553	466	403	323	267	226	123
HZY2-3000	1104	827	663	560	483	387	320	272	148
HZY2-3850	1418	1061	848	715	620	497	410	349	191

Battery Model	Time in Hours Ah to 1.70 VPC								
	2	3	4	5	6	8	10	12	24
HZY2-50	36.0	39.7	42.9	45.1	47.3	50.0	51.7	52.6	57.0
HZY2-100	73.3	81.3	87.5	92.2	96.7	102	106	108	115
HZY2-150	110	122	131	139	144	152	157	161	172
HZY2-200	147	163	175	185	193	205	211	215	229
HZY2-250	184	204	220	231	240	252	261	267	285
HZY2-300	219	243	262	275	287	303	313	320	340
HZY2-375	275	305	327	343	355	374	386	395	423
HZY2-400	295	329	352	371	387	406	422	434	463
HZY2-450	332	366	394	416	435	460	475	485	517
HZY2-500	368	409	439	464	482	511	529	540	573
HZY2-575	421	470	504	532	553	587	605	618	664
HZY2-600	442	491	527	555	576	607	626	643	692
HZY2-625	460	513	548	577	601	633	656	672	720
HZY2-750	553	616	663	700	728	772	798	815	861
HZY2-800	590	657	706	743	777	818	840	857	919
HZY2-1000	735	825	884	931	970	1025	1065	1087	1146
HZY2-1250	919	1032	1107	1168	1212	1282	1330	1353	1432
HZY2-1500	1103	1239	1330	1399	1452	1529	1576	1610	1712
HZY2-1875	1381	1551	1663	1745	1815	1912	1983	2033	2155
HZY2-2000	1472	1634	1756	1857	1929	2029	2089	2136	2288
HZY2-2500	1840	2053	2211	2332	2423	2552	2633	2684	2873
HZY2-3000	2209	2470	2653	2801	2907	3058	3162	3231	3461
HZY2-3850	2835	3161	3400	3561	3712	3910	4040	4130	4430

HAZE Watts Per Cell Data

Battery Model	Time in Minutes - Watts per cell to 1.85 VPC						
	15	20	25	30	45	60	90
HZY2-50	120	105	93.4	84.5	65.8	53.3	39.3
HZY2-100	251	216	189	169	130	107	79.5
HZY2-150	339	300	267	243	189	153	114
HZY2-200	382	348	326	302	247	206	155
HZY2-250	467	435	402	372	302	252	193
HZY2-300	551	509	470	442	364	304	231
HZY2-375	684	630	590	555	463	387	292
HZY2-400	764	697	638	598	489	409	310
HZY2-450	860	787	727	680	549	461	348
HZY2-500	940	867	806	756	616	516	386
HZY2-575	1060	979	914	852	703	589	440
HZY2-600	1104	1022	947	878	731	611	463
HZY2-625	1148	1053	974	908	760	637	482
HZY2-750	1380	1291	1206	1128	912	761	582
HZY2-800	1452	1376	1285	1192	973	812	616
HZY2-1000	1876	1734	1599	1492	1232	1021	771
HZY2-1250	2348	2150	2004	1866	1528	1273	963
HZY2-1500	2828	2610	2443	2276	1860	1540	1165
HZY2-1875	3480	3219	2988	2780	2279	1910	1445
HZY2-2000	3716	3441	3197	2990	2441	2031	1539
HZY2-2500	4528	4262	3953	3690	3019	2545	1941
HZY2-3000	5216	4920	4672	4400	3663	3070	2307
HZY2-3850	7000	6470	5940	5560	4600	3890	2973

Battery Model	Time in Minutes - Watts per cell to 1.80 VPC						
	15	20	25	30	45	60	90
HZY2-50	130	114	101	90.8	69.9	56.8	41.5
HZY2-100	266	231	204	182	140	113	83.1
HZY2-150	374	325	287	259	199	163	122
HZY2-200	417	379	352	325	266	219	163
HZY2-250	513	467	437	403	320	267	205
HZY2-300	616	554	511	478	388	326	247
HZY2-375	771	699	643	598	485	404	307
HZY2-400	833	750	689	640	517	437	329
HZY2-450	952	858	782	732	584	488	370
HZY2-500	1044	945	876	813	663	546	410
HZY2-575	1170	1062	984	910	749	622	469
HZY2-600	1232	1119	1032	952	779	654	493
HZY2-625	1285	1170	1075	994	815	678	510
HZY2-750	1540	1404	1297	1208	972	807	611
HZY2-800	1600	1480	1381	1280	1037	871	653
HZY2-1000	2068	1872	1720	1592	1305	1091	819
HZY2-1250	2596	2337	2159	2000	1624	1359	1018
HZY2-1500	3081	2814	2601	2406	1956	1629	1233
HZY2-1875	3800	3504	3245	3006	2451	2027	1526
HZY2-2000	4108	3750	3482	3228	2607	2168	1643
HZY2-2500	4928	4582	4251	3966	3221	2700	2053
HZY2-3000	6064	5577	5184	4826	3913	3277	2453
HZY2-3850	7908	7150	6576	6080	5000	4180	3154

Battery Model	Time in Minutes - Watts per cell to 1.75 VPC						
	15	20	25	30	45	60	90
HZY2-50	137	119	105	94.1	71.3	58.2	42.7
HZY2-100	276	238	210	188	144	117	85.8
HZY2-150	391	341	304	272	208	171	129
HZY2-200	447	402	366	337	274	228	172
HZY2-250	552	496	458	423	337	281	213
HZY2-300	670	603	550	505	407	342	258
HZY2-375	835	748	680	628	505	424	319
HZY2-400	904	809	732	676	541	456	344
HZY2-450	1036	913	828	766	613	510	386
HZY2-500	1136	1018	936	861	685	567	426
HZY2-575	1264	1140	1044	962	780	646	485
HZY2-600	1336	1203	1104	1018	822	687	516
HZY2-625	1360	1242	1135	1044	851	711	533
HZY2-750	1680	1520	1395	1280	1021	851	640
HZY2-800	1736	1584	1459	1344	1087	911	685
HZY2-1000	2212	1986	1814	1674	1360	1138	852
HZY2-1250	2804	2514	2285	2094	1700	1418	1063
HZY2-1500	3248	2979	2731	2514	2035	1700	1282
HZY2-1875	4096	3735	3425	3152	2565	2124	1593
HZY2-2000	4412	4011	3665	3392	2732	2265	1707
HZY2-2500	5368	4896	4510	4172	3369	2817	2144
HZY2-3000	6652	6015	5520	5086	4105	3440	2580
HZY2-3850	8400	7590	6912	6380	5173	4350	3293

HAZE Watts Per Cell Data

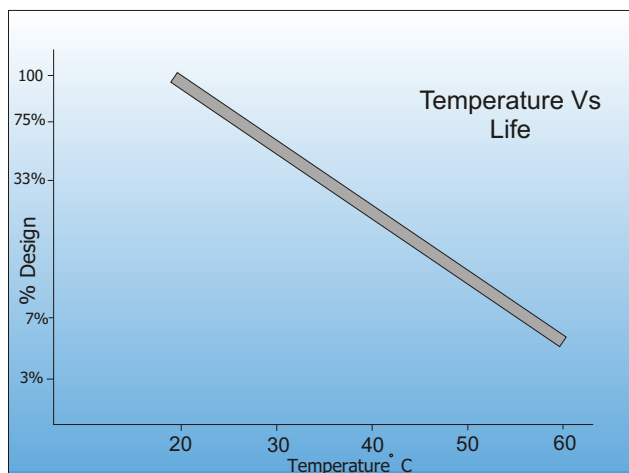
Battery Model	Time in Minutes - Watts per cell to 1.70 VPC						
	15	20	25	30	45	60	90
HZY2-50	141	122	107	96.0	72.8	59.2	43.5
HZY2-100	284	246	217	194	148	120	87.4
HZY2-150	404	351	310	278	212	175	131
HZY2-200	470	419	381	350	280	233	175
HZY2-250	578	520	475	435	347	288	218
HZY2-300	698	623	561	515	415	345	260
HZY2-375	872	778	710	649	520	435	326
HZY2-400	939	834	756	693	553	463	349
HZY2-450	1084	951	855	790	628	520	393
HZY2-500	1172	1047	955	879	699	582	436
HZY2-575	1340	1188	1078	988	795	662	495
HZY2-600	1416	1265	1147	1050	846	705	524
HZY2-625	1420	1287	1171	1072	872	728	546
HZY2-750	1763	1566	1423	1308	1047	867	651
HZY2-800	1832	1662	1522	1390	1116	933	700
HZY2-1000	2312	2061	1869	1724	1395	1160	873
HZY2-1250	2908	2583	2336	2140	1731	1440	1085
HZY2-1500	3376	3087	2844	2608	2090	1741	1308
HZY2-1875	4256	3858	3511	3234	2616	2168	1631
HZY2-2000	4588	4158	3782	3490	2793	2306	1739
HZY2-2500	5644	5079	4675	4296	3455	2871	2191
HZY2-3000	6944	6251	5712	5234	4187	3505	2632
HZY2-3850	8720	7830	7128	6560	5333	4450	3359

Battery Model	Time in Hours Watts per cell to 1.70 VPC								
	2	3	4	5	6	8	10	12	24
HZY2-50	34.8	25.8	20.9	17.8	15.5	12.4	10.3	8.82	4.80
HZY2-100	70.5	52.6	42.7	36.3	31.5	25.0	20.8	17.7	9.5
HZY2-150	106	79.5	64.3	54.5	47.2	37.3	31.2	26.7	14.6
HZY2-200	142	106	86.0	72.6	63.2	49.9	41.5	35.5	19.1
HZY2-250	178	132	107	90.8	79.0	62.9	52.5	44.8	23.9
HZY2-300	212	159	129	109	94.8	74.8	62.4	53.1	28.4
HZY2-375	266	198	161	136	117	92.9	77.4	65.9	35.4
HZY2-400	285	214	172	145	126	101	84.0	71.5	38.3
HZY2-450	321	238	193	164	143	114	94.9	80.8	42.7
HZY2-500	356	266	215	183	159	126	106	90.3	47.8
HZY2-575	406	305	247	208	181	144	121	103	54.7
HZY2-600	427	319	259	218	190	151	126	108	58.4
HZY2-625	444	333	270	227	197	157	132	113	61.3
HZY2-750	532	397	322	273	238	188	158	134	71.0
HZY2-800	570	427	346	292	252	200	167	142	76.8
HZY2-1000	710	533	433	365	318	253	211	180	96.9
HZY2-1250	886	670	544	459	398	317	265	225	120
HZY2-1500	1066	797	645	545	476	380	318	270	143
HZY2-1875	1332	1007	816	687	596	474	399	339	180
HZY2-2000	1422	1065	862	729	636	503	416	355	189
HZY2-2500	1779	1333	1084	919	798	631	526	448	238
HZY2-3000	2135	1611	1301	1096	952	754	626	533	288
HZY2-3850	2740	2053	1663	1409	1225	975	817	698	376

Battery Model	Time in Minutes - Watts per cell to 1.65 VPC						
	15	20	25	30	45	60	90
HZY2-50	143	125	109	97.0	74.4	60.2	44.3
HZY2-100	292	251	222	198	151	122	88.7
HZY2-150	414	359	317	283	218	177	133
HZY2-200	494	434	394	359	287	237	178
HZY2-250	604	541	492	449	356	293	221
HZY2-300	718	639	578	530	425	351	265
HZY2-375	907	804	734	668	531	443	333
HZY2-400	973	862	779	712	564	471	354
HZY2-450	1144	989	890	812	642	530	401
HZY2-500	1212	1080	979	896	711	590	440
HZY2-575	1396	1236	1114	1012	815	678	507
HZY2-600	1468	1302	1174	1070	863	718	537
HZY2-625	1488	1320	1198	1098	893	743	555
HZY2-750	1816	1614	1465	1340	1072	885	663
HZY2-800	1912	1729	1565	1430	1145	954	715
HZY2-1000	2384	2124	1922	1760	1424	1180	885
HZY2-1250	3012	2657	2395	2184	1756	1458	1099
HZY2-1500	3480	3174	2904	2666	2133	1776	1331
HZY2-1875	4400	3966	3600	3293	2655	2207	1667
HZY2-2000	4696	4254	3847	3554	2840	2347	1771
HZY2-2500	5864	5247	4759	4391	3524	2933	2241
HZY2-3000	7172	6456	5870	5348	4267	3571	2667
HZY2-3850	9080	8130	7320	6720	5427	4530	3427

Battery Model	Dimensions (mm) & weight (Kg)				Dimensions (Inches) & weight (lbs)				No. of Terminals	Internal Resistance mOhms	Maximum Charge Current	Short Circuit Current
	Length	Width	Height	Weight	Length	Width	Height	Weight				
HZY2-50	161	50	166	3.1	6.34	1.97	6.54	6.9	2	2.1	10	509
HZY2-100	171	72	205	6.4	6.73	2.83	8.07	14.2	2	2	20	1080
HZY2-150	172	102	205	8.2	6.77	4.02	8.07	18.1	2	1.5	30	1550
HZY2-200	173	111	329	14	6.81	4.37	12.95	30.9	2	0.5	40	1600
HZY2-250	173	111	329	16.3	6.81	4.37	12.95	36.0	2	0.45	50	2000
HZY2-300	171	151	330	18.7	6.73	5.94	12.99	41.3	2	0.4	60	2400
HZY2-375	171	151	330	21.8	6.73	5.94	12.99	48.2	2	0.39	75	3000
HZY2-400	211	176	329	26.2	8.31	6.93	12.95	57.9	4	0.36	80	3200
HZY2-450	223	187	351	30.3	8.78	7.36	13.82	67.0	4	0.33	90	3600
HZY2-500-1	211	176	329	32	8.31	6.93	12.95	70.7	4	0.3	100	4000
HZY2-500-2	241	172	331	30.9	9.49	6.77	13.03	68.3	4	0.3	100	4000
HZY2-575	223	187	351	36	8.78	7.36	13.82	79.6	4	0.29	115	4600
HZY2-600	301	175	331	38.8	11.85	6.89	13.03	85.7	4	0.28	120	4800
HZY2-625	241	172	331	37.2	9.49	6.77	13.03	82.2	4	0.25	125	5000
HZY2-750	301	175	331	45.3	11.85	6.89	13.03	100.1	4	0.22	130	6000
HZY2-800	410	175	330	52	16.14	6.89	12.99	114.9	8	0.2	160	6400
HZY2-1000-1	410	175	330	60.9	16.14	6.89	12.99	134.6	8	0.16	200	7900
HZY2-1000-2	475	175	328	64.6	18.70	6.89	12.91	142.8	8	0.16	200	7900
HZY2-1250	475	175	328	71.6	18.70	6.89	12.91	158.2	8	0.13	250	10050
HZY2-1500	401	351	342	100.3	15.79	13.82	13.46	221.7	8	0.11	300	11950
HZY2-1875	401	351	342	118	15.79	13.82	13.46	260.8	8	0.1	375	15050
HZY2-2000	491	351	344	133	19.33	13.82	13.54	293.9	8	0.09	400	16100
HZY2-2500	491	351	344	149.5	19.33	13.82	13.54	330.4	8	0.08	500	19850
HZY2-3000	762	353	341	203.3	30.00	13.90	13.43	449.3	8	0.08	600	24100
HZY2-3850	762	353	341	256.1	30.00	13.90	13.43	566.0	8	0.07	770	30800

The graph shows extrapolated Service Life condition for Haze batteries at different ambient temperatures. Clearly higher ambient temperatures will reduce service life.

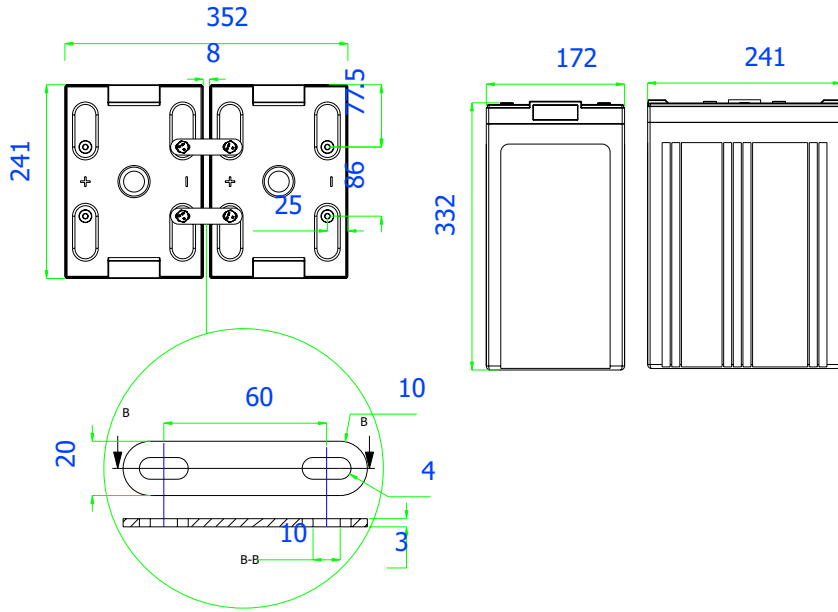


Temperature	Shelf Life
0 °C - 20 °C (32 °F - 68 °F)	12 Months
21 °C - 30 °C (69 °F - 86 °F)	9 Months
31 °C - 40 °C (87 °F - 104 °F)	5 Months
41 °C - 50 °C (105 °F - 1122 °F)	2.5 Months

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.

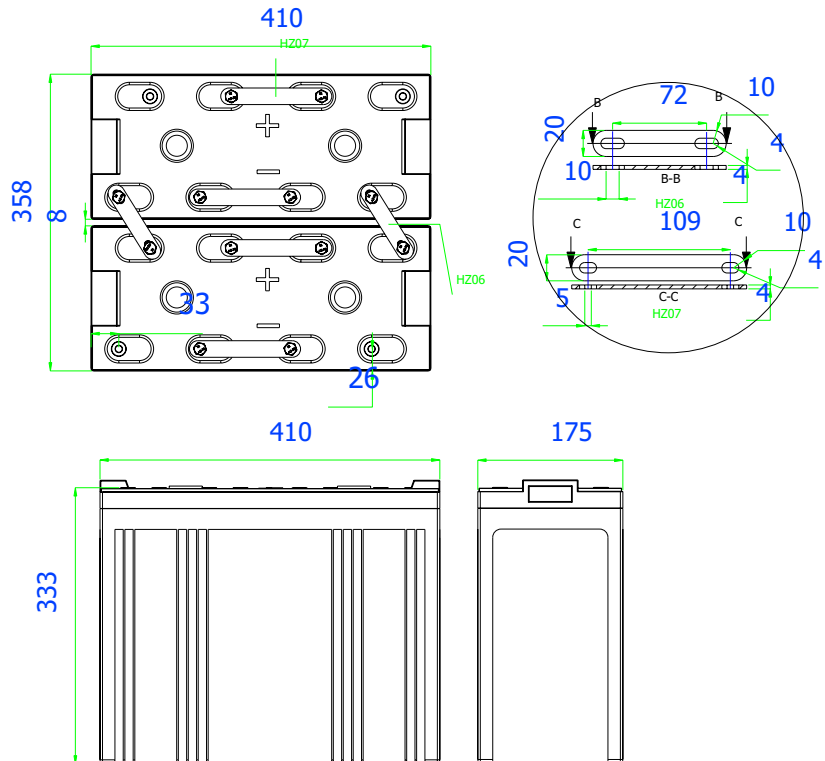
The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of $C_{20}/4$.

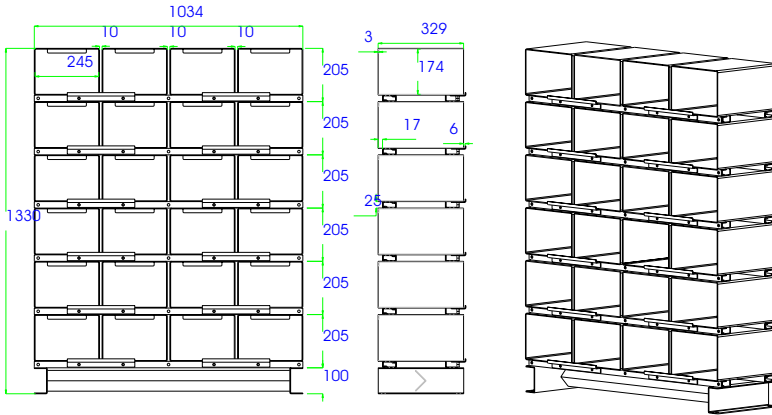


The sample battery layout drawings shown are available for all models showing terminal locations and intercell and inter battery connections. We can provide custom layouts to customers with an existing installation or footprint limitations.

Battery spacing is flexible to allow greater or smaller spacing between the cells, indeed our standard connector has 10mm of travel allowing battery spacing from 3 to 13 mm. Close spacing is only recommended in temperature controlled environments with forced cooling.

Connectors and terminal covers are supplied as standard.

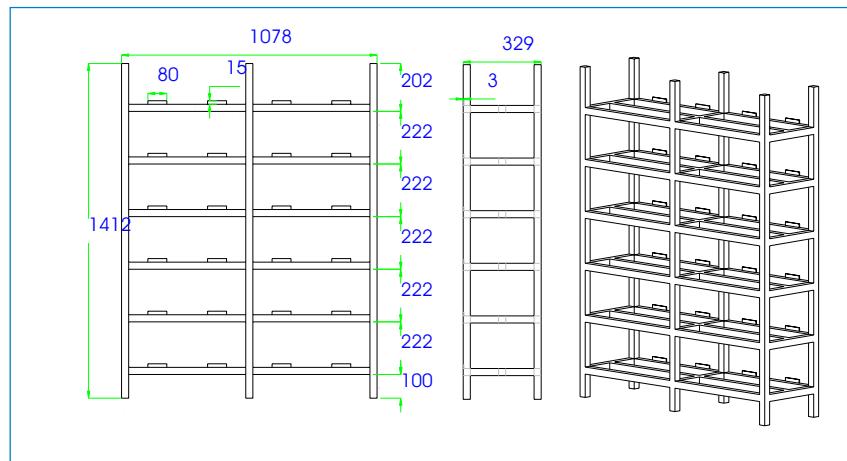




RACKING OPTIONS - Many racking options are available from Haze Battery Company. The favored style in Europe is the open rack, which can be designed to suit an existing foot print or minimised to fit the minimum possible space. Rack construction is from heavy duty steel section with welded joints or alternatively made in kit form for remote assembly.

A modular rack is also available for models HZY2-200 up to HZY2-1250. Box construction is from 3mm steel sheet, interlocking modules are slotted together and bolted in place, bolted front retainers hold the batteries in place resulting in a seismic zone 4 classified rack.

HZY2-1500 and above, due to their size and weight are more suited to vertical orientation - racking can be supplied to minimise the footprint by the use of multiple tiers. Battery retainers can be utilised to allow seismic zone 4 classification. Racks can be supplied with welded joints or as kit form for remote assembly.





151207

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