

# FRONT ACCESS AGM



**HAZE**

Haze Battery Company Ltd

The Haze Front Access - AGM range covers Ah capacities from 30Ah to 180Ah (C<sub>10</sub>) with dimensions suitable for racking systems for maximum space utilisation.

Specially designed racks and cabinets are available with cables and connectors to suit.

AGM is especially suited for premium sites with low to medium outage rates and climate controlled environments, for more extreme temperature variations and increased cyclic demands please consult the Haze Front Access - GEL range.

Haze facilities are fully accredited to ISO 14001 and the management system fully accredited to ISO 9001.



**Features** - Designed to meet the future needs of the Tele-communications industry for - mobile, wired, access, transmission, switching, integrated power applications etc.

Resulting in the following benefits to the customer:

- Compactness
- ETSI / 19" / 23" Integration
- Modularity
- Rackable Standard component
- Long life
- Use under extreme conditions
- High power volume ratio
- Maintenance free utilising VRLA technology
- Low Installation costs
- Front Connections and terminal access
- Long Design Life - 12 years
- Rope handles on 100Ah upwards
- Central gassing system and hinged front covers on all models
- Integral flame arrestor
- Low Internal resistance
- Recyclable lead and plastics
- Designed to meet BELLCORE recommendations
- Low self discharge rates

### Specifications

Nominal Voltage	12 Volts
Design Life	12 Years
Operating Temperature	-20 °C to 50 °C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	AGM - 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 2.4 @20 °C Max. 2.45 VPC. Max ripple 0.05C (A)
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	Epoxy sealed by extended mechanical paths
Torque setting	The recommended torque value is 5-7 Nm
Connectors	Supplied as standard (4 hr rate)



End of Discharge Voltage = 1.85						DISCHARGE CURRENT in A											20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	52.5	43.6	37.2	32.8	28.9	26.0	23.5	18.5	13.2	10.4	7.55	6.02	4.99	4.28	3.77	3.34	2.74	2.34	1.47	1.25
HZB12-40FA	68.6	56.9	48.6	42.9	37.7	34.0	30.8	23.9	16.9	13.3	9.6	7.67	6.39	5.53	4.92	4.40	3.66	3.12	1.96	1.66
HZB12-55FA	93.1	80.9	69.6	62.4	55.6	50.3	45.7	36.3	26.4	21.0	15.1	11.8	9.7	8.19	7.17	6.34	5.23	4.45	2.81	2.38
HZB12-80FA	140	120	105	93.6	83.8	76.5	70.0	56.0	40.3	31.8	22.6	17.7	14.6	12.5	11.0	9.73	8.01	6.82	4.34	3.68
HZB12-95FA	162	139	119	105	92.7	84.0	76.7	61.6	45.4	36.4	26.7	21.5	18.2	15.7	13.8	12.3	10.1	8.63	5.52	4.67
HZB12-95FA-2	155	133	115	101	89.1	80.7	73.7	58.6	42.1	33.6	24.5	19.6	16.4	14.2	12.4	11.0	9.02	7.63	4.85	4.13
HZB12-100FA	171	146	126	110	97.4	87.9	80.1	63.7	46.5	37.7	27.9	22.3	18.6	15.8	13.9	12.3	10.1	8.59	5.54	4.70
HZB12-125FA	187	160	141	126	113	103	94.3	76.8	57.4	46.8	35.0	28.5	24.3	21.2	18.9	17.0	14.2	12.2	7.83	6.63
HZB12-150FA	229	200	177	159	145	132	122	99.0	71.3	56.7	40.9	32.3	27.0	23.3	20.6	18.3	15.2	12.8	7.91	6.62
HZB12-180FA	254	231	212	193	177	163	150	120	87.1	69.6	50.4	39.7	33.0	28.3	24.9	22.1	18.4	15.6	9.68	8.17

End of Discharge Voltage = 1.80						DISCHARGE CURRENT in A											20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	56.1	46.5	39.7	35.1	30.9	27.8	25.1	19.7	14.1	11.1	8.07	6.43	5.33	4.57	4.02	3.57	2.93	2.50	1.57	1.33
HZB12-40FA	73.3	60.8	51.9	45.8	40.3	36.3	32.9	25.6	18.0	14.2	10.3	8.20	6.82	5.91	5.25	4.70	3.91	3.33	2.09	1.78
HZB12-55FA	97.4	84.1	71.9	64.2	57.0	51.6	47.0	37.2	26.9	21.4	15.4	12.0	9.8	8.35	7.29	6.44	5.32	4.52	2.86	2.42
HZB12-80FA	152	129	111	98.2	87.1	79.1	72.1	57.6	41.3	32.5	23.0	18.0	14.9	12.7	11.1	9.8	8.09	6.89	4.39	3.71
HZB12-95FA	173	146	124	108	95.7	86.7	79.0	63.4	46.7	37.3	27.2	21.9	18.5	16.0	14.1	12.5	10.3	8.78	5.61	4.75
HZB12-95FA-2	163	138	119	104	91.9	83.3	75.9	60.3	43.0	34.3	25.0	19.9	16.7	14.4	12.7	11.2	9.21	7.81	4.96	4.23
HZB12-100FA	185	155	132	115	101	91.5	83.3	66.1	47.9	38.8	28.6	22.9	19.0	16.2	14.2	12.5	10.3	8.79	5.65	4.80
HZB12-125FA	216	183	159	141	127	115	105	84.8	62.5	50.3	37.0	29.8	25.2	22.0	19.4	17.5	14.7	12.6	8.00	6.78
HZB12-150FA	264	226	195	174	156	142	130	104	74.0	58.5	42.3	33.4	27.9	24.1	21.2	18.9	15.6	13.2	8.19	6.89
HZB12-180FA	272	247	226	206	189	174	160	128	93.1	74.3	53.9	42.5	35.2	30.2	26.6	23.6	19.7	16.7	10.3	8.73

End of Discharge Voltage = 1.75						DISCHARGE CURRENT in A											20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	59.6	49.5	42.3	37.3	32.8	29.5	26.8	21.0	15.0	11.8	8.50	6.71	5.56	4.77	4.20	3.72	3.05	2.60	1.63	1.39
HZB12-40FA	77.9	64.7	55.2	48.8	42.9	38.6	35.0	27.2	19.2	15.1	10.8	8.55	7.12	6.16	5.48	4.90	4.07	3.47	2.18	1.85
HZB12-55FA	100	85.9	73.1	64.9	58.0	52.4	47.6	37.7	27.3	21.7	15.5	12.1	9.9	8.41	7.36	6.51	5.37	4.58	2.90	2.46
HZB12-80FA	159	133	114	100	89.1	80.7	73.6	58.4	41.7	32.8	23.2	18.2	15.0	12.8	11.2	9.9	8.18	6.96	4.43	3.76
HZB12-95FA	180	150	127	111	97.5	88.1	80.1	64.3	47.1	37.6	27.5	22.1	18.6	16.2	14.3	12.6	10.4	8.87	5.67	4.80
HZB12-95FA-2	169	142	121	106	93.6	84.6	77.0	61.0	43.7	34.7	25.3	20.1	16.9	14.6	12.8	11.4	9.31	7.91	5.03	4.29
HZB12-100FA	192	159	135	117	104	93.5	84.9	67.2	48.9	39.4	29.0	23.2	19.2	16.4	14.4	12.7	10.5	8.93	5.72	4.85
HZB12-125FA	234	197	170	150	135	123	112	88.7	64.7	51.8	37.9	30.5	25.6	22.3	19.7	17.8	14.9	12.7	8.06	6.84
HZB12-150FA	274	233	201	179	160	145	133	106	75.0	59.2	43.0	34.0	28.4	24.5	21.5	19.1	15.8	13.4	8.30	6.95
HZB12-180FA	289	263	241	219	201	185	170	136	99.0	79.1	57.3	45.2	37.5	32.2	28.3	25.1	20.9	17.8	11.0	9.29

End of Discharge Voltage = 1.70						DISCHARGE CURRENT in A											20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	61.0	50.6	43.2	38.1	33.6	30.2	27.3	21.5	15.3	12.1	8.77	7.00	5.80	4.97	4.38	3.88	3.18	2.71	1.70	1.45
HZB12-40FA	79.6	66.1	56.4	49.8	43.8	39.5	35.7	27.8	19.6	15.5	11.1	8.91	7.42	6.43	5.71	5.11	4.25	3.62	2.27	1.93
HZB12-55FA	102	87.0	74.2	65.9	58.7	53.0	48.2	37.9	27.6	22.0	15.7	12.2	10.0	8.47	7.42	6.56	5.40	4.60	2.92	2.48
HZB12-80FA	164	137	116	102	89.8	81.6	74.4	58.9	41.9	32.9	23.4	18.3	15.1	12.9	11.3	10.0	8.22	6.99	4.46	3.79
HZB12-95FA	185	153	129	112	98.9	89.2	81.1	64.9	47.6	38.0	27.7	22.2	18.8	16.3	14.3	12.7	10.5	8.94	5.71	4.83
HZB12-95FA-2	174	145	123	107	94.6	85.4	77.7	61.5	44.1	35.0	25.6	20.3	17.1	14.8	13.0	11.5	9.43	8.00	5.10	4.35
HZB12-100FA	196	162	137	119	105	94.8	86.0	68.0	49.3	39.7	29.2	23.4	19.4	16.5	14.5	12.8	10.6	8.97	5.77	4.88
HZB12-125FA	244	204	176	154	138	126	115	91.4	66.1	52.8	38.7	31.0	26.0	22.5	20.0	18.0	15.0	12.8	8.14	6.90
HZB12-150FA	282	240	205	182	162	148	135	107	75.7	60.0	43.3	34.2	28.6	24.7	21.7	19.3	16.0	13.6	8.39	7.03
HZB12-180FA	293	267	244	222	204	188	173	138	100	80.3	58.2	45.8	38.0	32.6	28.7	25.5	21.3	18.0	11.2	9.43

End of Discharge Voltage = 1.65										DISCHARGE CURRENT in A							20 - 25 °C				
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	61.7	51.2	43.7	38.6	34.0	30.6	27.7	21.7	15.5	12.2	8.89	7.09	-	-	-	-	-	-	-	-	
HZB12-40FA	80.7	66.9	57.2	50.5	44.4	40.0	36.2	28.2	19.9	15.6	11.3	9.02	-	-	-	-	-	-	-	-	
HZB12-55FA	105	88.2	74.9	66.7	59.3	53.6	48.7	38.2	27.9	22.2	15.8	12.2	-	-	-	-	-	-	-	-	
HZB12-80FA	168	139	117	102	90.8	82.2	75.1	59.2	42.3	33.2	23.5	18.4	-	-	-	-	-	-	-	-	
HZB12-95FA	189	155	130	114	100	89.9	81.8	65.5	47.8	38.3	27.9	22.4	-	-	-	-	-	-	-	-	
HZB12-95FA-2	178	147	125	109	95.5	86.2	78.3	62.0	44.5	35.3	25.7	20.5	-	-	-	-	-	-	-	-	
HZB12-100FA	200	164	139	120	106	95.7	86.8	68.8	49.8	40.1	29.5	23.6	-	-	-	-	-	-	-	-	
HZB12-125FA	249	207	178	156	140	127	117	93.1	67.5	53.6	39.1	31.4	-	-	-	-	-	-	-	-	
HZB12-150FA	288	242	208	185	164	149	136	108	76.3	60.5	43.6	34.4	-	-	-	-	-	-	-	-	
HZB12-180FA	298	271	248	226	208	191	176	140	102	81.6	59.2	46.6	-	-	-	-	-	-	-	-	

End of Discharge Voltage = 1.60										DISCHARGE CURRENT in A							20 - 25 °C				
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	62.3	51.7	44.2	39.0	34.3	30.9	28.0	21.9	15.7	12.3	8.97	7.15	-	-	-	-	-	-	-	-	
HZB12-40FA	81.4	67.6	57.7	51.0	44.8	40.3	36.5	28.4	20.0	15.8	11.4	9.11	-	-	-	-	-	-	-	-	
HZB12-55FA	107	89.6	75.8	67.2	59.8	54.0	49.0	38.5	28.0	22.3	15.9	12.3	-	-	-	-	-	-	-	-	
HZB12-80FA	172	141	119	103	91.6	82.7	75.5	59.6	42.5	33.3	23.6	18.4	-	-	-	-	-	-	-	-	
HZB12-95FA	193	157	132	114	101	90.5	82.3	65.9	48.1	38.5	28.1	22.5	-	-	-	-	-	-	-	-	
HZB12-95FA-2	181	149	126	110	96.5	86.9	79.0	62.3	44.7	35.5	25.9	20.6	-	-	-	-	-	-	-	-	
HZB12-100FA	204	167	140	122	107	96.5	87.7	69.5	50.3	40.4	29.8	23.8	-	-	-	-	-	-	-	-	
HZB12-125FA	252	209	179	157	141	128	117	94.1	68.1	54.0	39.4	31.5	-	-	-	-	-	-	-	-	
HZB12-150FA	295	247	212	186	166	150	137	109	77.3	61.0	43.9	34.6	-	-	-	-	-	-	-	-	
HZB12-180FA	301	273	250	228	209	192	177	142	103	82.2	59.6	47.0	-	-	-	-	-	-	-	-	

**Front Access AGM Construction** - 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 impurities, which would cause corrosion and self-discharge.

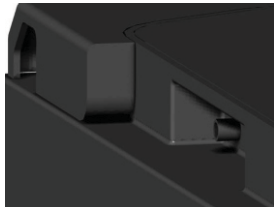
The separator is mat of random woven glass fibres, they are completely acid resistant and act as a sponge soaking up and immobilizing the acid whilst keeping the acid available when it is needed during periods of battery discharge. "S Wrapping" is employed to reduce the risk of short circuit due to mossing or debris at the bottom of the cell.

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

**AGM Technology** - AGM technology has a number of advantages over the equivalent Gel battery range, the main advantages for the Telecommunication applications are as follows:

- Increased capacity over shorter discharge times.
- Lower initial cost.
- Ideal for starting and stationary applications.
- More suitable for UPS stand-by where power outages are uncommon.
- Smaller size battery can be used for higher rate discharges.

Haze only employ "S wrapping" in our AGM construction to further reduce the possibility of short circuits due to mossing. Closely controlled plate density and thickness results in excellent consistent performance when placed in a string (series connection) Batteries are manufactured under a quality system designed to meet and exceed ISO 9002.



**Central Gassing** - Haze produce all models with an integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealed enclosures prevent any escaping gas from exiting, central gassing however allows a tube carrying the emissions to pass through a seal to atmosphere.

End of Discharge Voltage = 1.85											DISCHARGE IN WATTS PER CELL							20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	83.5	69.3	59.9	52.8	47.0	42.9	39.4	32.0	23.8	19.1	13.7	10.6	8.76	7.48	6.55	5.84	4.84	4.12	2.64	2.24	
HZB12-40FA	109	90.6	78.2	69.0	61.4	56.1	51.5	41.5	30.5	24.4	17.5	13.6	11.3	9.7	8.59	7.66	6.39	5.49	3.52	2.98	
HZB12-55FA	173	151	133	119	106	97	88.2	70.1	50.9	40.5	29.0	22.9	18.9	16.2	14.1	12.5	10.3	8.74	5.50	4.64	
HZB12-80FA	242	213	189	170	155	142	131	106	77.0	60.5	43.1	33.9	27.9	23.8	20.7	18.4	15.2	13.0	8.34	7.09	
HZB12-95FA	279	245	217	193	172	156	143	116	87.7	71.2	52.4	42.0	35.2	30.3	26.7	23.8	19.9	16.9	10.8	9.15	
HZB12-95FA-2	258	229	205	183	167	152	139	112	82.5	66.9	48.8	38.7	32.2	27.7	24.4	21.8	18.2	15.5	9.9	8.36	
HZB12-100FA	303	266	237	213	193	177	163	129	92.1	73.6	52.8	41.9	35.1	30.3	26.8	24.0	20.1	17.1	11.0	9.33	
HZB12-125FA	365	318	277	247	225	208	194	162	123	100	74.7	59.6	51.8	42.0	38.8	34.4	28.6	24.5	15.9	13.5	
HZB12-150FA	417	366	323	290	264	242	222	179	129	103	75.2	59.9	50.9	44.0	39.0	34.8	29.1	24.9	15.7	13.2	
HZB12-180FA	439	380	340	306	279	256	237	196	151	127	96.8	77.9	64.5	54.9	47.9	42.2	34.8	29.4	18.4	15.5	

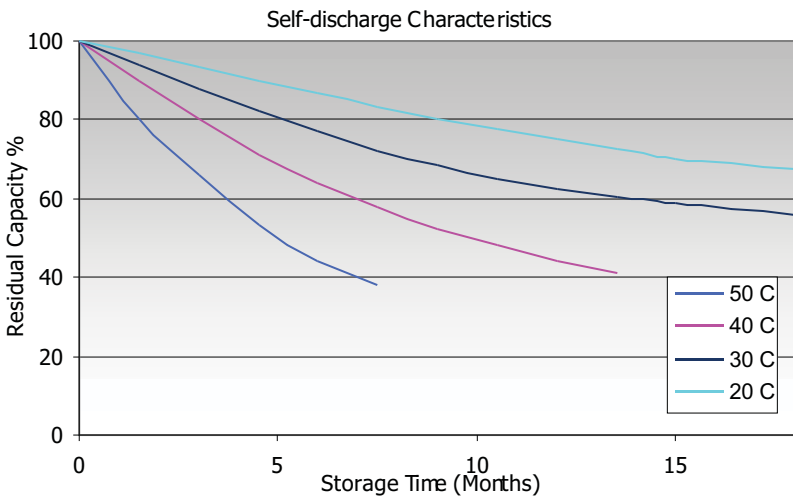
End of Discharge Voltage = 1.80											DISCHARGE IN WATTS PER CELL							20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	89.2	74.0	63.9	56.4	50.2	45.9	42.1	34.2	25.4	20.4	14.6	11.4	9.4	7.99	7.00	6.23	5.17	4.40	2.82	2.39	
HZB12-40FA	117	96.7	83.5	73.7	65.6	59.9	55.0	44.3	32.6	26.0	18.6	14.6	12.1	10.4	9.2	8.18	6.82	5.86	3.76	3.18	
HZB12-55FA	182	157	137	122	109	98.7	90.2	71.6	51.8	41.2	29.5	23.2	19.2	16.4	14.4	12.7	10.5	8.88	5.59	4.72	
HZB12-80FA	260	225	198	177	160	147	136	109	79.0	62.0	44.1	34.5	28.4	24.3	21.2	18.7	15.5	13.2	8.45	7.17	
HZB12-95FA	301	262	229	201	179	162	148	120	90.7	73.3	53.6	43.0	36.0	31.0	27.4	24.4	20.3	17.3	11.0	9.34	
HZB12-95FA-2	274	241	213	189	170	157	143	115	85.3	68.5	49.9	39.7	32.8	28.3	25.0	22.3	18.5	15.8	10.0	8.52	
HZB12-100FA	330	286	251	224	203	185	169	134	94.9	76.0	54.4	43.1	36.0	31.2	27.5	24.5	20.6	17.5	11.2	9.51	
HZB12-125FA	396	345	298	264	239	221	205	170	128	104	76.8	61.1	53.2	42.8	39.5	35.1	29.2	25.0	16.1	13.8	
HZB12-150FA	460	393	343	307	277	253	232	185	134	107	77.9	62.5	52.7	45.7	40.3	36.0	30.1	25.8	16.4	13.8	
HZB12-180FA	474	410	363	327	298	274	254	210	161	136	103	83.2	68.9	58.7	51.1	45.1	37.2	31.5	19.6	16.5	

End of Discharge Voltage = 1.75											DISCHARGE IN WATTS PER CELL							20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	94.9	78.8	68.0	60.0	53.4	48.8	44.8	36.4	27.0	21.8	15.6	12.1	10.0	8.50	7.45	6.63	5.50	4.68	3.00	2.54	
HZB12-40FA	124	103	88.9	78.4	69.8	63.8	58.6	47.1	34.7	27.7	19.8	15.5	12.8	11.0	9.8	8.71	7.26	6.23	4.00	3.39	
HZB12-55FA	188	160	139	124	110	100	91.1	72.4	52.3	41.6	29.7	23.4	19.3	16.5	14.4	12.8	10.5	8.95	5.64	4.76	
HZB12-80FA	271	232	203	182	164	150	138	111	80.0	62.8	44.5	34.9	28.7	24.4	21.3	18.9	15.6	13.3	8.49	7.21	
HZB12-95FA	316	271	235	207	183	166	151	122	92.1	74.5	54.5	43.5	36.4	31.5	27.8	24.8	20.6	17.6	11.2	9.50	
HZB12-95FA-2	287	250	220	196	175	160	147	117	86.6	69.7	51.0	40.2	33.2	28.8	25.3	22.6	18.8	16.0	10.2	8.67	
HZB12-100FA	343	295	257	230	207	188	172	136	96.8	77.3	55.2	43.8	36.4	31.5	27.9	24.9	20.7	17.6	11.4	9.63	
HZB12-125FA	423	359	309	274	247	227	209	173	130	105	77.5	61.8	53.7	43.4	40.1	35.6	29.6	25.3	16.3	13.9	
HZB12-150FA	478	404	353	313	283	258	237	189	137	109	79.3	63.2	53.4	46.2	40.8	36.4	30.4	26.0	16.5	13.9	
HZB12-180FA	499	431	386	348	317	291	270	223	171	145	110	88.5	73.3	62.4	54.4	48.0	39.6	33.5	20.9	17.6	

End of Discharge Voltage = 1.70											DISCHARGE IN WATTS PER CELL							20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	97.0	80.5	69.5	61.3	54.6	49.9	45.8	37.2	27.6	22.2	15.9	12.4	10.2	8.69	7.61	6.78	5.62	4.78	3.07	2.60	
HZB12-40FA	127	105	90.8	80.1	71.3	65.2	59.8	48.2	35.4	28.3	20.3	15.8	13.1	11.3	10.0	8.90	7.42	6.37	4.09	3.46	
HZB12-55FA	192	162	141	125	111	101	91.9	73.1	52.8	41.9	29.9	23.5	19.5	16.6	14.5	12.8	10.6	9.01	5.68	4.79	
HZB12-80FA	278	236	206	184	166	151	139	112	80.7	63.4	44.8	35.1	28.9	24.6	21.5	19.0	15.7	13.4	8.55	7.28	
HZB12-95FA	327	279	240	211	186	168	153	124	93.2	75.3	55.1	44.0	36.8	31.8	28.1	25.0	20.7	17.7	11.3	9.57	
HZB12-95FA-2	298	258	226	200	180	163	149	119	87.6	70.8	51.3	40.5	33.6	29.1	25.6	22.8	18.9	16.2	10.3	8.74	
HZB12-100FA	352	301	262	233	209	190	173	137	97.6	77.9	55.7	44.2	36.9	31.8	28.1	25.1	20.9	17.7	11.4	9.67	
HZB12-125FA	435	365	314	277	250	228	211	175	131	106	78.1	62.3	54.1	43.6	40.4	35.8	29.8	25.5	16.4	13.9	
HZB12-150FA	492	415	360	320	288	262	240	191	138	110	80.0	63.7	53.9	46.6	41.1	36.8	30.6	26.2	16.6	14.0	
HZB12-180FA	510	441	395	356	324	298	276	228	175	148	112	90.5	75.0	63.8	55.6	49.1	40.4	34.2	21.3	18.0	

End of Discharge Voltage = 1.65										DISCHARGE IN WATTS PER CELL								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	98.2	81.5	70.4	62.1	55.3	50.5	46.4	37.6	27.9	22.5	16.1	12.5	-	-	-	-	-	-	-	-	
HZB12-40FA	128	107	92.0	81.1	72.2	66.0	60.6	48.8	35.9	28.7	20.5	16.0	-	-	-	-	-	-	-	-	
HZB12-55FA	196	165	143	126	112	102	92.8	73.6	53.1	42.1	30.0	23.6	-	-	-	-	-	-	-	-	
HZB12-80FA	284	240	209	186	167	153	140	113	81.4	63.8	45.2	35.3	-	-	-	-	-	-	-	-	
HZB12-95FA	334	283	243	212	188	170	154	125	93.8	75.8	55.4	44.4	-	-	-	-	-	-	-	-	
HZB12-95FA-2	307	263	231	202	182	165	150	120	88.2	71.3	51.6	41.0	-	-	-	-	-	-	-	-	
HZB12-100FA	360	305	265	235	210	192	174	138	98.4	78.4	56.0	44.5	-	-	-	-	-	-	-	-	
HZB12-125FA	443	368	316	279	251	230	213	176	131	106	78.1	62.6	-	-	-	-	-	-	-	-	
HZB12-150FA	502	421	365	323	290	265	242	193	139	111	80.6	64.2	-	-	-	-	-	-	-	-	
HZB12-180FA	516	447	400	360	328	302	279	231	177	150	114	91.6	-	-	-	-	-	-	-	-	

End of Discharge Voltage = 1.60										DISCHARGE IN WATTS PER CELL								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr	
HZB12-30FA	99.2	82.3	71.1	62.7	55.8	51.0	46.8	38.0	28.2	22.7	16.3	12.6	-	-	-	-	-	-	-	-	
HZB12-40FA	130	108	92.9	81.9	72.9	66.6	61.2	49.3	36.2	28.9	20.7	16.2	-	-	-	-	-	-	-	-	
HZB12-55FA	200	167	144	127	113	103	93.5	74.0	53.3	42.3	30.2	23.7	-	-	-	-	-	-	-	-	
HZB12-80FA	289	242	210	187	169	154	141	114	81.8	64.0	45.4	35.5	-	-	-	-	-	-	-	-	
HZB12-95FA	340	288	246	215	190	171	156	126	94.4	76.3	55.7	44.7	-	-	-	-	-	-	-	-	
HZB12-95FA-2	312	268	234	204	184	166	151	121	88.8	71.7	51.9	41.2	-	-	-	-	-	-	-	-	
HZB12-100FA	367	309	267	237	212	193	176	139	99.0	79.0	56.3	44.7	-	-	-	-	-	-	-	-	
HZB12-125FA	448	369	317	280	252	232	214	177	132	106	78.5	63.0	-	-	-	-	-	-	-	-	
HZB12-150FA	511	426	369	326	292	267	244	194	140	112	81.3	64.6	-	-	-	-	-	-	-	-	
HZB12-180FA	521	451	403	364	331	305	282	233	179	151	115	92.5	-	-	-	-	-	-	-	-	



### 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

End of Discharge Voltage = 1.85									DISCHARGE CAPACITY Ah								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	13.1	14.5	15.7	16.4	16.9	17.3	17.7	18.5	19.8	20.8	22.7	24.1	25.0	25.8	26.4	26.9	27.4	28.0	29.3	30.0
HZB12-40FA	17.1	19.0	20.5	21.5	22.1	22.6	23.1	23.9	25.3	26.6	28.8	30.7	31.9	33.3	34.4	35.4	36.6	37.4	39.1	39.9
HZB12-55FA	23.3	27.0	29.4	31.2	32.6	33.5	34.3	36.3	39.5	42.0	45.3	47.2	48.4	49.3	50.2	50.9	52.3	53.4	56.3	57.2
HZB12-80FA	35.0	40.1	43.7	46.8	49.1	51.0	52.5	56.0	60.5	63.6	67.8	70.6	73.1	75.0	76.8	78.2	80.1	81.8	86.9	88.2
HZB12-95FA	40.5	46.3	49.8	52.4	54.3	56.0	57.5	61.6	68.2	72.8	80.2	86.0	90.8	94.4	96.9	98.7	101	104	110	112
HZB12-95FA-2	38.9	44.5	47.8	50.3	52.2	53.8	55.3	58.6	63.2	67.1	73.4	78.3	82.0	85.0	86.9	88.4	90.2	91.5	96.9	99
HZB12-100FA	42.8	48.6	52.6	55.1	57.1	58.6	60.1	63.7	69.7	75.3	83.8	89.0	92.8	95.0	97.0	98.5	101	103	111	113
HZB12-125FA	47.7	54.5	59.8	64.3	67.2	69.8	72.2	78.3	87.9	95.4	107	116	124	130	135	139	145	150	160	162
HZB12-150FA	57.3	66.8	73.9	79.7	84.7	88.1	91.8	99.0	107	113	123	129	135	140	144	147	152	154	158	159
HZB12-180FA	63.6	77.1	88.2	96.3	103	109	112	120	131	139	151	159	165	170	174	178	184	188	194	196

End of Discharge Voltage = 1.80									DISCHARGE CAPACITY Ah								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	14.0	15.5	16.8	17.5	18.1	18.5	18.9	19.7	21.2	22.2	24.2	25.7	26.7	27.5	28.2	28.7	29.3	30.0	31.3	32.0
HZB12-40FA	18.3	20.3	21.9	22.9	23.6	24.2	24.6	25.6	27.1	28.4	30.8	32.8	34.1	35.6	36.8	37.8	39.1	39.9	41.8	42.7
HZB12-55FA	24.4	28.0	30.4	32.1	33.4	34.4	35.3	37.2	40.4	42.8	46.2	47.9	49.1	50.2	51.0	51.8	53.2	54.2	57.1	58.0
HZB12-80FA	38.1	42.9	46.3	49.1	51.0	52.7	54.1	57.6	61.9	64.9	69.0	71.8	74.3	76.3	77.9	79.1	80.9	82.7	87.8	89.0
HZB12-95FA	43.4	48.7	51.8	54.2	56.1	57.8	59.3	63.4	70.0	74.5	81.6	87.4	92.3	96.0	98.6	101	103	105	112	114
HZB12-95FA-2	40.7	46.1	49.4	51.9	53.9	55.5	56.9	60.3	64.5	68.6	75.1	79.5	83.6	86.5	88.8	90.4	92.1	93.7	99	102
HZB12-100FA	46.2	51.3	54.8	57.3	59.4	61.0	62.5	66.1	71.9	77.5	85.8	91.5	95.2	97.4	99.1	101	103	105	113	115
HZB12-125FA	55.1	62.1	67.5	71.8	75.8	78.4	80.7	86.6	95.6	103	113	122	129	135	139	143	150	154	163	166
HZB12-150FA	66.1	75.3	81.4	86.9	91.3	94.3	97.7	104	111	117	127	134	139	144	149	152	156	158	164	165
HZB12-180FA	67.9	82.3	94.3	102.9	110	116	120	128	140	149	162	170	176	181	186	190	197	200	207	210

End of Discharge Voltage = 1.75									DISCHARGE CAPACITY Ah								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	14.9	16.5	17.8	18.7	19.2	19.7	20.1	21.0	22.5	23.6	25.5	26.8	27.8	28.7	29.4	29.9	30.5	31.2	32.7	33.4
HZB12-40FA	19.5	21.6	23.3	24.4	25.1	25.7	26.2	27.2	28.8	30.2	32.4	34.2	35.6	37.1	38.3	39.4	40.7	41.7	43.6	44.5
HZB12-55FA	25.0	28.6	30.8	32.5	34.0	35.0	35.7	37.7	40.9	43.5	46.6	48.4	49.6	50.6	51.5	52.4	53.7	54.9	58.1	59.0
HZB12-80FA	39.8	44.4	47.6	50.2	52.2	53.8	55.2	58.4	62.6	65.5	69.7	72.6	75.0	77.0	78.6	79.9	81.8	83.5	88.6	90.2
HZB12-95FA	45.1	49.9	52.9	55.4	57.2	58.7	60.1	64.3	70.7	75.2	82.5	88.2	93.1	96.9	100	102	104	106	113	115
HZB12-95FA-2	42.3	47.5	50.6	52.9	54.8	56.4	57.7	61.0	65.5	69.4	76.0	80.5	84.5	87.6	89.7	91.4	93.1	94.9	101	103
HZB12-100FA	47.9	52.7	56.1	58.6	60.7	62.3	63.7	67.2	73.3	78.7	86.9	92.6	96.2	98.5	101	102	105	107	114	117
HZB12-125FA	59.8	67.0	72.3	76.4	80.1	83.5	85.7	90.5	99.1	106	116	124	131	137	141	145	152	156	165	168
HZB12-150FA	68.6	77.7	83.7	89.3	93.8	96.6	100	106	112	118	129	136	142	147	151	154	158	161	166	167
HZB12-180FA	72.3	87.6	100.3	109	117	123	128	136	149	158	172	181	187	193	198	202	209	213	220	223

End of Discharge Voltage = 1.70									DISCHARGE CAPACITY Ah								20 - 25 °C			
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	15.2	16.9	18.2	19.1	19.7	20.1	20.5	21.5	23.0	24.1	26.3	28.0	29.0	29.9	30.6	31.2	31.8	32.6	34.1	34.8
HZB12-40FA	19.9	22.0	23.8	24.9	25.7	26.3	26.8	27.8	29.4	30.9	33.4	35.6	37.1	38.7	40.0	41.1	42.5	43.4	45.4	46.4
HZB12-55FA	25.6	29.0	31.3	32.9	34.4	35.3	36.1	37.9	41.4	44.0	47.1	48.7	49.9	51.0	51.9	52.8	54.0	55.2	58.5	59.4
HZB12-80FA	41.1	45.5	48.3	50.8	52.6	54.4	55.8	58.9	62.9	65.8	70.1	73.1	75.4	77.5	79.0	80.2	82.2	83.9	89.1	90.9
HZB12-95FA	46.3	50.8	53.8	56.2	57.9	59.5	60.8	64.9	71.4	75.9	83.2	88.9	93.8	97.6	100	102	105	107	114	116
HZB12-95FA-2	43.5	48.3	51.4	53.7	55.4	56.9	58.3	61.5	66.2	70.0	76.7	81.2	85.4	88.6	90.9	92.5	94.3	96.0	102	104
HZB12-100FA	48.9	53.8	57.1	59.4	61.6	63.2	64.5	68.0	74.0	79.4	87.7	93.4	97.0	99.1	101	103	106	108	115	117
HZB12-125FA	62.3	69.4	74.7	78.7	82.3	85.6	88.1	93.3	101	108	119	127	132	138	143	147	153	157	166	169
HZB12-150FA	70.6	80.1	85.5	91.0	95.0	98.4	101	107	114	120	130	137	143	148	152	155	160	163	168	169
HZB12-180FA	73.4	88.9	101.8	111	119	125	130	138	151	161	175	183	190	196	201	205	213	216	223	226

End of Discharge Voltage = 1.65										DISCHARGE CAPACITY Ah								20 - 25 °C		
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	15.4	17.1	18.5	19.3	19.9	20.4	20.8	21.7	23.3	24.5	26.7	28.3	-	-	-	-	-	-	-	-
HZB12-40FA	20.2	22.3	24.1	25.2	26.0	26.6	27.1	28.2	29.8	31.3	33.9	36.1	-	-	-	-	-	-	-	-
HZB12-55FA	26.2	29.4	31.6	33.3	34.8	35.7	36.5	38.2	41.8	44.3	47.4	49.0	-	-	-	-	-	-	-	-
HZB12-80FA	41.9	46.3	48.9	51.2	53.2	54.8	56.3	59.2	63.4	66.3	70.4	73.4	-	-	-	-	-	-	-	-
HZB12-95FA	47.4	51.6	54.3	56.8	58.4	60.0	61.3	65.5	71.7	76.5	83.7	89.4	-	-	-	-	-	-	-	-
HZB12-95FA-2	44.5	49.0	52.0	54.3	55.9	57.4	58.7	62.0	66.7	70.5	77.2	82.0	-	-	-	-	-	-	-	-
HZB12-100FA	49.9	54.6	57.8	60.2	62.3	63.8	65.1	68.8	74.7	80.2	88.5	94.2	-	-	-	-	-	-	-	-
HZB12-125FA	63.4	70.5	75.6	79.6	83.2	86.4	89.3	95.0	103	109	120	128	-	-	-	-	-	-	-	-
HZB12-150FA	72.0	80.8	86.8	92.3	95.9	99.1	102	108	115	121	131	138	-	-	-	-	-	-	-	-
HZB12-180FA	74.6	90.4	103.5	113	121	127	132	140	153	163	177	186	-	-	-	-	-	-	-	-

End of Discharge Voltage = 1.60										DISCHARGE CAPACITY Ah								20 - 25 °C		
Model	15'	20'	25'	30'	35'	40'	45'	1 hr	90'	2 hr	3 hr	4 hr	5 hr	6 hr	7 hr	8 hr	10 hr	12 hr	20 hr	24 hr
HZB12-30FA	15.6	17.2	18.6	19.5	20.1	20.6	21.0	21.9	23.5	24.7	26.9	28.6	-	-	-	-	-	-	-	-
HZB12-40FA	20.4	22.5	24.4	25.5	26.3	26.9	27.4	28.4	30.1	31.6	34.2	36.4	-	-	-	-	-	-	-	-
HZB12-55FA	26.8	29.9	32.0	33.6	35.1	36.0	36.8	38.5	42.0	44.6	47.6	49.3	-	-	-	-	-	-	-	-
HZB12-80FA	42.9	47.0	49.6	51.7	53.7	55.1	56.6	59.6	63.8	66.6	70.7	73.8	-	-	-	-	-	-	-	-
HZB12-95FA	48.2	52.3	55.0	57.2	58.9	60.4	61.7	65.9	72.1	76.9	84.2	89.9	-	-	-	-	-	-	-	-
HZB12-95FA-2	45.2	49.7	52.6	54.9	56.6	58.0	59.3	62.3	67.1	70.9	77.6	82.4	-	-	-	-	-	-	-	-
HZB12-100FA	51.1	55.4	58.5	60.9	62.9	64.3	65.8	69.5	75.4	80.8	89.3	95.0	-	-	-	-	-	-	-	-
HZB12-125FA	64.3	71.1	76.2	80.2	83.7	86.9	89.8	96.0	104	110	121	129	-	-	-	-	-	-	-	-
HZB12-150FA	73.8	82.2	88.2	93.1	97.0	99.8	103	109	116	122	132	138	-	-	-	-	-	-	-	-
HZB12-180FA	75.2	91.1	104.3	114	122	128	133	142	154	164	179	188	-	-	-	-	-	-	-	-

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

**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).



**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.

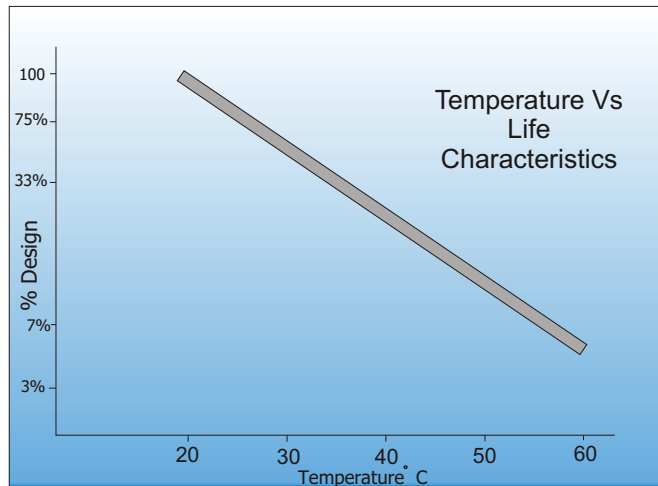


Capacity temperature correction Factor to be applied to Data at 20 Degrees C												
Discharge Time	-30 °C	-20 °C	-10 °C	0 °C	5 °C	10 °C	15 °C	20-25 °C	30 °C	35 °C	40 °C	50 °C
5 minutes to 59 minutes	24%	36%	45%	68%	77%	83%	92%	100%	105%	107%	108%	110%
1 Hour to 100 Hours	28%	41%	58%	73%	79%	86%	94%	100%	104%	106%	107%	108%



Battery Model	Qty Per Box	Dimensions (mm) & approx weight (kg)				Dimensions (Inches) & approx weight (Lbs)				Terminal Layout	Internal Resistance mOhms	Maximum Charge Current
		Length	Width	Height	Weight	Length	Width	Height	Weight			
HZB12-30FA	1	225	99	225	10.0	8.86	3.90	8.86	22.1	M5	5	7.5
HZB12-40FA	1	225	99	225	13.1	8.86	3.90	8.86	29.0	M5	5	10
HZB12-55FA	1	277	105	223	18.4	10.91	4.13	8.78	40.7	M6	4.3	15
HZB12-80FA	1	563	114	182	26.0	22.17	4.49	7.17	57.5	M6	3.6	20
HZB12-95FA	1	507	109	227	30.0	19.96	4.29	8.94	66.3	M6	4.1	25
HZB12-95FA-2	1	396	105	258	27.4	15.59	4.13	10.16	60.6	M6	3.8	25
HZB12-100FA	1	395	110	285	32.6	15.55	4.33	11.22	72.0	M6	3.6	30
HZB12-125FA	1	417	172	240	45.3	16.42	6.77	9.45	100.1	M6	2.9	35
HZB12-150FA	1	550	109	288	48.3	21.65	4.29	11.34	106.7	M6	3.1	40
HZB12-180FA	1	560	125	320	58.5	22.05	4.92	12.60	129.3	M8	2.9	45

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



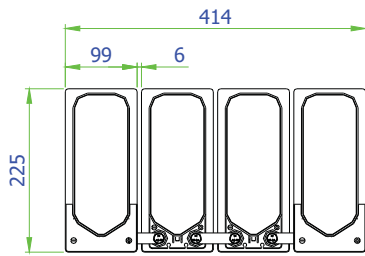
Temperature	Shelf Life
0 °C - 20 °C (32 °F - 68 °F)	12 Months
21 °C - 30 °C (69 °F - 86 °F)	9 Months
31 °C - 40 °C (87 °F - 104 °F)	5 Months
41 °C - 50 °C (105 °F - 1122 °F)	2.5 Months

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

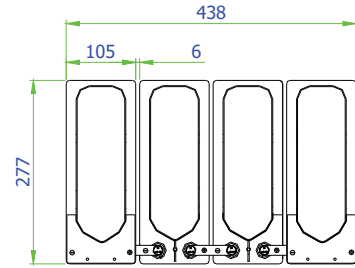
### CHARGING CHARACTERISTICS

**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.

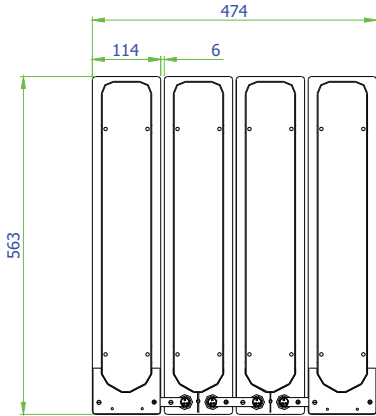
The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of  $C_{20}/4$ .



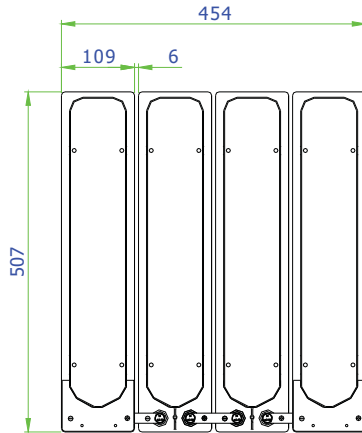
12-30&40 Front Access  
Battery Height: 225mm



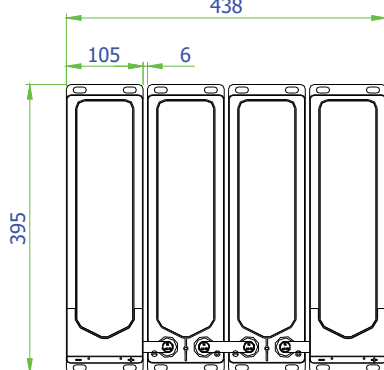
12-50&55 Front Access  
Battery Height: 223mm



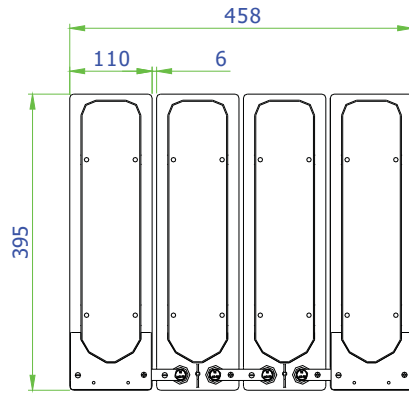
12-70&80 Front Access  
Battery Height: 182mm



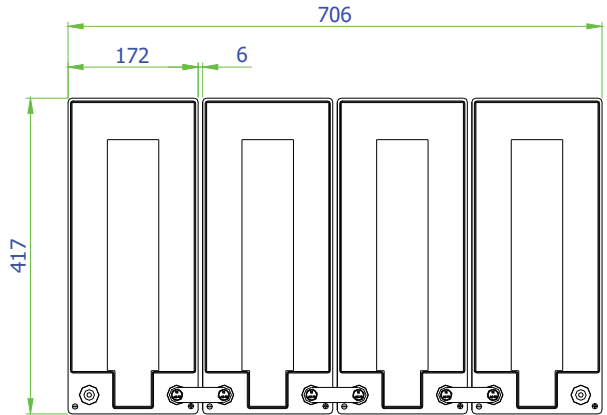
12-90&95 Front Access  
Battery Height: 227mm



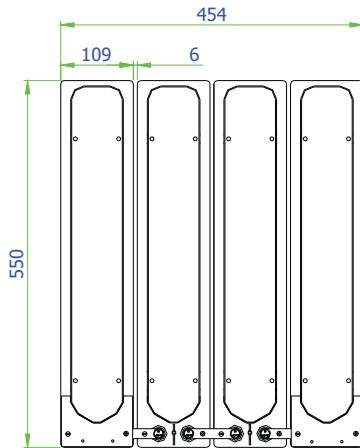
12-95-2 Front Access  
Battery Height: 257mm



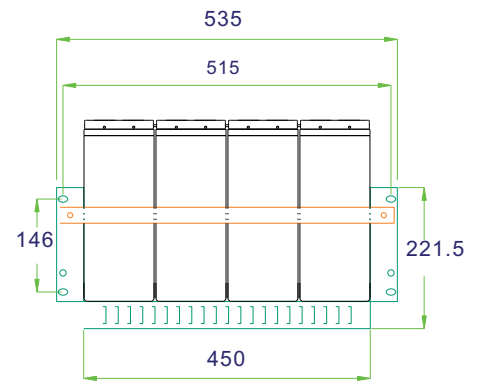
12-100 Front Access  
Battery Height: 285mm



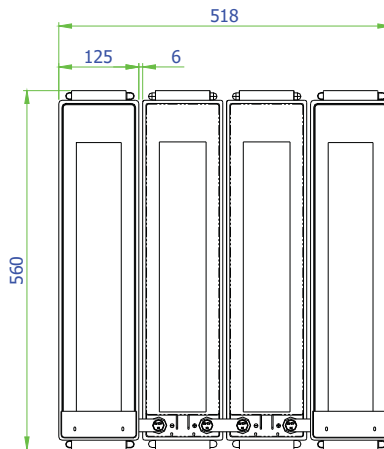
12-125 Front Access  
Battery Height: 240mm



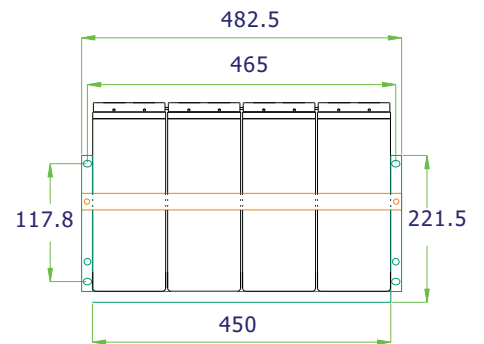
12-150 Front Access  
Battery Height: 285mm



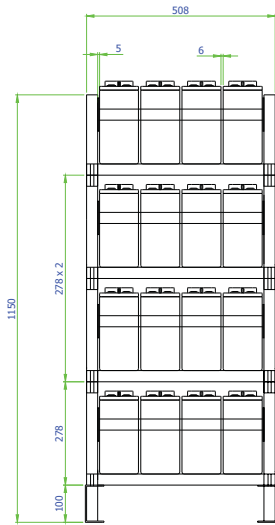
300mm Deep ETSI tray



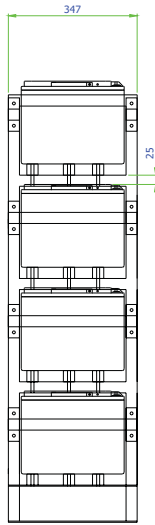
12-170&180 Front Access  
Battery Height: 320mm



300mm deep 19 inch tray

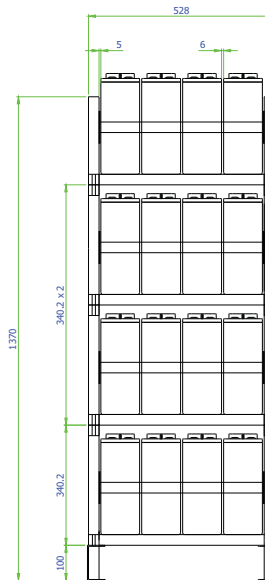


Front View

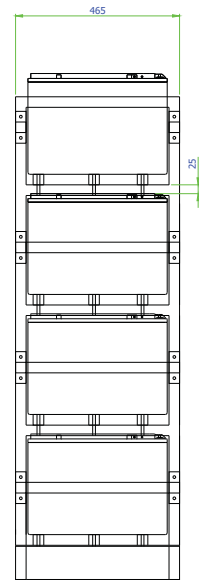


Side View

16 x 12V50FA&55FA Rack

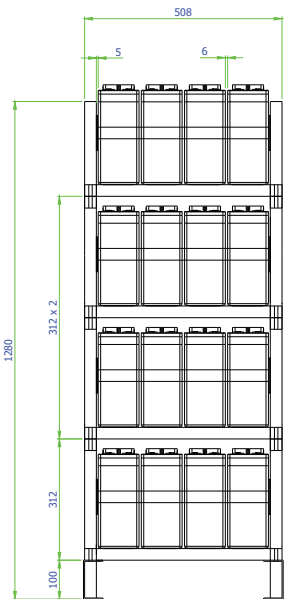


Front View

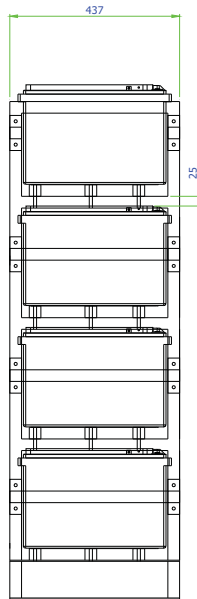


Side View

16 x 12V100FA Rack

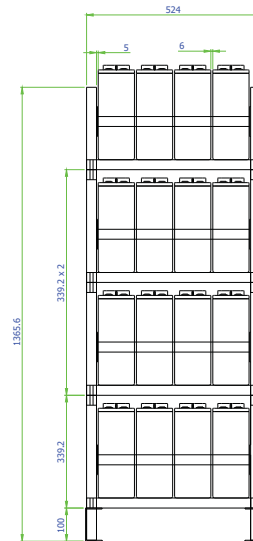


Front View

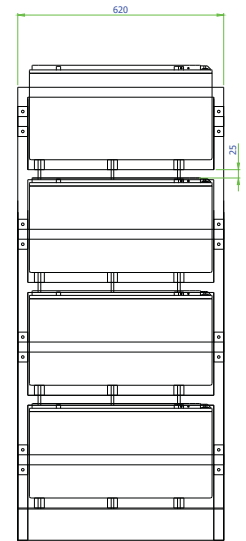


Side View

16 x 12V95FA-2 Rack

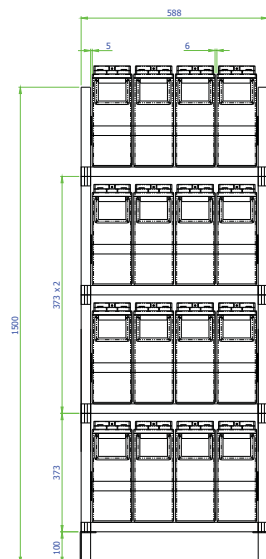


Front View

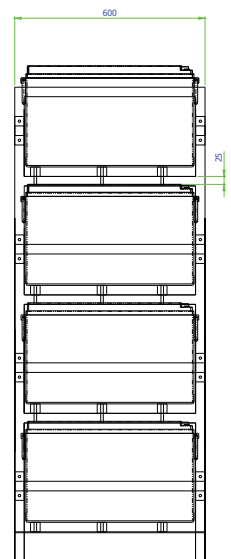


Side View

16 x 12V150FA Rack



Front View



Side View

16 x 12V170FA&180FA Rack

As can be seen from the rack diagrams, the Haze Front Access range are compatible with ETSI and standard 19" and 23" rack configurations, only the HZB/HZY 12 70FA can not be used in the standard ETSI and 19" formats. 300mm or 600mm deep trays can be utilised.

Other racking configurations can be tailored to meet the customers needs for a new installation or indeed to replace an existing arrangement utilising the same footprint.

The Front Access design allows racking clearances to be reduced whilst still allowing easy access for intercell connection and terminal inspection, all resulting in time and cost savings.

With reduced space requirements the designer has the option of smaller cabinets or more power from the same footprint.



## Haze Battery Company Ltd

### 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  
OPzV  
OPzS

Website: [www.hazebattery.com](http://www.hazebattery.com)  
E mail [sales@hazebattery.com](mailto:sales@hazebattery.com)

180811



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