EverExceed®

power your applications

Ni-Cd Pocket Plate Range

EBM Range

Capacity: 10 Ah to 1000 Ah

The block battery – for dependability

The wide range of low, medium and high capacity types makes accurate selection easy, based on discharge time and end of discharge voltage. Robust construction and generous electrolyte reserve enable the battery to withstand wide temperature fluctuations in stationary cycling behaviour over its 20+ years' life.

Built with a future Nickel-cadmium plates are completely reliable, with no risk of thermal runaway or sudden death. Generally operating between temperatures of -20˚C to +60˚C(-4˚F to +140˚F), they can tolerate extremes of -50˚C to +70˚C (-58˚F to +158˚F) for short periods.

With only periodic checks, the block battery will provide up to 20+ years' completely faithful service.

Trouble-free long cycle life

The EverExceed nickel-cadmium block battery's unique electrochemistry enables it to regularly withstand any depth of discharge.

Following a deep discharge the block battery is designed to recharge very quickly and economically, using standard single or two-level charging equipment.

Be sure of a low overall cost

The Ni-Cd block battery is the most highly cost-efficient solution to stored power requirements.

- No downtime
- No replacement costs
- Minimal maintenance
- Ease of installation
- 20+ years' operating life.

Easy storage and installation

Nickel-cadmium block batteries are quick and easy to install as original equipment and may be stored for many years in a discharged state under correct conditions.

On installation a simple bolted connector enables the battery to be rapidly commissioned.

Assured reliability

Ni-Cd is equally dependable in controlled city environments or harsh, unpredictable conditions in the world's most remote and unpopulated areas.

The Ni-Cd battery's block construction makes it highly resistant to electrical abuse and transport over rough terrain, precluding risk of subsequent failure.

Optimized for performance:

An electrolyte solution of potassium hydroxide and a small amount of lithium hydroxide acts only as an ion transfer medium, delivering optimum performance without causing base material degradation.

Good reserves and circulation of the electrolyte are achieved by a wide inter-plate space. Injection moulded plastic grids both separate plate and insulate plate edges. For extremely low temperatures a special high density electrolyte is available.

The block battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapours. The tough polypropylene casing ensures the battery's structural integrity throughout its long life.

EverExceed supports these Single Cell ranges with:

- quality approved manufacture to ISO 9001 and the TUV certification
- Single Cell batteries have been developed in line with the safety requirements of EN-50272-2 and components used (such as insulated cable connectors and end lug covers) are defined to ensure high protection against electric shocks (Ip2 level).
- full recycling service to protect the environment

Protective cover
- to prevent external short-circuits
- in line with EN 50272-2 (safety) with IP2 level

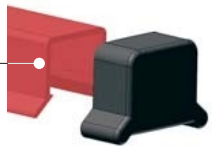
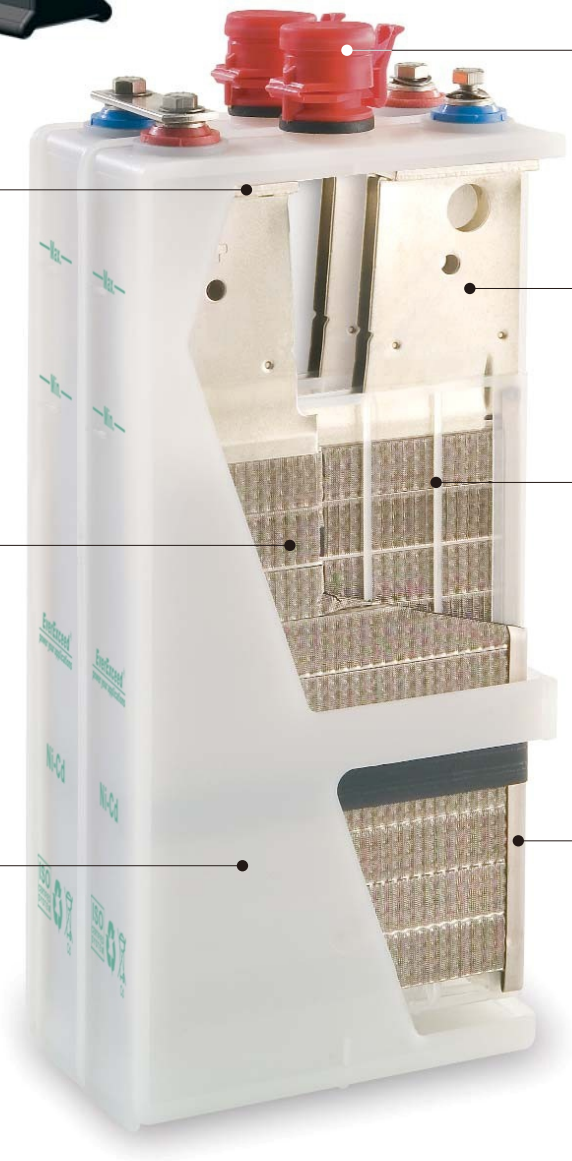


Plate group bus
Connects the plate tabs with the terminal post. Plate tabs and terminal post are projection- welded to the plate group bus.



Flame-arresting vents
Material: polypropylene.

Plate tab
Spot-welded both to the plate side-frames and to the upper edge of the pocket plate.

Separating grids
These separate the plates and insulate the plate frames from each other. The grids allow free circulation of electrolyte between the plates.

Plate
Horizontal pockets of double- perforated steel strips.

Plate frame
Seals the plate pockets and serves as a current collector.

Cell container
Material: translucent polypropylene.

The cells are welded together to form rugged blocks of 1 - 6 cells depending on the cell size and type.

The EverExceed Single Cell ranges fully comply and exceed the IEC 60623 standard requirements.

Performance Data

Many nickel-cadmium batteries are used in stationary standby power applications where discharges occur infrequently and the battery is continuously charged by a float or constant potential charge.

Under these circumstances there is a modification in the level of the discharge curve and allowances must be made for this when sizing the battery.

In order to simplify this process, the data EverExceed supplies in this publication has both the fully charged data to IEC 60623 and the fully charged data after prolonged float charge, which can be used directly in battery sizing calculations.

This phenomenon occurs with all nickel-cadmium batteries, but some other manufacturers of nickel- cadmium batteries may not take this effect into account in published data.

When calculating for deep discharges (0.65 V and 0.85 V) it is not necessary to take this effect into account.

Battery Charging

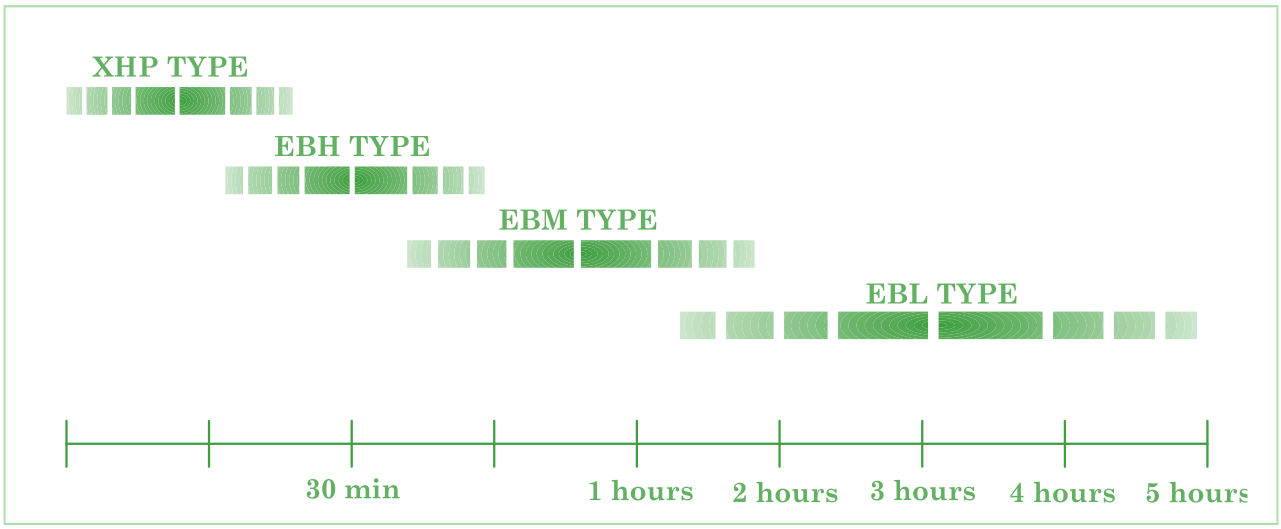
It is recommended to use Constant Voltage method of charging for Nickel Cadmium Batteries, usually with current limitation to C/5 or C/10. Charging voltages must be regularly checked. To optimize the battery performance, it is necessary to ensure that the voltage is kept within the following limits:

Recommended Charging Voltage Per Cell

Cell Type	IEC Type	Floating Charge	Equalizing Charge
XHP	KXP	1.38～1.40	1.46～1.49
EBH	KHP	1.42～1.45	1.55～1.60
EBM	KMP	1.42～1.45	1.55～1.60
EBL	KLP	1.48～1.50	1.55～1.60

Recommended Type Selection

According to backup time required by application:



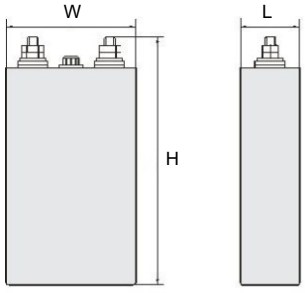
Initial Charging

The whole charge should preferably be carried out at constant current. The charging time is inversely proportional to the current which is set by the current limit of the charging equipment.
Recommended rates for the first charging:
0.2 C5A for 10 hours
0.1 C5A for 20 hours

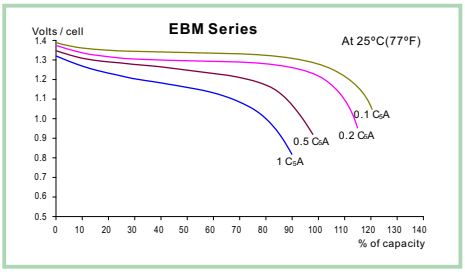
Capacity and dimensions

Cell Type	Capacity (C5 Ah)	Dimensions						Weight				Terminal	Cell Case Material
		Length		Width		Height		Without Electrolyte		With Electrolyte			
		mm	in	mm	in	mm	in	kg	lb.	kg	lb.		
EBM10	10	48	1.9	81	3.2	245	9.6	1.2	3.3	1.5	4	M10 X1	MBS
EBM20	20	68	2.7	134	5.3	245	9.6	1.7	3.7	2.5	5.5	M10 X1	MBS/PP
EBM30	30	68	2.7	134	5.3	245	9.6	2.3	5.1	3.0	6.6	M10 X1	MBS/PP
EBM40	40	70	2.8	134	5.3	285	11.2	3.0	6.6	4.0	8.8	M16	MBS/PP
EBM48	48	70	2.8	134	5.3	285	11.2	3.4	7.5	4.2	9.1	M16	MBS/PP
EBM50	50	70	2.8	134	5.3	285	11.2	3.2	7.1	4.2	9.3	M16	MBS/PP
EBM60	60	80	3.1	141	5.6	370	14.6	4.2	9.3	6.0	13.2	M16	MBS/PP
EBM70	70	80	3.1	141	5.6	370	14.6	4.9	10.8	6.4	14.1	M16	MBS/PP
EBM80	80	80	3.1	141	5.6	370	14.6	5.2	11.5	6.6	14.6	M16	MBS/PP
EBM85	85	80	3.1	141	5.6	370	14.6	5.0	11.0	6.6	14.6	M16	MBS/PP
EBM95	95	106	4.2	164	6.5	345	13.6	6.0	13.2	9.0	19.8	M20	MBS/PP
EBM100	100	106	4.2	164	6.5	345	13.6	6.9	15.2	9.0	19.8	M20	MBS/PP
EBM120	120	106	4.2	164	6.5	345	13.6	7.3	16.1	9.5	20.9	M20	MBS/PP
EBM150	150	164	6.5	167	6.6	345	13.6	9.3	20.5	13.0	28.7	M20	MBS/PP
EBM160	160	164	6.5	167	6.6	345	13.6	9.5	20.9	12.5	27.6	M20	MBS/PP
EBM200	200	164	6.5	167	6.6	345	13.6	13.5	29.8	14.5	32.0	M20	MBS/PP
EBM250	250	138	5.4	276	10.9	450	17.7	15.5	34.2	22.0	48.5	M20	PP
EBM280	280	138	5.4	276	10.9	450	17.7	15.5	34.2	22.0	48.5	2×M16	PP
EBM300	300	162	6.4	200	7.9	450	17.7	18.4	40.6	23.0	50.7	2×M16	PP
EBM350	350	162	6.4	200	7.9	450	17.7	19.4	42.8	24.0	52.9	2×M16	PP
EBM380	380	138	5.4	278	10.9	490	19.3	21.0	46.3	27.0	59.5	2×M16	PP
EBM400	400	138	5.4	278	10.9	490	19.3	22.0	48.5	27.0	59.5	2×M16	PP
EBM500	500	176	6.9	291	11.5	510	20.1	28.0	61.7	40.0	88.2	2×M20	MBS
EBM600	600	176	6.9	291	11.5	510	20.1	31.0	68.3	42.0	92.6	2×M20	MBS
EBM700	700	186	7.3	398	15.7	570	22.4	42.0	92.6	58.0	128	3×M20	MBS
EBM800	800	186	7.3	398	15.7	570	22.4	44.0	97.0	60.0	132	3×M20	MBS
EBM830	830	186	7.3	398	15.7	570	22.4	44.0	97.0	60.0	132	3×M20	MBS
EBM900	900	186	7.3	398	15.7	570	22.4	46.0	101	64.0	141	3×M20	MBS
EBM1000	1000	186	7.3	398	15.7	570	22.4	50.0	110	65.0	143	3×M20	MBS

EverExceed EBM batteries fulfil all requirements specified by IEC publication 60623.



Discharging Curves



Data for stationary applications

Performance after prolonged float charge of fully charged cells

Available amperes at +20°C ±5°C(+68°F ±9°F)

Final voltage: 1.14 V/cell

Cell Type	C5 Ah	Discharge Time in Hours							Discharge Time in Minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBM10	10	1.1	1.3	2.0	3.0	4.2	5.2	6.1	6.2	8.5	9.9	11.0	12.6	15.0	21.1	23.5	27.1	27.9
EBM20	20	2.1	2.5	4.0	6.0	8.4	10.3	12.6	13.2	17.1	19.8	22.0	25.1	30.1	42.2	47.0	54.2	55.8
EBM30	30	3.2	3.8	5.9	9.0	12.7	15.5	19.1	18.5	25.8	29.7	33.0	37.7	45.1	63.3	70.5	81.4	83.9
EBM40	40	4.2	5.0	8.1	11.9	16.9	20.6	25.1	26.8	34.2	39.6	44.1	50.3	60.3	84.5	93.9	108	111
EBM48	48	5.2	6.1	9.8	14.8	20.6	25.5	31.1	33.1	42.3	48.9	54.5	62.1	74.5	104	116	134	137
EBM50	50	5.3	6.3	9.9	14.9	21.1	25.8	31.4	33.0	42.7	49.4	55.1	62.8	75.2	105	117	135	139
EBM60	60	6.4	7.6	11.8	18.0	25.5	30.9	37.7	39.1	50.3	59.3	66.1	75.7	90.2	128	141	163	168
EBM70	70	7.4	8.9	13.9	21.1	29.6	36.1	44.0	47.0	59.8	38.6	77.3	88.1	105	148	165	192	197
EBM80	80	8.4	10.7	17.2	27.2	25.3	41.2	47.4	50.9	55.2	64.9	72.5	82.0	95.7	132	151	175	191
EBM85	85	8.8	11.3	17.6	27.8	36.4	43.3	50.0	52.5	57.0	69.0	74.8	84.6	98.9	138	156	182	196
EBM95	95	10.1	13.0	20.3	32.0	41.9	48.4	57.5	60.5	63.9	77.3	86.1	94.8	114	159	179	210	225
EBM100	100	10.5	12.9	19.8	29.9	42.2	51.5	62.8	67.0	85.5	98.9	110	126	150	211	235	271	279
EBM120	120	12.6	15.1	23.7	36.1	50.7	61.8	75.4	77.3	103	119	133	150	181	253	282	325	336
EBM150	150	16.0	19.0	29.9	44.8	62.8	77.3	94.8	97.9	128	148	166	188	226	316	352	407	419
EBM160	160	16.6	20.8	33.5	52.5	68.7	81.5	93.9	98.9	111	131	145	159	185	264	296	346	386
EBM200	200	21.0	25.2	39.6	59.7	84.5	103	126	144	171	199	221	251	301	422	470	543	559
EBM250	250	26.3	31.5	49.4	74.7	105	129	158	163	213	247	276	314	376	527	587	678	700
EBM280	280	30.3	36.4	55.6	86.1	121	149	182	188	246	285	318	362	434	608	677	782	808
EBM300	300	31.5	38.1	59.3	89.6	126	155	190	195	255	297	331	378	451	633	705	814	839
EBM350	350	36.8	44.3	69.2	104	147	180	221	227	299	346	385	441	526	740	822	950	976
EBM380	380	40.2	49.5	77.4	116	165	202	248	253	334	387	431	493	589	827	919	1062	1092
EBM400	400	42.0	50.5	79.1	119	169	206	252	258	342	396	441	505	602	845	939	1084	1117
EBM500	500	52.5	63.1	98.9	149	210	258	315	319	426	494	551	628	752	1056	1174	1354	1396
EBM600	600	63.0	75.7	118	179	252	309	379	386	512	593	661	754	903	1267	1409	1625	1675
EBM700	700	73.5	88.4	138	209	295	361	442	448	597	692	773	880	1054	1478	1644	1896	1954
EBM800	800	84.0	101	159	239	337	412	505	515	683	791	882	1005	1204	1689	1879	2167	2233
EBM900	900	94.8	113	178	269	379	464	569	597	768	890	992	1131	1353	1900	2114	2438	2512
EBM1000	1000	105	127	198	299	421	515	628	683	854	989	1102	1257	1504	2112	2348	2709	2791

Data for stationary applications

Performance after prolonged float charge of fully charged cells

Available amperes at +20°C ±5°C(+68°F ±9°F)

Final voltage: 1.10 V/cell

Cell Type	C5 Ah	Discharge Time in Hours							Discharge Time in Minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBM10	10	1.1	1.3	2.0	3.1	4.5	5.7	7.3	9.2	10.0	11.7	12.9	14.8	17.8	25.4	26.8	32.7	36.1
EBM20	20	2.2	2.6	4.0	6.3	9.1	11.3	14.6	15.5	20.0	23.5	25.8	29.7	35.6	51.1	53.6	65.3	71.6
EBM30	30	3.2	3.8	6.0	9.5	13.6	17.0	21.9	23.0	30.0	35.2	38.6	44.5	53.6	76.3	80.3	97.9	107
EBM40	40	4.3	5.2	8.0	12.6	18.1	22.7	29.3	30.9	40.0	47.0	51.5	59.3	71.3	102	107	130	142
EBM48	48	5.3	6.4	9.7	15.5	22.4	28.0	36.2	38.2	49.4	56.7	63.7	73.3	88.1	123	129	160	176
EBM50	50	5.5	6.4	10.0	15.8	22.7	28.3	36.6	38.3	50.0	58.7	64.4	74.2	89.1	127	134	162	178
EBM60	60	6.5	7.6	11.9	19.1	27.3	34.0	43.9	46.4	59.9	70.5	77.3	89.0	107	152	161	195	214
EBM70	70	7.6	9.0	14.0	22.1	31.9	39.7	51.5	55.7	70.0	82.4	90.1	103	125	178	187	228	249
EBM80	80	8.7	10.2	16.0	25.2	36.3	45.3	58.7	63.9	79.9	93.9	103	118	142	203	214	260	285
EBM85	85	9.1	11.1	17.8	28.6	39.6	48.4	59.7	65.4	76.5	89.8	94.8	106	119	158	166	209	242
EBM95	95	10.2	12.8	20.1	33.0	44.3	55.7	67.0	75.3	88.1	103	109	122	138	181	191	241	279
EBM100	100	10.8	12.7	20.1	31.4	45.3	56.7	73.1	77.3	100	117	129	148	178	253	268	324	356
EBM120	120	13.0	15.2	24.0	37.7	54.6	68.0	87.8	92.7	119	141	155	177	213	305	321	389	427
EBM150	150	16.5	19.1	30.4	47.4	68.0	85.0	110	118	149	176	194	222	263	381	402	484	536
EBM160	160	18.1	20.9	33.4	52.1	74.7	93.4	121	130	164	194	213	244	289	419	441	532	588
EBM200	200	21.6	25.3	40.0	62.8	90.6	113	146	170	200	235	258	297	350	505	533	643	713
EBM250	250	27.3	31.9	50.0	78.8	113	142	183	192	249	294	321	366	438	631	664	809	876
EBM280	280	31.5	36.8	57.6	90.9	131	164	212	221	288	339	371	422	505	728	766	933	1010
EBM300	300	32.4	38.1	59.9	94.8	136	170	221	230	299	352	386	439	525	757	797	964	1069
EBM350	350	38.1	44.4	70.0	110	159	199	258	268	349	412	450	512	613	883	930	1125	1226
EBM380	380	42.6	49.6	78.3	123	177	222	288	299	390	461	503	572	685	987	1040	1258	1371
EBM400	400	43.3	51.0	79.9	126	181	227	293	306	400	470	515	585	700	1009	1063	1285	1401
EBM500	500	54.6	63.9	100	158	227	283	367	383	496	587	643	731	876	1262	1329	1607	1751
EBM600	600	64.9	76.2	119	188	272	340	441	459	597	705	773	878	1051	1514	1594	1928	2101
EBM700	700	75.7	88.8	140	220	317	397	513	536	698	822	900	1024	1329	1766	1860	2250	2451
EBM800	800	86.5	101	160	251	363	453	587	613	799	939	1030	1170	1401	2019	2127	2570	2802
EBM900	900	97.3	114	180	282	408	510	659	710	893	1057	1158	1316	1576	2271	2392	2892	3152
EBM1000	1000	108	127	200	313	453	567	733	814	993	1174	1285	1463	1751	2524	2657	3214	3502

Data for stationary applications

Performance after prolonged float charge of fully charged cells

Available amperes at +20°C ±5°C(+68°F ±9°F)

Final voltage: 1.05 V/cell

Cell Type	C5 Ah	Discharge Time in Hours							Discharge Time in Minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBM10	10	1.1	1.3	2.1	3.2	4.8	6.2	8.2	9.3	11.7	13.9	14.9	17.3	20.6	28.8	31.9	38.1	39.2
EBM20	20	2.3	2.6	4.1	6.5	9.7	12.4	16.5	19.1	23.5	27.8	29.9	34.5	41.2	57.2	63.3	75.7	78.5
EBM30	30	3.3	3.9	6.2	10.3	14.5	18.6	24.7	27.8	35.5	41.2	45.3	52.2	61.3	85.5	94.8	113	117
EBM40	40	4.5	5.2	8.2	13.0	19.4	24.3	33.0	37.1	46.9	54.6	60.8	69.0	81.9	114	127	151	157
EBM48	48	5.5	6.4	10.2	16.0	23.9	30.0	40.7	44.8	57.9	67.5	75.1	85.3	101	141	157	187	194
EBM50	50	5.6	6.5	10.3	16.5	24.2	30.9	41.2	46.5	59.2	69.0	76.2	87.0	103	142	159	188	197
EBM60	60	6.7	7.7	12.4	19.6	29.4	37.3	49.4	55.7	70.6	82.4	90.6	104	123	171	190	226	236
EBM70	70	7.8	9.0	14.4	23.2	34.0	42.8	57.7	67.0	82.4	96.3	106	122	144	200	221	265	281
EBM80	80	9.0	10.3	16.3	26.0	38.6	48.4	65.9	75.1	93.9	109	122	138	165	228	253	301	314
EBM85	85	9.1	11.3	18.0	29.3	41.2	50.5	66.1	79.0	96.4	108	116	126	146	191	211	254	273
EBM95	95	10.2	13.0	20.7	33.7	47.4	58.1	76.1	90.9	111	124	134	145	168	219	243	293	314
EBM100	100	11.1	12.9	20.6	33.0	48.0	61.8	82.4	92.9	117	137	151	173	206	284	316	376	392
EBM120	120	13.4	15.5	24.7	39.1	57.7	74.7	98.9	111	141	165	181	207	247	341	381	451	471
EBM150	150	16.7	19.3	30.9	49.4	72.1	92.7	124	139	175	204	225	261	307	425	476	567	592
EBM160	160	18.3	21.2	33.9	54.3	79.2	102	136	153	192	224	247	286	337	467	523	622	651
EBM200	200	22.2	25.8	40.8	65.9	95.8	123	165	191	235	273	302	345	409	572	631	752	786
EBM250	250	27.8	32.1	51.0	82.4	121	155	209	233	293	338	374	431	510	709	786	940	979
EBM280	280	29.9	37.1	58.8	95.1	139	178	241	269	337	390	431	497	588	817	907	1085	1129
EBM300	300	33.5	38.6	61.3	99	144	184	247	278	350	406	448	516	612	850	942	1128	1174
EBM350	350	38.9	45.0	71.4	115	168	215	288	324	410	474	523	603	716	992	1104	1318	1378
EBM380	380	43.5	50.3	79.8	129	188	241	323	363	458	530	585	674	801	1109	1235	1474	1541
EBM400	400	44.5	51.5	81.6	132	192	245	330	371	464	546	603	690	817	1143	1262	1504	1571
EBM500	500	55.6	64.4	103	165	240	307	412	465	585	675	747	860	1020	1416	1571	1880	1957
EBM600	600	66.7	77.3	123	198	287	367	494	557	701	810	896	1032	1224	1700	1885	2256	2348
EBM700	700	77.9	89.9	143	231	336	430	577	650	819	945	1045	1205	1432	1983	2207	2637	2755
EBM800	800	89.1	103	163	264	383	488	659	743	935	1079	1195	1380	1633	2287	2524	3008	3142
EBM900	900	100.1	115	183	297	432	552	742	861	1053	1214	1344	1550	1838	2554	2833	3384	3523
EBM1000	1000	111	129	204	330	479	613	824	985	1169	1349	1494	1720	2039	2833	3142	3760	3914

Data for stationary applications

Performance after prolonged float charge of fully charged cells

Available amperes at +20°C ±5°C(+68°F ±9°F)

Final voltage: 1.00 V/cell

Cell Type	C5 Ah	Discharge Time in Hours							Discharge Time in Minutes							Time in Seconds		
		10	8	5	3	2	1.5	1	45	30	20	15	10	5	1	30	5	1
EBM10	10	1.1	1.4	2.1	3.4	4.9	6.4	8.9	10.8	13.4	15.7	17.1	19.6	23.7	33.0	36.6	43.6	45.3
EBM20	20	2.3	2.7	4.1	6.7	9.9	12.9	17.7	22.3	26.8	31.4	34.5	38.6	46.9	65.4	73.1	87.0	90.1
EBM30	30	3.4	4.1	6.2	10.1	14.9	19.2	26.6	32.4	40.2	46.9	51.0	58.2	70.6	98.4	110	131	136
EBM40	40	4.5	5.5	8.2	15.5	20.1	25.8	34.7	42.8	52.8	62.8	68.5	77.3	93.7	131	146	174	180
EBM48	48	5.5	6.7	10.2	19.1	24.2	31.8	41.7	51.5	65.3	77.7	82.4	95.5	113	162	181	215	223
EBM50	50	5.7	6.8	10.3	17.0	25.2	32.0	43.8	53.6	66.4	78.3	85.5	96.8	117	164	183	218	226
EBM60	60	6.8	8.1	12.4	20.2	29.9	38.3	53.0	64.4	80.3	93.7	102	116	141	197	219	262	271
EBM70	70	7.9	9.5	14.4	23.5	34.7	45.0	61.3	75.2	93.0	110	119	136	165	230	256	311	315
EBM80	80	9.1	10.8	16.5	30.4	39.7	51.5	70.0	86.0	107	126	137	155	187	262	293	348	361
EBM85	85	9.2	11.4	18.5	29.9	42.2	52.7	72.4	91.2	117	134	147	151	169	210	241	276	298
EBM95	95	10.3	12.9	21.3	33.5	48.6	60.7	83.4	102	135	154	170	174	194	242	277	318	343
EBM100	100	11.3	13.9	20.6	33.6	49.4	64.4	87.6	107	133	157	171	194	235	328	366	436	451
EBM120	120	13.9	16.5	24.7	40.3	59.2	76.7	105	128	160	187	204	232	282	393	439	523	541
EBM150	150	17.0	20.6	30.9	50.5	74.2	95.4	132	161	200	234	255	290	352	491	549	653	677
EBM160	160	18.7	22.6	33.9	54.1	81.5	105	145	177	220	257	281	319	387	540	603	717	743
EBM200	200	22.7	27.1	41.2	67.0	97.9	127	175	221	266	310	341	386	469	654	731	870	901
EBM250	250	28.3	34.0	51.5	83.9	123	159	219	268	332	387	425	483	586	818	915	1089	1127
EBM280	280	32.7	39.2	59.4	94.2	141	183	253	309	383	447	491	557	676	943	1055	1256	1300
EBM300	300	34.0	40.7	61.8	100	147	191	263	321	398	465	510	580	703	982	1097	1306	1352
EBM350	350	39.7	47.4	72.1	117	172	222	307	375	465	542	595	677	821	1145	1280	1523	1578
EBM380	380	44.3	51.5	80.6	131	192	249	343	419	519	606	666	757	918	1281	1432	1704	1765
EBM400	400	45.3	54.1	82.4	134	196	253	350	428	530	619	680	773	937	1308	1463	1741	1803
EBM500	500	56.7	68.0	103	168	245	317	438	536	663	774	850	966	1172	1636	1828	2176	2254
EBM600	600	68.0	81.4	124	201	294	380	525	643	795	928	1020	1159	1406	1962	2194	2611	2704
EBM700	700	79.3	94.8	144	235	343	444	613	750	928	1083	1190	1352	1641	2290	2560	3047	3155
EBM800	800	90.6	108	165	268	391	507	700	857	1061	1238	1360	1545	1875	2616	2925	3481	3605
EBM900	900	103	122	185	302	441	571	788	993	1193	1393	1530	1739	2109	2942	3291	3917	4056
EBM1000	1000	113	135	206	335	489	633	876	1136	1326	1547	1700	1931	2343	3270	3657	4352	4506

Calculation Methods

Information required for battery capacity calculation

The following informat on needed fbr a precise battery capacity calculation:

-Nominal voltage of the system	-Load current required	-Backup time required
-Maximum voltage (for charging)	-Minimum voltage	-Temperature range
-Battery layout and available space	-Physical condition	

Float Voltage Operation

In these conditions the float voltage, being the voltage at which the general load circuit will operate, then a decision will have to be reached on the cell float voltage needed to maintain the battery in the required condition.

$$\text{Number of cells required} = \frac{\text{Circuit voltage}}{\text{Cell Float voltage}} \qquad \text{Minimum cell voltag} = \frac{\text{Minimum D.C. voltage}}{\text{Number of cells}}$$

The most commonly used float voltages are 1.40-1.48 voltage per cell, but the exact figure has to be related carefully to circumstances.

For Example

An EverExceed Nickel Cadmium battery is required to maintain an inverter load of 50KVA at 0.8 power factor for a backup time of 30 minutes, at 20~25°C temperature. The DC voltage to the inverter operates within the limit of 265 volts with the battery on float charge to a minimum of 202 volts at end of back up time. The inverter has an 85% efficiency rate.

-Number of Cells (at recommended float of 1.44VPC) = 265/1.44≈184cells
-Minimum Cell Voltage = 202/184≈1.10 volts per cell
-Maximum Battery Current

$$= \frac{\text{Inverter load in KVA x Power factor}}{\text{Min. cell voltage x Number of cells x Inverter efficiency}}$$

$$= \frac{50\text{KVA} \times 0.80}{1.10 \times 184 \times 0.85} = 232.5 \text{ Amps}$$

We shall choose the battery with capacity equal or just above 232.5Amps.
To meet the 30 minutes backup time requirement, we determine to choose the battery size from EBM Range.
From our catalogue data, the cell type is EBM300.
Battery shall comprise 184 cells of EverExceed Nickel Cadmium type EBM300.

System Voltage	Number of Cells	Spread Range Number of Cells
24	20	18～21
36	30	27～31
48	40	36～41
110	92	88～93
220	184	180～186

The number of cells in a battery may be determined by simply dividing the nominal voltage of the system by the nominal voltage of a cell (1.2 Volts).

EverExceed®

Supplied Worldwide by:

EverExceed Corporation