

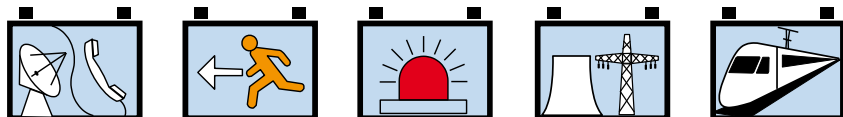
Guarantee

EverExceed[®]
power your applications

**Sealed NiCd - Low Maintenance
SEBM Pocket plate Range
10-1100Ah**



**»Premium quality for
uninterrupted communication«**



www.everexceed.com



Sealed NiCd - Low Maintenance SEBM Pocket plate Range 10-1100Ah

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 -40°C to $+60^{\circ}\text{C}$ (-40°F to $+140^{\circ}\text{F}$), they can tolerate extremes of -50°C to $+70^{\circ}\text{C}$ (-58°F to $+158^{\circ}\text{F}$) 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.

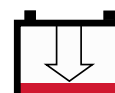
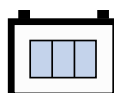
The block battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapours. The tough polypropylene casing ensures the battery's structural integrity throughout its long life.

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

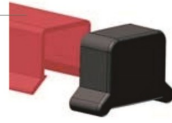


Plate group bus

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

Plate

Horizontal pockets of double-perforated steel strips.

Cell container

Material: translucent/transparent polypropylene

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 frame

Seals the plate pockets and serves as a current collector.



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

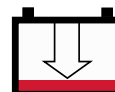
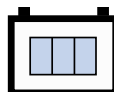
Many nickel-cadmium batteries are used in stationary standby power applications where discharges occur infrequently and the battery is continuously charged by a float or constant potential charge.

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:

Batteries can be charged in:

- ◆ **constant voltage mode with load connected**
- or
- ◆ **constant current or declining current mode when load is isolated.**

High rate or over charge will not damage the battery.

Minimum float charging current: 2 mA per Ah.

◆ **Constant voltage mode:**

For continuous parallel operation:

- Float voltage: 1.40 - 1.45 V/cell for SEBL, SEBM & SEBH
- Boost Voltage:
 - SEBL : 1.60 - 1.70 V/cell
 - SEBM : 1.60 - 1.65 V/cell
 - SEBH : 1.60 - 1.65 V/cell

A higher voltage will reduce the charge duration and increase the efficiency of recharging but may increase water consumption.

Single stage charging (without boost):

- SEBL: 1.47 - 1.50 V/cell
- SEBM: 1.46 - 1.49 V/cell
- SEBH: 1.45 - 1.48 V/cell

For starting application:

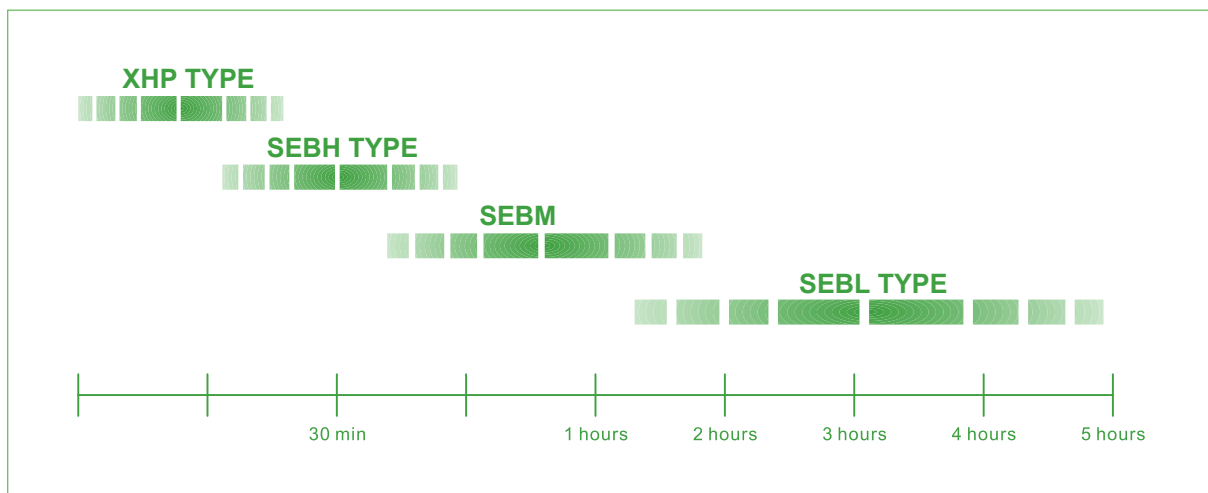
- Recommended charging voltage. 1.50 - 1.55 V/cell.

◆ **Constant current mode:**

- Normal charging: 0.2 C5 A for 8 hours
- Recommended for quick charging: 0.4 C5 A for 2.5 hours followed by 0.2 C5 A for 2.5 hours

Recommended Type Selection

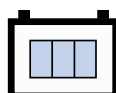
According to backup time required by application:



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

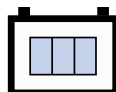


NiCd Pocket Plate SEBM Range Electrical Specifications & Dimensions

Cell Type	Nominal Voltage (V)	Capacity (C5 Ah)	Dimensions (mm/inch)						Weight (kg/lb.)				Terminal	Cell Case Material
			Length		Width		Height		Without Electrolyte		With Electrolyte			
SEBM10	1.2	10	43	1.7	85	3.3	260	10.2	0.75	1.7	1.2	2.6	M10	PP
SEBM20	1.2	20	55	2.2	134	5.3	270	10.6	1.1	2.4	1.9	4.2	M10	PP
SEBM30	1.2	30	55	2.2	134	5.3	270	10.6	1.6	3.5	2.4	5.3	M10	PP
SEBM40	1.2	40	60	2.4	140	5.5	270	10.6	2.5	5.5	3.6	7.9	M10	PP
SEBM50	1.2	50	70	2.8	140	5.5	295	11.6	3	6.6	4.2	9.3	M10	PP
SEBM60	1.2	60	70	2.8	140	5.5	295	11.6	3.2	7.1	4.4	9.7	M10	PP
SEBM70	1.2	70	70	2.8	140	5.5	295	11.6	3.4	7.5	4.6	10.1	M10	PP
SEBM80	1.2	80	80	3.1	140	5.5	365	14.4	4.8	10.6	6.5	14.3	M10	PP
SEBM90	1.2	90	80	3.1	140	5.5	365	14.4	5.2	11.5	6.7	14.8	M10	PP
SEBM100	1.2	100	105	4.1	165	6.5	345	13.6	7	15.4	9.2	20.3	M20	PP
SEBM120	1.2	120	105	4.1	165	6.5	345	13.6	7.2	15.9	9.5	20.9	M20	PP
SEBM150	1.2	150	165	6.5	167	6.6	345	13.6	9.2	20.3	12.5	27.6	M20	PP
SEBM200	1.2	200	165	6.5	167	6.6	345	13.6	10.6	23.4	14	30.9	M20	PP
SEBM250	1.2	250	145	5.7	280	11.0	450	17.7	15.8	34.8	21.5	47.4	2 x M16	PP
SEBM300	1.2	300	145	5.7	280	11.0	450	17.7	16.5	36.4	22.5	49.6	2 x M16	PP
SEBM350	1.2	350	145	5.7	280	11.0	490	19.3	19.5	43.0	25.5	56.2	2 x M20	PP
SEBM400	1.2	400	145	5.7	280	11.0	490	19.3	20.8	45.8	27	59.5	2 x M20	PP
SEBM500	1.2	500	175	6.9	290	11.4	500	19.7	27.5	60.6	38	83.8	2 x M20	ABS
SEBM600	1.2	600	175	6.9	290	11.4	500	19.7	30	66.1	40	88.2	2 x M20	ABS
SEBM700	1.2	700	186	7.3	398	15.7	565	22.2	41	90.4	55	121	3 x M20	ABS
SEBM800	1.2	800	186	7.3	398	15.7	565	22.2	43	94.8	58	128	3 x M20	ABS
SEBM900	1.2	900	186	7.3	398	15.7	565	22.2	46	101	61	134	3 x M20	ABS
SEBM1000	1.2	1000	186	7.3	398	15.7	565	22.2	48	106	64	141	3 x M20	ABS
SEBM1100	1.2	1100	186	7.3	398	15.7	565	22.2	50	110	66	145	3 x M20	ABS

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

Transparent case optional.



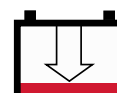
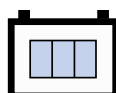
Discharge Date Table

Discharge performance date after fully charged by constant current according to IEC60623

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

Final voltage: 1.14V/cell

Cell Type	Capacity (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
SEBM10	10	1.1	1.3	2	3	4.2	5.2	6.1	6.2	8.5	9.9	11	12.6	15	21.1	23.5	27.1	27.9
SEBM20	20	2.1	2.5	4	6	8.4	10.3	12.6	13.2	17.1	19.8	22	25.1	30.1	42.2	47	54.2	55.8
SEBM30	30	3.2	3.8	5.9	9	12.7	15.5	19.1	18.5	25.8	29.7	33	37.7	45.1	63.3	70.5	81.4	83.9
SEBM40	40	4.2	5	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
SEBM50	50	5.3	6.3	9.9	14.9	21.1	25.8	31.4	33	42.7	49.4	55.1	62.8	75.2	105	117	135	139
SEBM60	60	6.4	7.6	11.8	18	25.5	30.9	37.7	39.1	50.3	59.3	66.1	75.7	90.2	128	141	163	168
SEBM70	70	7.4	8.9	13.9	21.1	29.6	36.1	44	47	59.8	38.6	77.3	88.1	105	148	165	192	197
SEBM80	80	8.4	10.7	17.2	27.2	25.3	41.2	47.4	50.9	55.2	64.9	72.5	82	95.7	132	151	175	191
SEBM90	90	9.5	12.0	19.4	30.6	28.5	46.4	53.3	57.3	62.1	73.0	81.6	92.3	108	149	170	197	215
SEBM100	100	10.5	12.9	19.8	29.9	42.2	51.5	62.8	67	85.5	98.9	110	126	150	211	235	271	279
SEBM120	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
SEBM150	150	16	19	29.9	44.8	62.8	77.3	94.8	97.9	128	148	166	188	226	316	352	407	419
SEBM200	200	21	25.2	39.6	59.7	84.5	103	126	144	171	199	221	251	301	422	470	543	559
SEBM250	250	26.3	31.5	49.4	74.7	105	129	158	163	213	247	276	314	376	527	587	678	700
SEBM300	300	31.5	38.1	59.3	89.6	126	155	190	195	255	297	331	378	451	633	705	814	839
SEBM350	350	36.8	44.3	69.2	104	147	180	221	227	299	346	385	441	526	740	822	950	976
SEBM400	400	42	50.5	79.1	119	169	206	252	258	342	396	441	505	602	845	939	1084	1117
SEBM500	500	52.5	63.1	98.9	149	210.1	258	315	319	426	494	551	628	752	1056	1174	1354	1396
SEBM600	600	63	75.7	118	179	252	309	379	386	512	593	661	754	903	1267	1409	1625	1675
SEBM700	700	73.5	88.4	138	209	295	361	442	448	597	692	773	880	1054	1478	1644	1896	1954
SEBM800	800	84.0	101	159	239	337	412	505	515	683	791	882	1005	1204	1689	1879	2167	2233
SEBM900	900	94.8	113	178	269	379	464	569	597	768	890	992	1131	1353	1900	2114	2438	2512
SEBM1000	1000	105	127	198	299	421	515	628	683	854	989	1102	1257	1504	2112	2348	2709	2791
SEBM1100	1100	128.6	155	242	366	515	630	768	835	1044	1209	1347	1536	1838	2581	2870	3311	3412



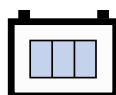
Discharge Date Table

Discharge performance date after fully charged by constant current according to IEC60623

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

Final voltage: 1.10V/cell

Cell Type	Capacity (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
SEBM10	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
SEBM20	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
SEBM30	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
SEBM40	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
SEBM50	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
SEBM60	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
SEBM70	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
SEBM80	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
SEBM90	90	9.8	11.5	18.0	28.4	40.8	51.0	66.0	71.9	89.9	106	116	133	160	228	241	293	321
SEBM100	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
SEBM120	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
SEBM150	150	16.5	19.1	30.4	47.4	68.0	85.0	110	118	149	176	194	222	263	381	402	484	536
SEBM200	200	21.6	25.3	40.0	62.8	90.6	113	146	170	200	235	258	297	350	505	533	643	713
SEBM250	250	27.3	31.9	50.0	78.8	113	142	183	192	249	294	321	366	438	631	664	809	876
SEBM280	280	31.5	36.8	57.6	90.9	131	164	212	221	288	339	371	422	505	728	766	933	1010
SEBM300	300	32.4	38.1	59.9	94.8	136	170	221	230	299	352	386	439	525	757	797	964	1069
SEBM350	350	38.1	44.4	70.0	110	159	199	258	268	349	412	450	512	613	883	930	1125	1226
SEBM400	400	43.3	51.0	79.9	126	181	227	293	306	400	470	515	585	700	1009	1063	1285	1401
SEBM500	500	54.6	64	100	158	227	283	367	383	496	587	643	731	876	1262	1329	1607	1751
SEBM600	600	64.9	76.2	119	188	272	340	441	459	597	705	773	878	1051	1514	1594	1928	2101
SEBM700	700	75.7	88.8	140	220	317	397	513	536	698	822	900	1024	1329	1766	1860	2250	2451
SEBM800	800	86.5	101	160	251	363	453	587	613	799	939	1030	1170	1401	2019	2127	2570	2802
SEBM900	900	97.3	114	180	282	408	510	659	710	893	1057	1158	1316	1576	2271	2392	2892	3152
SEBM1000	1000	108.2	127	200	313	453	567	733	814	993	1174	1285	1463	1751	2524	2657	3214	3502
SEBM1100	1100	119.0	139	220	344	499	623	807	895	1092	1292	1414	1609	1926	2776	2923	3535	3852



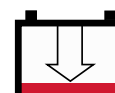
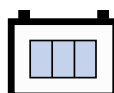
Discharge Date Table

Discharge performance date after fully charged by constant current according to IEC60623

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

Final voltage: 1.05V/cell

Cell Type	Capacity (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
SEBM10	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
SEBM20	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
SEBM30	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
SEBM40	40	4.5	5.2	8.2	13	19.4	24.3	33	37.1	46.9	54.6	60.8	69	81.9	114	127	151	157
SEBM50	50	5.6	6.5	10.3	16.5	24.2	30.9	41.2	46.5	59.2	69	76.2	87	103	142	159	188	197
SEBM60	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
SEBM70	70	7.8	9	14.4	23.2	34	42.8	57.7	67	82.4	96.3	106	122	144	200	221	265	281
SEBM80	80	9	10.3	16.3	26	38.6	48.4	65.9	75.1	93.9	109	122	138	165	228	253	301	314
SEBM90	90	10.1	11.6	18.3	29.3	43.4	54.5	74.1	84.5	106	123	137	155	186	257	285	339	353
SEBM100	100	11.1	12.9	20.6	33	48	61.8	82.4	92.9	117	137	151	173	206	284	316	376	392
SEBM120	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
SEBM150	150	16.7	19.3	30.9	49.4	72.1	92.7	124	139	175	204	225	261	307	425	476	567	592
SEBM200	200	22.2	25.8	40.8	65.9	95.8	123	165	191	235	273	302	345	409	572	631	752	786
SEBM250	250	27.8	32.1	51	82.4	121	155	209	233	293	338	374	431	510	709	786	940	979
SEBM300	300	33.5	38.6	61.3	98.9	144	184	247	278	350	406	448	516	612	850	942	1128	1174
SEBM350	350	38.9	45	71.4	115	168	215	288	324	410	474	523	603	716	992	1104	1318	1378
SEBM400	400	44.5	51.5	81.6	132	192	245	330	371	464	546	603	690	817	1143	1262	1504	1571
SEBM500	500	55.6	64.4	103	165	240	307	412	465	585	675	747	860	1020	1416	1571	1880	1957
SEBM600	600	66.7	77.3	123	198	287	367	494	557	701	810	896	1032	1224	1700	1885	2256	2348
SEBM700	700	77.9	90	143	231	336	430	577	650	819	945	1045	1205	1432	1983	2207	2637	2755
SEBM800	800	89.1	103	163	264	383	488	659	743	935	1079	1195	1380	1633	2287	2524	3008	3142
SEBM900	900	100	115	183	297	432	552	742	861	1053	1214	1344	1550	1838	2554	2833	3384	3523
SEBM1000	1000	111	129	204	330	479	613	824	985	1169	1349	1494	1720	2039	2833	3142	3760	3914
SEBM1100	1100	123	142	225	363	527	674	907	1084	1286	1484	1643	1893	2244	3116	3456	4136	4306



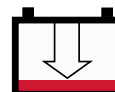
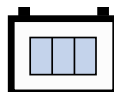
Discharge Date Table

Discharge performance date after fully charged by constant current according to IEC60623

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

Final voltage: 1.00V/cell

Cell Type	Capacity (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
SEBM10	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	36.6	43.6	45.3
SEBM20	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	90.1
SEBM30	30	3.4	4.1	6.2	10.1	14.9	19.2	26.6	32.4	40.2	46.9	51	58.2	70.6	98.4	110	131	136
SEBM40	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
SEBM50	50	5.7	6.8	10.3	17	25.2	32	43.8	53.6	66.4	78.3	85.5	96.8	117	164	183	218	226
SEBM60	60	6.8	8.1	12.4	20.2	29.9	38.3	53	64.4	80.3	93.7	102	116	141	197	219	262	271
SEBM70	70	7.9	9.5	14.4	23.5	34.7	45	61.3	75.2	93	110	119	136	165	230	256	311	315
SEBM80	80	9.1	10.8	16.5	30.4	39.7	51.5	70	86	107	126	137	155	187	262	293	348	361
SEBM90	90	10.2	12.2	18.6	34.2	44.7	57.9	78.8	96.8	120	142	154	174	210	295	330	392	406
SEBM100	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
SEBM120	120	13.9	16.5	24.7	40.3	59.2	76.7	105	128	160	187	204	232	282	393	439	523	541
SEBM150	150	17	20.6	30.9	50.5	74.2	95.4	132	161	200	234	255	290	352	491	549	653	677
SEBM200	200	22.7	27.1	41.2	67	97.9	127	175	221	266	310	341	386	469	654	731	870	901
SEBM250	250	28.3	34	51.5	83.9	123	159	219	268	332	387	425	483	586	818	915	1089	1127
SEBM300	300	34	40.7	61.8	100	147	191	263	321	398	465	510	580	703	982	1097	1306	1352
SEBM350	350	39.7	47.4	72.1	117	172	222	307	375	465	542	595	677	821	1145	1280	1523	1578
SEBM400	400	45.3	54.1	82.4	134	196	253	350	428	530	619	680	773	937	1308	1463	1741	1803
SEBM500	500	56.7	68	103	168	245	317	438	536	663	774	850	966	1172	1636	1828	2176	2254
SEBM600	600	68	81.4	124	201	294	380	525	643	795	928	1020	1159	1406	1962	2194	2611	2704
SEBM700	700	79.3	94.8	144	235	343	444	613	750	928	1083	1190	1352	1641	2290	2560	3047	3155
SEBM800	800	90.6	108	165	268	391	507	700	857	1061	1238	1360	1545	1875	2616	2925	3481	3605
SEBM900	900	103	122	185	302	441	571	788	993	1193	1393	1530	1739	2109	2942	3291	3917	4056
SEBM1000	1000	113	135	206	335	489	633	876	1136	1326	1547	1700	1931	2343	3270	3657	4352	4506
SEBM1100	1100	125	149	227	369	539	697	963	1250	1458	1702	1870	2124	2578	3598	4022	4787	4957



Calculation Methods

Information required for battery capacity calculation

The following information needed for 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.

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

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) = $265/1.44 \approx 184$ cells

-Minimum Cell Voltage = $202/184 \approx 1.10$ volts per cell

-Maximum Battery Current

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

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

We shall choose the battery with capacity equal or just above 232.5Amps.

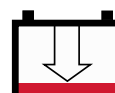
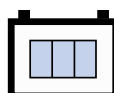
To meet the 30 minutes backup time requirement, we determine to choose the battery size from SEBM Range.

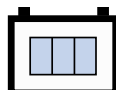
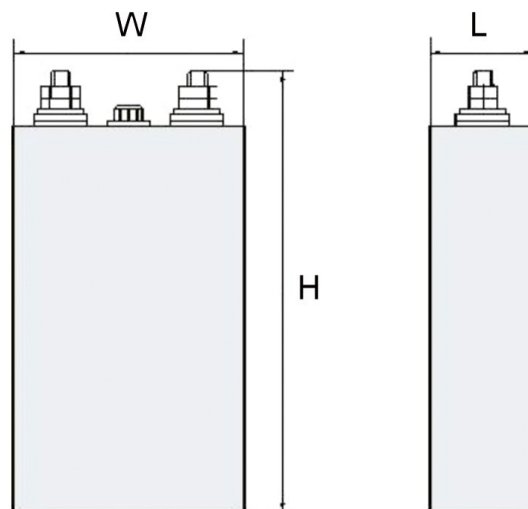
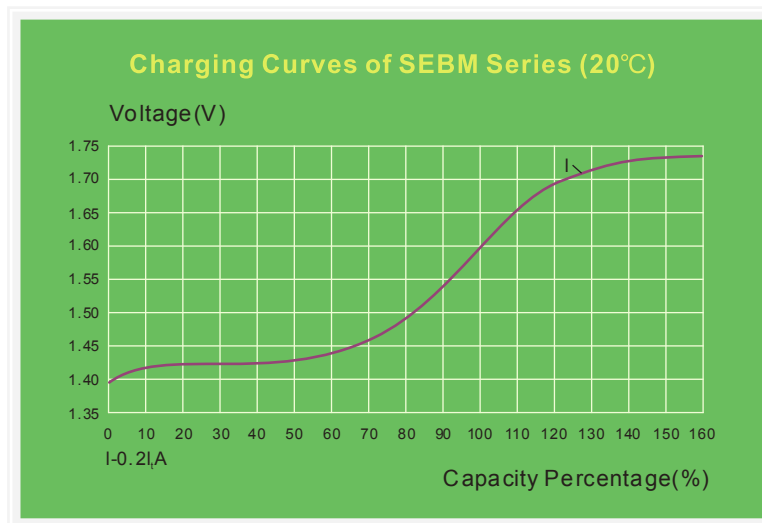
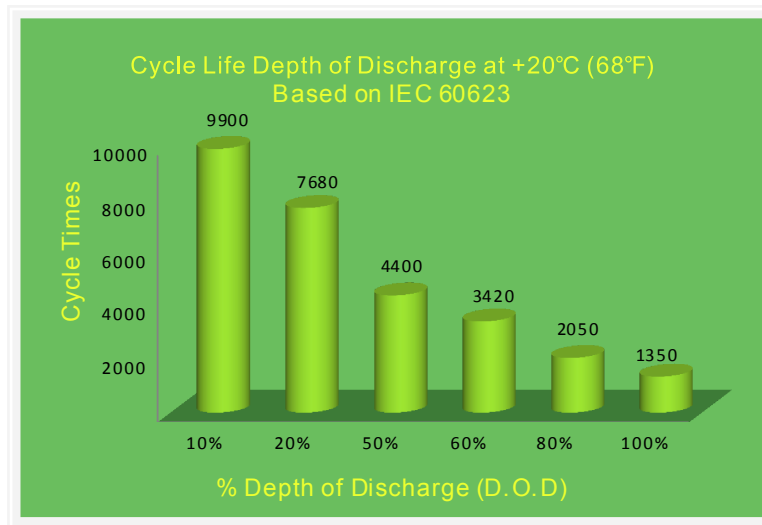
From our catalogue data, the cell type is SEBM300.

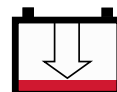
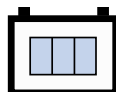
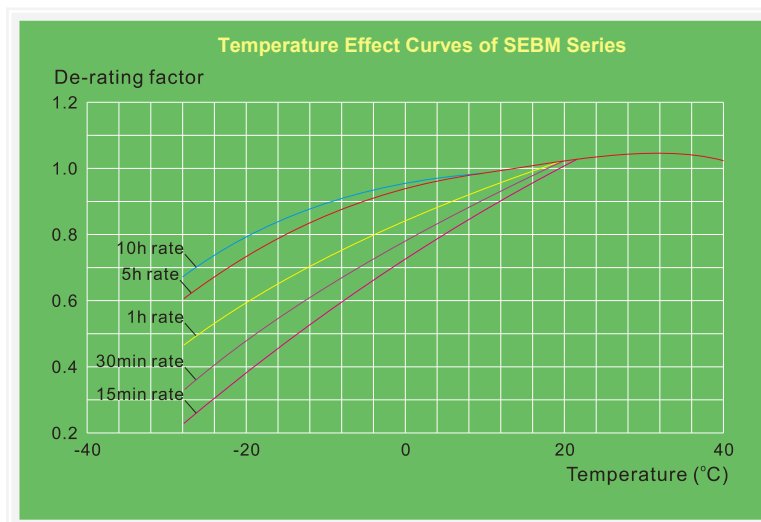
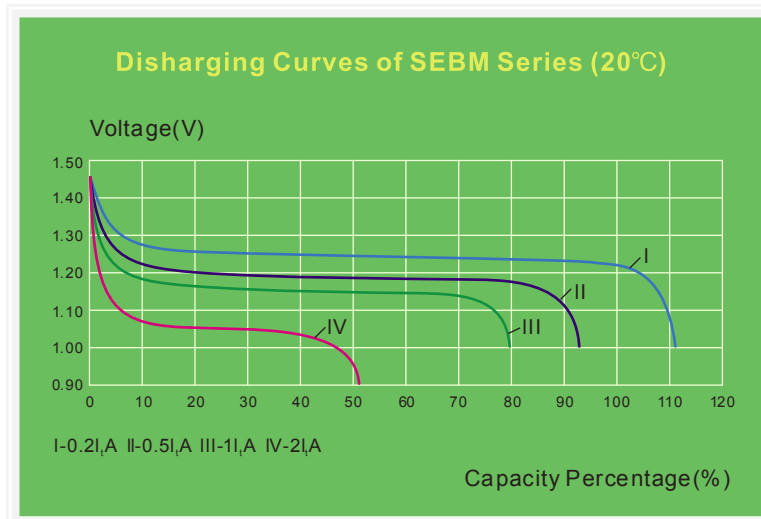
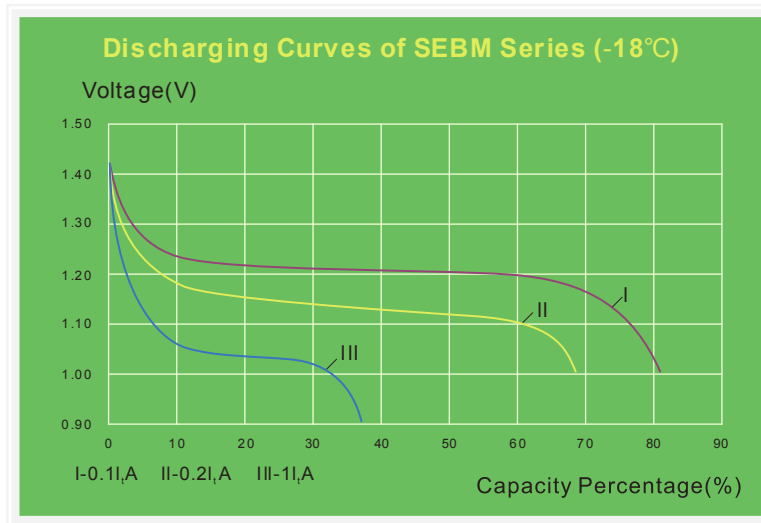
Battery shall comprise 184 cells of EverExceed Nickel Cadmium type SEBM300.

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).







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