

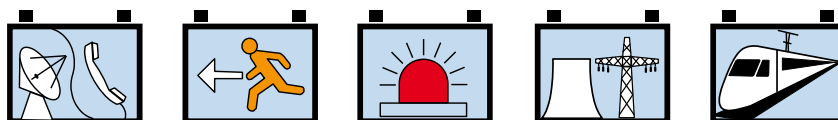
Guarantee

EverExceed®
power your applications

NiCd Pocket Plate Range **EBL 10-1200Ah**



**»Premium quality for
uninterrupted communication«**



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NiCd Pocket Plate Range

EverExceed®
power your applications



NiCd Pocket Plate Range
EBL 10-1200Ah

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.

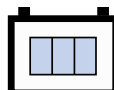
The block battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapours. The tough polypropylene casing ensures the battery's structural integrity throughout its long life.

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

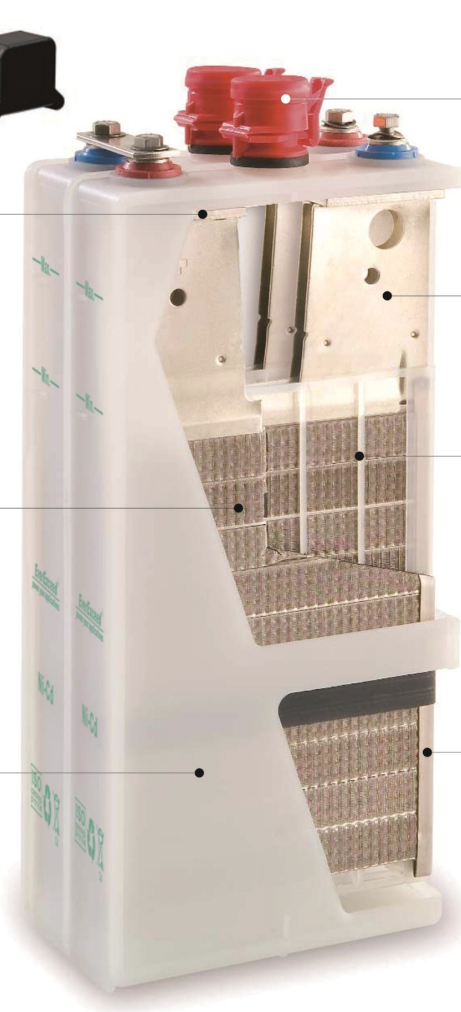
Spot-welded both to the plate side-frames and to the upper edge of the pocket plate.

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.



Application

EBL Series nickel cadmium batteries are designed for general industrial applications where absolute reliability is a necessity. Service-proven pocket-plate technology ensures long uninterrupted battery life without the risk of sudden loss of power.

EBL Series batteries are suitable for low discharge rate applications (between 1 hour to 100 hours) such as railroad signaling and control systems, photovoltaic, emergency lighting, telecommunications, etc.

Performance Data

Proven pocket-plate nickel-cadmium technology 50 years of experience in developing and manufacturing nickel-cadmium batteries.

High tolerance to electrical abuses such as overcharge and over discharge.

High tolerance to rough handling and mechanical abuse due to strong components and robust construction.

Trouble-free long cycle life .

No risk of sudden death due to the chemistry and the cell structure.

Wide operating temperature: -40°C to 60°C.

Generous electrolyte reserve for long maintenance intervals.

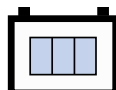
Clear (MBS) or translucent (PP) plastic cell case for easy electrolyte level inspection.

Plastic grid spacers eliminate separator deterioration problem.

Custom cell dimensions available.

20 years service life in stationary applications.

Conforms to IEC60623.



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 EBL, EBM & EBH
- Boost Voltage:
 - EBL : 1.60 - 1.70 V/cell
 - EBM : 1.60 - 1.65 V/cell
 - EBH : 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):

EBL:	1.47 - 1.50 V/cell
EBM:	1.46 - 1.49 V/cell
EBH:	1.45 - 1.48 V/cell

For starting application:

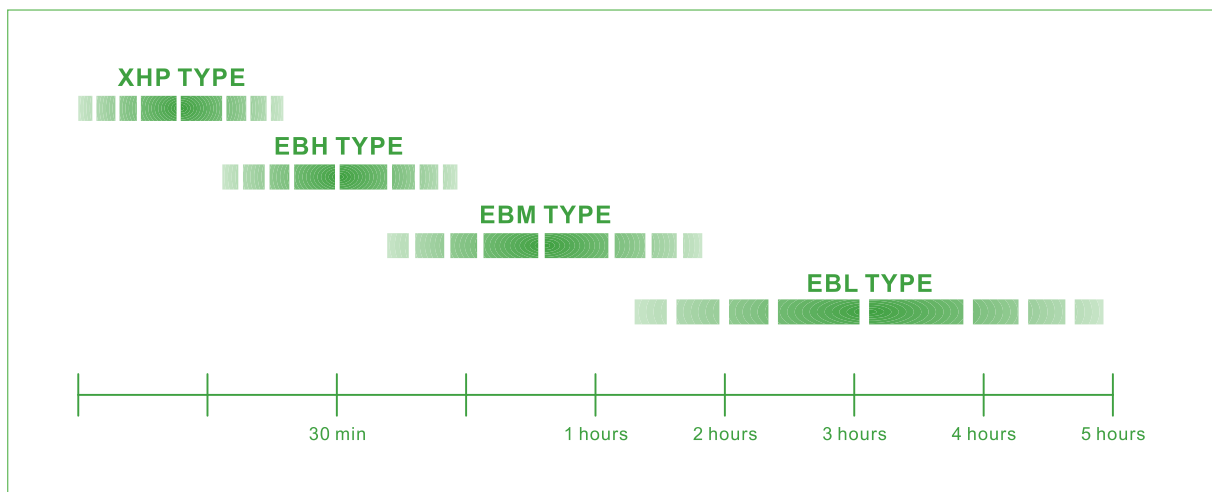
- Recommended charging voltage. 1.50 - 1.55 V/cell.

- ◆ **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

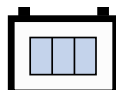
According to backup time required by application:



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

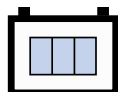


NiCd Pocket Plate EBL Range Electrical Specifications & Dimensions

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			
EBL10	1.2	10	40	1.6	85	3.3	150	5.9	0.7	1.5	1	2.2	M8	PP
EBL20	1.2	20	55	2.2	134	5.3	270	10.6	1.1	2.4	1.8	4.0	M10	PP
EBL30	1.2	30	55	2.2	134	5.3	270	10.6	1.5	3.3	2.2	4.8	M10	PP
EBL40	1.2	40	55	2.2	134	5.3	270	10.6	1.8	4.0	2.6	5.7	M10	PP
EBL50	1.2	50	60	2.4	140	5.5	270	10.6	2.4	5.3	3.2	7.1	M10	PP
EBL60	1.2	60	60	2.4	140	5.5	270	10.6	2.8	6.2	3.8	8.4	M10	PP
EBL70	1.2	70	70	2.8	141	5.6	295	11.6	2.9	6.4	4.1	9.0	M10	PP
EBL80	1.2	80	70	2.8	141	5.6	295	11.6	3.4	7.5	4.6	10.1	M10	PP
EBL90	1.2	90	80	3.1	140	5.5	365	14.4	4.2	9.3	6	13.2	M10	PP
EBL100	1.2	100	80	3.1	140	5.5	365	14.4	4.5	9.9	6.2	13.7	M10	PP
EBL120	1.2	120	80	3.1	140	5.5	365	14.4	5	11.0	6.5	14.3	M10	PP
EBL150	1.2	150	105	4.1	165	6.5	345	13.6	6.9	15.2	9.5	20.9	M20	PP
EBL200	1.2	200	105	4.1	165	6.5	345	13.6	7.8	17.2	10	22.0	M20	PP
EBL250	1.2	250	165	6.5	167	6.6	345	13.6	10.2	22.5	14.2	31.3	M20	PP
EBL300	1.2	300	145	5.7	280	11.0	450	17.7	13.8	30.4	21	46.3	2 x M16	PP
EBL350	1.2	350	145	5.7	280	11.0	450	17.7	15	33.1	22	48.5	2 x M16	PP
EBL400	1.2	400	145	5.7	280	11.0	450	17.7	15.8	34.8	22.8	50.3	2 x M16	PP
EBL500	1.2	500	145	5.7	280	11.0	490	19.3	16.8	37.0	24	52.9	2 x M20	PP
EBL600	1.2	600	175	6.9	290	11.4	500	19.7	27	59.5	37	81.5	2 x M20	ABS
EBL700	1.2	700	175	6.9	290	11.4	500	19.7	29	63.9	39	86.0	2 x M20	ABS
EBL800	1.2	800	186	7.3	398	15.7	565	22.2	39	86.0	58	128	3 x M20	ABS
EBL900	1.2	900	186	7.3	398	15.7	565	22.2	41	90.4	60	132	3 x M20	ABS
EBL1000	1.2	1000	186	7.3	398	15.7	565	22.2	44	97.0	61	134	3 x M20	ABS
EBL1100	1.2	1100	186	7.3	398	15.7	565	22.2	45	99.2	62	137	3 x M20	ABS
EBL1200	1.2	1200	186	7.3	398	15.7	565	22.2	46	101	63	139	3 x M20	ABS

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

Transparent case optional.



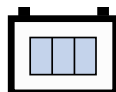
Discharge Date Table

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: 1.14 V/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
EBL10	10	1.05	1.26	1.94	3.05	3.87	4.49	5.18	5.53	6.48	7.15	7.59	8.50	9.87	12.9	14.0	15.1	15.5
EBL20	20	2.08	2.47	3.90	6.08	7.76	8.96	10.7	10.8	13.1	14.6	15.4	17.0	19.8	25.8	27.9	30.1	30.9
EBL30	30	3.13	3.73	5.85	9.14	11.8	13.6	15.7	16.5	19.6	21.5	22.8	25.6	29.8	38.6	41.9	45.3	46.6
EBL40	40	4.16	4.96	7.80	12.6	15.5	17.9	20.8	21.1	26.0	28.4	30.4	34.0	39.5	51.7	55.6	60.6	61.8
EBL50	50	5.25	6.18	9.73	15.4	19.4	22.8	26.3	28.8	32.6	35.8	37.9	42.7	49.4	64.9	69.8	75.3	77.8
EBL60	60	6.24	7.48	11.9	18.2	23.2	26.9	31.1	31.7	38.9	42.9	45.6	51.5	59.3	77.8	83.5	90.3	92.7
EBL70	70	7.31	8.67	13.9	21.3	27.1	31.5	36.8	37.1	45.3	50.1	53.4	59.6	69.1	90.1	97.4	105	108
EBL80	80	8.34	9.89	15.8	24.5	30.9	35.9	41.6	46.4	51.8	57.5	60.5	68.3	79.1	103	111	121	124
EBL90	90	9.51	12.4	18.5	25.8	30.5	35.5	41.9	47.0	52.9	59.7	62.8	70.0	81.4	108	118	126	134
EBL100	100	10.6	12.5	19.8	30.6	38.7	44.9	52.1	57.7	65.1	71.3	75.8	85.3	98.6	129	139	150	155
EBL120	120	12.7	14.8	23.7	36.6	46.6	53.9	62.3	73.4	77.8	85.7	91.1	102	117	155	167	180	185
EBL150	150	15.8	18.6	29.5	45.7	57.9	67.3	77.8	76.5	97.2	106	113	127	147	193	208	229	232
EBL200	200	21.1	24.9	38.8	61.2	77.5	90.1	103	106	129	142	151	170	197	258	278	300	309
EBL250	250	26.3	30.9	48.9	75.3	96.1	112	129	139	162	176	188	212	246	321	347	380	387
EBL300	300	31.4	37.5	58.6	91.2	115	134	154	160	194	212	227	253	294	385	416	456	463
EBL350	350	36.6	43.4	67.9	106	136	156	180	191	222	251	263	293	345	449	483	525	541
EBL400	400	41.8	49.5	77.6	121	154	179	208	211	260	284	303	340	393	515	556	598	617
EBL500	500	52.4	62.1	96.7	151	193	223	258	283	323	353	378	423	491	642	693	760	773
EBL600	600	62.8	74.5	116	181	231	268	309	340	387	424	453	507	589	770	832	912	927
EBL700	700	72.8	86.5	136	213	273	312	360	383	445	504	525	587	691	899	968	1051	1082
EBL800	800	83.4	99.1	154	243	309	359	416	464	519	569	606	680	787	1030	1112	1197	1234
EBL900	900	93.8	111	174	273	345	402	464	517	581	636	680	760	884	1156	1248	1353	1390
EBL1000	1000	104	124	194	301	383	445	515	567	647	704	754	849	985	1285	1388	1504	1545
EBL1100	1100	114	136	213	331	421	489	567	623	712	775	829	934	1083	1414	1527	1654	1700
EBL1200	1200	125	149	233	361	460	534	618	680	776	845	905	1019	1182	1542	1666	1805	1854



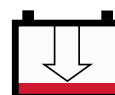
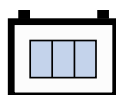
Discharge Data Table

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: 1.10 V/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
EBL10	10	1.06	1.29	1.96	3.17	4.41	5.17	6.10	6.24	7.59	8.52	9.17	9.99	11.9	15.2	16.1	17.7	17.9
EBL20	20	2.06	2.48	3.85	6.16	8.52	10.1	11.8	12.4	14.9	16.7	17.9	19.5	23.3	29.7	31.3	34.5	34.9
EBL30	30	3.17	3.82	5.89	9.51	13.2	15.5	18.3	18.5	22.7	25.6	27.5	29.9	35.5	45.8	48.6	57.2	59.5
EBL40	40	4.24	5.12	7.86	12.7	17.4	20.6	24.5	25.8	30.2	34.1	36.6	39.9	47.4	60.9	64.1	70.7	71.8
EBL50	50	5.27	6.35	9.82	15.9	21.8	25.9	30.4	30.9	37.8	42.7	45.8	49.9	59.7	75.8	80.5	88.1	89.9
EBL60	60	6.35	7.66	11.8	18.9	26.4	31.2	36.5	37.1	45.6	51.1	55.2	59.9	71.2	90.9	96.4	106	107
EBL70	70	7.38	8.91	13.9	22.2	30.4	36.2	42.6	43.3	52.9	60.3	64.1	70.1	83.1	106	112	124	126
EBL80	80	8.45	10.2	15.8	25.5	34.9	41.5	48.6	49.4	60.4	68.1	73.6	79.8	94.9	121	129	141	143
EBL90	90	9.58	11.5	17.8	28.7	39.5	46.8	54.7	55.8	68.0	76.6	82.8	89.8	107	136	145	159	161
EBL100	100	10.6	12.9	19.7	31.9	43.9	51.7	60.8	61.8	76.3	85.1	91.6	99.8	119	151	161	176	179
EBL120	120	12.7	15.4	23.8	38.3	52.6	61.9	73.1	78.7	91.4	102	110	120	142	181	193	212	215
EBL150	150	15.9	19.1	29.5	47.6	65.8	77.4	91.5	92.7	113	128	137	149	178	228	241	286	297
EBL200	200	21.3	25.5	39.3	63.6	86.9	103	122	124	151	170	182	199	237	303	321	352	357
EBL250	250	26.3	31.9	49.2	79.1	109	129	152	155	188	213	229	249	297	379	402	442	447
EBL300	300	31.5	38.5	59.2	94.9	131	155	182	185	227	255	274	299	355	453	482	572	582
EBL350	350	36.9	44.5	68.8	110	151	180	213	222	265	298	320	349	415	530	562	666	670
EBL400	400	42.6	50.9	78.5	126	173	206	243	247	302	340	366	399	474	606	643	702	715
EBL500	500	52.7	63.5	98	157	218	258	304	309	376	425	457	499	592	757	803	884	894
EBL600	600	63.4	76.5	117	190	262	309	365	371	453	510	541	597	706	896	964	1143	1164
EBL700	700	73.7	88.8	137	219	303	361	425	433	528	595	639	698	826	1052	1125	1333	1339
EBL800	800	84.4	101	157	252	346	412	486	494	604	680	731	820	948	1211	1285	1405	1430
EBL900	900	94.7	114	176	284	389	464	547	556	680	765	824	923	1066	1363	1446	1586	1607
EBL1000	1000	105	127	196	315	433	515	608	618	755	850	915	997	1185	1514	1607	1766	1789
EBL1100	1100	116	140	216	347	476	567	669	680	831	935	1007	1097	1304	1665	1768	1943	1968
EBL1200	1200	126	152	235	378	520	618	730	742	906	1020	1098	1196	1422	1817	1928	2119	2147



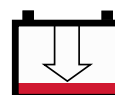
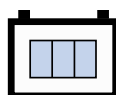
Discharge Data Table

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: 1.05 V/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
EBL10	10	1.08	1.31	2.05	3.26	4.68	5.75	6.91	7.7	8.82	9.85	10.9	11.9	13.8	17.6	19.1	22.1	22.5
EBL20	20	2.15	2.61	4.08	6.55	9.31	11.5	13.9	15.0	17.7	19.9	21.9	23.8	27.9	35.4	38.5	43.9	44.7
EBL30	30	3.12	3.79	5.95	9.49	13.7	16.8	20.3	22.6	26.2	28.8	32.1	34.7	40.1	51.5	58.4	64.2	65.1
EBL40	40	4.25	5.16	8.20	13.2	18.7	22.9	27.9	30.1	35.4	39.4	43.8	47.4	55.5	70.4	76.3	87.9	89.2
EBL50	50	5.31	6.49	10.3	16.3	23.2	28.6	34.5	37.7	44.7	49.2	54.7	59.5	68.7	88.1	94.9	109	111
EBL60	60	6.39	7.73	12.3	19.7	27.9	34.3	41.5	45.3	53.4	59.2	65.7	71.1	82.4	105	113	131	134
EBL70	70	7.46	9.01	14.5	22.9	32.5	40.1	48.4	52.7	62.4	68.9	76.4	83.1	95.9	124	133	152	156
EBL80	80	8.51	10.5	16.4	26.2	37.1	45.9	55.3	60.3	70.5	78.8	87.5	94.9	111	140	152	170	177
EBL90	90	9.59	11.8	18.5	29.5	41.7	51.6	62.5	67.8	79.7	88.8	98.4	107	125	158	171	191	199
EBL100	100	10.7	12.9	20.4	32.6	46.5	57.2	68.9	75.4	88.2	98.5	109	119	137	176	190	212	221
EBL120	120	12.9	15.5	24.6	39.6	55.6	68.4	82.5	96.0	106	117	131	142	164	211	227	259	266
EBL150	150	16.1	19.3	30.7	48.8	69.5	85.6	103	112	133	147	164	177	205	264	284	329	332
EBL200	200	21.3	25.8	40.8	64.9	91.9	113	137	150	177	196	218	237	274	352	379	424	443
EBL250	250	26.6	32.4	50.9	81.5	115	142	171	188	221	244	273	296	342	440	474	530	553
EBL300	300	31.9	38.5	61.2	97.5	138	168	206	226	266	295	327	354	410	527	569	636	663
EBL350	350	37.2	45.1	71.4	113	162	200	244	264	311	344	381	412	477	616	662	743	774
EBL400	400	42.7	51.5	81.6	130	183	227	274	301	352	391	437	474	548	704	758	849	886
EBL500	500	53.1	64.4	102	163	227	283	342	377	440	489	546	592	685	881	948	1061	1107
EBL600	600	63.9	77.5	123	195	276	336	412	452	531	589	655	709	820	1055	1137	1273	1327
EBL700	700	74.4	90.1	143	227	322	399	488	527	621	688	762	824	953	1231	1324	1485	1547
EBL800	800	84.9	103	163	260	363	453	547	603	703	783	873	948	1096	1409	1516	1697	1772
EBL900	900	95.6	115	183	292	410	510	616	678	792	881	983	1066	1233	1585	1706	1910	1993
EBL1000	1000	106	129	204	325	453	567	684	754	880	979	1092	1185	1370	1761	1895	2122	2215
EBL1100	1100	117	142	224	358	499	623	752	829	968	1076	1201	1303	1507	1937	2085	2334	2436
EBL1200	1200	128	156	247	394	548	685	828	912	1064	1184	1321	1433	1658	2131	2293	2567	2680



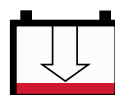
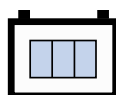
Discharge Data Table

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

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

Final voltage: 1.00 V/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
EBL10	10	1.09	1.35	2.06	3.39	4.85	6.10	7.75	8.82	10.1	11.5	12.4	13.8	15.8	20.3	22.2	25.1	26.5
EBL20	20	2.17	2.68	4.15	6.76	9.66	12.2	15.5	17.7	20.0	22.9	24.9	27.6	31.5	40.6	44.1	50.1	52.6
EBL30	30	3.26	4.01	6.19	10.4	14.6	18.5	23.3	26.5	30.3	34.4	37.1	41.5	47.2	60.9	65.8	74.9	79.1
EBL40	40	4.38	5.32	8.28	13.6	19.8	24.6	31.3	35.3	40.1	45.9	49.6	54.9	62.8	81.2	87.9	100	105
EBL50	50	5.47	6.69	10.5	16.9	24.5	30.6	38.9	44.3	50.1	57.3	62.0	68.9	78.5	101	110	125	132
EBL60	60	6.56	7.99	12.6	20.5	28.9	36.4	46.6	52.9	60.4	68.9	74.5	82.5	94.3	122	132	149	158
EBL70	70	7.59	9.29	14.6	23.7	33.9	42.5	54.2	61.8	69.9	80.3	86.8	95.9	110	142	153	174	184
EBL80	80	8.69	10.9	16.5	26.7	38.3	47.9	62.1	70.7	79.6	90.8	97.9	109	126	161	173	196	202
EBL90	90	9.90	12.4	19.1	29.4	41.2	52.7	71.3	79.5	90.6	97.9	101	111	132	170	183	205	209
EBL100	100	10.9	13.5	20.7	33.9	48.4	60.7	77.3	88.6	100	114	124	137	157	203	216	245	252
EBL120	120	13.2	16.1	24.9	40.4	57.9	72.6	92.9	110	119	137	148	164	187	243	263	295	303
EBL150	150	16.3	20.1	30.9	50.5	72.3	90.6	115	132	149	171	185	205	235	304	324	368	379
EBL200	200	21.6	26.8	41.2	67.1	96.0	121	152	176	198	227	245	273	311	404	433	489	505
EBL250	250	27.3	33.2	51.5	84.1	119	149	185	220	247	283	304	340	386	499	541	613	631
EBL300	300	32.5	39.8	61.8	100	144	181	231	265	299	341	369	407	464	597	644	734	757
EBL350	350	37.9	46.7	72.3	116	167	210	270	309	349	399	432	478	548	709	757	858	884
EBL400	400	43.3	53.0	82.4	134	191	238	305	353	396	453	490	546	622	808	865	979	1004
EBL500	500	54.1	66.4	103	168	239	299	371	442	494	567	608	680	773	997	1082	1226	1262
EBL600	600	64.9	79.6	124	200	285	358	442	529	589	675	723	814	927	1193	1285	1471	1514
EBL700	700	75.7	92.9	144	234	334	420	540	618	698	797	858	956	1095	1416	1514	1716	1766
EBL800	800	86.6	106	165	266	381	476	610	707	787	901	966	1082	1236	1590	1714	1957	2009
EBL900	900	97.5	119	185	301	428	536	685	795	886	1015	1088	1215	1391	1789	1928	2206	2271
EBL1000	1000	108	133	206	336	478	597	773	884	999	1133	1215	1360	1545	1988	2163	2451	2524
EBL1100	1100	119	147	227	369	526	657	850	972	1099	1246	1337	1496	1700	2187	2379	2697	2776
EBL1200	1200	130	160	247	403	574	716	928	1061	1199	1360	1458	1632	1854	2386	2596	2941	3029



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.

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

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.

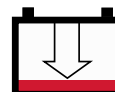
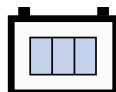
To meet the 30 minutes backup time requirement, we determine to choose the battery size from EBL Range.

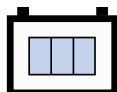
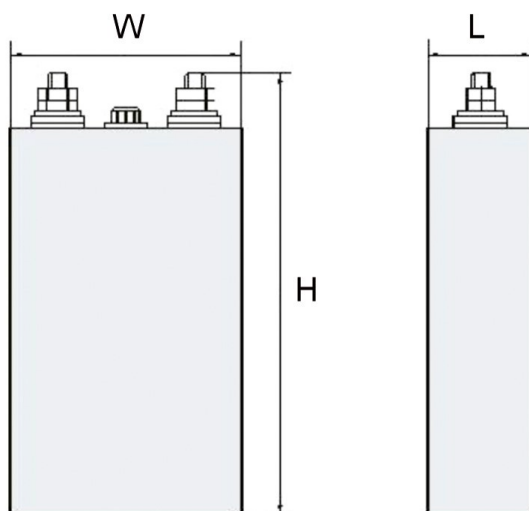
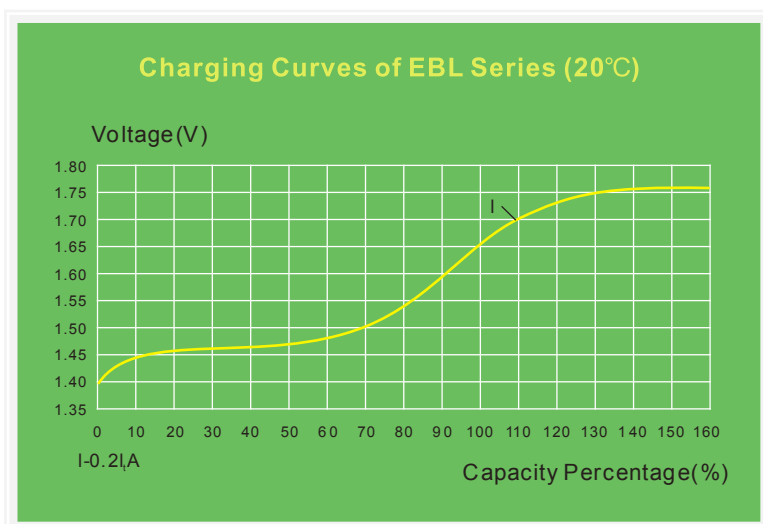
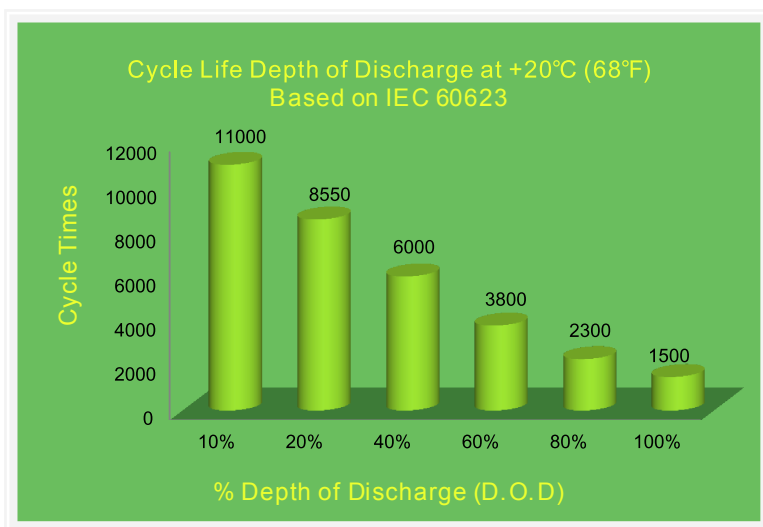
From our catalogue data, the cell type is EBL300.

Battery shall comprise 184 cells of EverExceed Nickel Cadmium type EBL300.

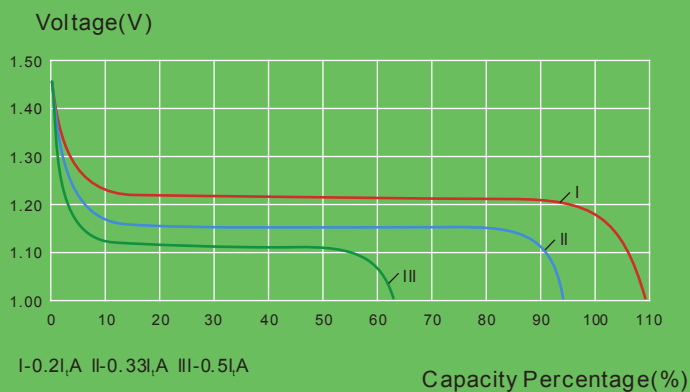
System Voltage	Number of Cells	Spread Range Number of Cells
24	20	18 ~ 21
36	30	27 ~ 31
48	40	36 ~ 41
110	92	88 ~ 93
220	184	180 ~ 186

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).

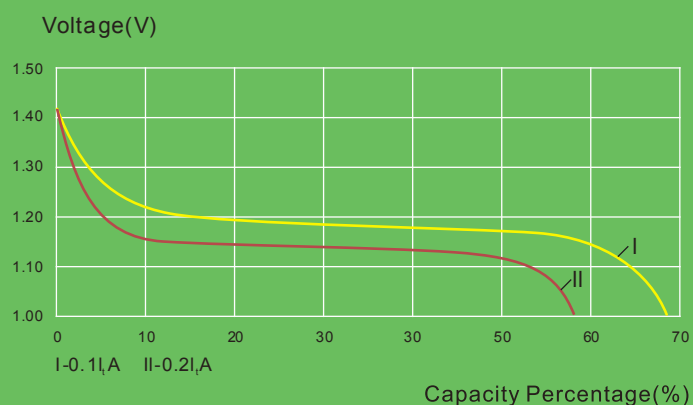




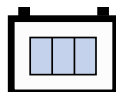
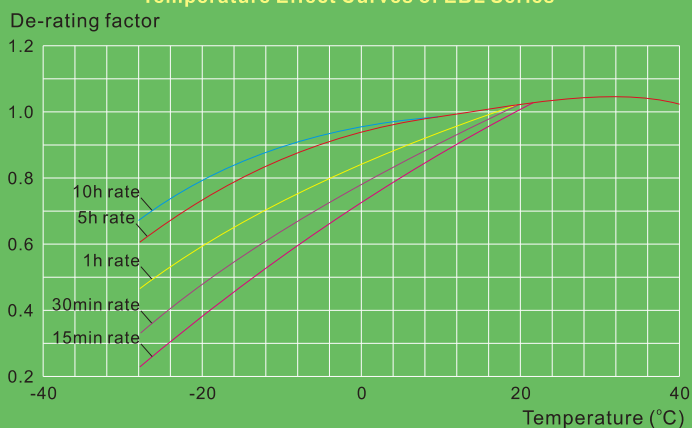
Discharging Curves of EBL Series (20°C)



Discharging Curves of EBL Series (-18°C)



Temperature Effect Curves of EBL Series



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