

Guarantee

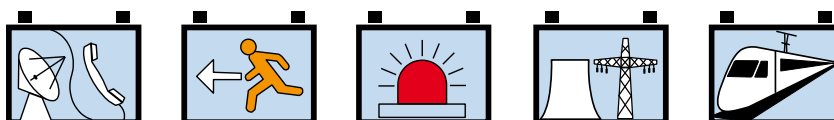
EverExceed®
power your applications

V4.1

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 behavior 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.

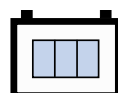
Good reserves and circulation of the electrolyte are achieved by a wide inter-plate space.

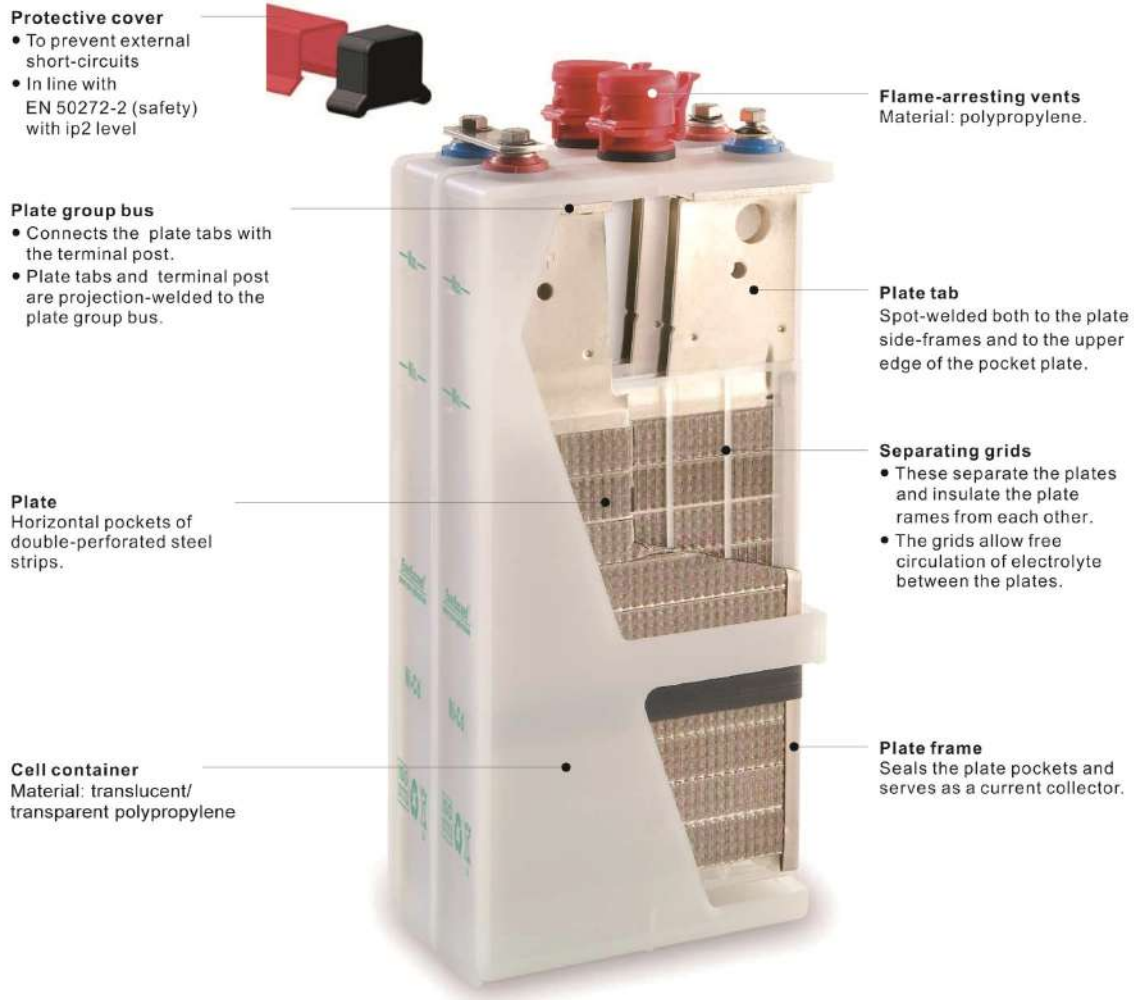
Injection molded plastic grids both separate plate and insulate plate edges. For extremely low temperatures a special high density electrolyte is available.

The block battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapors. 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.





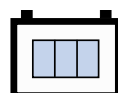
Application

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:

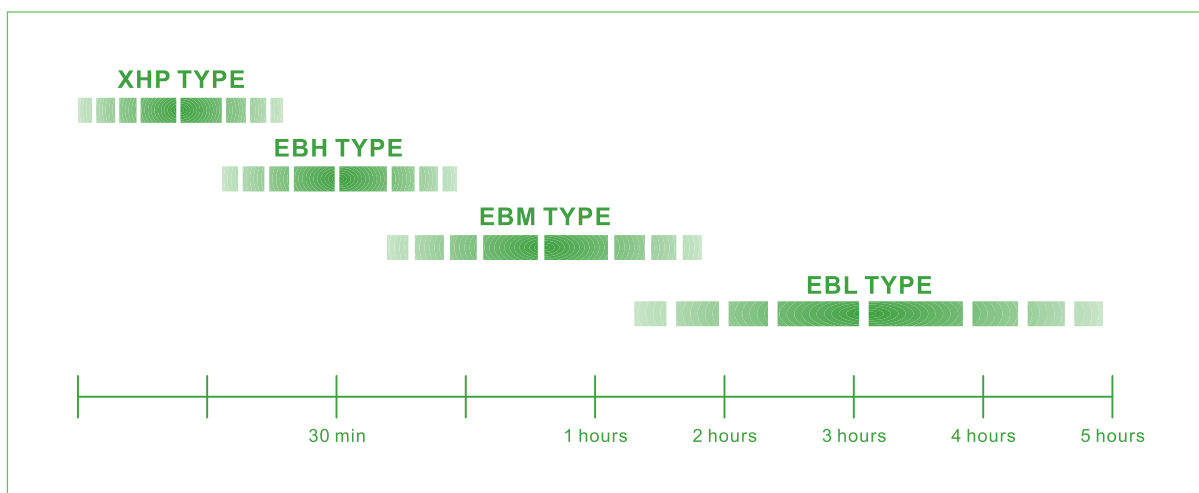
- Recommended charging voltage. 1.50 - 1.55 V/cell.

- ◆ **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

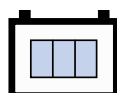
According to backup time required by application:



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

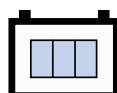


NiCd Pocket Plate EBL Range Electrical Specifications & Dimensions

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	1.0	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	6.0	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	5.0	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	10.0	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	140	5.5	280	11.0	450	17.7	13.8	30.4	21.0	46.3	2 x M16	PP
EBL350	1.2	350	140	5.5	280	11.0	450	17.7	15.0	33.1	22.0	48.5	2 x M16	PP
EBL400	1.2	400	140	5.5	280	11.0	450	17.7	15.8	34.8	22.8	50.3	2 x M16	PP
EBL500	1.2	500	140	5.5	280	11.0	490	19.3	16.8	37.0	24.0	52.9	2 x M20	PP
EBL600	1.2	600	175	6.9	290	11.4	500	19.7	27.0	59.5	37.0	81.5	2 x M20	ABS
EBL700	1.2	700	175	6.9	290	11.4	500	19.7	29.0	63.9	39.0	86.0	2 x M20	ABS
EBL800	1.2	800	186	7.3	398	15.7	565	22.2	39.0	86.0	58.0	128	3 x M20	ABS
EBL900	1.2	900	186	7.3	398	15.7	565	22.2	41.0	90.4	60.0	132	3 x M20	ABS
EBL1000	1.2	1000	186	7.3	398	15.7	565	22.2	44.0	97.0	61.0	134	3 x M20	ABS
EBL1100	1.2	1100	186	7.3	398	15.7	565	22.2	45.0	99.2	62.0	137	3 x M20	ABS
EBL1200	1.2	1200	186	7.3	398	15.7	565	22.2	46.0	101	63.0	139	3 x M20	ABS

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

Transparent case optional.



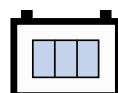
Discharge Data Table

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: 1.14 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	1.00	1.23	1.91	2.99	3.86	4.42	5.10	5.61	6.53	7.56	8.19	9.14	11.0	14.6	15.5	18.2	18.8
EBL20	20	1.98	2.42	3.64	5.45	7.14	8.30	10.2	11.2	13.1	15.1	16.7	17.6	20.2	29.0	33.5	44.0	50.3
EBL30	30	2.97	3.64	5.45	8.18	10.7	12.4	15.3	16.8	19.6	22.7	25.1	26.5	30.2	43.4	50.3	65.8	75.4
EBL40	40	3.96	4.85	7.27	10.9	14.3	16.6	20.4	22.4	26.1	30.2	33.4	35.3	40.3	57.9	67.0	87.8	101
EBL50	50	4.95	6.06	9.09	13.6	17.9	20.7	25.5	28.1	32.7	37.8	41.8	44.1	50.4	72.3	83.8	110	126
EBL60	60	5.94	7.27	10.9	16.3	21.4	24.9	30.6	33.7	39.2	45.3	47.6	54.6	58.8	81.1	89.8	115	130
EBL70	70	6.79	8.30	12.6	18.7	24.3	28.1	32.8	36.1	41.4	48.5	50.0	57.3	61.7	85.2	94.3	121	136
EBL80	80	7.92	9.70	14.5	21.0	26.5	30.5	35.9	39.5	45.7	50.4	53.8	60.5	70.6	91.1	100	124	137
EBL90	90	8.91	10.9	16.4	23.6	29.9	34.3	40.4	44.4	51.4	56.7	60.5	68.0	79.4	102	112	139	154
EBL100	100	9.73	11.8	18.0	26.6	34.7	40.2	46.9	51.6	59.2	69.3	71.4	81.9	88.2	121	135	173	195
EBL120	120	11.9	14.5	21.8	31.5	39.8	45.7	53.9	59.2	68.5	75.6	80.6	90.9	106	137	149	185	206
EBL150	150	14.8	18.2	27.3	39.4	49.7	57.2	67.3	74.1	85.7	94.5	101	114	133	171	187	232	258
EBL200	200	19.8	24.2	36.4	52.5	66.3	76.2	89.8	98.7	115	126	134	151	176	227	250	309	343
EBL250	250	24.8	30.3	45.5	65.7	82.9	95.5	112	123	143	158	168	189	221	284	312	387	429
EBL300	300	29.7	36.4	54.5	78.8	100	114	135	148	171	189	202	227	265	341	374	464	515
EBL350	350	34.7	42.4	63.6	92.0	116	133	157	173	200	221	236	265	309	398	437	541	600
EBL400	400	39.6	48.5	72.7	105	133	152	180	198	228	252	269	303	353	454	499	618	686
EBL500	500	49.5	60.6	90.9	132	166	191	224	246	286	315	336	378	441	568	623	773	858
EBL600	600	59.4	72.7	109	158	199	228	269	296	343	378	403	454	529	683	749	928	1029
EBL700	700	69.3	84.8	127	184	232	267	314	346	400	441	470	529	617	796	873	1082	1201
EBL800	800	79.1	97.0	145	210	265	305	359	395	457	504	537	605	705	910	998	1237	1372
EBL900	900	89.1	109	164	237	299	342	404	444	514	567	605	680	794	1024	1122	1391	1544
EBL1000	1000	99.0	121	182	262	332	381	449	494	571	630	672	756	882	1138	1247	1546	1716
EBL1100	1100	109	133	200	289	365	419	494	543	628	693	739	832	970	1251	1371	1701	1887
EBL1200	1200	119	145	218	315	398	457	539	592	685	756	806	907	1058	1365	1496	1855	2059



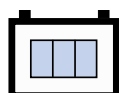
Discharge Data Table

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: 1.10 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	1.01	1.25	1.97	3.11	4.26	4.98	5.86	6.33	7.55	8.57	9.29	10.3	12.1	16.2	17.7	19.7	20.3
EBL20	20	2.02	2.50	3.87	5.92	7.98	9.55	11.8	12.7	15.5	17.4	18.7	21.4	25.7	32.9	37.8	49.4	56.2
EBL30	30	3.03	3.75	5.82	8.89	12.0	14.3	17.6	19.0	23.3	26.2	28.2	32.1	42.6	49.5	56.7	74.2	84.4
EBL40	40	4.04	5.00	7.76	11.8	16.0	19.1	23.4	25.3	31.0	34.9	37.5	42.8	51.4	65.9	75.6	98.8	112
EBL50	50	5.05	6.25	9.7	14.8	20.0	23.9	29.3	31.7	38.7	43.6	46.9	53.6	64.2	82.4	94.5	124	140
EBL60	60	6.06	7.50	11.6	17.8	23.9	28.6	35.2	38.0	46.5	52.3	56.3	64.3	70.1	90.7	104	134	149
EBL70	70	7.00	8.66	13.5	20.7	27.6	32.5	39.6	42.8	50.0	55.7	57.1	64.3	77.1	97.1	109	136	152
EBL80	80	8.08	10.0	15.5	23.1	30.7	35.6	43.6	47.1	53.9	58.8	65.3	73.4	78.3	104	113	138	151
EBL90	90	9.09	11.3	17.4	26.0	34.5	40.0	49.1	53.0	60.6	66.1	73.4	82.6	88.1	117	128	156	170
EBL100	100	10.0	12.4	19.2	29.7	39.4	46.5	56.6	61.1	71.4	79.6	81.6	91.8	110	138	155	194	218
EBL120	120	12.0	14.9	23.0	35.6	47.3	55.8	67.9	73.3	85.7	95.5	97.9	110	132	166	186	233	261
EBL150	150	15.2	18.7	29.1	43.4	57.6	66.7	81.8	88.4	101	110	122	138	146	195	212	259	283
EBL200	200	20.2	25.0	38.8	57.9	76.8	88.9	109	118	135	147	163	184	196	260	283	345	378
EBL250	250	25.3	31.2	48.5	72.4	96.4	111	137	148	169	184	204	230	245	325	353	431	472
EBL300	300	30.3	37.5	58.2	86.9	116	133	164	177	202	220	245	276	294	390	425	518	567
EBL350	350	35.4	43.7	67.9	102	135	156	191	207	236	257	286	322	343	454	495	604	662
EBL400	400	40.4	50.0	77.6	116	154	178	218	236	269	294	326	368	391	519	566	690	756
EBL500	500	50.5	62.5	96.9	145	192	222	272	294	337	367	408	459	490	649	707	862	945
EBL600	600	60.6	75.0	116	174	230	267	327	353	404	441	490	551	588	779	849	1035	1134
EBL700	700	70.7	87.5	135	203	269	311	382	412	471	514	571	643	685	909	990	1208	1323
EBL800	800	80.8	100	155	232	307	355	436	471	539	588	653	734	784	1039	1132	1380	1512
EBL900	900	90.9	112	175	260	346	400	491	531	606	661	734	827	881	1169	1273	1552	1701
EBL1000	1000	101	125	194	289	384	445	546	589	673	734	816	918	979	1298	1415	1725	1890
EBL1100	1100	111	137	213	318	422	489	600	648	741	808	898	1010	1077	1428	1557	1897	2079
EBL1200	1200	121	150	232	347	461	533	654	707	808	881	979	1102	1175	1559	1697	2070	2267



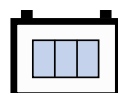
Discharge Data Table

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: 1.05 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	1.04	1.28	2.01	3.21	4.6	5.63	6.84	7.66	8.77	10.0	10.9	12.2	14.4	19.1	20.6	24.2	25.1
EBL20	20	2.06	2.55	3.96	6.26	8.8	10.8	14.0	15.7	18.7	22.3	24.3	27.2	29.7	40.1	45.0	59.9	67.4
EBL30	30	3.09	3.83	5.94	9.39	13.3	16.1	21.0	23.5	28.2	33.4	36.5	40.8	44.5	60.2	67.6	89.8	101
EBL40	40	4.12	5.10	7.92	12.5	17.6	21.5	27.9	31.3	37.5	44.5	48.6	54.4	59.3	80.2	90.0	120	134
EBL50	50	5.15	6.37	9.90	15.7	22.0	26.9	34.9	39.1	46.9	55.7	60.8	67.9	74.2	100	113	150	169
EBL60	60	6.18	7.65	11.9	18.8	26.5	32.3	42.0	47.0	56.3	66.8	73.0	81.5	89.0	121	135	180	202
EBL70	70	7.07	8.84	13.9	22.2	30.7	37.1	45.7	51.2	60.0	69.2	75.0	82.2	95.2	118	130	168	185
EBL80	80	8.08	10.1	15.8	25.3	35.1	42.4	52.2	58.5	68.5	79.1	85.7	93.9	109	135	148	192	212
EBL90	90	9.27	11.6	18.0	28.2	39.0	46.5	57.9	64.8	75.3	84.8	89.0	101	122	141	154	189	205
EBL100	100	10.3	12.9	20.0	31.4	43.4	51.6	64.3	72.0	83.6	94.2	98.9	112	136	156	171	210	228
EBL120	120	12.1	15.2	23.8	38.0	52.6	63.6	78.3	87.7	103	119	128	140	163	202	224	288	317
EBL150	150	15.5	19.3	30.0	47.0	65.0	77.5	96.4	108.0	126	141	148	167	204	235	257	314	341
EBL200	200	20.6	25.6	40.0	62.6	86.7	104	129	144.0	168	188	198	222	272	313	342	419	455
EBL250	250	25.8	32.0	50.0	78.3	108	129	160	179.7	210	236	247	278	340	391	428	524	569
EBL300	300	31.0	38.4	60.0	94.2	130	155	193	216.2	251	282	297	334	408	470	513	628	682
EBL350	350	36.1	44.9	70.0	109	151	181	225	251.6	293	330	346	389	476	548	599	733	796
EBL400	400	41.2	51.3	80.0	126	173	206	257	287.4	334	377	395	445	544	626	685	838	910
EBL500	500	51.5	64.1	100	156	217	258	321	359.5	418	472	495	556	680	783	856	1047	1138
EBL600	600	61.8	76.9	120	188	260	310	386	431.8	502	565	593	667	816	939	1028	1257	1365
EBL700	700	72.1	89.7	140	219	304	362	450	503.8	585	660	692	779	952	1096	1199	1467	1592
EBL800	800	82.5	102	160	250	347	414	514	575.9	670	754	791	890	1088	1253	1370	1676	1820
EBL900	900	92.8	115	180	282	390	465	579	648.0	753	848	890	1001	1224	1409	1541	1885	2047
EBL1000	1000	103	128	200	313	434	517	643	720.2	836	942	989	1113	1359	1565	1713	2095	2274
EBL1100	1100	113	141	220	344	477	568	707	791.7	920	1037	1088	1224	1496	1722	1884	2305	2502
EBL1200	1200	123	154	240	376	520	620	771	863.7	1004	1131	1187	1335	1632	1879	2055	2514	2729



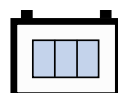
Discharge Data Table

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	1.04	1.28	2.02	3.26	4.67	5.90	7.64	8.56	9.90	11.3	12.2	13.7	16.3	21.6	23.8	27.6	28.1
EBL20	20	2.08	2.58	4.04	6.46	9.2	11.6	15.5	17.3	22.1	25.4	27.7	30.8	37.1	46.0	51.7	67.9	76.4
EBL30	30	3.11	3.87	6.06	9.70	13.8	17.4	23.3	26.0	33.0	38.1	41.6	34.0	55.6	69.0	77.5	102	114
EBL40	40	4.14	5.15	8.08	12.9	18.4	23.1	31.0	34.7	44.1	50.8	55.5	46.4	76.2	92.0	103	135	153
EBL50	50	5.18	6.44	10.1	16.1	23.0	28.9	38.7	43.4	55.1	63.5	69.3	65.7	92.7	115	129	170	191
EBL60	60	6.22	7.73	12.1	19.4	27.6	34.7	46.5	52.1	66.1	76.2	83.2	70.3	112	138	155	203	230
EBL70	70	7.15	8.93	14.1	22.6	32.5	40.1	52.2	58.4	70.7	81.4	87.1	89.4	109	136	147	191	213
EBL80	80	8.33	10.3	16.2	25.9	36.4	44.7	58.0	64.9	79.2	90.2	97.9	85.9	119	144	157	192	206
EBL90	90	9.37	11.6	18.2	29.1	41.0	50.3	65.2	73.1	89.1	101	110	122	134	162	177	216	232
EBL100	100	10.4	12.9	20.2	32.3	45.5	55.9	72.5	81.2	99.0	113	122	136	149	180	196	240	258
EBL120	120	12.2	15.3	24.2	38.8	55.8	68.6	89.4	100	121	139	149	140	185	233	253	328	364
EBL150	150	15.6	19.4	30.3	48.5	68.2	83.9	109	122	149	169	184	160	223	270	294	359	386
EBL200	200	20.9	25.8	40.4	64.6	91.0	111	144	162	197	226	245	206	296	360	392	479	514
EBL250	250	26.0	32.2	50.5	80.8	114	139	181	202	247	283	306	273	371	450	489	598	644
EBL300	300	31.2	38.6	60.6	97.0	136	168	217	244	297	340	367	289	445	540	588	718	772
EBL350	350	36.4	45.1	70.7	113	159	196	253	284	347	396	428	412	519	631	685	838	901
EBL400	400	41.6	51.5	80.8	129	182	224	290	325	396	453	490	491	594	720	783	957	1029
EBL500	500	52.0	64.4	101	161	228	279	362	405	495	566	612	553	741	900	979	1197	1287
EBL600	600	62.4	77.3	121	194	273	335	435	487	594	679	734	693	890	1080	1174	1436	1545
EBL700	700	72.8	90.2	141	226	318	391	507	568	693	793	857	816	1038	1261	1370	1676	1802
EBL800	800	83.2	103	162	259	364	447	579	649	791	905	979	917	1186	1441	1566	1915	2059
EBL900	900	93.7	116	182	291	409	503	652	730	890	1019	1102	1098	1335	1620	1762	2155	2316
EBL1000	1000	104	129	202	323	455	558	724	811	989	1132	1224	1233	1483	1800	1957	2394	2574
EBL1100	1100	114	141	222	356	500	615	797	892	1088	1245	1346	1386	1632	1981	2153	2633	2831
EBL1200	1200	125	155	242	388	545	671	869	973	1187	1359	1469	1496	1780	2161	2348	2873	3088



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.

$$\text{Number of cells required} = \frac{\text{Circuit voltage}}{\text{Cell Float voltage}}$$

$$\text{Minimum cell voltage} = \frac{\text{Minimum D.C. voltage}}{\text{Number of cells}}$$

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.

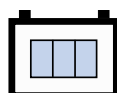
To meet the 30 minutes backup time requirement, we determine to choose the battery size from EBL Range.

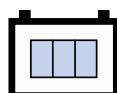
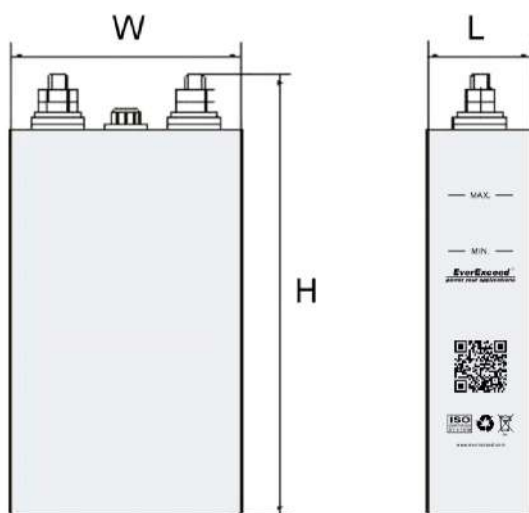
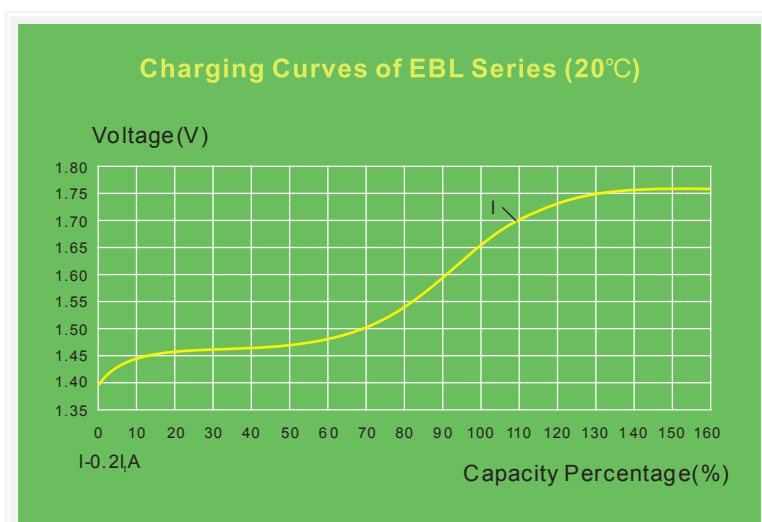
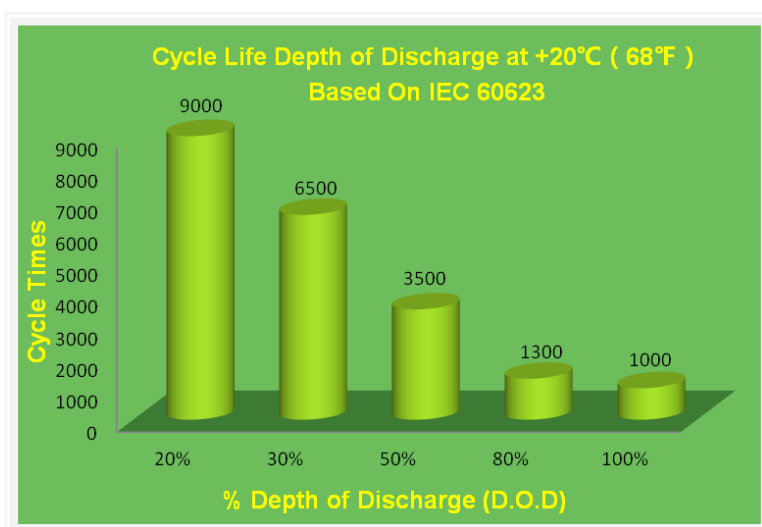
From our catalogue data, the cell type is EBL300.

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

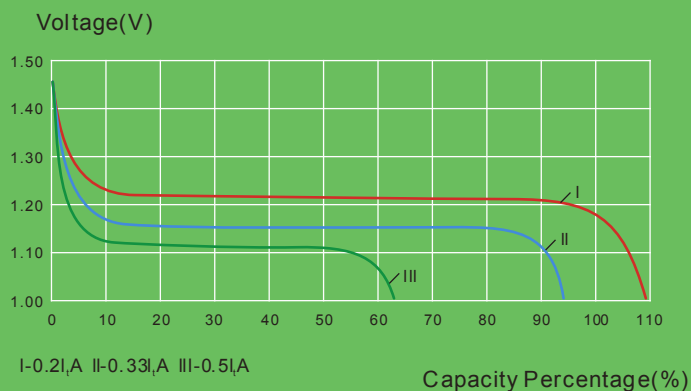
System Voltage	Number of Cells	Spread Range Number of Cells
24	20	18 ~ 21
36	30	27 ~ 31
48	40	36 ~ 41
110	92	88 ~ 93
220	184	180 ~ 186

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).

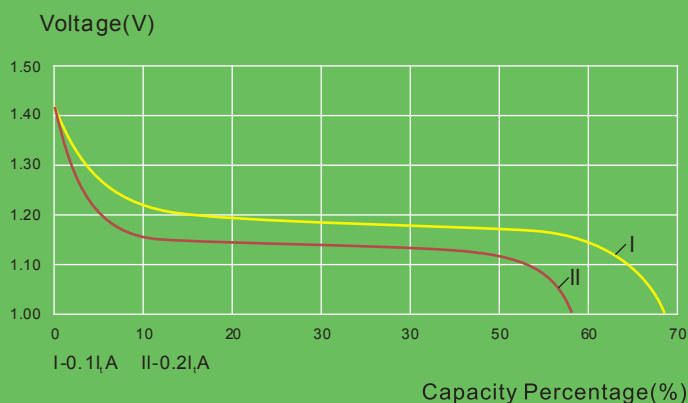




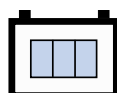
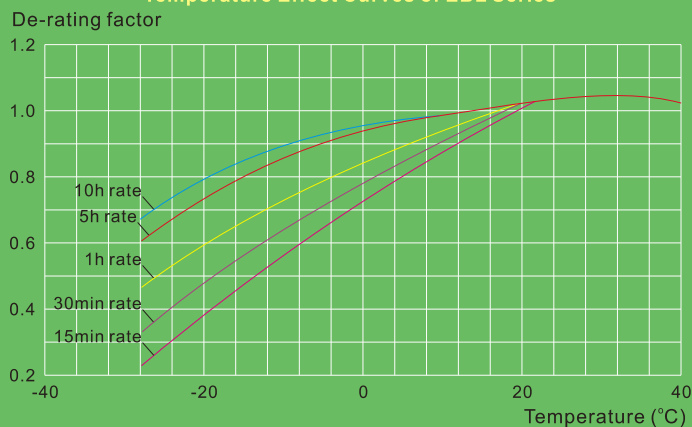
Discharging Curves of EBL Series (20°C)



Discharging Curves of EBL Series (-18°C)



Temperature Effect Curves of EBL Series



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EverExceed Corporation***

