



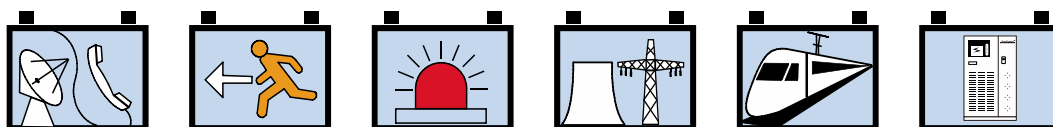
EverExceed®
power your applications

V4.4

Maintenance-free NiCd Battery



**»Premium quality for
uninterrupted communication«**



www.everexceed.com



ULTRA-HIGH RELIABILITY FREE MAINTENANCE

EverExceed SPL series is a powerful combination of proven pocket-plate construction and advanced design from the world leader in industrial nickel-cadmium battery technology. With a 20-year life and free maintenance requirements, EverExceed SPL series has become the cost-effective first choice – worldwide – for trouble-free standby power in the most demanding applications.

More Reliable

SPL series can continue to supply power for 20 years or more thanks to its corrosion free construction and EverExceed's tried and tested pocket-plate technology. No physical plate degradation and no sudden death with resulting costly downtime

Low life-cycle Cost

The cost of ownership of a battery system can be calculated across three distinct phases: the initial investment, including the cost of purchase and installation; on-going maintenance costs, including unexpected and expensive downtime periods; finally, the battery replacement costs, which include the expense of disposal as well as renewal. SPL series is the most cost-effective solution for any application – onshore or offshore – where long battery life, low maintenance costs, resistance to corrosion and total reliability are prime operating requirements.



More Adaptable

Offshore oil and gas, emergency lighting, fire and security, telecoms, utilities, photovoltaics. You can depend upon SPL series for perfect peace of mind.

No Water Filling

No water filling is necessary during the SPL series 20-year service life because of the controlled recombination and the valve regulated venting system (topping-up is possible if required).

More Durable

SPL series will survive treatment which would destroy lead acid batteries. This battery accepts ripple currents up to 0.2 C5 A and can be over-discharged or reversed without damage. Prolonged abusive overcharge can easily be compensated by refurbishment with water.

More Environmentally Tolerant

SPL series performs in the most severe conditions and can operate over a temperature range from 0°C to +40°C (+32°F to +104°F). It can survive extremes of temperature from as low as -50°C to as high as +70°C (-58°F to as high as +158°F).

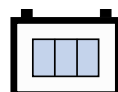
More Manageable

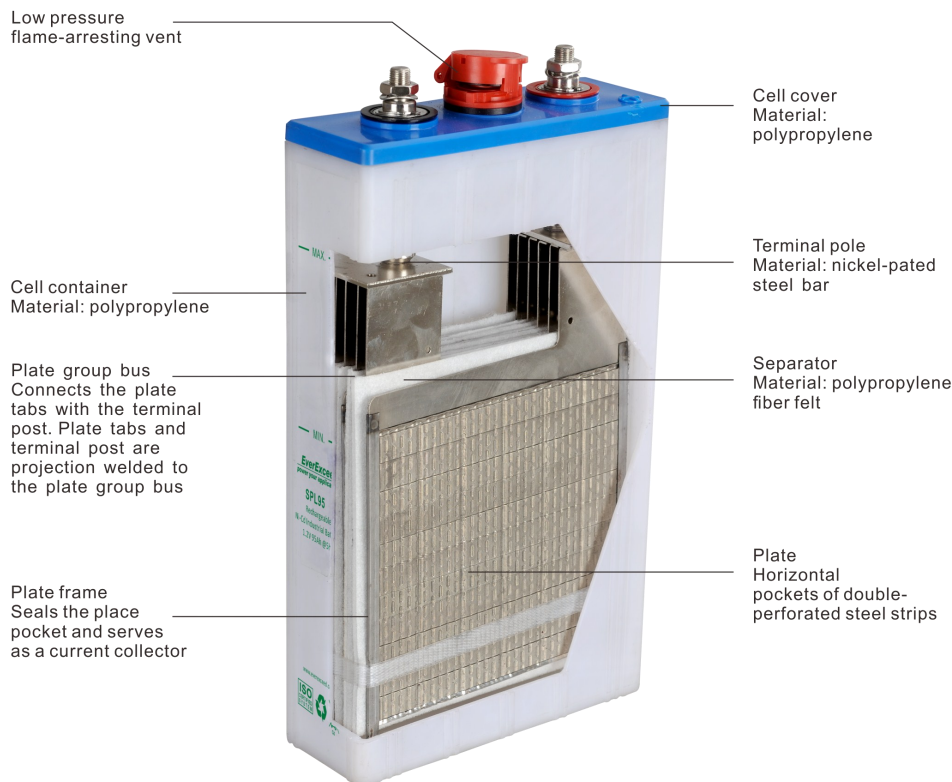
Compact and lightweight, SPL series is easy to transport and install. It can be stored for one year without need of refresher charges.

Float-corrected 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 dimensioning the battery.

In order to simplify this process, the data EverExceed supplies in this publication takes into account this phenomenon. The data published by EverExceed is the performance after prolonged floating and it can be used directly to perform the battery calculation. 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.





Meeting International Standards

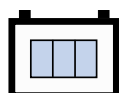
EverExceed batteries are manufactured under a strict ISO 9001 regime. Highest quality materials and rigorous quality checking procedures ensure all relevant international standards are met, including IEC 60623-2001, IEC 62259-2003.

Technology Superiority

- ☐ The electrode use steel tape as the framework. No react with electrolyte and remain complete during the whole service life.
 - ☐ The separator is made of polypropylene fiber felt.
 - ☐ No electrolyte replacement within service life.
 - ☐ Terminals are made of steel or copper which has excellent electric conductivity and high mechanical strength.
 - ☐ Battery case is made of high strength, corrosion resisting, translucent engineering plastics.
 - ☐ No sudden death risk.
 - ☐ Gas recombination efficiency can reach 85%~95%.
 - ☐ Ultra high gas recombination efficiency, which reduces 90% water consumption.
- Conforms to IEC/EN 62259.

Application

- | | | | |
|--|--|---|--|
| ☐ Offshore oil and gas | ☐ Process control | ☐ Telecommunications | ☐ Wind/Solar energy |
| ☐ Fire and security systems | ☐ Switchgear | ☐ Mass transit | ☐ UPS |
| ☐ Railway signaling | | | |



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:**

- A. Two level constant potential charging:**

- Float voltage: 1.42 V/cell
- Boost Voltage: 1.45 V/cell

Alternatively, if a faster rate of recharge is required, a voltage limit of 1.55 V/cell with a current limit of 0.1 C5 Ampere can be used. However, if frequent recharges are required this will increase the rate of water loss and gas generation.

- B. Single level float charging:**

- Float voltage: 1.42 V/cell

For use at temperatures outside the range of +15°C to +25°C (+59°F to +77°F), the correcting factor for charge voltage is $-3 \text{ mV/}^\circ\text{C/cell}$ ($-1.7 \text{ mV/}^\circ\text{F/cell}$).

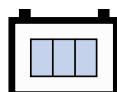
- ◆ **Constant current mode:**

- Normal charging: 0.1 C A for 16 hours

Initial Charging

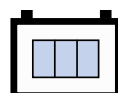
The whole charge should preferably be carried out at constant current. The charging time is inversely proportional to the current which is set by the current limit of the charging equipment.

Recommended rates for the first charging according to IEC 62259: □ □ 0.1 C5A for 16 hours



SPL Series Electrical Specifications & Dimensions

Cell Type	Nominal Voltage (V)	Capacity (C ₅ Ah)	Max. External Dimensions (mm/inch)						Max. Weight (kg/lb.)		Electrolyte Volume (L)	Terminal	Container Material
			Length		Width		Height						
SPL30	1.2	30	70	2.8	135	5.3	245	9.6	2.8	6.2	0.8	M10	PP
SPL40	1.2	40	70	2.8	135	5.3	245	9.6	3.0	6.6	0.8	M10	PP
SPL50	1.2	50	70	2.8	135	5.3	285	11.2	4.0	8.8	0.9	M16	PP
SPL60	1.2	60	70	2.8	135	5.3	285	11.2	4.2	9.3	0.8	M16	PP
SPL70	1.2	70	70	2.8	135	5.3	285	11.2	4.5	9.9	0.8	M16	PP
SPL80	1.2	80	80	3.1	140	5.5	365	14.4	5.8	12.8	1.7	M10	PP
SPL90	1.2	90	80	3.1	140	5.5	365	14.4	6.0	13.2	1.7	M10	PP
SPL100	1.2	100	80	3.1	140	5.5	365	14.4	6.2	13.7	1.6	M10	PP
SPL120	1.2	120	105	4.1	165	6.5	345	13.6	8.5	18.7	2.5	M20	PP
SPL150	1.2	150	105	4.1	165	6.5	345	13.6	9	19.8	2.2	M20	PP
SPL200	1.2	200	100	3.9	172	6.8	450	17.7	12.0	26.4	2.8	M20	PP
SPL250	1.2	250	100	3.9	172	6.8	450	17.7	12.6	27.7	2.3	M20	PP
SPL300	1.2	300	152	6.0	170	6.7	385	15.2	15.2	33.1	3.0	M20	PP
SPL350	1.2	350	152	6.0	170	6.7	385	15.2	16.5	36.3	2.8	M20	PP
SPL400	1.2	400	152	6.0	170	6.7	385	15.2	18	39.7	2.6	M20	PP
SPL450	1.2	450	138	5.4	276	10.9	450	17.7	25.2	55.4	5.6	2 x M16	PP
SPL500	1.2	500	138	5.4	276	10.9	450	17.7	26.5	58.3	5.0	2 x M16	PP
SPL550	1.2	550	175	6.9	290	11.4	500	19.7	36.5	80.3	9.5	2 x M20	ABS
SPL600	1.2	600	175	6.9	290	11.4	500	19.7	37.2	81.8	8.8	2 x M20	ABS
SPL700	1.2	700	175	6.9	290	11.4	500	19.7	39.2	86.3	8.3	2 x M20	ABS
SPL800	1.2	800	185	7.3	400	15.7	570	22.4	57.5	126.5	16.0	3 x M20	ABS
SPL900	1.2	900	185	7.3	400	15.7	570	22.4	58.2	128.0	14.8	3 x M20	ABS
SPL1000	1.2	1000	185	7.3	400	15.7	570	22.4	60.0	132.0	14.2	3 x M20	ABS



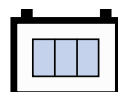
Discharge Data Table

Discharge performance data after fully charged by constant current according to IEC62259

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

Final voltage: 1.14 V/cell

Cell Type	Capacity (C ₅ Ah)	Discharge Time in Hours							Discharge Time in minutes						Time in Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
SPL30	30	3.00	3.75	5.85	9.33	12.9	15.2	17.8	20.9	22.0	23.7	25.3	27.8	31.8	34.0	37.1	40.2
SPL40	40	4.00	5.00	7.80	12.4	17.3	20.2	23.7	27.9	29.4	31.5	33.7	37.1	42.4	45.3	49.4	53.6
SPL50	50	5.00	6.25	9.75	15.6	21.6	25.3	29.6	34.8	36.7	39.4	42.2	46.4	53.0	56.7	61.8	67.0
SPL60	60	6.00	7.50	11.7	18.7	25.9	30.3	35.6	41.8	44.1	47.3	50.6	55.7	63.6	68.0	74.2	80.3
SPL70	70	7.00	8.75	13.7	21.8	30.2	35.4	41.5	48.8	51.4	55.2	59.0	65.0	74.3	79.3	86.5	93.7
SPL80	80	8.00	10.0	15.6	24.9	34.5	40.4	47.4	55.7	58.8	63.1	67.5	74.3	84.9	90.6	98.9	107
SPL90	90	9.00	11.3	17.6	28.0	38.8	45.5	53.4	62.7	66.1	71.0	75.9	83.5	95.5	102	111	121
SPL100	100	10.0	12.5	19.5	31.1	43.1	50.5	59.3	69.7	73.4	78.8	84.4	93	106	113	124	134
SPL120	120	12.0	15.0	23.4	37.3	51.8	60.6	71.1	83.6	88.1	94.6	101	111	127	136	148	161
SPL150	150	15.0	18.8	29.3	46.7	64.7	75.8	88.9	104	110	118	127	139	159	170	185	201
SPL200	200	20.0	25.0	39.0	62.2	86.3	101	119	139	147	158	169	186	212	227	247	268
SPL250	250	25.0	31.3	48.8	77.8	108	126	148	174	184	197	211	232	265	283	309	335
SPL300	300	30.0	37.5	58.5	93.3	129	152	178	209	220	237	253	278	318	340	371	402
SPL350	350	35.0	43.8	68.3	109	151	177	208	244	257	276	295	325	371	397	433	469
SPL400	400	40.0	50.0	78.0	124	173	202	237	279	294	315	337	371	424	453	494	536
SPL450	450	45.0	56.3	87.8	140	194	227	267	313	330	355	380	418	477	510	556	603
SPL500	500	50.0	62.5	97.5	156	216	253	296	348	367	394	422	464	530	567	618	670
SPL550	550	55.0	68.8	107	171	237	278	326	383	404	434	464	511	583	623	680	736
SPL600	600	60.0	75.0	117	187	259	303	356	418	441	473	506	557	636	680	742	803
SPL700	700	70.0	87.5	137	218	302	354	415	488	514	552	590	650	743	793	865	937
SPL800	800	80.0	100	156	249	345	404	474	557	588	631	675	743	849	906	989	1071
SPL900	900	90.0	113	176	280	388	455	534	627	661	710	759	835	955	1020	1112	1205
SPL1000	1000	100	125	195	311	431	505	593	697	734	788	844	928	1061	1133	1236	1339



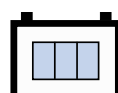
Discharge Data Table

Discharge performance data after fully charged by constant current according to IEC62259

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

Final voltage: 1.10 V/cell

Cell Type	Capacity (C ₅ Ah)	Discharge Time in Hours							Discharge Time in minutes						Time in Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
SPL30	30	3.02	3.65	5.35	7.70	10.3	11.8	12.5	17.2	20.8	22.5	24.5	28.5	30.2	33.8	36.8	40.3
SPL40	40	4.03	4.87	7.13	10.3	13.7	15.7	16.7	22.9	27.7	30.0	32.7	38.0	40.3	45.1	49.1	53.7
SPL50	50	5.03	6.08	8.92	12.8	17.2	19.7	20.8	28.7	34.7	37.5	40.8	47.5	50.3	56.3	61.3	67.2
SPL60	60	6.04	7.30	10.7	15.4	20.6	23.6	25.0	34.4	41.6	45.0	49.0	57.0	60.4	67.6	73.6	80.6
SPL70	70	7.05	8.52	12.5	18.0	24.0	27.5	29.2	40.1	48.5	52.5	57.2	66.5	70.5	78.9	85.9	94.0
SPL80	80	8.05	9.73	14.3	20.5	27.5	31.5	33.3	45.9	55.5	60.0	65.3	76.0	80.5	90.1	98.1	107
SPL90	90	9.06	11.0	16.1	23.1	30.9	35.4	37.5	51.6	62.4	67.5	73.5	85.5	90.6	101	110	121
SPL100	100	10.1	12.2	17.8	25.7	34.3	39.3	41.7	57.3	69.3	75.0	81.7	95.0	101	113	123	134
SPL120	120	12.1	14.6	21.4	30.8	41.2	47.2	50.0	68.8	83.2	90.0	98.0	114	121	135	147	161
SPL150	150	15.1	18.3	26.8	38.5	51.5	59.0	62.5	86.0	104	113	123	143	151	169	184	202
SPL200	200	20.1	24.3	35.7	51.3	68.7	78.7	83.3	115	139	150	163	190	201	225	245	269
SPL250	250	25.2	30.4	44.6	64.2	85.8	98.3	104	143	173	188	204	238	252	282	307	336
SPL300	300	30.2	36.5	53.5	77.0	103	118	125	172	208	225	245	285	302	338	368	403
SPL350	350	35.2	42.6	62.4	89.8	120	138	146	201	243	263	286	333	352	394	429	470
SPL400	400	40.3	48.7	71.3	103	137	157	167	229	277	300	327	380	403	451	491	537
SPL450	450	45.3	54.8	80.3	116	155	177	188	258	312	338	368	428	453	507	552	604
SPL500	500	50.3	60.8	89.2	128	172	197	208	287	347	375	408	475	503	563	613	672
SPL550	550	55.4	66.9	98.1	141	189	216	229	315	381	413	449	523	554	620	675	739
SPL600	600	60.4	73.0	107	154	206	236	250	344	416	450	490	570	604	676	736	806
SPL700	700	70.5	85.2	125	180	240	275	292	401	485	525	572	665	705	789	859	940
SPL800	800	80.5	97.3	143	205	275	315	333	459	555	600	653	760	805	901	981	1075
SPL900	900	90.6	110	161	231	309	354	375	516	624	675	735	855	906	1014	1104	1209
SPL1000	1000	101	122	178	257	343	393	417	573	693	750	817	950	1007	1127	1227	1343



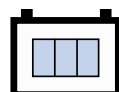
Discharge Data Table

Discharge performance data after fully charged by constant current according to IEC62259

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

Final voltage: 1.05 V/cell

Cell Type	Capacity (C ₅ Ah)	Discharge Time in Hours							Discharge Time in minutes						Time in Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
SPL30	30	3.03	3.78	5.94	9.64	13.6	17.0	20.3	25.2	26.9	28.2	29.4	31.8	37.3	40.2	45.4	49.7
SPL40	40	4.04	5.04	7.92	12.8	18.2	22.6	27.1	33.6	35.9	37.5	39.2	42.4	49.8	53.6	60.6	66.3
SPL50	50	5.05	6.30	9.90	16.1	22.7	28.3	33.8	42.0	44.9	46.9	49.0	53.0	62.2	67.0	75.7	82.9
SPL60	60	6.06	7.56	11.9	19.3	27.3	33.9	40.6	50.4	53.9	56.3	58.8	63.6	74.7	80.3	90.8	99.5
SPL70	70	7.07	8.82	13.9	22.5	31.8	39.6	47.4	58.8	62.8	65.7	68.5	74.3	87.1	93.7	106	116
SPL80	80	8.08	10.1	15.8	25.7	36.4	45.2	54.1	67.2	71.8	75.1	78.3	84.9	99.6	107	121	133
SPL90	90	9.09	11.3	17.8	28.9	40.9	50.9	60.9	75.6	80.8	84.5	88.1	95.5	112	121	136	149
SPL100	100	10.1	12.6	19.8	32.1	45.5	56.6	67.7	83.9	89.8	93.8	97.9	106	124	134	151	166
SPL120	120	12.1	15.1	23.8	38.5	54.5	67.9	81.2	101	108	113	118	127	149	161	182	199
SPL150	150	15.2	18.9	29.7	48.2	68.2	84.8	102	126	135	141	147	159	187	201	227	249
SPL200	200	20.2	25.2	39.6	64.2	90.9	113	135	168	180	188	196	212	249	268	303	332
SPL250	250	25.3	31.5	49.5	80.3	114	141	169	210	224	235	245	265	311	335	379	415
SPL300	300	30.3	37.8	59.4	96.4	136	170	203	252	269	282	294	318	373	402	454	497
SPL350	350	35.4	44.1	69.3	112	159	198	237	294	314	328	343	371	436	469	530	580
SPL400	400	40.4	50.4	79.2	128	182	226	271	336	359	375	392	424	498	536	606	663
SPL450	450	45.5	56.7	89.1	145	205	255	305	378	404	422	441	477	560	603	681	746
SPL500	500	50.5	63.0	99.0	161	227	283	338	420	449	469	490	530	622	670	757	829
SPL550	550	55.6	69.3	109	177	250	311	372	462	494	516	539	583	684	736	833	912
SPL600	600	60.6	75.6	119	193	273	339	406	504	539	563	588	636	747	803	908	995
SPL700	700	70.7	88.2	139	225	318	396	474	588	628	657	685	743	871	937	1060	1161
SPL800	800	80.8	101	158	257	364	452	541	672	718	751	783	849	996	1071	1211	1327
SPL900	900	90.9	113	178	289	409	509	609	756	808	845	881	955	1120	1205	1363	1492
SPL1000	1000	101	126	198	321	455	566	677	839	898	938	979	1061	1244	1339	1514	1658



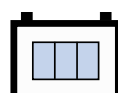
Discharge Data Table

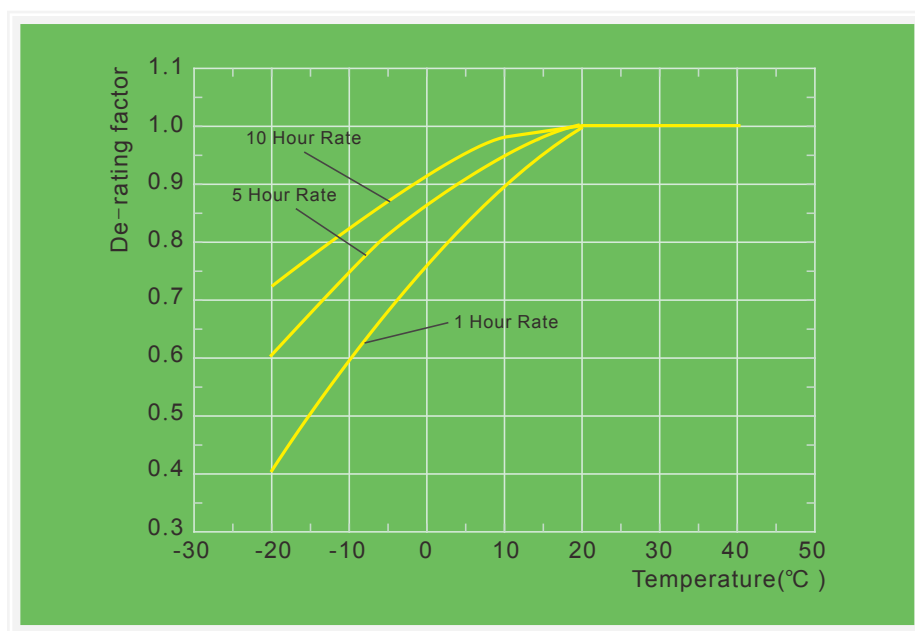
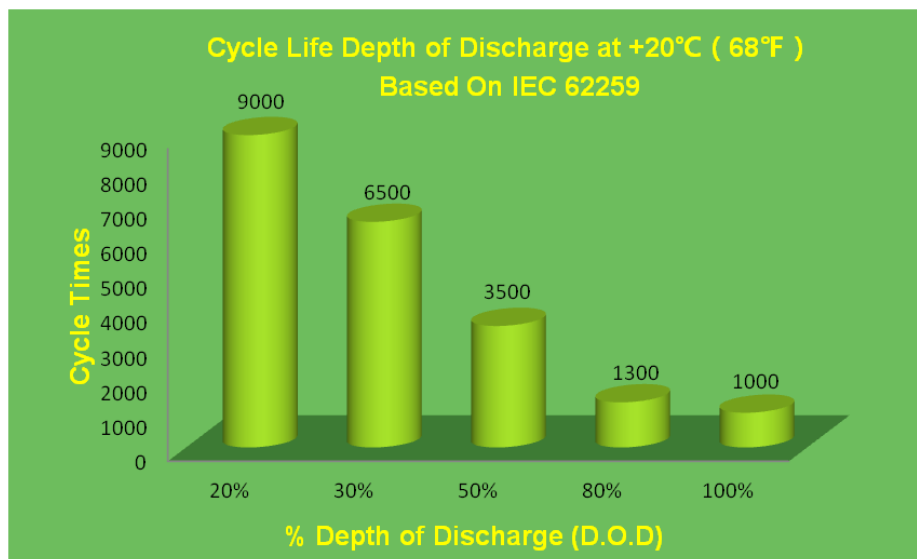
Discharge performance data after fully charged by constant current according to IEC62259

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

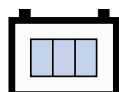
Final voltage: 1.00 V/cell

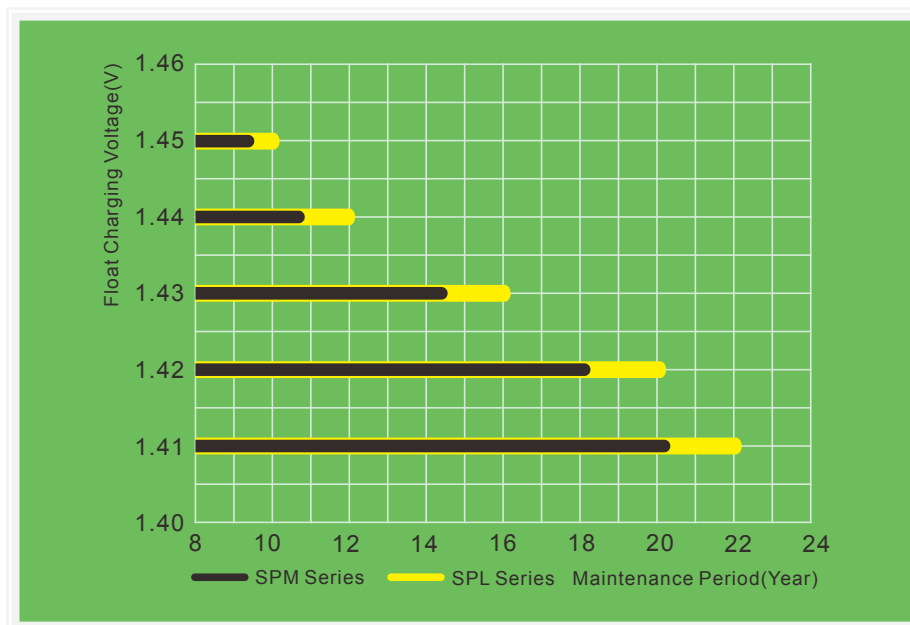
Cell Type	Capacity (C ₅ Ah)	Discharge Time in Hours							Discharge Time in minutes						Time in Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
SPL30	30	3.06	3.81	6.00	9.79	14.0	18.5	23.8	28.7	30.6	32.1	34.3	36.4	41.9	44.5	50.4	56.9
SPL40	40	4.08	5.08	8.00	13.0	18.7	24.6	31.8	38.2	40.8	42.8	45.7	48.6	55.9	59.3	67.2	75.8
SPL50	50	5.10	6.35	10.0	16.3	23.4	30.8	39.7	47.8	51.0	53.6	57.1	60.7	69.9	74.2	83.9	94.8
SPL60	60	6.12	7.62	12.0	19.6	28.1	37.0	47.7	57.3	61.2	64.3	68.5	72.8	83.8	89.0	101	114
SPL70	70	7.14	8.89	14.0	22.8	32.7	43.1	55.6	66.9	71.4	75.0	80.0	85.0	97.8	104	118	133
SPL80	80	8.16	10.2	16.0	26.1	37.4	49.3	63.6	76.5	81.6	85.7	91.4	97.1	112	119	134	152
SPL90	90	9.18	11.4	18.0	29.4	42.1	55.4	71.5	86.0	91.8	96.4	103	109	126	133	151	171
SPL100	100	10.2	12.7	20.0	32.6	46.8	61.6	79.5	95.6	102	107	114	121	140	148	168	190
SPL120	120	12.2	15.2	24.0	39.1	56.1	73.9	95.4	115	122	129	137	146	168	178	201	227
SPL150	150	15.3	19.1	30.0	48.9	70.1	92.4	119	143	153	161	171	182	210	222	252	284
SPL200	200	20.4	25.4	40.0	65.2	93.5	123	159	191	204	214	228	243	279	297	336	379
SPL250	250	25.5	31.8	50.0	81.6	117	154	199	239	255	268	286	303	349	371	420	474
SPL300	300	30.6	38.1	60.0	97.9	140	185	238	287	306	321	343	364	419	445	504	569
SPL350	350	35.7	44.5	70.0	114	164	216	278	335	357	375	400	425	489	519	588	663
SPL400	400	40.8	50.8	80.0	130	187	246	318	382	408	428	457	486	559	593	672	758
SPL450	450	45.9	57.2	90.0	147	210	277	358	430	459	482	514	546	629	667	756	853
SPL500	500	51.0	63.5	100	163	234	308	397	478	510	536	571	607	699	742	839	948
SPL550	550	56.1	69.9	110	179	257	339	437	526	561	589	628	668	769	816	923	1042
SPL600	600	61.2	76.2	120	196	281	370	477	573	612	643	685	728	838	890	1007	1137
SPL700	700	71.4	88.9	140	228	327	431	556	669	714	750	800	850	978	1038	1175	1327
SPL800	800	81.6	102	160	261	374	493	636	765	816	857	914	971	1118	1187	1343	1516
SPL900	900	91.8	114	180	294	421	554	715	860	918	964	1028	1092	1258	1335	1511	1706
SPL1000	1000	102	127	200	326	468	616	795	956	1020	1071	1142	1214	1397	1483	1679	1895



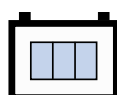
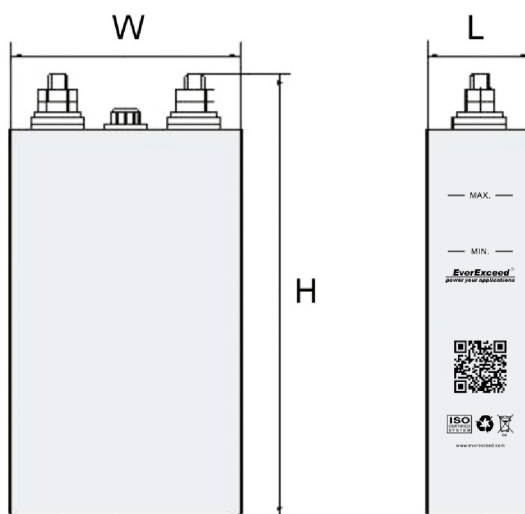


Temperature Effect Curves of SPL Series





Maintenance cycle of SPL series and SPM series battery under different float charging voltage(20°C)



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