

FIAMM

Industrial Batteries

ENDURLITE

SGL-SGH

series



FIAMM's **SGL-SGH** battery range can be used in standby mode on all applications requiring high performance and deep discharge. The **SGL-SGH** battery range is specially designed to ensure the highest reliability for special applications such as Nuclear and Thermal Power Plants and Electrical Utilities. The extra thick pure lead planté plates and a high reliable post seal guarantee a long life even in the worst operating conditions. The design life of the **SGL-SGH** batteries is 25 years in float operation and benign temperature environment.

FIAMM has a program of continuous improvement investing in manufacturing processes, equipment and technology.

FIAMM's Standby Battery factories are ISO 9001-2000 certified. Our continuous investment in battery technology is reflected by means of premium products that are of the highest quality and reliability.

FIAMM's **SGL-SGH** pure lead planté vented lead acid batteries are the ideal energy source for many different industrial applications.

Technical Features

Positive Plates: manufactured with planté technology, cast from pure lead to ensure there is no loss in capacity throughout the battery life.

Negative Plates: designed to have service life consistent with the positive plates. The alloy and curing process are designed so that porosity of active material is maintained during operation.

Electrolyte: high purity sulphuric acid solution with a specific gravity of 1.21 (± 0.01) at 77°F.

Separators: made of high quality microporous material, with low electrical resistance to achieve the lowest self discharge and highest efficiency.

Containers: injection molded from high quality transparent SAN (Styrene acrylonitrile) for easy cell status inspection.

Lids: made of opaque SAN. Flame retardant ABS is optional.

Vent Caps: effectively prevent acid spray from the cell when 'gassing' during equalizing charge. They are constructed with a ceramic filter and bayonet lock, designed to prevent any errant spark or flame from entering the cell.

Cell Pillars, Connectors and Hardware: the cell terminal pillars are lead with solid copper inserts (only SGL's) providing high conductivity. Intercell connectors are of tin plated solid copper, stainless steel accessories are supplied as standard.

Post Seals: high integrity post seal design to prevent electrolyte leakage and terminal corrosion.

Applications

Nuclear and Thermal Power plants
Electrical Utilities

Product Features

- ✦ The most reliable design in the lead acid battery technologies
- ✦ Long proven Life: up to 25 years on float in temperature controlled environments
- ✦ High performance
- ✦ 100% capacity throughout battery life
- ✦ High operational reliability

Standby Products



SGL-SGH series

CELL TYPE	DIN 40738 STANDARD Type	CAPACITY (Ah) at 77°F 8 hr to 1.75	DIMENSIONS						WEIGHT		ELECTROLYTE VOLUME (Sg 1.21) Gals	TERMINALS	
			Length		Width		Total Height		lbs	kg		+	-
			in	mm	in	mm	in	mm					
SGL 7D	3 GroE 75	84	6.02	153	7.17	182	16.25	413	38.5	17.5	1.43	1	1
SGL 9D	4 GroE 100	112	6.02	153	7.17	182	16.25	413	43.4	19.7	1.37	1	1
SGL 11D	5 GroE 125	140	6.02	153	7.17	182	16.25	413	48.2	21.9	1.35	1	1
SGL 13D	6 GroE 150	168	6.02	153	7.17	182	16.25	413	53	24.1	1.29	1	1
SGL 15D	7 GroE 175	196	6.02	153	7.17	182	16.25	413	57.9	26.3	1.27	1	1
SGL 17D	8 GroE 200	224	8.98	228	7.17	182	16.25	413	73	33.2	2.03	1	1
SGL 19D	9 GroE 225	252	8.98	228	7.17	182	16.25	413	77.9	35.4	1.98	1	1
SGL 21D	10 GroE 250	280	8.98	228	7.17	182	16.25	413	82.7	37.6	1.95	1	1
SGL 23D	11 GroE 275	308	8.98	228	7.17	182	16.25	413	87.6	39.8	1.90	1	1
SGL 25D	12 GroE 300	336	8.98	228	7.17	182	16.25	413	92.4	42	1.85	1	1
SGL 27D	13 GroE 325	364	13.39	340	7.17	182	16.25	413	115.5	52.5	3.06	2	2
SGL 29D	14 GroE 350	392	13.39	340	7.17	182	16.25	413	120.1	54.6	2.99	2	2
SGL 31D	15 GroE 375	420	13.39	340	7.17	182	16.25	413	124.7	56.7	2.93	2	2
SGL 33D	16 GroE 400	448	13.39	340	7.17	182	16.25	413	129.6	58.9	2.88	2	2
SGL 35D	17 GroE 425	476	13.39	340	7.17	182	16.25	413	134.2	61	2.80	2	2
SGL 37D	18 GroE 450	504	13.39	340	7.17	182	16.25	413	138.6	63	2.72	2	2
SGH 11D	5 GroE 500	577	10.55	268	12.91	328	23.81	605	211.2	96	7.03	1	1
SGH 13D	6 GroE 600	692	10.55	268	12.91	328	23.81	605	233.2	106	6.97	1	1
SGH 15D	7 GroE 700	807	10.55	268	12.91	328	23.81	605	250.8	114	6.92	2	2
SGH 17D	8 GroE 800	923	10.55	268	12.91	328	23.81	605	270.6	123	6.71	2	2
SGH 19D	9 GroE 900	1038	10.55	268	12.91	328	23.81	605	290.4	132	6.50	2	2
SGH 21D	10 GroE 1000	1153	10.55	268	12.91	328	23.81	605	310.2	141	6.29	2	2
SGH 23D	11 GroE 1100	1269	10.55	268	12.91	328	23.81	605	330	150	6.08	2	2
SGH 25D	12 GroE 1200	1384	13.70	348	12.91	328	23.81	605	382.8	174	8.45	3	3
SGH 27D	13 GroE 1300	1500	13.70	348	12.91	328	23.81	605	400.4	182	8.22	3	3
SGH 29D	14 GroE 1400	1615	13.70	348	12.91	328	23.81	605	420.2	191	8	3	3
SGH 31D	15 GroE 1500	1730	13.70	348	12.91	328	23.81	605	437.8	199	7.79	3	3
SGH 33D	16 GroE 1600	1845	17.24	438	12.91	328	23.81	605	495	225	10.62	3	3
SGH 35D	17 GroE 1700	1960	17.24	438	12.91	328	23.81	605	514.8	234	10.38	3	3
SGH 37D	18 GroE 1800	2077	17.24	438	12.91	328	23.81	605	532.4	242	10.17	3	3
SGH 39D	19 GroE 1900	2192	17.24	438	12.91	328	23.81	605	552.2	251	9.96	3	3
SGH 41D	20 GroE 2000	2307	17.24	438	12.91	328	23.81	605	569.8	259	9.75	3	3
SGH 43D	21 GroE 2100	2421	20.83	529	12.91	328	23.81	605	649	295	12.55	4	4
SGH 45D	22 GroE 2200	2537	20.83	529	12.91	328	23.81	605	666.6	303	12.34	4	4
SGH 47D	23 GroE 2300	2652	20.83	529	12.91	328	23.81	605	686.4	312	12.02	4	4
SGH 49D	24 GroE 2400	2767	20.83	529	12.91	328	23.81	605	704	320	11.91	4	4
SGH 51D	25 GroE 2500	2882	20.83	529	12.91	328	23.81	605	741.4	337	12.79	4	4
SGH 53D	26 GroE 2600	2997	20.83	529	12.91	328	23.81	605	761.2	346	12.55	4	4

Electrical Characteristics

- ✦ NOMINAL VOLTAGE: 2 Vpc
- ✦ FLOAT VOLTAGE CHARGE AT 77°F: 2.23 Vpc
- ✦ BOOST CHARGE: 2.4 Vpc with a maximum current of $0.15 \times C_8$ (A)
- ✦ MAXIMUM SHORT CIRCUIT CURRENT: for fully charged cells and without the voltage losses associated with connectors, SGL cells = $20 \times C_8$ (A), SGH cells = $16 \times C_8$ (A)
- ✦ INTERNAL RESISTANCE: SGL cells = $0.1 \times 1/C_8$ Ohm; SGH cells = $0.13 \times 1/C_8$ Ohm

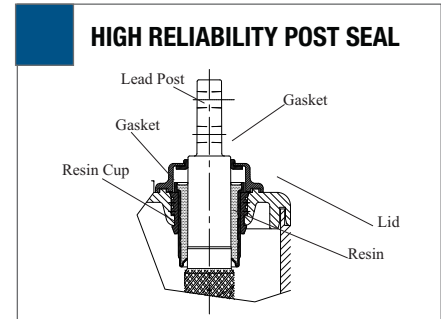
ENDURLITE

SGL-SGH series

FIAMM planté cells are long life batteries with a design life of up to 25 years on float in temperature controlled environment.

This unique battery design differentiates itself from any other type of battery since it does not lose capacity throughout service life.

The unique post design guarantees high integrity seal which prevents electrolyte leakage while simultaneously reducing terminal corrosion.



CELL TYPE	ELECTRICAL CHARACTERISTICS	
	SGL	SGH
Nominal Voltage (V)	2	2
Float Voltage at 77°F	2.23 Vpc	2.23 Vpc
Equalization Charge	2.4 Vpc	2.4 Vpc
Short Circuit Current	20xC ₈ (A)	16xC ₈ (A)
Internal Resistance at 77°F	0.112/C ₈ (ohms)	0.115/C ₈ (ohms)

Cell Type	CELL SPECIFICATIONS					
	SGL			SGH		
Electrolyte SG at 77 °F	1.21±0.01			1.21±0.01		
Plates Dimensions	Height	Width	Thickness	Height	Width	Thickness
Positive	8.2"	5.0"	0.31"	14.6"	10"	0.4"
Negative	8.3"	5.0"	0.16"	15.2"	10"	0.2"
Sediment Space	1.4"			2.0"		
Electrolyte Over Plates	2.7" max/1.7"min			1.8"		
Container Material	Transparent S.A.N			Transparent S.A.N		
Cover Material	Opaque S.A.N			Opaque S.A.N		
Terminal Post Type	Lead (Copper Insert)			Lead (Copper Insert)		
Plate Suspension	Positive Supported from side lugs at top			Positive Supported from side lugs at top		
	Negative: Bottom Supported			Negative: Bottom Supported		
Intercell Connectors	Tin Plated Copper			Tin Plated Copper		
Connector Hardware	Stainless Steel			Stainless Steel		
Torque Settings	53-62 inlbs (6-7 Nm)			124-141.7 inlbs (14-16 Nm)		
Terminal Type	Bolt 1/4 W			Bolt M10		

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CELL TYPE	Constant Current Discharge Rates Amperes to 1.75 Vpc at 77°F (25°C) Sg 1.21									
	MINUTES							HOURS		
	1	5	10	15	30	45	60	2	3	8
SGL 7D	175	144	117	99.7	72.6	57.4	47.9	29.4	21.7	9.73
SGL 9D	233	192	157	133	96.8	76.6	63.9	39.1	28.9	13.0
SGL 11D	291	239	196	166	121	95.7	79.8	48.9	36.2	16.2
SGL 13D	349	287	235	199	145	115	95.8	58.7	43.4	19.5
SGL 15D	407	335	274	233	169	134	112	68.5	50.6	22.7
SGL 17D	465	383	313	266	194	153	128	78.3	57.8	26.0
SGL 19D	524	431	352	299	218	172	144	88.1	65.1	29.2
SGL 21D	582	479	391	332	242	191	160	97.9	72.3	32.4
SGL 23D	640	527	431	366	266	211	176	108	79.5	35.7
SGL 25D	698	575	470	399	290	230	192	117	86.8	38.9
SGL 27D	756	623	509	432	315	249	208	127	94.0	42.2
SGL 29D	814	671	548	465	339	268	224	137	101	45.4
SGL 31D	873	718	587	498	363	287	239	147	108	48.7
SGL 33D	931	766	626	532	387	306	255	157	116	51.9
SGL 35D	989	814	665	565	411	326	271	166	123	55.2
SGL 37D	1047	862	705	598	436	345	287	176	130	58.4
SGH 11D	779	735	664	597	470	385	328	207	152	68.9
SGH 13D	934	883	797	717	564	462	394	248	182	82.6
SGH 15D	1090	1030	930	836	658	539	459	290	213	96.4
SGH 17D	1246	1177	1063	956	751	616	525	331	243	110
SGH 19D	1402	1324	1196	1075	845	693	590	372	274	124
SGH 21D	1557	1471	1329	1195	939	770	656	414	304	138
SGH 23D	1713	1618	1462	1314	1033	847	722	455	334	152
SGH 25D	1869	1765	1594	1434	1127	924	787	496	365	165
SGH 27D	2025	1912	1727	1553	1221	1001	853	538	395	179
SGH 29D	2180	2059	1860	1673	1315	1078	919	579	426	193
SGH 31D	2336	2206	1993	1792	1409	1155	984	621	456	207
SGH 33D	2492	2353	2126	1912	1503	1232	1050	662	486	220
SGH 35D	2648	2500	2259	2031	1597	1309	1115	703	517	234
SGH 37D	2803	2648	2392	2151	1691	1386	1181	745	547	248
SGH 39D	2959	2795	2525	2270	1785	1463	1247	786	578	262
SGH 41D	3115	2942	2657	2390	1879	1540	1312	827	608	275
SGH 43D	3270	3089	2790	2509	1973	1617	1378	869	638	289
SGH 45D	3426	3236	2923	2629	2067	1694	1443	910	669	303
SGH 47D	3582	3383	3056	2748	2161	1771	1509	952	699	317
SGH 49D	3738	3530	3189	2868	2254	1848	1575	993	729	331
SGH 51D	3893	3677	3322	2987	2348	1925	1640	1034	760	344
SGH 53D	4049	3824	3455	3106	2442	2002	1706	1076	790	358

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CELL TYPE	Constant Power Discharge Rates Amperes to 1.80 Vpc at 77°F (25°C) Sg 1.21									
	MINUTES							HOURS		
	1	5	10	15	20	30	60	2	3	8
SGL 7D	139	121	103	89.6	66.5	53.5	44.8	28.2	21.0	9.51
SGL 9D	185	162	137	119	88.7	71.3	59.7	37.6	28.0	12.7
SGL 11D	232	202	172	149	111	89.1	74.7	47.1	35.0	15.9
SGL 13D	278	243	206	179	133	107	89.6	56.5	42.0	19.0
SGL 15D	324	283	240	209	155	125	105	65.9	49.0	22.2
SGL 17D	371	324	275	239	177	143	119	75.3	56.0	25.4
SGL 19D	417	364	309	269	200	160	134	84.7	63.0	28.5
SGL 21D	464	405	343	299	222	178	149	94.1	70.0	31.7
SGL 23D	510	445	378	329	244	196	164	104	77.0	34.9
SGL 25D	556	486	412	358	266	214	179	113	84.0	38.0
SGL 27D	603	526	446	388	288	232	194	122	91.1	41.2
SGL 29D	649	567	481	418	310	249	209	132	98.1	44.4
SGL 31D	695	607	515	448	333	267	224	141	105	47.6
SGL 33D	742	647	549	478	355	285	239	151	112	50.7
SGL 35D	788	688	584	508	377	303	254	160	119	53.9
SGL 37D	834	728	618	538	399	321	269	169	126	57.1
SGH 11D	645	608	554	515	419	351	308	200	148	67.8
SGH 13D	774	729	664	618	503	421	370	240	177	81.4
SGH 15D	903	851	775	721	587	491	431	280	207	95.0
SGH 17D	1032	972	886	824	671	561	493	320	236	109
SGH 19D	1162	1094	997	927	755	631	554	359	266	122
SGH 21D	1291	1215	1107	1030	838	701	616	399	295	136
SGH 23D	1420	1337	1218	1133	922	772	678	439	325	149
SGH 25D	1549	1458	1329	1236	1006	842	739	479	354	163
SGH 27D	1678	1580	1439	1339	1090	912	801	519	384	176
SGH 29D	1807	1702	1550	1442	1174	982	862	559	413	190
SGH 31D	1936	1823	1661	1545	1258	1052	924	599	443	204
SGH 33D	2065	1945	1772	1648	1341	1122	986	639	472	217
SGH 35D	2194	2066	1882	1751	1425	1192	1047	679	502	231
SGH 37D	2323	2188	1993	1854	1509	1263	1109	719	531	244
SGH 39D	2452	2309	2104	1957	1593	1333	1170	759	561	258
SGH 41D	2581	2431	2215	2060	1677	1403	1232	799	591	271
SGH 43D	2710	2552	2325	2163	1761	1473	1293	839	620	285
SGH 45D	2839	2674	2436	2266	1845	1543	1355	879	650	298
SGH 47D	2968	2795	2547	2369	1928	1613	1417	919	679	312
SGH 49D	3097	2917	2657	2472	2012	1683	1478	959	709	326
SGH 51D	3226	3039	2768	2575	2096	1754	1540	999	738	339
SGH 53D	3356	3160	2879	2678	2180	1824	1601	1039	768	353

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