



SGL/SGH Range Planté Cells

Delivering quality

ALCAD

SGL/SGH RANGE

Planté Cells

General

ALCAD High Performance Planté cells are designed to give long, trouble-free service with a life expectancy of up to 25 years. Planté batteries are unique in that, unlike any other type of battery, they do not lose capacity throughout their service life.

Due to their High Rate Performance they are particularly suitable for standby power in data processing systems, switch and circuit breaker tripping, gas turbine starting operations, etc.

When the application requires a very long life battery and the ultimate reliability, planté cells should be the battery of choice.

Design Features

PLANTÉ POSITIVE PLATES: Cast from pure lead to ensure there is no fall-off capacity throughout their long life.

NEGATIVE PLATES: Of rugged pasted grid construction with a service life compatible with the positive plates.

SEPARATORS: Microporous separators giving maximum electrolyte utilization while retaining minimum internal resistance.

CELL CONTAINERS: Injection molded from high quality transparent S.A.N. (styrene acrylonitrile) giving maximum transparency together with very high insulating properties.

CELL LIDS: Molded from opaque S.A.N. and permanently sealed to the container.

VENT PLUGS: Effectively prevent acid spray from the cell when "gassing" during equalize charge. They are provided with explosion preventing (ceramic) plugs with bayonet lock.

INTERCELL CONNECTIONS: Dual independently bolted lead plated copper connectors are used to allow "on-line" maintenance of the battery bank.

ELECTROLYTE: Pure sulfuric acid with a specific gravity of 1.210 at 77°F when fully charged.

BATTERY RACKS: Cells are intended to be mounted on steel racks. With the table on the opposite page you can easily size a rack to fit your application. The table shows how many cells will fit per row for all standard length battery racks. Seismic battery racks are available upon request, consult your local representative or the factory for the sizing.

Alcad Quality

Alcad products are manufactured within a Quality Management System officially recognized as meeting the requirements of ISO 9001. The approval is subject to regular monitoring by CISQ to ensure that standards in design and manufacture are maintained.

Capacity

The nominal ampere hour capacity is at the 8 hour rate to 1.75 volts per cell, at 77°F.

Internal Resistance (at 77°F)

$$\text{SGL: } \frac{0.112 \text{ OHMS}}{C_8} \quad \text{SGH: } \frac{0.115 \text{ ohms}}{C_8}$$

Short Circuit Current (at 77°F)

$$\text{SGL: } 17.9 \times C_8 \text{ amps} \quad \text{SGH: } 13.9 \times C_8 \text{ amps}$$

Charging

* Constant potential charging is recommended to maintain the battery in a fully charged condition (recommended float voltage 2.23 Volts per cell) with recovery of 90% of 8 hour capacity in less than 15 hours.

* Rapid recharge or equalizing is carried out at a voltage of 2.23 - 2.4 Volts per cell.

* Maximum charge current (Amperes):
- initial: 15% of 8 hour capacity
- final: 5% of 8 hour capacity
i.e., for an SGL 15 cell, nominal capacity 196 Ah:
initial 30 A, final 10 A.

Cell Specifications

	SGL			SGH		
	Height	Width	Thickness	Height	Width	Thickness
• Plate Dimensions:						
- 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.		
• Separators:	Microporous			Microporous		
• Terminal Post Type:	Lead Alloy (copper insert)			Lead Alloy		
• Plate Suspension:	Positive Hung from side lugs at top Negative: Bottom supported			Positive Hung from side lugs at top Negative: Bottom supported		
• Intercell Connectors:	Lead Plated Copper			Lead Plated Copper		
• Connector Hardware:	316 Stainless Steel			316 Stainless Steel		

Capacities, Weights & Dimensions

CELL TYPE	A.H. CAPACITY	CELL WEIGHTS			OVERALL CELL DIMENSIONS			NO. OF POSTS
		EMPTY (LBS.)	FILLED (LBS.)	WEIGHT OF ACID* (LBS.)	LENGTH (INCHES)	WIDTH (INCHES)	HEIGHT (INCHES)	
SGL 7D	84	23.8	38.6	14.8	6.0	7.2	16.1	2
SGL 9D	112	28.2	43.4	15.2	6.0	7.2	16.1	2
SGL 11D	140	32.6	48.3	15.7	6.0	7.2	16.1	2
SGL 13D	168	37.0	53.1	16.1	6.0	7.2	16.1	2
SGL 15D	196	41.4	68.3	26.9	6.0	7.2	16.1	2
SGL 17D	224	48.3	73.2	24.9	9.0	7.2	16.1	2
SGL 19D	252	52.9	78.0	25.1	9.0	7.2	16.1	2
SGL 21D	280	57.3	82.9	25.6	9.0	7.2	16.1	2
SGL 23D	308	61.9	88.0	26.1	9.0	7.2	16.1	2
SGL 25D	336	66.6	99.2	25.6	9.0	7.2	16.1	2
SGL 27D	364	76.7	137.8	61.1	13.4	7.2	16.1	4
SGL 29D	392	81.1	120.4	39.3	13.4	7.2	16.1	4
SGL 31D	420	85.8	125.0	39.2	13.4	7.2	16.1	4
SGL 33D	448	90.2	129.9	39.7	13.4	7.2	16.1	4
SGH 11D	577	140.0	211.6	71.6	10.6	12.9	22.2	2
SGH 13D	692	161.6	232.6	71.0	10.6	12.9	22.2	2
SGH 15D	807	188.7	251.3	62.6	10.6	12.9	22.2	4
SGH 17D	923	210.3	271.2	60.9	10.6	12.9	22.2	4
SGH 19D	1038	231.9	289.9	58.0	10.6	12.9	22.2	4
SGH 21D	1153	253.1	312.6	59.5	10.6	12.9	22.2	4
SGH 23D	1269	274.1	330.7	56.0	10.6	12.9	22.2	4
SGH 25D	1384	307.1	382.5	75.4	13.7	12.9	22.2	6
SGH 27D	1500	328.7	401.2	72.5	13.7	12.9	22.2	6
SGH 29D	1615	350.1	425.0	74.9	13.7	12.9	22.2	6
SGH 31D	1730	371.5	444.7	73.2	13.7	12.9	22.2	6
SGH 33D	1845	399.7	496.0	96.3	17.2	12.9	22.2	6
SGH 35D	1960	421.3	518.1	96.8	17.2	12.9	22.2	6
SGH 37D	2077	442.5	540.1	97.6	17.2	12.9	22.2	6
SGH 39D	2192	463.8	557.8	94.0	17.2	12.9	22.2	6
SGH 41D	2307	485.7	578.9	93.2	17.2	12.9	22.2	6
SGH 43D	2421	521.6	649.3	127.7	20.8	12.9	22.2	6
SGH 45D	2537	543.0	668.0	125.0	20.8	12.9	22.2	6

*To calculate quantity of acid (in gallons), multiply by .099.

Battery Racks

120-130V battery 58-60 Cells								
Cell Type	1 Step	2 Step	3 Step	4 Step	2 Tier 1 Row	2 Tier 4 Row	2 Tier 6 Row	2 Tier 8 Row
SGL7D-SGL13D	—	SGL2-51	SGL3-33	SGL4-27	E-PGL1-51	E-SGL2-27	E-SGL3-18	E-SGL4-15
SGL15D	—	SGL2-51H	SGL3-33H	SGL4-27H	E-PGL1-21H	E-SGL2-12H	E-SGL3-18H	E-SGL4-15H
SGL17D-SGL19D	—	—	SGL3-48	SGL4-36	—	E-SGL2-36	E-SGL3-24	E-SGL4-21
SGL21D-SGL25D	—	—	SGL3-48H	SGL4-36H	—	E-SGL2-36H	E-SGL3-24H	E-SGL4-21H
SGL27D	—	—	—	SGL4-54	—	E-SGL2-54	E-SGL3-36	E-SGL4-30
SGL29D-SGL31D	—	—	—	SGL4-54H	—	E-SGL2-54H	E-SGL3-36H	E-SGL4-30H
SGH11D	—	—	—	—	—	E-SGT2-42H	—	—
SGH13D-SGH23D	—	—	—	—	—	E-SGT2-42HH	—	—
SGH25D-SGH31D	—	—	—	—	—	E-SGT2-54HH	—	—
SGH33D-SGH41D	—	—	—	—	—	E-SGT2-36HH	—	—
SGH43D-SGH45D	—	—	—	—	—	E-SGT2-45HH	—	—

48V battery 23-24 Cells								
Cell Type	1 Step	2 Step	3 Step	4 Step	2 Tier 1 Row	2 Tier 4 Row	2 Tier 6 Row	2 Tier 8 Row
SGL7D-SGL13D	PGL1-42	SGL2-21	SGL3-15	SGL4-12	E-PGL1-21	E-SGL2-12	E-SGL3-09	E-SGL4-09
SGL15D	PGL1-42H	SGL2-21H	SGL3-15H	SGL4-12H	E-PGL1-21H	E-SGL2-12H	E-SGL3-09H	E-SGL4-09H
SGL17D-SGL19D	PGL1-60	SGL2-30	SGL3-21	SGL4-15	E-PGL1-30	E-SGL2-15	E-SGL3-12	E-SGL4-09
SGL21D-SGL25D	PGL1-60H	SGL2-30H	SGL3-21H	SGL4-15H	E-PGL1-30H	E-SGL2-15H	E-SGL3-12H	E-SGL4-09H
SGL27D	—	SGL2-42	SGL3-30	SGL4-21	E-PGL1-42	E-SGL2-21	E-SGL3-15	E-SGL4-12
SGL29D-SGL31D	—	SGL2-42H	SGL3-30H	SGL4-21H	E-PGL1-42H	E-SGL2-21H	E-SGL3-15H	E-SGL4-12H
SGH11D	—	SGT2-36H	—	—	E-PGT1-36H	E-SGT2-18H	—	—
SGH13D-SGH23D	—	SGT2-36HH	—	—	E-PGT1-36HH	E-SGT2-18H	—	—
SGH25D-SGH31D	—	SGT2-45HH	—	—	E-PGT1-45HH	E-SGT2-24HH	—	—
SGH33D-SGH41D	—	SGT2-54HH	—	—	E-PGT1-54HH	E-SGT2-27HH	—	—
SGH43D-SGH45D	—	—	—	—	—	E-SGT2-33HH	—	—

24V battery - 12 Cells								
Cell Type	1 Step	2 Step	3 Step	4 Step	2 Tier 1 Row	2 Tier 4 Row	2 Tier 6 Row	2 Tier 8 Row
SGL7D-SGL13D	PGL1-21	SGL2-12	SGL3-09	SGL4-06	E-PGL1-12	E-SGL2-06	E-SGL3-06	—
SGL15D	PGL1-21H	SGL2-12H	SGL3-09H	SGL4-06H	E-PGL1-12H	E-SGL2-06H	E-SGL3-06H	—
SGL17D-SGL19D	PGL1-30	SGL2-15	SGL3-12	SGL4-09	E-PGL1-15	E-SGL2-09	E-SGL3-06	E-SGL4-06
SGL21D-SGL25D	PGL1-30H	SGL2-15H	SGL3-12H	SGL4-09H	E-PGL1-15H	E-SGL2-09H	E-SGL3-06H	E-SGL4-06H
SGL27D	PGL1-42	SGL2-21	SGL3-15	SGL4-12	E-PGL1-21	E-SGL2-12	—	E-SGL4-09
SGL29D-SGL31D	PGL1-42H	SGL2-21H	SGL3-15H	SGL4-12H	E-PGL1-21H	E-SGL2-12H	—	E-SGL4-09H
SGH11D	PGL1-36H	SGT2-18H	—	—	E-PGT1-18H	E-SGT2-09H	—	—
SGH13D-SGH23D	PGL1-36HH	SGT2-18HH	—	—	E-PGT1-18HH	E-SGT2-09HH	—	—
SGH25D-SGH31D	PGL1-45HH	SGT2-24HH	—	—	E-PGT1-24HH	E-SGT2-12HH	—	—
SGH33D-SGH41D	PGL1-54HH	SGT2-27HH	—	—	E-PGT1-27HH	E-SGT2-15HH	—	—
SGH43D-SGH45D	—	SGT2-33HH	—	—	E-PGT1-33HH	E-SGT2-18HH	—	—

Discharge Data

Amperes on Discharge to 1.75 Volts Per Cell at 77°F

Cell type	Ah Capacity	Discharge Time in Minutes									
		1	5	10	15	20	30	60	120	180	480
SGL 7D	84	176	139	114	97.5	86.4	70.5	49.8	28.5	21.0	10.5
SGL 9D	112	234	185	152	130	115	94.0	66.4	38.0	28.0	14.0
SGL 11D	140	293	232	190	163	144	118	83.0	47.5	35.0	17.5
SGL 13D	168	351	278	228	195	173	141	99.6	57.0	42.0	21.0
SGL 15D	196	410	324	266	228	202	165	116	66.5	49.0	24.5
SGL 17D	224	468	370	304	260	230	188	133	76.0	56.0	28.0
SGL 19D	252	527	417	342	293	259	212	149	85.5	63.0	31.5
SGL 21D	280	585	463	380	325	288	235	166	95.0	70.0	35.0
SGL 23D	308	644	509	418	358	316	259	183	105	77.0	38.5
SGL 25D	336	702	556	456	390	346	282	199	114	84.0	42.0
SGL 27D	364	761	602	494	423	374	306	216	124	91.0	45.5
SGL 29D	392	819	648	532	455	403	329	232	133	98.0	49.0
SGL 31D	420	878	695	570	488	432	353	249	143	105	52.5
SGL 33D	448	936	741	608	520	461	376	266	152	112	56.0
SGH 11D	577	890	725	620	550	500	430	303	195	145	72.0
SGH 13D	692	1068	870	744	660	600	516	363	234	174	86.4
SGH 15D	807	1246	1015	868	770	700	602	424	273	203	101
SGH 17D	923	1424	1160	992	880	800	688	484	312	232	115
SGH 19D	1038	1602	1305	1116	990	900	774	545	351	261	130
SGH 21D	1153	1780	1450	1240	1100	1000	860	605	390	290	144
SGH 23D	1269	1958	1595	1364	1210	1100	946	666	429	319	158
SGH 25D	1384	2136	1740	1488	1320	1200	1032	726	468	348	173
SGH 27D	1500	2314	1885	1612	1430	1300	1118	787	507	377	187
SGH 29D	1615	2492	2030	1736	1540	1400	1204	847	546	406	202
SGH 31D	1730	2670	2175	1860	1650	1500	1290	908	585	435	216
SGH 33D	1845	2848	2320	1984	1760	1600	1376	968	624	464	230
SGH 35D	1960	3026	2465	2108	1870	1700	1462	1029	663	493	245
SGH 37D	2077	3204	2610	2232	1980	1800	1548	1089	702	522	259
SGH 39D	2192	3382	2755	2356	2090	1900	1634	1150	741	551	274
SGH 41D	2307	3560	2900	2480	2200	2000	1720	1210	780	580	288
SGH 43D	2421	3738	3045	2604	2310	2100	1806	1271	819	609	302
SGH 45D	2537	3914	3190	2728	2420	2200	1892	1331	858	638	317

Amperes on Discharge to 1.81 Volts Per Cell at 77°F

Cell type	Ah Capacity	Discharge Time in Minutes													
		1	5	10	15	20	30	45	60	90	120	180	300	360	480
SGL 7D	84	122	106	92	82	74	62	54	43	34	27	21	14	13	10
SGL 9D	112	162	142	123	109	99	83	72	58	46	36	28	19	17	13
SGL 11D	140	203	178	154	137	123	104	90	72	58	46	35	24	22	16
SGL 13D	168	244	213	185	164	148	124	108	87	69	55	43	29	26	20
SGL 15D	196	285	249	216	191	173	145	126	102	81	64	50	34	30	23
SGL 17D	224	325	284	247	219	198	166	144	116	92	73	57	39	35	27
SGL 19D	252	366	320	277	246	223	187	162	131	104	83	64	44	39	30
SGL 21D	280	407	356	308	274	247	208	180	145	116	92	71	49	44	33
SGL 23D	308	447	391	339	301	272	228	198	160	127	101	79	54	48	37
SGL 25D	336	488	427	370	328	297	249	216	175	139	110	86	59	53	40
SGL 27D	364	529	462	401	356	322	270	234	189	150	120	93	64	57	44
SGL 29D	392	570	498	432	383	346	291	252	204	162	129	100	69	61	47
SGL 31D	420	610	534	463	411	371	312	270	218	174	138	107	73	66	50
SGL 33D	448	651	569	494	438	396	332	288	233	185	147	115	78	70	54
SGH 11D	557	680	586	513	464	420	374	313	271	223	180	133	91	80	66
SGH 13D	692	816	703	616	557	504	449	376	325	267	217	160	109	96	80
SGH 15D	807	952	821	719	649	588	524	439	379	312	253	187	128	112	93
SGH 17D	923	1088	938	822	742	673	598	502	433	357	289	214	146	128	106
SGH 19D	1038	1224	1055	925	835	757	673	565	488	401	325	241	164	144	120
SGH 21D	1153	1360	1172	1027	928	841	748	627	542	446	361	267	182	160	133
SGH 23D	1269	1496	1290	1130	1021	925	823	690	596	491	398	294	201	177	146
SGH 25D	1384	1632	1407	1233	1114	1009	898	753	650	535	434	321	219	193	160
SGH 27D	1500	1768	1524	1336	1206	1093	973	816	705	580	470	348	237	209	173
SGH 29D	1615	1904	1642	1439	1299	1177	1048	878	759	625	506	375	256	225	186
SGH 31D	1730	2040	1759	1541	1392	1262	1122	941	813	669	542	401	274	241	200
SGH 33D	1845	2176	1876	1644	1485	1346	1197	1004	867	714	578	428	292	257	213
SGH 35D	1960	2312	1993	1747	1578	1430	1272	1067	922	759	615	455	311	273	226
SGH 37D	2077	2448	2111	1850	1671	1514	1347	1130	976	803	651	482	329	289	240
SGH 39D	2192	2584	2228	1952	1764	1598	1422	1192	1030	848	687	508	347	305	253
SGH 41D	2307	2720	2345	2055	1856	1682	1497	1255	1084	893	723	535	365	321	266
SGH 43D	2421	2856	2463	2158	1949	1766	1572	1318	1139	937	759	562	384	337	280
SGH 45D	2537	2992	2578	2259	2042	1851	1647	1381	1193	982	796	589	402	354	293

Represented in your area by:

Alcad, Standby Batteries

3 Powdered Metal Drive, North Haven, CT 06473

Telephone 203-234-8333 Fax 203-234-8255

<http://www.alcadusa.com>

Delivering quality

