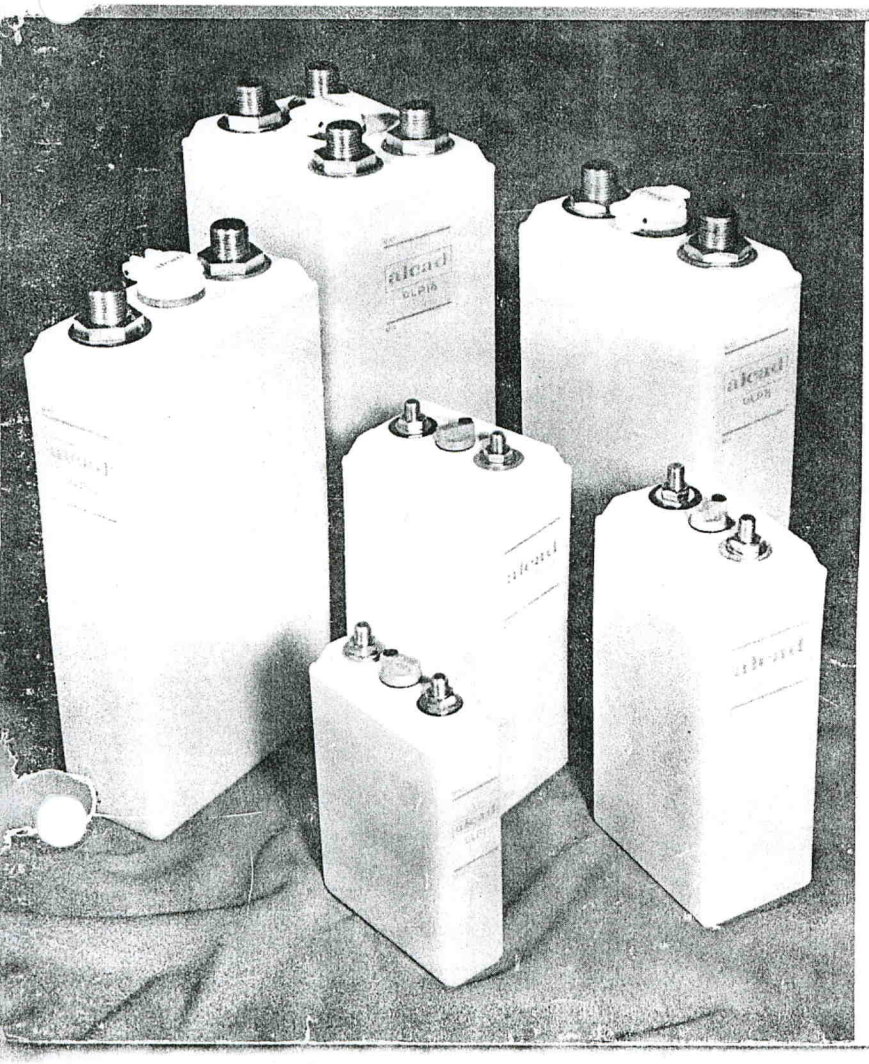
PERFORMANCE DATA

DLP and DLS Cells
The SPRINT Series

For other cell data see

- RVP and RV Cells AB-31
  The MIDDLE DISTANCE Series
- EP and E Cells AB-32
  The DISTANCE Series

ALCAD®



Nickel-Cadmium Pocket Plate
Alkaline Cells for

Stationary Engine Starting
Railway Engine Starting
Switchgear Operation
Emergency Lighting

AB-33

PLATE GROUP ASSEMBLY

Alcad nickel cadmium batteries are of pocket plate construction employing nickel hydrate for the positive plate and cadmium oxide for the negative plate. With the exception of the smaller capacities of cells, which have welded assemblies, plates are solidly bolted on their group bolts. Terminal pillars are machined from mild steel of ample section, and in the case of large high performance cells they are duplicated or triplicated to insure adequate current carrying capacity. In the case of plastic cells the solidity of the group bar and pole bolt construction is an important feature in ensuring that the cell is rigidly constructed and cannot inadvertently twist inside the container and short circuit.

SEPARATORS

Separation in Alcad cells is by means of channel section edge insulators and pin type separators located in vertical grooves in the plates, or perforated and corrugated plastic sheets. Pin separators are preferred where the internal resistance of the cell is critical.

ELECTROLYTE

The electrolyte used in Alcad cells is potassium hydroxide with the addition of lithium hydroxide. Its function is to provide an adequate supply of ions and water to support the reactions at the two plates. The overall charge and discharge reactions result in transfer of a relatively small amount of water between electrolyte and the active materials of the plates. Consequently there is no significant change in specific gravity related to state of charge of the battery. Alcad nickel cadmium cells with a very large reserve of electrolyte permitting long periods between topping up are available. In standby applications this may be as long as eight years.

Alcad cells are not damaged by continuous overcharge but unnecessarily high rates of charge increase water consumption and therefore maintenance. The optimum charging system is one that will maintain the battery in a high state of charge with minimum water consumption. Chloride will be pleased to advise on the detailed design of charging systems to achieve this. In the type of floating applications for which Alcad nickel cadmium cells are normally used it is not necessary to change the electrolyte during the battery's lifetime.

CELL CONTAINER

In the High Performance range a choice of plastic or steel cell containers is offered but not in every cell size. The choice of steel or plastic containers depends on the application. The advantages of each construction may be summarized as follows:

STEEL

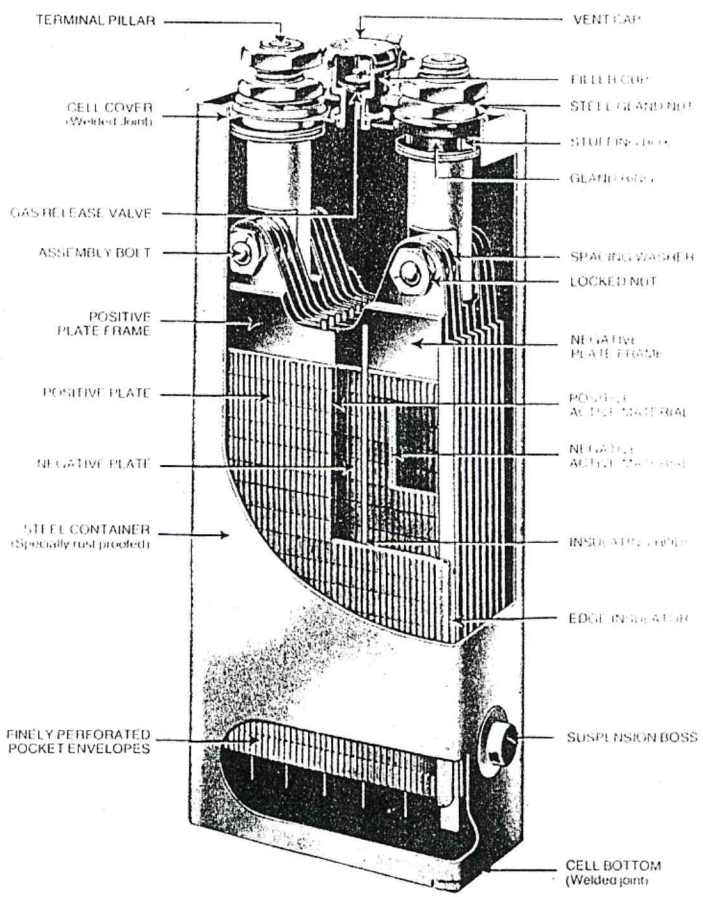
Greater strength for conditions of extreme vibration and shock. Advantages for operating in climatical extremes.

PLASTIC

Complete freedom from corrosion in saline atmospheres. Translucent containers allow electrolyte levels to be checked at a glance.

Containers are non-conducting and for stationary applications they may be assembled in a very satisfactory manner by simply taping them in blocks.

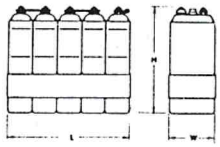
The suffix 'P' in the cell designation indicates a plastic case and the suffix 'S' a steel case.



Sectioned view of a typical Alcad steel case cell.

DLP CELLS (plastic containers)

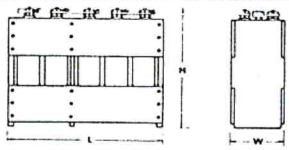
DLP1 to DLP4 1.4" of electrolyte above plates.
DLP6 to DLP21 2" of electrolyte above plates.



Cell Type	AH Capacity 8 hr. Rate to 1.14	Current to charge in 14 hrs. amps.	Electro-lyte above plates cc.	Weight of complete cell lbs.	Dimensions of Battery In Taped Blocks (INCHES)						
					Height (H)	Width (W)	Length (L) of Block				
							1 Cell	2 Cells	3 Cells	4 Cells	5 Cells
DLP1	12	1.2	120	2.9	7.2	4.5	1.7	3.4	5.0	6.6	8.2
DLP2	16	1.6	171	3.8	7.4	4.5	2.2	4.5	6.6	8.8	10.9
DLP2.5	21	2.1	171	4.3	8.1	4.5	2.2	4.5	6.6	8.8	10.9
DLP3	32	3.2	190	5.8	9.3	4.5	2.6	5.2	7.7	10.2	12.7
DLP4	44	4.4	221	7.4	9.3	4.5	3.0	6.0	9.0	11.9	14.9
DLP6	60	6.0	470	12.5	10.5	6.6	3.0	6.0	9.0	11.9	14.9
DLP7	68	6.8	593	14.8	10.5	6.6	3.7	7.5	11.1	14.8	—
DLP8	85	8.5	605	18.0	13.1	6.6	3.7	7.5	11.1	—	—
DLP10	105	10.5	593	19.2	13.1	6.6	3.7	7.5	11.1	—	—
DLP12	120	12.0	579	20.6	13.1	6.6	3.7	7.5	11.1	—	—
DLP14	140	14.0	814	26.9	13.1	6.6	5.0	10.1	15.1	—	—
DLP15	155	15.5	802	28.2	13.1	6.6	5.0	10.1	15.1	—	—
DLP17	175	17.5	789	29.4	13.1	6.6	5.0	10.1	15.1	—	—
DLP19	195	19.5	802	32.1	14.3	6.6	5.0	10.1	15.1	—	—
DLP21	215	21.5	789	33.6	14.3	6.6	5.0	10.1	15.1	—	—

DLS CELLS (steel containers)

DLS7 to DLS45 2" of electrolyte above plates.



Cell Type	AH Capacity 8 hr. Rate to 1.14	Current to charge in 14 hrs. amps.	Electro-lyte above plates cc.	Weight of complete cell lbs.	Dimensions of Battery In Wood Tray (INCHES)						
					Height (H)	Width (W)	Length (L) of Block				
							1 Cell	2 Cells	3 Cells	4 Cells	5 Cells
DLS7	68	6.8	403	15.2	11.8	7.4	3.9	7.8	10.8	13.8	17.5
DLS8	85	8.5	330	16.6	13.9	7.4	—	6.9	9.5	12.1	15.3
DLS10	105	10.5	403	19.3	13.9	7.4	—	7.8	10.8	13.8	17.5
DLS12	120	12.0	481	22.2	13.9	7.4	—	8.7	12.2	16.3	19.8
DLS13	140	14.0	546	24.7	13.9	7.4	—	9.5	13.4	17.9	21.8
DLS15	155	15.5	614	29.7	13.9	7.4	—	10.7	15.8	20.3	24.8
DLS17	175	17.5	686	32.3	13.9	7.4	—	11.5	17.1	22.0	26.9
DLS19	195	19.5	614	33.8	15.4	7.4	—	10.7	15.8	20.3	24.8
DLS21	215	21.5	686	36.9	15.4	7.4	—	11.5	17.1	22.0	26.9
DLS23	240	24.0	780	39.1	15.4	7.4	—	12.4	18.3	23.6	—
DLS25	260	26.0	854	43.2	15.4	7.4	—	14.0	20.6	—	—
DLS27	280	28.0	924	45.5	15.4	7.4	—	14.9	21.9	—	—
DLS29	300	30.0	1010	50.8	15.4	7.4	—	15.9	23.4	—	—
DLS31	325	32.5	1076	55.1	15.4	7.4	—	16.7	24.6	—	—
DLS35	360	36.0	1010	59.0	17.2	7.4	—	15.9	23.4	—	—
DLS40	410	41.0	1148	67.4	17.2	7.4	—	17.6	25.9	—	—
DLS45	460	46.0	1294	75.8	17.2	7.4	—	19.3	—	—	—

All heights are with vent caps closed. For height with open caps DLS only ADD 1.4".
Standard tray sizes only are listed. Other sizes supplied to special order.

HIGH PERFORMANCE DLP/DLS DISCHARGE CHARACTERISTICS

Fully Charged—no open Circuit Stand . . . at 77°F (25°C).

Amps on discharge to **1.14** volts per cell

Cell Type	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min	10 Min	30 Min	1 Hour	2 Hour	3 Hour	5 Hour	8 Hour	10 Hour
DLP/DLS 1	76.5	64.5	59	47	41	38.2	31.1	26.4	21.4	13.2	8.4	5.6	4.0	2.5	1.6	1.3
DLP/DLS 2	91.5	77.5	70	59.5	53	47	38.9	32.4	26.2	16.8	11.4	7.6	5.5	3.4	2.1	1.7
DLP/DLS 2.5	117	96	89	74	65.5	59.5	48.5	41.8	34.6	22	14.7	9.7	7.0	4.3	2.7	2.2
DLP/DLS 3	177	151	140	117	104	95	78	67.5	51.7	33.4	22.4	14.9	10.7	6.6	4.2	3.5
DLP/DLS 4	232	197	183	156	138	126	104	90	69	46	30.8	20.4	14.7	9.1	5.7	4.7
DLP/DLS 6	290	255	234	198	180	159	136	115	90.3	60.9	41.2	26.1	18.9	11.7	7.4	6.0
DLP/DLS 7	345	300	283	240	216	195	158	137	110	73.5	49.7	31.6	22.8	14.1	8.9	7.3
DLP/DLS 8	435	380	355	300	264	242	198	170	137	94.5	64.1	40.6	29.3	18.1	11.4	9.3
DLP/DLS10	510	445	410	354	313	280	238	203	163	113	77.3	48.7	36.2	21.6	13.8	11.1
DLP/DLS12	590	500	460	400	360	324	270	235	189	132	89.8	56.9	41.1	25.3	16.0	13.0
DLS13	655	560	520	445	395	366	305	264	210	145	103	65.0	46.8	28.9	18.3	14.9
DLP14	715	610	565	485	430	390	330	280	221	147	103	65.0	46.8	28.9	18.3	14.9
DLP/DLS15	805	695	635	540	485	440	370	320	252	166	116	73.2	52.7	32.4	20.6	16.8
DLP/DLS17	855	730	670	590	530	485	400	345	273	176	128	81.7	58.9	36.3	23.0	18.7
DLP/DLS19	925	795	725	630	575	520	435	376	299	205	143	91.2	65.7	40.5	25.6	20.9
DLP/DLS21	955	830	775	660	600	550	460	400	320	221	159	101	72.9	44.9	28.5	23.2
DLS23	1020	895	825	710	640	585	485	420	336	236	174	111	80.1	49.4	31.3	25.4
DLS25	1100	955	880	755	680	615	520	450	362	257	190	121	87.3	53.8	34.0	27.7
DLS27	1150	1010	930	815	730	670	565	495	397	280	206	131	94.4	58.2	36.9	30.0
DLS29	1245	1100	1010	890	805	740	630	540	436	305	222	142	102	62.8	39.8	32.3
DLS31	1300	1140	1070	935	850	790	660	570	457	326	237	151	109	67.2	42.5	34.7
DLS35	1360	1210	1140	995	900	840	710	630	509	362	264	168	121	74.7	47.3	38.4
DLS40	1480	1340	1270	1100	1010	930	800	705	578	412	301	192	139	85.3	54.0	44.0
DLS45	1620	1450	1350	1200	1100	1030	870	770	630	452	338	215	155	95.7	60.6	49.4

Amps on discharge to **1.10** volts per cell

Cell Type	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min	10 Min	30 Min	1 Hour	2 Hour	3 Hour	5 Hour	8 Hour	10 Hour
DLP/DLS 1	85.7	74	67.5	57.8	50.6	46.6	38.4	32.7	26.5	16.4	10.4	5.9	4.1	2.5	1.6	1.3
DLP/DLS 2	107	90	82.5	71.5	64.5	58.5	49.5	41.5	34.7	22	14.1	8.1	5.5	3.4	2.2	1.7
DLP/DLS 2.5	138	116	105	89	81	73	60.5	51.8	43	27.3	18.2	10.4	7.1	4.3	2.8	2.3
DLP/DLS 3	190	161	148	131	118	109	90	77.6	64.5	42.5	27.6	15.9	10.8	6.6	4.2	3.5
DLP/DLS 4	269	228	212	189	170	156	130	112	86	56.8	38	21.7	14.9	9.1	5.8	4.7
DLP/DLS 6	330	290	268	235	211	198	162	139	110	73.5	51	27.9	19.1	11.7	7.4	6.1
DLP/DLS 7	390	340	315	282	246	232	190	165	131	88.2	60.9	33.6	23.0	14.0	8.9	7.3
DLP/DLS 8	500	435	405	250	316	290	240	206	167	113	78.2	43.2	29.6	18.1	11.4	9.4
DLP/DLS10	575	505	465	417	375	337	285	250	200	134	93.9	51.9	35.5	23.7	13.9	11.2
DLP/DLS12	665	580	535	470	420	385	325	277	227	155	109	60.5	41.4	25.3	16.2	13.1
DLS13	735	645	595	522	470	430	360	313	252	175	125	69.1	47.7	29.0	18.5	15.0
DLP14	815	760	650	570	515	480	400	342	273	182	125	69.1	47.4	29.0	18.5	15.0
DLP/DLS15	920	800	740	645	580	535	450	385	308	207	141	77.7	53.2	32.6	20.8	16.9
DLP/DLS17	980	855	785	695	635	580	480	418	336	226	158	86.8	59.5	36.2	23.2	18.9
DLP/DLS19	1040	920	850	750	680	630	515	450	363	250	176	96.9	66.4	40.3	25.8	21.1
DLP/DLS21	1080	955	885	785	715	665	555	478	390	271	195	107	73.6	44.8	28.7	23.4
DLS23	1150	1020	945	830	750	705	595	515	420	292	214	118	80.9	49.2	31.5	25.7
DLS25	1250	1090	1010	890	810	750	640	550	449	319	233	123	88.1	53.5	34.3	28.0
DLS27	1310	1160	1070	950	870	800	690	595	488	343	252	140	95.3	58.0	37.2	30.3
DLS29	1410	1250	1170	1040	960	895	765	670	544	378	273	150	103	62.7	40.1	32.7
DLS31	1480	1300	1230	1090	1000	935	805	705	572	401	292	161	110	67.0	42.9	35.0
DLS35	1540	1390	1300	1170	1080	1010	860	750	611	435	324	179	122	74.5	47.7	38.9
DLS40	1670	1520	1430	1290	1200	1120	965	845	693	496	370	204	140	85.0	54.5	44.4
DLS45	1820	1660	1570	1410	1300	1210	1060	935	767	557	416	229	156	95.0	61.1	49.9

Amps on discharge to

1.05

volts per cell

Cell Type	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min	10 Min	30 Min	1 Hour	2 Hour	3 Hour	5 Hour	8 Hour	10 Hour
DLP/DLS 1	106	85.5	76.5	65.5	57.7	52	42.5	38	30.2	18.5	11.2	6.0	4.1	2.5	1.6	1.3
DLP/DLS 2	128	106	96	83	75.5	68.5	55.2	48.5	39	24.5	15.6	8.1	5.6	3.4	2.2	1.8
DLP/DLS 2.5	161	135	124	108	98	90	72	62	50.5	31.0	19.5	10.5	7.2	4.4	2.8	2.3
DLP/DLS 3	240	204	189	168	150	140	115	99	80	49	29.7	16.1	10.9	6.7	4.2	3.5
DLP/DLS 4	307	266	248	221	200	187	153	130	106	66	40.8	22.0	15.0	9.2	5.8	4.7
DLP/DLS 6	380	340	310	275	250	235	198	166	140	85	53.0	28.2	19.2	11.8	7.5	6.1
DLP/DLS 7	440	395	370	335	300	270	230	204	165	100	63.5	34.0	23.1	14.1	9.0	7.3
DLP/DLS 8	560	495	465	415	380	345	290	260	210	130	82	43.7	29.7	18.2	11.5	9.4
DLP/DLS10	660	585	545	490	450	410	350	305	250	155	98	52.3	35.7	22.0	13.9	11.2
DLP/DLS12	770	670	620	560	505	460	385	340	280	180	114	61.0	41.6	25.4	16.2	13.1
DLS13	850	745	695	620	575	525	445	380	320	200	130	70	47.8	29.1	18.5	15.0
DLP14	935	815	760	680	620	570	485	420	340	210	130	70	47.8	29.1	18.5	15.0
DLP/DLS15	1050	915	850	750	690	630	540	470	380	235	147	78.5	53.7	32.8	20.8	16.9
DLP/DLS17	1100	960	905	815	760	700	590	505	420	260	164	87.8	59.7	36.6	23.3	18.9
DLP/DLS19	1190	1035	960	875	815	755	635	550	450	285	183	97.8	66.6	40.7	25.9	21.1
DLP/DLS21	1240	1080	1020	920	860	800	670	585	480	310	203	108	74.0	45.0	28.8	23.4
DLS23	1320	1175	1100	990	920	860	715	625	510	335	222	120	81.1	49.5	31.6	25.7
DLS25	1430	1250	1170	1050	980	915	780	675	560	360	241	130	88.4	53.8	34.5	28.0
DLS27	1490	1340	1260	1130	1040	970	850	750	610	395	262	141	95.7	58.4	37.3	30.4
DLS29	1610	1440	1370	1230	1150	1075	935	825	670	430	283	152	103.3	63.0	40.2	32.8
DLS31	1680	1500	1420	1300	1210	1130	980	875	715	460	302	163	110	67.5	43.1	35.1
DLS35	1770	1600	1510	1380	1290	1210	1050	935	770	500	336	181	123	75.0	47.8	39.0
DLS40	1920	1740	1650	1520	1430	1340	1150	1030	850	560	384	206	141	85.5	54.7	44.5
DLS45	2100	1900	1800	1660	1560	1470	1300	1160	950	630	430	232	157	95.5	61.3	50.0

Amps on discharge to

1.00

volts per cell

Cell Type	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min	10 Min	30 Min	1 Hour	2 Hour	3 Hour	5 Hour	8 Hour	10 Hour
DLP/DLS 1	114	98	90.5	78	69.5	62.8	51	44	36.6	21.4	11.4	6.1	4.1	2.5	1.6	1.3
DLP/DLS 2	140	123	111	100	90	81.5	66.5	57	46	27.3	15.5	8.3	5.6	3.4	2.2	1.8
DLP/DLS 2.5	179	154	143	125	112	100	83	70.2	57.5	34.6	20	10.7	7.2	4.4	2.8	2.3
DLP/DLS 3	263	231	216	194	176	161	132	113	87.2	52	30.4	16.3	11.0	6.7	4.3	3.5
DLP/DLS 4	344	300	280	250	230	214	177	151	116	71.5	41.9	22.3	15.1	9.2	5.9	4.8
DLP/DLS 6	425	377	350	322	290	277	236	202	168	99.8	55.1	28.7	19.3	11.9	7.5	6.1
DLP/DLS 7	495	445	418	384	350	328	280	245	200	121	66.7	34.5	23.3	14.3	9.0	7.4
DLP/DLS 8	635	565	525	480	440	420	350	305	252	155	86.1	44.4	29.9	18.4	11.7	9.5
DLP/DLS10	740	670	625	570	520	490	420	367	299	184	103	53.3	35.9	22.1	14.0	11.3
DLP/DLS12	845	760	705	645	585	550	465	405	336	205	121	62.2	41.9	25.6	16.3	13.2
DLS13	940	845	790	725	655	620	520	460	376	233	138	71.1	47.9	29.3	18.6	15.1
DLP14	1050	925	860	780	715	680	570	490	404	242	138	71.7	47.9	29.3	18.6	15.1
DLP/DLS15	1180	1040	970	875	800	755	645	560	457	276	154	79.9	54.0	33.0	20.9	17.0
DLP/DLS17	1240	1100	1030	940	870	810	700	605	496	305	173	89.4	60.3	36.9	23.4	19.0
DLP/DLS19	1330	1185	1110	1030	950	890	755	660	541	331	193	99.6	67.2	41.2	26.0	21.2
DLP/DLS21	1400	1240	1160	1070	1010	950	805	705	580	362	214	110	74.6	45.7	29.0	23.5
DLS23	1480	1320	1240	1150	1070	1020	860	750	630	399	235	122	81.9	50.1	31.8	25.8
DLS25	1600	1415	1325	1220	1130	1070	930	815	677	431	256	132	89.3	54.6	34.7	28.1
DLS27	1670	1500	1410	1300	1210	1150	1010	895	746	462	277	143	96.5	59.1	37.5	30.5
DLS29	1820	1640	1530	1420	1340	1280	1115	980	824	499	299	154	104	63.7	40.4	32.9
DLS31	1890	1700	1630	1515	1400	1340	1170	1050	882	530	320	165	111	68.3	43.3	35.2
DLS35	2090	1800	1710	1600	1500	1420	1250	1120	935	572	355	184	124	75.8	48.1	39.1
DLS40	2160	1980	1900	1760	1670	1580	1400	1230	1040	641	405	210	142	86.6	54.9	44.6
DLS45	2330	2140	2030	1850	1755	1690	1550	1380	1166	725	456	235	159	97.1	61.6	50.1

ENGINE STARTING DATA

Amps on discharge to

0.85 and 0.65

volts per cell

Cell Type	To 0.85 v.p.c.								To 0.65 v.p.c.							
	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min	1 Sec	5 Sec	10 Sec	30 Sec	60 Sec	90 Sec	3 Min	5 Min
DLP/DLS 1	154	138	129	115	101	93	73	54.4	202	183	170	147	132	121	95.5	78
DLP/DLS 2	186	162	152	138	125	115	97	76	252	228	215	192	175	162	133	110
DLP/DLS 2.5	236	270	198	176	158	147	122	96	320	283	266	237	220	205	171	140
DLP/DLS 3	358	321	306	272	248	233	196	159	477	435	414	372	345	322	278	229
DLP/DLS 4	455	415	395	357	327	306	264	211	603	556	534	492	460	431	375	305
DLP/DLS 6	560	520	477	430	410	380	332	295	735	695	660	610	565	535	472	430
DLP/DLS 7	660	608	565	520	475	455	405	358	880	810	775	715	670	630	567	525
DLP/DLS 8	835	760	715	665	615	570	500	443	1100	1030	975	905	840	800	715	640
DLP/DLS10	990	890	845	775	735	690	610	540	1300	1210	1140	1080	1020	955	860	775
DLP/DLS12	1130	1010	955	885	820	775	675	560	1480	1350	1290	1220	1145	1070	945	860
DLS13	1250	1130	1060	970	915	865	750	675	1660	1510	1450	1350	1280	1210	1060	965
DLP14	1390	1250	1190	1070	985	930	825	730	1820	1670	1600	1470	1400	1310	1165	1050
DLP/DLS15	1550	1400	1330	1200	1110	1050	920	820	2050	1870	1780	1650	1550	1470	1310	1200
DLP/DLS17	1660	1510	1420	1290	1210	1145	1015	900	2210	2030	1930	1810	1700	1600	1430	1290
DLP/DLS19	1770	1615	1530	1400	1305	1240	1090	970	2350	2160	2080	1930	1840	1720	1540	1410
DLP/DLS21	1850	1690	1605	1430	1370	1300	1165	1030	2430	2250	2150	2020	1920	1815	1640	1490
DLS23	1970	1790	1700	1580	1470	1400	1240	1110	2570	2400	2290	2140	2040	1940	1750	1610
DLS25	2110	1900	1800	1695	1590	1510	1350	1200	2810	2550	2460	2300	2170	2080	1890	1740
DLS27	2200	2020	1930	1790	1700	1620	1465	1330	2900	2700	2580	2470	2320	2220	2050	1910
DLS29	2380	2170	2080	1940	1860	1780	1610	1470	3150	2910	2800	2690	2600	2510	2290	2120
DLS31	2480	2270	2180	2060	1950	1880	1700	1550	3290	3060	2950	2840	2710	2580	2400	2240
DLS35	2600	2400	2310	2180	2090	2010	1810	1650	3440	3220	3120	3030	2920	2790	2540	2400
DLS40	2800	2640	2560	2420	2320	2220	2020	1850	3730	3570	3450	3350	3230	3110	2870	2680
DLS45	3060	2860	2780	2630	2530	2440	2220	2040	4050	3860	3800	3610	3460	3350	3130	2940

For proper sizing see publications AB19 "Failproof Engine Starting" and AB20 "Engine Starting Selection Table."

STEPPED RACKS AVAILABLE FOR DLP CELLS

12 VOLT SYSTEM

1 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP1—DLP 2.5	24″	8″	16″
DLP 3	30″	8″	16″
DLP 4—DLP 6	36″	8″	17″
DLP 7—DLP 12	42″	8″	19″
DLP 14—DLP 21	54″	8″	21″

2 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 4—DLP 6	18″	16″	23″
DLP 7—DLP 12	24″	16″	25″
DLP 14—DLP 21	30″	16″	27″

24 VOLT SYSTEM

2 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	24″	16″	22″
DLP 3	30″	16″	22″
DLP 4—DLP 6	36″	16″	23″
DLP 7—DLP 12	42″	16″	25″
DLP 14—DLP 21	54″	16″	27″

3 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 4—DLP 6	24″	24″	29″
DLP 7—DLP 12	30″	24″	31″
DLP 14—DLP 21	42″	24″	33″

32 VOLT SYSTEM

3 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	24″	24″	28″
DLP 3	30″	24″	28″
DLP 4—DLP 6	30″	24″	29″
DLP 7—DLP 12	36″	24″	31″
DLP 14—DLP 21	54″	24″	33″

48 VOLT SYSTEM

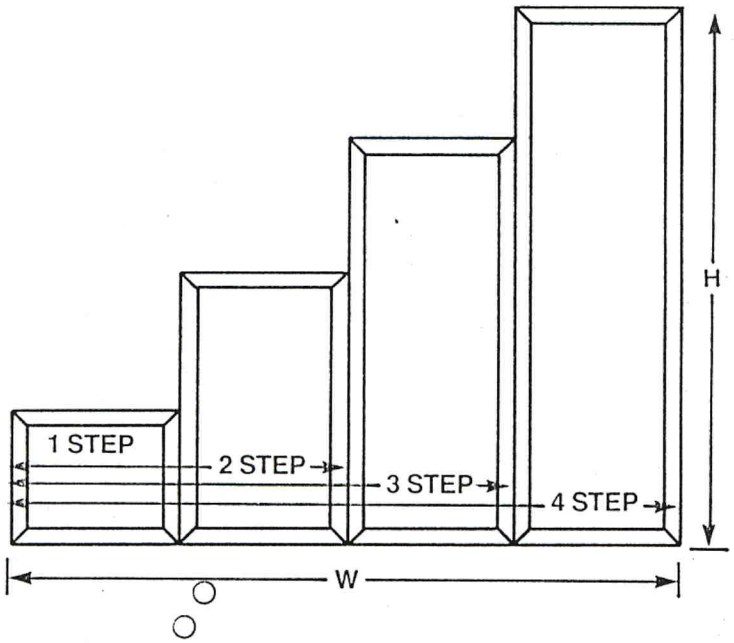
3 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	30″	24″	28″
DLP 3	36″	24″	28″
DLP 4—DLP 6	42″	24″	29″
DLP 7—DLP 12	54″	24″	31″
DLP 14—DLP 21	68″	24″	33″

4 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	24″	32″	34″
DLP 3	30″	32″	34″
DLP 4—DLP 6	36″	32″	35″
DLP 7—DLP 12	42″	32″	37″
DLP 14—DLP 21	54″	32″	39″

120 VOLT SYSTEM

3 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	72″	24″	28″
DLP 3	84″	24″	28″
DLP 4—DLP 6	108″	24″	29″
DLP 7—DLP 12	122″	24″	31″
DLP 14—DLP 21	164″	24″	33″

4 STEP	DIMENSIONS WITH BATT. L.	W.	H.
DLP 1—DLP 2.5	54″	32″	34″
DLP 3	66″	32″	34″
DLP 4—DLP 6	78″	32″	35″
DLP 7—DLP 12	96″	32″	37″
DLP 14—DLP 21	122″	32″	39″



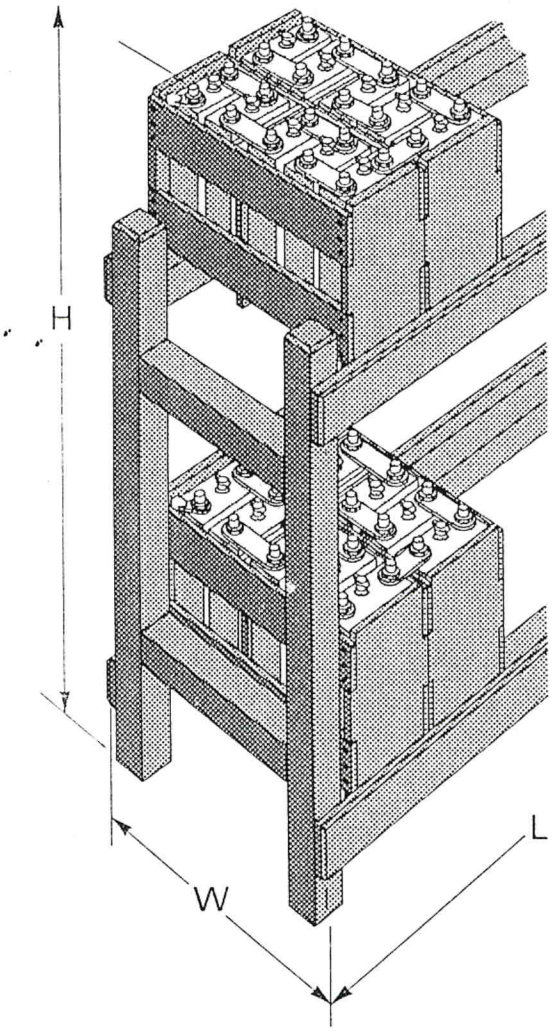
Racks are supplied with insulated runners in knocked down assembly. Construction is of 1½″ × 1½″ × ¼″ 90° angle iron painted with alkali resistant finish. All heights are overall for battery mounted on rack. 120 volt racks supplied in 2 sections.

OVERALL DIMENSIONS OF STEEL CELL BATTERIES ON STANDS— DLS CELLS

Height dimension includes stand insulators on 110 volt batteries.

Cell Type		Stand Width (inches) (W)	Height (inches) H	
			Single Tier 24 Volt & 50 Volt Batteries	Double tier 110 Volt Batteries
DLS4	5 Cell Crates	18	23	49
DLS6		18	24	51
DLS7		20	24	51
DLS8		18	26	56
DLS10		20	26	56
DLS12		22	26	56
DLS13		24	26	56
DLS15		27	26	56
DLS17		29	26	56
DLS19	3 Cell Crates	18	28	59
DLS21		19	28	59
DLS23		20	28	59
DLS25		22	28	59
DLS27		23	28	59
DLS29		25	28	59
DLS31	2 Cell Crates	19	28	59
DLS35		18	30	62
DLS40		19	30	62
DLS45		21	30	62

DOUBLE TIER STAND



LENGTH (inches) L

Cell Type	Single Tier				Double Tier	
	24 Volt		50 Volt		110 Volt	
	18 Cells	20 Cells	38-40 Cells	41-42 Cells	86-90 Cells	91-92 Cells
DLS4	26	26	48	54	57	65
DLS6-17	34	34	64	71	85	85
DLS19-29	49	56	38-39 Cells	40-42 Cells		
			102	109	70 *59	70 *70
DLS31-45	71	79	38-40 Cells	41-42 Cells	86-88 Cells	90-92 Cells
			79 *79	87 *87	85 *100	100 *100

* Two Stands required.

For other Nickel Cadmium cell data see . . .

RVP and RV Cells AB-31
The MIDDLE DISTANCE Series
EP and E Cells AB-32
The DISTANCE Series

Our engineers will be pleased to advise on the dimensions and accommodation of any ALCAD batteries.