



# LCR AND LCY LEAD-CALCIUM LAR LEAD-ANTIMONY

## FOR SWITCHGEAR AND CONTROL APPLICATIONS

Capacities from 900 to 2400 Ampere-hours

C&D Technologies' Power Systems Division flooded batteries are engineered to provide superior performance and reliability over the life of the product. These batteries are designed using proprietary techniques and quality components and materials for reduced maintenance and extended battery life.



### APPLICATIONS

- **Electric Power Generation Facilities**
- **Nuclear Power Plants**
- **Emergency Systems**
- **Manufacturing Facilities**
  - **Assembly Lines**
  - **Process Controls**
- **Petrochemical processing plants**
- **Pipelines**

### FEATURES & BENEFITS

- Electrical testing to 100% capacity on every cell prior to shipping assures performance of every battery upon delivery.
- Proprietary vacuum-assisted, bottom-pour, positive-grid casting assures void-free grid quality resulting in long service life.
- Waterbath charging results in consistently formed plates for reliable performance out of the box (no cycling required in the field).
- Suspended positive plates permit free growth without pressure on jar and cover.
- 20 year environmental and seismic qualification (calcium).

### SAFE OPERATION

- Flame-retardant covers enhance battery plant safety with self-extinguishing properties, LOI>32%, UL 94V-0.
- Low-evaporation, flame-arrester vent to extend watering intervals and prevent external sparks from reacting with the hydrogen inside the cell.

### COST SAVINGS

- Transparent container allows visual inspection of plates.
- Soft rubber post seal minimizes stress on post reducing maintenance requirements.
- Computer controlled heli-arc welded post seals result in consistent and reliable seals for less maintenance and longer product life.

## SPECIFICATIONS

Plates	LCR/LAR	LCY
<b>Dimensions</b>		
<b>Height</b>	15.00 in (381 mm)	15.00 in (381 mm)
<b>Width</b>	12.00 in (305 mm)	12.00 in (305 mm)
<b>Positive Thickness</b>	0.312 in (7.9 mm)	0.250 in (6.4 mm)
<b>Negative Thickness</b>	0.210 in (5.3 mm)	0.180 in (4.6 mm)
<b>Outside Negative Thickness</b>	0.130 in (3.3 mm)	0.130 in (3.3 mm)
<b>Electrolyte height above plates</b>	2.88 in (73 mm)	
<b>Sediment space</b>	0.63 in (16 mm)	
<b>Electrolyte @ 77°F (25°C)</b>	Sulfuric acid, 1.215 specific gravity nominal	
<b>Electrolyte withdrawal tubes</b>	Two per cell optional	
<b>Recommended Float voltages</b>	2.21 - 2.22 volts per cell (calcium); 2.15 - 2.18 volts per cell (antimony)	
<b>Container</b>	Thermoplastic, transparent (SAN)	
<b>Cover</b>	High-impact, flame-retardant thermoplastic, with tongue-and-groove seal. Flammability ratings: UL 94-V0; ASTM D-635 self-extinguishing.	
<b>Separator</b>	Microporous with fiberglass retaining mat	
<b>Vent Systems</b>	Flame-arrester with dust cover	
<b>Terminals</b>		
<b>2LCR/2LAR-13 and 2LCR/2LAR-15</b>	Two, 1-in square copper-inserted posts with dual-bolt holes per cell	
<b>LCR/LAR-13 through LCR/LAR-17</b>	Four, 1-in square lead posts with 2 cross-bolt holes	
<b>LCR/LAR-19 through LCR/LAR-33</b>	Four, 1-in square copper-inserted posts with single-bolt holes	
<b>LCY-35 through LCY-39</b>	Six, 1-in square copper-inserted posts with single-bolt holes	
<b>* Optional container</b>	Transparent, flame-retardant, polycarbonate. Flammability ratings: UL 94-HB; ASTM D-635-68, self-extinguishing	

Models	Unit dimensions in (mm)			Unit wt. lbs (kgs)		Electrolyte per cell lbs (kgs)
	L	W	H	Net filled	Dom. packed	
2LCR/2LAR-13	12.10 (307)	14.12 (359)	22.70 (577)	352 (160.0)	372 (169.1)	55 (22.0)
2LCR/2LAR-15				380 (172.7)	401 (182.3)	52 (23.6)
LCR/LAR-13				7.62 (194)	196 (88.9)	211 (95.7)
LCR/LAR-15	210 (95.3)				225 (102.1)	60 (27.2)
LCR/LAR-17	224 (101.6)				240 (108.9)	58 (26.3)
LCR/LAR-19	8.88 (226)			254 (115.2)	274 (124.3)	70 (31.8)
LCR/LAR-21				270 (122.5)	290 (131.5)	67 (30.4)
LCR/LAR-23				10.62 (270)	310 (140.6)	330 (149.7)
LCR/LAR-25	325 (147.4)				345 (156.5)	82 (37.2)
LCR/LAR-27	13.14 (334)		350 (158.8)		373 (169.2)	98 (44.5)
LCR/LAR-29			367 (166.5)	390 (176.9)	96 (43.5)	
LCR/LAR-31			384 (174.2)	407 (184.6)	94 (42.6)	
LCR/LAR-33			416 (188.7)	440 (199.6)	92 (41.7)	
LCY-35			22.78 (579)	400 (181.4)	423 (191.9)	94 (42.6)
LCY-37				420 (190.5)	443 (200.9)	92 (41.7)
LCY-39	438 (198.7)	461 (209.1)		90 (40.8)		

For information on battery racks, please refer to brochure 12-560.

## WHAT DOES THE C&D POWERCOM BATTERY SELECTION APPLICATION DO?

The C&D Powercom Battery Selection Application allows users to quickly calculate many values essential for the proper selection of standby battery product via an online application. This allows users to access all the information they need to size and select the proper battery without having to download and install software.

### This includes the ability to:

- Select batteries based on complex step loads and generate IEEE-485 Sizing Work Sheets.
- Select batteries based on constant current loads.
- Select batteries based on constant power loads.
- View and customize rating tables.
- Do battery run time analysis.

## RATINGS TABLE: AMPERES

FV/Cell	Models	Ampere-hours	Nominal Rates @ 77°F (25°C) and 1.215 Specific Gravity (includes connector voltage drop)									
			Amperes									
		8 hr	1 min	15 min	30 min	1 hr	2 hr	3 hr	4 hr	5 hr	8 hr	12 hr
1.75	2LCR/2LAR-13	900	843	743	633	460	301	231	189	161	113	81
	2LCR/2LAR-15	1050	984	867	739	537	352	269	220	188	131	95
	LCR/LAR-13	900	882	723	603	456	312	240	195	165	113	80
	LCR/LAR-15	1050	1029	844	704	532	364	280	228	193	132	93
	LCR/LAR-17	1200	1176	964	804	608	416	320	260	220	151	107
	LCR/LAR-19	1350	1438	1152	942	699	472	362	294	249	171	121
	LCR/LAR-21	1500	1598	1280	1047	776	525	402	327	276	190	134
	LCR/LAR-23	1650	1668	1371	1137	849	575	440	358	303	207	147
	LCR/LAR-25	1800	1800	1457	1212	915	626	480	391	330	226	159
	LCR/LAR-27	1950	1889	1566	1303	977	665	512	418	354	244	174
	LCR/LAR-29	2030	1984	1661	1388	1038	702	537	437	370	254	180
	LCR/LAR-31	2175	2106	1734	1449	1095	749	575	469	396	272	192
	LCR/LAR-33	2320	2235	1841	1541	1167	799	614	500	423	290	205
LCY-35	2147	2727	2065	1610	1146	757	575	466	393	268	189	
LCY-37	2274	2888	2186	1705	1213	802	609	494	416	284	200	
LCY-39	2400	3048	2308	1800	1281	846	642	521	439	300	212	
1.78	2LCR/2LAR-13	886	736	664	582	436	288	222	183	156	111	81
	2LCR/2LAR-15	1034	859	775	679	508	336	258	213	182	129	94
	LCR/LAR-13	887	764	650	555	430	299	231	189	161	111	79
	LCR/LAR-15	1034	891	758	648	501	349	270	221	187	129	92
	LCR/LAR-17	1182	1018	866	741	573	399	308	253	214	148	105
	LCR/LAR-19	1338	1245	1036	868	658	452	349	285	242	167	119
	LCR/LAR-21	1486	1384	1151	965	731	502	388	317	269	186	132
	LCR/LAR-23	1627	1445	1231	1047	801	551	425	347	294	203	145
	LCR/LAR-25	1770	1557	1310	1115	862	600	464	380	322	221	157
	LCR/LAR-27	1917	1637	1406	1201	921	637	493	405	345	240	171
	LCR/LAR-29	1994	1721	1491	1279	979	671	517	423	360	249	178
	LCR/LAR-31	2132	1823	1559	1335	1032	717	555	454	386	267	189
	LCR/LAR-33	2273	1935	1655	1419	1100	765	592	485	411	284	202
LCY-35	2097	2359	1862	1485	1074	719	551	449	380	262	186	
LCY-37	2220	2497	1971	1573	1137	762	583	476	403	278	197	
LCY-39	2344	2636	2081	1660	1200	804	616	502	425	293	208	
1.81	2LCR/2LAR-13	860	627	577	519	406	272	210	174	150	108	79
	2LCR/2LAR-15	1003	731	673	605	473	317	245	203	175	125	92
	LCR/LAR-13	860	643	568	499	398	282	220	181	154	108	77
	LCR/LAR-15	1003	750	663	583	464	329	257	211	180	125	90
	LCR/LAR-17	1146	857	757	666	530	376	293	242	206	143	102
	LCR/LAR-19	1298	1047	906	781	608	426	332	273	233	162	116
	LCR/LAR-21	1442	1163	1006	868	676	473	368	303	258	180	129
	LCR/LAR-23	1578	1217	1076	942	741	519	403	332	283	197	141
	LCR/LAR-25	1715	1308	1146	1003	797	566	442	363	309	214	153
	LCR/LAR-27	1861	1380	1228	1080	853	600	468	387	331	233	168
	LCR/LAR-29	1937	1451	1301	1150	907	632	491	404	345	242	174
	LCR/LAR-31	2069	1534	1362	1200	955	676	527	434	370	259	185
	LCR/LAR-33	2206	1627	1446	1276	1017	721	562	463	395	276	198
LCY-35	2038	2002	1649	1355	1002	681	526	431	367	255	182	
LCY-37	2158	2119	1746	1435	1061	721	557	457	388	270	193	
LCY-39	2278	2237	1843	1515	1120	762	588	482	410	285	204	
1.85	2LCR/2LAR-13	802	489	457	421	348	243	190	159	138	100	75
	2LCR/2LAR-15	935	570	534	492	406	284	222	185	160	117	87
	LCR/LAR-13	802	495	453	411	340	250	198	165	142	100	73
	LCR/LAR-15	936	577	528	479	397	291	231	192	165	117	85
	LCR/LAR-17	1070	660	603	547	454	333	264	220	189	134	97
	LCR/LAR-19	1210	806	722	642	520	377	298	248	213	151	110
	LCR/LAR-21	1345	896	802	714	578	419	331	276	237	168	122
	LCR/LAR-23	1473	938	857	774	635	460	363	302	259	184	134
	LCR/LAR-25	1601	1006	914	825	681	501	397	330	284	200	145
	LCR/LAR-27	1738	1064	977	887	731	531	421	351	303	217	159
	LCR/LAR-29	1810	1120	1035	944	779	560	441	367	316	226	166
	LCR/LAR-31	1934	1182	1085	987	818	598	473	394	339	242	176
	LCR/LAR-33	2062	1253	1153	1049	871	638	505	421	362	258	188
LCY-35	1942	1509	1324	1150	897	628	490	405	346	243	175	
LCY-37	2056	1598	1402	1218	950	665	519	428	366	257	185	
LCY-39	2170	1687	1479	1285	1003	702	548	452	387	272	195	

\*Data based on discharge directly from a 72-hour float condition per IEEE-450 procedures

Additional ratings and application information is available in the Battery Selection Program at [www.cdstandbypower.com.net](http://www.cdstandbypower.com.net).

Battery	Number of Cells	Two Tier RDB-0901-(L)-P Width: 24.06 in (611 mm) Height: 65.81 in (1691 mm)					Qty Racks Required	Three Tier RDB-0902-(L)-P Width: 25.06 in (637 mm) Height: 94.81 in (2408 mm)					Qty Racks Required	Two Step RDB-0903-(L)-P Width: 44.75 in (1137 mm) Height: 52.31 in (1329 mm)				
		L		W		Qty Racks Required		L		W		Qty Racks Required		L		W		Qty Racks Required
		ft	mm	lbs	kgs			ft	mm	lbs	kgs			ft	mm	lbs	kgs	
2LCR-13	60	16	4877	348	158	1	11	3353	368	167	1	16	487	274	124	1		
2LCR-15																		
LCR-13	60	11	3353	235	107	2	14	4267	454	206	1	11	3353	185	84	2		
LCR-15																		
LCR-17																		
LCR-19	60	12	3658	273	124	2	16	4877	541	245	1	12	3658	211	96	2		
LCR-21																		
LCR-23	60	14	4267	291	132	2	10	3048	352	160	2	14	4267	230	104	2		
LCR-25																		
LCR-27	60																	
LCR-29																		
LCR-31		18	5486	370	168	2	12	3658	426	193	2	18	5486	296	135	2		
LCR-33																		
LCY-35	60	18	5486	370	168	2	12	3658	426	193	2	18	5486	296	135	2		
LCY-37																		
LCY-39																		

Notes:

- Rack Lengths for other batteries can be calculated by the formula:  
Number of units per tier or step x (L+0.5 inches)- 0.5 inches = total rack length, where "L" is the length of battery jar or cell in inches.
- See Section 12-560 for information about seismic-rated racks.
- Rack width does not include cross bracing. Increase width by 0.5 inches (12.7mm) when this dimension is critical.
- Height is the height to the top of the battery installed on this rack. See Section 12-560 and rack drawings for further information.
- Additional ratings and application information is available in the Battery Selection Program at [www.cdstandbypower.net](http://www.cdstandbypower.net)



**A CENTURY OF EXPERIENCE YOU CAN TRUST**

From our inception 100 years ago, C&D Technologies has been a pioneer in the development and use of telecommunications, data transmission, computer system infrastructure and utilities to enable them to maintain critical operations during power outages. We are also proud to be a major competitor in the Motive Power industry. As a manufacturer and marketer of motive power batteries, advanced chargers, and motive power management tools, C&D has the knowledge and experience to maximize your material handling applications. We continue to be the leader in high quality, long lasting batteries for all applications. You can find our representatives in over forty countries serving our customers. Our continued success is due to our Products, our employees and our sales Partners. Although a major part of C&D's continued success over the past 100 years is you—our loyal customers.

**C&D TECHNOLOGIES, INC.**

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