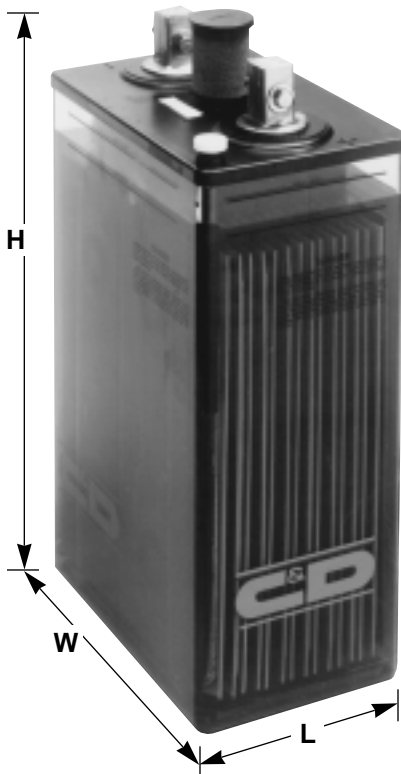


# CD TECHNOLOGIES

## Power Solutions

### KCR LEAD-CALCIUM KAR LEAD-ANTIMONY

For switchgear and control applications  
Capacities from 180 to 825 Ampere-hours



#### FEATURES AND BENEFITS

- 20-year environmental and seismic qualification (calcium)
- Flame-retardant covers enhance battery plant safety
- Terminals accessible for measurement of individual cell voltages
- Transparent container allows visual inspection of plates
- Low-evaporation, flame-arrester vent
- Electrical testing to 100 percent capacity assures performance of every battery
- Two-point, top-suspended positive plates permit free growth without pressure on jar and cover
- Vacuum-assisted, bottom-pour, positive-grid casting assures plate quality and long life
- Soft rubber post seal minimizes stress on post

#### SPECIFICATIONS

	Height	Width	Thickness
<b>Plates</b>			
Positive	11.38 in (289 mm)	8.75 in (222 mm)	0.312 in (7.9 mm)
Negative	11.38 in (289 mm)	8.75 in (222 mm)	0.210 in (5.3 mm)
Outside negative	11.38 in (289 mm)	8.75 in (222 mm)	0.130 in (3.3 mm)
Electrolyte height above plates	2.06 in (52 mm)		
Sediment space	0.75 in (19.1 mm)		
Electrolyte @ 77F (25C)	Sulfuric acid, 1.215 specific gravity nominal		
Float voltages	2.20–2.25 volts per cell (calcium); 2.15–2.17 volts per cell (antimony)		
Container*	Thermoplastic, transparent		
Cover	High-impact, flame-retardant thermoplastic with tongue-and-groove seal. Flammability ratings: UL 94-VO; ASTM D-635 self-extinguishing		
Separator	Microporous with fibrous glass mat		
Safety vent system	Flame-arrester type with dust cover		
Terminals			
3KCR/3KAR (5 plates)	Two, 0.5 in x 1.38 in (12.7 mm x 35 mm) cast-lead terminals		
KCR/KAR (7 through 13 plates)	Two, 1-in (25 mm) square posts with 2 cross-bolt holes		
KCR/KAR (15 through 21 plates)	Two, 1-in (25 mm) square copper-inserted posts with single-bolt hole		
Withdrawal tubes	Two per cell		
*Optional container	Transparent, flame-retardant polycarbonate. Flammability ratings: UL 94-HB; ASTM D-635 self-extinguishing		

Final volts	Models	Nominal rates at 77F (25C) (includes connector voltage drop)							
		Ampere-hours			Amperes				
		8 Hr	4 Hr	3 Hr	1.5 Hr	1 Hr	30 Min	15 Min	1 Min
1.81	3KCR/3KAR	168	130	118	57	68	90	109	127
	KCR/KAR-7	231	192	174	86	106	142	176	217
	KCR/KAR-9	308	256	232	114	142	190	234	290
	KCR/KAR-11	385	320	290	143	173	240	290	358
	KCR/KAR-13	462	384	348	171	215	290	356	458
	KCR/KAR-15	539	448	406	200	251	338	418	557
	KCR/KAR-17	616	512	464	228	287	387	478	611
	KCR/KAR-19	693	576	522	257	319	427	527	666
	KCR/KAR-21	770	640	580	285	346	469	579	724
1.78	3KCR/3KAR	175	134	124	63	75	100	122	152
	KCR/KAR-7	240	198	183	95	117	158	197	260
	KCR/KAR-9	320	264	244	126	156	211	262	347
	KCR/KAR-11	400	330	305	156	191	261	325	429
	KCR/KAR-13	480	396	366	189	237	323	398	549
	KCR/KAR-15	560	462	427	221	277	377	468	667
	KCR/KAR-17	640	528	488	252	316	430	535	732
	KCR/KAR-19	720	594	549	284	352	474	590	798
	KCR/KAR-21	800	660	610	315	381	521	648	867
1.75	3KCR/3KAR	180	142	132	65	81	109	134	177
	KCR/KAR-7	250	210	195	98	126	172	219	303
	KCR/KAR-9	330	280	260	130	168	230	292	404
	KCR/KAR-11	410	350	326	163	204	285	362	500
	KCR/KAR-13	495	420	390	195	255	351	444	639
	KCR/KAR-15	577	490	456	228	298	410	522	777
	KCR/KAR-17	660	560	521	260	340	468	596	852
	KCR/KAR-19	742	630	586	293	378	517	657	929
	KCR/KAR-21	825	700	650	325	410	568	723	1010

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

Type of cell		Overall dimensions			Approx. wt. lbs (kgs)		Electrolyte per cell lbs (kgs)
Calcium	Antimony	L in (mm)	W in (mm)	H in (mm)	Net filled	Dom packed	
3KCR	3KAR-5	8.53 (217)	10.44 (265)	18.25 (464)	122 (53.3)	135 (61.2)	13 (5.9)
KCR-7	KAR-7	3.62 (91.9)			56 (25.4)	61 (27.7)	15 (6.8)
KCR-9	KAR-9	4.62 (117)			73 (33.1)	80 (36.3)	20 (9.1)
KCR-11	KAR-11	4.62 (117)			82 (37.2)	89 (40.4)	19 (8.6)
KCR-13	KAR-13	5.59 (142)			97 (44.0)	105 (47.6)	23 (10.4)
KCR-15	KAR-15	6.59 (167)			114 (51.7)	124 (56.2)	28 (12.7)
KCR-17	KAR-17	8.53 (217)			134 (60.8)	145 (65.8)	39 (17.7)
KCR-19	KAR-19	8.53 (217)			143 (64.9)	155 (70.3)	38 (17.2)
KCR-21	KAR-21	8.53 (217)			152 (68.9)	165 (74.8)	36 (16.3)

Note: Electrolyte weighs approximately 10 lbs per gallon (1.210 kgs per liter).

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

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