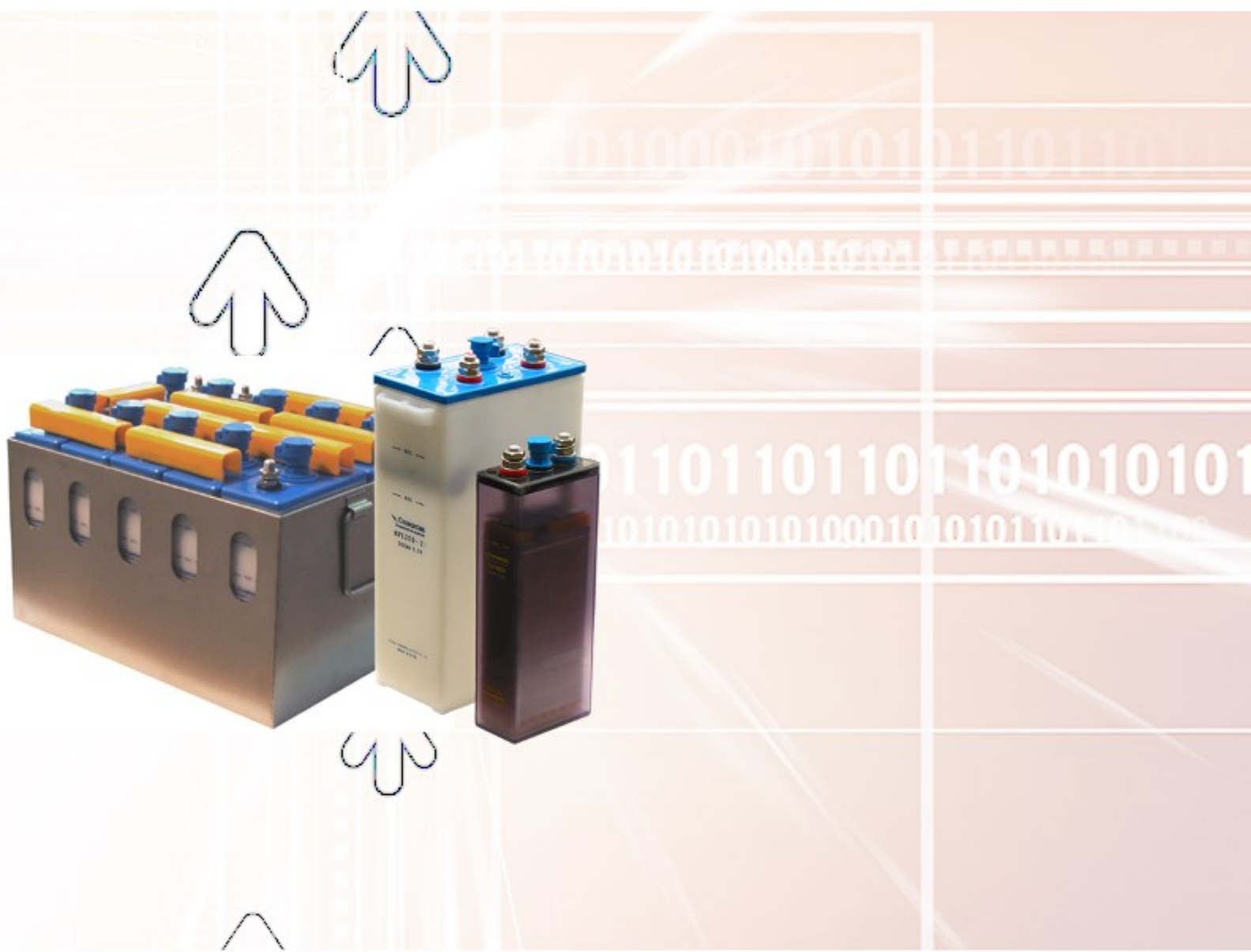


KPX Ni-Cd Battery



January 2013

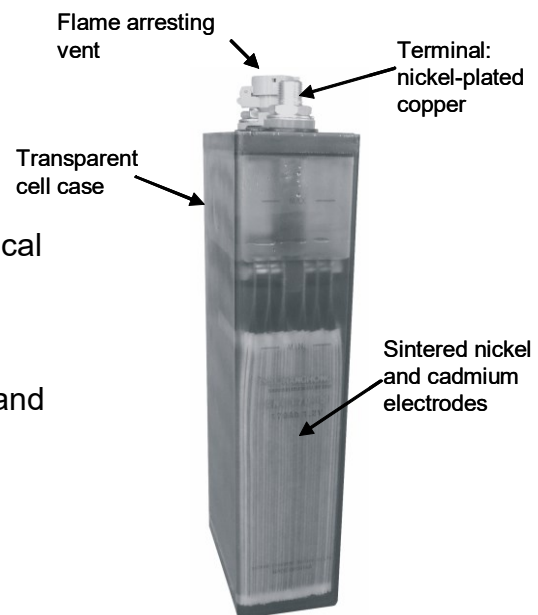


Qualmega KPX Series nickel cadmium batteries are designed for industrial high power applications. Sintered-plate technology used on both positive and negative electrodes provides unrivaled performance in power and energy density. The technology and the production line were acquired from VARTA in Germany.

KPX Series batteries are suitable for ultra high power or high energy density applications such as locomotive diesel engine starting, rolling stock, automatic guided vehicles (AGV), trucks, etc.

Product Features:

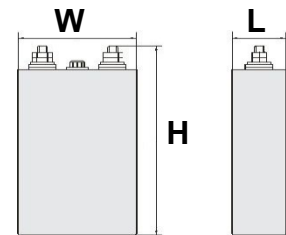
- Proven VARTA sintered-plate electrode technology
- 3-C charging current
- Over 20-C cranking current
- High tolerance to electrical abuses such as overcharge and overdischarge
- High tolerance to rough handling and mechanical abuse due to strong components and robust construction
- Trouble-free long cycle life
- No risk of sudden death due to the chemistry and the cell structure
- Wide operating temperature: -40°C to 50°C
- Generous electrolyte reserve for long maintenance intervals
- Clear cell case for easy electrolyte level inspection
- Custom cell dimensions available
- Conforms to IEC60623



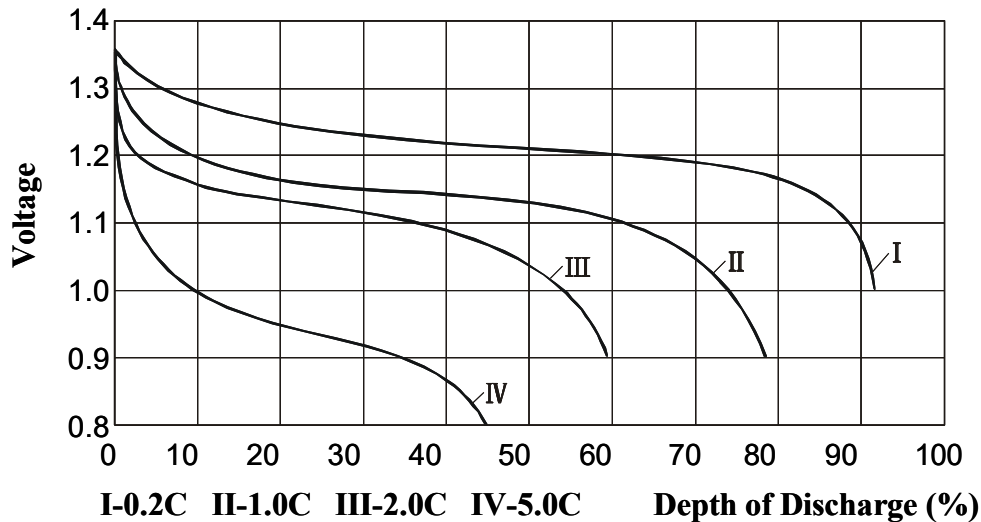
Qualmega nickel-cadmium batteries are manufactured by **Sichuan Changhong Battery Co., Ltd. (SCBC)**, the largest industrial nickel-cadmium battery manufacturer in China. Established for over five decades, SCBC specializes in developing and manufacturing industrial alkaline rechargeable batteries. It currently supplies their high quality batteries to railroad, aviation and industrial markets throughout the world. SCBC is ISO 9001 certified.

Qualmega KPX General Specifications:

Cell Model	Capacity (C5 Ah)	Dimensions						Cell Weight (with electrolyte)		Electrolyte Volume (L)	Terminal	Cell Case Material
		Width		Length		Height		kg	lb.			
		mm	in	mm	in	mm	in					
KPX10	10	81	3.2	29	1.1	218	8.6	1.05	2.32	0.16	M10	PA
KPX20	20	81.5	3.2	36.5	1.4	244	9.6	1.30	2.87	0.15	M10	AS
KPX30	30	81.5	3.2	42.5	1.7	255	10.0	1.65	3.64	0.22	M10	AS
KPX40	40	81.5	3.2	42.5	1.7	255	10.0	1.75	3.86	0.21	M10	AS
KPX50	50	81.5	3.2	49	1.9	244	9.6	2.00	4.41	0.20	M10	AS
KPX60	60	80.5	3.2	50	2.0	250	9.8	2.80	6.17	0.25	M10	PA
KPX80	80	80.5	3.2	74.5	2.9	243	9.6	3.10	6.84	0.45	M12	PA
KPX90	90	80.5	3.2	74.5	2.9	243	9.6	3.40	7.50	0.40	M12	PA
KPX100	100	134	5.3	70	2.8	285	11.2	5.50	12.1	0.85	M16	MBS
KPX120	120	139	5.5	79	3.1	365	14.4	7.50	16.5	1.09	M16 x 1.5	MBS
KPX140	140	139	5.5	79	3.1	365	14.4	7.60	16.8	1.06	M16 x 1.5	MBS
KPX170	170	139	5.5	79	3.1	365	14.4	7.90	17.4	1.02	M16 x 1.5	MBS
KPX190	190	139	5.5	79	3.1	365	14.4	8.50	18.7	1.00	M16 x 1.5	MBS
KPX200	200	166.5	6.6	107	4.2	348	13.7	11.0	24.3	1.70	M20	MBS
KPX210	210	166.5	6.6	107	4.2	348	13.7	12.5	27.6	1.65	M20	MBS
KPX220	220	166.5	6.6	107	4.2	348	13.7	13.0	28.7	1.65	M20	MBS
KPX230	230	166.5	6.6	107	4.2	348	13.7	13.0	28.7	1.60	M20	MBS
KPX240	240	166.5	6.6	107	4.2	348	13.7	13.1	28.9	1.60	M20	MBS
KPX250	250	166.5	6.6	107	4.2	348	13.7	13.2	29.1	1.60	M20	MBS



Discharge Performance at -18°C [0°F]:



Qualmegea KPX Cell Performance

Available amperes at 20 °C. Discharge current is for fully charged cells

Final voltage: 1.14 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	22.5	28.0	37.5	49.5	55.3	70.5	74.3
KPX20	20	43.2	53.7	72.0	95.0	106	135	142
KPX30	30	67.5	84.0	112	148	165	211	222
KPX40	40	86.4	107	144	190	212	270	285
KPX50	50	112	140	187	247	276	352	371
KPX60	60	135	168	225	297	331	432	445
KPX80	80	180	224	300	396	442	564	594
KPX90	90	210	252	340	441	498	638	677
KPX100	100	225	280	375	495	552	705	742
KPX120	120	270	336	450	594	663	846	891
KPX140	140	315	392	525	693	773	987	1039
KPX170	170	382	476	637	841	939	1198	1262
KPX190	190	427	532	712	940.0	1049	1339	1410
KPX200	200	460	570	770	1010	1114	1440	1514
KPX210	210	483	598	808	1060	1169	1512	1590
KPX220	220	493	614	822	1085	1210	1545	1626
KPX230	230	520	650	870	1150	1300	1640	1720
KPX240	240	550	698	930	1210	1380	1730	1820
KPX250	250	578	740	1000	1268	1450	1810	1920

Final voltage: 1.10 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	23.7	39.0	44.3	61.3	70.5	73.3	91.7
KPX20	20	45.6	74.8	84.9	117	135	140	176
KPX30	30	71.2	117	132	183	211	219	275
KPX40	40	91.2	149	169	235	270	281	352
KPX50	50	118	195	221	306	352	366	458
KPX60	60	142	234	265	367	423	439	550
KPX80	80	190	312	354	490	564	586	734
KPX90	90	213	351	396	557	634	660	926
KPX100	100	237	390	442	612	705	732	917
KPX120	120	285	468	531	735	846	879	1101
KPX140	140	332	546	619	857	987	1025	1284
KPX170	170	403	663	752	1041	1198	1245	1559
KPX190	190	451	741	840	1163	1339	1406	1743
KPX200	200	484	796	900	1254	1440	1494	1874
KPX210	210	508	835	945	1317	1512	1569	1968
KPX220	220	520	855	969	1341	1545	1604	2010
KPX230	230	560	910	1020	1430	1640	1710	2140
KPX240	240	595	960	1080	1510	1730	1805	2260
KPX250	250	630	1010	1160	1600	1820	1910	2380

Final voltage: 1.05 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	26.7	44.8	54.0	70.7	79.5	84.7	108
KPX20	20	51.3	85.9	103	135	152	162	208
KPX30	30	80.2	134	162	212	238	254	326
KPX40	40	102	171	207	271	305	325	417
KPX50	50	133	223	270	353	397	423	543
KPX60	60	160	268	324	424	477	508	652
KPX80	80	214	358	432	566	636	678	870
KPX90	90	245	400	485	630	710	751	964
KPX100	100	267	447	540	707	795	847	1087
KPX120	120	321	537	648	849	954	1017	1305
KPX140	140	374	626	756	990	1113	1186	1522
KPX170	170	454	760	918	1202	1351	1440	1848
KPX190	190	508	850	1026	1344	1510	1610	2066
KPX200	200	545	914	1100	1444	1620	1734	2274
KPX210	210	572	959	1155	1516	1701	1789	2317
KPX220	220	585	980	1183	1549	1742	1856	2382
KPX230	230	620	1050	1260	1640	1860	1870	2490
KPX240	240	658	1120	1325	1730	1970	1980	2590
KPX250	250	685	1167	1380	1802	2052	2063	2698

Final voltage: 1.00 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	30.0	50.0	68.0	91.2	100	106	124
KPX20	20	57.6	96.0	130	175	192	204	238
KPX30	30	90.0	150	204	273	301	320	372
KPX40	40	115	192	261	350	385	409	477
KPX50	50	150	250	340	456	502	533	621
KPX60	60	180	300	408	547	603	640	745
KPX80	80	240	400	544	730	804	854	994
KPX90	90	270	450	612	814	913	961	1086
KPX100	100	300	500	680	912	1005	1067	1242
KPX120	120	360	600	816	1095	1206	1281	1491
KPX140	140	420	700	952	1277	1407	1494	1739
KPX170	170	510	850	1156	1551	1708	1814	2112
KPX190	190	570	950	1292	1733	1909	2028	2360
KPX200	200	610	1020	1390	1854	2050	2164	2544
KPX210	210	640	1071	1459	1946	2152	2272	2671
KPX220	220	658	1096	1490	1999	2202	2338	2722
KPX230	230	688	1150	1570	2190	2350	2470	2900
KPX240	240	720	1190	1640	2270	2460	2600	3150
KPX250	250	750	1220	1700	2350	2550	2720	3280

Qualmega KPX Cell Performance

Available amperes at 20 °C. Discharge current is for fully charged cells

Final voltage: 0.85 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	32.0	56.0	98.0	190	200	247	258
KPX20	20	63.0	106	182	360	380	420	500
KPX30	30	95.0	167	271	530	570	667	689
KPX40	40	128	209	324	700	760	876	897
KPX50	50	160	256	420	850	950	1134	1190
KPX60	60	192	330	480	1020	1240	1450	1499
KPX80	80	255	450	613	1280	1390	1660	1730
KPX90	90	286	490	700	1440	1540	1810	1900
KPX100	100	346	530	805	1600	1730	1995	2105
KPX120	120	384	660	965	1920	2260	2510	2600
KPX140	140	440	780	1160	2240	2580	2820	3012
KPX170	170	536	920	1420	2700	3110	3490	3601
KPX190	190	591	1000	1580	2900	3300	3667	3720
KPX200	200	623	1065	1620	3100	3440	3820	3980
KPX210	210	654	1118	1681	3255	3612	4011	4179
KPX220	220	686	1200	1700	3300	3740	4100	4205
KPX230	230	712	1270	1742	3450	3880	4270	4470
KPX240	240	740	1340	1790	3600	4030	4500	4710
KPX250	250	765	1410	1850	3750	4180	4700	4950

Final voltage: 0.65 V/cell

Cell Type	C ₅ Ah	Minutes				Seconds		
		20	10	5	1	30	5	1
KPX10	10	33.0	65.0	106	215	240	370	410
KPX20	20	66.0	121	203	420	468	720	800
KPX30	30	99.0	185	315	617	730	1039	1150
KPX40	40	132	244	395	821	930	1408	1566
KPX50	50	165	298	490	1034	1150	1746	1910
KPX60	60	198	371	589	1310	1460	1997	2209
KPX80	80	264	483	755	1697	1820	2365	2601
KPX90	90	297	510	840	1785	1990	2447	2806
KPX100	100	360	601	947	2110	2300	3401	3705
KPX120	120	396	720	1122	2479	2670	3885	4209
KPX140	140	460	845	1301	2900	3210	3981	4398
KPX170	170	560	1105	1502	3300	3700	4601	4948
KPX190	190	620	1201	1690	3457	3900	4782	5188
KPX200	200	655	1260	1718	3640	4030	4827	5249
KPX210	210	687	1288	1740	3821	4104	4920	5290
KPX220	220	720	1350	1800	4003	4300	5010	5499
KPX230	230	740	1440	1850	4180	4430	5130	5680
KPX240	240	763	1520	1910	4360	4550	5250	5850
KPX250	250	787	1600	1970	4500	4720	5400	6000