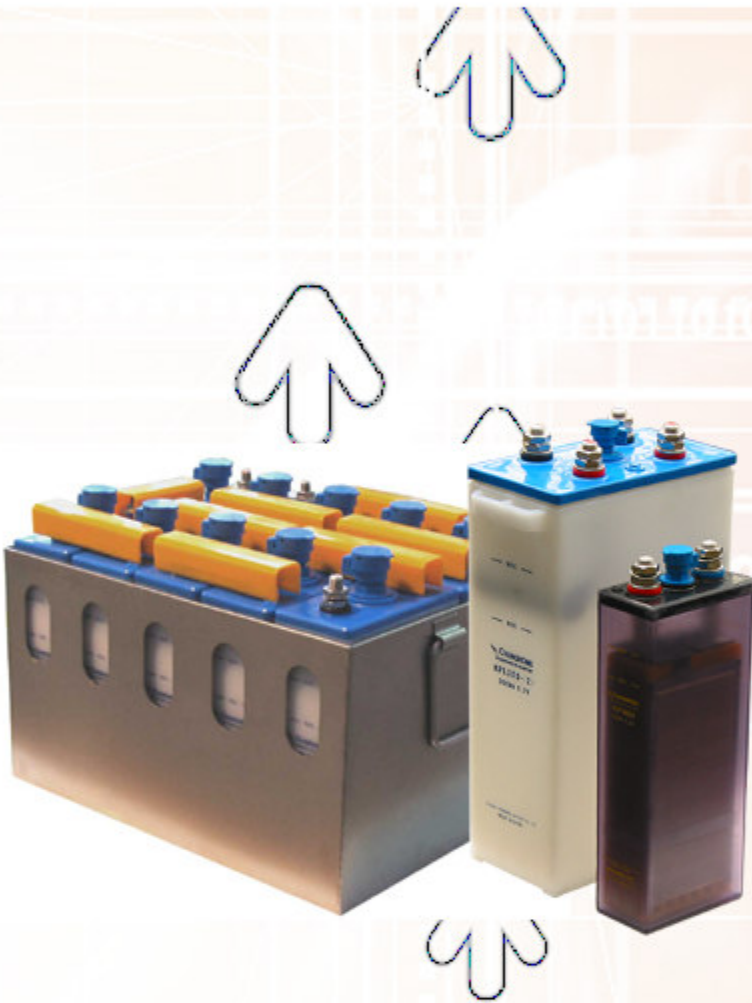


KPM Ni-Cd Battery



January 2010

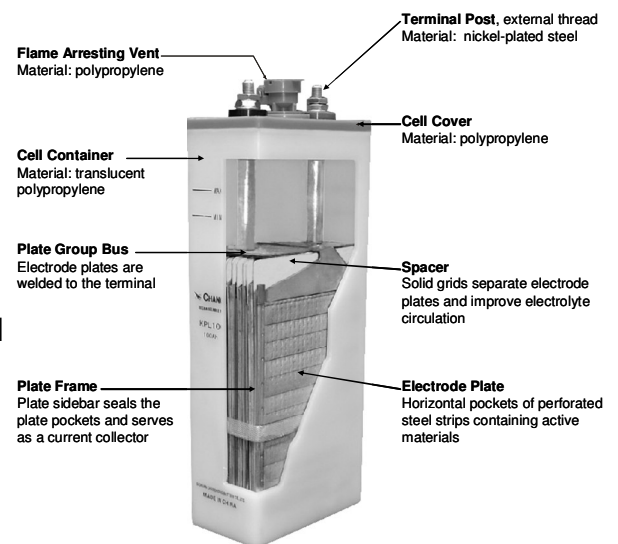


Qualmega KPM Series nickel cadmium batteries are designed for general industrial applications where absolute reliability is a necessity. Service-proven pocket-plate technology ensures long uninterrupted battery life without the risk of sudden loss of power.

KPM Series batteries are suitable for medium discharge rate applications (between 30 minutes to 3 hours) such as railroad signaling and control systems, UPS, telecommunications, etc.

Product Features:

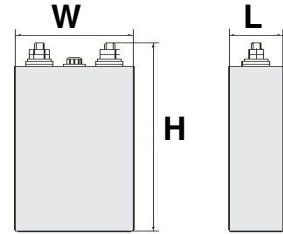
- Proven pocket-plate nickel-cadmium technology
- 50 years of experience in developing and manufacturing nickel-cadmium batteries.
- High tolerance to electrical abuses such as overcharge and overdischarge
- High tolerance to rough handling and mechanical abuse due to strong components and robust construction
- 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
- Translucent (PP) or clear (MBS) plastic cell case for easy electrolyte level inspection
- Plastic grid spacers eliminate separator deterioration problem
- Custom cell dimensions available
- 20 years service life in stationary applications
- Conforms to IEC60623



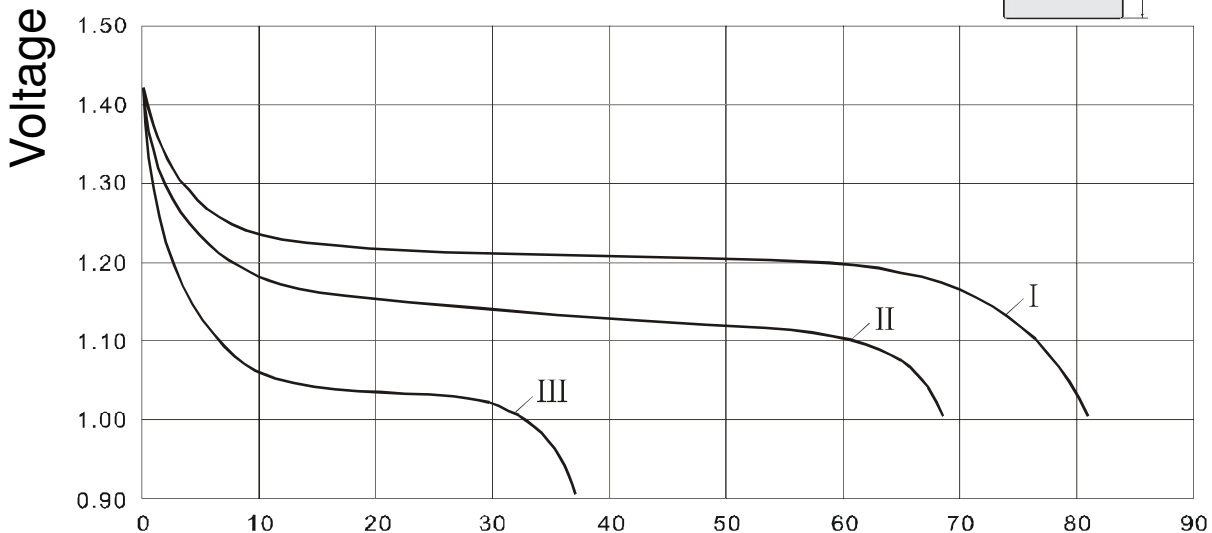
Qualmega nickel-cadmium batteries are manufactured by **Sichuan Changhong Battery Co., Ltd. (SCBC)**, the largest industrial nickel-cadmium battery manufacturer in China. Established for over five decades, SCBC specializes in developing and manufacturing industrial alkaline rechargeable batteries. It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

Qualmega KPM General Specifications:

Cell Type	Capacity (C5 Ah)	Dimensions						Weight				Terminal	Cell Case Material
		Length		Width		Height		Without Electrolyte		With Electrolyte			
		mm	in	mm	in	mm	in	kg	lb.	kg	lb.		
KPM10	10	48	1.9	81	3.2	245	9.6	1.2	2.6	1.5	3.3	M10	MBS
KPM20	20	68	2.7	134	5.3	245	9.6	1.6	3.5	2.5	5.5	M10	PP
KPM30	30	68	2.7	134	5.3	245	9.6	2.0	4.4	2.8	6.2	M10	PP
KPM40	40	70	2.8	134	5.3	285	11.2	3.0	6.6	4.0	8.8	M10	MBS
KPM50	50	70	2.8	134	5.3	285	11.2	3.3	7.3	4.2	9.2	M10	MBS
KPM60	60	70	2.8	134	5.3	285	11.2	4.2	9.3	4.8	10.6	M10	MBS
KPM70	70	80	3.1	141	5.6	370	14.6	4.8	10.6	6.3	13.9	M16	PP
KPM80	80	80	3.1	141	5.6	370	14.6	5.5	12.1	6.4	14.1	M16	PP
KPM100	100	80	3.1	141	5.6	370	14.6	7.0	15.4	8.5	18.7	M16	PP
KPM120	120	106	4.2	164	6.5	345	13.6	7.2	15.9	9.5	20.9	M20	PP
KPM150	150	106	4.2	164	6.5	345	13.6	7.8	17.2	10.0	22.1	M20	PP
KPM200	200	152	6.0	170	6.7	385	15.2	11.5	25.4	15.0	33.1	M20	PP
KPM250	250	152	6.0	170	6.7	385	15.2	12.5	27.6	16.0	35.3	M20	PP
KPM300	300	162	6.4	200	7.9	450	17.7	17.5	38.6	23.0	50.7	M16	PP
KPM350	350	162	6.4	200	7.9	450	17.7	18.5	40.8	24.0	52.9	M16	PP
KPM400	400	162	6.4	200	7.9	450	17.7	21.0	46.3	26.0	57.3	M16	PP
KPM500	500	176	6.9	291	11.5	510	20.1	28.0	61.7	40.0	88.2	M20	MBS
KPM600	600	176	6.9	291	11.5	510	20.1	30.0	66.2	42.0	92.6	M20	MBS
KPM700	700	186	7.3	398	15.7	570	22.4	42.0	92.6	58.0	128	M20	MBS
KPM800	800	186	7.3	398	15.7	570	22.4	45.0	99.2	60.0	132	M20	MBS
KPM900	900	186	7.3	398	15.7	570	22.4	47.0	104	62.0	137	M20	MBS
KPM1000	1000	186	7.3	398	15.7	570	22.4	50.0	110	65.0	143	M20	MBS



Discharge Performance at -18°C [0°F]:



I-0.1C II-0.2C III-1.0C

Depth of Discharge

Qualmega KPM Cell Performance

Available amperes at 20 °C

Discharge current is for fully charged cells

Final voltage: 1.14 V/cell

Cell Type	C _s Ah	Hours							Minutes							Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1	
KPM10	10	0.94	1.16	1.73	2.80	3.20	3.70	4.30	5.50	6.40	7.00	8.00	9.90	14.7	16.7	19.8	22.0	
KPM20	20	1.88	2.40	3.70	5.50	6.40	7.50	8.60	11.2	12.8	13.9	15.9	19.2	27.1	30.4	36.4	44.0	
KPM30	30	2.82	3.50	5.60	8.20	9.60	11.3	12.9	16.8	19.2	20.9	23.9	28.9	40.6	45.6	53.0	67.0	
KPM40	40	3.76	4.70	7.50	10.9	12.7	15.0	17.3	22.4	25.6	27.8	31.8	38.6	54.2	60.7	71.0	90.0	
KPM50	50	4.70	5.90	9.40	13.6	15.9	18.8	21.6	27.9	32.1	34.8	39.7	47.9	67.8	75.9	88.0	112	
KPM60	60	5.64	7.07	11.2	15.3	19.5	23.1	27.3	35.2	40.4	44.7	50.1	61.1	87.4	97.7	115	119	
KPM70	70	6.58	8.25	13.1	17.9	22.7	27.0	31.8	41.1	47.1	52.1	59.1	71.3	102	114	134	139	
KPM80	80	7.52	9.43	14.9	20.5	25.9	30.9	36.3	46.9	53.8	59.5	67.5	81.5	117	130	153	159	
KPM100	100	9.40	11.8	18.7	25.6	32.4	38.6	45.4	58.7	67.3	74.4	84.4	102	146	163	191	198	
KPM120	120	11.3	14.1	22.4	30.7	38.9	46.3	54.5	70.0	81.0	89.0	101	122	174	196	230	238	
KPM150	150	14.1	17.7	28.1	38.4	48.6	57.9	68.1	88.0	101	117	127	153	218	244	287	298	
KPM200	200	18.8	23.6	37.4	51.1	64.9	77.0	91.0	117	135	149	169	204	291	326	383	397	
KPM250	250	23.6	29.5	46.8	63.9	81.0	96.0	114	147	168	186	211	254	364	407	478	497	
KPM300	300	28.4	35.4	56.1	76.7	97.3	116	136	176	202	224	253	306	437	489	574	596	
KPM350	350	32.9	41.3	65.5	89.5	114	135	159	205	236	261	295	356	510	570	670	695	
KPM400	400	37.8	47.2	74.8	102	130	154	182	235	269	298	338	407	583	652	766	794	
KPM500	500	47.1	59.1	93.6	128	162	193	227	294	336	372	422	509	728	815	957	993	
KPM600	600	56.4	70.7	112	154	195	232	273	352	404	447	506	611	874	977	1148	1192	
KPM700	700	65.8	82.5	131	179	227	270	318	411	471	521	591	713	1019	1140	1340	1390	
KPM800	800	75.4	94.3	150	204	259	309	363	470	538	596	676	814	1165	1303	1531	1589	
KPM900	900	84.8	106	168	230	292	347	409	528	606	670	760	916	1311	1466	1723	1787	
KPM1000	1000	94.2	118	187	256	324	386	454	587	673	745	845	1018	1457	1630	1915	1986	

Final voltage: 1.10 V/cell

Cell Type	C _s Ah	Hours							Minutes							Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1	
KPM10	10	0.98	1.23	1.94	2.91	3.76	4.51	5.61	7.33	8.54	9.28	10.4	12.6	17.9	20.3	24.0	26.3	
KPM20	20	1.96	2.45	3.89	5.83	7.51	9.03	11.3	14.7	17.1	18.6	20.9	25.3	35.7	40.6	48.0	52.6	
KPM30	30	2.94	3.69	5.82	8.73	11.3	13.5	16.8	21.9	25.6	27.8	31.2	37.8	53.7	60.9	72.0	78.9	
KPM40	40	3.92	4.92	7.76	11.6	15.1	18.1	22.4	29.3	34.2	37.1	41.6	50.4	71.6	81.2	96.0	105	
KPM50	50	4.90	6.15	9.70	14.6	18.8	22.6	28.1	36.7	42.7	46.4	52.0	63.0	89.5	102	120	132	
KPM60	60	5.88	7.35	11.7	17.5	22.5	27.1	33.7	43.9	51.3	55.7	62.7	75.8	107	122	144	158	
KPM70	70	6.86	8.58	13.6	20.4	26.3	31.6	39.3	51.3	59.8	65.0	73.1	88.4	125	142	168	184	
KPM80	80	7.84	9.81	15.5	23.3	30.1	36.1	44.9	58.6	68.3	74.3	83.5	101	143	162	192	210	
KPM100	100	9.80	12.3	19.4	29.1	37.6	45.2	56.2	73.4	85.6	93.2	106	128	183	208	246	269	
KPM120	120	11.8	14.8	23.3	34.9	45.1	54.2	67.4	88.1	103	112	127	154	220	250	295	323	
KPM150	150	14.7	18.5	29.1	43.7	56.4	67.8	84.3	110	128	140	159	192	275	312	369	404	
KPM200	200	19.6	24.5	38.9	58.4	75.2	90.4	114	148	173	189	212	256	360	412	486	532	
KPM250	250	24.5	30.8	48.5	72.8	94.0	113	141	184	214	235	268	324	461	524	620	681	
KPM300	300	29.5	37.0	58.4	87.5	113	135	168	219	259	280	316	384	542	615	726	798	
KPM350	350	34.3	43.1	67.9	102	132	158	197	257	300	328	376	452	646	734	869	952	
KPM400	400	39.3	49.4	77.8	116	151	182	226	297	346	375	420	510	721	822	968	1056	
KPM500	500	49.1	61.6	97.2	146	188	227	282	368	428	467	524	636	898	1026	1210	1332	
KPM600	600	58.9	73.7	119	178	228	274	340	442	517	561	632	764	1076	1228	1450	1592	
KPM700	700	68.7	85.9	137	208	269	320	399	519	604	656	739	892	1258	1428	1690	1850	
KPM800	800	78.6	98.4	156	234	304	364	452	592	687	748	841	1017	1438	1632	1934	2118	
KPM900	900	88.4	113	178	267	344	414	514	668	777	851	959	1158	1655	1883	2227	2445	
KPM1000	1000	98.2	126	198	296	382	460	571	742	863	946	1066	1287	1839	2092	2474	2716	

Available amperes at 20 °C

Discharge current is for fully charged cells

Final voltage: 1.05 V/cell

Cell Type	C _s Ah	Hours							Minutes					Seconds			
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10	10	1.01	1.24	1.96	3.22	4.18	5.00	6.40	8.34	9.57	10.6	12.2	14.9	22.1	25.3	31.2	33.8
KPM20	20	2.02	2.48	3.92	6.44	8.36	10.1	12.8	16.6	19.1	21.2	24.4	29.8	44.2	50.6	62.4	67.6
KPM30	30	3.03	3.72	5.88	9.66	12.5	15.1	19.2	25.0	28.7	31.8	36.6	44.7	66.3	75.9	93.6	101
KPM40	40	4.04	4.96	7.84	12.9	16.7	20.0	25.6	33.4	38.3	42.4	48.8	59.6	88.4	101	125	135
KPM50	50	5.05	6.20	9.80	16.1	20.9	25.1	32.1	41.7	47.8	53.1	61.0	74.5	110	127	156	169
KPM60	60	6.06	7.50	11.9	19.4	25.3	30.6	40.3	54.3	61.5	68.0	78.5	75.8	133	151	182	195
KPM70	70	7.07	8.75	13.9	22.6	29.5	35.7	47.0	63.3	71.8	79.3	91.6	110	155	176	212	227
KPM80	80	8.08	10.0	15.9	25.8	33.7	40.8	53.7	72.3	82.1	90.6	105	126	177	201	242	259
KPM100	100	10.1	12.5	19.9	32.3	42.1	51.0	67.1	90.4	103	113	131	157	221	251	303	324
KPM120	120	12.1	15.0	23.9	38.8	50.5	61.2	80.5	108	124	136	157	188	265	301	364	389
KPM150	150	15.2	18.8	29.9	48.5	63.2	76.5	101	136	155	170	192	236	333	377	455	486
KPM200	200	20.2	25.0	39.8	64.6	84.2	102	134	181	206	226	262	314	442	502	606	648
KPM250	250	25.3	31.3	49.8	80.8	105	128	168	226	258	283	328	393	553	628	758	810
KPM300	300	30.3	37.5	59.7	96.9	127	153	201	271	309	339	393	471	663	753	909	972
KPM350	350	35.4	43.8	69.7	113	147	179	235	316	361	396	459	550	774	879	1061	1134
KPM400	400	40.5	50.0	79.6	129	168	204	268	362	412	452	524	628	884	1004	1212	1296
KPM500	500	50.6	62.5	99.6	162	211	255	336	452	515	565	655	785	1105	1255	1515	1620
KPM600	600	60.8	75.0	120	196	258	314	412	552	624	689	794	952	1338	1522	1834	1964
KPM700	700	70.9	87.5	141	232	301	364	476	640	725	802	924	1108	1560	1772	2130	2283
KPM800	800	80.9	100	162	263	341	413	544	730	829	914	1058	1268	1779	2021	2432	2612
KPM900	900	90.9	115	179	291	379	459	604	814	927	1017	1179	1413	1989	2259	2727	2916
KPM1000	1000	102	128	200	326	427	518	679	1003	1039	1140	1320	1582	2223	2524	3046	3258

Final voltage: 1.00 V/cell

Cell Type	C _s Ah	Hours							Minutes					Seconds			
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10	10	1.02	1.26	2.0	3.27	4.79	5.77	7.49	10.7	12.5	13.7	15.6	19.0	26.7	30.4	37	39.4
KPM20	20	2.04	2.52	4.0	6.54	9.57	11.5	15.0	21.3	24.9	27.4	31.1	38.0	53.4	60.9	74	78.9
KPM30	30	3.06	3.78	6.0	9.80	14.4	17.3	22.5	32.0	37.4	41.1	46.7	57.0	80.1	91.3	111	118
KPM40	40	4.08	5.04	8.0	13.1	19.1	23.1	29.9	42.6	49.8	54.7	62.3	76.0	107	122	148	158
KPM50	50	5.10	6.30	10.0	16.4	23.9	28.9	37.4	53.3	62.3	68.4	77.9	95.0	134	152	185	197
KPM60	60	6.12	7.58	12.0	19.6	28.7	34.6	49.9	63.9	74.7	82.1	93.4	114	160	183	222	237
KPM70	70	7.14	8.84	14.0	22.9	33.5	40.4	52.4	74.6	87.2	95.8	109	133	187	213	259	276
KPM80	80	8.16	10.1	16.0	26.2	38.3	46.2	59.9	82.3	99.7	109	125	152	214	243	296	315
KPM100	100	10.2	12.7	20.0	32.7	47.9	57.7	74.9	107	125	137	156	190	269	304	370	394
KPM120	120	12.2	15.2	24.0	39.2	57.5	69.2	89.9	128	150	164	187	228	320	365	444	473
KPM150	150	15.3	19.1	30.0	49.1	71.9	86.6	112	161	188	206	234	285	401	456	555	591
KPM200	200	20.4	25.4	40.0	65.4	95.8	115	149	214	250	274	312	380	534	608	740	788
KPM250	250	25.5	31.8	50.0	81.8	120	144	187	268	313	343	390	475	668	760	925	985
KPM300	300	30.6	36.8	60.0	98.1	144	173	225	321	375	411	468	570	801	912	1110	1182
KPM350	350	35.7	44.5	70.0	114	168	202	262	375	438	480	546	665	935	1064	1295	1389
KPM400	400	40.8	50.8	80.0	131	192	231	300	428	500	548	624	760	1068	1216	1480	1576
KPM500	500	51.2	63.5	100	164	240	289	375	535	625	685	780	950	1335	1520	1850	1970
KPM600	600	61.4	75.8	121	197	288	347	450	642	750	824	937	1146	1606	1838	2228	2379
KPM700	700	70.6	88.5	141	230	336	406	526	748	875	961	1094	1336	1876	2136	2598	2768
KPM800	800	81.8	102	162	264	385	464	603	826	1001	1094	1254	1526	2146	2436	2968	3160
KPM900	900	91.8	114	181	294	432	520	674	963	1125	1233	1404	1710	2403	2730	3330	3546
KPM1000	1000	103	128	202	329	481	579	752	1073	1254	1374	1564	1905	2676	3047	3707	3948



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