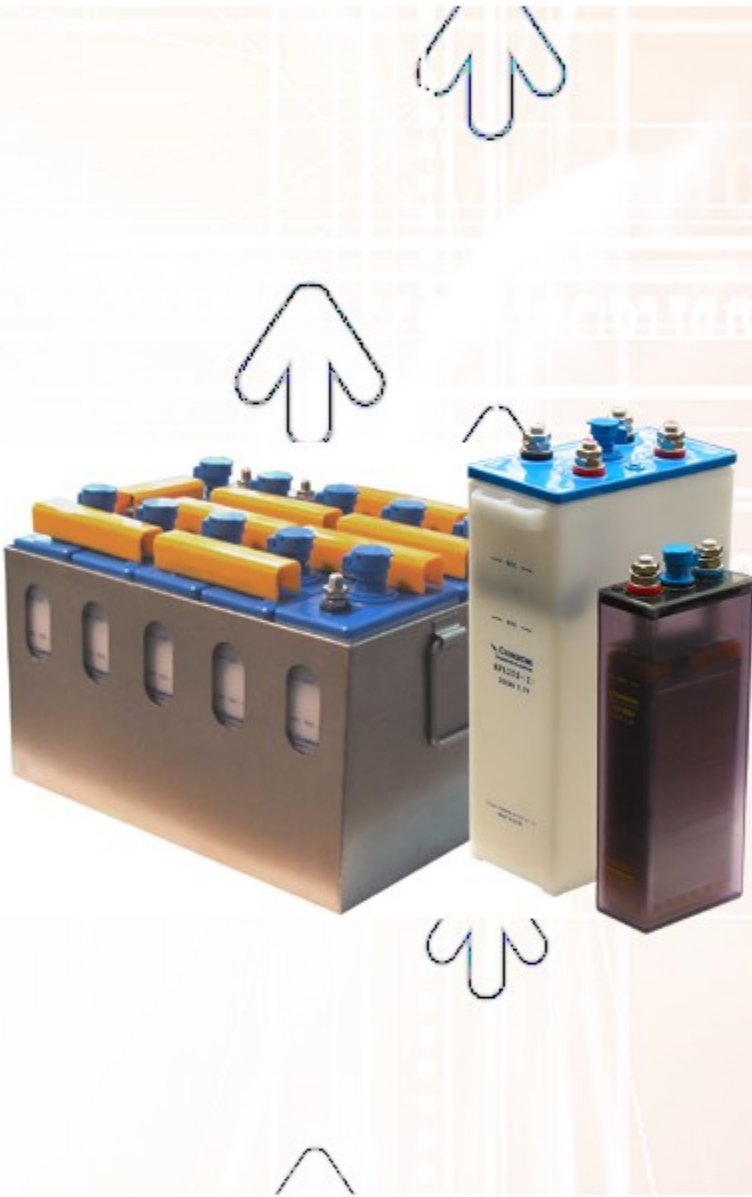


# KPL Ni-Cd Battery



August 2019

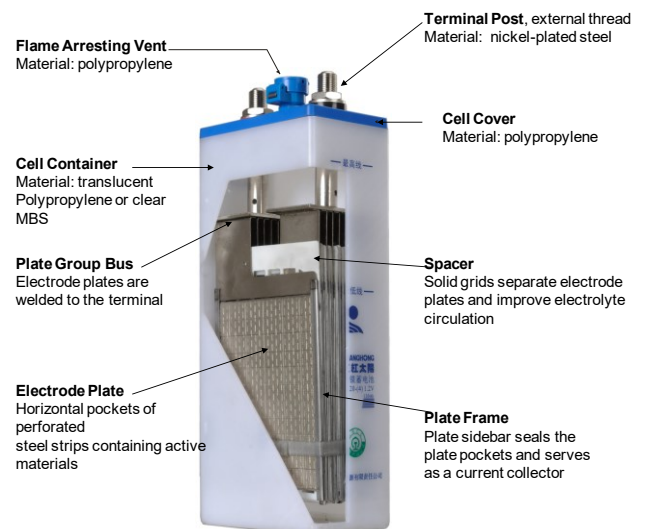


**Qualmega** KPL Series nickel cadmium batteries are designed for general industrial applications where absolute reliability is a necessity. Service-proven pocket-plate technology ensures long uninterrupted battery life without the risk of sudden loss of power.

KPL Series batteries are suitable for low discharge rate applications (between 1 hour to 100 hours) such as railroad signaling and control systems, photovoltaic, emergency lighting, telecommunications, etc.

## Product Features:

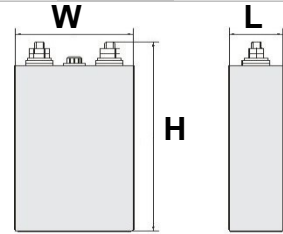
- Proven pocket-plate nickel-cadmium technology
- 50 years of experience in developing and manufacturing nickel-cadmium batteries.
- High tolerance to electrical abuses such as overcharge and overdischarge
- High tolerance to rough handling and mechanical abuse due to strong components and robust construction
- Trouble-free long cycle life
- No risk of sudden death due to the chemistry and the cell structure
- Wide operating temperature:  $-40^{\circ}\text{C}$  to  $50^{\circ}\text{C}$
- Generous electrolyte reserve for long maintenance intervals
- Translucent (PP) or clear (MBS) plastic cell case for easy electrolyte level inspection
- Custom cell dimensions available
- 20 years service life in stationary applications
- Conforms to IEC60623



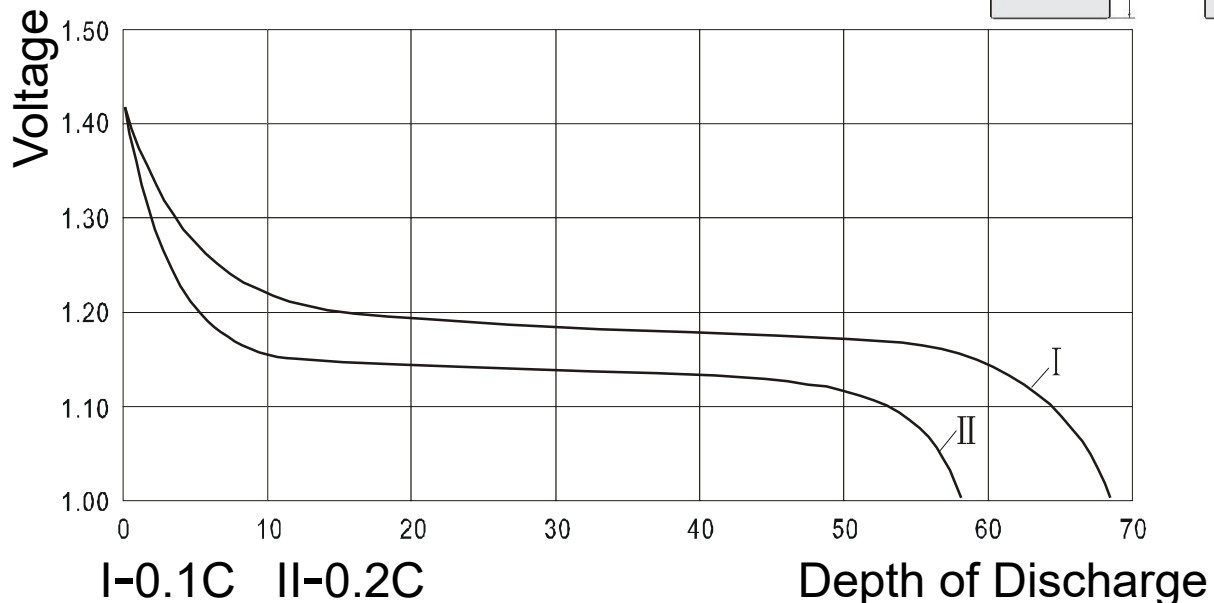
**Qualmega** nickel-cadmium batteries are manufactured by **Sichuan Changhong Battery Co., Ltd. (SCBC)**, the largest industrial nickel-cadmium battery manufacturer in China. Established for over five decades, SCBC specializes in developing and manufacturing industrial alkaline rechargeable batteries.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

# Qualmega KPL 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.		
KPL10	10	38	1.5	84	3.3	135	5.3	0.6	1.3	0.7	1.5	M6	PP
KPL20	20	32	1.3	113	4.4	223	8.8	1.0	2.2	1.2	2.6	M6	PP
KPL30	30	68	2.7	134	5.3	245	9.6	1.7	3.7	2.6	5.6	M10X1	PP
KPL40	40	68	2.7	134	5.3	245	9.6	2.1	4.6	2.9	6.3	M10X1	PP
KPL50	50	68	2.7	134	5.3	245	9.6	2.5	5.5	3.2	7.1	M10X1	PP
KPL60	60	68	2.7	134	5.3	245	9.6	3.2	7.1	3.8	8.4	M10X1	PP
KPL70	70	80	3.1	141	5.6	370	14.6	3.8	8.4	5.7	12.6	M10X1	PP
KPL80	80	80	3.1	141	5.6	370	14.6	4.0	8.8	5.8	12.8	M10X1	PP
KPL90	90	80	3.1	141	5.6	370	14.6	4.2	9.3	6.0	13.2	M10X1	PP
KPL100	100	80	3.1	141	5.6	370	14.6	4.5	9.9	6.2	13.7	M10X1	PP
KPL130	130	80	3.1	141	5.6	370	14.6	5.3	11.7	6.4	14.1	M10X1	PP
KPL150	150	106	4.2	164	6.5	345	13.6	7.0	15.4	9.0	19.8	M20	PP
KPL165	165	106	4.2	164	6.5	345	13.6	7.2	15.9	9.5	20.9	M20	PP
KPL200	200	106	4.2	164	6.5	345	13.6	8.0	17.6	9.6	21.2	M20	PP
KPL250	250	100	3.9	171	6.7	450	17.7	11.0	24.3	13.5	29.8	M20	PP
KPL300	300	152	6.0	170	6.7	385	15.2	13.7	30.2	16.7	36.8	M20	PP
KPL340	340	152	6.0	170	6.7	385	15.2	14.3	31.5	17.2	37.9	M20	PP
KPL400	400	162	6.4	200	7.9	450	17.7	17.0	37.5	23.0	50.7	M16	PP
KPL450	450	162	6.4	200	7.9	450	17.7	18.0	39.7	24.5	54.0	M16	PP
KPL500	500	138	5.4	276	10.9	490	19.3	20.0	44.1	25.0	55.1	M16	PP
KPL600	600	176	6.9	291	11.5	510	20.1	27.0	59.5	37.5	82.7	M20	MBS
KPL700	700	176	6.9	291	11.5	510	20.1	29.0	63.9	39.0	86.0	M20	MBS
KPL800	800	186	7.3	398	15.7	570	22.4	39.0	86.0	59.0	130.1	M20	MBS
KPL900	900	186	7.3	398	15.7	570	22.4	41.0	90.4	60.0	132.3	M20	MBS
KPL1000	1000	186	7.3	398	15.7	570	22.4	44.0	97.0	61.0	134.5	M20	MBS



## Discharge Performance at $-18^{\circ}\text{C}$ [ $0^{\circ}\text{F}$ ]:



# Qualmege KPL Cell Performance

Available discharge amperes at 20 °C from fully charged cells.  
Final voltage - 1.14 V/cell:

Cell Type	C <sub>5</sub> Ah	Hours							Minutes					Seconds			
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	0.90	1.12	1.51	2.26	2.47	2.86	3.25	3.78	4.05	4.18	4.34	4.86	5.93	6.49		
KPL20	20	1.80	2.24	3.02	4.52	4.94	5.72	6.50	7.56	8.10	8.36	8.68	9.72	11.9	12.9		
KPL30	30	2.70	3.36	4.54	6.78	7.40	8.57	9.76	11.4	12.1	12.5	13.0	14.6	17.8	19.5		
KPL40	40	3.60	4.48	6.04	9.00	9.90	11.4	13.0	15.1	16.2	16.7	17.4	19.4	23.7	25.9		
KPL50	50	4.50	5.60	7.55	11.3	12.4	14.3	16.3	18.9	20.3	20.9	21.7	24.3	29.7	32.5		
KPL60	60	5.41	6.72	9.09	13.5	17.1	19.3	21.8	26.1	29.3	31.4	34.0	39.0	51.0	55.0		
KPL70	70	6.31	7.84	10.6	15.8	19.9	22.5	25.4	30.5	34.2	36.6	39.7	45.5	59.5	64.1		
KPL80	80	7.21	8.96	12.1	18.1	22.7	25.7	29.0	34.9	39.1	41.8	45.4	52.0	68.0	73.0		
KPL90	90	8.11	10.1	13.6	20.3	25.6	28.9	32.7	39.2	43.9	47.1	51.0	59.0	77.0	83.0		
KPL100	100	9.01	11.2	15.2	22.6	28.4	32.1	36.3	43.6	48.9	52.3	56.7	65.0	85.0	92.0		
KPL130	130	11.7	14.6	19.8	29.4	36.9	41.8	47.2	56.7	63.6	68	73.8	84.5	111	119		
KPL150	150	13.5	16.8	22.8	33.9	42.6	48.2	54.5	65.4	73.4	78.5	85.1	97.5	128	137		
KPL165	165	14.9	18.5	25.1	37.3	46.9	53.0	60.0	71.9	80.7	86.4	93.6	107	141	151		
KPL200	200	18.0	22.4	30.4	45.2	56.8	64.0	72.6	87.2	97.6	105	114	130	170	183		
KPL250	250	22.5	28.0	38.0	56.5	71.0	80.0	90.8	109	122	131	142	163	213	229		
KPL300	300	27.1	33.6	45.6	67.8	85.2	96.3	109	131	147	157	170	195	255	275		
KPL340	340	30.7	38.1	51.3	76.8	96.9	109	123	148	167	178	193	221	289	311		
KPL400	400	36.1	44.8	60.4	90.4	114	128	145	174	196	209	227	260	340	366		
KPL450	450	40.6	50.4	68.0	102	112	129	147	170	183	236	256	293	383	412		
KPL500	500	45.1	56.0	75.5	113	124	143	163	189	203	262	284	325	425	458		
KPL600	600	54.1	67.2	90.8	136	169	191	217	257	290	305	333	382	496	539		
KPL700	700	63.1	78.4	106	158	199	225	254	305	342	366	397	355	595	641		
KPL800	800	72.1	89.6	121	181	227	257	290	349	391	418	454	520	680	733		
KPL900	900	81.1	101	136	203	256	289	327	392	439	471	510	585	765	824		
KPL1000	1000	90.1	112	152	226	284	321	363	436	489	523	567	650	850	916		

Final voltage - 1.10 V/cell:

Cell Type	C <sub>5</sub> Ah	Hours							Minutes					Seconds			
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	0.96	1.19	1.75	2.54	3.36	3.98	4.60	5.19	5.61	5.76	6.02	6.45	7.77	8.43		
KPL20	20	1.92	2.38	3.50	5.08	6.72	7.96	9.20	10.4	11.2	11.5	12.1	12.9	15.5	16.9		
KPL30	30	2.87	3.57	5.24	7.62	10.1	11.9	13.8	15.6	16.8	17.3	18.1	19.3	23.3	25.3		
KPL40	40	3.84	4.76	7.01	10.2	13.4	15.9	18.4	20.8	22.4	23.1	24.2	25.8	31.1	33.8		
KPL50	50	4.80	5.95	8.75	12.7	16.8	19.9	23.1	26.1	28.2	28.8	30.1	32.3	38.9	42.2		
KPL60	60	5.74	7.12	10.4	15.2	20.1	23.4	26.5	32.1	36.1	38.2	41.5	48.2	61.8	66.2		
KPL70	70	6.70	8.32	12.2	17.9	23.9	27.8	31.9	38.4	43.5	45.9	49.7	57.8	73.5	79.8		
KPL80	80	7.66	9.51	13.9	20.5	27.3	31.8	36.5	43.9	49.7	52.5	56.8	66.1	84.0	91.2		
KPL90	90	8.61	10.7	15.7	23.1	30.7	35.7	41.0	49.4	55.9	59.0	63.9	74.3	94.5	103		
KPL100	100	9.60	11.9	17.4	25.6	34.1	39.7	45.6	54.9	62.1	65.6	71.0	82.6	105	114		
KPL130	130	12.5	15.5	22.6	33.3	44.4	51.7	59.3	71.4	80.8	85.3	92.7	107.5	137	148		
KPL150	150	14.4	17.9	26.1	38.4	51.2	59.6	68.4	82.4	93.2	98.4	107	124	158	171		
KPL165	165	15.8	19.7	28.7	42.2	56.3	65.6	75.2	90.6	103	108	118	136	174	188		
KPL200	200	19.2	23.8	34.8	51.2	68.2	79.4	91.2	110	125	131	142	166	210	228		
KPL250	250	24.0	29.8	43.5	64.0	85.3	99.3	114	137	156	164	178	207	263	285		
KPL300	300	28.7	35.7	52.4	76.3	102	121	142	160	173	178	187	249	315	342		
KPL340	340	32.6	40.5	59.8	88.4	116	139	160	190	218	231	252	289	367	395		
KPL400	400	38.4	47.6	70.3	104	136	163	188	223	256	272	296	340	432	465		
KPL450	450	43.4	53.6	78.9	116	153	183	211	248	286	299	325	378	481	520		
KPL500	500	48.2	59.6	87.7	129	170	203	234	275	318	332	361	420	534	578		
KPL600	600	57.4	71.3	105	153	203	235	269	324	363	385	418	487	622	668		
KPL700	700	67.1	83.4	124	181	242	281	322	387	439	464	508	586	741	806		
KPL800	800	76.6	95.1	140	206	276	322	369	443	504	531	572	668	848	923		
KPL900	900	86.2	108	160	234	311	362	415	499	565	596	646	752	951	1038		
KPL1000	1000	96.3	121	176	259	346	405	464	557	629	665	718	836	1062	1159		

Available discharge amperes at 20 °C from fully charged cells.

Final voltage - 1.05 V/cell:

Cell Type	C <sub>5</sub> Ah	Hours							Minutes						Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	1.01	1.25	1.95	2.84	3.74	4.46	5.34	6.53	6.96	7.16	7.56	8.29	10.1	10.9		
KPL20	20	2.02	2.50	3.90	5.68	7.48	8.92	10.7	13.1	13.9	14.3	15.1	16.5	20.2	21.8		
KPL30	30	3.02	3.75	5.96	8.51	11.2	13.4	16.0	19.6	20.9	21.5	22.7	24.9	30.2	32.6		
KPL40	40	4.03	5.00	7.80	11.4	14.9	17.8	21.4	26.1	27.8	28.6	30.2	33.2	40.4	43.6		
KPL50	50	5.04	6.25	9.75	14.2	18.7	22.3	26.7	32.7	34.8	35.8	37.8	41.5	50.5	54.5		
KPL60	60	6.03	7.50	11.9	17.4	23.3	28.3	33.6	41.2	45.8	49.3	54.3	62.1	78.6	85.2		
KPL70	70	7.04	8.75	13.9	20.3	27.2	33.0	39.2	48.1	53.4	57.5	63.3	72.4	91.7	99.4		
KPL80	80	8.08	10.0	15.9	23.2	31.1	37.7	44.8	54.9	61.0	65.7	72.3	82.4	105	114		
KPL90	90	9.08	11.3	17.9	26.1	35.0	42.4	50.4	61.8	68.7	73.9	81.4	92.7	118	128		
KPL100	100	10.1	12.5	19.9	29.0	38.9	47.1	56.0	68.7	76.3	82.1	90.4	103	131	142		
KPL130	130	13.2	16.3	25.9	37.7	50.6	61.3	72.8	89.3	98.8	107	118	134	171	185		
KPL150	150	15.2	18.8	29.9	43.5	58.4	70.7	84.0	103	114	123	136	155	197	213		
KPL165	165	16.7	20.7	32.9	47.9	64.2	77.8	92.4	113	125	135	150	171	217	234		
KPL200	200	20.2	25.0	39.8	58	77.8	94.4	112	138	153	164	181	198	231	259		
KPL250	250	25.3	31.3	49.8	72.5	97.3	118	140	172	191	205	226	248	289	324		
KPL300	300	30.2	37.6	59.1	85.2	113	135	162	198	213	219	231	254	306	331		
KPL340	340	34.3	42.6	66.3	96.9	127	151	184	224	239	246	259	286	347	375		
KPL400	400	40.3	50.1	78.0	114	149	178	217	264	281	289	305	336	408	441		
KPL450	450	45.4	56.3	87.9	129	169	203	242	296	315	325	343	377	459	497		
KPL500	500	50.4	62.6	97.7	143	188	225	269	329	350	361	381	419	510	552		
KPL600	600	60.4	75.0	119	174	232	281	331	403	449	478	533	608	763	825		
KPL700	700	70.5	87.6	139	204	274	332	394	484	537	579	637	728	924	1000		
KPL800	800	80.8	101	161	234	313	379	451	551	613	660	728	829	1056	1148		
KPL900	900	90.9	114	181	263	352	427	507	621	696	743	819	932	1186	1288		
KPL1000	1000	101	126	200	292	391	474	563	690	776	824	909	1100	1317	1430		

Final voltage - 1.00 V/cell:

Cell Type	C <sub>5</sub> Ah	Hours							Minutes						Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	1.02	1.26	2.00	3.18	4.28	5.03	6.09	7.64	8.37	8.74	9.33	10.5	12.7	13.6		
KPL20	20	2.04	2.52	4.00	6.36	8.56	10.0	12.2	15.3	16.7	17.5	18.7	21.0	25.4	27.2		
KPL30	30	3.06	3.72	6.00	9.54	12.8	15.1	18.3	22.9	25.1	26.2	28.0	31.5	38.1	40.8		
KPL40	40	4.08	5.04	8.00	12.7	17.1	20.1	24.4	30.6	33.5	35.0	37.3	42.0	50.8	54.4		
KPL50	50	5.10	6.31	10.0	15.9	21.4	25.2	30.5	38.2	41.9	43.7	46.7	52.5	63.5	68.0		
KPL60	60	6.90	7.58	12.0	19.5	25.6	31.7	40.2	49.3	55.6	59.2	65.4	75.3	96.0	104		
KPL70	70	7.11	8.84	14.0	22.7	29.9	37.0	46.9	57.5	64.9	69.1	76.2	87.9	112	121		
KPL80	80	8.13	10.1	16.0	25.9	34.2	36.2	53.6	65.7	74.2	79.0	87.1	100	128	138		
KPL90	90	9.14	11.4	18.0	29.2	38.4	40.8	60.3	73.9	83.4	88.8	98.0	113	144	156		
KPL100	100	10.2	12.6	20.0	32.3	44.2	52.8	65.3	80.5	91.0	97.2	106	122	156	168		
KPL130	130	13.3	16.5	26.0	42.0	57.5	68.7	84.9	105	119	127	139	159	202	219		
KPL150	150	15.3	19.0	30.0	48.5	66.3	79.3	98.0	121	137	146	160	184	233	253		
KPL165	165	16.8	20.9	33.0	53.4	72.9	87.2	107.8	133	151	161	176	202	256	278		
KPL200	200	20.5	25.2	40.0	64.6	88.8	106	130	161	182	194	212	244	312	336		
KPL250	250	25.6	31.5	50.0	80.8	111	132	163	201	228	243	265	305	390	420		
KPL300	300	30.6	37.3	60.0	95.6	130	155	187	241	273	292	318	366	468	504		
KPL340	340	34.7	43.0	68.0	109	146	173	209	262	309	329	361	416	529	572		
KPL400	400	40.8	50.6	80.0	128	172	203	246	308	364	387	425	489	622	673		
KPL450	450	46.0	56.9	90.0	145	194	229	277	347	410	437	478	550	700	757		
KPL500	500	51.1	63.2	100	161	216	254	308	385	455	485	531	611	778	841		
KPL600	600	61.0	75.8	120	194	265	317	392	483	546	583	638	734	933	1010		
KPL700	700	71.2	88.4	140	228	300	371	471	577	652	694	765	883	1124	1216		
KPL800	800	81.5	101	160	261	346	365	539	660	745	794	875	1004	1285	1386		
KPL900	900	91.6	115	180	293	385	409	607	742	837	892	982	1134	1445	1568		
KPL1000	1000	103.0	127	200	324	444	530	655	807	913	975	1063	1224	1564	1688		