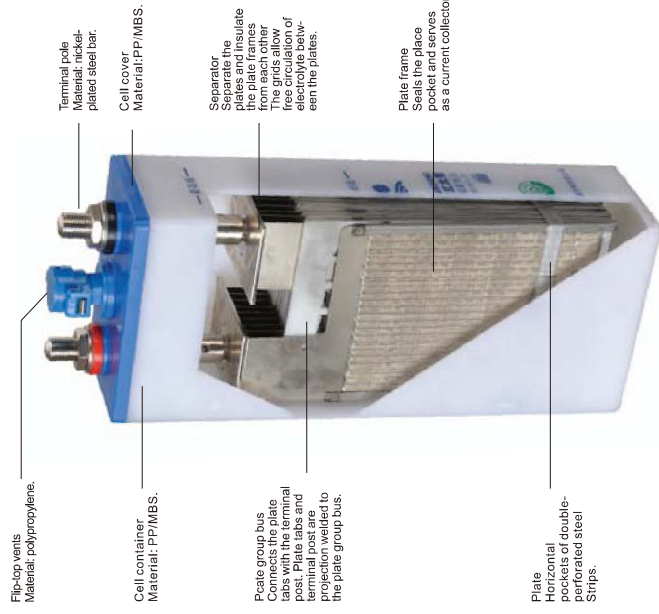


◆ Battery Characteristics

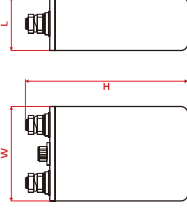
Pocket type nickel cadmium rechargeable battery (hereinafter called 'The battery' for short), can be divided into 3 kinds: low discharge rate (KPL), medium discharge rate (KPM) and high discharge rate (KPH), according to different applications (Namely, with different discharging current). Low discharge rate (KPL series) is suitable for the applications, that discharging current is lower than 0.5I_A. Medium discharge rate (KPM series) is applicable for those, that the discharging current is between 0.5I_A~3.5I_A, and high discharge rate (KPH series) is applicable for those, that discharging current is between 3.5I_A~7I_A. After the fully charging in accordance with standard specifications under the ambient temperature of 20°C ±5°C, the battery can be operated in the ambient temperature of -40°C~60°C, obviously the capacity discharged will be different under different temperature.

Low and medium discharge rate batteries (KPL and KPM series are mainly applicable as standby or DC power supply for electricity, telecommunication, railway, metallurgy, mining, emergency lighting, UPS, and also used as energy storage battery for wind, solar and other renewable energy power systems. High discharge rate battery (KPH series) is widely applied for diesel engines, starting power supply of rail traffic and other DC systems.



Structure Schematic Diagram of Pocket Type Ni-cd Cell

◆ Products Catalogue



■ KPL Series

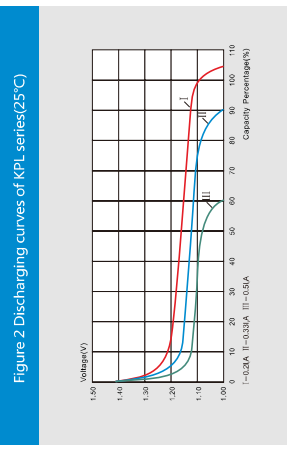
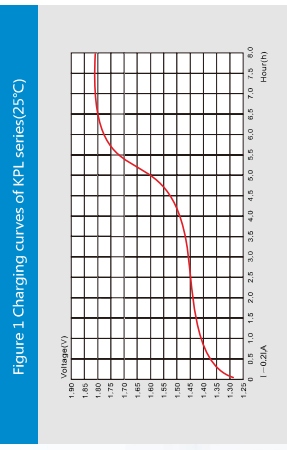
Model	Nominal Voltage V	Rated Capacity C ₂₀ Ah	Max External Dimension (mm)			Max Weight Kg	Electrolyte Volume L	Screw Thread of Terminal Poles	Container Material
			L	W	H				
KPL10	1.2	10	29	81	223	0.8	0.2	M6	PP
KPL20	1.2	20	32	113	223	1.2	0.3	M6	PP
KPL30	1.2	30	68	134	245	2.7/3.0	0.8	M10×1	PP
KPL50	1.2	50	68	134	245	3.2	0.6	M10×1	PP
KPL60	1.2	60	70	134	285	4.2	0.8	M16	MBS or PP
KPL70	1.2	70	70	134	285	4.2	0.7	M16	MBS or PP
KPL80	1.2	80	80	141	370	5.8	1.7	M10×1	MBS or PP
KPL100	1.2	100	80	141	370	6.0	1.5	M10×1	MBS or PP
KPL150	1.2	150	107	165	348	9.0	1.5	M20	MBS or PP
KPL200	1.2	200	107	165	348	10.0	1.3	M20	MBS or PP
KPL250	1.2	250	164	167	348	13.5	2.5	M20	MBS or PP
KPL300	1.2	300	164	167	348	15.0	2.5	M20	MBS or PP
KPL350	1.2	350	152	170	385	15.7	2.6	M20	PP
KPL400	1.2	400	152	170	385	17.0	2.4	M20	PP
KPL500	1.2	500	162	200	450	22.0	4.2	2×M16	PP
KPL600	1.2	600	176	291	510	36.5	8.8	2×M20	MBS
KPL700	1.2	700	176	291	510	39.0	8.2	2×M20	MBS
KPL800	1.2	800	186	398	570	57.0	13.8	3×M20	MBS
KPL1000	1.2	1000	186	398	570	60.0	12.3	3×M20	MBS
KPL1200	1.2	1200	186	398	570	63.0	10.0	3×M20	MBS
KPL1400	1.2	1400	186	498	570	75.0	13.5	4×M20	MBS
KPL1600	1.2	1600	186	498	570	78.0	12.0	4×M20	MBS

Remarks:

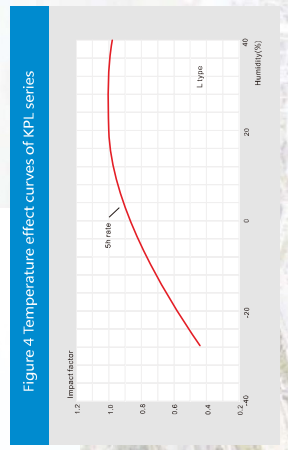
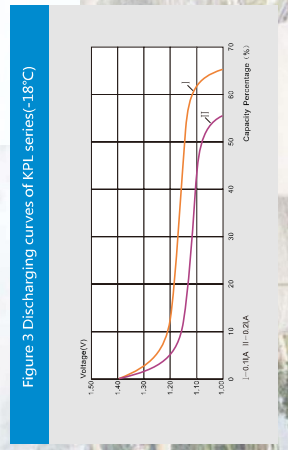
1. The above specifications may be modified without prior notice.
2. The above dimensions are only a part of our standard products' range, we may design and develop any other battery model, according to specific end-user's requirements.

KPL The Curves of KPL Series

KPM Series



Accordingly, the listed operating curves are for reference only, and not regarded as the battery acceptance standards.



Model	Nominal Voltage V	Rated Capacity CsAh	Max External Dimension (mm)			Max Weight Kg	Electrolyte Volume L	Screw Thread of Terminal Poles	Container Material
			L	W	H				
KPM10	1.2	10	48	81	245	1.5	0.3	M10×1	MBS
KPM20	1.2	20	68	134	245	2.7	0.8	M10×1	PP
KPM40	1.2	40	70	134	285	4.0	0.8	M16	MBS or PP
KPM50	1.2	50	70	134	285	4.0	0.8	M16	MBS or PP
KPM60	1.2	60	80	141	370	5.8	1.7	M16	MBS or PP
KPM80	1.2	80	80	141	370	6.5	1.4	M16	MBS or PP
KPM100	1.2	100	107	165	348	9.0	1.9	M20	MBS or PP
KPM120	1.2	120	107	165	348	9.5	1.8	M20	MBS or PP
KPM150	1.2	150	164	167	348	12.4	2.5	M20	MBS or PP
KPM200	1.2	200	164	167	348	14.2	2.3	M20	MBS or PP
KPM250	1.2	250	152	170	385	15.7	2.7	M20	PP
KPM300	1.2	300	162	200	450	22.0	4.6	2×M16	PP
KPM350	1.2	350	162	200	450	23.0	4.5	2×M16	PP
KPM400	1.2	400	176	291	510	35.7	8.7	2×M20	MBS
KPM500	1.2	500	176	291	510	37.0	8.2	2×M20	MBS
KPM600	1.2	600	176	291	510	39.0	7.5	2×M20	MBS
KPM700	1.2	700	186	398	570	58.0	12.5	2×M20	MBS
KPM800	1.2	800	186	398	570	60.0	11.5	3×M20	MBS
KPM900	1.2	900	186	398	570	62.0	11.5	3×M20	MBS
KPM1000	1.2	1000	186	398	570	63.0	11.0	3×M20	MBS
KPM1100	1.2	1100	186	498	570	75.0	13.5	4×M20	MBS
KPM1200	1.2	1200	186	498	570	78.0	12.0	4×M20	MBS

Remarks:
 1. The above specifications may be modified without prior notice.
 2. The above dimensions are only a part of our standard products' range, we may design and develop any other battery model, according to specific end-user's requirements.

KPM The Curves of KPM Series

Figure 5 Charging curves of KPM series(25°C)

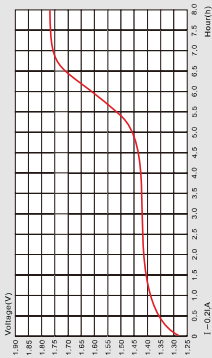


Figure 6 Discharging curves of KPM series(25°C)

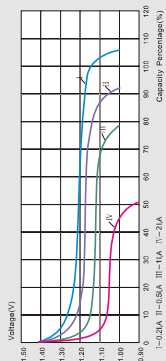


Figure 7 Discharging curves of KPM series (-18°C)

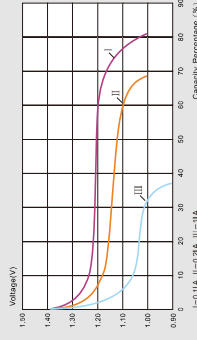
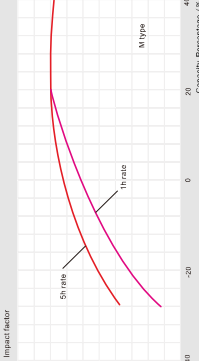


Figure 8 Temperature effect curves of KPM series



Accordingly, the listed operating curves are for reference only, and not regarded as the battery acceptance standards.

KPH Series

Model	Nominal Voltage V	Rated Capacity C ₂₀ Ah	Max External Dimension(mm)			Max Weight kg	Electrolyte Volume L	Screw Thread of Terminal Poles	Container Material
			L	W	H				
KPH10	1.2	10	48	81	245	1.8	0.3	M10×1	MBS
KPH20	1.2	20	68	134	245	2.8	0.9	M10×1	PP
KPH30	1.2	30	70	134	285	4.3	0.9	M16	MBS or PP
KPH40	1.2	40	70	134	285	4.4	0.7	M16	MBS or PP
KPH50	1.2	50	80	141	370	6.2	1.7	M16	MBS or PP
KPH60	1.2	60	80	141	370	6.5	1.6	M16	MBS or PP
KPH70	1.2	70	107	165	348	8.5	2.2	M20	MBS or PP
KPH80	1.2	80	107	165	348	9.0	2.0	M20	MBS or PP
KPH100	1.2	100	164	167	348	12.8	3.2	M20	PP
KPH120	1.2	120	164	167	370	13.0	3.0	M20	PP
KPH150	1.2	150	164	167	370	14.0	2.8	M20	PP
KPH200	1.2	200	162	200	450	23.0	5.7	2×M20	PP
KPH250	1.2	250	162	200	450	24.0	5.5	2×M20	PP
KPH300	1.2	300	176	291	510	36.0	9.5	2×M20	MBS
KPH350	1.2	350	176	291	510	37.0	9.0	2×M20	MBS
KPH400	1.2	400	186	398	570	57.0	16.7	3×M20	MBS
KPH500	1.2	500	186	398	570	59.0	15.8	3×M20	MBS

Remarks:

1. The above specifications may be modified without prior notice.
2. The above dimensions are only a part of our standard products' range, we may design and develop any other battery model, according to specific end-user's requirements.

KPH The Curves of KPH Series

Figure 9 Charging curves of KPH series(25°C)

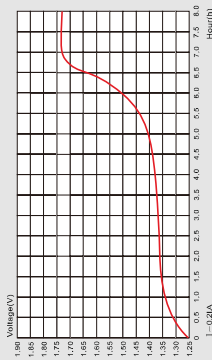


Figure 10 Discharging curves of KPH series(25°C)

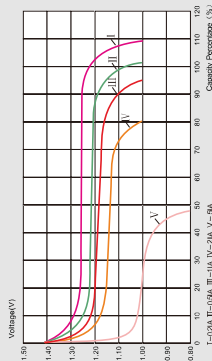


Figure 13 Loss values of open circuit under different temperature

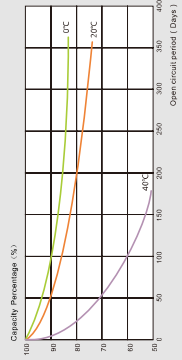


Figure 11 Discharging curves of KPH Series(-18°C)

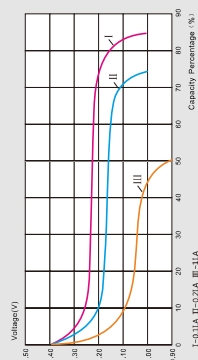


Figure 12 Temperature effect curves of KPH series

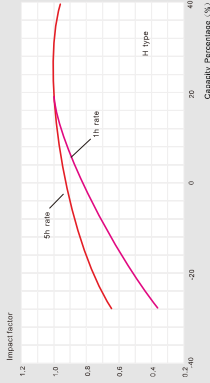


Figure 14 Cycle life comparison curves between pocket type n-cd cell and VRLA cell under different temperature

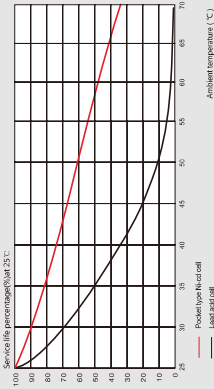


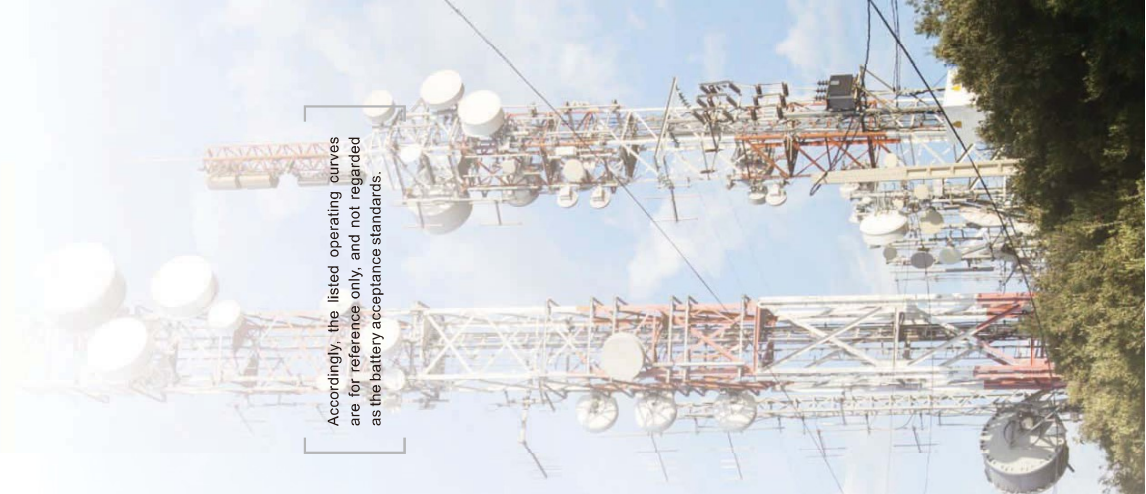
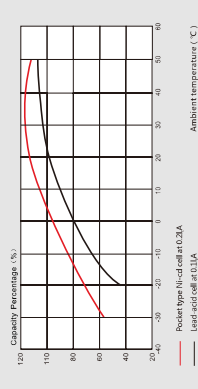
Figure 11 Discharging curves of KPH Series(-18°C)



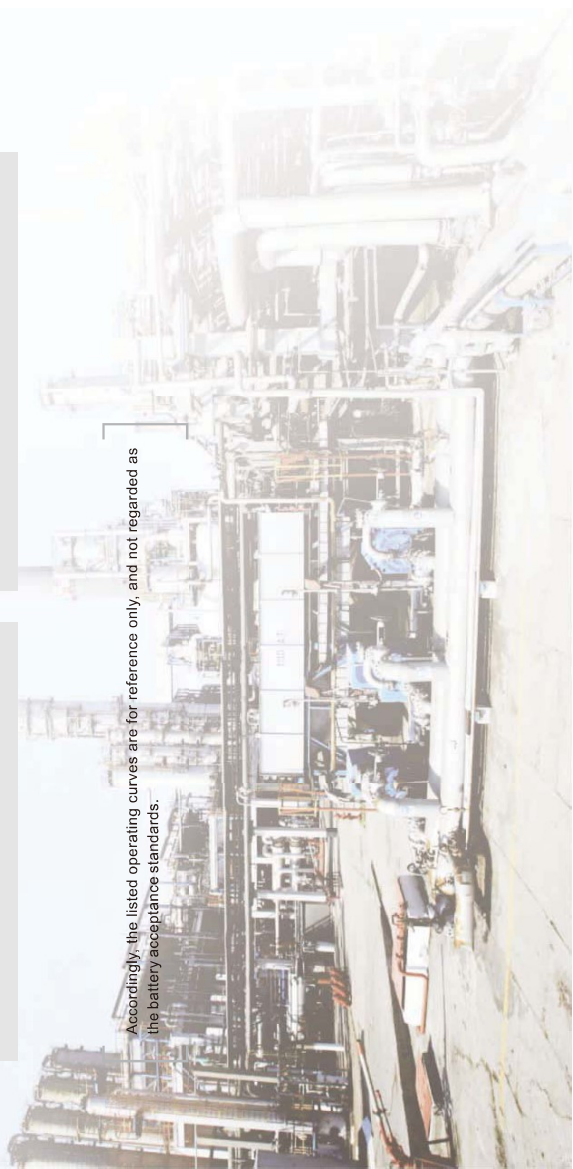
Figure 12 Temperature effect curves of KPH series



Figure 15 Capacity comparison curves between pocket type n-cd cell and VRLA cell under different temperature



Accordingly, the listed operating curves are for reference only, and not regarded as the battery acceptance standards.



Accordingly, the listed operating curves are for reference only, and not regarded as the battery acceptance standards.

◆ Discharge Performance Data

1.1 KPL series battery (Final voltage 1.14V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C _a h	Hours								Minutes					Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	0.98	1.20	1.80	2.70	3.50	4.07	5.00	6.40	7.20	7.93	8.40	9.60	13.8	15.9	20.9	23.9
KPL20	20	1.96	2.40	3.60	5.40	7.00	8.13	10.0	12.8	14.4	15.9	16.8	19.2	27.6	31.9	41.8	47.9
KPL30	30	2.94	3.60	5.40	8.10	10.5	12.2	15.0	19.2	21.6	23.9	25.2	28.8	41.3	47.9	62.7	71.8
KPL50	50	4.89	5.98	8.99	13.4	17.4	20.2	24.6	31.5	35.4	38.8	41.5	47	67	77.2	100	115
KPL60	60	5.81	7.11	10.7	16	20.6	23.9	28.6	36.3	41	43.7	48.3	53.4	75	84.8	109	125
KPL70	70	6.74	8.24	12.5	18.5	23.8	27.6	32.5	41.1	46.7	48.5	55.1	59.8	82.9	92.4	118	134
KPL80	80	7.73	9.46	14.3	21.0	26.9	31.0	36.3	45.9	51.4	53.5	61.0	67.2	90.9	100	127	143
KPL100	100	9.74	11.9	17.9	26.1	33.1	38.1	44.7	56.7	62.2	65.5	74.2	84.0	111	122	154	171
KPL150	150	14.7	18.0	27.0	39.0	48.7	56.0	66.0	84.1	90.0	95.9	108	126	163	178	221	241
KPL200	200	19.6	24.0	36.0	52.0	65.0	74.7	87.9	112	120	128	144	168	216	238	294	322
KPL250	250	24.5	30.0	45.0	65.0	81.3	93.5	110	140	150	160	180	210	271	297	368	401
KPL300	300	29.5	36.0	54.0	78.0	97.7	112	132	168	180	192	216	252	325	357	442	483
KPL350	350	34.4	42.0	63.0	91.0	114	131	154	196	210	224	252	294	379	416	516	566
KPL400	400	39.2	48.0	72.0	104	130	149	176	224	240	256	288	336	433	475	589	646
KPL500	500	49.0	60.0	90.0	130	163	186	220	280	300	320	360	420	541	594	736	809
KPL600	600	58.8	72.0	108	156	195	224	264	336	360	384	432	504	650	713	884	970
KPL700	700	68.6	84.0	126	182	228	261	308	392	420	448	504	588	758	831	1031	1135
KPL800	800	78.4	96.0	144	208	260	299	352	448	480	512	576	672	866	950	1178	1299
KPL1000	1000	98.0	120	180	260	325	373	440	560	600	640	720	840	1083	1187	1473	1625
KPL1200	1200	118	144	216	312	390	448	528	672	720	768	864	1008	1300	1424	1768	1950
KPL1400	1400	138	168	252	364	455	523	616	784	840	896	1008	1176	1517	1661	2063	2275
KPL1600	1600	157	192	288	416	520	597	704	896	960	1024	1152	1344	1733	1899	2357	2600

◆ Discharge Performance Data

1.2 KPL series battery (Final voltage 1.10V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C _a h	Hours								Minutes					Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL10	10	0.99	1.22	1.92	2.93	3.95	4.73	5.80	7.60	8.53	9.20	10.5	12.6	16.1	18.5	24.2	27.5
KPL20	20	1.99	2.44	3.84	5.87	7.92	9.47	11.6	15.2	17.1	18.4	21.0	25.2	32.3	37.1	48.4	55.1
KPL30	30	2.98	3.66	5.76	8.80	11.9	14.2	17.4	22.8	25.7	27.6	31.5	37.8	48.5	55.6	72.7	82.7
KPL50	50	4.97	6.18	9.59	14.6	19.7	23.5	28.8	37.5	42.1	45	51.3	61.5	78.7	89.9	117	132
KPL60	60	5.96	7.38	11.4	17.6	23.5	27.9	34.1	43.5	48.7	51	57.8	69.3	88	99.5	127	143
KPL70	70	6.96	8.59	13.3	20.5	27.3	32.3	39.3	49.5	55.2	57	64.2	77.1	97.3	109	137	154
KPL80	80	7.95	9.76	15.2	23.3	31.2	36.8	44.3	55.1	61	64	72	84	107	119	148	164
KPL100	100	9.94	12.2	19.0	29.4	39.0	46.0	56.0	70.0	78.0	80.0	90.0	108	136	152	190	214
KPL150	150	14.9	18.3	28.8	43.0	57.0	66.0	81.0	99.0	108	120	135	144	191	208	254	278
KPL200	200	19.9	24.4	38.4	57.3	76.0	87.9	108	132	144	160	180	192	255	277	338	370
KPL250	250	24.9	30.5	48.0	71.6	95.1	110	135	165	180	200	225	240	318	347	423	463
KPL300	300	29.8	36.6	57.6	86.0	114	132	162	198	216	240	270	288	382	416	508	556
KPL350	350	34.8	42.7	67.2	100	133	154	189	231	252	280	316	336	446	486	592	648
KPL400	400	39.8	48.8	76.8	115	152	176	216	264	288	320	361	384	509	555	677	741
KPL500	500	49.7	61.0	96.3	144	190	220	270	330	360	400	450	480	636	694	846	926
KPL600	600	59.6	73.2	115	172	228	264	324	396	432	480	540	576	764	832	1015	1112
KPL700	700	69.6	85.4	134	201	266	308	378	462	504	560	630	672	891	971	1184	1297
KPL800	800	79.5	97.6	153	230	304	352	432	528	576	640	720	768	1018	1110	1353	1482
KPL1000	1000	99.4	122	192	286	381	440	541	661	720	800	901	960	1274	1387	1691	1853
KPL1200	1200	119	146	230	343	457	528	649	793	864	960	1081	1152	1529	1664	2029	2224
KPL1400	1400	139	170	269	400	533	616	757	925	1008	1120	1261	1344	1784	1942	2367	2594
KPL1600	1600	159	195	307	458	610	704	866	1058	1152	1280	1442	1536	2038	2219	2706	2965

◆ Discharge Performance Data

1.3 KPL series battery (Final voltage 1.05V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C ₅ 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	1.96	3.10	4.33	5.27	6.87	9.20	10.8	11.8	13.2	14.4	19.5	21.9	28.5	32.1		
KPL20	20	2.02	2.50	3.92	6.22	8.64	10.5	13.5	17.9	20.9	22.8	25.3	28.1	37.1	41.5	53.8	60.2		
KPL30	30	3.03	3.75	5.89	9.36	12.9	15.7	20.6	27.6	32.4	35.6	39.6	43.2	58.4	65.6	85.5	96.2		
KPL50	50	5.05	6.25	9.8	15.5	21.5	26.3	33.8	45.3	53	57.9	64.5	71	94.8	106	137	155		
KPL60	60	6.06	7.50	11.8	18.7	25.8	31.3	39.5	52.3	60.6	65.9	72.9	82.2	106	117	151	168		
KPL70	70	7.07	8.75	13.7	21.9	30.1	36.4	45.1	59.4	68.2	73.9	81.3	91.4	117	129	164	182		
KPL80	80	8.08	10.0	15.7	25.1	34.4	41.3	51	66.7	75.6	81.3	90	106	128	141	176	193		
KPL100	100	10.1	12.5	19.7	31.2	42.7	51.1	63.4	82.7	93.3	98.8	110	132	156	172	210	230		
KPL150	150	15.2	18.8	29.6	46.8	64.2	77.0	95.3	125	141	150	167	198	238	262	323	354		
KPL200	200	20.2	25.0	39.6	62.2	85.3	102	126	165	186	196	219	264	310	340	414	451		
KPL250	250	25.3	31.3	49.6	77.6	106	127	157	206	230	241	271	330	382	418	504	548		
KPL300	300	30.3	37.5	59.5	93.1	128	152	189	246	275	288	324	396	456	499	599	650		
KPL350	350	35.4	43.8	69.4	109	149	177	220	287	321	336	378	462	532	582	698	758		
KPL400	400	40.4	50.0	79.3	124	170	203	252	328	366	384	432	528	608	665	798	867		
KPL500	500	50.5	62.5	99.0	156	213	254	315	410	458	480	540	660	760	831	997	1083		
KPL600	600	60.6	75.0	119	186	255	304	378	492	549	576	648	792	912	997	1197	1299		
KPL700	700	70.7	87.5	138	217	298	355	441	574	640	672	756	924	1064	1164	1396	1516		
KPL800	800	80.8	100	158	248	341	406	504	657	732	768	863	1057	1217	1330	1596	1733		
KPL1000	1000	101	125	198	310	425	507	630	820	915	960	1080	1320	1520	1663	1995	2166		
KPL1200	1200	121	150	238	372	510	608	756	984	1098	1152	1296	1584	1824	1996	2394	2599		
KPL1400	1400	141	175	277	434	595	710	882	1148	1281	1344	1512	1848	2128	2328	2793	3032		
KPL1600	1600	161	200	317	496	680	811	1008	1312	1464	1536	1728	2112	2432	2661	3192	3466		

◆ Discharge Performance Data

1.4 KPL series battery (Final voltage 1.0V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C ₅ Ah	Hours								Minutes					Seconds				
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1		
KPL10	10	1.03	1.27	2.00	3.20	4.55	5.73	7.60	10.8	12.5	13.6	15.0	18.0	22.3	25.1	32.3	36.4		
KPL20	20	2.05	2.55	4.00	6.40	9.08	11.4	14.9	21.0	24.2	26.3	29.0	34.0	42.0	46.7	59.3	66.1		
KPL30	30	3.07	3.83	6.00	9.60	13.6	16.9	22.0	32.4	37.6	40.8	45.2	54.0	67.0	75.2	96.9	109		
KPL50	50	5.12	6.36	10	15.9	22.8	28.5	37.7	53.3	61.3	66.8	73.5	87.6	108	121	156	175		
KPL60	60	6.1	7.61	12.1	19.3	27.4	34.1	44.5	61.7	71	76.7	83.7	97.7	121	134	171	192		
KPL70	70	7.09	8.85	14	22.4	32.1	39.7	51.3	70.1	80.6	86.5	93.9	107	134	146	187	208		
KPL80	80	8.13	10.1	16	25.6	36.6	45	58	78.8	90.4	97.1	106	119	147	160	201	221		
KPL100	100	10.2	12.7	20.0	32.0	45.4	55.8	71.8	97.8	112	121	132	146	180	196	240	261		
KPL150	150	15.4	19.2	30.0	48.0	67.5	83.0	107	146	166	180	198	216	262	285	342	368		
KPL200	200	20.6	25.5	40.0	64.0	89.9	111	142	194	222	240	264	288	350	380	456	490		
KPL250	250	25.8	31.9	50.0	80.0	112	138	178	242	277	300	330	360	437	475	570	613		
KPL300	300	30.9	38.2	60.0	96.0	135	166	213	291	333	360	396	432	524	570	684	736		
KPL350	350	36.1	44.6	70.0	112	157	194	249	339	389	420	462	504	612	665	798	858		
KPL400	400	41.2	51.0	80.0	128	180	221	284	388	444	480	528	576	699	760	912	981		
KPL500	500	51.5	63.7	100	160	225	276	355	485	555	600	660	720	874	950	1140	1226		
KPL600	600	61.8	76.5	120	192	270	332	426	582	666	720	792	864	1048	1140	1368	1471		
KPL700	700	72.1	89.3	140	224	315	387	497	679	777	840	924	1008	1223	1330	1596	1716		
KPL800	800	82.4	102	160	256	360	443	568	776	888	960	1056	1152	1398	1520	1824	1961		
KPL1000	1000	103	128	200	320	450	554	710	970	1110	1200	1320	1440	1748	1901	2280	2451		
KPL1200	1200	124	153	240	384	540	665	852	1164	1332	1440	1584	1728	2098	2281	2736	2941		
KPL1400	1400	145	179	280	448	630	776	994	1358	1554	1680	1848	2016	2447	2661	3192	3431		
KPL1600	1600	165	204	320	512	720	886	1136	1552	1776	1920	2112	2304	2797	3042	3648	3922		

◆ Discharge Performance Data

1.5 KPM series battery (Final voltage 1.14V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C-Ah	Hours								Minutes					Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10	10	0.99	1.22	1.88	2.98	4.11	4.92	6.00	8.00	9.40	10.5	12.0	14.7	21.9	24.8	29.6	32.8
KPM20	20	1.97	2.45	3.76	5.97	8.26	9.95	12.2	16.2	19.0	21.2	24.2	29.4	43.1	48.6	57.5	62.7
KPM40	40	3.94	4.90	7.52	12.0	16.7	20.2	24.8	33.1	38.7	42.8	48.8	58.8	84.1	94.2	110	117
KPM50	50	4.93	6.12	9.40	15.0	20.9	25.4	31.1	41.5	48.5	53.6	61.1	73.5	105	117	136	143
KPM60	60	5.92	7.34	11.3	18.0	25.1	30.5	37.4	49.9	58.3	64.5	73.4	88.2	125	140	162	170
KPM80	80	7.89	9.79	15.0	24.0	33.5	40.8	50.1	66.7	77.9	86.1	98.1	118	166	185	215	224
KPM100	100	9.86	12.2	18.8	30.0	41.9	51.1	62.7	83.6	97.6	108	123	147	207	231	267	278
KPM100	120	11.8	14.7	22.6	36.0	50.3	61.4	75.3	100	117	129	147	176	248	277	320	332
KPM150	150	14.8	18.4	28.2	45.0	62.9	76.8	94.3	126	147	162	184	221	310	345	399	413
KPM200	200	19.7	24.5	37.6	60.0	84.0	103	126	168	196	216	246	294	413	459	530	548
KPM250	250	24.7	30.6	47.0	75.0	105	128	157	210	245	270	307	368	515	573	661	682
KPM300	300	29.6	36.7	56.4	90.0	126	154	189	252	294	324	369	441	618	687	792	817
KPM350	350	34.5	42.8	65.8	105	147	180	220	294	343	378	430	515	721	801	924	953
KPM400	400	39.4	49.0	75.2	120	168	206	252	336	392	432	492	588	824	916	1056	1089
KPM500	500	49.3	61.2	94.0	150	210	257	315	420	490	540	615	736	1030	1145	1321	1361
KPM600	600	59.1	73.4	113	179	252	309	378	504	588	647	738	883	1236	1373	1585	1634
KPM700	700	69.0	85.7	132	209	294	361	441	588	686	755	861	1030	1441	1602	1850	1906
KPM800	800	78.8	97.9	150	239	336	413	504	672	784	863	984	1178	1647	1831	2114	2178
KPM900	900	88.7	110	169	269	378	464	567	755	882	971	1107	1325	1853	2060	2378	2450
KPM1000	1000	98.5	122	188	298	420	516	629	839	980	1079	1229	1472	2059	2288	2643	2722
KPM1100	1100	108	134	207	328	462	568	692	923	1078	1187	1352	1619	2265	2517	2907	2994
KPM1200	1200	118	146	226	358	504	619	755	1007	1176	1295	1475	1766	2471	2746	3172	3266

◆ Discharge Performance Data

1.6 KPM series battery (Final voltage 1.10V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C-Ah	Hours								Minutes					Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10	10	1.00	1.23	1.95	3.12	4.41	5.48	6.93	9.33	10.9	12.1	14.0	17.2	25.3	28.9	35.4	37.5
KPM20	20	2.00	2.46	3.91	6.24	8.86	11.0	14.1	18.9	22.1	24.4	28.2	34.4	49.9	56.8	68.8	72.9
KPM40	40	4.00	4.92	7.81	12.5	17.8	22.3	28.7	38.5	45.1	49.6	57.0	68.8	97.8	110	132	140
KPM50	50	5.00	6.15	9.76	15.6	22.3	28.0	36.0	48.4	56.6	62.2	71.4	86.0	122	137	163	173
KPM60	60	6.00	7.38	11.7	18.8	26.8	33.6	43.3	58.2	68.2	74.8	85.8	103	146	164	195	207
KPM80	80	8.00	9.84	15.6	25.0	35.7	44.9	58.0	77.8	91.2	100	115	138	194	217	258	273
KPM100	100	10.0	12.3	19.5	31.3	44.7	56.2	72.6	97.4	114	125	143	172	242	270	321	340
KPM100	120	12.0	14.8	23.4	37.5	53.6	67.5	87.2	117	137	151	172	206	289	324	384	407
KPM150	150	15.0	18.4	29.3	46.9	67.1	84.5	109	147	172	188	216	258	361	404	478	507
KPM200	200	20.0	24.6	39.0	62.6	89.4	113	146	196	230	251	288	344	481	537	635	674
KPM250	250	25.0	30.7	48.8	78.2	112	141	182	245	287	314	360	430	601	671	793	841
KPM300	300	30.0	36.9	58.5	93.9	134	169	219	294	345	377	432	516	721	805	950	1008
KPM350	350	35.0	43.0	68.3	110	157	197	256	343	402	441	504	602	841	938	1107	1175
KPM400	400	40.0	49.2	78.0	125	179	226	292	392	460	504	576	688	960	1072	1265	1342
KPM500	500	50.0	61.5	97.5	156	224	282	365	490	575	630	720	860	1200	1339	1579	1676
KPM600	600	60.0	73.9	117	188	268	338	438	588	690	756	864	1032	1440	1606	1895	2012
KPM700	700	70.0	86.2	136	219	313	395	511	686	805	882	1008	1204	1680	1874	2211	2347
KPM800	800	80.0	98.6	156	250	357	451	584	784	920	1008	1152	1376	1919	2142	2526	2683
KPM900	900	90.0	111	175	282	402	507	657	882	1035	1134	1296	1548	2159	2410	2842	3018
KPM1000	1000	100	123	195	313	447	564	729	980	1150	1260	1440	1720	2399	2678	3157	3353
KPM1100	1100	110	135	215	344	492	620	802	1078	1265	1386	1584	1892	2639	2946	3473	3688
KPM1200	1200	120	148	234	376	536	677	875	1176	1380	1512	1728	2064	2879	3214	3788	4024

◆ Discharge Performance Data

1.7 KPM series battery (Final voltage 1.05V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C _{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	1.26	1.98	3.22	4.64	5.88	7.80	10.7	12.6	14.0	16.1	19.9	29.6	33.9	41.7	45.1
KPM20	20	2.01	2.53	3.96	6.44	9.30	11.8	15.8	21.9	25.6	28.4	32.6	40.0	58.4	66.5	81.0	87.5
KPM40	40	4.03	5.05	7.92	12.9	18.6	23.8	32.2	44.9	52.5	58.0	66.3	80.4	114	129	155	167
KPM50	50	5.04	6.32	9.90	16.1	23.3	29.8	40.4	56.5	65.9	72.9	83.1	101	142	161	192	207
KPM60	60	6.05	7.58	11.9	19.4	28.0	35.8	48.6	68.0	79.3	87.7	99.9	121	170	192	229	247
KPM80	80	8.06	10.1	13.9	22.6	32.7	41.8	56.9	79.5	92.8	102	117	141	198	224	266	287
KPM100	100	10.1	12.6	15.8	25.8	37.3	47.8	65.1	91.0	106	117	134	161	226	255	303	327
KPM100	120	12.1	15.2	19.8	32.3	46.7	59.9	81.5	114	133	147	167	202	282	318	377	407
KPM150	150	15.1	18.9	29.7	48.4	70.1	89.9	123	172	200	221	251	303	422	475	562	606
KPM200	200	20.2	25.3	39.6	64.5	93.4	120	164	229	267	295	336	404	562	633	747	805
KPM250	250	25.2	31.6	49.5	80.7	117	150	205	287	335	369	420	505	702	790	932	1005
KPM300	300	30.2	37.9	59.4	96.8	140	180	246	345	402	443	504	606	842	947	1117	1204
KPM350	350	35.3	44.2	69.3	113	164	210	287	402	469	517	588	707	981	1104	1302	1404
KPM400	400	40.3	50.5	79.2	129	187	240	328	460	536	591	672	808	1121	1262	1487	1603
KPM500	500	50.4	63.2	99.0	161	234	300	410	575	670	740	841	1010	1401	1576	1857	2002
KPM600	600	60.5	75.8	119	194	281	360	492	690	804	888	1009	1212	1681	1891	2229	2402
KPM700	700	70.5	88.4	139	226	328	420	574	805	938	1036	1177	1414	1961	2207	2600	2803
KPM800	800	80.6	101	158	259	375	480	656	920	1072	1184	1345	1616	2241	2522	2971	3203
KPM900	900	90.7	114	178	291	421	540	738	1035	1206	1332	1513	1818	2521	2837	3343	3604
KPM1000	1000	101	126	198	323	468	600	820	1150	1340	1480	1681	2020	2801	3152	3714	4004
KPM1100	1100	111	139	218	355	515	660	902	1265	1474	1628	1849	2222	3081	3467	4085	4404
KPM1200	1200	121	151	238	388	562	720	984	1380	1608	1776	2017	2424	3361	3782	4457	4805

◆ Discharge Performance Data

1.8 KPM series battery (Final voltage 1.00V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Model	C _{Ah}	Hours								Minutes					Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10	10	1.04	1.28	2	3.27	4.77	6.19	8.57	12.8	15	16.6	19	23	32.4	36.3	43.6	46.4
KPM20	20	2.09	2.57	4	6.54	9.54	12.4	17.1	25.6	30	33.2	38	46	64.8	72.6	87.2	92.8
KPM40	40	4.18	5.14	8	13.1	19.1	24.7	34.2	51.2	60	66.4	76	92	130	145	174	186
KPM50	50	5.22	6.42	10	16.3	23.8	30.9	42.8	64	75	83	95	115	162	182	218	232
KPM60	60	6.26	7.71	12	19.6	28.6	37.1	51.4	76.8	90	99.6	114	138	194	218	262	278
KPM80	80	8.35	10.3	16	26.1	38.1	49.5	68.5	102	120	132.8	152	184	259	290	349	371
KPM100	100	10.4	12.8	20	32.7	47.7	61.9	85.7	128	150	166	190	230	324	363	436	464
KPM100	120	12.5	15.4	24	39.2	57.3	74.3	103	154	180	199	228	277	388	435	521	554
KPM150	150	15.7	19.3	30.0	49.0	71.6	92.9	129	193	225	250	286	346	484	543	650	690
KPM200	200	20.9	25.7	40.0	65.4	95.4	124	172	257	301	333	381	462	645	722	864	916
KPM250	250	26.1	32.1	50.0	81.7	119	155	215	322	376	417	477	577	806	902	1078	1142
KPM300	300	31.3	38.5	60.0	98.0	143	186	258	387	452	501	573	693	967	1082	1292	1368
KPM350	350	36.5	45.0	70.0	114	167	217	301	451	528	584	668	809	1128	1262	1506	1594
KPM400	400	41.8	51.4	80.0	131	191	248	344	516	603	668	764	924	1289	1441	1720	1820
KPM500	500	52.2	64.2	100	163	239	310	430	646	754	836	955	1155	1611	1801	2148	2272
KPM600	600	62.6	77.1	120	196	286	372	516	774	905	1003	1147	1387	1933	2161	2577	2727
KPM700	700	73.1	89.9	140	229	334	434	602	903	1056	1170	1338	1618	2255	2521	3007	3181
KPM800	800	83.5	103	160	262	382	496	688	1032	1207	1337	1529	1849	2577	2882	3436	3636
KPM900	900	94.0	116	180	295	430	558	774	1161	1358	1503	1720	2080	2900	3242	3866	4091
KPM1000	1000	104	128	200	327	478	630	860	1290	1509	1670	1911	2311	3222	3602	4295	4545
KPM1100	1100	114	141	220	360	526	682	946	1419	1660	1837	2102	2542	3544	3962	4725	5000
KPM1200	1200	125	154	240	392	574	744	1032	1548	1811	2004	2293	2773	3866	4322	5154	5454

◆ Discharge Performance Data

1.9 KPH series battery (Final voltage 1.14V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Models	C _r Ah	Hours								Minutes					Seconds				
		8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1			
KPH10	10	1.17	1.86	3.02	4.41	5.71	7.52	10.0	11.7	12.9	14.3	17.6	27.3	31.8	38.8	46.5			
KPH20	20	2.34	3.71	6.06	8.86	11.5	15.3	20.5	24.0	26.4	29.3	35.7	55.4	64.1	80.0	84.0			
KPH30	30	3.51	5.56	9.09	13.2	17.2	22.9	30.8	36.0	39.6	43.9	53.6	83.1	96.1	120	126			
KPH35	35	4.09	6.48	10.6	15.5	20.0	26.7	36.0	42.0	46.2	51.2	62.5	96.9	112	140	147			
KPH40	40	4.68	7.41	12.1	17.7	22.9	30.5	41.1	48.0	52.8	58.5	71.4	111	128	160	168			
KPH50	50	5.85	9.26	15.1	22.1	28.7	38.1	51.4	60.0	65.9	73.1	89.3	139	160	200	210			
KPH60	60	7.02	11.1	18.2	26.5	34.4	45.7	61.7	71.9	79.1	87.8	107	166	192	240	252			
KPH70	70	8.19	13.0	21.2	31.0	40.1	53.4	72.0	83.9	92.3	102	125	194	224	280	294			
KPH80	80	9.36	14.8	24.2	35.4	45.9	61.0	82.3	95.9	105	116	143	222	256	320	336			
KPH100	100	11.7	18.5	30.3	44.3	57.3	76.1	103	120	132	146	179	277	320	400	420			
KPH120	120	14.0	22.2	36.4	53.2	68.7	91.4	123	143	159	176	215	333	384	480	504			
KPH150	150	17.6	27.7	45.5	66.5	86.0	115	155	180	198	220	268	416	481	600	631			
KPH180	180	21.1	33.3	54.5	79.7	103	137	185	216	238	263	321	498	577	720	757			
KPH200	200	23.4	37.0	60.6	88.6	114	152	206	240	264	293	357	554	641	800	841			
KPH250	250	29.2	46.3	75.7	111	143	191	257	300	329	365	446	693	801	1000	1051			
KPH300	300	35.1	55.5	90.9	133	171	229	308	360	396	439	536	831	961	1200	1260			
KPH350	350	40.9	64.7	106	155	200	267	360	419	462	512	625	970	1121	1400	1470			
KPH400	400	46.8	74.0	121	177	229	304	411	479	527	585	715	1108	1282	1600	1680			
KPH500	500	57.9	91.5	150	220	283	377	509	594	653	724	884	1371	1586	1980	2079			

◆ Discharge Performance Data

1.10 KPH series battery (Final voltage 1.10V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Models	C _r Ah	Hours								Minutes					Seconds				
		8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1			
KPH10	10	1.20	1.92	3.14	4.63	6.05	8.51	13.0	14.9	16.6	18.7	22.4	34.0	39.5	50.0	52.7			
KPH20	20	2.42	3.84	6.31	9.26	12.1	17.3	26.6	30.8	34.3	38.2	45.8	69.2	80.0	98.0	109			
KPH30	30	3.63	5.76	9.46	13.9	18.2	25.9	40.0	46.2	51.5	57.3	68.7	103	120	147	164			
KPH35	35	4.24	6.72	11.0	16.2	21.2	30.2	46.7	53.9	60.1	66.9	80.1	121	140	171	192			
KPH40	40	4.84	7.68	12.6	18.6	24.2	34.5	53.3	61.6	68.7	76.5	91.5	138	160	196	219			
KPH50	50	6.05	9.60	15.7	23.2	30.3	43.1	66.6	77.0	85.9	95.6	114	173	200	245	274			
KPH60	60	7.26	11.5	18.9	27.8	36.4	51.7	80.0	92.4	103	115	137	207	240	294	329			
KPH70	70	8.47	13.4	22.0	32.4	42.4	60.3	93.3	108	121	134	160	242	280	343	384			
KPH80	80	9.68	15.4	25.2	37.1	48.5	68.9	106	124	138	153	183	276	320	392	439			
KPH100	100	12.1	19.2	31.5	46.3	60.6	86.1	134	154	171	191	229	346	400	490	549			
KPH120	120	14.5	23.1	37.8	55.5	72.7	104	160	185	206	230	275	415	480	588	659			
KPH150	150	18.2	28.8	47.3	69.4	90.9	129	200	231	258	287	343	519	600	736	824			
KPH180	180	21.8	34.6	56.7	83.4	109	155	240	278	309	344	412	622	720	883	989			
KPH200	200	24.2	38.4	63.0	92.6	121	172	266	308	344	383	458	692	800	981	1099			
KPH250	250	30.3	48.0	78.7	116	152	215	333	385	429	478	572	865	1000	1226	1374			
KPH300	300	36.3	57.6	94.5	139	182	258	400	462	515	573	687	1038	1200	1470	1648			
KPH350	350	42.3	67.2	110	162	212	301	467	539	602	669	801	1211	1400	1715	1924			
KPH400	400	48.4	76.8	126	185	242	345	533	617	687	764	915	1384	1600	1960	2197			
KPH500	500	60.5	96.0	158	231	303	431	667	771	859	956	1145	1730	2000	2451	2747			

◆ Discharge Performance Data

1.1.1 KPH series battery (Final voltage 1.05V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Models	C _r Ah	Hours								Minutes					Seconds				
		8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1			
KPH10	10	1.24	1.98	3.24	4.78	6.28	9.10	16.1	19.4	21.3	24.1	28.8	42.8	50.2	61.3	66.3			
KPH20	20	2.48	3.94	6.48	9.58	12.5	18.2	32.6	40.1	44.0	49.8	58.9	87.7	100	123	133			
KPH30	30	3.72	5.91	9.72	14.4	18.8	27.3	48.9	60.1	65.9	74.6	88.4	131	150	185	199			
KPH35	35	4.34	6.89	11.3	16.8	22.0	31.9	57.1	70.2	76.9	87.0	103	153	175	216	232			
KPH40	40	4.96	7.88	12.9	19.2	25.1	36.4	65.2	80.2	87.9	99.5	118	175	200	247	265			
KPH50	50	6.20	9.85	16.2	24.0	31.4	45.5	81.5	100	110	124	148	219	250	308	332			
KPH60	60	7.44	11.8	19.4	28.8	37.7	54.6	97.8	120	132	149	177	263	300	370	398			
KPH70	70	8.68	13.8	22.7	33.6	44.0	63.7	115	140	154	174	207	307	350	432	464			
KPH80	80	9.92	15.8	25.9	38.3	50.3	72.8	131	160	176	199	236	350	400	494	530			
KPH100	100	12.4	19.7	32.4	47.9	62.9	91.0	163	200	219	249	295	439	500	617	662			
KPH120	120	14.8	23.6	38.8	57.5	75.5	109	195	240	263	299	354	527	600	740	794			
KPH150	150	18.6	29.5	48.6	71.8	94.3	137	244	301	330	373	442	658	750	926	993			
KPH180	180	22.3	35.5	58.3	86.2	113	164	294	361	396	447	531	789	900	1112	1192			
KPH200	200	24.8	39.4	64.8	95.8	126	182	327	401	440	498	590	878	1000	1235	1324			
KPH250	250	31.0	49.3	81.0	120	157	228	408	501	550	622	737	1096	1250	1543	1656			
KPH300	300	37.2	59.1	97.2	144	189	273	490	601	659	746	885	1315	1500	1852	1987			
KPH350	350	43.4	68.9	113	168	220	318	571	701	769	871	1032	1535	1750	2160	2318			
KPH400	400	49.6	78.8	129	191	251	364	652	802	879	995	1180	1755	2000	2469	2649			
KPH500	500	62.0	98.5	162	239	315	455	816	1002	1099	1243	1475	2193	2500	3087	3312			



◆ Discharge Performance Data

1.1.2 KPH series battery (Final voltage 1.0V/cell)

Discharge performance data after fully charged by constant current according to IEC60623.
Available current under 20°C±5°C.

Models	C _r Ah	Hours								Minutes					Seconds				
		8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1			
KPH10	10	1.25	2.00	3.29	4.88	6.42	9.40	17.0	22.7	25.5	29.0	35.1	51.8	58.4	74.1	78.8			
KPH20	20	2.51	4.00	6.58	9.76	12.8	18.8	34.4	46.4	52.7	60.1	72.4	103	118	148	162			
KPH30	30	3.76	6.00	9.87	14.7	19.2	28.2	51.6	69.6	79.1	90.1	109	154	177	222	244			
KPH35	35	4.38	7.00	11.5	17.1	22.5	32.9	60.2	81.2	92.4	105	127	180	206	259	284			
KPH40	40	5.01	8.00	13.1	19.5	25.7	37.6	68.8	92.8	106	120	145	206	235	296	325			
KPH50	50	6.26	10.0	16.4	24.4	32.1	47.0	86.0	116	132	150	182	258	294	370	406			
KPH60	60	7.51	12.0	19.7	29.3	38.5	56.4	104	139	159	180	218	309	353	444	488			
KPH70	70	8.76	14.0	23.0	34.2	45.0	65.7	121	162	185	210	254	361	412	518	569			
KPH80	80	10.0	16.0	26.3	39.1	51.4	75.1	138	185	211	240	290	412	471	592	650			
KPH100	100	12.6	20.0	32.9	48.8	64.3	94.0	172	232	264	300	362	515	588	741	813			
KPH120	120	15.1	24.0	39.5	58.6	77.2	113	206	279	316	360	435	618	706	889	975			
KPH150	150	18.7	30.0	49.4	73.2	96.5	141	258	348	395	450	543	773	883	1111	1219			
KPH180	180	22.5	36.0	59.2	87.9	116	169	310	418	475	541	652	927	1059	1333	1463			
KPH200	200	25.0	40.0	65.8	97.6	129	188	344	464	538	601	724	1031	1177	1482	1626			
KPH250	250	31.2	50.0	82.2	122	161	235	430	580	660	751	906	1288	1470	1852	2033			
KPH300	300	37.5	60.0	98.7	146	193	282	516	696	792	901	1087	1546	1764	2222	2439			
KPH350	350	43.7	70.0	115	171	225	329	603	812	923	1051	1268	1805	2058	2593	2846			
KPH400	400	50.0	80.0	131	195	257	376	688	928	1055	1201	1449	2062	2353	2963	3252			
KPH500	500	62.5	100	165	244	322	469	860	1160	1320	1501	1812	2577	2941	3704	4065			