

# KPL, KPM, KPH Nickel-cadmium batteries

Reliability and performance



# AMCO Saft Ni-Cd batteries

## The broadest capability in the world



**AMCO Saft Ni-Cd batteries** are one of the world's most reliable power back-up systems. For improving quality and safety, safeguarding the environment and reducing Total Cost of Ownership (TCO), only AMCO Saft Ni-Cd batteries provide a truly reliable solution.

For installations requiring totally reliable power back-up, failsafe engine starting or bulk energy storage, the uniquely long life and low maintenance characteristics of AMCO Saft Ni-Cd batteries cannot be surpassed.

More than 100 years' experience in developing pocket plate technology is built into every AMCO Saft Ni-Cd battery.

## KPL, KPM, KPH

### Wide range – for dependability

The wide range of low, medium and high discharge rates and capacity types makes accurate selection easy, based on discharge time and end of discharge voltage. Robust construction and generous electrolyte reserve enable the battery to withstand wide temperature fluctuations in stationary cycling behaviour over its 20+ years' life.

#### Specified by major customers:

AMCO Saft Ni-Cd batteries are specified for failsafe dependability on diverse installations in India such as Mega-Power Plant Projects, power generation and distribution plants, refineries and other industrial plants.

Railway coaches also rely on AMCO Saft long lasting and robust construction.

Delivering long life and requiring minimal maintenance, there is no better solution for installations where the risk of failure is unacceptable, as in:

- UPS systems
- emergency lighting
- process control
- telecommunications
- offshore oil and gas
- gas pipelines
- railway signalling
- emergency lighting
- security systems





# KPL, KPM, KPH

## Wide range – main benefits

### Performance in temperature extremes

Nickel-cadmium plates are completely reliable, with no risk of thermal runaway or sudden death. Generally operating between temperatures of  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ , they can tolerate extremes of  $-50^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$  for short periods.

### Trouble-free long cycle life

The AMCO Saft Ni-Cd battery's unique electrochemistry enables to regularly withstand any depth of discharge.

Following a deep discharge the battery is designed to recharge very quickly and economically, using standard single or dual-level charging equipment.

### Total reliability for a low Total Cost of Ownership

The Ni-Cd battery is the most cost-efficient solution to back-up critical equipment:

- no downtime
- ease of installation
- no replacement costs
- 20+ years' operating life
- minimal maintenance

### Easy storage and installation

Nickel-cadmium batteries are quick and easy to install as original equipment and may be stored in a discharged state under recommended conditions.

On installation a simple bolted connector enables the cells to be rapidly connected and commissioned.

### Assured reliability

Ni-Cd is reliable in controlled city environments or harsh, unpredictable conditions in the world's most remote and unattended areas.

The Ni-Cd battery's construction makes it highly resistant to electrical abuse and transport over rough terrain, precluding risk of subsequent failure.

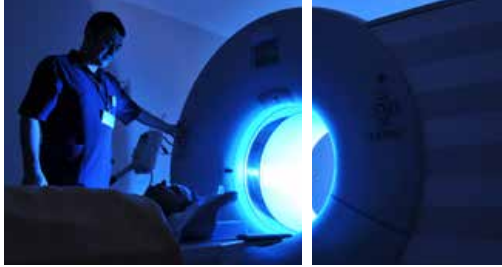
### Quality built, quality tested for durability and performance

The AMCO Saft battery is manufactured in India at one of Saft's internationally accredited ISO 9001 sites.

The AMCO Saft Ni-Cd battery meets, and exceeds, the requirements of the IEC 60623 standard as well as Indian Standard IS 10918.



# AMCO Saft Ni-Cd batteries Solution for all kinds of industry



**KPL, KPM, KPH** offer different performance characteristics and cover a wide capacity range, enabling selection of an AMCO Saft Ni-Cd battery for any application.

## KPL

KPL has the thickest plates and is designed for applications where the battery is required to provide:

- a reliable source of energy over long discharge periods
- a current that is relatively low in comparison with the total stored energy
- discharges are generally infrequent

KPL is typically used in power back-up and bulk energy storage applications.

## KPM

KPM is designed for applications where the batteries are usually required to sustain:

- electrical loads between 30 minutes and 3 hours
- “mixed” loads which involve high and low discharge rates
- frequent or infrequent discharges

KPM type is typically used in power back-up applications.

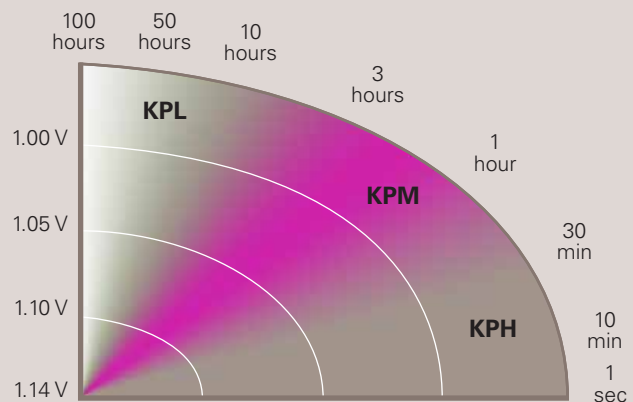
## KPH

KPH uses very thin plates and is designed for applications demanding:

- a relatively high current over short periods
- usually less than 1 hour duration
- frequent or infrequent discharges

KPH type is typically used in starting and power back-up applications.

		Intercity & urban transport	Electricity, gas, water, production & distribution	Offshore & onshore petrochemical refineries	Chemical, mining steel metal works	Commercial & public buildings	Hospitals, X rays equipment	Radio satellite, cable, cellular base & repeater stations	Sub stations & signalling	Traffic control
<b>KPL</b>	Power back-up Bulk energy storage		•	•		•	•	•		•
<b>KPM</b>	Power back-up	•	•	•	•		•	•	•	•
<b>KPH</b>	Starting Power back-up	•	•	•	•	•		•	•	



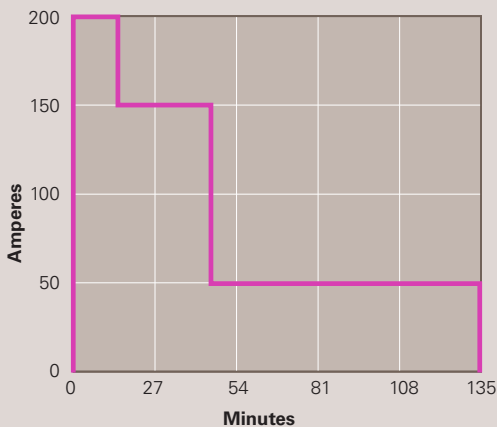
# KPL/KPM/KPH batteries

## Calculating your battery size

It is important to define the optimum battery size for your particular installation. Nickel-cadmium ranges offer many capacity steps to create the optimum battery for your application. AMCO Saft's battery sizing software has been developed to make your battery selection easy. Our sales engineers have been specifically trained to fine-tune sizing of the batteries according to your specific conditions.

### Stationary Ni-Cd battery sizing

#### Load profile



#### Battery layout

Connector between blocks



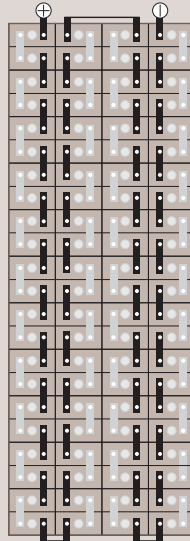
End lug



Cable between steps/rows, inside-inside



Cable between steps/rows, outside-outside



## 1. Electrode assembly

The active material is retained in pockets formed from perforated nickel-plated steel strips. This mechanically robust pocket plate construction promotes conductivity and robustness. The supporting structure of electrodes is made of nickel-plated steel and is inert to alkaline electrolyte. There is no corrosion and no risk of "Sudden death".

## 2. Separator

AMCO Saft engineered grid ensures separation between electrodes of opposite polarity.

## 3. Electrolyte

The electrolyte used in KPL, KPM and KPH cells is aqueous solution of potassium hydroxide and lithium hydroxide and acts only as an ion transfer medium, delivering optimum performance without causing base material degradation. It is not necessary to change the electrolyte during the life of the cell. For extremely low temperatures a special high density electrolyte is available.

## 4. Terminals

Easy to bolt nickel-plated terminals made of steel are provided for both polarities.

## 5. Cell containers

AMCO Saft cells are available in polypropylene or stainless steel containers. The polypropylene container can withstand high mechanical stresses, shocks, vibrations and extreme temperatures. It has excellent electrical insulation, is corrosion resistant and permits visible check of electrolyte level for ease of maintenance.

## 6. Venting system

The battery is fitted with a specially designed flame arresting flip top vent and does not produce corrosive vapours. This vent allows easy topping up operation when needed.

# Construction features



# KPL/KPM/KPH batteries

## Technical Characteristics



### Nominal voltage: 1.2V/cell rated (nominal) capacity

Rated Capacity  $C_5$  (as per IEC 60623) is defined as available ampere-hours (Ah) at 5 hours discharge rate to an end voltage of 1.0 V/cell at ambient temperature + 20°C.

### Internal resistance of the cell:

- KPL:  $0.25 \times 1/C_5$  ohms
- KPM:  $0.15 \times 1/C_5$  ohms
- KPH:  $0.07 \times 1/C_5$  ohms

### Maximum short circuit current:

- KPL:  $10 \times C_5$  Amps
- KPM:  $15 \times C_5$  Amps
- KPH:  $23 \times C_5$  Amps

KPL, KPM and KPH batteries can withstand its short circuit current without damage.

### Charging characteristics

Batteries can be charged in:

- **constant voltage mode with load connected**  
or
- **constant current or declining current mode when load is isolated.**

High rate or over charge will not damage the battery.

Minimum float charging current: 2 mA per Ah.

- **Constant voltage mode:**

For continuous parallel operation:

- Float voltage: 1.40 - 1.42 V/cell for KPL, KPM & KPH
- Boost Voltage:
  - KPL : 1.47 - 1.70 V/cell
  - KPM : 1.46 - 1.70 V/cell
  - KPH : 1.45 - 1.70 V/cell

A higher voltage will reduce the charge duration and increase the efficiency of recharging but may increase water consumption.

Single stage charging (without boost):

- KPL: 1.47 - 1.50 V/cell
- KPM: 1.46 - 1.49 V/cell
- KPH: 1.45 - 1.48 V/cell

For starting application:

- Recommended charging voltage. 1.50 - 1.55 V/cell.
- **Constant current mode:**
  - Normal charging: 0.2  $C_5$  A for 8 hours
  - Recommended for quick charging: 0.4  $C_5$  A for 2.5 hours followed by 0.2  $C_5$  A for 2.5 hours



# KPL/KPM/KPH batteries

## Performance Data

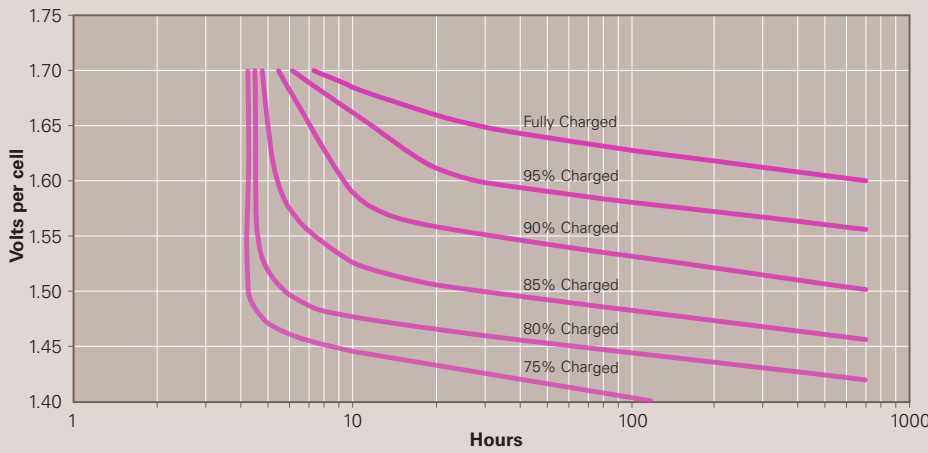
### Performance Data

Rated discharge performance of cells are at  $+20^{\circ}\text{C} \pm 2^{\circ}\text{C}$  temperature for different durations and end cell voltages as given in performance data sheets. The rated capacity " $C_5$ " is a baseline performance measure. Use the discharge performance tables to select a proper battery for your specific application.

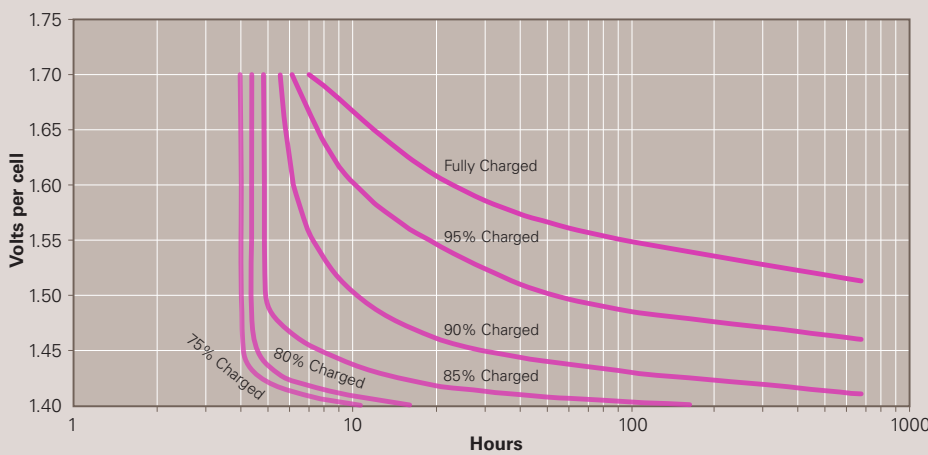
### State of charge diagrams

Time required to attain state of charge using constant voltage charging with Current limited to  $C_5$  rate for a fully discharged cell.

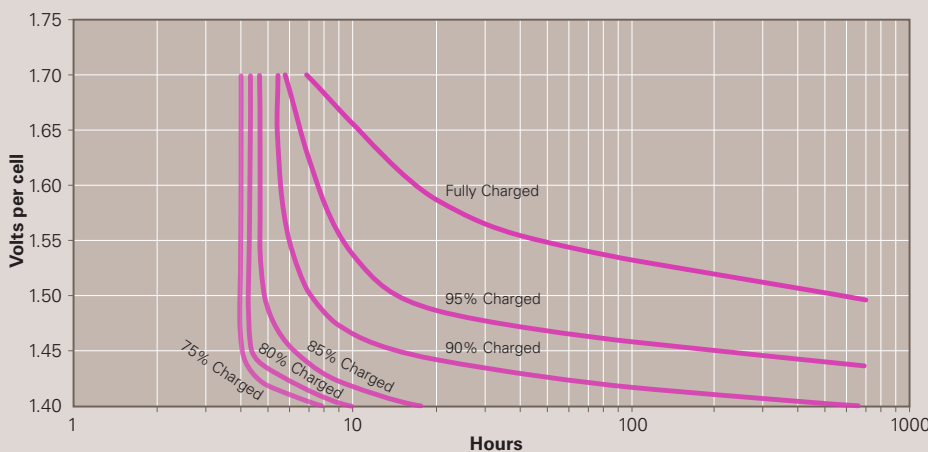
#### KPL



#### KPM

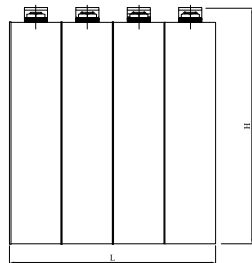
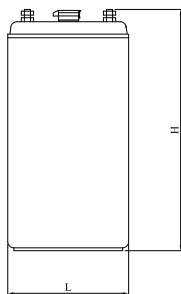
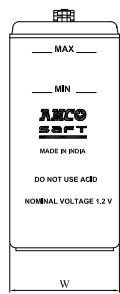


#### KPH



# AMCO Soft Ni-Cd batteries

## Physical and performance data



# L Range

Cell Type	C <sub>5</sub> Ah	Cell Dimension			Approx Cell Wt (KG)	Electrolyte Volume (Litres)	Terminals
		L (mm)	W (mm)	H (mm)			
KPL11P	11				1.6	0.7	
KPL18P	18	46	87	272	1.8	0.6	M10
KPL25P	25				2	0.5	
KPL32P	32				2.8	1.1	
KPL39P	39				3.1	1	
KPL45P	45	86	87	272	3.4	0.9	M10
KPL52P	52				3.6	0.8	
KPL58P	58				3.7	0.8	
KPL69P	69				5	1.9	
KPL75P	75				5.2	1.8	
KPL80P	80	58	139	401	5.3	1.7	M20
KPL88P	88				5.4	1.6	
KPL94P	94				5.5	1.6	
KPL100P	100				5.7	1.5	
KPL115P	115				6.2	1.9	
KPL125P	125	75	139	401	6.4	1.8	M20
KPL135P	135				6.5	1.7	
KPL145P	145				6.6	1.6	
KPL155P	155				9.4	3.7	
KPL165P	165				9.6	3.6	
KPL177P	177				9.8	3.5	
KPL191P	191	103	165	401	10	3.3	M20
KPL205P	205				10.1	3.2	
KPL216P	216				10.2	3.1	
KPL230P	230				10.4	3	
KPL240P	240				14.1	4.2	
KPL256P	256				14.3	4.1	
KPL265P	265	128	165	401	14.5	4	2XM20
KPL282P	282				14.7	3.9	
KPL290P	290				15	3.8	
KPL310P	310				15.3	3.6	
KPL335P	335				16.8	4.8	
KPL365P	365	156	165	401	17	4.6	2XM20
KPL390P	390				17.2	4.4	
KPL400P	400				21.6	6	
KPL425P	425				21.8	6	
KPL445P	445				22	5.8	
KPL457P	457	176	195	405	22.4	5.8	2XM10
KPL485P	485				22.6	5.7	
KPL500P	500				22.8	5.6	
KPL515P	515				23	5.6	
KPL540P	540				31.2	9.3	
KPL575P	575				31.5	9.3	
KPL595P	595				32.4	9	
KPL635P	635	261	195	405	32.7	9	3XM10
KPL670P	670				33	8.7	
KPL685P	685				33.6	8.7	
KPL730P	730				33.9	8.4	
KPL775P	775				34.5	8.4	
KPL800P	800				43.2	12	
KPL850P	850				43.6	12	
KPL895P	895	345	195	405	44	11.6	4XM10
KPL915P	915				44.8	11.6	
KPL970P	970				45.2	11.2	
KPL1030P	1030				46	11.2	
KPL1060P	1060				54.5	15	
KPL1120P	1120				55	14.5	
KPL1145P	1145	430	195	405	56	14.5	5XM10
KPL1220P	1220				56.5	14	
KPL1285P	1285				57.5	14	
KPL1350P	1350				66	17.4	
KPL1370P	1370	515	195	405	67.2	17.4	6XM10
KPL1460P	1460				67.8	16.8	
KPL1550P	1550				69	16.8	



# L Range

Performance for fully charged cells

Available Amperes at + 20°C **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	
KPL11P	11	1.12	1.39	2.20	3.55	5.10	6.44	8.25	10.6	12.2	13.2	14.6	16.8	21.6	23.3	26.4	27.2	
KPL18P	18	1.83	2.28	3.60	5.81	8.35	10.5	13.5	17.4	19.9	21.5	23.8	27.5	35.3	38.1	43.1	44.5	
KPL25P	25	2.55	3.16	5.00	8.06	11.6	14.6	18.8	24.2	27.7	29.9	33.1	38.2	49.0	52.9	59.9	61.8	
KPL32P	32	3.26	4.05	6.40	10.3	14.8	18.7	24.0	31.0	35.4	38.3	42.4	48.9	62.7	67.8	76.7	79.1	
KPL39P	39	3.98	4.93	7.80	12.6	18.1	22.8	29.3	37.7	43.2	46.6	51.7	59.6	76.5	82.6	93.4	96.4	
KPL45P	45	4.59	5.69	9.00	14.5	20.9	26.3	33.8	43.5	49.8	53.8	59.6	68.8	88.2	95.3	108	111	
KPL52P	52	5.30	6.58	10.4	16.8	24.1	30.4	39.0	50.3	57.6	62.2	68.9	79.5	102	110	125	128	
KPL58P	58	5.91	7.33	11.6	18.7	26.9	33.9	43.5	56.1	64.2	69.4	76.8	88.7	114	123	139	143	
KPL69P	69	7.03	8.73	13.8	22.3	32.0	40.4	51.8	66.8	76.4	82.5	91.4	106	135	146	165	170	
KPL75P	75	7.65	9.48	15.0	24.2	34.8	43.9	56.3	72.6	83.1	89.7	99.3	115	147	159	180	185	
KPL80P	80	8.15	10.1	16.0	25.8	37.1	46.8	60.0	77.4	88.6	95.7	106	122	157	169	192	198	
KPL88P	88	8.97	11.1	17.6	28.4	40.8	51.5	66.0	85.2	97.5	105	117	135	173	186	211	217	
KPL94P	94	9.58	11.9	18.8	30.3	43.6	55.0	70.5	91.0	104	112	125	144	184	199	225	232	
KPL100P	100	10.2	12.6	20.0	32.3	46.4	58.5	75.0	96.8	111	120	132	153	196	212	240	247	
KPL115P	115	11.7	14.5	23.0	37.1	53.3	67.3	86.3	111	127	138	152	176	225	244	275	284	
KPL125P	125	12.7	15.8	25.0	40.3	58.0	73.1	93.8	121	138	150	166	191	245	265	299	309	
KPL135P	135	13.8	17.1	27.0	43.5	62.6	79.0	101	131	150	161	179	206	265	286	323	334	
KPL145P	145	14.8	18.3	29.0	46.8	67.3	84.8	109	140	161	173	192	222	284	307	347	358	
KPL155P	155	15.8	19.6	31.0	50.0	71.9	90.7	116	150	172	185	205	237	304	328	371	383	
KPL165P	165	16.8	20.9	33.0	53.2	76.5	96.6	124	160	183	197	219	252	324	349	395	408	
KPL177P	177	18.0	22.4	35.4	57.1	82.1	104	133	171	196	212	234	271	347	375	424	437	
KPL191P	191	19.5	24.2	38.2	61.6	88.6	112	143	185	212	228	253	292	374	404	458	472	
KPL205P	205	20.9	25.9	41.0	66.1	95.1	120	154	198	227	245	272	313	402	434	491	507	
KPL216P	216	22.0	27.3	43.2	69.7	100	126	162	209	239	258	286	330	423	457	517	534	
KPL230P	230	23.4	29.1	46.0	74.2	107	135	173	223	255	275	305	352	451	487	551	568	
KPL240P	240	24.5	30.3	48.0	77.4	111	140	180	232	266	287	318	367	471	508	575	593	
KPL256P	256	26.1	32.4	51.2	82.6	119	150	192	248	284	306	339	391	502	542	613	633	
KPL265P	265	27.0	33.5	53.0	85.5	123	155	199	256	294	317	351	405	520	561	635	655	
KPL282P	282	28.7	35.7	56.4	91.0	131	165	212	273	312	337	374	431	553	597	676	697	
KPL290P	290	29.6	36.7	58.0	93.5	135	170	218	281	321	347	384	443	569	614	695	717	
KPL310P	310	31.6	39.2	62.0	100	144	181	233	300	343	371	411	474	608	656	743	766	
KPL335P	335	34.1	42.4	67.0	108	155	196	251	324	371	401	444	512	657	709	802	828	
KPL365P	365	37.2	46.2	73.0	118	169	214	274	353	404	437	483	558	716	773	874	902	
KPL390P	390	39.8	49.3	78.0	126	181	228	293	377	432	466	517	596	765	826	934	964	
KPL400P	400	40.8	50.6	80.0	129	186	234	300	387	443	478	530	612	784	847	958	988	
KPL425P	425	43.3	53.7	85.0	137	197	249	319	411	471	508	563	650	833	900	1018	1050	
KPL445P	445	45.4	56.3	89.0	144	206	260	334	431	493	532	589	680	872	942	1066	1100	
KPL457P	457	46.6	57.8	91.4	147	212	267	343	442	506	547	605	699	896	968	1095	1129	
KPL485P	485	49.4	61.3	97.0	156	225	284	364	469	537	580	642	742	951	1027	1162	1198	
KPL500P	500	51.0	63.2	100	161	232	293	375	484	554	598	662	765	980	1059	1198	1235	
KPL515P	515	52.5	65.1	103	166	239	301	386	498	570	616	682	787	1010	1090	1234	1273	
KPL540P	540	55.0	68.3	108	174	250	316	405	523	598	646	715	826	1059	1143	1294	1334	
KPL575P	575	58.6	72.7	115	185	267	336	431	556	637	688	762	879	1127	1218	1377	1421	
KPL595P	595	60.7	75.2	119	192	276	348	446	576	659	712	788	910	1167	1260	1425	1470	
KPL635P	635	64.7	80.3	127	205	295	372	476	615	703	760	841	971	1245	1345	1521	1569	
KPL670P	670	68.3	84.7	134	216	311	392	503	648	742	801	887	1024	1314	1419	1605	1656	
KPL685P	685	69.8	86.6	137	221	318	401	514	663	759	819	907	1047	1343	1450	1641	1693	
KPL730P	730	74.4	92.3	146	235	339	427	548	706	809	873	967	1116	1431	1546	1749	1804	
KPL775P	775	79.0	98.0	155	250	360	454	582	750	859	927	1027	1185	1520	1641	1857	1915	
KPL800P	800	81.5	101	160	258	371	468	600	774	886	957	1060	1223	1569	1694	1916	1977	
KPL850P	850	86.6	107	170	274	394	497	638	823	942	1017	1126	1300	1667	1800	2036	2100	
KPL895P	895	91.2	113	179	289	415	524	672	866	991	1071	1185	1368	1755	1895	2144	2212	
KPL915P	915	93.3	116	183	295	424	535	687	885	1014	1094	1212	1399	1794	1937	2192	2261	
KPL970P	970	98.9	123	194	313	450	568	728	939	1075	1160	1285	1483	1902	2054	2324	2397	
KPL1030P	1030	105	130	206	332	478	603	773	997	1141	1232	1364	1575	2019	2181	2467	2545	
KPL1060P	1060	108	134	212	342	492	620	795	1026	1174	1268	1404	1621	2078	2244	2539	2619	
KPL1120P	1120	114	142	224	361	520	655	840	1084	1241	1340	1483	1713	2196	2372	2683	2767	
KPL1145P	1145	117	145	229	369	531	670	859	1108	1268	1370	1517	1751	2245	2424	2743	2829	
KPL1220P	1220	124	154	244	394	566	714	915	1181	1351	1459	1616	1865	2392	2583	2922	3015	
KPL1285P	1285	131	162	257	415	596	752	964	1244	1423	1537	1702	1965	2519	2721	3078	3175	
KPL1350P	1350	138	171	270	435	626	790	1013	1306	1495	1615	1788	2064	2647	2859	3234	3336	
KPL1370P	1370	140	173	274	442	636	802	1028	1326	1518	1639	1815	2095	2686	2901	3282	3385	
KPL1460P	1460	149	185	292	471	677	854	1095	1413	1617	1746	1934	2232	2863	3091	3497	3608	
KPL1550P	1550	158	196	310	500	719	907	1163	1500	1717	1854	2053	2370	3039	3282	3713	3830	

# L Range

Performance for fully charged cells

Available Amperes at + 20°C **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
KPL11P	11	1.11	1.38	2.17	3.48	4.95	6.13	7.48	9.43	10.6	11.5	12.7	14.8	18.9	20.4	22.9	24.3
KPL18P	18	1.81	2.26	3.55	5.70	8.09	10.0	12.2	15.4	17.4	18.8	20.7	24.3	30.9	33.4	37.4	39.7
KPL25P	25	2.52	3.15	4.94	7.92	11.2	13.9	17.0	21.4	24.2	26.2	28.8	33.7	42.9	46.4	51.9	55.1
KPL32P	32	3.22	4.03	6.32	10.1	14.4	17.8	21.8	27.4	31.0	33.5	36.9	43.2	54.9	59.4	66.5	70.6
KPL39P	39	3.93	4.91	7.70	12.4	17.5	21.7	26.5	33.4	37.7	40.8	44.9	52.6	66.9	72.4	81.0	86.0
KPL45P	45	4.53	5.66	8.88	14.3	20.2	25.1	30.6	38.6	43.5	47.1	51.8	60.7	77.1	83.6	93.5	99.3
KPL52P	52	5.23	6.54	10.3	16.5	23.4	29.0	35.4	44.6	50.3	54.4	59.9	70.1	89.1	96.6	108	115
KPL58P	58	5.84	7.30	11.5	18.4	26.1	32.3	39.4	49.7	56.1	60.7	66.8	78.2	99.4	108	120	128
KPL69P	69	6.94	8.68	13.6	21.9	31.0	38.5	46.9	59.2	66.8	72.2	79.5	93.1	118	128	143	152
KPL75P	75	7.55	9.44	14.8	23.8	33.7	41.8	51.0	64.3	72.6	78.5	86.4	101	129	139	156	165
KPL80P	80	8.05	10.1	15.8	25.3	36.0	44.6	54.4	68.6	77.4	83.7	92.1	108	137	149	166	176
KPL88P	88	8.86	11.1	17.4	27.9	39.6	49.1	59.8	75.5	85.2	92.1	101	119	151	163	183	194
KPL94P	94	9.46	11.8	18.6	29.8	42.3	52.4	63.9	80.6	91.0	98.4	108	127	161	175	195	207
KPL100P	100	10.1	12.6	19.7	31.7	45.0	55.7	68.0	85.7	96.8	105	115	135	171	186	208	221
KPL115P	115	11.6	14.5	22.7	36.4	51.7	64.1	78.2	98.6	111	120	132	155	197	214	239	254
KPL125P	125	12.6	15.7	24.7	39.6	56.2	69.7	85.0	107	121	131	144	169	214	232	260	276
KPL135P	135	13.6	17.0	26.7	42.8	60.7	75.3	91.8	116	131	141	155	182	231	251	280	298
KPL145P	145	14.6	18.2	28.6	45.9	65.2	80.8	98.6	124	140	152	167	196	249	269	301	320
KPL155P	155	15.6	19.5	30.6	49.1	69.7	86.4	105	133	150	162	179	209	266	288	322	342
KPL165P	165	16.6	20.8	32.6	52.3	74.2	92.0	112	141	160	173	190	223	283	306	343	364
KPL177P	177	17.8	22.3	34.9	56.1	79.6	98.7	120	152	171	185	204	239	303	329	368	390
KPL191P	191	19.2	24.0	37.7	60.5	85.9	106	130	164	185	200	220	258	327	355	397	421
KPL205P	205	20.6	25.8	40.5	64.9	92.2	114	139	176	198	215	236	277	351	381	426	452
KPL216P	216	21.7	27.2	42.6	68.4	97.1	120	147	185	209	226	249	291	370	401	449	476
KPL230P	230	23.1	28.9	45.4	72.9	103	128	156	197	223	241	265	310	394	427	478	507
KPL240P	240	24.2	30.2	47.4	76.0	108	134	163	206	232	251	276	324	411	446	499	529
KPL256P	256	25.8	32.2	50.5	81.1	115	143	174	219	248	268	295	345	439	475	532	565
KPL265P	265	26.7	33.3	52.3	83.9	119	148	180	227	256	277	305	357	454	492	551	585
KPL282P	282	28.4	35.5	55.7	89.3	127	157	192	242	273	295	325	380	483	524	586	622
KPL290P	290	29.2	36.5	57.3	91.9	130	162	197	249	281	303	334	391	497	539	602	640
KPL310P	310	31.2	39.0	61.2	98.2	139	173	211	266	300	324	357	418	531	576	644	684
KPL335P	335	33.7	42.1	66.1	106	151	187	228	287	324	351	386	452	574	622	696	739
KPL365P	365	36.7	45.9	72.1	116	164	203	248	313	353	382	420	492	626	678	758	805
KPL390P	390	39.3	49.1	77.0	124	175	217	265	334	377	408	449	526	669	724	810	860
KPL400P	400	40.3	50.3	79.0	127	180	223	272	343	387	419	461	540	686	743	831	882
KPL425P	425	42.8	53.5	83.9	135	191	237	289	364	411	445	489	573	729	789	883	937
KPL445P	445	44.8	56.0	87.9	141	200	248	303	382	431	466	512	600	763	827	924	982
KPL457P	457	46.0	57.5	90.2	145	206	255	311	392	442	478	526	617	783	849	949	1008
KPL485P	485	48.8	61.0	95.7	154	218	270	330	416	469	508	559	654	831	901	1008	1070
KPL500P	500	50.3	62.9	98.7	158	225	279	340	429	484	523	576	675	857	929	1039	1103
KPL515P	515	51.8	64.8	102	163	232	287	350	442	498	539	593	695	883	957	1070	1136
KPL540P	540	54.3	67.9	107	171	243	301	367	463	523	565	622	728	926	1003	1122	1191
KPL575P	575	57.9	72.3	114	182	259	321	391	493	556	602	662	776	986	1068	1195	1268
KPL595P	595	59.9	74.9	117	188	268	332	405	510	576	623	685	803	1020	1105	1236	1312
KPL635P	635	63.9	79.9	125	201	286	354	432	544	615	664	731	857	1089	1179	1319	1401
KPL670P	670	67.4	84.3	132	212	301	373	456	574	648	701	772	904	1149	1244	1392	1478
KPL685P	685	68.9	86.2	135	217	308	382	466	587	663	717	789	924	1174	1272	1423	1511
KPL730P	730	73.5	91.8	144	231	328	407	496	626	706	764	841	985	1251	1356	1517	1610
KPL775P	775	78.0	97.5	153	246	349	432	527	665	750	811	893	1046	1329	1440	1610	1710
KPL800P	800	80.5	101	158	253	360	446	544	686	774	837	921	1079	1371	1486	1662	1765
KPL850P	850	85.5	107	168	269	382	474	578	729	823	889	979	1147	1457	1579	1766	1875
KPL895P	895	90.1	113	177	284	402	499	609	767	866	937	1031	1207	1534	1662	1859	1974
KPL915P	915	92.1	115	181	290	411	510	622	785	885	958	1054	1234	1568	1700	1901	2018
KPL970P	970	97.6	122	191	307	436	541	660	832	939	1015	1117	1309	1663	1802	2015	2140
KPL1030P	1030	104	130	203	326	463	574	700	883	997	1078	1186	1390	1766	1913	2140	2272
KPL1060P	1060	107	133	209	336	477	591	721	909	1026	1109	1221	1430	1817	1969	2202	2338
KPL1120P	1120	113	141	221	355	504	624	762	960	1084	1172	1290	1511	1920	2080	2327	2471
KPL1145P	1145	115	144	226	363	515	638	779	982	1108	1198	1319	1545	1963	2127	2379	2526
KPL1220P	1220	123	153	241	386	549	680	830	1046	1181	1277	1405	1646	2091	2266	2534	2691
KPL1285P	1285	129	162	254	407	578	716	874	1102	1244	1345	1480	1734	2203	2387	2669	2834
KPL1350P	1350	136	170	267	428	607	753	918	1158	1306	1413	1555	1821	2314	2508	2805	2978
KPL1370P	1370	138	172	270	434	616	764	932	1175	1326	1434	1578	1848	2348	2545	2846	3022
KPL1460P	1460	147	184	288	462	657	814	993	1252	1413	1528	1681	1970	2503	2712	3033	3220
KPL1550P	1550	156	195	306	491	697	864	1054	1329	1500	1622	1785	2091	2657	2879	3220	3419

# L Range

Performance for fully charged cells

Available Amperes at + 20°C **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
KPL11P	11	1.10	1.36	2.13	3.39	4.66	5.52	6.49	8.12	9.11	9.79	10.7	12.7	16.2	17.4	18.9	19.1
KPL18P	18	1.80	2.22	3.48	5.54	7.62	9.03	10.6	13.3	14.9	16.0	17.6	20.8	26.6	28.5	30.9	31.3
KPL25P	25	2.50	3.08	4.84	7.69	10.6	12.5	14.7	18.5	20.7	22.2	24.4	28.9	36.9	39.6	42.9	43.4
KPL32P	32	3.20	3.94	6.19	9.85	13.5	16.1	18.9	23.6	26.5	28.5	31.3	37.0	47.3	50.7	54.9	55.6
KPL39P	39	3.90	4.81	7.55	12.0	16.5	19.6	23.0	28.8	32.3	34.7	38.1	45.1	57.6	61.8	66.9	67.7
KPL45P	45	4.50	5.55	8.71	13.8	19.0	22.6	26.5	33.2	37.2	40.0	44.0	52.1	66.5	71.3	77.1	78.1
KPL52P	52	5.20	6.41	10.1	16.0	22.0	26.1	30.7	38.4	43.0	46.3	50.8	60.2	76.8	82.4	89.1	90.3
KPL58P	58	5.80	7.15	11.2	17.8	24.5	29.1	34.2	42.8	48.0	51.6	56.7	67.1	85.7	91.9	99.4	101
KPL69P	69	6.90	8.50	13.4	21.2	29.2	34.6	40.7	50.9	57.1	61.4	67.4	79.8	102	109	118	120
KPL75P	75	7.50	9.24	14.5	23.1	31.7	37.6	44.2	55.4	62.1	66.7	73.3	86.8	111	119	129	130
KPL80P	80	8.00	9.86	15.5	24.6	33.9	40.2	47.2	59.0	66.2	71.2	78.1	92.5	118	127	137	139
KPL88P	88	8.80	10.8	17.0	27.1	37.2	44.2	51.9	64.9	72.8	78.3	86.0	102	130	139	151	153
KPL94P	94	9.40	11.6	18.2	28.9	39.8	47.2	55.4	69.4	77.8	83.6	91.8	109	139	149	161	163
KPL100P	100	10.0	12.3	19.4	30.8	42.3	50.2	59.0	73.8	82.8	89.0	97.7	116	148	158	171	174
KPL115P	115	11.5	14.2	22.3	35.4	48.7	57.7	67.8	84.9	95.2	102	112	133	170	182	197	200
KPL125P	125	12.5	15.4	24.2	38.5	52.9	62.7	73.7	92.3	103	111	122	145	185	198	214	217
KPL135P	135	13.5	16.6	26.1	41.5	57.1	67.8	79.6	99.6	112	120	132	156	199	214	231	234
KPL145P	145	14.5	17.9	28.1	44.6	61.4	72.8	85.5	107	120	129	142	168	214	230	249	252
KPL155P	155	15.5	19.1	30.0	47.7	65.6	77.8	91.4	114	128	138	151	179	229	246	266	269
KPL165P	165	16.5	20.3	31.9	50.8	69.8	82.8	97.3	122	137	147	161	191	244	261	283	286
KPL177P	177	17.7	21.8	34.3	54.5	74.9	88.8	104	131	147	157	173	205	261	280	303	307
KPL191P	191	19.1	23.5	37.0	58.8	80.8	95.9	113	141	158	170	187	221	282	303	327	332
KPL205P	205	20.5	25.3	39.7	63.1	86.8	103	121	151	170	182	200	237	303	325	351	356
KPL216P	216	21.6	26.6	41.8	66.5	91.4	108	127	159	179	192	211	250	319	342	370	375
KPL230P	230	23.0	28.3	44.5	70.8	97.3	115	136	170	190	205	225	266	340	364	394	399
KPL240P	240	24.0	29.6	46.5	73.9	102	120	142	177	199	214	234	278	354	380	411	417
KPL256P	256	25.6	31.5	49.5	78.8	108	128	151	189	212	228	250	296	378	406	439	444
KPL265P	265	26.5	32.7	51.3	81.6	112	133	156	196	219	236	259	307	391	420	454	460
KPL282P	282	28.2	34.7	54.6	86.8	119	142	166	208	233	251	275	326	416	447	483	490
KPL290P	290	29.0	35.7	56.1	89.2	123	146	171	214	240	258	283	335	428	460	497	503
KPL310P	310	31.0	38.2	60.0	95.4	131	156	183	229	257	276	303	359	458	491	531	538
KPL335P	335	33.5	41.3	64.8	103	142	168	198	247	277	298	327	388	495	531	574	582
KPL365P	365	36.5	45.0	70.6	112	154	183	215	269	302	325	357	422	539	578	626	634
KPL390P	390	39.0	48.1	75.5	120	165	196	230	288	323	347	381	451	576	618	669	677
KPL400P	400	40.0	49.3	77.4	123	169	201	236	295	331	356	391	463	591	634	686	694
KPL425P	425	42.5	52.4	82.3	131	180	213	251	314	352	378	415	492	628	673	729	738
KPL445P	445	44.5	54.8	86.1	137	188	223	262	328	368	396	435	515	657	705	763	773
KPL457P	457	45.7	56.3	88.5	141	193	229	269	337	378	407	446	529	675	724	783	793
KPL485P	485	48.5	59.8	93.9	149	205	243	286	358	401	431	474	561	716	768	831	842
KPL500P	500	50.0	61.6	96.8	154	212	251	295	369	414	445	488	578	738	792	857	868
KPL515P	515	51.5	63.5	99.7	158	218	258	304	380	426	458	503	596	761	816	883	894
KPL540P	540	54.0	66.5	105	166	229	271	318	399	447	480	527	625	797	856	926	938
KPL575P	575	57.5	70.9	111	177	243	289	339	424	476	512	562	665	849	911	986	998
KPL595P	595	59.5	73.3	115	183	252	299	351	439	493	529	581	688	879	943	1020	1033
KPL635P	635	63.5	78.2	123	195	269	319	374	469	526	565	620	735	938	1006	1089	1102
KPL670P	670	67.0	82.6	130	206	284	336	395	495	555	596	654	775	989	1062	1149	1163
KPL685P	685	68.5	84.4	133	211	290	344	404	506	567	609	669	792	1012	1085	1174	1189
KPL730P	730	73.0	90.0	141	225	309	366	430	539	604	649	713	844	1078	1157	1251	1267
KPL775P	775	77.5	95.5	150	239	328	389	457	572	642	690	757	897	1145	1228	1329	1346
KPL800P	800	80.0	98.6	155	246	339	402	472	590	662	712	781	925	1181	1268	1371	1389
KPL850P	850	85.0	105	165	262	360	427	501	627	704	756	830	983	1255	1347	1457	1476
KPL895P	895	89.5	110	173	275	379	449	528	661	741	796	874	1035	1322	1418	1534	1554
KPL915P	915	91.5	113	177	282	387	459	540	675	757	814	894	1058	1351	1450	1568	1589
KPL970P	970	97.0	120	188	299	411	487	572	716	803	863	947	1122	1432	1537	1663	1684
KPL1030P	1030	103	127	199	317	436	517	607	760	853	916	1006	1191	1521	1632	1766	1788
KPL1060P	1060	106	131	205	326	449	532	625	782	877	943	1035	1226	1565	1680	1817	1840
KPL1120P	1120	112	138	217	345	474	562	660	827	927	996	1094	1296	1654	1775	1920	1944
KPL1145P	1145	115	141	222	352	485	575	675	845	948	1019	1118	1325	1691	1814	1963	1988
KPL1220P	1220	122	150	236	375	516	612	719	900	1010	1085	1192	1411	1802	1933	2091	2118
KPL1285P	1285	129	158	249	395	544	645	758	948	1064	1143	1255	1486	1898	2036	2203	2231
KPL1350P	1350	135	166	261	415	571	678	796	996	1117	1201	1319	1562	1994	2139	2314	2344
KPL1370P	1370	137	169	265	422	580	688	808	1011	1134	1219	1338	1585	2023	2171	2348	2378
KPL1460P	1460	146	180	283	449	618	733	861	1078	1209	1299	1426	1689	2156	2313	2503	2535
KPL1550P	1550	155	191	300	477	656	778	914	1144	1283	1379	1514	1793	2289	2456	2657	2691

# L Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.14 V/cell**

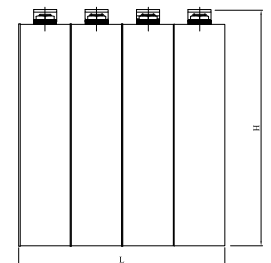
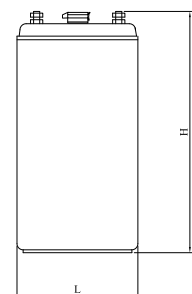
Cell Type	C <sub>5</sub> Ah	Hours							Minutes						Seconds		
		10	8	5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPL11P	11	1.07	1.33	2.08	3.26	4.18	4.78	5.61	6.93	7.79	8.35	9.21	10.7	13.9	15.1	16.2	16.5
KPL18P	18	1.75	2.17	3.40	5.33	6.84	7.82	9.17	11.3	12.7	13.7	15.1	17.6	22.8	24.8	26.6	27.0
KPL25P	25	2.44	3.02	4.73	7.40	9.50	10.9	12.7	15.7	17.7	19.0	20.9	24.4	31.7	34.4	36.9	37.5
KPL32P	32	3.12	3.86	6.05	9.48	12.2	13.9	16.3	20.1	22.6	24.3	26.8	31.3	40.6	44.1	47.3	48.0
KPL39P	39	3.80	4.71	7.37	11.5	14.8	16.9	19.9	24.6	27.6	29.6	32.7	38.1	49.4	53.7	57.6	58.5
KPL45P	45	4.38	5.43	8.51	13.3	17.1	19.5	22.9	28.3	31.8	34.1	37.7	44.0	57.0	62.0	66.5	67.5
KPL52P	52	5.07	6.27	9.83	15.4	19.8	22.6	26.5	32.7	36.8	39.5	43.5	50.8	65.9	71.6	76.8	78.0
KPL58P	58	5.65	7.00	11.0	17.2	22.0	25.2	29.6	36.5	41.0	44.0	48.6	56.7	73.5	79.9	85.7	87.0
KPL69P	69	6.72	8.32	13.0	20.4	26.2	30.0	35.2	43.4	48.8	52.4	57.8	67.4	87.5	95.0	102	104
KPL75P	75	7.31	9.05	14.2	22.2	28.5	32.6	38.2	47.2	53.1	56.9	62.8	73.3	95.1	103	111	113
KPL80P	80	7.79	9.65	15.1	23.7	30.4	34.7	40.8	50.4	56.6	60.7	67.0	78.1	101	110	118	120
KPL88P	88	8.57	10.6	16.6	26.1	33.4	38.2	44.9	55.4	62.3	66.8	73.7	86.0	112	121	130	132
KPL94P	94	9.16	11.3	17.8	27.8	35.7	40.8	47.9	59.2	66.5	71.3	78.7	91.8	119	129	139	141
KPL100P	100	9.74	12.1	18.9	29.6	38.0	43.4	51.0	63.0	70.8	75.9	83.7	97.7	127	138	148	150
KPL115P	115	11.2	13.9	21.7	34.1	43.7	49.9	58.6	72.4	81.4	87.3	96.3	112	146	158	170	173
KPL125P	125	12.2	15.1	23.6	37.0	47.5	54.3	63.7	78.7	88.5	94.8	105	122	158	172	185	188
KPL135P	135	13.2	16.3	25.5	40.0	51.3	58.6	68.8	85.0	95.5	102	113	132	171	186	199	203
KPL145P	145	14.1	17.5	27.4	42.9	55.1	63.0	73.9	91.3	103	110	121	142	184	200	214	218
KPL155P	155	15.1	18.7	29.3	45.9	58.9	67.3	79.0	97.6	110	118	130	151	197	213	229	233
KPL165P	165	16.1	19.9	31.2	48.9	62.7	71.6	84.1	104	117	125	138	161	209	227	244	248
KPL177P	177	17.2	21.4	33.5	52.4	67.3	76.9	90.2	111	125	134	148	173	224	244	261	266
KPL191P	191	18.6	23.0	36.1	56.6	72.6	82.9	97.3	120	135	145	160	187	242	263	282	287
KPL205P	205	20.0	24.7	38.8	60.7	77.9	89.0	104	129	145	156	172	200	260	282	303	308
KPL216P	216	21.0	26.1	40.8	64.0	82.1	93.8	110	136	153	164	181	211	274	297	319	324
KPL230P	230	22.4	27.7	43.5	68.1	87.4	99.9	117	145	163	175	193	225	292	317	340	345
KPL240P	240	23.4	29.0	45.4	71.1	91.2	104	122	151	170	182	201	234	304	330	354	360
KPL256P	256	24.9	30.9	48.4	75.8	97.3	111	130	161	181	194	214	250	325	352	378	384
KPL265P	265	25.8	32.0	50.1	78.5	101	115	135	167	188	201	222	259	336	365	391	398
KPL282P	282	27.5	34.0	53.3	83.5	107	122	144	178	200	214	236	275	358	388	416	423
KPL290P	290	28.3	35.0	54.8	85.9	110	126	148	183	205	220	243	283	368	399	428	435
KPL310P	310	30.2	37.4	58.6	91.8	118	135	158	195	219	235	260	303	393	427	458	465
KPL335P	335	32.6	40.4	63.3	99.2	127	145	171	211	237	254	281	327	425	461	495	503
KPL365P	365	35.6	44.0	69.0	108	139	158	186	230	258	277	306	357	463	503	539	548
KPL390P	390	38.0	47.1	73.7	115	148	169	199	246	276	296	327	381	494	537	576	585
KPL400P	400	39.0	48.3	75.6	118	152	174	204	252	283	303	335	391	507	551	591	600
KPL425P	425	41.4	51.3	80.3	126	162	185	217	268	301	322	356	415	539	585	628	638
KPL445P	445	43.4	53.7	84.1	132	169	193	227	280	315	338	373	435	564	613	657	668
KPL457P	457	44.5	55.1	86.4	135	174	198	233	288	323	347	383	446	579	629	675	686
KPL485P	485	47.2	58.5	91.7	144	184	211	247	305	343	368	406	474	615	668	716	728
KPL500P	500	48.7	60.3	94.5	148	190	217	255	315	354	379	419	488	634	688	738	750
KPL515P	515	50.2	62.1	97.4	153	196	224	262	324	364	391	431	503	653	709	761	773
KPL540P	540	52.6	65.1	102	160	205	234	275	340	382	410	452	527	685	743	797	810
KPL575P	575	56.0	69.4	109	170	219	250	293	362	407	436	482	562	729	792	849	863
KPL595P	595	58.0	71.8	112	176	226	258	303	375	421	451	498	581	754	819	879	893
KPL635P	635	61.9	76.6	120	188	241	276	324	400	449	482	532	620	805	874	938	953
KPL670P	670	65.3	80.8	127	198	255	291	341	422	474	508	561	654	849	922	989	1005
KPL685P	685	66.7	82.6	129	203	260	297	349	431	485	520	574	669	868	943	1012	1028
KPL730P	730	71.1	88.1	138	216	277	317	372	460	517	554	611	713	925	1005	1078	1095
KPL775P	775	75.5	93.5	147	230	295	337	395	488	549	588	649	757	983	1067	1145	1163
KPL800P	800	77.9	96.5	151	237	304	347	408	504	566	607	670	781	1014	1101	1181	1200
KPL850P	850	82.8	103	161	252	323	369	433	535	602	645	712	830	1078	1170	1255	1275
KPL895P	895	87.2	108	169	265	340	389	456	564	633	679	749	874	1135	1232	1322	1343
KPL915P	915	89.1	110	173	271	348	397	466	576	648	694	766	894	1160	1260	1351	1373
KPL970P	970	94.5	117	183	287	369	421	494	611	687	736	812	947	1230	1335	1432	1455
KPL1030P	1030	100	124	195	305	391	447	525	649	729	781	863	1006	1306	1418	1521	1545
KPL1060P	1060	103	128	200	314	403	460	540	667	750	804	888	1035	1344	1459	1565	1590
KPL1120P	1120	109	135	212	332	426	486	571	705	793	850	938	1094	1420	1542	1654	1680
KPL1145P	1145	112	138	216	339	435	497	584	721	810	869	959	1118	1452	1576	1691	1718
KPL1220P	1220	119	147	231	361	464	530	622	768	863	926	1022	1192	1547	1680	1802	1830
KPL1285P	1285	125	155	243	381	488	558	655	809	909	975	1076	1255	1629	1769	1898	1928
KPL1350P	1350	132	163	255	400	513	586	688	850	955	1024	1131	1319	1711	1859	1994	2025
KPL1370P	1370	133	165	259	406	521	595	698	863	970	1039	1147	1338	1737	1886	2023	2055
KPL1460P	1460	142	176	276	432	555	634	744	919	1033	1108	1223	1426	1851	2010	2156	2190
KPL1550P	1550	151	187	293	459	589	673	790	976	1097	1176	1298	1514	1965	2134	2289	2325



# M Range

Cell Type	C <sub>5</sub> Ah	Cell Dimension			Approx Cell Wt (KG)	Electrolyte Volume (Litres)	Terminals
		L (mm)	W (mm)	H (mm)			
KPM10P	10				1.5	0.7	
KPM16P	16	46	87	272	1.7	0.6	M10
KPM20P	20				1.8	0.5	
KPM25P	25				2.8	1.2	
KPM32P	32	86	87	272	3	1.1	M10
KPM39P	39				3.1	1.1	
KPM45P	45				3.3	1	
KPM55P	55				4.6	1.7	
KPM62P	62	58	139	401	4.9	1.6	M20
KPM74P	74				5.3	1.5	
KPM80P	80				5.5	1.4	
KPM90P	90				6.6	1.9	
KPM95P	95	75	139	401	6.8	1.8	M20
KPM105P	105				7	1.7	
KPM112P	112				7.2	1.6	
KPM128P	128				9.6	3.7	
KPM137P	137				9.8	3.6	
KPM150P	150				10	3.5	
KPM158P	158	103	165	401	10.2	3.4	M20
KPM167P	167				10.4	3.3	
KPM180P	180				10.6	3.2	
KPM188P	188				10.8	3.1	
KPM200P	200				11	3	
KPM220P	220				14.1	4.2	
KPM240P	240	128	165	401	14.5	4	2XM20
KPM260P	260				14.9	3.8	
KPM280P	280				17	5	
KPM300P	300	156	165	401	17.4	4.8	2XM20
KPM323P	323				17.8	4.6	
KPM350P	350				21.3	6.2	
KPM376P	376				21.8	6.1	
KPM400P	400	176	195	405	22.3	6	2XM10
KPM425P	425				22.8	5.9	
KPM455P	455				23.3	5.8	
KPM490P	490				31.4	9.6	
KPM520P	520				32	9.4	
KPM565P	565	261	195	405	32.8	9.2	3XM10
KPM600P	600				33.5	9	
KPM635P	635				34.2	8.9	
KPM680P	680				35	8.7	
KPM700P	700				42.6	12.5	
KPM750P	750				43.7	12.3	
KPM800P	800	345	195	405	44.6	12	4XM10
KPM850P	850				45.6	11.8	
KPM900P	900				46.6	11.6	
KPM945P	945				54.6	15.3	
KPM1000P	1000	430	195	405	55.8	15	5XM10
KPM1060P	1060				57	14.8	
KPM1130P	1130				58.3	14.5	
KPM1200P	1200				67	18	
KPM1285P	1285	515	195	405	68.4	17.8	6XM10
KPM1365P	1365				70	17.4	

# AMCO Soft Ni-Cd batteries Physical and performance data



# M Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.00 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10P	10	2.00	3.26	4.77	6.19	8.59	12.9	15.1	16.6	19.0	23.0	32.1	35.9	42.9	45.3
KPM16P	16	3.20	5.22	7.63	9.90	13.7	20.6	24.1	26.6	30.5	36.8	51.4	57.4	68.6	72.4
KPM20P	20	4.00	6.52	9.54	12.4	17.2	25.7	30.1	33.3	38.1	46.0	64.2	71.8	85.8	90.5
KPM25P	25	5.00	8.15	11.9	15.5	21.5	32.2	37.7	41.6	47.6	57.5	80.3	89.8	107	113
KPM32P	32	6.40	10.4	15.3	19.8	27.5	41.2	48.2	53.2	60.9	73.6	103	115	137	145
KPM39P	39	7.80	12.7	18.6	24.1	33.5	50.2	58.7	64.9	74.3	89.7	125	140	167	177
KPM45P	45	9.00	14.7	21.5	27.9	38.7	57.9	67.8	74.9	85.7	103	144	162	193	204
KPM55P	55	11.0	17.9	26.2	34.0	47.3	70.8	82.8	91.5	105	126	177	197	236	249
KPM62P	62	12.4	20.2	29.6	38.4	53.3	79.8	93.4	103	118	143	199	223	266	281
KPM74P	74	14.8	24.1	35.3	45.8	63.6	95.3	111	123	141	170	238	266	317	335
KPM80P	80	16.0	26.1	38.2	49.5	68.7	103	120	133	152	184	257	287	343	362
KPM90P	90	18.0	29.3	42.9	55.7	77.3	116	136	150	171	207	289	323	386	407
KPM95P	95	19.0	31.0	45.3	58.8	81.6	122	143	158	181	218	305	341	407	430
KPM105P	105	21.0	34.2	50.1	65.0	90.2	135	158	175	200	241	337	377	450	475
KPM112P	112	22.4	36.5	53.4	69.3	96.2	144	169	186	213	258	360	402	480	507
KPM128P	128	25.6	41.7	61.0	79.2	110	165	193	213	244	294	411	460	549	579
KPM137P	137	27.4	44.7	65.3	84.8	118	176	206	228	261	315	440	492	588	620
KPM150P	150	30.0	48.9	71.5	92.9	129	193	226	250	286	345	482	539	643	679
KPM158P	158	31.6	51.5	75.4	97.8	136	203	238	263	301	363	507	567	678	715
KPM167P	167	33.4	54.4	79.6	103	144	215	252	278	318	384	536	600	716	756
KPM180P	180	36.0	58.7	85.8	111	155	232	271	299	343	414	578	646	772	815
KPM188P	188	37.6	61.3	89.7	116	162	242	283	313	358	432	604	675	806	851
KPM200P	200	40.0	65.2	95.4	124	172	257	301	333	381	460	642	718	858	905
KPM220P	220	44.0	71.7	105	136	189	283	331	366	419	506	706	790	944	996
KPM240P	240	48.0	78.2	114	149	206	309	361	399	457	552	770	862	1029	1086
KPM260P	260	52.0	84.8	124	161	223	335	392	433	495	598	835	934	1115	1177
KPM280P	280	56.0	91.3	134	173	241	360	422	466	533	644	899	1005	1201	1267
KPM300P	300	60.0	97.8	143	186	258	386	452	499	571	690	963	1077	1287	1358
KPM323P	323	64.6	105	154	200	278	416	487	537	615	743	1037	1160	1385	1462
KPM350P	350	70.0	114	167	217	301	451	527	582	666	805	1124	1257	1501	1584
KPM376P	376	75.2	123	179	233	323	484	566	626	716	865	1207	1350	1613	1702
KPM400P	400	80.0	130	191	248	344	515	602	665	762	920	1284	1436	1716	1810
KPM425P	425	85.0	139	203	263	365	547	640	707	809	977	1364	1526	1823	1924
KPM455P	455	91.0	148	217	282	391	586	685	757	866	1046	1461	1634	1952	2059
KPM490P	490	98.0	160	234	303	421	631	738	815	933	1127	1573	1759	2102	2218
KPM520P	520	104	170	248	322	447	669	783	865	990	1196	1669	1867	2230	2354
KPM565P	565	113	184	269	350	486	727	851	940	1076	1299	1814	2029	2423	2557
KPM600P	600	120	196	286	371	516	772	904	998	1142	1380	1926	2154	2574	2716
KPM635P	635	127	207	303	393	546	817	956	1056	1209	1460	2039	2280	2724	2874
KPM680P	680	136	222	324	421	584	875	1024	1131	1295	1564	2183	2442	2917	3078
KPM700P	700	140	228	334	433	602	901	1054	1165	1333	1610	2247	2513	3003	3168
KPM750P	750	150	245	358	464	645	965	1130	1248	1428	1725	2408	2693	3217	3395
KPM800P	800	160	261	382	495	687	1030	1205	1331	1523	1840	2568	2872	3432	3621
KPM850P	850	170	277	405	526	730	1094	1280	1414	1618	1955	2729	3052	3646	3847
KPM900P	900	180	293	429	557	773	1158	1356	1497	1714	2070	2889	3231	3860	4073
KPM945P	945	189	308	451	585	812	1216	1423	1572	1799	2173	3034	3393	4053	4277
KPM1000P	1000	200	326	477	619	859	1287	1506	1664	1904	2300	3210	3590	4289	4526
KPM1060P	1060	212	346	506	656	911	1364	1597	1764	2018	2438	3403	3806	4547	4798
KPM1130P	1130	226	368	539	700	971	1455	1702	1880	2152	2599	3628	4057	4847	5114
KPM1200P	1200	240	391	572	743	1031	1545	1807	1996	2285	2760	3852	4309	5147	5431
KPM1285P	1285	257	419	613	795	1104	1654	1936	2138	2447	2955	4125	4614	5512	5816
KPM1365P	1365	273	445	651	845	1173	1757	2056	2271	2599	3139	4382	4901	5855	6178

# M Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.05 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10P	10	1.98	3.22	4.67	5.99	8.19	11.5	13.4	14.8	16.7	20.1	27.9	31.4	37.0	39.9
KPM16P	16	3.16	5.15	7.47	9.59	13.1	18.4	21.4	23.7	26.8	32.2	44.7	50.2	59.2	63.9
KPM20P	20	3.96	6.43	9.33	12.0	16.4	22.9	26.7	29.6	33.5	40.3	55.8	62.8	74.0	79.8
KPM25P	25	4.95	8.04	11.7	15.0	20.5	28.7	33.4	37.0	41.9	50.4	69.8	78.4	92.5	99.8
KPM32P	32	6.33	10.3	14.9	19.2	26.2	36.7	42.8	47.3	53.6	64.5	89.3	100	118	128
KPM39P	39	7.71	12.5	18.2	23.4	31.9	44.7	52.1	57.7	65.3	78.6	109	122	144	156
KPM45P	45	8.90	14.5	21.0	27.0	36.9	51.6	60.1	66.5	75.4	90.7	126	141	166	180
KPM55P	55	10.9	17.7	25.7	33.0	45.0	63.1	73.5	81.3	92.1	111	154	173	203	220
KPM62P	62	12.3	19.9	28.9	37.2	50.8	71.1	82.8	91.7	104	125	173	195	229	247
KPM74P	74	14.6	23.8	34.5	44.3	60.6	84.9	98.9	109	124	149	207	232	274	295
KPM80P	80	15.8	25.7	37.3	47.9	65.5	91.8	107	118	134	161	223	251	296	319
KPM90P	90	17.8	28.9	42.0	53.9	73.7	103	120	133	151	181	251	282	333	359
KPM95P	95	18.8	30.6	44.3	56.9	77.8	109	127	140	159	191	265	298	351	379
KPM105P	105	20.8	33.8	49.0	62.9	86.0	120	140	155	176	212	293	329	388	419
KPM112P	112	22.2	36.0	52.3	67.1	91.7	128	150	166	188	226	313	351	414	447
KPM128P	128	25.3	41.2	59.7	76.7	105	147	171	189	214	258	357	402	473	511
KPM137P	137	27.1	44.1	63.9	82.1	112	157	183	203	229	276	382	430	507	547
KPM150P	150	29.7	48.2	70.0	89.9	123	172	200	222	251	302	419	471	555	599
KPM158P	158	31.3	50.8	73.7	94.7	129	181	211	234	265	318	441	496	584	631
KPM167P	167	33.0	53.7	77.9	100	137	192	223	247	280	336	466	524	618	667
KPM180P	180	35.6	57.9	84.0	108	147	207	241	266	301	363	502	565	666	718
KPM188P	188	37.2	60.5	87.7	113	154	216	251	278	315	379	525	590	695	750
KPM200P	200	39.6	64.3	93.3	120	164	229	267	296	335	403	558	628	740	798
KPM220P	220	43.5	70.8	103	132	180	252	294	325	368	443	614	690	814	878
KPM240P	240	47.5	77.2	112	144	197	275	321	355	402	484	670	753	888	958
KPM260P	260	51.4	83.6	121	156	213	298	347	384	435	524	726	816	962	1038
KPM280P	280	55.4	90.1	131	168	229	321	374	414	469	564	782	879	1036	1118
KPM300P	300	59.3	96.5	140	180	246	344	401	444	502	604	837	941	1110	1197
KPM323P	323	63.9	104	151	194	265	371	432	478	541	651	902	1013	1195	1289
KPM350P	350	69.2	113	163	210	287	402	468	517	586	705	977	1098	1295	1397
KPM376P	376	74.4	121	175	225	308	431	502	556	630	758	1049	1180	1391	1501
KPM400P	400	79.1	129	187	240	328	459	535	591	670	806	1116	1255	1480	1596
KPM425P	425	84.1	137	198	255	348	488	568	628	712	856	1186	1334	1572	1696
KPM455P	455	90.0	146	212	273	373	522	608	673	762	917	1270	1428	1683	1816
KPM490P	490	96.9	158	229	294	401	562	655	724	821	987	1368	1537	1812	1956
KPM520P	520	103	167	243	312	426	597	695	769	871	1048	1451	1632	1923	2075
KPM565P	565	112	182	264	339	463	648	755	835	946	1138	1577	1773	2090	2255
KPM600P	600	119	193	280	360	491	688	802	887	1005	1209	1675	1883	2219	2395
KPM635P	635	126	204	296	381	520	729	849	939	1063	1279	1772	1992	2349	2534
KPM680P	680	135	219	317	408	557	780	909	1005	1139	1370	1898	2134	2515	2714
KPM700P	700	138	225	327	419	573	803	935	1035	1172	1410	1954	2196	2589	2794
KPM750P	750	148	241	350	449	614	860	1002	1109	1256	1511	2093	2353	2774	2993
KPM800P	800	158	257	373	479	655	918	1069	1183	1340	1612	2233	2510	2959	3193
KPM850P	850	168	273	397	509	696	975	1136	1257	1424	1712	2373	2667	3144	3393
KPM900P	900	178	289	420	539	737	1033	1203	1331	1507	1813	2512	2824	3329	3592
KPM945P	945	187	304	441	566	774	1084	1263	1397	1583	1904	2638	2965	3495	3772
KPM1000P	1000	198	322	467	599	819	1147	1336	1478	1675	2015	2791	3138	3699	3991
KPM1060P	1060	210	341	495	635	868	1216	1416	1567	1775	2136	2959	3326	3921	4231
KPM1130P	1130	224	363	527	677	926	1296	1510	1671	1892	2277	3154	3546	4180	4510
KPM1200P	1200	237	386	560	719	983	1377	1604	1774	2010	2418	3349	3765	4439	4789
KPM1285P	1285	254	413	600	770	1052	1474	1717	1900	2152	2589	3587	4032	4753	5129
KPM1365P	1365	270	439	637	818	1118	1566	1824	2018	2286	2750	3810	4283	5049	5448

# M Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.10 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10P	10	1.94	3.11	4.46	5.63	7.27	9.79	11.5	12.6	14.3	17.2	24.0	26.7	31.5	33.4
KPM16P	16	3.11	4.98	7.14	9.01	11.6	15.7	18.4	20.1	23.0	27.5	38.3	42.7	50.4	53.5
KPM20P	20	3.88	6.23	8.92	11.3	14.5	19.6	22.9	25.2	28.7	34.3	47.9	53.4	63.0	66.8
KPM25P	25	4.85	7.78	11.2	14.1	18.2	24.5	28.7	31.5	35.9	42.9	59.9	66.8	78.8	83.5
KPM32P	32	6.21	9.96	14.3	18.0	23.3	31.3	36.7	40.3	45.9	55.0	76.7	85.5	101	107
KPM39P	39	7.57	12.1	17.4	22.0	28.3	38.2	44.7	49.1	55.9	67.0	93.5	104	123	130
KPM45P	45	8.74	14.0	20.1	25.4	32.7	44.0	51.6	56.7	64.5	77.3	108	120	142	150
KPM55P	55	10.7	17.1	24.5	31.0	40.0	53.8	63.1	69.3	78.9	94.4	132	147	173	184
KPM62P	62	12.0	19.3	27.7	34.9	45.1	60.7	71.1	78.1	88.9	106	149	166	195	207
KPM74P	74	14.4	23.0	33.0	41.7	53.8	72.4	84.9	93.2	106	127	177	198	233	247
KPM80P	80	15.5	24.9	35.7	45.1	58.1	78.3	91.8	101	115	137	192	214	252	267
KPM90P	90	17.5	28.0	40.2	50.7	65.4	88.1	103	113	129	155	216	240	284	301
KPM95P	95	18.4	29.6	42.4	53.5	69.0	93.0	109	120	136	163	228	254	299	317
KPM105P	105	20.4	32.7	46.8	59.2	76.3	103	120	132	151	180	252	280	331	351
KPM112P	112	21.7	34.9	50.0	63.1	81.4	110	128	141	161	192	268	299	353	374
KPM128P	128	24.8	39.9	57.1	72.1	93.0	125	147	161	184	220	307	342	403	428
KPM137P	137	26.6	42.7	61.1	77.2	99.6	134	157	173	197	235	328	366	432	458
KPM150P	150	29.1	46.7	66.9	84.5	109	147	172	189	215	258	359	401	473	501
KPM158P	158	30.7	49.2	70.5	89.0	115	155	181	199	227	271	379	422	498	528
KPM167P	167	32.4	52.0	74.5	94.1	121	163	192	210	240	287	400	446	526	558
KPM180P	180	34.9	56.0	80.3	101	131	176	207	227	258	309	431	481	567	601
KPM188P	188	36.5	58.5	83.9	106	137	184	216	237	270	323	451	502	592	628
KPM200P	200	38.8	62.3	89.2	113	145	196	229	252	287	343	479	534	630	668
KPM220P	220	42.7	68.5	98.2	124	160	215	252	277	316	378	527	588	693	735
KPM240P	240	46.6	74.7	107	135	174	235	275	302	344	412	575	641	756	802
KPM260P	260	50.5	81.0	116	146	189	254	298	327	373	446	623	694	819	869
KPM280P	280	54.4	87.2	125	158	203	274	321	353	402	481	671	748	882	935
KPM300P	300	58.2	93.4	134	169	218	294	344	378	430	515	719	801	945	1002
KPM323P	323	62.7	101	144	182	235	316	371	407	463	555	774	863	1018	1079
KPM350P	350	67.9	109	156	197	254	343	402	441	502	601	839	935	1103	1169
KPM376P	376	73.0	117	168	212	273	368	431	474	539	646	901	1004	1185	1256
KPM400P	400	77.7	125	178	225	291	392	459	504	574	687	959	1068	1260	1336
KPM425P	425	82.5	132	190	239	309	416	488	535	610	730	1018	1135	1339	1420
KPM455P	455	88.3	142	203	256	331	445	522	573	653	781	1090	1215	1434	1520
KPM490P	490	95.1	153	219	276	356	480	562	617	703	841	1174	1309	1544	1637
KPM520P	520	101	162	232	293	378	509	597	655	746	893	1246	1389	1638	1737
KPM565P	565	110	176	252	318	411	553	648	712	810	970	1354	1509	1780	1887
KPM600P	600	116	187	268	338	436	587	688	756	861	1030	1438	1603	1891	2004
KPM635P	635	123	198	283	358	461	622	729	800	911	1090	1522	1696	2001	2121
KPM680P	680	132	212	303	383	494	666	780	856	975	1168	1630	1816	2143	2272
KPM700P	700	136	218	312	394	509	685	803	882	1004	1202	1677	1870	2206	2338
KPM750P	750	146	234	335	423	545	734	860	945	1076	1288	1797	2003	2363	2505
KPM800P	800	155	249	357	451	581	783	918	1007	1148	1374	1917	2137	2521	2673
KPM850P	850	165	265	379	479	618	832	975	1070	1219	1460	2037	2270	2678	2840
KPM900P	900	175	280	402	507	654	881	1033	1133	1291	1545	2157	2404	2836	3007
KPM945P	945	183	294	422	532	687	925	1084	1190	1356	1623	2265	2524	2978	3157
KPM1000P	1000	194	311	446	563	727	979	1147	1259	1434	1717	2396	2671	3151	3341
KPM1060P	1060	206	330	473	597	770	1037	1216	1335	1520	1820	2540	2831	3340	3541
KPM1130P	1130	219	352	504	637	821	1106	1296	1423	1621	1940	2708	3018	3561	3775
KPM1200P	1200	233	374	535	676	872	1175	1377	1511	1721	2061	2876	3205	3781	4009
KPM1285P	1285	249	400	573	724	934	1258	1474	1618	1843	2207	3079	3432	4049	4293
KPM1365P	1365	265	425	609	769	992	1336	1566	1719	1958	2344	3271	3646	4301	4560



# M Range

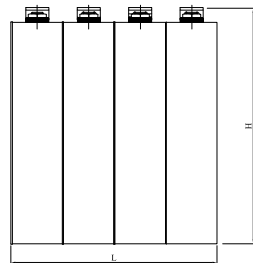
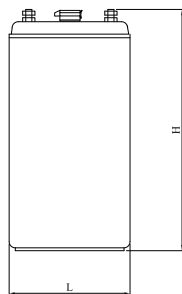
Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.14 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPM10P	10	1.84	2.94	4.12	5.04	6.16	8.32	9.68	10.8	12.3	14.6	20.5	22.8	26.4	27.2
KPM16P	16	2.94	4.70	6.59	8.06	9.86	13.3	15.5	17.2	19.6	23.4	32.9	36.5	42.2	43.5
KPM20P	20	3.68	5.88	8.23	10.1	12.3	16.6	19.4	21.5	24.5	29.3	41.1	45.7	52.7	54.4
KPM25P	25	4.60	7.34	10.3	12.6	15.4	20.8	24.2	26.9	30.7	36.6	51.4	57.1	65.9	68.0
KPM32P	32	5.88	9.40	13.2	16.1	19.7	26.6	31.0	34.5	39.2	46.8	65.7	73.0	84.4	87.0
KPM39P	39	7.17	11.5	16.1	19.7	24.0	32.4	37.8	42.0	47.8	57.1	80.1	89.0	103	106
KPM45P	45	8.27	13.2	18.5	22.7	27.7	37.4	43.6	48.5	55.2	65.9	92.4	103	119	122
KPM55P	55	10.1	16.2	22.6	27.7	33.9	45.7	53.3	59.2	67.5	80.5	113	126	145	150
KPM62P	62	11.4	18.2	25.5	31.2	38.2	51.6	60.0	66.8	76.0	90.8	127	142	164	169
KPM74P	74	13.6	21.7	30.5	37.3	45.6	61.5	71.7	79.7	90.8	108	152	169	195	201
KPM80P	80	14.7	23.5	32.9	40.3	49.3	66.5	77.5	86.2	98.1	117	164	183	211	218
KPM90P	90	16.5	26.4	37.1	45.4	55.5	74.8	87.2	96.9	110	132	185	205	237	245
KPM95P	95	17.5	27.9	39.1	47.9	58.5	79.0	92.0	102	117	139	195	217	251	258
KPM105P	105	19.3	30.8	43.2	52.9	64.7	87.3	102	113	129	154	216	240	277	286
KPM112P	112	20.6	32.9	46.1	56.5	69.0	93.1	108	121	137	164	230	256	295	305
KPM128P	128	23.5	37.6	52.7	64.5	78.9	106	124	138	157	187	263	292	338	348
KPM137P	137	25.2	40.2	56.4	69.1	84.4	114	133	148	168	201	281	313	361	373
KPM150P	150	27.6	44.1	61.8	75.6	92.4	125	145	162	184	220	308	342	396	408
KPM158P	158	29.1	46.4	65.1	79.6	97.3	131	153	170	194	231	325	361	417	430
KPM167P	167	30.7	49.1	68.8	84.2	103	139	162	180	205	244	343	381	440	454
KPM180P	180	33.1	52.9	74.1	90.7	111	150	174	194	221	263	370	411	475	490
KPM188P	188	34.6	55.2	77.4	94.8	116	156	182	202	231	275	386	429	496	511
KPM200P	200	36.8	58.8	82.3	101	123	166	194	215	245	293	411	457	527	544
KPM220P	220	40.5	64.6	90.6	111	136	183	213	237	270	322	452	502	580	598
KPM240P	240	44.1	70.5	98.8	121	148	200	232	258	294	351	493	548	633	653
KPM260P	260	47.8	76.4	107	131	160	216	252	280	319	381	534	594	686	707
KPM280P	280	51.5	82.3	115	141	173	233	271	302	343	410	575	639	738	762
KPM300P	300	55.2	88.1	124	151	185	249	291	323	368	439	616	685	791	816
KPM323P	323	59.4	94.9	133	163	199	269	313	348	396	473	664	737	852	879
KPM350P	350	64.4	103	144	176	216	291	339	377	429	512	719	799	923	952
KPM376P	376	69.1	110	155	190	232	313	364	405	461	550	772	858	992	1023
KPM400P	400	73.6	118	165	202	246	333	387	431	491	585	822	913	1055	1088
KPM425P	425	78.2	125	175	214	262	353	412	458	521	622	873	970	1121	1156
KPM455P	455	83.7	134	187	229	280	378	441	490	558	666	935	1039	1200	1238
KPM490P	490	90.1	144	202	247	302	407	475	528	601	717	1007	1119	1292	1333
KPM520P	520	95.6	153	214	262	320	432	504	560	638	761	1068	1187	1371	1414
KPM565P	565	104	166	233	285	348	470	547	608	693	827	1161	1290	1490	1537
KPM600P	600	110	176	247	302	370	499	581	646	736	878	1233	1370	1582	1632
KPM635P	635	117	187	261	320	391	528	615	684	779	929	1304	1450	1675	1727
KPM680P	680	125	200	280	343	419	565	659	732	834	995	1397	1552	1793	1850
KPM700P	700	129	206	288	353	431	582	678	754	858	1025	1438	1598	1846	1904
KPM750P	750	138	220	309	378	462	624	726	808	920	1098	1541	1712	1978	2040
KPM800P	800	147	235	329	403	493	665	775	862	981	1171	1643	1826	2110	2176
KPM850P	850	156	250	350	428	524	707	823	915	1042	1244	1746	1940	2242	2312
KPM900P	900	165	264	371	454	555	748	872	969	1104	1317	1849	2055	2374	2448
KPM945P	945	174	278	389	476	582	786	915	1018	1159	1383	1941	2157	2492	2571
KPM1000P	1000	184	294	412	504	616	832	968	1077	1226	1464	2054	2283	2637	2720
KPM1060P	1060	195	311	436	534	653	881	1027	1142	1300	1552	2177	2420	2796	2883
KPM1130P	1130	208	332	465	570	696	940	1094	1217	1386	1654	2321	2580	2980	3074
KPM1200P	1200	221	353	494	605	739	998	1162	1292	1472	1756	2465	2739	3165	3264
KPM1285P	1285	236	377	529	648	792	1068	1245	1384	1576	1881	2640	2933	3389	3495
KPM1365P	1365	251	401	562	688	841	1135	1322	1470	1674	1998	2804	3116	3600	3713

# AMCO Soft Ni-Cd batteries

## Physical and performance data



# H Range

Cell Type	C <sub>5</sub> Ah	Cell Dimension			Approx Cell Wt (KG)	Electrolyte Volume (Litres)	Terminals
		L (mm)	W (mm)	H (mm)			
KPH 8 P	8				1.4	0.7	
KPH 11 P	11				1.6	0.6	
KPH 15 P	15	47	87	272	1.8	0.6	M10
KPH 19 P	19				2	0.5	
KPH 22 P	22				2.1	0.5	
KPH 26 P	26				3.1	1.1	
KPH 30 P	30				3.2	1.0	
KPH 35 P	35				3.3	1.0	
KPH 38 P	38	86	87	272	3.5	0.9	M10
KPH 42 P	42				3.6	0.9	
KPH 46 P	46				3.8	0.8	
KPH 50 P	50				5	1.2	
KPH 58 P	58	58	139	361	5.3	1.1	M20
KPH 65 P	65				6.6	1.8	
KPH 75 P	75	75	139	361	6.8	1.6	M20
KPH 85 P	85				7	1.4	
KPH 94 P	94				8.8	2.6	
KPH 100 P	100				9	2.5	
KPH 111 P	111	105	139	361	9.3	2.3	M20
KPH 120 P	120				9.5	2.1	
KPH 130 P	130				9.7	2	
KPH 140 P	140	103	165	361	12.2	2.9	M20
KPH 148 P	148				12.4	2.8	
KPH 160 P	160				13.7	3.5	
KPH 170 P	170	128	165	361	14.1	3.2	2XM20
KPH 180 P	180				14.4	3.1	
KPH 190 P	190				14.7	3	
KPH 200 P	200				16.4	3.9	
KPH 213 P	213				16.7	3.8	
KPH 225 P	225	156	165	361	17.1	3.7	2XM20
KPH 235 P	235				17.5	3.6	
KPH 245 P	245				17.8	3.5	
KPH 265 P	265				22.4	6.6	
KPH 275 P	275				22.8	6.4	
KPH 290 P	290	176	195	405	23.2	6.4	2XM10
KPH 300 P	300				23.6	6.2	
KPH 315 P	315				24	6.2	
KPH 330 P	330				24.3	6	
KPH 353 P	353				32.4	10.2	
KPH 375 P	375				33	9.9	
KPH 390 P	390				33.6	9.9	
KPH 410 P	410	261	195	405	34.2	9.6	3XM10
KPH 430 P	430				34.8	9.6	
KPH 450 P	450				35.4	9.3	
KPH 471 P	471				36	9.3	
KPH 491 P	491				36.5	9	
KPH 520 P	520				44.8	13.2	
KPH 530 P	530				45.0	13.0	
KPH 540 P	540				45.6	12.8	
KPH 575 P	575				46.4	12.8	
KPH 590 P	590	345	195	405	46.7	12.6	4XM10
KPH 600 P	600				47.2	12.4	
KPH 615 P	615				47.5	12.4	
KPH 630 P	630				48.0	12.4	
KPH 640 P	640				48.2	12.2	
KPH 656 P	656				48.6	12.0	
KPH 670 P	670				56.6	16.2	
KPH 680 P	680				56.8	16.1	
KPH 691 P	691				57.0	16.0	
KPH 715 P	715				57.8	16.0	
KPH 725 P	725	430	195	405	58.0	16.0	5XM10
KPH 755 P	755				59.0	15.5	
KPH 800 P	800				60.0	15.5	
KPH 825 P	825				60.8	15.0	
KPH 840 P	840				61.3	14.9	
KPH 865 P	865				69.6	19.2	
KPH 885 P	885				70.1	19.1	
KPH 910 P	910				70.8	18.6	
KPH 927 P	927	515	195	405	71.3	18.6	6 XM10
KPH 950 P	950				72.0	18.6	
KPH 990 P	990				72.9	18.0	
KPH 1012 P	1012				73.5	18.0	

# H Range

Performance for fully charged cells. Available Amperes at + 20°C

**Final voltage: 0.65 V/cell**

Cell Type	C <sub>5</sub> Ah	Seconds					
		90	60	30	10	5	1
KPH 8 P	8	74.4	82.3	87.4	105	116	125
KPH 11 P	11	102	113	120	145	159	172
KPH 15 P	15	140	154	164	198	217	234
KPH 19 P	19	177	195	208	250	275	297
KPH 22 P	22	205	226	240	290	318	344
KPH 26 P	26	242	267	284	343	376	406
KPH 30 P	30	279	309	328	395	434	469
KPH 35 P	35	326	360	382	461	506	547
KPH 38 P	38	354	391	415	501	549	594
KPH 42 P	42	391	432	459	554	607	656
KPH 46 P	46	428	473	503	606	665	719
KPH 50 P	50	465	514	546	659	723	781
KPH 58 P	58	540	597	634	764	838	906
KPH 65 P	65	605	669	710	857	939	1016
KPH 75 P	75	698	771	820	988	1084	1172
KPH 85 P	85	791	874	929	1120	1228	1328
KPH 94 P	94	875	967	1027	1239	1358	1469
KPH 100 P	100	930	1028	1093	1318	1445	1563
KPH 111 P	111	1033	1142	1213	1463	1604	1734
KPH 120 P	120	1116	1234	1311	1582	1734	1875
KPH 130 P	130	1209	1337	1421	1713	1879	2031
KPH 140 P	140	1303	1440	1530	1845	2023	2188
KPH 148 P	148	1377	1522	1617	1951	2139	2313
KPH 160 P	160	1489	1646	1749	2109	2312	2500
KPH 170 P	170	1582	1748	1858	2240	2457	2656
KPH 180 P	180	1675	1851	1967	2372	2601	2813
KPH 190 P	190	1768	1954	2076	2504	2746	2969
KPH 200 P	200	1861	2057	2186	2636	2890	3125
KPH 213 P	213	1982	2191	2328	2807	3078	3328
KPH 225 P	225	2093	2314	2459	2965	3251	3516
KPH 235 P	235	2186	2417	2568	3097	3396	3672
KPH 245 P	245	2279	2520	2677	3229	3540	3828
KPH 265 P	265	2465	2725	2896	3492	3829	4141
KPH 275 P	275	2558	2828	3005	3624	3974	4297
KPH 290 P	290	2698	2983	3169	3822	4191	4531
KPH 300 P	300	2791	3085	3279	3954	4335	4688
KPH 315 P	315	2931	3240	3442	4151	4552	4922
KPH 330 P	330	3070	3394	3606	4349	4769	5156
KPH 353 P	353	3284	3630	3858	4652	5101	5516
KPH 375 P	375	3489	3857	4098	4942	5419	5859
KPH 390 P	390	3628	4011	4262	5140	5636	6094
KPH 410 P	410	3814	4217	4481	5403	5925	6406
KPH 430 P	430	4001	4422	4699	5667	6214	6719
KPH 450 P	450	4187	4628	4918	5931	6503	7031
KPH 471 P	471	4382	4844	5147	6207	6806	7359
KPH 491 P	491	4568	5050	5366	6471	7095	7672
KPH 520 P	520	4838	5348	5683	6853	7514	8125
KPH 530 P	530	4931	5451	5792	6985	7659	8281
KPH 540 P	540	5024	5554	5901	7117	7803	8438
KPH 575 P	575	5350	5914	6284	7578	8309	8984
KPH 590 P	590	5489	6068	6448	7776	8526	9219
KPH 600 P	600	5582	6171	6557	7908	8671	9375
KPH 615 P	615	5722	6325	6721	8105	8887	9609
KPH 630 P	630	5861	6479	6885	8303	9104	9844
KPH 640 P	640	5954	6582	6994	8435	9249	10000
KPH 656 P	656	6103	6747	7169	8646	9480	10250
KPH 670 P	670	6233	6891	7322	8830	9682	10469
KPH 680 P	680	6326	6994	7431	8962	9827	10625
KPH 691 P	691	6429	7107	7551	9107	9986	10797
KPH 715 P	715	6652	7354	7814	9423	10332	11172
KPH 725 P	725	6745	7456	7923	9555	10477	11328
KPH 755 P	755	7024	7765	8251	9950	10910	11797
KPH 800 P	800	7443	8228	8743	10543	11561	12500
KPH 825 P	825	7675	8485	9016	10873	11922	12891
KPH 840 P	840	7815	8639	9180	11071	12139	13125
KPH 865 P	865	8048	8896	9453	11400	12500	13516
KPH 885 P	885	8234	9102	9672	11664	12789	13828
KPH 910 P	910	8466	9359	9945	11993	13150	14219
KPH 927 P	927	8624	9534	10131	12217	13396	14484
KPH 950 P	950	8838	9770	10382	12520	13728	14844
KPH 990 P	990	9211	10182	10819	13047	14306	15469
KPH 1012 P	1012	9415	10408	11059	13337	14624	15813

**Final voltage: 0.85 V/cell**

Cell Type	C <sub>5</sub> Ah	Seconds					
		90	60	30	10	5	1
KPH 8 P	8	56.7	62.0	69.3	78.6	85.4	92.9
KPH 11 P	11	77.9	85.2	95.3	108	117	128
KPH 15 P	15	106	116	130	147	160	174
KPH 19 P	19	135	147	165	187	203	221
KPH 22 P	22	156	170	191	216	235	255
KPH 26 P	26	184	201	225	255	278	302
KPH 30 P	30	212	232	260	295	320	348
KPH 35 P	35	248	271	303	344	374	406
KPH 38 P	38	269	294	329	373	406	441
KPH 42 P	42	297	325	364	413	448	488
KPH 46 P	46	326	356	399	452	491	534
KPH 50 P	50	354	387	433	491	534	581
KPH 58 P	58	411	449	503	570	619	673
KPH 65 P	65	460	504	563	639	694	755
KPH 75 P	75	531	581	650	737	801	871
KPH 85 P	85	602	659	736	835	907	987
KPH 94 P	94	666	728	814	924	1004	1091
KPH 100 P	100	708	775	866	983	1068	1161
KPH 111 P	111	786	860	962	1091	1185	1289
KPH 120 P	120	850	930	1040	1179	1281	1393
KPH 130 P	130	921	1007	1126	1277	1388	1509
KPH 140 P	140	991	1085	1213	1376	1495	1626
KPH 148 P	148	1048	1147	1282	1454	1580	1718
KPH 160 P	160	1133	1240	1386	1572	1708	1858
KPH 170 P	170	1204	1317	1473	1670	1815	1974
KPH 180 P	180	1275	1395	1560	1769	1922	2090
KPH 190 P	190	1346	1472	1646	1867	2028	2206
KPH 200 P	200	1416	1550	1733	1965	2135	2322
KPH 213 P	213	1508	1650	1846	2093	2274	2473
KPH 225 P	225	1593	1743	1950	2211	2402	2613
KPH 235 P	235	1664	1821	2036	2309	2509	2729
KPH 245 P	245	1735	1898	2123	2407	2616	2845
KPH 265 P	265	1877	2053	2296	2604	2829	3077
KPH 275 P	275	1948	2131	2383	2702	2936	3193
KPH 290 P	290	2054	2247	2513	2850	3096	3367
KPH 300 P	300	2125	2325	2599	2948	3203	3483
KPH 315 P	315	2231	2441	2729	3095	3363	3658
KPH 330 P	330	2337	2557	2859	3243	3523	3832
KPH 353 P	353	2500	2735	3059	3469	3769	4099
KPH 375 P	375	2656	2906	3249	3685	4004	4354
KPH 390 P	390	2762	3022	3379	3832	4164	4528
KPH 410 P	410	2904	3177	3552	4029	4377	4761
KPH 430 P	430	3045	3332	3726	4225	4591	4993
KPH 450 P	450	3187	3487	3899	4422	4804	5225
KPH 471 P	471	3336	3650	4081	4628	5028	5469
KPH 491 P	491	3477	3805	4254	4825	5242	5701
KPH 520 P	520	3683	4029	4506	5110	5552	6038
KPH 530 P	530	3753	4107	4592	5208	5658	6154
KPH 540 P	540	3824	4184	4679	5306	5765	6270
KPH 575 P	575	4072	4456	4982	5650	6139	6677
KPH 590 P	590	4178	4572	5112	5797	6299	6851
KPH 600 P	600	4249	4649	5199	5896	6406	6967
KPH 615 P	615	4355	4766	5329	6043	6566	7141
KPH 630 P	630	4462	4882	5459	6190	6726	7315
KPH 640 P	640	4532	4959	5545	6289	6833	7431
KPH 656 P	656	4646	5083	5684	6446	7004	7617
KPH 670 P	670	4745	5192	5805	6583	7153	7780
KPH 680 P	680	4816	5269	5892	6682	7260	7896
KPH 691 P	691	4894	5354	5987	6790	7377	8023
KPH 715 P	715	5064	5540	6195	7026	7634	8302
KPH 725 P	725	5134	5618	6282	7124	7740	8418
KPH 755 P	755	5347	5850	6542	7419	8060	8767
KPH 800 P	800	5665	6199	6932	7861	8541	9289
KPH 825 P	825	5843	6393	7148	8107	8808	9579
KPH 840 P	840	5949	6509	7278	8254	8968	9754
KPH 865 P	865	6126	6703	7495	8500	9235	10044
KPH 885 P	885	6267	6858	7668	8696	9448	10276
KPH 910 P	910	6444	7051	7885	8942	9715	10566
KPH 927 P	927	6565	7183	8032	9109	9897	10764
KPH 950 P	950	6728	7361	8231	9335	10142	11031
KPH 990 P	990	7011	7671	8578	9728	10569	11495
KPH 1012 P	1012	7167	7842	8768	9944	10804	11751

# H Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.00 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPH 8 P	8	1.60	2.63	3.90	5.12	7.51	13.6	18.3	21.1	24.9	31.0	45.0	50.7	61.8	65.7
KPH 11 P	11	2.20	3.61	5.36	7.05	10.3	18.7	25.1	29.0	34.2	42.6	61.9	69.7	84.9	90.3
KPH 15 P	15	3.00	4.92	7.30	9.61	14.1	25.5	34.2	39.6	46.6	58.1	84.3	95.0	116	123
KPH 19 P	19	3.80	6.24	9.25	12.2	17.8	32.4	43.4	50.1	59.0	73.6	107	120	147	156
KPH 22 P	22	4.40	7.22	10.7	14.1	20.7	37.5	50.2	58.0	68.4	85.3	124	139	170	181
KPH 26 P	26	5.20	8.53	12.7	16.7	24.4	44.3	59.3	68.6	80.8	101	146	165	201	213
KPH 30 P	30	6.00	9.85	14.6	19.2	28.2	51.1	68.5	79.1	93.2	116	169	190	232	246
KPH 35 P	35	7.00	11.5	17.0	22.4	32.9	59.6	79.9	92.3	109	136	197	222	270	287
KPH 38 P	38	7.60	12.5	18.5	24.3	35.7	64.7	86.7	100	118	147	214	241	293	312
KPH 42 P	42	8.40	13.8	20.5	26.9	39.4	71.5	95.9	111	130	163	236	266	324	345
KPH 46 P	46	9.20	15.1	22.4	29.5	43.2	78.3	105	121	143	178	259	291	355	378
KPH 50 P	50	10.00	16.4	24.3	32.0	47.0	85.2	114	132	155	194	281	317	386	410
KPH 58 P	58	11.6	19.0	28.2	37.2	54.5	98.8	132	153	180	225	326	367	448	476
KPH 65 P	65	13.0	21.3	31.7	41.6	61.0	111	148	171	202	252	365	412	502	534
KPH 75 P	75	15.0	24.6	36.5	48.0	70.4	128	171	198	233	291	422	475	579	616
KPH 85 P	85	17.0	27.9	41.4	54.4	79.8	145	194	224	264	329	478	538	656	698
KPH 94 P	94	18.8	30.9	45.8	60.2	88.3	160	215	248	292	364	529	595	726	772
KPH 100 P	100	20.0	32.8	48.7	64.1	93.9	170	228	264	311	388	562	633	772	821
KPH 111 P	111	22.2	36.4	54.1	71.1	104	189	253	293	345	430	624	703	857	911
KPH 120 P	120	24.0	39.4	58.4	76.9	113	204	274	316	373	465	675	760	926	985
KPH 130 P	130	26.0	42.7	63.3	83.3	122	221	297	343	404	504	731	823	1004	1067
KPH 140 P	140	28.0	46.0	68.2	89.7	131	238	320	369	435	543	787	887	1081	1149
KPH 148 P	148	29.6	48.6	72.1	94.8	139	252	338	390	460	574	832	938	1143	1215
KPH 160 P	160	32.0	52.5	77.9	102	150	273	365	422	497	620	900	1014	1235	1313
KPH 170 P	170	34.0	55.8	82.8	109	160	290	388	448	528	659	956	1077	1312	1395
KPH 180 P	180	36.0	59.1	87.7	115	169	307	411	475	559	698	1012	1140	1390	1478
KPH 190 P	190	38.0	62.4	92.5	122	178	324	434	501	590	736	1068	1204	1467	1560
KPH 200 P	200	40.0	65.7	97.4	128	188	341	457	527	621	775	1125	1267	1544	1642
KPH 213 P	213	42.6	69.9	104	136	200	363	486	562	662	826	1198	1349	1644	1748
KPH 225 P	225	45.0	73.9	110	144	211	383	514	593	699	872	1265	1425	1737	1847
KPH 235 P	235	47.0	77.1	114	151	221	400	536	620	730	911	1321	1489	1814	1929
KPH 245 P	245	49.0	80.4	119	157	230	417	559	646	761	950	1378	1552	1891	2011
KPH 265 P	265	53.0	87.0	129	170	249	451	605	699	823	1027	1490	1679	2046	2175
KPH 275 P	275	55.0	90.3	134	176	258	468	628	725	854	1066	1546	1742	2123	2257
KPH 290 P	290	58.0	95.2	141	186	272	494	662	765	901	1124	1631	1837	2239	2380
KPH 300 P	300	60.0	98.5	146	192	282	511	685	791	932	1163	1687	1900	2316	2463
KPH 315 P	315	63.0	103	153	202	296	536	719	831	979	1221	1771	1995	2432	2586
KPH 330 P	330	66.0	108	161	211	310	562	753	870	1025	1279	1856	2090	2548	2709
KPH 353 P	353	70.6	116	172	226	332	601	806	931	1097	1368	1985	2236	2725	2898
KPH 375 P	375	75.0	123	183	240	352	639	856	989	1165	1454	2109	2375	2895	3078
KPH 390 P	390	78.0	128	190	250	366	664	890	1028	1212	1512	2193	2470	3011	3201
KPH 410 P	410	82.0	135	200	263	385	698	936	1081	1274	1589	2305	2597	3165	3365
KPH 430 P	430	86.0	141	209	275	404	732	982	1134	1336	1667	2418	2724	3320	3530
KPH 450 P	450	90.0	148	219	288	423	766	1027	1187	1398	1744	2530	2851	3474	3694
KPH 471 P	471	94.2	155	229	302	442	802	1075	1242	1463	1826	2648	2984	3636	3866
KPH 491 P	491	98.2	161	239	315	461	836	1121	1295	1526	1903	2761	3110	3790	4030
KPH 520 P	520	104	171	253	333	488	886	1187	1371	1616	2016	2924	3294	4014	4268
KPH 530 P	530	106	174	258	340	498	903	1210	1398	1647	2054	2980	3357	4092	4350
KPH 540 P	540	108	177	263	346	507	920	1233	1424	1678	2093	3036	3421	4169	4433
KPH 575 P	575	115	189	280	368	540	979	1313	1516	1787	2229	3233	3642	4439	4720
KPH 590 P	590	118	194	287	378	554	1005	1347	1556	1833	2287	3317	3737	4555	4843
KPH 600 P	600	120	197	292	384	563	1022	1370	1582	1864	2326	3374	3801	4632	4925
KPH 615 P	615	123	202	299	394	578	1047	1404	1622	1911	2384	3458	3896	4748	5048
KPH 630 P	630	126	207	307	404	592	1073	1438	1661	1957	2442	3542	3991	4864	5171
KPH 640 P	640	128	210	312	410	601	1090	1461	1688	1989	2481	3599	4054	4941	5253
KPH 656 P	656	131	215	319	420	616	1117	1497	1730	2038	2543	3689	4155	5064	5385
KPH 670 P	670	134	220	326	429	629	1141	1529	1767	2082	2597	3767	4244	5172	5500
KPH 680 P	680	136	223	331	436	639	1158	1552	1793	2113	2636	3823	4307	5250	5582
KPH 691 P	691	138	227	336	443	649	1177	1577	1822	2147	2678	3885	4377	5334	5672
KPH 715 P	715	143	235	348	458	671	1218	1632	1886	2222	2771	4020	4529	5520	5869
KPH 725 P	725	145	238	353	464	681	1235	1655	1912	2253	2810	4077	4593	5597	5951
KPH 755 P	755	151	248	368	484	709	1286	1723	1991	2346	2927	4245	4783	5829	6197
KPH 800 P	800	160	263	390	512	751	1363	1826	2110	2486	3101	4498	5068	6176	6567
KPH 825 P	825	165	271	402	528	775	1405	1883	2176	2563	3198	4639	5226	6369	6772
KPH 840 P	840	168	276	409	538	789	1431	1917	2215	2610	3256	4723	5321	6485	6895
KPH 865 P	865	173	284	421	554	812	1473	1974	2281	2688	3353	4864	5479	6678	7100
KPH 885 P	885	177	291	431	567	831	1507	2020	2334	2750	3430	4976	5606	6832	7264
KPH 910 P	910	182	299	443	583	855	1550	2077	2400	2827	3527	5117	5764	7025	7470
KPH 927 P	927	185	304	451	594	871	1579	2116	2445	2880	3593	5212	5872	7156	7609
KPH 950 P	950	190	312	463	609	892	1618	2168	2505	2952	3682	5342	6018	7334	7798
KPH 990 P	990	198	325	482	634	930	1686	2260	2611	3076	3837	5567	6271	7643	8126
KPH 1012 P	1012	202	332	493	648	950	1724	2310	2669	3144	3923	5690	6411	7813	8307



# H Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.05 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPH 8 P	8	1.57	2.59	3.82	5.01	7.27	12.9	16.4	18.5	21.7	26.8	38.1	44.1	53.2	55.6
KPH 11 P	11	2.16	3.56	5.26	6.89	10.00	17.8	22.6	25.4	29.9	36.9	52.5	60.7	73.2	76.5
KPH 15 P	15	2.94	4.85	7.17	9.40	13.6	24.3	30.8	34.7	40.7	50.3	71.5	82.7	99.8	104
KPH 19 P	19	3.73	6.14	9.08	11.9	17.3	30.7	39.0	44.0	51.6	63.7	90.6	105	126	132
KPH 22 P	22	4.31	7.11	10.5	13.8	20.0	35.6	45.2	50.9	59.7	73.8	105	121	146	153
KPH 26 P	26	5.10	8.40	12.4	16.3	23.6	42.0	53.4	60.1	70.6	87.2	124	143	173	181
KPH 30 P	30	5.88	9.70	14.3	18.8	27.3	48.5	61.6	69.4	81.4	101	143	165	200	209
KPH 35 P	35	6.86	11.3	16.7	21.9	31.8	56.6	71.9	81.0	95.0	117	167	193	233	243
KPH 38 P	38	7.45	12.3	18.2	23.8	34.5	61.4	78.0	87.9	103	127	181	210	253	264
KPH 42 P	42	8.24	13.6	20.1	26.3	38.2	67.9	86.3	97.2	114	141	200	232	280	292
KPH 46 P	46	9.02	14.9	22.0	28.8	41.8	74.4	94.5	106	125	154	219	254	306	320
KPH 50 P	50	9.80	16.2	23.9	31.3	45.4	80.9	103	116	136	168	238	276	333	348
KPH 58 P	58	11.4	18.7	27.7	36.3	52.7	93.8	119	134	157	194	277	320	386	403
KPH 65 P	65	12.7	21.0	31.1	40.7	59.1	105	133	150	176	218	310	359	433	452
KPH 75 P	75	14.7	24.2	35.8	47.0	68.2	121	154	174	204	251	358	414	499	521
KPH 85 P	85	16.7	27.5	40.6	53.2	77.2	137	175	197	231	285	405	469	566	591
KPH 94 P	94	18.4	30.4	44.9	58.9	85.4	152	193	217	255	315	448	519	626	654
KPH 100 P	100	19.6	32.3	47.8	62.6	90.9	162	205	231	271	335	477	552	665	695
KPH 111 P	111	21.8	35.9	53.0	69.5	101	179	228	257	301	372	529	612	739	772
KPH 120 P	120	23.5	38.8	57.3	75.2	109	194	246	278	326	402	572	662	799	834
KPH 130 P	130	25.5	42.0	62.1	81.4	118	210	267	301	353	436	620	717	865	904
KPH 140 P	140	27.5	45.3	66.9	87.7	127	226	288	324	380	469	668	772	932	973
KPH 148 P	148	29.0	47.8	70.7	92.7	135	239	304	342	402	496	706	816	985	1029
KPH 160 P	160	31.4	51.7	76.4	100	145	259	329	370	434	536	763	883	1065	1113
KPH 170 P	170	33.3	54.9	81.2	106	154	275	349	393	461	570	811	938	1131	1182
KPH 180 P	180	35.3	58.2	86.0	113	164	291	370	416	489	604	858	993	1198	1252
KPH 190 P	190	37.3	61.4	90.8	119	173	307	390	440	516	637	906	1048	1264	1321
KPH 200 P	200	39.2	64.6	95.6	125	182	323	411	463	543	671	954	1103	1331	1391
KPH 213 P	213	41.8	68.8	102	133	194	344	437	493	578	714	1016	1175	1417	1481
KPH 225 P	225	44.1	72.7	108	141	204	364	462	521	611	754	1073	1241	1497	1564
KPH 235 P	235	46.1	76.0	112	147	214	380	483	544	638	788	1121	1296	1564	1634
KPH 245 P	245	48.0	79.2	117	153	223	396	503	567	665	821	1168	1351	1630	1704
KPH 265 P	265	52.0	85.7	127	166	241	429	544	613	719	889	1264	1462	1764	1843
KPH 275 P	275	53.9	88.9	131	172	250	445	565	636	746	922	1311	1517	1830	1912
KPH 290 P	290	56.9	93.7	139	182	264	469	596	671	787	972	1383	1600	1930	2016
KPH 300 P	300	58.8	97.0	143	188	273	485	616	694	814	1006	1431	1655	1996	2086
KPH 315 P	315	61.8	102	151	197	286	509	647	729	855	1056	1502	1738	2096	2190
KPH 330 P	330	64.7	107	158	207	300	534	678	763	896	1106	1574	1820	2196	2295
KPH 353 P	353	69.2	114	169	221	321	571	725	817	958	1184	1683	1947	2349	2454
KPH 375 P	375	73.5	121	179	235	341	606	770	868	1018	1257	1788	2069	2496	2607
KPH 390 P	390	76.5	126	186	244	354	631	801	902	1059	1308	1860	2151	2595	2712
KPH 410 P	410	80.4	133	196	257	373	663	842	948	1113	1375	1955	2262	2728	2851
KPH 430 P	430	84.3	139	205	269	391	695	883	995	1167	1442	2051	2372	2862	2990
KPH 450 P	450	88.2	145	215	282	409	728	924	1041	1221	1509	2146	2482	2995	3129
KPH 471 P	471	92.4	152	225	295	428	762	967	1090	1278	1579	2246	2598	3134	3275
KPH 491 P	491	96.3	159	235	308	446	794	1008	1136	1333	1646	2341	2708	3268	3414
KPH 520 P	520	102	168	248	326	473	841	1068	1203	1411	1744	2480	2868	3460	3616
KPH 530 P	530	104	171	253	332	482	857	1088	1226	1439	1777	2527	2923	3527	3685
KPH 540 P	540	106	175	258	338	491	873	1109	1249	1466	1811	2575	2979	3594	3755
KPH 575 P	575	113	186	275	360	523	930	1181	1330	1561	1928	2742	3172	3827	3998
KPH 590 P	590	116	191	282	370	536	954	1212	1365	1601	1978	2814	3254	3926	4102
KPH 600 P	600	118	194	287	376	545	970	1232	1388	1629	2012	2861	3310	3993	4172
KPH 615 P	615	121	199	294	385	559	994	1263	1423	1669	2062	2933	3392	4093	4276
KPH 630 P	630	124	204	301	395	573	1019	1294	1457	1710	2112	3004	3475	4193	4380
KPH 640 P	640	125	207	306	401	582	1035	1314	1481	1737	2146	3052	3530	4259	4450
KPH 656 P	656	129	212	313	411	596	1061	1347	1518	1781	2200	3128	3619	4366	4561
KPH 670 P	670	131	217	320	420	609	1083	1376	1550	1819	2246	3195	3696	4459	4659
KPH 680 P	680	133	220	325	426	618	1100	1396	1573	1846	2280	3243	3751	4525	4728
KPH 691 P	691	135	223	330	433	628	1117	1419	1599	1876	2317	3295	3812	4598	4805
KPH 715 P	715	140	231	342	448	650	1156	1468	1654	1941	2397	3410	3944	4758	4971
KPH 725 P	725	142	234	346	454	659	1172	1489	1677	1968	2431	3457	3999	4825	5041
KPH 755 P	755	148	244	361	473	686	1221	1550	1747	2049	2531	3600	4165	5024	5250
KPH 800 P	800	157	259	382	501	727	1294	1643	1851	2171	2682	3815	4413	5324	5563
KPH 825 P	825	162	267	394	517	750	1334	1694	1909	2239	2766	3934	4551	5490	5736
KPH 840 P	840	165	272	401	526	763	1358	1725	1943	2280	2816	4006	4633	5590	5841
KPH 865 P	865	170	280	413	542	786	1399	1776	2001	2348	2900	4125	4771	5756	6014
KPH 885 P	885	174	286	423	554	804	1431	1817	2047	2402	2967	4220	4882	5890	6154
KPH 910 P	910	178	294	435	570	827	1471	1869	2105	2470	3051	4340	5020	6056	6327
KPH 927 P	927	182	300	443	581	842	1499	1904	2144	2516	3108	4421	5113	6169	6446
KPH 950 P	950	186	307	454	595	863	1536	1951	2198	2579	3185	4530	5240	6322	6605
KPH 990 P	990	194	320	473	620	900	1601	2033	2290	2687	3319	4721	5461	6588	6884
KPH 1012 P	1012	198	327	484	634	920	1636	2078	2341	2747	3393	4826	5582	6735	7037

# H Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.10 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPH 8 P	8	1.53	2.51	3.70	4.83	6.95	11.3	13.7	15.5	18.0	22.1	33.2	378	45.0	473
KPH 11 P	11	2.11	3.46	5.08	6.65	9.55	15.6	18.9	21.4	24.8	30.4	45.7	52.0	61.9	65.0
KPH 15 P	15	2.87	4.71	6.93	9.06	13.0	21.3	25.7	29.1	33.8	41.5	62.3	70.8	84.5	88.6
KPH 19 P	19	3.64	5.97	8.78	11.5	16.5	27.0	32.6	36.9	42.8	52.6	78.9	89.7	107	112
KPH 22 P	22	4.21	6.91	10.2	13.3	19.1	31.2	37.8	42.8	49.6	60.9	91.3	104	124	130
KPH 26 P	26	4.98	8.17	12.0	15.7	22.6	36.9	44.6	50.5	58.6	72.0	108	123	146	154
KPH 30 P	30	5.74	9.43	13.9	18.1	26.0	42.6	51.5	58.3	67.6	83.0	125	142	169	177
KPH 35 P	35	6.70	11.0	16.2	21.1	30.4	49.6	60.1	68.0	78.9	96.9	145	165	197	207
KPH 38 P	38	7.28	11.9	17.6	23.0	33.0	53.9	65.2	73.8	85.7	105	158	179	214	224
KPH 42 P	42	8.04	13.2	19.4	25.4	36.5	59.6	72.1	81.6	94.7	116	174	198	236	248
KPH 46 P	46	8.81	14.5	21.3	27.8	39.9	65.2	79.0	89.4	104	127	191	217	259	272
KPH 50 P	50	9.57	15.7	23.1	30.2	43.4	70.9	85.8	97.2	113	138	208	236	282	295
KPH 58 P	58	11.1	18.2	26.8	35.0	50.4	82.3	99.5	113	131	161	241	274	327	343
KPH 65 P	65	12.4	20.4	30.0	39.3	56.4	92.2	112	126	147	180	270	307	366	384
KPH 75 P	75	14.4	23.6	34.7	45.3	65.1	106	129	146	169	208	311	354	422	443
KPH 85 P	85	16.3	26.7	39.3	51.4	73.8	121	146	165	192	235	353	401	479	502
KPH 94 P	94	18.0	29.5	43.4	56.8	81.6	133	161	183	212	260	390	444	529	555
KPH 100 P	100	19.1	31.4	46.2	60.4	86.8	142	172	194	225	277	415	472	563	591
KPH 111 P	111	21.3	34.9	51.3	67.1	96.4	157	191	216	250	307	461	524	625	656
KPH 120 P	120	23.0	37.7	55.5	72.5	104	170	206	233	271	332	498	567	676	709
KPH 130 P	130	24.9	40.9	60.1	78.6	113	184	223	253	293	360	540	614	732	768
KPH 140 P	140	26.8	44.0	64.7	84.6	122	199	240	272	316	387	581	661	788	827
KPH 148 P	148	28.3	46.5	68.4	89.4	129	210	254	288	334	410	614	699	833	874
KPH 160 P	160	30.6	50.3	73.9	96.7	139	227	275	311	361	443	664	756	901	945
KPH 170 P	170	32.6	53.4	78.6	103	148	241	292	330	383	470	706	803	957	1004
KPH 180 P	180	34.5	56.6	83.2	109	156	255	309	350	406	498	747	850	1013	1063
KPH 190 P	190	36.4	59.7	87.8	115	165	270	326	369	428	526	789	897	1070	1122
KPH 200 P	200	38.3	62.9	92.4	121	174	284	343	389	451	554	830	945	1126	1181
KPH 213 P	213	40.8	66.9	98.4	129	185	302	366	414	480	590	884	1006	1199	1258
KPH 225 P	225	43.1	70.7	104	136	195	319	386	437	507	623	934	1063	1267	1329
KPH 235 P	235	45.0	73.9	109	142	204	333	403	457	530	650	976	1110	1323	1388
KPH 245 P	245	46.9	77.0	113	148	213	348	420	476	552	678	1017	1157	1379	1447
KPH 265 P	265	50.7	83.3	122	160	230	376	455	515	597	733	1100	1252	1492	1565
KPH 275 P	275	52.7	86.4	127	166	239	390	472	534	620	761	1142	1299	1548	1625
KPH 290 P	290	55.5	91.1	134	175	252	411	498	564	654	803	1204	1370	1633	1713
KPH 300 P	300	57.4	94.3	139	181	260	426	515	583	676	830	1245	1417	1689	1772
KPH 315 P	315	60.3	99.0	146	190	274	447	541	612	710	872	1308	1488	1774	1861
KPH 330 P	330	63.2	104	152	199	287	468	566	641	744	913	1370	1559	1858	1949
KPH 353 P	353	67.6	111	163	213	307	501	606	686	796	977	1465	1667	1988	2085
KPH 375 P	375	71.8	118	173	227	326	532	644	729	845	1038	1557	1771	2111	2215
KPH 390 P	390	74.7	123	180	236	339	553	669	758	879	1079	1619	1842	2196	2304
KPH 410 P	410	78.5	129	189	248	356	582	704	797	924	1135	1702	1936	2308	2422
KPH 430 P	430	82.3	135	199	260	373	610	738	836	969	1190	1785	2031	2421	2540
KPH 450 P	450	86.2	141	208	272	391	638	772	874	1014	1245	1868	2125	2534	2658
KPH 471 P	471	90.2	148	218	285	409	668	808	915	1062	1304	1955	2225	2652	2782
KPH 491 P	491	94.0	154	227	297	426	696	843	954	1107	1359	2038	2319	2765	2901
KPH 520 P	520	99.6	163	240	314	452	738	892	1010	1172	1439	2159	2456	2928	3072
KPH 530 P	530	101	167	245	320	460	752	910	1030	1195	1467	2200	2503	2984	3131
KPH 540 P	540	103	170	250	326	469	766	927	1049	1217	1495	2242	2550	3040	3190
KPH 575 P	575	110	181	266	347	499	816	987	1117	1296	1591	2387	2716	3238	3397
KPH 590 P	590	113	185	273	357	512	837	1013	1147	1330	1633	2449	2787	3322	3485
KPH 600 P	600	115	189	277	363	521	851	1030	1166	1353	1661	2491	2834	3378	3544
KPH 615 P	615	118	193	284	372	534	872	1056	1195	1386	1702	2553	2905	3463	3633
KPH 630 P	630	121	198	291	381	547	894	1081	1224	1420	1744	2615	2976	3547	3722
KPH 640 P	640	123	201	296	387	556	908	1098	1244	1443	1771	2657	3023	3603	3781
KPH 656 P	656	126	206	303	396	570	930	1126	1275	1479	1816	2723	3098	3694	3875
KPH 670 P	670	128	211	310	405	582	950	1150	1302	1510	1854	2781	3164	3772	3958
KPH 680 P	680	130	214	314	411	590	965	1167	1321	1533	1882	2823	3212	3829	4017
KPH 691 P	691	132	217	319	418	600	980	1186	1343	1558	1912	2869	3264	3891	4082
KPH 715 P	715	137	225	330	432	621	1014	1227	1389	1612	1979	2968	3377	4026	4224
KPH 725 P	725	139	228	335	438	630	1028	1244	1409	1634	2007	3010	3424	4082	4283
KPH 755 P	755	145	237	349	456	656	1071	1296	1467	1702	2090	3134	3566	4251	4460
KPH 800 P	800	153	251	370	483	695	1135	1373	1555	1803	2214	3321	3779	4504	4726
KPH 825 P	825	158	259	381	499	716	1170	1416	1603	1860	2283	3425	3897	4645	4874
KPH 840 P	840	161	264	388	508	729	1191	1442	1632	1894	2325	3487	3967	4730	4962
KPH 865 P	865	166	272	400	523	751	1227	1485	1681	1950	2394	3591	4086	4870	5110
KPH 885 P	885	169	278	409	535	768	1255	1519	1720	1995	2449	3674	4180	4983	5228
KPH 910 P	910	174	286	420	550	790	1291	1562	1768	2051	2519	3778	4298	5124	5376
KPH 927 P	927	178	291	428	560	805	1315	1591	1801	2090	2566	3848	4378	5219	5476
KPH 950 P	950	182	299	439	574	825	1348	1630	1846	2142	2629	3944	4487	5349	5612
KPH 990 P	990	190	311	457	598	860	1404	1699	1924	2232	2740	4110	4676	5574	5848
KPH 1012 P	1012	194	318	468	612	879	1435	1737	1967	2281	2801	4201	4780	5698	5978

# H Range

Performance for fully charged cells

Available Amperes at + 20°C **Final voltage: 1.14 V/cell**

Cell Type	C <sub>5</sub> Ah	Hours					Minutes						Seconds		
		5	3	2	1.5	1	30	20	15	10	5	1	30	5	1
KPH 8 P	8	1.48	2.41	3.52	4.57	6.39	9.43	11.4	12.9	14.8	18.8	28.3	32.4	38.2	39.6
KPH 11 P	11	2.03	3.31	4.85	6.28	8.79	13.0	15.7	17.7	20.4	25.8	38.9	44.5	52.6	54.4
KPH 15 P	15	2.77	4.51	6.61	8.57	12.0	17.7	21.4	24.1	27.8	35.2	53.0	60.7	71.7	74.2
KPH 19 P	19	3.50	5.72	8.37	10.8	15.2	22.4	27.1	30.5	35.2	44.5	67.2	76.9	90.8	94.0
KPH 22 P	22	4.06	6.62	9.69	12.6	17.6	25.9	31.3	35.4	40.8	51.6	77.8	89.0	105	109
KPH 26 P	26	4.79	7.82	11.5	14.8	20.8	30.7	37.0	41.8	48.2	60.9	91.9	105	124	129
KPH 30 P	30	5.53	9.03	13.2	17.1	24.0	35.4	42.7	48.2	55.6	70.3	106	121	143	148
KPH 35 P	35	6.45	10.5	15.4	20.0	28.0	41.3	49.8	56.2	64.9	82.0	124	142	167	173
KPH 38 P	38	7.01	11.4	16.7	21.7	30.4	44.8	54.1	61.1	70.4	89.1	134	154	182	188
KPH 42 P	42	7.74	12.6	18.5	24.0	33.6	49.5	59.8	67.5	77.9	98.4	149	170	201	208
KPH 46 P	46	8.48	13.8	20.3	26.3	36.8	54.2	65.5	73.9	85.3	108	163	186	220	228
KPH 50 P	50	9.22	15.0	22.0	28.6	39.9	59.0	71.2	80.3	92.7	117	177	202	239	247
KPH 58 P	58	10.7	17.5	25.6	33.1	46.3	68.4	82.6	93.2	108	136	205	235	277	287
KPH 65 P	65	12.0	19.6	28.6	37.1	51.9	76.6	92.6	104	120	152	230	263	311	322
KPH 75 P	75	13.8	22.6	33.0	42.8	59.9	88.4	107	121	139	176	265	304	358	371
KPH 85 P	85	15.7	25.6	37.4	48.5	67.9	100	121	137	158	199	301	344	406	420
KPH 94 P	94	17.3	28.3	41.4	53.7	75.1	111	134	151	174	220	332	380	449	465
KPH 100 P	100	18.4	30.1	44.1	57.1	79.9	118	142	161	185	234	354	405	478	495
KPH 111 P	111	20.5	33.4	48.9	63.4	88.7	131	158	178	206	260	393	449	530	549
KPH 120 P	120	22.1	36.1	52.9	68.5	95.9	141	171	193	222	281	424	486	573	594
KPH 130 P	130	24.0	39.1	57.3	74.2	104	153	185	209	241	305	460	526	621	643
KPH 140 P	140	25.8	42.1	61.7	79.9	112	165	199	225	260	328	495	567	669	693
KPH 148 P	148	27.3	44.5	65.2	84.5	118	175	211	238	274	347	523	599	707	732
KPH 160 P	160	29.5	48.2	70.5	91.4	128	189	228	257	297	375	566	648	764	791
KPH 170 P	170	31.3	51.2	74.9	97.1	136	200	242	273	315	398	601	688	812	841
KPH 180 P	180	33.2	54.2	79.3	103	144	212	256	289	334	422	637	728	860	890
KPH 190 P	190	35.0	57.2	83.7	108	152	224	271	305	352	445	672	769	908	940
KPH 200 P	200	36.9	60.2	88.1	114	160	236	285	321	371	469	707	809	956	989
KPH 213 P	213	39.3	64.1	93.8	122	170	251	303	342	395	499	753	862	1018	1054
KPH 225 P	225	41.5	67.7	99.1	128	180	265	320	362	417	527	796	911	1075	1113
KPH 235 P	235	43.3	70.7	104	134	188	277	335	378	436	551	831	951	1123	1162
KPH 245 P	245	45.2	73.7	108	140	196	289	349	394	454	574	866	992	1171	1212
KPH 265 P	265	48.9	79.8	117	151	212	312	377	426	491	621	937	1072	1266	1311
KPH 275 P	275	50.7	82.8	121	157	220	324	392	442	510	645	972	1113	1314	1360
KPH 290 P	290	53.5	87.3	128	166	232	342	413	466	538	680	1026	1174	1386	1435
KPH 300 P	300	55.3	90.3	132	171	240	354	427	482	556	703	1061	1214	1433	1484
KPH 315 P	315	58.1	94.8	139	180	252	371	449	506	584	738	1114	1275	1505	1558
KPH 330 P	330	60.8	99.3	145	188	264	389	470	530	612	773	1167	1336	1577	1632
KPH 353 P	353	65.1	106	156	202	282	416	503	567	654	827	1248	1429	1687	1746
KPH 375 P	375	69.1	113	165	214	300	442	534	603	695	879	1326	1518	1792	1855
KPH 390 P	390	71.9	117	172	223	312	460	555	627	723	914	1379	1578	1863	1929
KPH 410 P	410	75.6	123	181	234	328	483	584	659	760	961	1450	1659	1959	2028
KPH 430 P	430	79.3	129	189	246	344	507	612	691	797	1008	1521	1740	2055	2127
KPH 450 P	450	83.0	135	198	257	360	531	641	723	834	1055	1591	1821	2150	2226
KPH 471 P	471	86.8	142	208	269	376	555	671	757	873	1104	1666	1906	2250	2330
KPH 491 P	491	90.5	148	216	280	392	579	699	789	910	1151	1736	1987	2346	2429
KPH 520 P	520	95.9	156	229	297	415	613	741	836	964	1219	1839	2104	2485	2572
KPH 530 P	530	97.7	160	234	303	423	625	755	852	982	1242	1874	2145	2532	2622
KPH 540 P	540	99.6	163	238	308	431	637	769	868	1001	1266	1910	2185	2580	2671
KPH 575 P	575	106	173	253	328	459	678	819	924	1066	1348	2033	2327	2747	2844
KPH 590 P	590	109	178	260	337	471	696	840	948	1094	1383	2086	2388	2819	2919
KPH 600 P	600	111	181	264	343	479	707	855	964	1112	1406	2122	2428	2867	2968
KPH 615 P	615	113	185	271	351	491	725	876	988	1140	1441	2175	2489	2939	3042
KPH 630 P	630	116	190	278	360	503	743	897	1012	1168	1477	2228	2550	3010	3116
KPH 640 P	640	118	193	282	365	511	755	911	1028	1186	1500	2263	2590	3058	3166
KPH 656 P	656	121	197	289	375	524	774	934	1054	1216	1538	2320	2655	3134	3245
KPH 670 P	670	124	202	295	383	535	790	954	1077	1242	1570	2369	2711	3201	3314
KPH 680 P	680	125	205	300	388	543	802	968	1093	1260	1594	2405	2752	3249	3364
KPH 691 P	691	127	208	304	395	552	815	984	1110	1281	1620	2444	2796	3302	3418
KPH 715 P	715	132	215	315	408	571	843	1018	1149	1325	1676	2528	2894	3416	3537
KPH 725 P	725	134	218	319	414	579	855	1033	1165	1344	1699	2564	2934	3464	3586
KPH 755 P	755	139	227	333	431	603	890	1075	1213	1400	1770	2670	3055	3607	3735
KPH 800 P	800	148	241	352	457	639	943	1139	1286	1483	1875	2829	3238	3822	3957
KPH 825 P	825	152	248	363	471	659	973	1175	1326	1529	1934	2917	3339	3942	4081
KPH 840 P	840	155	253	370	480	671	990	1196	1350	1557	1969	2970	3399	4014	4155
KPH 865 P	865	159	260	381	494	691	1020	1232	1390	1603	2027	3059	3501	4133	4279
KPH 885 P	885	163	266	390	505	707	1044	1260	1422	1640	2074	3130	3582	4229	4378
KPH 910 P	910	168	274	401	520	727	1073	1296	1462	1687	2133	3218	3683	4348	4501
KPH 927 P	927	171	279	408	529	741	1093	1320	1490	1718	2173	3278	3752	4429	4586
KPH 950 P	950	175	286	419	542	759	1120	1353	1527	1761	2227	3359	3845	4539	4699
KPH 990 P	990	183	298	436	565	791	1167	1410	1591	1835	2320	3501	4007	4730	4897
KPH 1012 P	1012	187	305	446	578	809	1193	1441	1626	1876	2372	3579	4096	4835	5006



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