



The KG Avantgarde Series

Low and medium rate Nickel
Cadmium power solutions

**Rugged reliance,
low maintenance**



NICAD Avantgarde



Specification

Positive electrode:	Horizontal pockets of double perforated steel strips
Negative electrode:	Horizontal pockets of double perforated steel strips
Float voltage:	1.42 vpc \pm 1% at 20°C
Max. charge voltage:	1.45 vpc \pm 1% at 20°C
Electrolyte:	Potassium hydroxide
Safety valve:	Low pressure flame arresting vent cap
Separators:	Fibre mat separator
Terminals:	Female or male nut and screw connection
Electrical:	Low rate of discharge 14Ah - 1600Ah, Medium rate of discharge 20Ah - 1250Ah at C/5 to 1.00vpc @ 20°C

Product information

Extreme low maintenance

The Avantgarde KG Series features low (KGL) and medium (KGM) rate of discharge options allowing you to select the optimum solution for all industrial applications. The KG series is valve regulated and crafted using our well-proven pocket plate technology, making it perfect for extreme applications. With low maintenance requirements, it will weather the harshest temperatures, deep discharge and lifespan demands.

Our upgraded Ni-Cd range has been built to German standards using ELM (extreme low maintenance) technology. It has a double perforated plate and a unique internal design for maximum performance. We've employed an absorbed fibre mat separator and a special low-pressure vent cap to make it virtually maintenance-free, without losing the advantages of a standard Ni-Cd battery.

Innovative design

- ⌘ No ice formation at temperatures below 0 °C
- ⌘ Extended lifetime at high temperatures
- ⌘ 25 years plus lifetime in stationary cycling applications
- ⌘ Designed for deep discharge
- ⌘ Engineered for extreme applications
- ⌘ No electrolyte stratification or plate corrosion
- ⌘ Long shelf life in a discharged state under suitable conditions

Design life

Years:	>20 Years design life in float service @ 20°C.
Cycles:	up to 1,000 cycles @ 80% DOD as per IEC

Product compliance

IEC	62259:2001
EN	50522-2
EN	61373

Company Accreditation

ISO	9001:2015
ISO	14001:2004

Robust design for harsh conditions

The KG is perfect for extreme applications and will withstand temperature variations, deep discharge and aging like no other product. The flame-arresting vent cap or plug-in gas drying vent make it explosion-proof and therefore perfect for use in harsh and critical conditions.

Our standard translucent cell container gives you good electrolyte visibility, but the fibre mat separator provides perfect plate insulation, increased circulation, and lower resistance.

The KG was built to provide low rates of discharge over long periods and can be used in UPS, railway, power and substations, alternative energy stations, marine equipment, and telecommunications. But, it was especially designed for oil & gas, power & utility and the rail sector. The KG offers the longest lifetime in the market today with the lowest maintenance costs.

- ⌘ Excellent high power rating
- ⌘ High cycling capability
- ⌘ Virtually no maintenance
- ⌘ Exceptionally low life cycle costs
- ⌘ No risk of thermal runaway effect
- ⌘ Low internal resistance
- ⌘ Wide operational temperature range between - 50°C to + 70°C

“For applications where exceptional reliability and uncompromising performance are standard requirements, the KG Avantgarde Nickel Cadmium series will meet the exacting requirements of professional users.”

Dr Mike McDonagh
SEC Group

Product benefits

Virtually maintenance free

The KG is a robust, hardy battery which will withstand the elements. The ELM technology means it requires virtually no maintenance and can be left to do its job. This battery offers peace of mind for busy operators in a range of applications.

Absolute reliability under harsh conditions

KG series batteries are resistant to vibration and perform consistently despite extreme temperatures. They have a wide operational range - from -50°C to + 70°C. The KG tolerates freezing and has extended lifetime while stationary cycling at high temperatures > 20°C.

Increased safety

There is no risk of thermal runaway effect as there are no exothermic reactions. Recombination without the thermal runaway effect means it can run harder and faster than other competing NiCd batteries.

Exceptional operating costs over time

Nickel Cadmium offers an excellent high power rating and high cycling capability for daily use. It's perfect for applications requiring frequent use like solar and standby. The high cycling ability gives it one of the lowest levelised costs of energy on the market.

Extended lifetime

The perforated pocket plate gives improved electrolyte access which means the Nickel Cadmium battery will last longer. It has no electrolyte stratification or plate corrosion which is a life limiting factor in other batteries. It has a calendar life of over 20 years in stationary applications and a long shelf life in the right conditions.

Quick charging

The KG has extremely low internal resistance, allowing quick recharge and operation at cooler temperatures. This makes it more efficient when your application demands a quick charge/recharge turnaround or under unusual circumstances.

Applications



UPS systems



Power and substations



Telecommunications



Emergency lighting



Oil and gas refineries



Process control



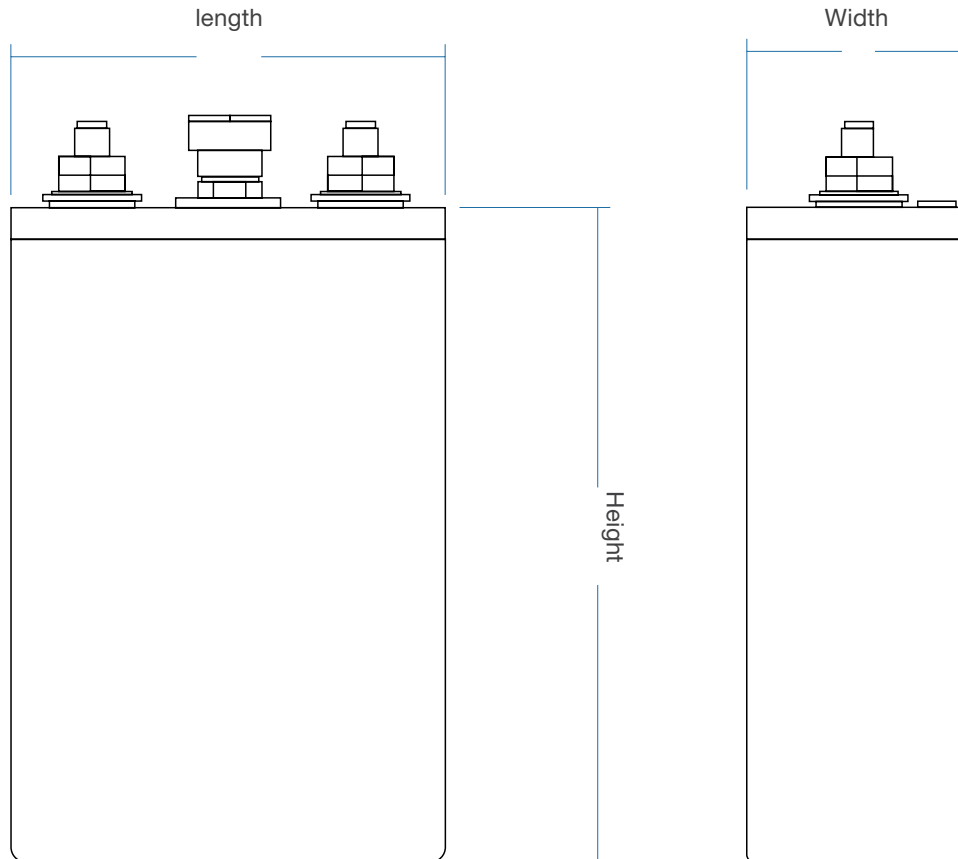
Rail rolling stock



Railway signalling



Renewable applications



Cell dimensions-low (KGL)

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/5 1.00 vpc	Battery weight (kg)	Overall battery dimension				Terminal number and size
			Length	Width	Height	Total Height	
			mm	mm	mm	mm	
1.2-KGL-14P	14	1.03	85	46	167	193	2 x M10
1.2-KGL-18P	18	1.48	113	59	213	235	2 x M10
1.2-KGL-25P	25	1.51	113	59	213	235	2 x M10
1.2-KGL-30P	30	1.60	113	59	213	235	2 x M10
1.2-KGL-35P	35	1.64	113	59	213	235	2 x M10
1.2-KGL-40P	40	2.41	113	59	213	235	2 x M10
1.2-KGL-45P	45	2.68	113	59	213	235	2 x M10
1.2-KGL-55P	55	2.82	113	59	213	235	2 x M10
1.2-KGL-60P	60	2.97	113	59	213	235	2 x M10
1.2-KGL-70P	70	4.85	127	60	253	275	2 x M14
1.2-KGL-80P	80	5.00	136	74	339	357	2 x M10
1.2-KGL-100P	100	6.18	136	74	339	357	2 x M10
1.2-KGL-120P	120	6.51	136	74	339	357	2 x M10
1.2-KGL-140P	140	7.67	134	112	291	327	2 x M16
1.2-KGL-150P	150	7.84	134	112	291	327	2 x M16
1.2-KGL-180P	180	10.61	167	118	327	362	4 x M20
1.2-KGL-200P	200	10.91	167	118	327	362	4 x M20

Cell dimensions-low (KGL)

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/5 1.00 vpc	Battery weight (kg)	Overall battery dimension				Terminal number and size
			Length	Width	Height	Total Height	
			mm	mm	mm	mm	
1.2-KGL-230P	230	11.17	167	118	327	362	4 x M20
1.2-KGL-240P	240	11.62	167	118	327	362	4 x M20
1.2-KGL-275P	275	12.22	167	129	364	400	2 x M20
1.2-KGL-300P	300	16.30	167	129	364	400	2 x M20
1.2-KGL-330P	330	16.50	167	129	364	400	2 x M20
1.2-KGL-380P	380	17.50	174	171	337	372	4 x M20
1.2-KGL-400P	400	18.00	174	171	337	372	4 x M20
1.2-KGL-435P	435	18.50	174	171	337	372	4 x M20
1.2-KGL-450P	450	18.90	174	171	337	372	4 x M20
1.2-KGL-500P	500	27.30	246	176	382	410	4 x M10
1.2-KGL-560P	560	28.30	246	176	382	410	4 x M10
1.2-KGL-600P	600	29.30	246	176	382	410	4 x M10
1.2-KGL-625P	625	29.80	246	176	382	410	4 x M10
1.2-KGL-650P	650	40.70	368	176	382	420	6 x M10
1.2-KGL-750P	750	41.90	368	176	382	420	6 x M10
1.2-KGL-800P	800	42.60	368	176	382	420	6 x M10
1.2-KGL-850P	850	43.10	368	176	382	420	6 x M10
1.2-KGL-910P	910	49.20	448	176	382	420	8 x M10
1.2-KGL-1000P	1000	53.70	448	176	382	420	8 x M10
1.2-KGL-1120P	1120	56.00	448	176	382	420	8 x M10
1.2-KGL-1250P	1250	64.30	558	176	382	420	10 x M10
1.2-KGL-1350P	1350	66.80	558	176	382	420	10 x M10
1.2-KGL-1400P	1400	68.90	558	176	382	420	10 x M10
1.2-KGL-1500P	1500	70.50	558	176	382	420	10 x M10
1.2-KGL-1600P	1600	71.60	558	176	382	420	10 x M10

Cell dimensions-medium (KGM)

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/5 1.00 vpc	Battery weight (kg)	Overall battery dimension				Terminal number and size
			Length	Width	Height	Total Height	
			mm	mm	mm	mm	
1.2-KGM-20P	20	1.48	113	59	213	235	2 x M10
1.2-KGM-30P	30	1.72	113	59	213	235	2 x M10
1.2-KGM-40P	40	2.76	113	59	213	235	2 x M10
1.2-KGM-50P	50	2.82	113	59	213	235	2 x M10
1.2-KGM-70P	70	4.85	127	60	253	275	2 x M14
1.2-KGM-80P	80	5.00	136	74	339	357	2 x M10

Cell dimensions-medium (KGM)

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/5 1.00 vpc	Battery weight (kg)	Overall battery dimension				Terminal number and size
			Length	Width	Height	Total Height	
			mm	mm	mm	mm	
1.2-KGM-100P	100	6.18	136	74	339	357	2 x M10
1.2-KGM-120P	120	7.67	134	112	291	327	2 x M16
1.2-KGM-140P	140	7.84	134	112	291	327	2 x M16
1.2-KGM-150P	150	10.61	167	118	327	362	4 x M20
1.2-KGM-180P	180	10.91	167	118	327	362	4 x M20
1.2-KGM-200P	200	11.17	167	118	327	362	4 x M20
1.2-KGM-220P	220	11.62	167	118	327	362	4 x M20
1.2-KGM-240P	240	12.22	167	129	364	400	2 x M20
1.2-KGM-260P	260	16.30	167	129	364	400	2 x M20
1.2-KGM-300P	300	16.50	167	129	364	400	2 x M20
1.2-KGM-320P	320	17.00	167	129	364	400	2 x M20
1.2-KGM-340P	340	17.50	174	171	337	372	4 x M20
1.2-KGM-375P	375	18.00	174	171	337	372	4 x M20
1.2-KGM-390P	390	18.50	174	171	337	372	4 x M20
1.2-KGM-400P	400	18.90	174	171	337	372	4 x M20
1.2-KGM-420P	420	27.30	246	176	382	410	4 x M10
1.2-KGM-500P	500	28.30	246	176	382	410	4 x M10
1.2-KGM-550P	550	28.90	246	176	382	410	4 x M10
1.2-KGM-580P	580	29.70	246	176	382	410	4 x M10
1.2-KGM-600P	600	40.70	246	176	382	410	4 x M10
1.2-KGM-675P	675	41.90	368	176	382	420	6 x M10
1.2-KGM-705P	705	42.25	368	176	382	420	6 x M10
1.2-KGM-750P	750	43.10	368	176	382	420	6 x M10
1.2-KGM-850P	850	51.40	448	176	382	420	8 x M10
1.2-KGM-950P	950	53.70	448	176	382	420	8 x M10
1.2-KGM-1000P	1000	56.00	448	176	382	420	8 x M10
1.2-KGM-1050P	1050	58.90	448	176	382	420	8 x M10
1.2-KGM-1150P	1150	68.90	558	176	382	420	10 x M10
1.2-KGM-1250P	1250	68.90	558	176	382	420	10 x M10

Operating temperature

Design operating temperature	20°C
Operating temperature range	-50 to +70°C
Limit for storage	-10 to +30°C

Charging in operation

Two step charge	
Float Voltage	1.40 - 1.42 vpc at 25°C
Boost charge voltage	1.45 vpc at 25°C
Current limitation	0.1 I _A
Single step charge	
Standard charge voltage	1.42 vpc at 25°C
Temperature compensation factor	-3mV/°C baseline at 20°C

Current-low (KGL)

Amperes at 20°C

SEC model type	End volts/ Cell	Discharge data Amps at 20°C										
		Discharge time in hours										
		0.5hr	1hr	2hr	3hr	4hr	5hr	6hr	7hr	8hr	9hr	10hr
1.2-KGL-14P	1.15	7.57	6.27	4.39	3.39	2.91	2.61	2.27	1.96	1.73	1.55	1.40
	1.10	9.49	7.92	5.41	3.95	3.08	2.74	2.32	2.04	1.79	1.59	1.44
	1.05	12.1	9.38	6.16	4.25	3.33	2.77	2.34	2.05	1.81	1.60	1.45
	1.00	14.4	9.38	6.16	4.25	3.33	2.77	2.34	2.05	1.81	1.60	1.45
1.2-KGL-18P	1.15	9.78	8.07	5.64	4.35	3.75	3.36	2.91	2.57	2.25	2.00	1.80
	1.10	12.2	10.2	6.96	5.07	3.96	3.51	2.97	2.63	2.30	2.05	1.84
	1.05	15.6	12.1	7.92	5.46	4.29	3.57	3.02	2.66	2.33	2.06	1.86
	1.00	18.5	14.0	8.52	5.97	4.48	3.60	3.04	2.69	2.35	2.09	1.88
1.2-KGL-25P	1.15	13.6	11.2	7.83	6.04	5.21	4.67	4.04	3.56	3.13	2.77	2.50
	1.10	17.0	14.1	9.67	7.04	5.50	4.88	4.13	3.66	3.20	2.84	2.56
	1.05	21.7	16.8	11.4	7.58	5.96	4.96	4.19	3.69	3.24	2.86	2.58
	1.00	25.8	19.5	11.8	8.29	6.23	5.00	4.23	3.73	3.27	2.91	2.61
1.2-KGL-30P	1.15	16.3	13.5	9.40	7.25	6.25	5.60	4.85	4.28	3.75	3.33	3.00
	1.10	20.4	17.0	11.6	8.45	6.60	5.85	4.95	4.39	3.84	3.41	3.07
	1.05	26.0	20.1	13.2	9.10	7.15	5.95	5.03	4.43	3.89	3.44	3.10
	1.00	30.9	23.4	14.2	10.0	7.47	6.00	5.07	4.48	3.92	3.49	3.14
1.2-KGL-35P	1.15	19.0	15.7	11.0	8.46	7.29	6.53	5.66	4.99	4.38	3.89	3.50
	1.10	23.7	19.8	13.5	9.86	7.70	6.83	5.78	5.12	4.48	3.98	3.58
	1.05	30.3	23.5	15.4	10.6	8.34	6.94	5.87	5.17	4.54	4.01	3.62
	1.00	36.1	27.3	16.6	11.6	8.72	7.00	5.92	5.23	4.57	4.07	3.66
1.2-KGL-40P	1.15	20.0	17.2	12.9	9.80	8.40	7.40	6.30	5.50	4.80	4.30	3.90
	1.10	26.1	21.5	15.7	11.7	9.20	7.70	6.50	5.60	4.90	4.40	3.90
	1.05	32.0	25.2	16.9	12.3	9.50	7.90	6.60	5.70	5.00	4.50	4.10
	1.00	37.2	28.3	17.5	12.6	9.70	8.00	6.70	5.80	5.20	4.60	4.20
1.2-KGL-45P	1.15	22.5	19.4	14.6	11.0	9.40	8.30	7.10	6.10	5.40	4.80	4.40
	1.10	29.5	24.2	17.7	13.2	10.3	8.60	7.30	6.40	5.60	4.90	4.40
	1.05	36.0	28.4	19.1	13.8	10.6	8.80	7.40	6.50	5.60	5.10	4.60
	1.00	41.9	31.8	19.7	14.1	10.9	9.00	7.50	6.50	5.80	5.20	4.70
1.2-KGL-55P	1.15	27.5	23.7	17.8	13.5	11.5	10.2	8.70	7.50	6.60	5.90	5.30
	1.10	36.0	29.6	21.6	16.1	12.6	10.6	8.90	7.80	6.80	6.00	5.40
	1.05	44.0	34.7	23.3	16.9	13.0	10.8	9.10	7.90	6.90	6.20	5.60
	1.00	51.2	38.9	24.1	17.3	13.3	11.0	9.20	8.00	7.10	6.30	5.80
1.2-KGL-60P	1.15	30.0	25.9	19.4	14.7	12.5	11.1	9.49	8.18	7.20	6.44	5.78
	1.10	39.3	32.3	23.6	17.6	13.7	11.6	9.71	8.51	7.42	6.55	5.89
	1.05	48.0	37.9	25.4	18.4	14.2	11.8	9.93	8.62	7.53	6.76	6.11
	1.00	55.9	42.4	26.3	18.9	14.5	12.0	10.0	8.73	7.75	6.87	6.33
1.2-KGL-70P	1.15	35.0	30.2	22.6	17.2	14.6	12.9	11.1	9.58	8.40	7.54	6.78
	1.10	45.8	37.7	27.5	20.5	16.0	13.5	11.3	9.80	8.62	7.65	6.89
	1.05	56.0	44.2	29.6	21.5	16.6	13.8	11.5	10.0	8.83	7.86	7.11
	1.00	65.2	49.5	30.7	22.1	16.9	14.0	11.7	10.2	9.05	8.08	7.32
1.2-KGL-80P	1.15	38.4	33.6	25.8	20.3	16.8	14.2	12.0	10.4	9.40	8.40	7.50
	1.10	49.2	41.6	31.4	24.4	19.2	15.6	13.2	11.3	9.90	8.80	8.00
	1.05	62.0	50.8	35.6	25.7	19.5	15.8	13.3	11.4	9.90	9.00	8.10
	1.00	74.8	59.2	37.6	26.0	19.7	16.0	13.4	11.6	10.1	9.10	8.20
1.2-KGL-100P	1.15	48.0	42.0	32.3	25.4	21.0	17.7	15.0	13.0	11.7	10.5	9.40
	1.10	61.5	52.0	39.2	30.5	24.0	19.5	16.5	14.1	12.3	11.0	10.0
	1.05	77.5	63.5	44.5	32.1	24.4	19.8	16.6	14.3	12.4	11.2	10.1
	1.00	93.5	74.0	47.0	32.5	24.6	20.0	16.8	14.5	12.7	11.3	10.2

Current-low (KGL)

Amperes at 20°C

SEC model type	End volts/ Cell	Discharge data Amps at 20°C										
		Discharge time in hours										
		0.5hr	1hr	2hr	3hr	4hr	5hr	6hr	7hr	8hr	9hr	10hr
1.2-KGL-120P	1.15	57.6	50.4	38.8	30.5	25.2	21.2	18.0	15.6	14.0	12.6	11.3
	1.10	73.8	62.4	47.0	36.6	28.8	23.4	19.8	16.9	14.8	13.2	12.0
	1.05	93.0	76.2	53.4	38.5	29.3	23.8	19.9	17.2	14.9	13.4	12.1
	1.00	112	88.8	56.4	39.0	29.5	24.0	20.2	17.4	15.2	13.6	12.2
1.2-KGL-140P	1.15	67.2	58.8	45.2	35.6	29.4	24.8	21	18.2	16.4	14.7	13.2
	1.10	86.1	72.8	54.9	42.7	33.6	27.3	23.1	19.7	17.2	15.4	14.0
	1.05	109	88.9	62.3	44.9	34.2	27.7	23.2	20.0	17.4	15.7	14.1
	1.00	131	104	65.8	45.5	34.4	28.0	23.5	20.3	17.8	15.8	14.3
1.2-KGL-150P	1.15	70.0	61.1	47.5	37.7	31.4	26.6	22.7	19.6	17.5	15.6	14.1
	1.10	89.5	75.7	57.7	45.4	35.9	29.1	24.7	21.3	18.6	16.6	15.0
	1.05	113	92.3	65.4	48.0	36.7	29.7	24.9	21.5	18.8	16.9	15.2
	1.00	133	106	69.3	48.9	37.1	30.0	25.3	21.8	19.1	17.1	15.4
1.2-KGL-180P	1.15	71.7	62.6	51.2	42.4	36.3	31.7	27.7	24.3	21.1	18.3	16.2
	1.10	105	88.3	68.0	54.0	42.9	34.8	29.6	25.5	22.4	19.9	18.0
	1.05	112	94.0	70.5	56.1	44.0	35.4	29.7	26.0	22.8	20.1	18.2
	1.00	132	106	75.6	58.7	44.8	36.0	30.0	26.1	22.9	20.2	18.3
1.2-KGL-200P	1.15	79.7	69.5	56.8	47.2	40.3	35.2	30.8	26.7	23.3	20.8	18.7
	1.10	102	86.0	69.4	57.3	46.3	37.5	32.6	28.6	25.0	22.2	20.0
	1.05	124	102	78.4	62.4	48.9	39.4	33.0	28.9	25.3	22.4	20.2
	1.00	146	118	84.0	65.1	49.7	40.0	33.3	29.0	25.4	22.5	20.3
1.2-KGL-230P	1.15	91.6	80.0	65.3	54.3	46.4	40.5	35.4	30.7	26.8	23.9	21.5
	1.10	117	98.9	79.8	65.9	53.3	43.1	37.5	32.9	28.8	25.6	23.0
	1.05	143	118	90.2	71.8	56.2	45.3	38.0	33.2	29.1	25.8	23.2
	1.00	168	135	96.6	74.9	57.2	46.0	38.3	33.4	29.2	25.9	23.4
1.2-KGL-240P	1.15	95.6	83.5	68.1	56.7	48.4	42.3	36.9	32.0	28.0	24.9	22.4
	1.10	122	103	83.3	68.8	55.6	45.0	39.1	34.3	30.1	26.7	24.0
	1.05	149	123	94.1	74.9	58.6	47.3	39.7	34.6	30.4	26.9	24.2
	1.00	176	141	101	78.2	59.7	48.0	40.0	34.9	30.5	27.0	24.4
1.2-KGL-275P	1.15	110	95.6	78.1	64.9	55.4	48.5	42.4	36.7	32.1	28.5	25.7
	1.10	140	118	95.4	78.8	63.8	51.5	44.8	39.3	34.4	30.6	27.5
	1.05	171	141	108	85.9	67.2	54.1	45.4	39.7	34.7	30.9	27.8
	1.00	201	162	116	89.5	68.3	55.0	45.8	39.9	34.9	31.0	27.9
1.2-KGL-300P	1.15	120	104	85.2	70.8	60.5	52.9	46.2	40.0	34.9	31.1	28.0
	1.10	153	129	104	86.0	69.5	56.2	48.8	42.8	37.5	33.3	30.0
	1.05	186	153	118	93.6	73.3	59.0	49.5	42.9	37.7	33.6	30.3
	1.00	220	176	126	97.7	74.5	60.0	50.2	43.2	38.0	33.8	30.5
1.2-KGL-330P	1.15	131	115	93.7	77.9	66.6	58.2	50.8	44.0	38.4	34.2	30.8
	1.10	168	142	115	94.6	76.5	61.8	53.7	47.1	41.3	36.6	33.0
	1.05	217	182	136	101	79.6	65.3	54.7	47.2	41.5	37.2	33.7
	1.00	229	191	134	93.5	73.2	60.0	50.3	43.4	38.2	34.1	31.0
1.2-KGL-380P	1.15	158	131	105	89.4	77.0	66.8	56.3	48.6	42.8	38.3	34.8
	1.10	210	182	135	106	89.4	73.9	62.3	53.8	47.3	42.4	38.3
	1.05	251	211	157	116	92.4	75.0	63.1	54.3	47.9	42.8	38.7
	1.00	291	242	169	118	92.9	76.0	63.7	54.9	48.4	43.2	39.2
1.2-KGL-400P	1.15	166	139	111	94.0	81.0	71.0	59.2	51.1	45.1	40.3	36.3
	1.10	221	191	141	111	94.0	78.0	65.6	56.6	49.9	44.6	40.3
	1.05	264	221	165	123	97.0	79.0	66.4	57.2	50.4	45.1	40.8
	1.00	306	255	179	124	98.0	80.0	67.1	57.9	50.9	45.5	41.3

Current-low (KGL)

Amperes at 20°C

SEC model type	End volts/ Cell	Discharge data Amps at 20°C										
		Discharge time in hours										
		0.5hr	1hr	2hr	3hr	4hr	5hr	6hr	7hr	8hr	9hr	10hr
1.2-KGL-435P	1.15	180	151	120	103	88.0	77.0	64.4	55.6	49.1	43.9	39.8
	1.10	240	208	154	121	102	85.0	71.4	61.5	54.2	48.5	43.9
	1.05	287	241	180	133	106	86.0	72.2	62.2	54.8	49.1	44.3
	1.00	333	278	194	135	106	87.0	72.9	62.9	55.3	49.5	44.9
1.2-KGL-450P	1.15	186	156	124	107	91.0	79.7	66.6	57.5	50.8	45.4	41.2
	1.10	248	215	159	125	106	87.9	73.9	63.6	56.1	50.2	45.4
	1.05	297	249	186	138	109	89.0	74.7	64.3	56.7	50.8	45.8
	1.00	344	288	201	140	110	90.0	75.4	65.1	57.2	51.2	46.4
1.2-KGL-500P	1.15	207	173	138	118	101	88.3	74.0	63.9	56.4	50.4	45.7
	1.10	277	239	177	139	117	97.9	82.0	70.7	62.3	55.7	50.4
	1.05	323	271	202	150	119	97.0	81.4	70.1	61.7	55.3	50.0
	1.00	383	319	223	155	122	100	83.8	72.3	63.6	56.9	51.6
1.2-KGL-560P	1.15	232	194	154	131	113	98.0	82.0	71.0	62.0	56.0	51.0
	1.10	309	267	197	155	130	109	92.0	79.0	69.0	61.0	56.0
	1.05	368	309	230	171	136	110	93.0	80.0	70.0	62.0	57.0
	1.00	429	356	250	173	137	112	94.0	81.0	71.0	64.0	58.0
1.2-KGL-600P	1.15	248	207	165	141	121	105	87.4	75.8	67.2	60.5	53.8
	1.10	331	286	211	166	139	116	97.9	84.5	73.9	66.2	60.5
	1.05	395	331	247	183	145	118	98.9	85.4	74.9	67.2	61.4
	1.00	459	382	268	186	147	120	101	86.4	75.8	68.2	62.4
1.2-KGL-625P	1.15	258	216	172	147	126	109	91.0	79.0	70.0	63.0	56.0
	1.10	345	298	220	173	145	121	102	88.0	77.0	69.0	63.0
	1.05	411	345	257	191	151	123	103	89.0	78.0	70.0	64.0
	1.00	478	398	279	194	153	125	105	90.0	79.0	71.0	65.0
1.2-KGL-650P	1.15	269	225	179	153	131	114	95.0	83.0	73.0	65.0	59.0
	1.10	359	310	229	180	151	126	106	91.0	80.0	71.0	65.0
	1.05	428	359	268	199	158	128	108	93.0	81.0	73.0	66.0
	1.00	498	414	290	201	159	130	109	94.0	83.0	74.0	68.0
1.2-KGL-750P	1.15	310	259	207	176	151	132	109	95.3	84.1	75.0	67.9
	1.10	414	358	264	208	174	146	123	105	92.2	82.1	75.0
	1.05	494	414	309	229	181	147	124	106	94.3	84.1	76.0
	1.00	574	477	334	232	183	150	126	108	95.3	85.1	78.0
1.2-KGL-800P	1.15	331	277	221	188	161	141	117	102	89.7	80.0	72.4
	1.10	441	382	281	222	186	156	131	112	98.4	87.6	80.0
	1.05	526	441	330	244	194	157	132	114	101	89.7	81.1
	1.00	612	509	357	248	196	160	134	116	102	90.8	83.2
1.2-KGL-850P	1.15	351	294	234	199	172	149	124	108	95.1	85.0	76.9
	1.10	470	406	300	236	197	165	139	119	104	93.1	85.0
	1.05	559	470	350	260	206	167	141	121	106	95.1	87.0
	1.00	651	541	379	263	207	170	143	122	108	96.1	88.0
1.2-KGL-910P	1.15	376	315	250	213	184	159	133	116	102	91.0	82.3
	1.10	503	434	321	252	211	177	148	128	112	99.7	91.0
	1.05	598	503	375	278	221	179	151	130	114	102	93.2
	1.00	697	580	406	282	222	182	153	131	116	103	94.3
1.2-KGL-1000P	1.15	415	347	277	235	202	177	147	127	112	100	90.0
	1.10	552	477	352	277	235	195	162	140	122	110	100
	1.05	660	552	412	307	242	197	165	142	125	112	102
	1.00	765	637	447	310	245	200	167	144	127	114	103

Current-low (KGL)

Amperes at 20°C

SEC model type	Discharge data Amps at 20°C											
	End volts/ Cell	Discharge time in hours										
		0.5hr	1hr	2hr	3hr	4hr	5hr	6hr	7hr	8hr	9hr	10hr
1.2-KGL-1120P	1.15	465	389	310	263	226	198	165	142	125	112	101
	1.10	618	534	394	310	263	218	181	157	137	123	112
	1.05	739	618	461	344	271	221	185	159	140	125	114
	1.00	857	713	501	347	274	224	187	161	142	128	115
1.2-KGL-1250P	1.15	519	434	346	294	253	221	184	159	140	125	113
	1.10	690	596	440	346	294	244	203	175	153	138	125
	1.05	825	690	515	384	303	246	206	178	156	140	128
	1.00	956	796	559	388	306	250	209	180	159	143	129
1.2-KGL-1350P	1.15	561	469	374	318	273	239	199	172	151	135	122
	1.10	745	644	475	374	318	264	219	189	165	149	135
	1.05	891	745	556	415	327	266	222	192	168	151	138
	1.00	1032	860	604	419	330	270	226	194	172	154	139
1.2-KGL1400P	1.15	581	486	388	329	283	248	206	178	157	140	127
	1.10	773	668	493	388	329	273	227	196	171	155	140
	1.05	924	773	577	430	339	276	231	199	175	157	143
	1.00	1071	892	626	435	343	280	234	202	178	160	144
1.2-KGL-1500P	1.15	623	521	416	353	303	266	221	191	168	150	135
	1.10	828	716	528	416	353	293	243	210	183	165	150
	1.05	990	828	618	461	363	296	248	213	188	168	153
	1.00	1148	956	671	465	368	300	251	216	191	171	155
1.2-KGL-1600P	1.15	665	556	444	377	323	284	236	204	179	160	144
	1.10	883	764	563	444	377	313	259	224	195	176	160
	1.05	1056	883	659	492	387	316	265	227	201	179	163
	1.00	1225	1020	716	496	393	320	268	230	204	182	165

Current-medium (KGM)

Amperes at 20°C

SEC model type	Discharge data Amps at 20°C									
	End volts/ cell	Discharge time in minutes					Discharge time in hours			
		5min	10min	20min	30min	60min	1.5min	2hr	3hr	5hr
1.2-KGM-20P	1.14	19.5	15.6	13.2	11.2	8.90	7.60	6.30	5.00	3.50
	1.10	24.2	20.0	16.8	14.4	11.1	8.80	7.40	5.70	3.80
	1.05	29.6	25.0	19.9	17.6	13.2	9.90	8.30	6.40	3.90
	1.00	36.6	30.1	24.6	22.0	15.0	11.5	9.50	6.60	4.00
1.2-KGM-30P	1.14	29.2	23.4	19.8	16.8	13.3	11.4	9.45	7.50	5.25
	1.10	36.4	30.0	25.2	21.6	16.6	13.2	11.1	8.50	5.80
	1.05	44.4	37.5	29.9	26.4	19.8	14.8	12.4	9.6	5.90
	1.00	54.9	45.2	36.9	33.0	22.5	17.2	14.2	9.9	6.00
1.2-KGM-40P	1.14	39.0	31.3	26.4	22.4	17.8	15.2	12.6	10.0	7.00
	1.10	48.6	40.0	33.6	28.2	22.2	17.6	14.8	11.4	7.70
	1.05	59.3	50.0	39.9	35.2	26.4	19.9	16.6	12.8	7.80
	1.00	73.2	60.2	49.2	44.0	30.0	22.9	19.0	13.2	8.00
1.2-KGM-50P	1.14	48.7	39.1	33.0	28.0	22.2	19.0	15.8	12.5	8.75
	1.10	60.8	50.0	42.0	36.0	27.7	22.0	18.5	14.3	9.70
	1.05	74.1	62.5	49.8	44.0	33.0	24.8	20.7	16.0	9.80
	1.00	91.5	75.3	61.6	55.0	37.5	28.6	23.7	16.5	10.0
1.2-KGM-70P	1.14	68.3	54.8	46.2	39.2	31.1	26.6	22.1	17.5	12.3
	1.10	85.1	70.0	58.8	50.4	38.8	30.8	25.9	20.0	13.5
	1.05	104	87.5	69.8	61.6	46.2	34.8	29.0	22.4	13.8
	1.00	128	105	86.1	77.0	52.5	40.1	33.2	23.1	14.0
1.2-KGM-80P	1.14	78.0	62.6	52.8	44.8	35.6	30.4	25.2	20.0	14.2
	1.10	97.2	80.0	67.2	57.6	44.4	35.2	29.6	22.8	15.5
	1.05	119	100	79.8	70.4	52.8	39.8	33.2	25.6	15.7
	1.00	146	102	98.5	88.0	60.0	45.8	38.0	26.4	16.0
1.2-KGM-100P	1.14	97.5	78.3	66.0	56.0	44.5	38.0	31.5	25.0	17.6
	1.10	122	100	84.0	72.0	55.5	44.0	37.0	28.6	19.4
	1.05	148	125	100	88.0	66.0	49.8	41.5	32.0	19.7
	1.00	183	151	123	110	75.0	57.3	47.5	33.0	20.0
1.2-KGM-120P	1.14	117	93.7	79.2	67.2	53.4	45.6	37.8	30.0	21.1
	1.10	146	120	101	86.4	66.6	52.8	44.4	34.3	23.2
	1.05	178	150	120	106	79.2	59.7	49.8	38.4	23.6
	1.00	220	181	148	132	90.0	68.8	57.0	39.6	24.0
1.2-KGM-140P	1.14	137	110	92.4	78.4	62.3	53.2	44.1	35.0	24.6
	1.10	170	140	118	101	77.7	61.6	51.8	40.0	27.1
	1.05	208	175	140	123	92.4	69.7	58.1	44.8	27.5
	1.00	256	211	172	154	105	80.3	66.5	46.2	28.0
1.2-KGM-150P	1.14	146	117	99.0	84.0	66.7	57.0	47.3	37.5	26.3
	1.10	182	150	126	108	83.2	66.0	55.5	42.9	29.1
	1.05	222	188	150	132	99.0	74.6	62.2	48.0	29.5
	1.00	275	226	185	165	113	86.0	71.2	49.5	30.0
1.2-KGM-180P	1.14	176	141	119	101	80.1	68.4	56.7	45.0	31.5
	1.10	219	180	151	130	100	79.2	66.6	51.4	34.9
	1.05	267	225	180	158	119	89.6	74.7	57.6	35.4
	1.00	330	271	222	198	135	103	85.5	59.4	36.0
1.2-KGM-200P	1.14	195	157	132	112	89.0	76.0	63.0	50.0	35.0
	1.10	243	200	168	144	111	88.0	74.0	57.2	38.8
	1.05	297	250	200	176	132	100	83.0	64.0	39.4
	1.00	366	301	246	220	150	115	95.0	66.0	40.0

Current-medium (KGM)

Amperes at 20°C

SEC model type	Discharge data Amps at 20°C									
	End volts/ cell	Discharge time in minutes					Discharge time in hours			
		5min	10min	20min	30min	60min	1.5min	2hr	3hr	5hr
1.2-KGM-220P	1.14	214	172	145	123	97.9	83.6	69.3	55.0	38.6
	1.10	268	220	185	158	122	96.8	81.4	62.9	42.6
	1.05	326	275	220	194	145	110	91.3	70.4	43.3
	1.00	403	331	271	242	165	126	105	72.6	44.0
1.2-KGM-240P	1.14	234	188	159	134	107	91.2	75.6	60.0	42.6
	1.10	292	240	202	173	133	106	88.8	68.6	46.5
	1.05	356	300	240	211	158	120	100	76.8	47.2
	1.00	439	361	296	264	180	138	114	79.2	48.0
1.2-KGM-260P	1.14	254	204	172	146	116	98.8	81.9	65.0	45.7
	1.10	316	260	218	187	144	114	96.2	74.3	50.4
	1.05	385	325	259	229	172	129	108	83.2	51.2
	1.00	476	392	320	286	195	149	124	85.8	52.0
1.2-KGM-300P	1.14	293	235	198	168	134	114	94.5	75.0	52.9
	1.10	365	300	252	216	167	132	111	85.8	58.2
	1.05	445	375	299	264	198	149	125	96.0	59.1
	1.00	549	452	369	330	225	172	143	99.0	60.0
1.2-KGM-320P	1.14	312	251	211	179	142	122	101	80.0	56.0
	1.10	389	320	269	230	178	141	118	91.5	62.0
	1.05	474	400	319	281	211	159	133	102	63.0
	1.00	586	482	394	352	240	184	152	106	64.0
1.2-KGM-340P	1.14	332	266	225	190	151	129	107	85.0	59.5
	1.10	413	340	286	245	189	150	126	97.2	65.9
	1.05	504	425	339	299	224	169	141	109	66.9
	1.00	623	512	419	374	255	195	162	112	68.0
1.2-KGM-375P	1.14	365	294	248	210	167	143	118	93.8	64.9
	1.10	456	375	315	270	208	165	139	107	72.7
	1.05	556	469	374	330	248	187	156	120	73.8
	1.00	687	565	462	413	281	215	178	124	75.0
1.2-KGM-390P	1.14	296	260	223	201	174	148	123	97.5	67.5
	1.10	370	332	295	260	217	172	144	111	75.6
	1.05	451	414	351	316	257	195	162	125	76.7
	1.00	557	499	408	326	293	224	186	129	78.0
1.2-KGM-400P	1.14	390	313	262	224	178	152	126	100	70.7
	1.10	486	400	336	288	222	176	148	114	77.6
	1.05	593	500	399	352	264	199	166	128	78.8
	1.00	732	602	493	440	300	229	190	132	80.0
1.2-KGM-420P	1.14	410	329	275	235	187	160	132	105	74.2
	1.10	511	420	353	302	233	185	155	120	81.5
	1.05	623	525	419	370	277	209	174	134	82.7
	1.00	769	633	517	462	315	241	200	139	84.0
1.2-KGM-500P	1.14	488	392	330	280	222	190	157	125	87.5
	1.10	608	500	420	360	277	220	185	143	97.0
	1.05	741	625	499	440	330	249	207	160	98.4
	1.00	915	753	615	550	375	286	237	165	100
1.2-KGM-550P	1.14	537	431	363	308	245	209	173	138	96.3
	1.10	669	550	462	396	305	242	204	157	107
	1.05	815	679	549	484	363	274	228	176	108
	1.00	1016	836	683	611	416	317	263	183	111

Current-medium (KGM)

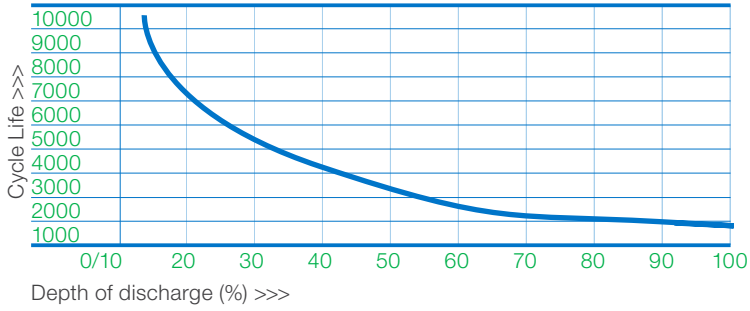
Amperes at 20°C

SEC model type	Discharge data Amps at 20°C									
	End volts/ cell	Discharge time in minutes					Discharge time in hours			
		5min	10min	20min	30min	60min	1.5min	2hr	3hr	5hr
1.2-KGM-580P	1.14	566	454	383	325	258	220	183	145	102
	1.10	705	580	487	418	322	232	215	166	113
	1.05	860	725	579	510	383	289	241	186	114
	1.00	1062	873	714	638	435	333	276	191	116
1.2-KGM-600P	1.14	585	470	396	336	267	228	189	150	105
	1.10	730	600	504	432	333	240	222	172	116
	1.05	890	750	599	528	396	299	249	192	118
	1.00	1099	904	739	660	450	344	285	198	120
1.2-KGM-675P	1.14	658	529	446	378	300	257	213	169	118
	1.10	821	675	567	486	375	270	250	193	131
	1.05	1001	844	674	594	446	336	280	216	133
	1.00	1236	1017	831	743	506	387	321	223	135
1.2-KGM-705P	1.14	687	552	466	395	314	268	222	176	123
	1.10	857	705	592	508	391	282	261	202	137
	1.05	1045	881	703	620	465	351	293	226	139
	1.00	1291	1062	868	776	529	404	335	233	141
1.2-KGM-750P	1.14	731	587	495	420	334	285	236	188	131
	1.10	912	750	630	540	416	300	278	215	146
	1.05	1112	938	748	660	495	374	311	240	148
	1.00	1373	1130	923	825	563	430	356	248	150
1.2-KGM-850P	1.14	829	666	561	476	378	323	268	213	149
	1.10	1034	850	714	612	472	340	315	243	165
	1.05	1260	1063	848	748	561	423	353	272	167
	1.00	1556	1280	1046	935	638	487	404	281	170
1.2-KGM-950P	1.14	926	744	627	532	423	361	299	238	166
	1.10	1155	950	798	684	527	380	352	272	184
	1.05	1408	1188	948	836	627	473	394	304	187
	1.00	1739	1431	1170	1045	713	545	451	314	190
1.2-KGM-1000P	1.14	975	783	661	560	445	380	315	250	175
	1.10	1216	1000	840	720	555	400	370	286	194
	1.05	1483	1250	998	880	660	498	415	320	197
	1.00	1831	1506	1231	1100	750	573	475	330	200
1.2-KGM-1050P	1.14	1024	822	694	588	467	399	331	263	184
	1.10	1277	1050	882	756	583	420	389	300	204
	1.05	1557	1313	1048	924	693	523	436	336	207
	1.00	1923	1581	1293	1155	788	602	499	347	210
1.2-KGM-1150P	1.14	1121	900	760	644	512	437	362	288	201
	1.10	1398	1150	966	828	638	460	426	329	223
	1.05	1705	1438	1148	1012	759	573	477	368	227
	1.00	2106	1732	1416	1265	863	659	546	380	230
1.2-KGM-1250P	1.14	1219	979	826	700	556	475	394	313	219
	1.10	1520	1250	1050	900	694	500	463	358	243
	1.05	1853	1563	1247	1100	825	623	519	400	246
	1.00	2289	1883	1539	1375	938	717	594	413	250

Cycle life

Relationship between depth of discharge and life

Ambient temperature 20°C

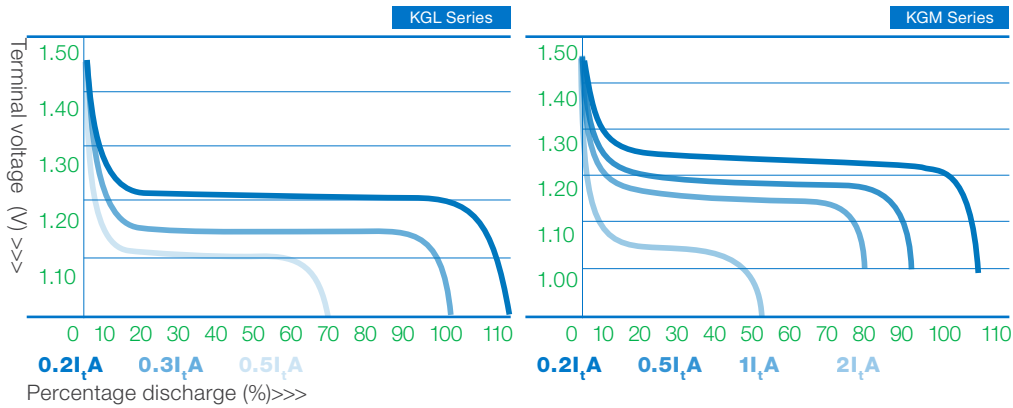


The depth of discharge critically affects the number of cycles which a battery will complete during its life time.

Discharge characteristics

Discharge current VS discharge time curve

Ambient temperature 20°C



Effect of discharge rate on battery capacity for NICAD battery.

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