

## SEC NICKEL CADMIUM

# SEC NI-CAD BATTERIES

## NICKEL CADMIUM - POCKET PLATE

SEC Industrial Battery Companies Nickel Cadmium Pocket Plate batteries are available for a wide range of applications.

### APPLICATIONS

- Telecommunications
- UPS Installations
- Power Stations
- Oil and Gas Refineries
- Railway
- Diesel Engine Starting
- Emergency Lighting
- Traction Batteries
- Photovoltaic & Wind Power
- Offshore Equipment
- Onboard Ship Equipment



Approved by Telecom and Power Authorities Worldwide

### Series Type KL...P - For Long Discharge Rate ( Above 3 Hours)

11 to 1250 A/h in Plastic Cases  
11 to 1650 A/h in Steel Cases

### Series Type KM...P - For Medium Discharge (30 mins upto 3 Hours)

18 to 1250 A/h in Plastic Cases  
18 to 1250 A/h in Steel Cases

### Series Type KH...P - For High Discharge Rate (seconds upto 1 Hour)

10 to 250 A/h in Plastic Cases

Nickel Cadmium cells using pocket plate technology have been used successfully in Industrial battery applications for many years.

With a design life of more than 20 years they have proved to be a very reliable DC power source in float service or cyclic applications in harsh conditions with temperature up to 60° C.

### Specific Design Features:

- Exceptionally long service life in excess of 25 years in many applications
- Wide range of operating temperature (-40° to +60° C)
- Resistant to electrical abuse – both overcharge and over discharge
- Accepts high rate of charge
- Very long shelf/storage life
- Low Maintenance
- Quality approved manufacture to DIN EN ISO 9002:1994
- Dimensions and nominal capacities meet the requirement of IEC 623/DIN 40771.
- Cell container made of translucent polypropylene as standard
- Flame retardant cell containers available as option
- Flip top flame arresting vents available as option

Equalizing voltage range: 1.55 to 1.65 Volts/cell.  
SEC Nickel Cadmium range comprises three types of high, medium and low rate discharge

### Charging Output Current

The batteries are supplied in single cell units complete with inter-cell connectors, pole insulation and cable lugs.

Electrolyte is supplied filled or in solid dry flake for filling on site.

The batteries can be supplied in taped blocks or wooden crates. Mechanical data for taped blocks and wooden crates available on request.

### L Range

The L range is designed for applications where the battery is required to provide energy over relatively long discharge period. Typical uses are power back-up and bulk Energy storage.

### M Range

The M range is designed for applications where the batteries are required to sustain electrical loads for between 30 mins to 3 hours or for mixed loads which involves a mixture of high and low discharge rates. The range is typically used in power back-up applications.

### H Range

The H range is designed for applications where there is a relatively high current over a short periods, usually less than 30 mins in durations. The range is typically used in starting and power back-up applications.

### Capacity

The nominal rated capacity C5 of a cell is the capacity in ampere hours (A/H) available at the 5-hour discharge rate to 1.0 volts/cell, in accordance with DIN EN 60623 and IEC 623. Nominal Voltage is 1.2 volts/Cell.

### Charging

In general all standard charging methods with W-, I-, IU-characteristics are possible.

### Constant Voltage Charging

Float Voltage range: 1.40 to 1.42 Volts/cell.  
The maximum charging output current is 2.5 I5 at 25° C, provided that the charging Voltage Limit is not higher than 1.68 volts/cell.  
The minimum recommended charging rate is I10.

### Constant Current Charging

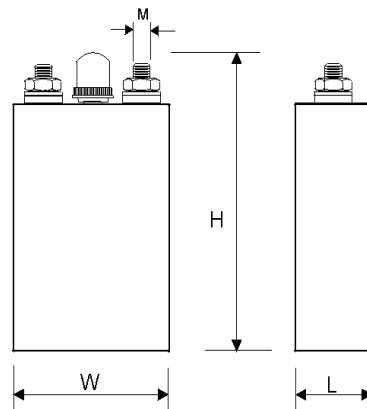
Standard charge: I5 for 7 to 8 hours  
Fast recharge: 2 I5 for 2.5 hours,  
Followed by I5 for 2 to 3 hours  
Minimum effective rate: 1.5 mA/Ah  
Temperature coefficient: -3 to -4 mV/°C  
The electrolyte temperature should never exceed 45°C during charging.

## Series Type KL...P: Cell Type, Nominal Capacity, Dimensions, Weights Plastic Case Cells

### Long Discharge Specification

Cell Type	Nominal Capacity at the 5hr Rate	Dimension Single Cell (mm)			Terminal Bolt Dia.	Number of Terminal Bolts	Weight Per Cell (Kgs)	
		L	W	Ht			Total Weight Filled	Without Electrolyte Dry
KL 11 P	11	46	85	257	M10	2	1.30	0.75
KL 18 P	18	46	85	257	M10	2	1.41	0.92
KL 24 P	24	46	85	257	M10	2	1.51	1.12
KL 30 P	30	46	85	257	M10	2	1.64	1.27
KL 40 P	40	85	85	257	M10	2	2.68	1.80
KL 45 P	45	85	85	257	M10	2	2.80	1.92
KL 55 P	55	85	85	257	M10	2	2.82	2.05
KL 65 P	65	85	85	257	M10	2	2.97	2.30
KL 80 P	80	69	134	394	M16	2	5.32	3.37
KL 100 P	100	69	134	394	M16	2	5.61	3.78
KL 120 P	120	69	134	394	M16	2	5.74	3.96
KL 140 P	140	69	134	394	M16	2	6.07	4.47
KL150 P	150	70	164	394	M16	2	7.10	4.90
KL 160 P	160	108	164	394	M16	2	9.80	5.70
KL 185 P	185	108	164	394	M16	2	9.99	6.33
KL 200 P	200	108	164	394	M16	2	10.35	6.69
KL 230 P	230	108	164	394	M16	2	10.80	7.50
KL 270 P	270	108	164	394	M16	2	11.26	8.32
KL 300 P	300	108	164	394	M16	2	11.72	9.14
KL 340 P	340	158	164	392	M10	4	16.60	11.40
KL 370 P	370	158	164	392	M10	4	17.10	12.20
KL 400 P	400	158	164	392	M10	4	17.70	13.00
KL 435 P	435	158	164	392	M10	4	18.20	13.80
KL 470 P	470	158	164	392	M10	4	18.80	14.60
KL 520 P	520	176	246	408	M10	4	26.70	18.30
KL 560 P	560	176	246	408	M10	4	27.20	18.80
KL625 P	625	176	246	408	M10	4	28.30	20.40
KL 650 P	650	176	368	421	M10	6	37.00	23.70
KL 740 P	740	176	368	421	M10	6	38.60	25.90
KL 800 P	800	176	368	421	M10	6	38.70	26.50
KL 840 P	840	176	368	421	M10	6	40.60	28.10
KL 910 P	940	176	368	421	M10	6	43.99	30.54
KL 1000 P	1000	176	448	421	M10	8	52.50	39.30
KL 1040 P	1040	176	448	421	M10	8	55.20	40.50
KL 1120 P	1120	176	448	421	M10	8	56.20	41.50
KL 1250 P	1250	176	558	421	M10	8	62.00	42.50
KL 1350 P	1350	176	558	421	M10	8	64.90	44.88
KL 1400 P	1400	176	558	421	M10	8	67.30	46.50
KL 1500 P	1500	176	558	421	M10	8	66.40	48.90
KL 1620 P	1620	176	558	421	M10	8	70.80	52.16
KL 1700 P	1700	176	558	421	M10	8	75.30	55.50

Cells are normally supplied as single cells, taped together into blocks or assembled in wooden crates can be supplied





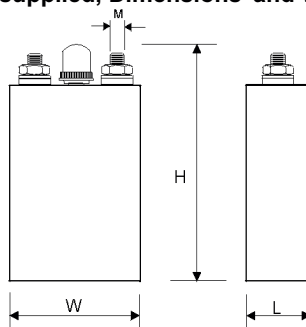


## Series Type KM...P: Cell Type, Nominal Capacity, Dimensions, Weights Plastic Case Cells

### Medium Discharge - Specification

Cell Type	Nominal Capacity at the 5hr Rate	Cell Dimensions (mm)			Terminal Bolt Type (mm)	Number of Terminal Bolts	Weight Per Cell (Kgs)	
		L	W	Ht			Total Weight Filled	Without Electrolyte Dry
KM 11 P	11	46	85	187	M10	2	1.03	0.71
KM 18 P	18	46	85	257	M10	2	1.48	1.04
KM 24 P	24	46	85	257	M10	2	1.59	1.20
KM 30 P	30	46	85	257	M10	2	1.72	1.35
KM 40 P	40	85	85	257	M10	2	2.76	1.88
KM48 P	48	85	85	257	M10	2	2.82	2.05
KM 55 P	55	85	85	257	M10	2	2.97	2.30
KM 65 P	65	53	134	392	M8	2	4.85	3.56
KM 75 P	75	53	134	392	M8	2	5.00	3.78
KM 90 P	90	69	134	392	M8	2	6.18	4.36
KM 110 P	110	69	134	392	M8	2	6.51	4.94
KM 125 P	125	70	164	392	M8	2	7.67	5.61
KM 140 P	140	70	164	392	M8	2	7.84	6.04
KM 160 P	160	108	164	392	M8	2	10.61	6.92
KM 185 P	185	108	164	392	M8	2	10.91	7.50
KM 205 P	205	108	164	392	M8	2	11.17	8.27
KM 225 P	225	108	164	392	M8	2	11.62	8.82
KM 250 P	250	108	164	392	M8	2	12.22	9.62
KM 270 P	270	164	158	392	M10	2	16.30	11.20
KM300 P	300	164	158	392	M10	2	16.50	11.50
KM 320 P	320	164	158	392	M10	2	17.00	12.20
KM340 P	340	164	158	392	M10	2	17.50	13.00
KM 355 P	355	164	158	392	M10	2	18.00	13.70
KM 380 P	380	164	158	392	M10	2	43.10	32.0
KM 400 P	400	164	158	392	M10	2	18.90	15.10
KM 420 P	420	176	246	408	M10	4	25.40	18.70
KM 450 P	450	176	246	408	M10	4	27.30	20.00
KM 470 P	470	176	246	408	M10	4	28.50	20.90
KM 500 P	500	176	246	408	M10	4	28.30	21.22
KM 520 P	520	176	246	408	M10	4	29.40	22.40
KM 570 P	570	176	246	408	M10	4	30.40	23.20
KM 550 P	550	176	246	408	M10	4	29.30	22.40
KM 600 P	600	176	368	421	M10	6	40.70	27.00
KM 630 P	630	176	368	421	M10	6	42.70	28.40
KM 675 P	675	176	368	421	M10	6	43.70	30.80
KM 705 P	705	176	368	421	M10	6	41.90	29.50
KM 750 P	750	176	368	421	M10	6	43.10	32.00
KM 850 P	850	176	448	421	M10	8	48.80	36.20
KM 950 P	950	176	448	421	M10	8	53.20	40.70
KM 1000P	1000	176	448	421	M10	8	56.00	42.80
KM 1050P	1050	176	448	421	M10	8	58.80	44.90
KM 1150P	1150	176	558	421	M10	10	63.40	48.20
KM 1250P	1250	176	558	421	M10	10	68.90	52.40
KM 1390P	1390	176	558	421	M10	10	76.60	58.30

Cells are normally supplied as single cells, taped together into blocks or assembled in wooden crates can be supplied as required.  
Cell Type up to 1250 A/h can be supplied, Dimensions and Weights available on request.









## Series Type KH...P: Cell Type, Nominal Capacity, Dimensions, Weights Plastic Case Cells

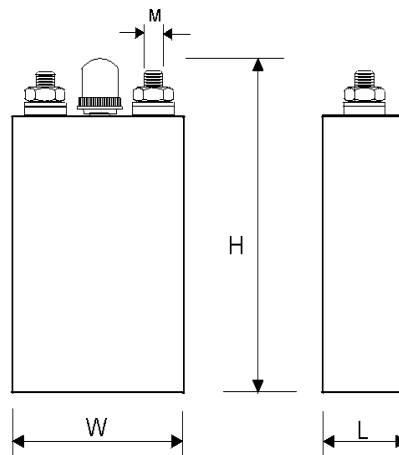
### High Discharge - Specification

Cell Type	Nominal Capacity at the 5hr Rate	Cell Dimensions (mm)			Terminal Bolt size (mm)	Number of Terminal Bolts	Weight Per Cell (Kg)	
		L	W	Ht			Total Weight Filled	Without Electrolyte Dry
KH 10P	10	46	85	257	M10	2	1.62	1.11
KH 20P	20	46	85	257	M10	2	1.90	1.57
KH 30P	30	53	134	360	M8	2	4.13	2.70
KH 40P	40	53	134	360	M8	2	4.37	3.12
KH 50P	50	53	134	360	M8	2	4.61	3.59
KH 65P	65	69	134	360	M8	2	6.10	4.52
KH 80P	80	69	134	360	M8	2	6.63	5.37
KH 100P	100	103.5	134	360	M8	2	8.82	6.49
KH 125P	125	103.5	134	360	M8	2	9.69	7.82
KH 150P	150	108	164	360	M8	4	11.90	8.87
KH 185P	185	164	158	360	M8	4	15.59	10.57
KH 200P	200	164	158	360	M8	4	16.18	11.38
KH 235P	235	164	158	360	M8	4	17.06	12.60
KH250P	250	164	158	360	M8	4	17.35	13.00
KH280P	280	176	246	360	M10	4	23.70	16.98
KH300P	300	176	246	360	M10	4	24.18	17.68
KH320P	320	176	246	360	M10	4	24.60	18.46
KH360P	360	176	368	360	M10	6	33.86	22.68
KH390P	390	176	368	360	M10	6	34.66	23.78
KH420P	420	176	368	360	M10	6	35.40	24.83
KH450P	450	176	368	360	M10	6	36.25	25.98
KH480P	480	176	368	360	M10	6	37.04	27.08
KH520P	520	176	448	360	M10	8	44.73	31.50
KH560P	560	176	448	360	M10	8	45.86	33.00
KH600P	600	176	448	360	M10	8	47.00	34.50
KH640P	640	176	448	360	M10	8	48.11	36.00
KH700P	700	176	558	360	M10	10	57.20	41.13
KH750P	750	176	558	360	M10	10	58.60	43.00
KH800P	800	176	558	360	M10	10	60.00	44.88

## Series Type KH: Cell Type, Nominal Capacity, Dimensions, Weights Steel Case Cells

Details available on request.

Cells are normally supplied as single cells, taped together into blocks or assembled in wooden crates can be supplied as required.  
Cell Type up to 1000 A/h can be supplied, Dimensions and Weights available at request.







## SEC Industrial Battery Co. range of products

<p>CELLYTE 2CMT/G Modular Steel Rack</p>	<p>CELLYTE 2TLAM/G Tubular Steel Rack</p>	<p>CELLYTE 2CMT/G, CELLYTE 2TLAM/G with Catalyst</p>	
<p>CELLYTE 12PLF &amp; 12PLT Range</p>	<p>CELLYTE 12FTA/G Range</p>	<p>CELLYTE 6-12TUA Range</p>	<p>CELLYTE 6-12TSG Range</p>
<p>CELLYTE 6-12TLA Range</p>	<p>CELLYTE 6-12TLG Range</p>	<p>MICROLYTE +Plus Range</p>	<p>MICROLYTE Red Top Range</p>
<p>CELLYTE 2ETG OPzV Range Tubular Steel Rack</p>	<p>SEC Tubular OPzS Range</p>	<p>Nickel Cadmium Range Pocket Plate flooded and Valve Regulated</p>	<p>Typical VRLA catalyst</p>

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Industrial Battery Co.  
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