

NCX

Nickel-cadmium batteries

NCX 80 - NCX 125 - NCX 160



Telecom applications

The NCX battery has been designed to fulfill the demanding requirements of remote or outside telecom plants: local or access terminals, Base Transceiver Stations, Base Station Controllers, Optical Nodes Units, etc...

Beneficial VRLA replacement

Compact and modular, NCX can adjust to most existing Valve Regulated Lead Acid (VRLA) battery compartments and is compatible with existing charging systems. With much longer life, predictable operation, less maintenance, and lower life cycle cost, NCX is a realistic and attractive alternative to troublesome VRLA batteries, particularly in extreme operating temperatures.

Simple configuration

For a typical 48 V bulk power application, 38 NCX cells are recommended, with 3 to 11 cells comprising each battery module. During operation, a fixed single rate charge voltage of 1.43 V/cell is recommended, rather than temperature compensated voltage control.

Central Watering System

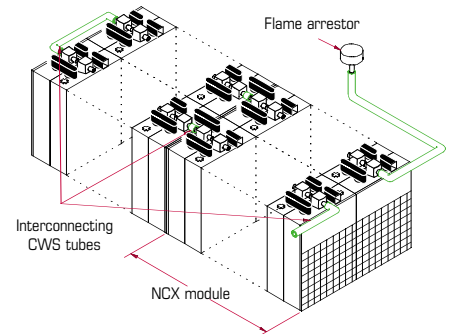
Electrically interconnected NCX modules are linked by a Central Watering System (CWS). During operation, gases are channeled through the CWS and exhausted through a flame arrestor.

The CWS single inlet to fill all cells and quick disconnects facilitate a swift and safe set-up when servicing the battery.

NCX, nickel-cadmium battery for telecom networks with extreme conditions

Reliable investment

Designed around stable components and corrosion-free chemistry, NCX makes problems like dry-out, grid corrosion, plate growth, and thermal runaway worries of the past. This stability allows for extended lifetime without frequent maintenance. At the end of the day, lower operating costs and less down time are guaranteed.



Battery characteristics	NCX 160	NCX 125	NCX 80
Volumetric energy density	57 Wh/l	65 Wh/l	57 Wh/l
Gravimetric energy density	36 Wh/kg	40 Wh/kg	36 Wh/kg
Charge voltage range*	1.41 to 1.45 V/cell	1.41 to 1.45 V/cell	1.41 to 1.45 V/cell
Charging current range*	0.1C ₅ to 0.2C ₅	0.1C ₅ to 0.2C ₅	0.1C ₅ to 0.2C ₅
Case material	Polypropylene	Polypropylene	Polypropylene
Flammability (and OI)	UL-94 VO (28%)	UL-94 VO (28%)	UL-94 VO (28%)
Terminal size	M 6 x 0.75	M 6 x 0.75	M 6 x 0.75
Life time at +25°C	≥20 years	≥20 years	≥20 years
Maintenance	NCX 160	NCX 125	NCX 80
Reserve electrolyte	230 ml	350 ml	230 ml
Watering interval at +25°C	≥12 years	≥12 years	≥12 years

*During constant voltage charge

Applications advantages

- Fits most existing VRLA battery compartments and all charging systems
- Remote bulk power cabinets
- Controlled Environment Vaults (CEV)
- Huts
- Central Offices (CO)

Advantages

- Very low maintenance
- Long life, even under extreme operating temperatures
- Very low Life Cycle Cost
- Flooded technology and separator design minimize thermal runaway
- Single point watering system
- All parts are readily recyclable

Operating range

- -20°C to +40°C (-4°F to 104°F), however can survive extremes from -50°C to +70°C (-58°F to +158°F)
- Up to Zone 4 earthquake

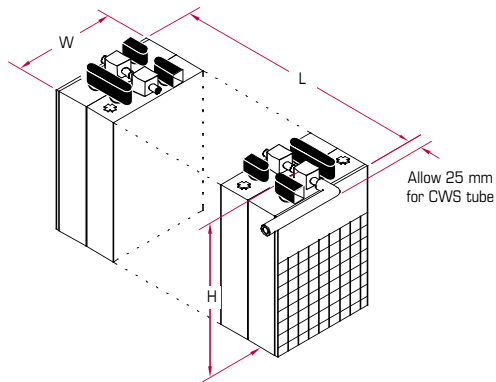
Technology

- Sintered positive electrodes
- Plastic bonded negative electrode
- Flooded alkaline electrolyte
- Compact stack design using chemically stable separator material.

Module physical characteristics

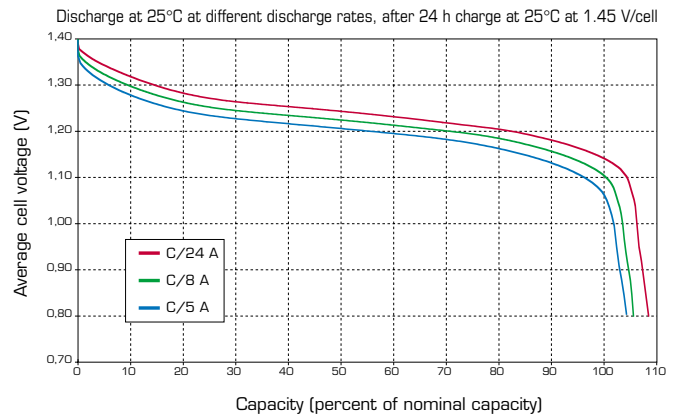
Type	Voltage (V)	Rated Capacity C ₅ Ah*	Nominal Capacity C ₈ Ah**	Maximum dimensions mm (inches)						Weight	
				L		W		H		kg	lbs.
				mm	in	mm	in	mm	in		
NCX 125-3	3.6	140	125	165	6.5	171	6.7	259	10.20	11.4	25.1
NCX 125-4	4.8	140	125	216	8.5	171	6.7	259	10.20	15.1	33.3
NCX 125-5	6.0	140	125	267	10.5	171	6.7	259	10.20	18.9	41.7
NCX 125-6	7.2	140	125	318	12.52	171	6.7	259	10.20	22.7	50.0
NCX 125-7	8.4	140	125	369	14.53	171	6.7	259	10.20	26.5	58.4
NCX 125-8	9.6	140	125	420	16.54	171	6.7	259	10.20	30.3	66.8
NCX 80-3	3.6	93	80	121	4.8	171	6.7	259	10.20	8.3	18.3
NCX 80-4	4.8	93	80	157	6.2	171	6.7	259	10.20	11.0	24.3
NCX 80-5	6.0	93	80	194	7.64	171	6.7	259	10.20	13.6	30.0
NCX 80-6	7.2	93	80	230	9.1	171	6.7	259	10.20	16.3	35.9
NCX 80-7	8.4	93	80	266	10.5	171	6.7	259	10.20	18.9	41.7
NCX 80-8	9.6	93	80	303	11.9	171	6.7	259	10.20	21.5	47.4
NCX 80-10	12.0	93	80	375	14.8	171	6.7	259	10.20	26.8	59.1
NCX 80-11	13.2	93	80	412	16.2	171	6.7	259	10.20	29.4	64.8
NCX 160-2	2.4	186	160	157	6.2	171	6.7	259	10.20	11.1	24.5
NCX 160-3	3.6	186	160	230	9.1	171	6.7	259	10.20	16.4	36.2
NCX 160-4	4.8	186	160	303	11.9	171	6.7	259	10.20	21.6	47.6

*IEC 60623. ** Obtained after a constant voltage charge of 1.45 V/cell 24 h, 25°C followed by a discharge 8 h, 25°C down to 1.1 V/cell

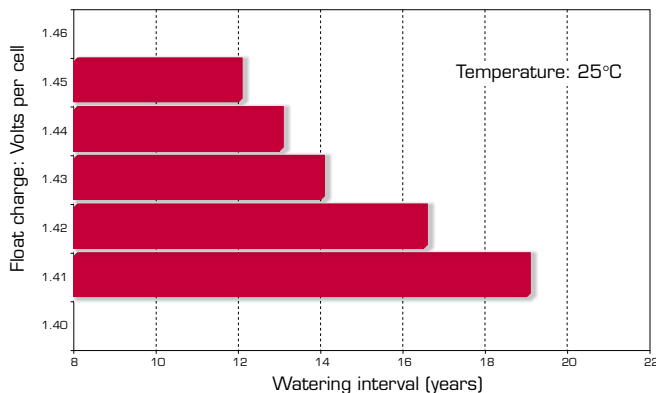


NCX module

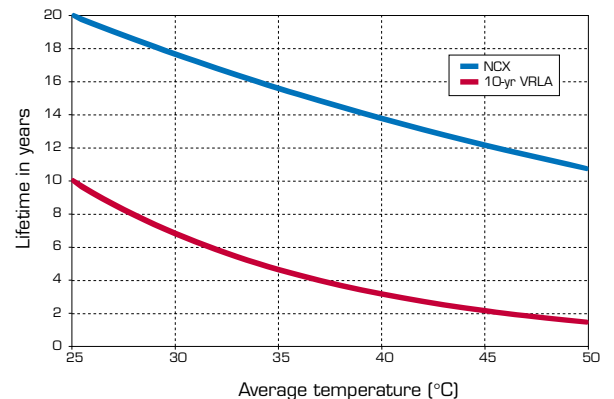
Discharge characteristics



Effect of V_{float} on maintenance



Effect of temperature on battery life



Tabular discharge data for the NCX range

Performance table in **Ampere** after a constant voltage charge of 1.45V/cell for 24 h at +20°C to +25°C (+68°F to +77°F)

Figures are valid for a new cell that has never been put in service and has been stored less than six months.

Final voltage: 1.00 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	55.1	36.4	25.2	19.1	15.6	10.2	8.3	3.5
NCX 125	125	86.1	56.9	39.3	29.8	24.4	16.0	12.9	5.4
NCX 160	160	110.1	72.8	50.3	38.2	31.3	20.4	16.5	7.0

Final voltage: 1.05 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	46.2	32.9	24.9	19.1	15.6	10.1	8.2	3.5
NCX 125	125	72.2	51.4	38.9	29.8	24.4	15.8	12.8	5.4
NCX 160	160	92.4	65.7	49.7	38.2	31.3	20.2	16.3	7.0

Final voltage: 1.10 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	39.1	27.5	22.5	18.2	15.1	10.0	8.1	3.4
NCX 125	125	61.1	43.0	35.2	28.5	23.6	15.6	12.6	5.4
NCX 160	160	78.1	55.1	45.0	36.4	30.2	20.0	16.2	6.9

Final voltage: 1.14 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	30.2	24.0	18.9	16.0	13.7	9.2	7.6	3.3
NCX 125	125	47.2	37.5	29.6	25.0	21.4	14.4	11.9	5.2
NCX 160	160	60.4	48.0	37.9	32.0	27.4	18.4	15.3	6.7

* Nominal capacity is obtained after a constant voltage charge (I-U) of 1.45 V/cell (24 h at +25°C/+77°F) followed by a discharge (at the discharge rate corresponding to 8 h autonomy) down to 1.1 V/cell. Available charge current 0.15 C_B A.

Tabular discharge data for the NCX range

Performance table in **Watt** after a constant voltage charge of 1.45V/cell for 24 h at +20°C to +25°C (+68°F to +77°F)

Figures are valid for a new cell that has never been put in service and has been stored less than six months.

Final voltage: 1.00 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	59.5	39.7	28.4	22.2	18.3	12.1	9.8	4.2
NCX 125	125	92.9	62.0	44.4	34.7	28.6	18.8	15.4	6.6
NCX 160	160	118.9	79.4	56.8	44.4	36.6	24.1	19.7	8.5

Final voltage: 1.05 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	50.3	36.1	28.1	22.2	18.3	11.9	9.7	4.2
NCX 125	125	78.7	56.5	43.8	34.7	28.6	18.6	15.2	6.6
NCX 160	160	100.7	72.3	56.1	44.4	36.6	23.8	19.4	8.5

Final voltage: 1.10 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	44.1	31.1	25.9	21.3	17.7	11.8	9.6	4.2
NCX 125	125	68.9	48.6	40.4	33.3	27.6	18.4	15.0	6.6
NCX 160	160	88.1	62.2	51.7	42.6	35.3	23.6	19.2	8.4

Final voltage: 1.14 V/cell

Cell type	C _B (Ah) *	Hours							
		1	2	3	4	5	8	10	24
NCX 80	80	34.7	27.6	22.1	18.7	16.1	11.0	9.2	4.1
NCX 125	125	54.2	43.1	34.6	29.2	25.1	17.1	14.3	6.4
NCX 160	160	69.3	55.1	44.3	37.4	32.1	21.9	18.3	8.1

* Nominal capacity is obtained after a constant voltage charge (I-U) of 1.45 V/cell (24 h at +25°C/+77°F) followed by a discharge (at the discharge rate corresponding to 8 h autonomy) down to 1.1 V/cell. Available charge current 0.15 C_B A.

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