

NCX

Nickel-cadmium batteries

NCX 80 - NCX 125



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

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, Cable TV,...

With its compactness and its modularity, the NCX battery strings can fit most of the battery compartment which are primarily designed for the VRLA batteries. 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 operations.

Simple configuration

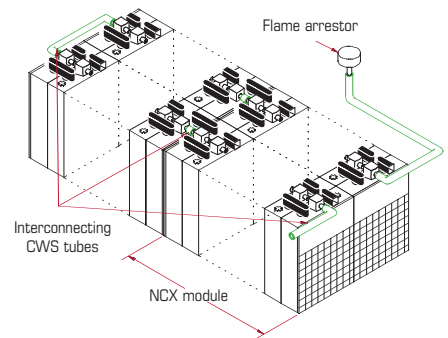
A typical 48 Volt battery requires 38 cells using 3-8 cell blocks for NCX 125 or 3-11 cell blocks for NCX 80. A float voltage of 54.4 volts is recommended and temperature compensation is not required.

Central Watering System (CWS)

NCX battery strings are designed with a single point watering system. The single point watering system channels all the gases produced during normal float operation through the flame arrestor. This single point watering system allows each cell to be billed to its correct level during watering operation.

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 125	NCX 80
Volumetric energy density	65 Wh/l	57 Wh/l
Gravimetric energy density	40 Wh/kg	36 Wh/kg
Charge voltage range	1.41 to 1.45 V/cell	1.41 to 1.45 V/cell
Charging current range*	0.1 C ₅ to 0.2 C ₅	0.1 C ₅ to 0.2 C ₅
Case material	Polypropylene	Polypropylene
Flammability (and OI)	UL-94 V0 (28%)	UL-94 V0 (28%)
Female terminal size	M 6 x 1	M 6 x 1
Life time at +25°C/+77°F	≥20 years	≥20 years
Watering interval at +25°C/+77°F	≥12 years	≥12 years

* During constant voltage charge. The initial charging current could be as high as 0.7 C₈ A.

Applications

- Remote bulk power cabinets
- Controlled Environment Vaults (CEV)
- Cables TV (CATV)
- Huts
- Central Offices (CO)

Due to its high volumetric energy density and charge acceptance, NCX fits most existing VRLA battery compartments and all charging systems.

Advantages

- High reliability
- Very low maintenance
- Long life, even under extreme operating temperatures
- Very low Life Cycle Cost
- Resistance to electrical abuse and to thermal runaway
- Permanent mechanical integrity
- 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

Module physical characteristics

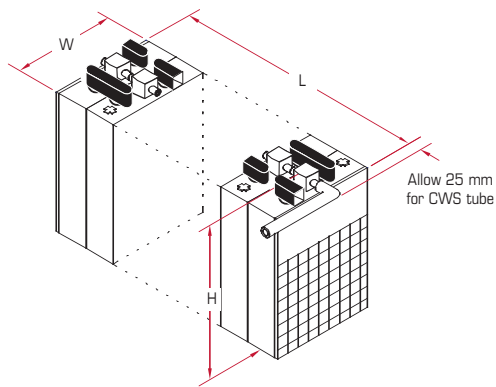
Type	Voltage (V)	Rated Capacity C ₅ Ah*	Nominal Capacity C ₈ Ah**	Maximum dimensions mm (inches)						Weight	
				L		W		H		kg	lbs.
				mm	in	mm	in	mm	in		
NCX 125-3	3.6	140	125	165	6.5	171	6.7	259	10.20	11.4	25.1
NCX 125-4	4.8	140	125	216	8.5	171	6.7	259	10.20	15.1	33.3
NCX 125-5	6.0	140	125	267	10.5	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

* According IEC 60623.

** Obtained after a constant voltage charge of 1.45 V/cell 24 h, +25°C/+77°F followed by a discharge 8 h, +25°C/+77°F down to 1.1 V/cell.

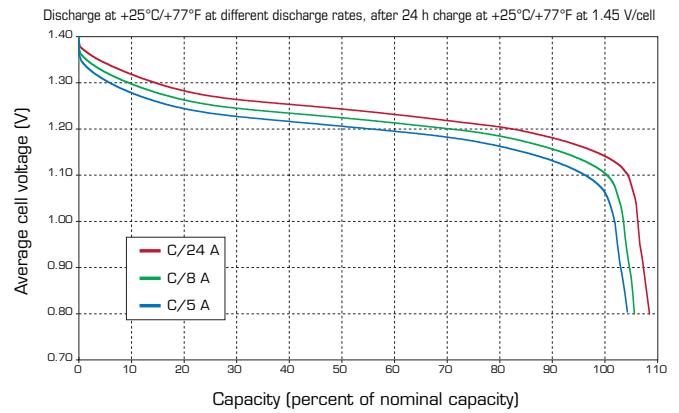
Technology

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

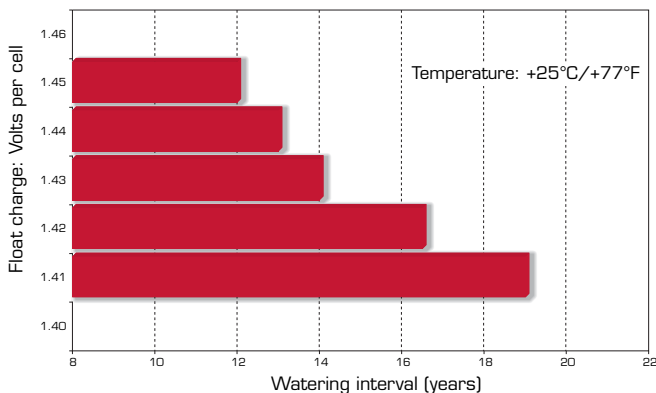


NCX module

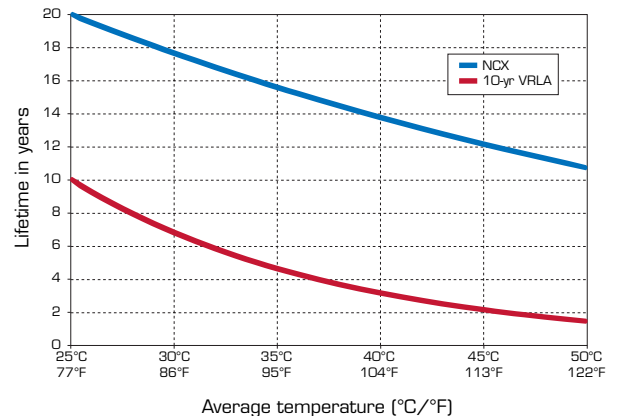
Discharge characteristics



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), available charge current 0.15 C₈ A **.

Final voltage: 1.00 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	55.1	36.4	25.2	19.1	15.6	10.2	8.3	6.9	4.6	3.5
NCX 125	125	86.1	56.9	39.3	29.8	24.4	16.0	12.9	10.8	7.2	5.4

Final voltage: 1.05 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	46.2	32.9	24.9	19.1	15.6	10.1	8.2	6.8	4.6	3.5
NCX 125	125	72.2	51.4	38.9	29.8	24.4	15.8	12.8	10.6	7.2	5.4

Final voltage: 1.10 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	39.1	27.5	22.5	18.2	15.1	10.0	8.1	6.7	4.5	3.4
NCX 125	125	61.1	43.0	35.2	28.5	23.6	15.6	12.6	10.5	7.1	5.4

Final voltage: 1.14 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	30.2	24.0	18.9	16.0	13.7	9.2	7.6	6.4	4.3	3.3
NCX 125	125	47.2	37.5	29.6	25.0	21.4	14.4	11.9	9.9	6.8	5.2

* 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.

** The performance table is valid for 1.43 - 1.45 V per cell range.

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), available charge current 0.15 C₈ A **.

Final voltage: 1.00 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	59.5	39.7	28.4	22.2	18.3	12.1	9.8	8.2	5.5	4.2
NCX 125	125	92.9	62.0	44.4	34.7	28.6	18.8	15.4	12.9	8.6	6.6

Final voltage: 1.05 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	50.3	36.1	28.1	22.2	18.3	11.9	9.7	8.1	5.5	4.2
NCX 125	125	78.7	56.5	43.8	34.7	28.6	18.6	15.2	12.7	8.6	6.6

Final voltage: 1.10 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	44.1	31.1	25.9	21.3	17.7	11.8	9.6	8.0	5.4	4.2
NCX 125	125	68.9	48.6	40.4	33.3	27.6	18.4	15.0	12.6	8.5	6.6

Final voltage: 1.14 V/cell

Cell type	C ₈ (Ah) *	Hours									
		1	2	3	4	5	8	10	12	18	24
NCX 80	80	34.7	27.6	22.1	18.7	16.1	11.0	9.2	7.6	5.2	4.1
NCX 125	125	54.2	43.1	34.6	29.2	25.1	17.1	14.3	11.9	8.1	6.4

* 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.

** The performance table is valid for 1.43 - 1.45 V per cell range.

