AGM VRLA NXT Series

EXIDE

INDUSTRIAL
SOLUTION
POWER

- Headquartered in **Kolkata**, India
- Products : **Lead Acid Storage Batteries** : 2.5Ah to 20,000 Ah
  Home UPS
  DC Power Solution
  Standby Products & Solutions
- **9 Manufacturing units** in India
- **1 R&D Center** in India
- **5 Wholly owned Subsidiaries** in India
- Turnover of **USD 1.3 Billion**
- An Integrated Manufacturing Unit for **Standby Systems and DC Power solutions** in Kolkata, India.

INVERTER BATTERIES

After 10 years of experience in VRLA with Shin Kobe, Exide (INDIA) has finally launched new Index NXT with the cycle life unmatched with competition nationally and internationally with its unique feature of 5 hours quick recharge option.

FEATURES

Fast recovery from deep discharge

Extended cycle life

Fast recharge capability

Deep cycle application

Excellent charge retention

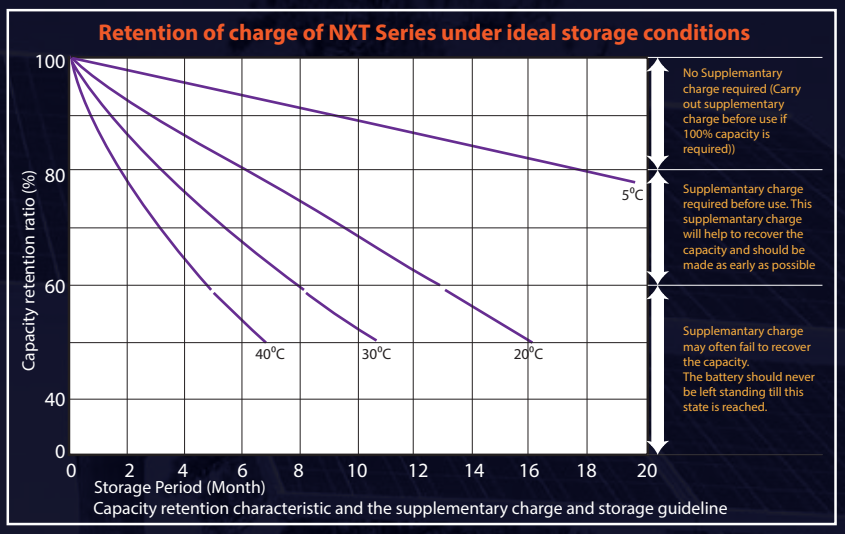
Free from orientation constraints

TECHNICAL SPECIFICATION

Battery Type	Nominal Voltage (V)	Rated Capacity (Ah) at 27°C								Dimensions (mm)				Weight (Kg) ± 5%	Internal Resistance (m-ohm)	Max Discharge Current (Amps)
		20 hr 1.75 V/cell	10h r 1.75 V/cell	5 hr 1.75 V/cell	3 hr 1.75 V/cell	2 hr 1.75 V/cell	90 min 1.75 V/cell	60 min 1.75 V/cell	30 min 1.75 V/cell	Overall Height ± 3	Height upto lid ± 3	Length ± 2	Width ± 2			
NXT 17-12	12	17	15.5	14.0	13.0	12.0	11.0	9.5	7.5	167	167	181	76	5.9	15	255
NXT 26-12	12	26	23.5	21.0	19.5	18.0	17.0	14.5	11.5	175	175	166	125	9.6	10	390
NXT 34-12	12	34	30.5													
NXT42-12	12	42	38.0	34.0	31.5	29.5	27.5	23.0	19.0	190	190	197	165	13.8	8	420
NXT50-12	12	50	45.5													
NXT65-12	12	65	58.5	52.5	49.0	45.5	43.0	36.0	29.5	174	174	350	166	22.0	8	500
NXT84-12	12	84	76.4													
NXT100-12	12	100	90.0	81.0	75.0	75.0	66.0	55.0	45.0	235	235	407	173	32.8	6	600
NXT150-12	12	150	135.0	121.5	112.5	112.5	99.0	82.5	67.5	240	240	557	172	45.8	6	900
NXT200-12	12	200	180.0	162.0	150.0	140.0	132.0	110.0	90.0	240	240	533	250	63.6	5	1200

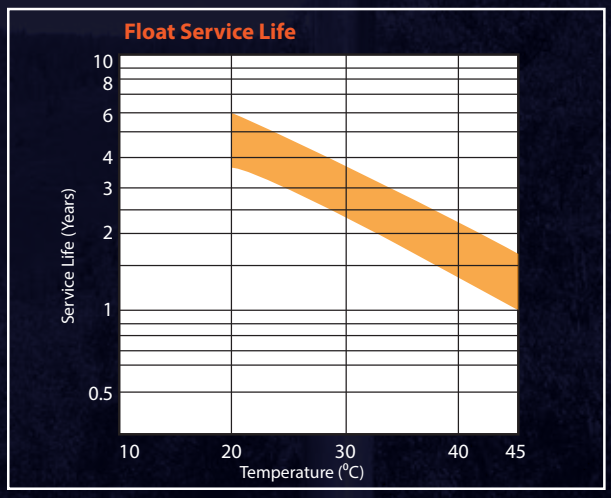
Note: Batteries are dispatched from factory at minimum 90% state of charge. Full capacity is achieved after a minimum ten numbers of charge – discharge cycle at full depth or 3 months of continuous float operation.

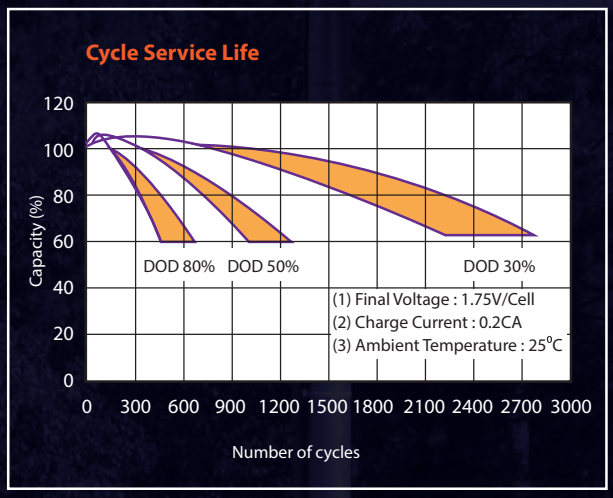
CAPACITY RETENTION



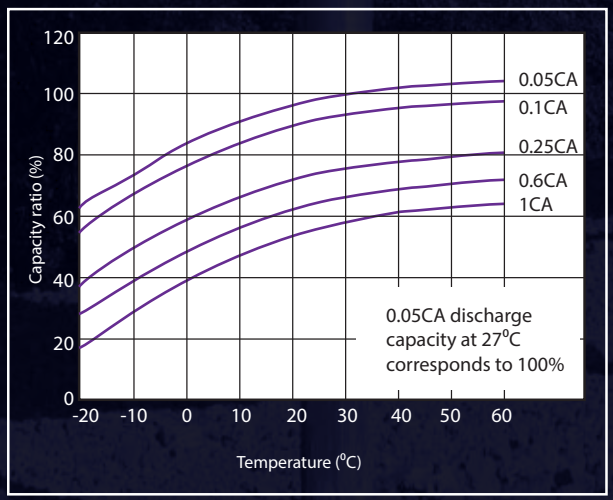
Capacity retention characteristic and the supplementary charge and storage guideline

NXT SERVICE LIFE

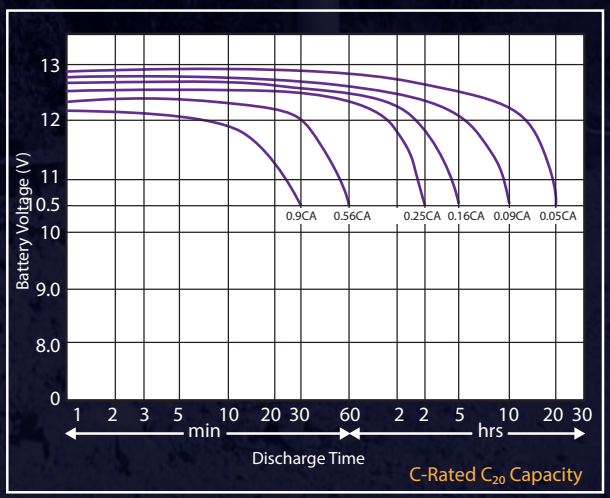




EFFECT OF TEMPERATURE ON CAPACITY



NXT DISCHARGE CHARACTERISTICS



NOTES OF OPERATIONS

CHARGING CHARACTERISTICS :

a) Normal Recharge :

Batteries to be recharged in cc – cv model only

Mode of operation	Voltage setting per 12V unit for Ambient temperature 20–30°C	Current setting
Float	13.7V +/- 0.1V	Maximum: 0.3 CA Minimum: 0.1 CA
Cyclic	14.7V +/- 0.1V	

Temperature Compensation : (Reference 25°C)
Float : - 18mV / °C / 12V unit
Cyclic : - 30mV / °C / 12V unit

b) Fast Recharge option:

During operation, if the battery bank is subjected to regular (daily) deep discharge in excess of 50% (cumulative basis), the fast recharge option may be exercised.

Fast recharge, following pattern to be followed:-
Step 1: 0.3C - 14.5V ⟶ **Step 2:** 0.1C - 14.5V ⟶ **Step 3:** 0.05C - 14.5V ⟶ **Step 4:** 0.02C - 14.5V

Total duration for the four steps shall be 5.0 hours for a recharge after a 70% DOD. However, this mode of recharge will require an equalization once a month at the recommended float voltage for a period of 12 hours uninterrupted.

Caution on Ripple

The maximum limits of the A.C. content of the D.C. shall be **5A A.C. (rms) per 100 Ah C20 capacity** during float charge. The A.C. current induced battery temperature rise **should be below 3°C**. At all times the average D.C. float current **must be kept positive**.

Heat Dissipation

A VRLA battery under normal float condition shall dissipate heat into the atmosphere. For the overall heat load calculation taking into account a worst case operation, the rate of heat dissipation may be taken as **0.45 Walts/100 Ah C20 capacity/Cell**.

Hydrogen Evolution

Hydrogen gas evolved by a lead acid battery may be estimated from the following formula:
Hydrogen gas evolved per hour = 0.45 x 10^{-3} x nx I x C m^3 at N.T.P.
Where, n = number of 2V cells
i = 0.2 A/100 Ah for a VRLA cell
C= C20 capacity of Cell
To design for the ventilation (air flow) requirement so that the hydrogen percentage in the air is always below 4% (lower explosive Limit), the air flow rate may be estimated as:

$Q = d \times s \times 0.45 \times 10^{-3} \times n \times I \times C\ m^3/hr$

Where, d= dilution ratio (100.4)/4 =24
S = factor of safety, eg.5
For a VRLA, the above may be simplified as:
Q = 0.0108 x n x C