

# NM Series

VRLA Battery

NM-450



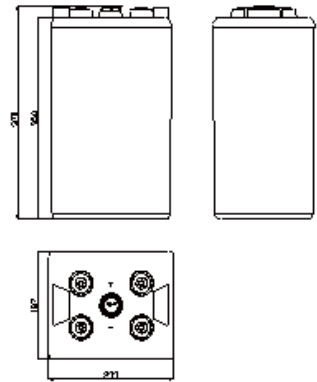
## Main Applications

- Backup power for diesel engine starting system
- Backup power for signals and lighting system
- Backup power for military and maritime equipment

## Benefits

- Long Design Life: The locomotive running 6 years or more than 900000 km (25 °C)
- Long Cycle Life: The starting life is more than 10000 times, the 5 hour rate capacity is more than 85%
- Strong Starting Ability: Starting current is 2100-2200A, starting time is more than 300s (25°C±5°C); Starting current is 1700-1800A, starting time is more than 50s (-40°C±1°C)

## Dimensions



## Certification

- ☑ ISO 9001:2008  
(NO. 03015Q10076R4M)
- ☑ ISO 14001:2004  
(NO. 03016E10080R2L)
- ☑ GB/T 28001-2011  
(NO. 03014S10092R2M)
- ☑ ISO/TS16949

## Technical Parameters

Nominal Voltage	2V
Capacity	450 Ah @ 5hr to 1.70V per cell @ 25°C(77°F)
Weight	39kg
Dimensions	Length: 223mm Width: 187mm Total height: 370mm
Self Discharge @ 25°C (77°F)	Less than 4% after 30 days storage
Operating Temperature Range	Discharge: -40°C ~ 50°C(-40°F ~ 122°F) Charge: -20°C ~ 45°C(-4°F ~ 113°F) Storage: -20°C ~ 40°C(-4°F ~ 104°F)
Recommended Operating Temperature	15°C ~ 25°C(59°F ~ 77°F)
Recommended Charging Current	70A
Charging Voltage @25°C(77°F)	Float: 2.23 V/cell Equalize: 2.35 V/cell
Maximum Discharge Current	2200A
Container Material	ABS/ABS V0 (Optional)
Capacity Affected by Temperature(C10)	103% @ 40°C(104°F) 85% @ 0°C(32°F) 60% @ -20°C(-4°F)
Design life @ 25°C (77°F)	6 years

## Technical Features

- Long service life, with independent intellectual property rights of sealed patent technology
- Advanced grid design enhance the utilization of active material and the service life
- Die-casting copper core with bigger diameter, enhance the high current discharge performance
- Easy handling with handle.

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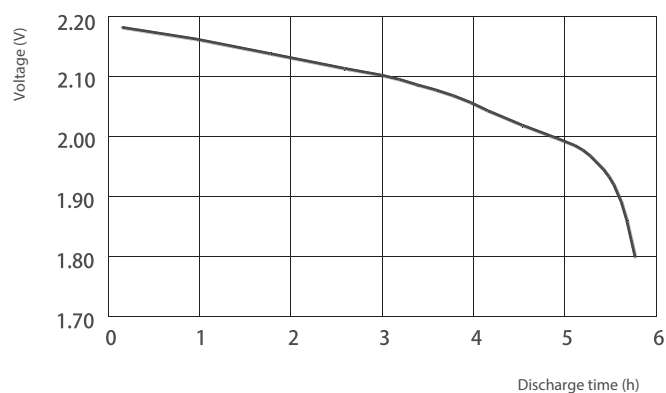


## Discharge Parameters

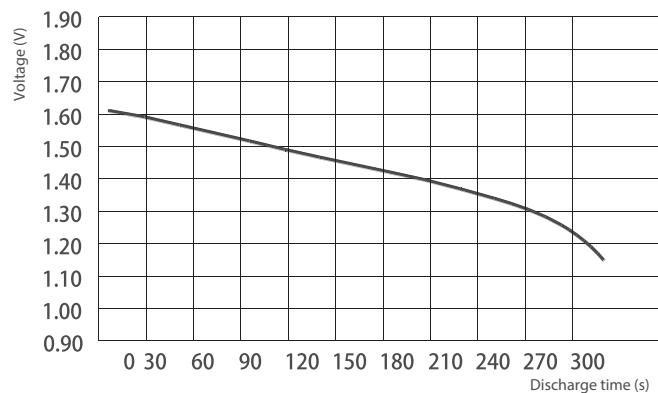
Type	5 hour rate discharge			1 hour rate discharge		
	$I_5$ (A)	Capacity(Ah)	Final voltage(V)	$I_1$ (A)	Capacity(Ah)	Final voltage(V)
NM-450	90	450	1.70	325	325	1.60

## Performance Curve

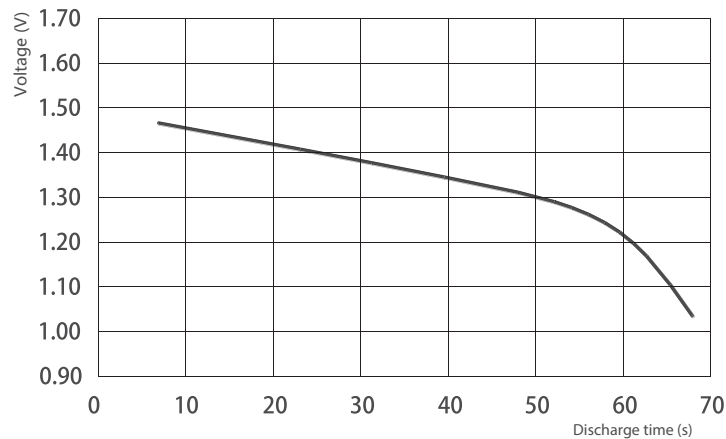
5 hour rate discharge characteristics @ 25°C



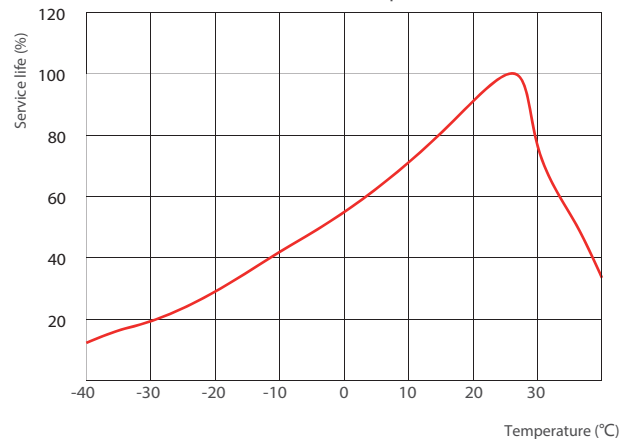
Start up performance at normal temperature (25°C±2°C)



Start up performance at low temperature (-40°C)



Service Life at Different Temperature



**\*Declaration:**

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