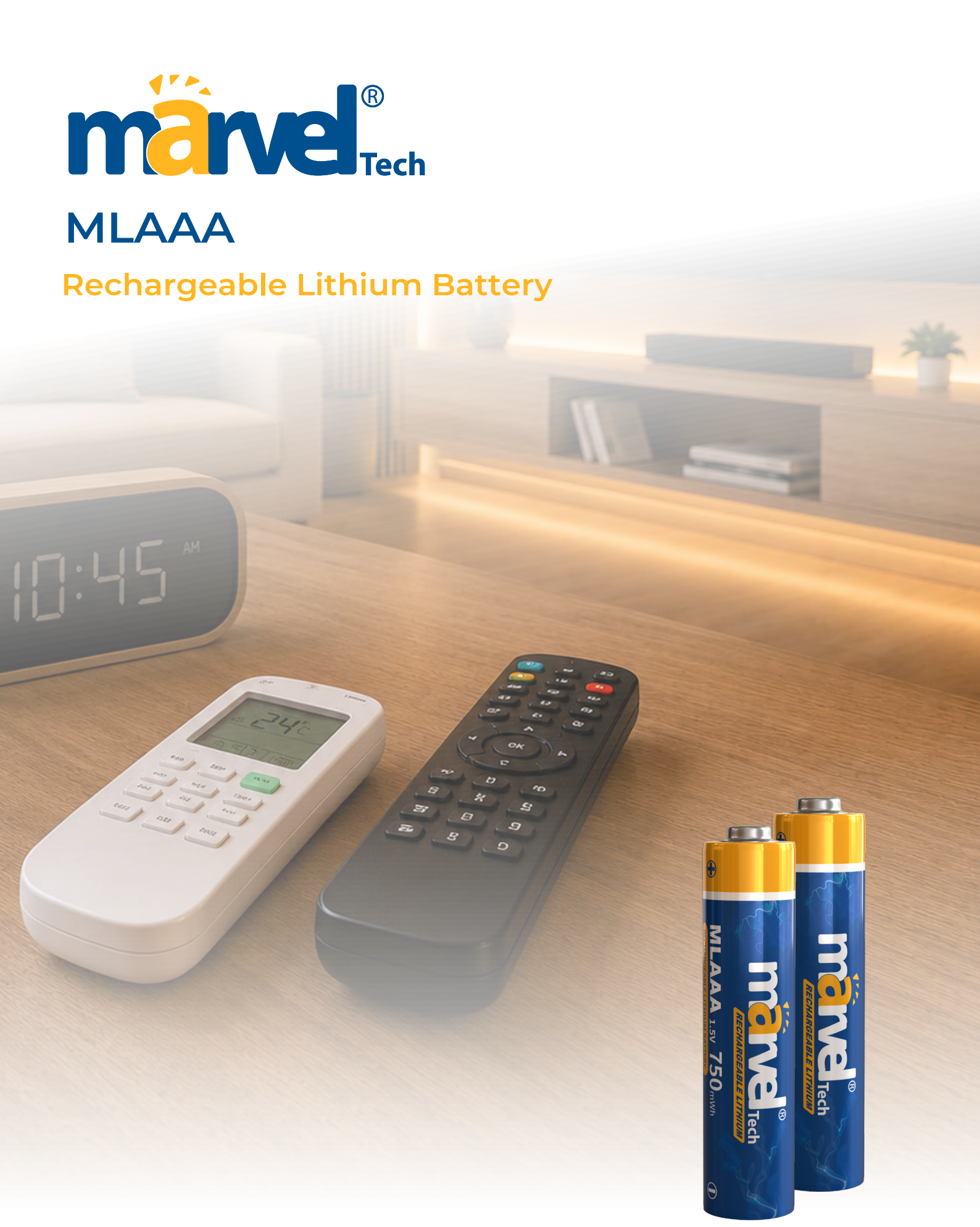
marvel® Tech

MLAAA

Rechargeable Lithium Battery



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info@marvel-battery.com

MLAAA

Rechargeable Lithium Battery

Basic Performance

Battery parameters

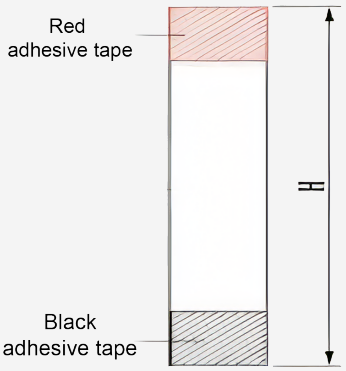
Model Number	MLAAA	
Material	Lithium	
Nominal Voltage	1.5V	
Rated Capacity	Typical Capacity	500mAh， 0.2C charging and discharging
	Minimum Capacity	450mAh ,0.2C charging and discharging
Rated Energy	Typical Energy	750mWh
	Minimum Energy	675mWh
Dimension	Diameter（d1）	Max:10.5mm
	Height (h1)	Max:45.5mm
Weight	7.3±0.5g	
Charge	Charging Method	Type-C cable
	Charging Voltage	5V
	Charging Current	90mA
	Charging Time	2.0 hours ±0.5
	LED Indicators LED	Blink when charging,Stay on when full charged
Discharge	Discharging Current	90mA
	Cutoff Voltage	1.1V
Maximum Continuous Discharge Current	400mA	
Protection	short-circuited	Yes
	over-flowed	Yes
	over-charged	Yes
	over-discharged	Yes
Working Temperature	Charge	0~40℃/65±20%RH
	Discharge	-20~50℃/65±20%RH

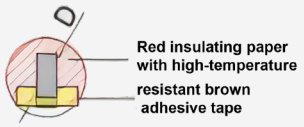
MLAAA

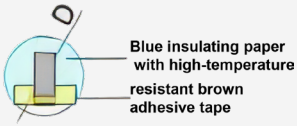
Rechargeable Lithium Battery

Cell parameters

Model Number	MLAAA		
Material		Lithium-Ion	
Nominal Voltage		3.7V	
Rated Capacity	Typical	230mAh	
	Minimum capacity	220mAh/0.2C	
Dimension	Diameter	Max 9.3mm	
	Height	Max 29.5mm	
	Polar Ear size Max	2.0±0.2mm	
	Polar Ear length Max	3.5±1.0mm	
Weight	4.5±0.3g		
AC Impedance Resistance		≤180m Ω	
Charge	Standard	0.2C@4.20V	
	Rapid	0.5C@4.20V	
Discharge	Standard	0.2C@3.0V	
	Rapid	1.0C@3.0V	
Maximum Continuous Discharge Current		1.0C@3.0V	
Operation Temperature Range	Charge	10~45℃/65±20%RH	
	Discharge	-20~60℃/65±20%RH	
	Less than 7 days	-20~+50℃	The recovery capacity shall not be less than80% of the capacity 80%, Recommended storage
	Less than 1 months	-20~+40℃	







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Test Requirement

1 Standard environmental conditions (unless specifically requested,trials should be conducted under standard atmospheric conditions).

Standard temperature： 25±3℃;

Atmospheric pressure： 86kPa~106 kPa;

Standard humidity： 65±20%

2 Standard Charge : Under standard environmental conditions ,the product is charged by 5V 90mA until LED stay on.

3 Standard Discharge:The product is discharge to the termination voltage 1.1V by 90mA current。

Electrochemical Performance

NO.	Item	Testing method	Standard
1	Discharge Capacity	Standard environmental conditions, standard discharge 90mA after Standard charge.	≥450mAh
2	Life cycle	Temperature:25±3℃ Charge: 90mA to LED stay on. Discharge: 90mA to 1.1V higher than 60% of the Initial capacity.	≥1000 cycle
3	Self discharge	When the battery has been completely standard charged, it shall be disconnected and put aside for 28 Days at (25±3)℃, then discharged at 90mA.	≥250min

Storage and Shipment Requirement

Item		Requirement
Storage environment	Short period less than 1 month	-20 ~ +45°C， 65%±20%RH
	Long period more than 3 month	-10 ~ + 35°C， 65%±20%RH
	Recommend storage	+15 ~+ 35°C， 65%±20%RH
Long time storage If the battery is stored for a long time, the battery's storage voltage should be 1.3~1.5V and the battery is to be stored in a condition as No.6.0 ,The battery should be charged and discharged every 3 months.		

Any issues not covered in this specification should be discussed between the customer and our company

Picture of battery

d1	Max:10.5	h1	Max:45.5
PCM/		UNIT	mm

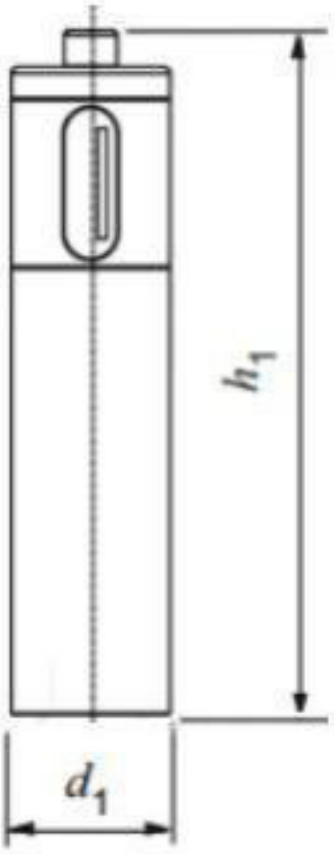


Fig.（1）The Dimension of PACK