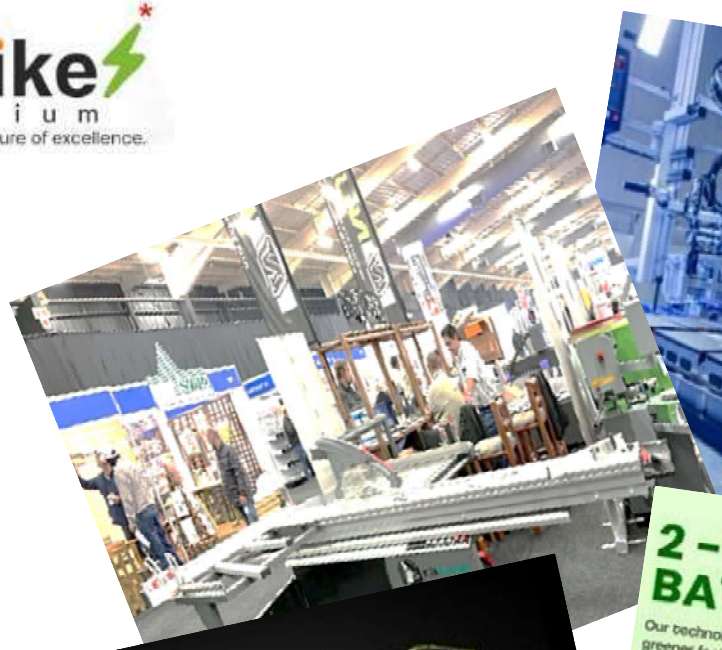
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SPIN OFF Technopark Limited

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Company Introduction

SPINOFF

Technopark Limited

Power Electronics Solution Under one Roof

SPINOFF Technopark Ltd, based in Chandigarh with promoters having 35+ years experience for state of art facility with R&D driven manufacturing facilities.








Business Activities

Manufacturing of ESS/ Lithium Battery Packs for EVs/ UPS/ Invertors/ LED Lights

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Existing Business Divisions



LED Lights

- LED Lights
- Fancy lights
- Up-Down lights
- Pharma Lights
- Magnetic Lights
- Under water lights
- COB Lights
- Outdoor Lights
- Highway Lights
- Architectural Lighting
- Customised Lighting solutions



Lithium Ion UPS/ Invertor

- India's 1st Lithium Integrated Home Segment Invertors with UPS
- Hybrid Home / Commercial Invertors/ UPS
- Solar Invertor



Metal Engineering

- Lighting Fixtures
- Battery Cabinets
- Inverter & UPS Enclosures
- Stainless Steel Customised engineering Solutions
- Portable Power converter enclosures
- EV Battery Pack Enclosures
- Telecom / ESS Battery Pack Enclosures

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Manufacturing Facilities



Mohali Factory

Spinoff Mohali factory started with focus on developing new design of lights with Own R&D CENTRE, & SMT line with in house Design, Testing, Prototyping & production, having grown to more then 1000 products under 1st preference with Architects & Builders.



Rajpura Factory

A new facility is up for manufacturing of Lithium Batteries for Static & Dynamic sector such as ESS, Mobility like EV segment & solar & lighting application, & also sheet metal processing for enclosure used in lighting & non lighting. These 3 verticals will make the Growth in Top line and bottom line.

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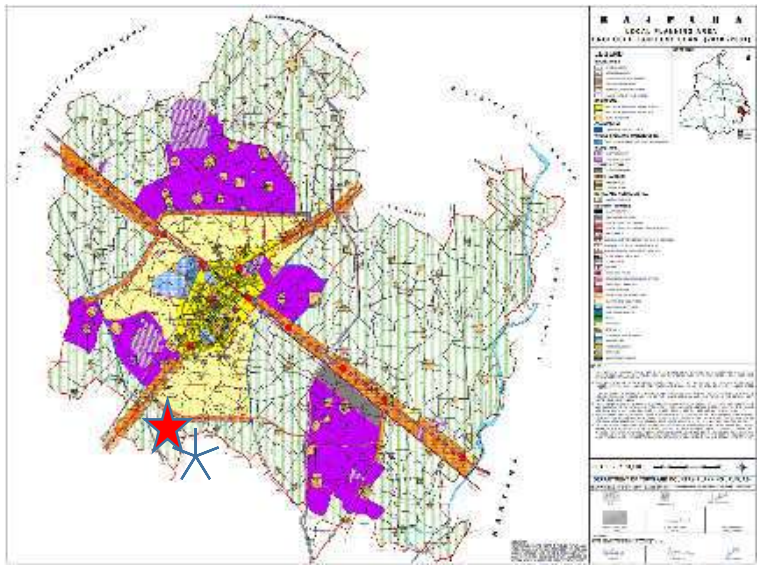
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Lithium Ion manufacturing Facility Outside - Rajpura







Sprawling campus of 2,50,000 Sqft in the Industrial Town of Rajpura (Punjab) adjoining the Notified Smart city by Central Govt.

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Lithium Ion manufacturing Facility Inside- Rajpura











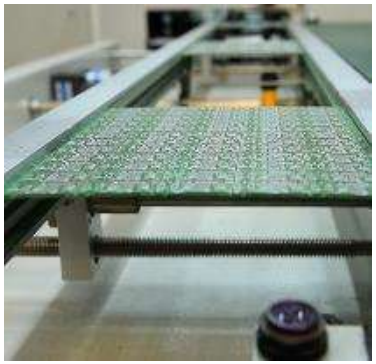

State of the Art Facility for R&D, Testing, Manufacturing of Lithium Ion Cells & Batteries at Rajpura Factory

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LED Lighting Facility at Mohali













The Factory in Mohali was established way back in 2016 & was the 1st factory of Punjab in the LED industry with state of Art R&D center & SMT line from JAPAN, the plant boast of quality infra & best manufacturing practices in the said segment with Central Air-conditioning & best manufacturing practices.
We are consistently working for improving our product range & try to give support & service to our esteemed customers.

We always believe in best, many of our business vertical are well established & we are serving to public Giants like INDIAN RAILWAY, & MINISTRY OF DEFENCE, in addition to many corporate group including Reliance, Colgate, Palmolive, JW Marriott, ISB Campus, Quark City, Shapoorji Pallonji, IVY Hospital, Fortis Hospital, Elante Mall, MacLeod's Pharma, MC Donald, etc.

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State of the Art Machinery at our Facilities for LED & Sheet Metal



SMT Machine



Integrated Sphere



Automatic Regulated Reflow Oven



Wave Solder Machine



Cold Press



Automatic Edge Bending Machine



CNC Laser Cutting



Powder Coating Machine



Hydraulic Press Machine



CNC Router Machine

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LED & Lighting Products

- **Architectural Lighting :-** We manufacture architectural lighting solutions that combine aesthetics with functionality, enhancing the design and ambiance of spaces
- **Lighting Automation :-** We offer lighting automation systems that provide seamless control, enhancing energy efficiency, convenience, and ambiance in any space.
- **Customized Lighting Solution :-** We provide customized lighting solutions tailored to meet specific design needs, ensuring optimal functionality and aesthetic appeal
- **Decorative Lighting Solution :-** We offer decorative LED lighting solutions, including wall lamps, table lamps, chandeliers, and garden lights, enhancing any space with style.
- **COB Lights :-** Compact and powerful, our Chip-on-Board (COB) lights deliver concentrated lighting solutions ideal for industrial and commercial applications.
- **Outdoor Lights :-** From rugged streetlights to elegant garden fixtures, our outdoor lighting solutions ensure safety, security, and aesthetic appeal in every environment.










- **Led Lights :-** Offering unparalleled energy efficiency and longevity, our LED lights are designed to enhance both indoor and outdoor spaces with bright, crisp illumination.
- **Pharma Lights :-** Designed with precision for pharmaceutical facilities, our specialized pharma lights meet stringent requirements for clean rooms and sterile environments.
- **Up-Down Lights :-** Versatile and stylish, our up-down lights provide ambient lighting that enhances architectural features while optimizing visual comfort
- **Magnetic Lights :-** Easy to install and adjust, our magnetic lights offer flexible lighting solutions suitable for diverse settings from offices to retail spaces
- **Underwater Lights :-** Built to withstand underwater conditions, our underwater lights combine durability with exceptional brightness for pools & fountains applications
- **Highbay Lights :-** Designed for large indoor spaces, our highbay lights offer superior brightness and uniformity, making them ideal for warehouses, factories, and gymnasiums





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Development on EV eco system- Lithium Ion Cells & Battery pack

- Facility for Battery Pack assembly
- Modern Infrastructure & Machinery
- Latest Gadgets & Equipment for Assembly/ Testing
- Test Bench for Simulations

Market Research on OEM specifications for Cells/ Battery Packs/ BMS

- Product & OEM Overview
- Market presence
- New Technologies
- Start ups
- Product Utility & Market demands
- Product & Technology finalisation
- In House Testing & Validation of key products

Product selection & Validation of technical specifications



Supplier Identification for the validated product, Validation of supplier quality

- Indian & International suppliers for key Components
- Supplier information & Validation
- Product Validation wrt specifications
- Sourcing of Test components
- Regular supplier contracts

Sourcing of required cells/ BMS

Testing & validation of Cells

Testing of BMS & Validation

- Testing & validation of components
- State of the art technology centre with best of Tools & equipment
- Professional teams on Technology development & simulation.

Battery Pack assembly & Testing

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High Tech Machines & Equipment for Lithium Cells & Battery Packs-Rajpura Plant

Cell Grading Machine Cylindrical Cells



Cell Grading Machine Prismatic Cells



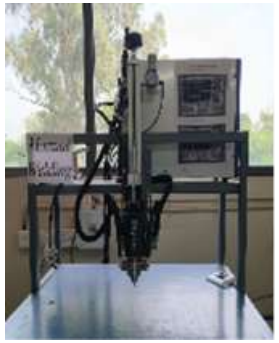
Automatic Cell Sorting – Machine- Cylindrical Cells



Lithium Battery Pack Spot Welding Machine



Manual Spot Welding Machine



Battery Comprehensive Testing Machine



IR Tester by HIOKI]



Battery Pack Balancer



BMS Testing Machine



Battery Pack Ageing Machine



Battery Ageing Machine



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In- House -BMS –Testing & Validation for Lithium Ion Battery Packs

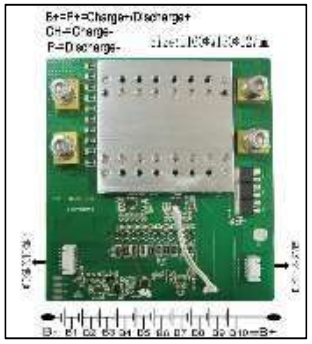
Complete Capability of Testing & Validating BMS (Hardware & Software) for various Battery applications :

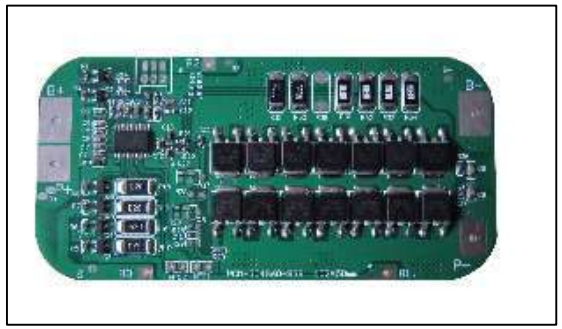
1) Mobility
2) Energy storage systems
3) UPS & Inverters
4) Telecom

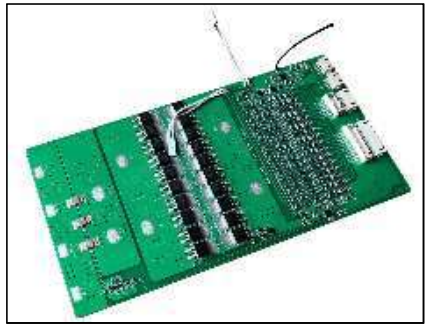
- Hardware check through BMS testing Machines
- Software checking through Re Power Ageing Machine with Real time sensor

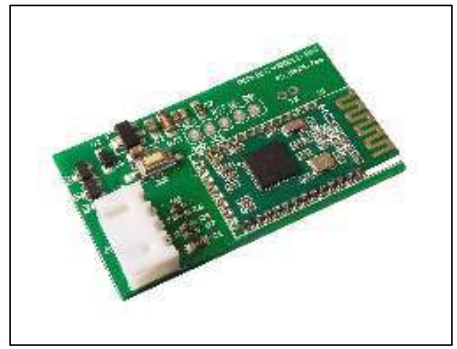












In House-BMS –Testing & Validation- Validation Done & In Use

JBD BMS REPORT- Imported BMS (Hardware & Software)

BMS PARAMETER

		(Specification)				STATUS
(Over-voltage and Under-voltage protection)	项目(Project)	最小值	典型值	最大值MAX	单位(Unit)	
		MIN	TYP			OK
	(Over-voltage)	3.7	3.75	3.8	V	OK
	(Over-voltage delay)	1000	2000	3000	mS	OK
	(Over-voltage release)	3.55	3.6	3.65	V	OK
	(Under-voltage)	2.1	2.2	2.3	V	OK
	(Under-voltage delay)	1000	2000	3000	mS	OK
	(Under-voltage release)	2.5	2.6	2.7	V	OK
	(Under-voltage release conditions)	(Self-recovery by increasing voltage or charging)				OK
	(Over-current Charge protection value)	(Refer to configuration table of over-current protection value below)				OK
	(Over-current Charge delay)	5	10	15	S	OK
	(Over-current Charge release conditions)	(Automatic recover after a delay of 32S)				OK
	th Over-current Discharge valu	(Refer to configuration table of over-current protection value below)				OK
	(1th Over-current Discharge delay)	5	10	15	S	OK
	(2th Over-current Discharge value)	(Refer to configuration table of over-current protection value below)				OK
	(2th Over-current Discharge delay)	32	-	500	mS	OK
	(Over-current Discharge release)	(Automatic recover after a delay of 32S)				OK
(Short Circuit Protection)	(Short circuit protection current value)	(Refer to configuration table of over-current protection value below)				OK
	短路保护延迟时间	62	-	1000	uS	OK
	(Short circuit protection delay time)					OK
	(Short circuit protection recovery)	Recover by releasing load after approximately 5s				OK
温度保护 (Short Circuit Discharge)	温度保护值	62	65	68	℃	OK
	(Temperature protection value)					OK
充电CHG	温度保护释放值	52	55	58	℃	OK
	(Temperature protection release value)					OK
	温度保护值	-13	-10	-7	℃	OK
	(Temperature protection value)					OK
	温度保护释放值	-8	-5	-2	℃	OK
	(Temperature protection release value)					OK
放电DSG	温度保护值	72	75	78	℃	OK
	(Temperature protection value)					OK
	温度保护释放	62	65	68	℃	OK
	(Temperature protection release value)					OK
	温度保护值	-23	-20	-17	℃	OK
	(Temperature protection value)					OK
	温度保护释放	-13	-10	-7	℃	OK
	(Temperature protection release value)					OK
FET	温度保护值	85	90	95	℃	OK
	(Temperature protection value)					OK
	温度保护释放值	65	70	75	℃	OK
	(Temperature protection release value)					OK
均衡功能 (Balance Function)	均衡开启电压	3.37	3.4	3.43	V	OK
	(Balance function turn-on voltage)					OK
	开启压差		15		mV	OK
	(Difference opening voltage value)					OK
	均衡电流	20		110	mA	OK
	(Balance current)					OK
	(Balance model)	(Idle equalization)				OK
	(Balance type)	(Pulsed model)				OK







DALY BMS REPORT- Imported Hardware & Software

BMS PARAMETER

4.1 基本参数 Basic parameters

序号 No	检测内容 Test content		出厂默认参数 Factory default parameters	单位 Unit	备注 Remark
1	放电 Discharge	额定放电电流 Rated discharge current	50	A	
	充电 Charging	充电电压 Charging voltage	67.2	V	
		额定充电电流 Rated charging current	25	A	可设置 Can be set up
2	被动均衡功能 Passive equalization function	均衡开启电压 Equalization turn-on voltage	3.8	V	可设置 Can be set up
		均衡开启压差 Equalize opening differential pressure	50	mV	可设置 Can be set up
		均衡开启条件 Equilibrium On Condition	同时满足： Satisfy both: 1.充电情况下 Under charging 2.达到设定平衡开启压差		

1	Over charge voltage protection	67.2V	67.2V	PASSED
2	Over charge current protection	25Ams	25.1Ams	PASSED
3	Over discharge voltage protection	43.2V	43.2V	PASSED
4	Over discharge Current protection	50Ams	50.1Ams	PASSED
				PASSED
6	Over temparature Protection during charge	Sen.1= 60°c		PASSED
		Sen.2=60°c		PASSED
		Sen.3=60°c		PASSED
		Sen.4=60°c		PASSED
7	Over temparature Protection during discharge	Sen.1=65°c		PASSED
		Sen.2=65°c		PASSED
		Sen.3=65°c		PASSED
		Sen.4=65°c		PASSED

STATUS: The BMS is Allover OK



- Applications :

1) 2 wheeler & 3 Wheeler
2) UPS/ Inverter
3) Solar Storage systems

STATUS: These 2 BMS results are Okay all over as per applications , Being used into production for our in-house products.

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In House -BMS –Testing & Validation-Under Validation

16S/LFP/15A-30A (RXN) – Indian Software BMS

finike — Finike Lithium Pvt. Ltd. — Document No. / Rev. No. / Rev. Date

BMS Test Report

BMS (Specification)- 16S,LFP,15A-30A, RXN BMS

Category	Parameters	Sub-	BMS Characteristics	Results	Remark
General Specifications	Cell configuration		16S	Okay	
	Supports Chemistry		LFP	Okay	
	Max. Operating Cell Voltage		57.6V	Okay	
	Min. Operating Cell Voltage		40	Okay	
	Continuous allowable current/Pack		30A	Okay	
	Peak current/Pack		40A	Okay	
	Communication Interface		UART and BLUETOOTH (Monitoring & Config)	Okay	
	BMS Dimensions (including Heat Sink) (LxWxH)		126mmX63mmX20mm	Okay	
	Power Consumption in Sleep mode/Active mode			Okay	
	SD Card		NA		
	Telematics supportible		NA		
	Temperature Sensors		4	Okay	
Category	Parameters	Sub-	Value	Results	Remark
Protections	Voltage	Cell Over	3.6±0.025 mV (1 sec delay)	Okay	Configurable
		Cell Over	3.5±0.05 mV(1 sec delay)	Okay	Configurable
		Cell Under	2.6±0.05 V (1 sec delay)	Okay	Configurable
		Cell Under	2.9±0.05 V (1 sec delay)	Okay	Configurable
		Cell Under		Okay	Configurable
	Current	Continuous	30 Amp	Okay	Configurable
		Discharge	45±3 Amp (45 sec delay)	Okay	Configurable
		Discharge	60 ±10 Amp (490 mSec delay)	Okay	Configurable
		Continuous	15 Amp	Okay	Configurable
		Charge Over	48±10 A (1 sec delay)	Okay	Configurable
	Short Circuit	Short Circuit	550%-of continuous rating	Okay	
		Short Circuit	5	Okay	
		Short Circuit	3 sec	Okay	
	Temperature	Discharge	65 °C	Okay	
		Discharge	-5 °C	Okay	
		Charge Over	65 °C	Okay	
		Charge	-5 °C	Okay	
		MOSFET		Okay	
		MOSFET		Okay	
	Balancing	Cell Balance	3.3 V	Okay	Configurable
		Cell	30±10 mA	Okay	
	Thermal Runaway	Thermal	60 C < temp < 75 °C	Okay	
		Thermal			
		Buzzer	(On 1 sec Off 3 sec)	Not okay	Super continuously on for 5 min
Communication -	UART/ Bluetooth				
UART/CAN/ Bluetooth Specifications	UART/CAN				
	Voltage of all cells		YES		
	Value of all Temperature Sensors		YES		
	Pack Voltage		YES		
	Pack Current		YES		
	SOH				
	Remaining energy AH		YES		
	Fully Charge/Discharge Cycle Count				
	Cell Balance Activities		YES		
	Firmware Version				
	Board Hardware Version				
	Board SN				
	Designed Pack Capacity, in Ah		YES		
	Voltage Abnormality:		YES		
	Current Abnormality: COCP, DOCP, SCP		YES		
	Temperature Abnormality: COTP, CUTP, DOTP,		YES		
	SOC LOW		YES		
	Read/Write/Modifying Parameters		YES		
	Enable/Disable Charge Enable/Disable Discharge		YES		
	Stream Data on Bluetooth - Not Applicable				
	Voltage of all cells		YES		
	Value of all Temperature Sensors		YES		
	Pack Voltage		YES		
	Pack Current		YES		
	Enable/Disable Charge Enable/Disable Discharge		YES		
	SOH		No		
	View All Faults		No		

Remark- This is Semiconfigurable BMS. Only some parameter can be changed

Applications :
1) Electric 2 W , 2) UPS/ Inverter/ ESS (as per application requirements)

Test Results found satisfactory on sample basis. Under further Testing Cycles

16S/LFP/60A-60A VECMOCON BMS- Hardware & Software -Indian BMS

Finike Lithium Pvt. Ltd. — Document No. / Rev. No. / Rev. Date

BMS Test Report

BMS (Specification)- 16S,LFP/60A-60A VECMOCON BMS

Category	Parameters	BMS Characteristics	Results	Remark
General Specifications	Cell configuration	16S	Okay	
	Supports Chemistry	LFP	Okay	
	Max. Operating Cell Voltage	57.6V	Okay	
	Min. Operating Cell Voltage	40	Okay	
	Continuous allowable current/Pack	60A	Okay	
	Peak current/Pack	80A	Okay	
	Communication Interface	UART and CAN (Monitoring & Config.)	Okay	
	BMS Dimensions (including Heat Sink) (LxWxH)	162mmX120mmX18mm	Okay	
	Power Consumption in Sleep mode/Active mode	1uA/20mA	Okay	
	SD Card	N/A		
	Telematics supportable	N/A		
	Temperature Sensors	4	Okay	

Category	Parameters	Sub-Parameters	Value	Results	Remark
Protections	Voltage	Cell Over Voltage Protection (V)	3.6±0.05 mV (1 sec delay)	Okay	Configurable
		Cell Over Voltage Protection Release (V)	3.5±0.05 mV(1 sec delay)	Okay	Configurable
		Cell Under Voltage Protection (V)	2.6±0.05 V (1 sec delay)	Okay	Configurable
		Cell Under Voltage Protection Release (V)	2.9±0.05 V (1 sec delay)	Okay	Configurable
		Cell Under Voltage Shutdown (V)		Okay	Configurable
	Current	Continuous discharge current	50 Amp	Okay	Configurable
		Discharge current level 1 protection current	50±1 Amp (10 sec delay)	Okay	Configurable
		Discharge current level 2 protection current	80±10 Amp (1 Sec delay)	Okay	Configurable
		Continuous charging current	30 Amp	Okay	Configurable
		Charge Over Current Protection (A)	>30A (5 sec delay)	Okay	Configurable
	Short Circuit	Short Circuit Protection (A)	178 A	Okay	
		Short Circuit Delay Time (µS)	15	Okay	
		Short Circuit Protection Release (Remove	2 sec	Okay	
	Temperature	Discharge Over Temperature Protection (-C)	57 °C	Okay	Configurable
		Discharge Over Temperature Release (-C)	52 °C	Okay	Configurable
		Discharge Under Temperature Protection(-C)	(-7) °C	Okay	Configurable
		Charge Over Temperature Protection (-C)	55 °C	Okay	Configurable
		Charge Over Temperature Release (-C)	50 °C	Okay	Configurable
		Charge Under Temperature Protection(C)	(-10) °C	Okay	Configurable
		MOSFET Over Temperature Protection (-C)		Okay	
		MOSFET Over Temperature Protection Release		Okay	
	Balancing	Cell Balance Voltage (V)	3.2 V	Okay	
		Cell Balancing Current (mA)	200±10 mA	Okay	
	Thermal Runway	Thermal runaway tier 1	50 C < temp< 75 °C		Thermal Runaway Alarm Anytime
		Thermal runaway tier 2	temp>75 °C		
		Buzzer			

		UART/CAN		
UART/CAN/ Bluetooth Specifications	Voltage of all cells	YES		
	Value of all Temperature Sensors	YES		
	Pack Voltage	YES		
	Pack Current	YES		
	SOH			
	Remaining energy AH	YES		
	Fully Charge/Discharge Cycle Count			
	Cell Balance Activities	YES		
	Firmware Version	NOT OKEY		
	Board Hardware Version			
	Board SN			
	Designed Pack Capacity, in Ah	YES		
	Voltage Abnormality: COVP, CUVP, POVP, PUVP			
	Current Abnormality: COCP, DOCP, SCP	YES		
	Temperature Abnormality: COTP, CUTP, DOTP,	YES		
	SOC LOW	YES		
	Read/Write/Modifying Parameters	YES		
	Enable/Disable Charge Enable/Disable	YES		
	Stream Data on UART/CAN			
	Voltage of all cells	YES		
	Value of all Temperature Sensors	YES		
	Pack Voltage	YES		
	Pack Current	YES		
	Enable/Disable Charge Enable/Disable	YES		
	SOH	YES		
	View All Faults	YES		
Final Test Report		Fail (due to stability of bms firemwere)		

Applications :
1) 2 wheeler, 2) UPS/ Inverter

Test Results : Not Okay as per application tested, In further collaboration with the supplier.

ESMITO 15S 50A SOFTWARE BMS REPORT – Indian Software

BMS PARAMETER FROM ESMITO			
Parameter Setup		TEST REPORT	STATUS
CELL IN SERIES	15	CELL IN SERIES	
CELL IN PARALLEL	6	CELL IN PARALLEL	
CELL CAPACITY (Ah)	6	BATT. CYCLE COUNT	
CELL CHEMISTRY	LFP	BATTERY HEALTH COUNT	
TIME TO SLEEP (min)	15	TIME TO SLEEP	
TIME TO LOW POWER (min)	5	TIME TO LOW POWER	
TIME TO STANDBY (min)	5	TIME TO STANDBY	
CELL TEMP. SENSORS	4	CELL TEMP. SENSORS	
CELL UNDER VOLTAGE (Volt)	2.65	CELL UNDER VOLTAGE	
CELL OVER VOLTAGE (Volt)	**3.65**	**CELL OVER VOLTAGE**	**ERROR**
PACK UNDER VOLTAGE (Volt)	39.75	PACK UNDER VOLTAGE	
PACK OVER VOLTAGE (Volt)	**54.75**	**PACK OVER VOLTAGE**	**ERROR**
CONTINOUS DISCHARGE (Amp)	18	CONTINOUS DISCHARGE	
OVER CURRENT DISCHARGE LEVEL 1 (Amp)	20	OVER CURRENT DISCHARGE LEVEL 1	
OVER CURRENT DISCHARGE LEVEL 2 (Amp)	40	OVER CURRENT DISCHARGE LEVEL 2	
OVER CURRENT DISCHARGE LEVEL 3 (Amp)	54	OVER CURRENT DISCHARGE LEVEL 3	
OVER TEMPERATURE CHARGE (°C)	55	OVER TEMPERATURE CHARGE	
OVER TEMPERATURE DISCHARGE (°C)	65	OVER TEMPERATURE DISCHARGE	
UNDER TEMPERTURE CHARGE (°C)	5	UNDER TEMPERTURE CHARGE	
UNDER TEMPERTURE DISCHARGE (°C)	15	UNDER TEMPERTURE DISCHARGE	
OVER TEMPERTURE FET CHARGE (°C)	80	OVER TEMPERTURE FET CHARGE	
OVER TEMPERTURE FET DISCHARGE (°C)	90	OVER TEMPERTURE FET DISCHARGE	
UNDER TEMPERTURE FET CHARGE (°C)	5	UNDER TEMPERTURE FET CHARGE	
UNDER TEMPERTURE FET DISCHARGE (°C)	10	UNDER TEMPERTURE FET DISCHARGE	
ACTIVE COMMUNICATION OUTPUT	RS485, CAN	ACTIVE COMMUNICATION OUTPUT	
Switching Type	MOSFET	Contactor Switching	
Hall Sensor		Hall sensor data	
Sensitivity		Accuracy	



Applications :
1) 2 wheeler

Test Results : Not Okay as per application tested, In further collaboration with the supplier.

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In House-BMS –Testing & Validation

TELECOM BMS REPORT-Only Software (Parallel) – Indian BMS

BMS Parameters.

NO.	Type		Function	Setting value	Remarks
				V-LFP48100 48V100Ah	
1	Voltage	Charge	Cell Voltage Protection	3.90V Protection	Recover at 3.6V
2			Total Voltage Protection	60.0V Protection	Recover at 54.0V
3		Discharge	Cell Voltage Protection	2.5V Protection	Recover at 3.1V
4			Total Voltage Protection	43.2V Protection	Recover at 48.0V
5	Current	charge	Normal	≤100A	
6		Discharge	Normal	≤100A	
7			Over Current Protection 1	>100A and <150A	Delay 30s ,recovery in every 60s
			Over Current Protection 2	>150A and <200A	Delay 3s ,recovery in every 60s
8			Short Circuit Protection	≥200A	Delay 1mS
9	Temp	Cell Temp 1	Low temp protection	Charging < 0℃ Discharging <-20℃	Delay 1~2S
10		Cell Temp 2	High temp protection	Charging >70℃ Discharging >75℃	Delay 1~2S
11		PCB	Range	≥95℃	Recovery at 75℃
12	Cell Balance	Balance	Make all cells be balance during charging process. Current: 150mA	V_{Max} ≥3.40V and V_{Max} - V_{Min} ≥40mV, Start balance	All cell voltages≤3.65V and V_{Max} - V_{Min}≤40mV, Stop balance

Specifications		V-LFP48100
Voltage		48 V
Nominal Capacity (40°C , 0.5C)		100 Ah
Weight (Approximate)		43.0±0.3Kg
Energy	Normal energy (40°C , 0.5C)	5120 Wh
	Volumetric energy density	153Wh/L
	Gravimetric energy density	119Wh/kg
Dimensions (W*D*H)	Width*Depth* Height	442mm*425mm*178mm
Impedance	(Max, at 1000Hz.)	<30mΩ
Standard Discharge 25°C	Max. constant current	100A
	Cut-off voltage	43.2V
Standard charge 25℃	Charge Voltage	56V
	Max. constant current	100A
	Recommended charging current and time	30A(0.3C) for 3.5 hours
Round trip efficiency(%)		>98%
Calendar life	25℃	>10 years
Cycle life (0.2C, 25℃)		80% DOD 4000 cycles
Recommend operating temperature		Charging: 0℃~60℃
		Discharging: -20℃~60℃
Recommend storage temperature		Recommended range: 0℃~55℃



Applications :

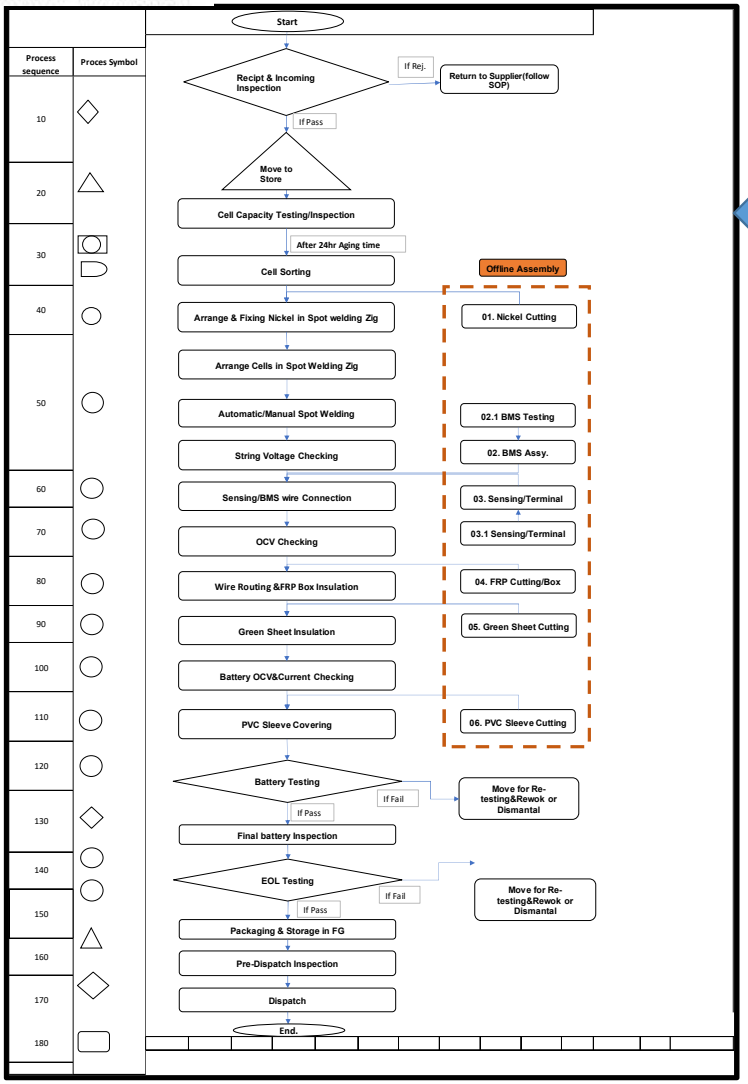
1) Telecom
2) UPS/ Inverter

STATUS: Under Testing

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In House-Process Development & Adaptation - Lithium Ion Cells & Battery Pack



Process

PDF

Process

In-house Development of Complete Process & work flow with designated work stations & Associated Roles

Work Flow

FINIKE LITHIUM

Cylindrical Battery Pack Assembly Line Process

Process	Steps	Type	Machine	Manpower	Role (B Tech/ Diplom engineers)
Preparation	Cells capacity testing and grading	Automatic	512 channel grading machine	1	Quality Engine
	Insulation Pasting	Manual	Insulation Pasting machine	1	Quality Engine
	cell sorting and scanning	Automatic	sorting machine	1	Quality Engine
Assembling	cell holder module making	Manual	NA	1	Production Engineer
	cells polarity detection				
	spot welding	Automatic	automatic double sided machine	1	Production Engineer
	welding strips testing	Manual	NA	1	Production Engine
	whole pack IR testing	Manual	IR meter	1	Production Engineer
	BMS testing	Automatic	BMS tester	1	Production Engineer
	BMS mounting and connection	Manual	NA	1	Production Quality Engineer
	harness and connection quick testing	Manual	quick tester		
	epoxy and insulation routing	Manual	NA	1	Production Engineer
	sleeve covering	Manual	Hot air gun	1	Production Engineer
	comprehensive testing	Automatic	Comprehensive machine	1	Quality Engine
	pack inserting in cabinet and closing	Manual	NA	1	Production engineer
Testing	IP Testing , logo and warning stickers pasting	Manual	NA	1	Quality Engine
	charging and discharging testing	Automatic	Regenrative machines	2	Quality Engineer
	final battery pack	Manual	NA	1	Quality Engine
	end of process	Manual	NA		
		TOTAL MANPOWER		8	

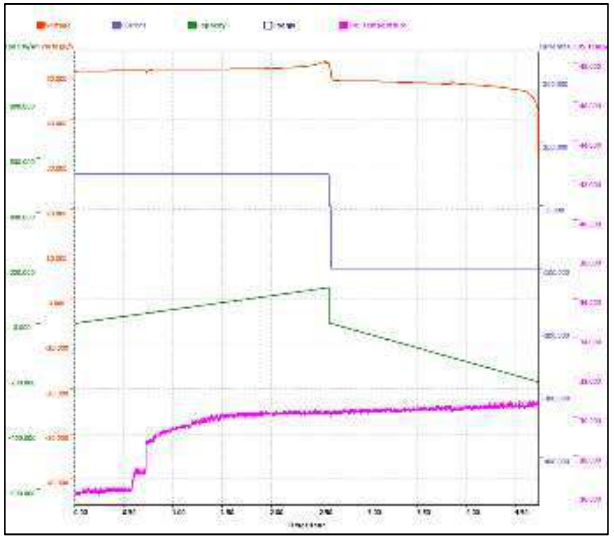
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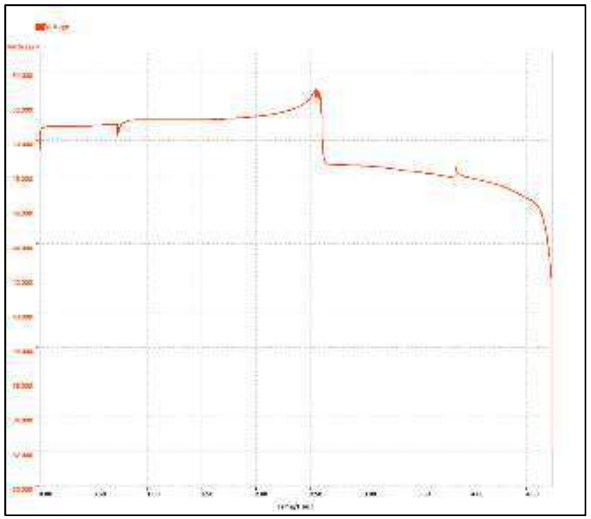
E Rickshaw – In-house Lithium Battery –In-house Testing & Validation

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Testing Simulations & Outcome

No	Record ID	event description	Time
1	1	Data recording start normally	2024.09.23-17:13:32
2	4	Channel forced to jump	2024.09.23-17:13:36
3	1306	Test stopped by user.	2024.09.23-17:57:00
4	1307	Current step continue test (E0063)	2024.09.24-08:51:13
5	1307	Test continue start	2024.09.24-08:51:13
6	4720	Channel forced to jump	2024.09.24-10:50:10
7	4746	Channel forced to jump	2024.09.24-10:51:00
8	6967	Test stopped by user.	2024.09.24-12:04:59
9	6968	Current step continue test (E0063)	2024.09.24-12:36:18
10	6968	Test continue start	2024.09.24-12:36:18
11	8576	End Volt	2024.09.24-13:29:57





Step	Process	Mode	Set Volt(V)	Set Current(A)	Status	Capacity(Ah)	rge Capacity(	harge Capacity	Energy(Wh)	ge Energy	arge Energy	per Capcity	ep Time(Mi	Start Volt(V)	End Volt(V)
1--1	Still					0	0	0	-0.007	0	0.007	-40.1	0.034	49.465	49.477
1--2	Charge	CC/CV		50	Pass	129.75	129.75	0	6651.38	6651.38	0	194697.3	155.7	50.114	52.513
1--3	Still					0	0	0	0	0	0	0	0.8	51.636	51.59
1--4	Discharge	CD	-0.001	100	Pass	-212.525	0	212.525	-10151.568	0	10151.568	-40446.56	127.52	50.938	32.022

Test Conditions
Call Template: loader 48V 200Ah.tplx
Start Time:2024,09,23--17:13:32 End Time:2024,09,24--13:29:57
Security Protection:0.000V--70.000V, ¡À105.000A
Recording Conditions: dT=2.000Sec. dV=0.120V dI=¡À0.100A H/S:11.7/4.0000-0002U/2020-06-08

Test Results
- OVP (Over Voltage protection) is Okay
- UVP (Under Voltage protection) is Okay
- AH Out is 212 AH, which is Okay
- Performance found as per application Requirement.

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E Rickshaw – In-house Lithium Battery –Field Testing & Validation

SR NO	ROAD TEST REPORT FOR ELECTRIC 2 WHEELER & 3 WHEELER	
		REMARKS
1	VEHICLE MODEL	E LOADER VANDE BHARAT MD9SEVUE1
2	MOTOR POWER	1000W
3	TOP SPEED	45KM/HR ON SPEEDOMETER ACTUAL 38KM/HR
4	TYRE SIZE	12MM
5	CONTROLLER RATING	48V/60V 1500 WATT
6	TEST DATE	15.10.2024
	KM DETAILS	
7	OCV	52V
8	BATTERY SR NO	48V 200AH
9	PAY LOAD	450kg + driver
10	SINGLE LOAD PEAK CURRENT	59.6A For 20 Seconds
11	SINGLE LOAD CONTINOUS CURRENT	35A To 36A
12	FULL LOAD PEAK CURRENT	59.6A
13	FULL LOAD CONTINOUS CURRENT	35A To 36A
14	PEAK CURRENT AT SLOPE	59.6A For 20 Seconds To 40 seconds
15	TOTAL KM TRAVELLED	262KM
16	FULL CHARGE VOLTAGE	52V
17	CUT OFF VOLTAGE	42.9V
18	TIME DURATION	08:30
19	SPEEDO METER KM	262km
20	GPS KM	181KM
21	RIDER NAME	PULKIT & ROHIT









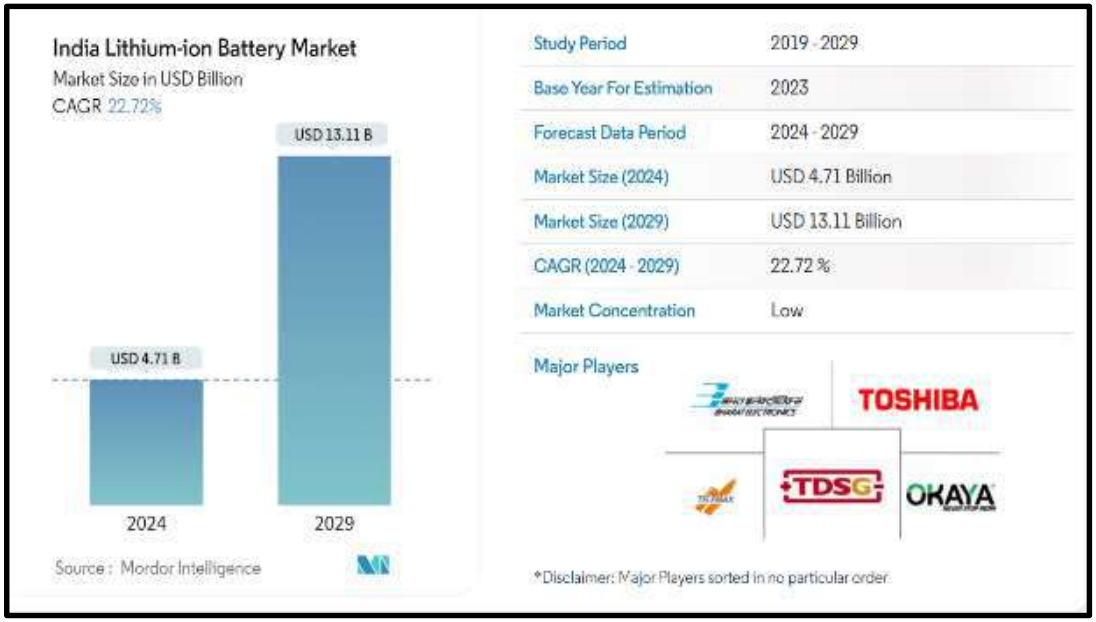


- Road Test done between Rajpura to Ludhiana & back –Total distance of 262 Kms on a single charge
- Total load of 450 Kgs + Driver all through the test.
- Battery test did not cut & stop during the journey of the total journey time of 8.5 Hours
- Complete data set captured on our system.
- Successful Testing for the Lithium battery pack 48V/ 200 Ah.

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Lithium Ion Battery Market Size- Global & Indian market scenario

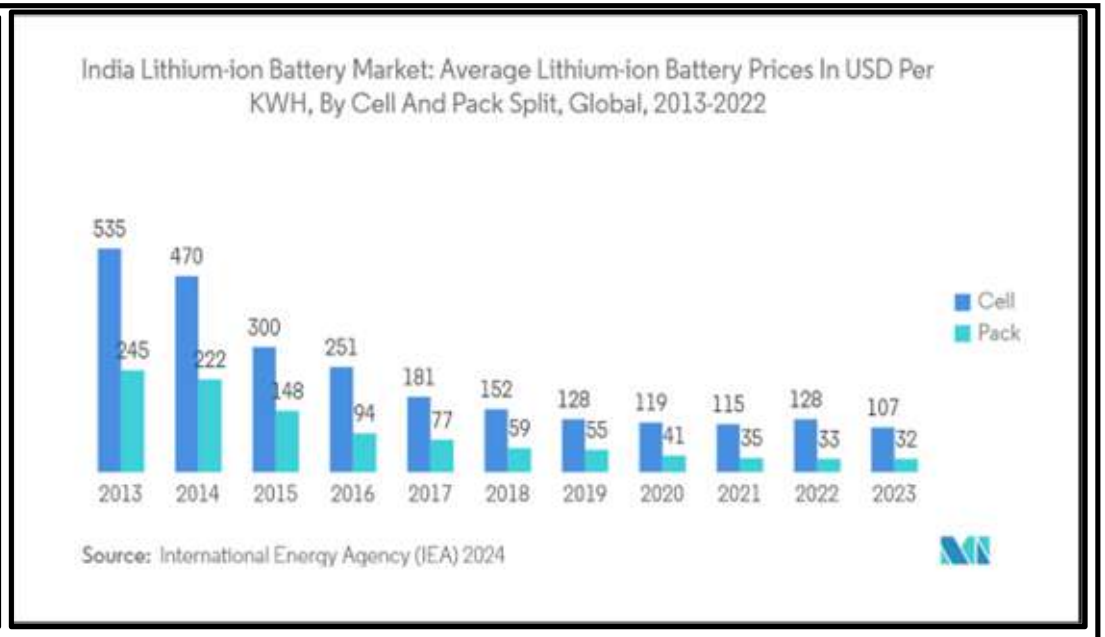


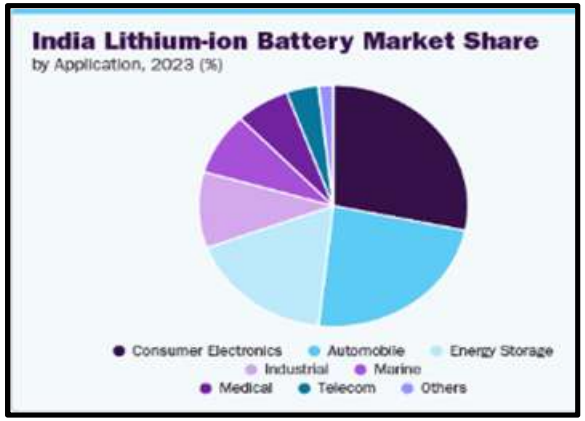
Study Period	2019 - 2029
Base Year For Estimation	2023
Forecast Data Period	2024 - 2029
Market Size (2024)	USD 4.71 Billion
Market Size (2029)	USD 13.11 Billion
CAGR (2024 - 2029)	22.72 %
Market Concentration	Low

Major Players

TOSHIBA, TDSG, OKAYA

*Disclaimer: Major Players sorted in no particular order





- Global market size in 2032 - $ 307.8 Billion with an CAGR of 18.3%
- Indian Market size 2023 $4.71 Billion
- Indian Market size by 2029- $ 13.11 Billion with an average growth rate of @23%
- Average price of Lithium cell/ KWh in 2024 India - $107 (INR 8800/)
- Key Indian companies – TDSG, BEL, Toshiba ,Okaya & Telemax India
- By Application Consumer durables contribute to 28.3% of the overall market size followed by Automobiles, ESS & other applications.

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Lithium Ion Battery Market Size- Battery Type

INDIA LITHIUM-ION BATTERY MARKET

MARKET BY REGION



MARKET BY BATTERY TYPE

- Lithium Cobalt Oxide
- Lithium Iron Phosphate
- Lithium Nickel Manganese Cobalt
- Lithium Manganese Oxide
- Others



MARKET BY BATTERY FORM



- Cylindrical lithium-ion cell
- Prismatic lithium-ion cell
- Lithium Pouch Cell

MARKET SIZE



CAGR: ~18.5%

INCREMENTAL GROWTH

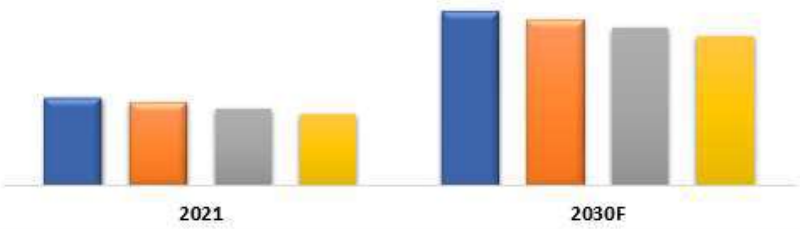
USD 1067.80 MN

MARKET STUDY PERIOD

HISTORIC YEAR: 2020
BASE YEAR: 2021
FORECAST YEAR: 2022-2030

MARKET BY POWER CAPECITY

Based on power capacity, the India lithium-ion battery market is divided into 0 to 3000mAh, 3000 to 10000mAh, 10000 to 50000mAh, and More than 50000mAh. Among these, the 3000 to 10000mAh category dominates the growth of this segment. This is mainly due to the growing popularity among consumers has contributed to the increasing demand for high-capacity batteries.



- 0 to 3000mAh
- 3000 to 10000mAh
- 10000 to 50000mAh
- More than 50000mAh

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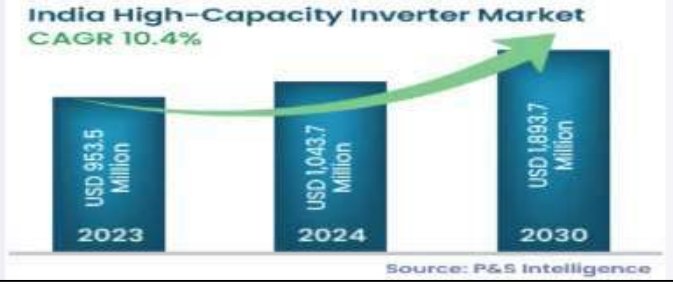
Future of Lithium Ion Invertors in India

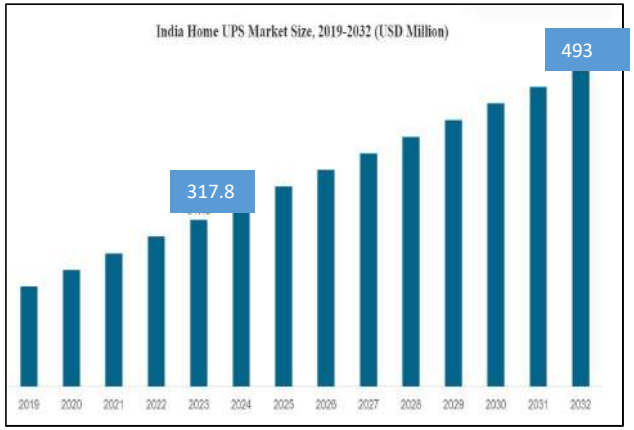
India High-Capacity Inverter Market Data

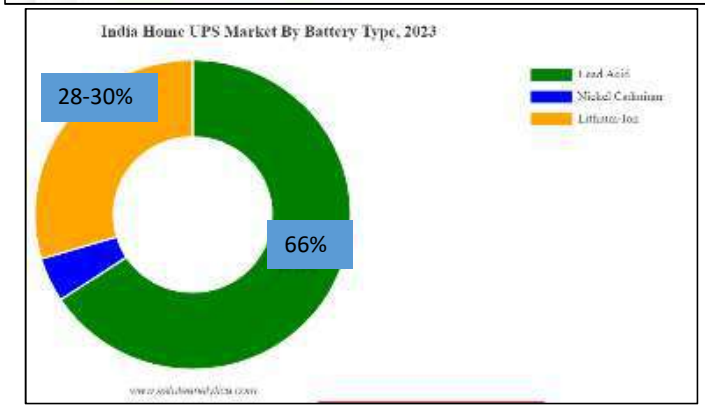
Market Statistics

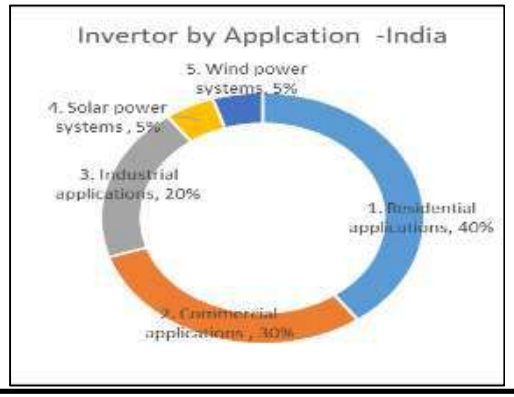
Study Period	2017 – 2030
2023 Market Size	USD 953.5 Million
2024 Market Size	USD 1,043.7 Million
2030 Forecast	USD 1,893.7 Million
Growth Rate (CAGR)	10.4%
Largest Wave Type	Sine Wave
Largest Phase	Single Phase
Nature of the Market	Fragmented

Market Size Comparison









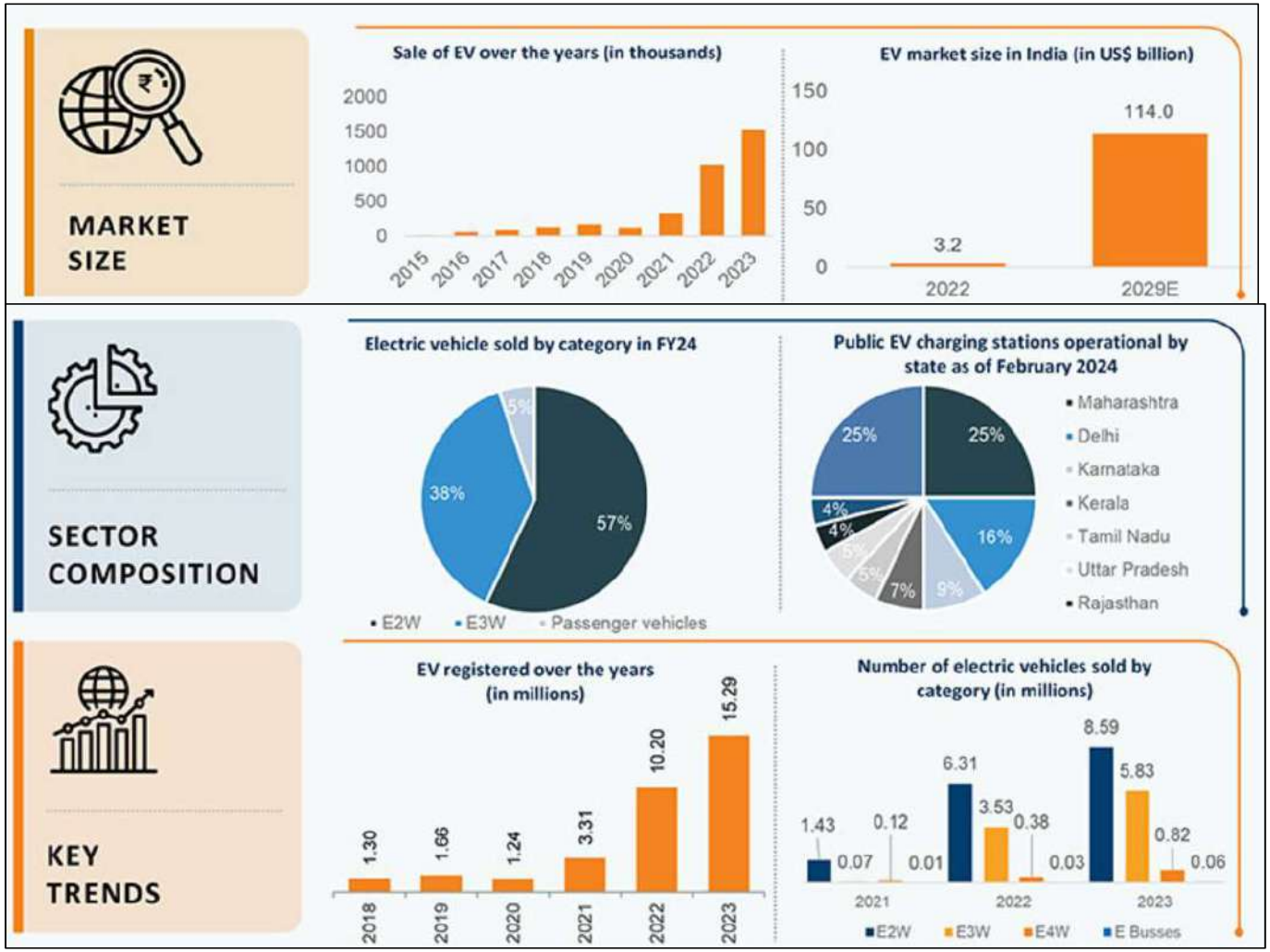


- Home invertor Markets in India are at a growing rate & is expected to reach 493 Million USD by 2030
- Lithium Ion invertors are rapidly taking over the conventional lead acid battery invertors in the last 3 years with close to 28% market share, the market share of Lithium ion invertor is expected to grow to close to 50% in the next 3 Years
- Limited players exclusively in to the new technology , Major player in the market still laying on conventional invertors.
- Players like Finike Lithium are exclusively into Li On Battery & Invertors with the state of the art products & services.

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Evolving EV Markets in India



Robust Demand:
Indian EV market is forecasted to expand from US$ 3.21 Billion in 2022 to US$ 113.99 Billion by 2029 with a CAGR of 66.52%.

- 2 W EV share up to 80%
- 70% in 3W & LCV
- 40% in Busses
- 30% in Private cars

Opportunity: Manufacturing base keeps costs lower by 10-25% relatively to Europe & American markets

- 132 million charging stations to come up by 2030.

Policy Support: Capital subsidy by Govt of India

- FAME India scheme
- 100% FDI allowed

Increased Investment:

- India is emerging as a major hub for auto components sourcing & industry exports over 25% of overall production.

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Existing Investments & Future plans

Current Infrastructure & Automation

State of the art Manufacturing Facility (Rajpura)

- Total Area : 2,50,000 Sqft (Plot Area)
- Build up Area (Existing) : 20,000 Sqft
- R & D centre
- Cell Testing & validation centre
- Battery Pack assembly & Testing
- New Product Development centre
- Warehouse
- Staff Hostel
- 24 Hours Power Back up with 120 Kw (Battery/ DG Set)

Future Plans

- New Built up area expansion plan: 30,000 Sqft.
- Automated assembly Lines for UPS/ Inverter & ESS
- Automated assembly line for Battery Packs (Cylindrical & Prismatic)
- Modern Equipment
- 2W & 3W (L3 & L5) R&D & Testing facility
- Assembly Line for Mobility & Static applications.

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Certifications

Our Products have been accredited with major international system certifications-ISO 9001-2015 Quality management system certification & CE, FCC certification. All our products are being made according to BIS Standards. We offer broad range of products for customer across various user group like corporate, public sector, private sector, commercial & industrial sector. We are registered with various National Institutions with NSIC, CII, PHD Chamber of Commerce & Industry & MIA etc.



CE



FC



ISO-9001



MSME



NSIC



TRADEMARK



ROHS



BIS



INTELECTUAL PROPERTY



UDHYAM



ISO-14001



CPCB

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Awards & Recognitions

Spinoff Technopark Ltd. is consistently achieving the recognition from the various industrial chambers & industrial bodies.





2017



2018



2019



2020



2021

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Our Corporate Customers





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Lithium-Ion BATTERIES





EV



SOLAR BATTERIES



2 WHEELER E-CYCLE



SOLAR STREET LIGHT

AIS156 COMPLIANT

ISO

MAKE IN INDIA

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Two Wheelers



Model-Series-"E-Wheel Power"

Lithium Batteries For Low Speed & High Speed 2W Specs*

Technical Specifications

Model	48V30Ah	60V24Ah	60V30Ah	60V42Ah	72V30Ah	72V36Ah	72V42Ah	72V60Ah
Type	LFP	LFP	LFP	LFP	LFP	LFP	LFP	LFP
Nominal Voltage	48 V	60 V	60 V	60 V	73.6V	73.6V	73.6V	73.6V
Ah Capacity	30 Ah	24 Ah	30 Ah	42 Ah	30Ah	36Ah	42Ah	60Ah
Wh Capacity	1440 Wh	1440 Wh	1800 Wh	2520 Wh	2208Wh	2650 Wh	3090 Wh	4416 Wh
Recommended Charging Current	10A(Max)	10A(Max)	10A(Max)	10A(Max)	15A(Max)	15A(Max)	20A(Max)	20A(Max)
Recommended Charging Voltage	54V	68V	68V	68V	83V	83V	83V	83V
Cell Balancing	✓	✓	✓	✓	✓	✓	✓	✓
Discharge Current	30A(Max)	24A(Max)	30A(Max)	42A(Max)	30A(Max)	36A(Max)	42A(Max)	60A(Max)
Recommended Operating Range	42V-54V	50V-69V	50V-69V	50V-69V	57V-83V	57V-83V	57V-83V	57V-83V
Operating Temperature	0-60° C	0-60° C	0-60° C	0-60° C	0-60° C	0-60° C	0-60° C	0-60° C
Storage Temperature	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C
BMS Feature	Protection Against Deep Discharge,Over Charge / Under Charge ,Over Current, Over Voltage Under Voltage							
Battery Warranty	As per Industry Norms/3 years							

*Customised options available in LFP/ NMC for OEM only.

Rajpura Factory :- Nh1, Rajpura-Ludhiana Road, Punjab , India
Mohali Factory :- E-226, Ph-8b, Ind Area, Mohali, Punjab ,India
Corporate Office :- SCO-117/118, Sec-43B, Chandigarh, India

"Finike Lithium" A Unit Of Spinoff Technopark Ltd.
Customer Care No. - +91 97780-44000,
Email-customercare@spinoff.in
For any sales enquiry please contact us: +91 84370-42204

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E-rickshaw/E-loader/E-auto(L3-L5) Lithium Battery Specs*

DATA SHEET-LITHIUM-ION E-RICKSHAW BATTERY PACK-51.2 V, 105AH/48V100AH/48V200AH/60V105AH						
1	General Characteristics	Model	48V100AH	51.2V105AH	60V105AH	48V200AH
		Chemistry	LFP	LFP	LFP	LFP
		Number Of Cell In Series	15	16	19	15
		Number Of Cell In Parallel	1	1	1	2
		Nominal Voltage (V)	48V	51.2V	60 V	48
		BMS Type (Options)	Smart /HW	Smart /HW	Smart /HW	Smart /HW
		Nominal Capacity	100 AH	105 AH	105 AH	200 AH
		Total Energy	4.8kWh	5.3kWh	6.3kWh	9.6kWh
		Maximum Charge Current (A)	50 A	50 A	50 A	50 A
2	Electrical Characteristics	Continuous Discharge Current (A)	25 A	25 A	25 A	25 A
		Charging Mode	CC/CV	CC/CV	CC/CV	CC/CV
		Maximum Charging Voltage (V)	54 V	57 V	68 V	54 V
		Standard Discharging Current (A)	35A	35A	35A	35A
		Recommended Charging Current (A)	16A-20A	16A-20A	16A-20A	16A-20A
		Battery Low Cut Off (V)	37.5V-42.5V	37.5V-42.5V	37.5V-42.5V	37.5V-42.5V
		Discharge cut off Voltage (V)	40 V	43 V	40 V	40 V
		Peak Instant Discharge Current (A)	75A	75A	75A	75A
3	Monitoring Characteristic	Module Bluetooth (In smart BMS)*	Yes	Yes	Yes	Yes
		CAN Communication*	Yes	Yes	Yes	Yes
4	Protections	Cell Over Voltage Protection	Yes	Yes	Yes	Yes
		Charging Under Voltage Protection	Yes	Yes	Yes	Yes
		Charging Over Current Protection	Yes	Yes	Yes	Yes
		Discharging Over Current Protection	Yes	Yes	Yes	Yes
		Output Short Circuit Protection	Yes	Yes	Yes	Yes
		Cell Temperature Protection Incharging & Discharging Mode	Yes	Yes	Yes	Yes
5	Temperature Characteristics	Operating Temperature During Charging	0°C to +55°C	0°C to +55°C	0°C to +55°C	0°C to +55°C
		Operating Temperature During Discharging	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C	-20°C to +60°C
6	Warranty	Years	3	3	3	3
7	Mechanical Characteristics	Module dimension (LXWXH) mm*	(A) 523x318x280 (B) 590x380x280	(A) 523x318x280 (B) 590x380x280	(A) 523x318x280 (B) 590x380x280	Customized
		Power Connector	D type 3 Pin & Anderson SB 50	D type 3 Pin & Anderson SB 50	D type 3 Pin & Anderson SB 50	D type 3 Pin & Anderson SB 50
8	Accessories	Cables (Red & Black) SOC INDICATOR	2.0 meter	2.0 meter	2.0 meter	2.0 meter
9	GPS	Enabled*	Yes	Yes	Yes	Yes
10	Live Location	Enabled*	Yes	Yes	Yes	Yes
11	Software	Enabled*	Yes	Yes	Yes	Yes
12	DoD%	Depth of discharge	90%	90%	90%	90%



Model-Series-"Ride Max"

*Customised options available .

Rajpura Factory :- Nh1, Rajpura-Ludhiana Road, Punjab , India
Mohali Factory :- E-226, Ph-8b, Ind Area, Mohali, Punjab ,India
Corporate Office :- SCO-117/118, Sec-43B, Chandigarh, India

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Email-customercare@spinoff.in
For any sales enquiry please contact us: +91 84370-42204

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LED Solar Street Light Specs*

Model-Series-"FLEXI SUN"

Technical Specifications							
Model	12.8V12Ah	12.8V18Ah	12.8V24Ah	12.8V30Ah	12.8V36Ah	12.8V42Ah	12.8V48Ah
Chemistry	LiFePo4	LiFePo4	LiFePo4	LiFePo4	LiFePo4	LiFePo4	LiFePo4
Nominal Voltage	12.8 V	12.8 V	12.8 V	12.8 V	12.8 V	12.8 V	12.8 V
AH Capacity	12 Ah	18 Ah	24 Ah	30 Ah	36 Ah	42 Ah	48 Ah
WH Capacity	154 Wh	230 Wh	307 Wh	384 Wh	460 Wh	537 Wh	614 Wh
Recommended charging current	5A(Max)	5A(Max)	10A(Max)	10A(Max)	10A(Max)	15A(Max)	20A(Max)
Recommended charging voltage	14.6	14.6	14.6	14.6	14.6	14.6	14.6
Cell Balancing	✓	✓	✓	✓	✓	✓	✓
Discharge Current	5A(Max)	5A(Max)	10A(Max)	10A(Max)	15A(Max)	15A(Max)	15A(Max)
Recommended Operating Range	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V	10V-14.6V
Operating Temperature	-10 C≈55°C	-10 C≈55°C	-10 C≈55°C	-10 C≈55°C	-10 C≈55°C	-10 C≈55°C	-10 C≈55°C
Storage Temperature	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C	0-35° C
BMS Feature	Protection Against Deep Discharge,Over Charge / Under Charge ,Over Current, Over Voltage Under Voltage						
Battery Warranty	3/5 years as per Customer's needs						

E-Cycle Lithium Battery Specs*

Model-Series-"LITHI PEDAL"

DATA SHEET-NMC E Cycle-36V10AH*			
1	General Characteristics	Model	36V10AH
		Chemistry	NMC
		Nominal Voltage (V)	36V
		Nominal Capacity	10 AH
		Total Energy	360Wh
2	Electrical Characteristics	Operating Voltage Range (v)	28V-42V
		Charging Mode	CC/CV
		Recommended Charging Voltage (v)	42V
		Standard Discharging Current (A)	5A
		Maximum Discharging Current (A)	10A
		Standard Charging Current (A)	2A
		Maximum Charging Current (A)	5A
		Battery Low Cut Off (V)	28V
		Battery High Voltage Cut Off (V)	42V
		DoD%	90%
3	Protections	Cell Over Voltage Protection / Cell Under Voltage Protection	Yes
		Charging Over Current Protection / Discharging Over Current Protection	Yes
4	Temperature Characteristics	Operating Temperature During Charging	-10°C to +55°C
		Operating Temperature During Discharging	-10°C to +60°C
5	Battery IP	IP Category	IP 65
6	Warranty	Years	3



*Customised options available in all battery packs for OEM.

AIS 156 COMPLIANT

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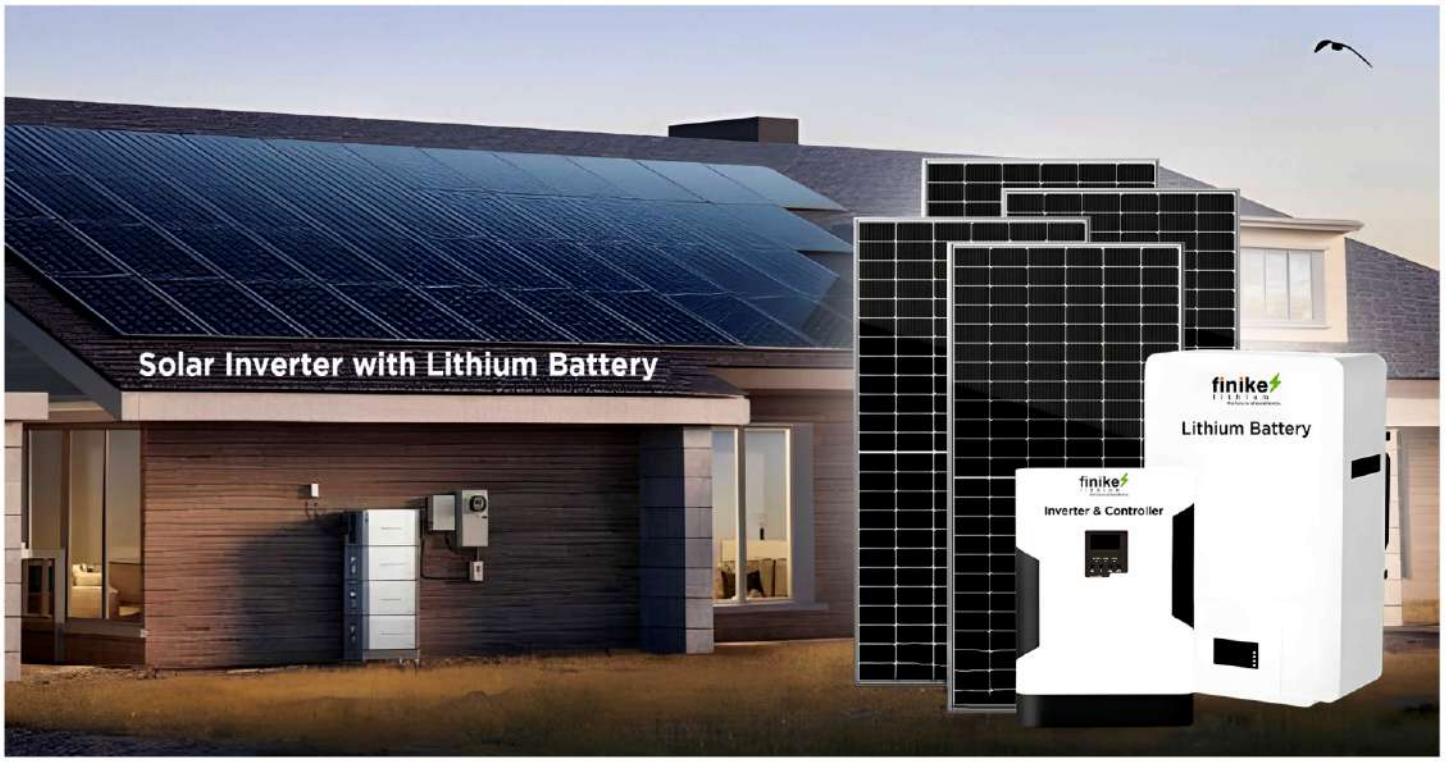
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Pure Sine Wave Lithium-Ion Battery

UPS/INVERTER " LITHIUM-INBUILT "



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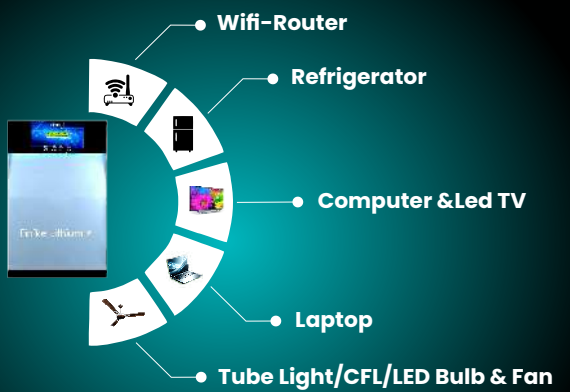
Finike Lithium "Pure Sine Wave Lithium -Ion Battery UPS/Inverter"

WHY CHOOSE

LITHIUM ION BATTERY INVERTER OVER LEAD ACID INVERTER BATTERY?

Features	Lead Acid Battery	Lithium Battery
Battery Life	3-5 Years	10-12 Years
Charging Time	10-12Hrs	3-4Hrs
Fumes, Acid Spills	Yes	No
Maintenance	Water Topping Requirement, Cleaning Battery Terminals	Maintenance-free
Ah Capacity	150Ah	100Ah
Charging Cost	3 (Times)	1 (Time)
Cost Efficiency	Replacement After 3-5 years	Replacement After 10-12 years

Applications



UPS CUM INVERTER BUYING GUIDE

Home Type	Appliances Type	Finike Lithium 1100VA
1-2 BHK	2-fans ,2tube light, 3-led (9W), 1-TV, 1-Laptop+ Wi-Fi Router	3 to 4 hours
2-3 BHK	3-fans ,3tube light, 3-led (9W), 1-TV, 1-Laptop+ Wi-Fi Router	2 to 3 hours
2-3 BHK	3-fans ,3tube light, 3-led (9W), 1-TV, 1-Laptop+ Wi-Fi Router	1 to 2 hours

Protections

- Overload
- Short Circuit
- Low Battery
- Mains fuse Trip
- Over temperature
- Wiring Fault
- AC & DC MCB



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HOME INVERTER/UPS- "LITHIUM BATTERY"

	Battery Type	Lithium Iron Phosphate (LiFePO4)	Lithium Iron Phosphate (LiFePO4)
ELECTRIC	Nominal Voltage	12.8V	25.6V
	Type Of Cells	PRISMATIC	PRISMATIC
	Nominal Capacity	100 AH	100AH
	Stored Energy	1280 WH	2560WH
	Cycles	3500 Cycles	3500 Cycles
	MCB Switch	✓	✓
	Energy Efficiency	98%	98%
ELECTRICAL CHARACTERISTICS	Charge Voltage	14.4 V ± 0.2V	28.8 V ± 0.2V
	Charge Mode	CC/CV: Constant Current/Constant Voltage	CC/CV: Constant Current/Constant Voltage
	Standard Charge Current	50A	50A
STANDARD DISCHARGE	Standard Discharge Current	100A	100A
	Peak Discharge Current	200A (2C) only for a few seconds)	200A (2C) only for a few seconds)
SMART BMS FUNCTION	Circuit Protection	Over Charge / Over Discharge / Over Current / Over Temp / Short Circuit.	Over Charge / Over Discharge / Over Current / Over Temp / Short Circuit.
	Communication Interface	CAN, RS485, or Bluetooth (optional)	CAN, RS485, or Bluetooth (optional)
	Cell Balancing	Passive Balancing for Extended Battery Life	Passive Balancing for Extended Battery Life
	Temperature Monitoring	Inbuilt Sensors for Safe Operation	Inbuilt Sensors for Safe Operation
	Remote Monitoring	Remote Monitoring: Mobile App/Web Interface (Optional)	Remote Monitoring: Mobile App/Web Interface (Optional)
ENVIRONMENT	Charge Temperature Range	0°C to +60°C	0°C to +60°C
	Discharge Temperature Range	0°C to +60°C	0°C to +60°C
	Storage Temperature	0°C o +50°C @60±25% relative humidity	0°C o +50°C @60±25% relative humidity
MECHANICAL	Casing Material	METAL	METAL
	Dimensions	L*B*H (mm) 200x163x425	425x163x425
	Weight	14.5 KG	25 KG
	Terminal	ISOLATED	ISOLATED

Lithium Batteries for all type of Inverters/UPS/ESS Range (12.8v-51.2V 100Ah-200Ah) Model-Series-"Volt Edge Pro"



*Customized Battery Packs Available As Per Requirement For Various Sizes.

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ESS/SOLAR "LITHIUM BATTERY"SPECS (MODULAR)

Designed for compatibility with Various makes of solar inverters

LiFePO4 51.2V 100AH Solar/ESS	Model- SUNVAULT -X5
Longer Cycle Life: Offers longer cycle life and five times longer float/calendar life than lead acid battery, helping to minimize replacement cost and reduce total cost of ownership. **Lighter Weight:** About 40% of the weight of a comparable lead acid battery. A 'drop in' replacement for lead acid batteries. **Higher Power:** Delivers Twice Power of Lead Acid Battery, Even High Discharge Rate, While Maintaining High Energy Capacity. **Wider Temperature Range:** -20°C to +60°C. **Superior Safety:** Lithium Phosphate chemistry eliminates the risk of explosion or combustion due to high impact, overcharging or short circuit situation.	

Mechanical	
Metal Box	MS
Dimensions (L x W x H)	506 X 474 X 256
Approx. Weight	47kgs
Terminal Type	Power Connector 100A
Environmental	
Charge Temperature	0 °C to 55 °C @60± 25% Relative Humidity
Discharge Temperature	-20 °C to 60 °C @60 +25% Relative Humidity
Storage Temperature	0 °C to 25 °C
IP Class	IP 20
Cell	
Type	LiFePO4 Battery
Nominal Capacity	100Ah @0.5C 90 %DOD
Nominal Voltage	3.2V
Dimensions	L-131 x T-40 x H-221mm
Approx. Weight	2.26kgs
Electrical Characteristics	
Normal Voltage	51.2V
Nominal Capacity	100AH
Minimum Capacity	95AH
Energy	5120WH
Cycle Life	>3500cycles @0.5C 80%DOD
Months Self Discharge	<3%
Efficiency of Charge	100%@0.5C
Efficiency of Discharge	96~99%@0.5C
BMS Functions	Over Charge, Over Discharge, Over Current, Short Circuit And Temperature Protection
Communication	RS485/RS232/CAN
Standard Charge and Discharge	
Charge Voltage	57.6V
Charge Mode	(CC/CV)





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TELECOM/ESS

Lithium Battery

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Finike Lithium Project Series

- High Quality Cell
- Heating Function
- Intelligent BMS
- LCD
- Capacity
- Voltage
- Case Color
- Bluetooth



CUSTOMISED ESS / BESS SOLUTIONS

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ESS/TELECOM LITHIUM BATTERY SEGMENT MODULAR

Lithium Battery Technical Specification: 48V,100AH

Overview:

Finike Lithium provides safe & reliable energy storage Solutions with wide range of models for ESS/Telecom/Others.

- Quick charging.
- Long cyclic life.
- High specific energy / energy density.
- Zero Maintenance.
- Low foot print.

Features:

- RS 485 communication output for monitoring.
- Cell voltage & temperature sensors.
- Multi-level safety protection for overcharge, over discharge, short circuit, temperature etc.,
- Over current protection in charge/discharge.
- High/low temperature protection.
- Passive cell balancing.
- Customized BMS functions and algorithms.
- Data logging.
- SMART BMS.
- Protection for short circuit (Pack Level)

General Characteristics:

Nominal Voltage (V)	48V
Energy(KWh)	4.8KWh
Energy Capacity	100Ah

Mechanical Characteristics

Weight	45Kg ± 2 Kg
Dimensions(mm)*	L :(540 ±5)mm w:(428 ±5)mm H :(244 ±5)mm

Electrical Characteristics:

Operating voltage (V) @100%DOD	42 V to 54V
Recommended Voltage(V) @80%DOD	46.5 V to 54V
Rated charging voltage(V)	54V
Discharge Cutoff voltage(V)	42V
Max Continuous Charge Current (A)	0.5C (50A)
Recommended Charge current (A)	0.3C (30A)
Max Continuous Discharge Current(A)*	1C (100A)
Recommended Discharge Current(A)	0.5C (50A)

Operating Conditions:

Pack Cycle life (80%DOD@25° C, 0.2C Charge/Discharge)		3500Cycles
Ah Efficiency (%)		≥ 99%
Operating temperature	Charge Discharge	0°C to60°C -20°C to60°C
Storage temperature		25°C to35°C

Product Visuals





*Specification For Reference Only. Customised Sizes Also Available.

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HIGH VOLTAGE LITHIUM ION BATTERY ENERGY STORAGE SYSTEM

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Module Energy	5.12kWh	
Module Nominal Voltage	51.2V	
Module Capacity	100Ah	
Battery Module Qty 1 in Series	7	10
System Nominal Voltage (V)	358.4V	512V
Operating Voltage(V)	336V-392V	480V-560V
Cut-off Discharge Voltage (V)	336V	560V
Float Charge Voltage (V)	392V	560V
System Energy	35.80kWh	51.20kWh
Recommend Depth of Discharge	80%	
Storage Temperature	25-35C	
Communication Port	UART/CAN/RS232/RS485	
Status indicator	Run-Green Light ;Alarm - Red Light	
IP RATING OF ENCLOSURE	IP20	
*Dimension(W/D/H,mm) Single Module	540x428x244*	
Installation Location	Rack / Cabinet,Indoor	
Cycle life	⩾ 3500 Cycles at 0.5C/0.5C ,25 C	
Warranty	5 Years	

Product Visuals







❶ SAFETY & RELIABILITY

- Air conditioner in cabinet, fans & fire extinguishing device in battery module.
- LiFePO4 battery with higher safety & longer lifetime.*

❷ CONVENIENCE

- Standard rack design for easy installation and maintenance.
- Supporting USB upgrade software*

❸ FLEXIBILITY

- Standard modular design with 5.12kWh per battery modules
- Flexible design from 4-16 battery modules in series parallel-in low voltage ESS.

❹ SPECIAL FEATURES

- Three-layer architecture built in BMU+RBMS+SBMS for multiple protection only in high voltage.
- Touchable screen design for choosing different communication protocol option available.
- Flexible capacity & power scalability with up to 64 clusters in parallel

*Specification For Reference Only. Customized Sizes Also Available.

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ESS RESIDENTIAL/COMMERCIAL SERIES

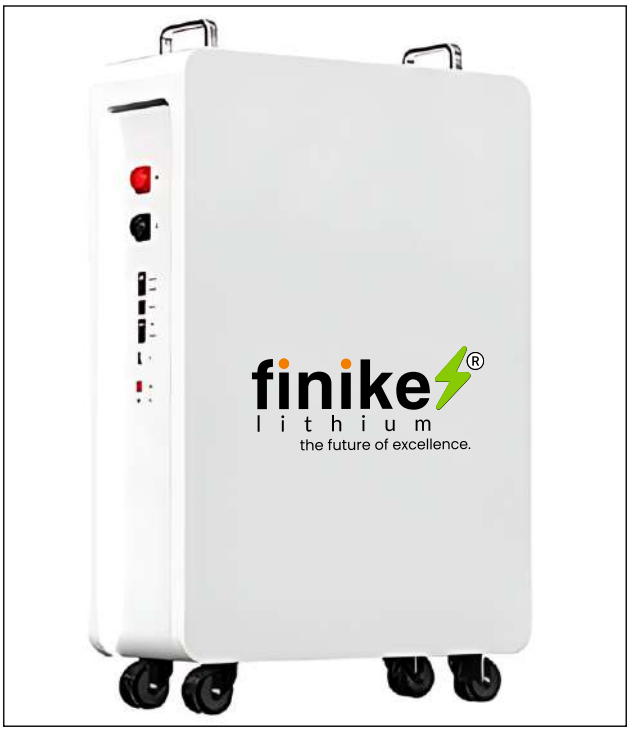






- Extra Long Cycle life
- A safe & reliable BMS
- Easy plug and play
- Ground -Standing For easy installation
- Rs485 & CAN communication
- Compatible with most of the inverters

Technical Specification of 51.2V-200Ah



Rated Voltage	51.2V
Rated Capacity	200Ah
Rated Energy	10.24kwh
Operating Voltage Range	43.2V~58.4V
Charging Voltage	57.6~58.4V
Cut-off Voltage	43.2V
Max.Charging Current	100A
Recommended Charging Current	50A
Max.Discharge Current	100A
Efficiency	>98%
Dimensions L*W*H(mm)*	495*780*217
Weight (Kg)*	≈92
Humidity	5%~95% Relative humidity
Charging Temperature	0℃~50℃
Discharging Temperature	-20℃~60℃
Storage Temperature	-25℃~30℃
Cycle Life	>3500times (0.25 C, 80%DOD)
Design life	10 years

*Dimension & Weight for reference only, all other sizes can be customised.

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