GREENFUEL®

YOUR SINGLE - STOP SOLUTION

PREMIUM E-MOBILITY BATTERIES

TWO WHEELER BATTERIES

THREE WHEELER BATTERIES

Empowering Clean Mobility Solutions

Since 2006

MD's Message

Akshay Kashyap, MD of Greenfuel

Our premium lithium-ion batteries are designed to provide long-lasting, reliable power for all your e-mobility and energy storage based applications. These batteries are not only energy efficient, but they are also eco-friendly and cost-effective. With our batteries, you can enjoy the power of reliable, safe and sustainable energy without breaking the bank.

Advanced Battery Division - Journey

+7years

of products knowledge (Li-ion Batteries)

2016
Est. Battery Division

2020

13%

Engineers engaged in R&D

+100K

Batteries sold and running successfully

2021

2022

+80M

Kms covered by Greenfuel's lithium-ion battery

04

Patents acquired for battery pack design

2023

03
Manufacturing Units

342+
Employees

HEADQUARTERS
IMT Manesar, Gurugram

PAN INDIA
Network

02
Divisions

Infrastructure

20K Sq. Ft.

In utilisation for battery plant
(IMT, Gurugram) expanding 3X by 2024

125MW

Production plant capacity in **Single Shift**

222

End Of Line (EOL) channels

3800

Cell capacity channels

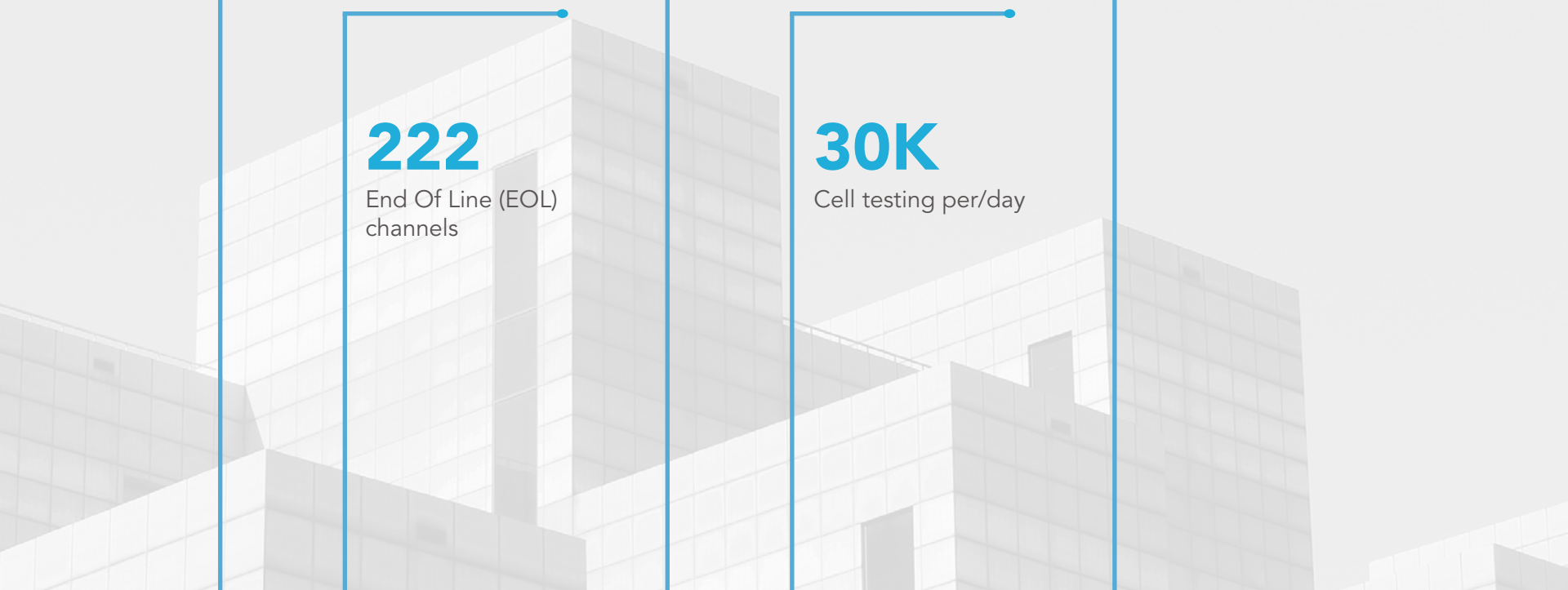
30K

Cell testing per/day

In-house

BMS

testers



Prestigious Customers - Battery Division

BULL · BatterySmart · GEMOPAI · ZEN MOBILITY · yc
LECTRIX · chargeup · GALAXY E-Vehicles · G.R.D. MOTORS
LORD'S AUTOMATIVE PVT. LTD. · SHIGAN · Statie · DMW Electric Vehicles
VANDE BHARAT · Mini Metro · SKS Arzoo

4 Patents On Battery Pack Design

CELL HOLDING FOR VIBRATION MANAGEMENT


ORIGINAL
GOVERNMENT OF INDIA
THE PATENT OFFICE
CERTIFICATE OF REGISTRATION OF DESIGN

LITHIUM BATTERY PACK DESIGN


ORIGINAL
GOVERNMENT OF INDIA
THE PATENT OFFICE
CERTIFICATE OF REGISTRATION OF DESIGN

STANDALONE LI-ION BATTERY ASSEMBLY


ORIGINAL
GOVERNMENT OF INDIA
THE PATENT OFFICE
CERTIFICATE OF REGISTRATION OF DESIGN

HEAT CONDUCTING ELASTOMERIC PAD


ORIGINAL
GOVERNMENT OF INDIA
THE PATENT OFFICE
CERTIFICATE OF REGISTRATION OF DESIGN

MAKE IN INDIA

GREENFUEL®

E-Rickshaw
Lithium Batteries

Battery Range

- 51.2 V - 75 Ah to 300 Ah
- 60.8 V - 100Ah to 300 Ah
- 76.8 V - 100Ah to 300 Ah

Batteries can be tailored to specific needs*

51.2V 100Ah

BATTERY **FEATURES**

COMPACT SIZE

Flexibility in battery pack placement due to compact size: under the driver seat or under the cargo

HIGHLY DURABLE

Capable of withstanding side impact, drop, and top-loading

LONG BATTERY LIFE

Long cycle life and LFP chemistry for thermal stability

PRECISE SOC

Advanced algorithm in accuracy in SOC estimation > 98%

THERMAL MANAGEMENT

Thermal management to ensure battery operation at a controlled temperature

ACCURACY IN VOLTAGE

High accuracy in voltage, and current measurement

SMART BMS

3+ years of data and event storage locally at the BMS level

FRIENDLY DESIGN

Service-friendly design, allows easy access to electronic and electromechanical components

BATTERY **PERFORMANCE**

5KW

Supports up to 5kw peak power

<2500+

cycle life under normal operating conditions

4000A

Short circuit protection capability up to 4000A

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	5 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	LFP
CELL PACKAGE TYPE	Prismatic
CAPACITY	100 Ah
OPERATION DOD RANGE	90
NOMINAL VOLTAGE	51.2V
VOLTAGE RANGE	40V to 59.2 V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	1C
RATED DISCHARGE CURRENT	0.5C
PEAK DISCHARGE CURRENT	1C for 15 Sec
COMMUNICATION INTERFACE/PROTOCOL	CAN 2.0A
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 55°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 60°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~2500
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	20% drop in initial capacity at the end of <2500 cycles. % drop in capacity at different parts of the life shall be confirmed after simulation.
CYCLE DEFINITION	One complete charging and discharging is considered to be a cycle for the above.

51.2V 75Ah
BATTERY FEATURES

BLUETOOTH BLE
Monitoring capabilities with companion mobile application.

LONG CYCLE LIFE
LFP chemistry for thermal stability.

SOC ESTIMATION>98%
Capable of withstanding side impact, drop, and top-loading

ACCURATE MANAGEMENT
High accuracy in voltage, current and temperature measurement

COMPACT SIZE
Flexibility in battery pack placement due to compact size under the driver seat or under the cargo.

SERVICE FRIENDLY DESIGN
Service friendly design, allows easy access to electronic and electromechanical components.

3+ YEARS DATA
3+ years of data and event storage locally at the BMS level

THERMAL MANAGEMENT
Thermal management to ensure battery operation at controlled temperature.

AIS-004 CERTIFIED
UN38.3, AIS-156 & AIS-004 Certified

ENVIRONMENTAL COMPLIANCE
Environmental compliance as per ISO 16750.

BATTERY PERFORMANCE

3.8KW
Supports up to 3.8kw peak power

<2500+
cycle life under normal operating conditions

4000A
Short circuit protection capability up to 4000A

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	3.8 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	LFP
CELL PACKAGE TYPE	Cylindrical
CAPACITY	75 Ah
OPERATION DOD RANGE	100
NOMINAL VOLTAGE	51.2V
VOLTAGE RANGE	42V to 58.4 V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	1C
RATED DISCHARGE CURRENT	0.5C
PEAK DISCHARGE CURRENT	0.8C for 20 Sec
COMMUNICATION INTERFACE/PROTOCOL	CAN 2.0A
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 55°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 60°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~2500
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	20% drop in initial capacity at the end of <2500 cycles. % drop in capacity at different parts of the life shall be confirmed after simulation.
CYCLE DEFINITION	One complete charging and discharging is considered to be a cycle for the above.
PACKAGE DIMENSION (LxWxH)	430x340x182 mm
IP PROTECTION	67

MAKE IN INDIA

GREENFUEL®

Light Commercial Vehicle
Lithium Batteries

Battery Range

- 51.2 V - 75 Ah to 300 Ah
- 60.8 V - 100Ah to 300 Ah
- 76.8 V - 100Ah to 300 Ah

Batteries can be tailored to specific needs*

72V 100Ah
BATTERY FEATURES

LONG CYCLE LIFE
NMC chemistry delivering high energy density.

SOC ESTIMATION>98%
Accuracy in SOC estimation > 98%.

BLUETOOTH BLE MONITORING
Capable to withstand side impact, drop and top loading.

ACCURATE MANAGEMENT
High accuracy in voltage, current and measurement.

COMPACT SIZE
Flexibility in battery pack placement due to lower height under the driver seat or under the cargo.

SERVICE FRIENDLY DESIGN
Service friendly design, allows easy access to electronic and electromechanical components.

3+ YEARS DATA
3+ years of data and event storage locally at the BMS level

THERMAL MANAGEMENT
Thermal management to ensure battery operation at controlled temperature.

AIS-004 CERTIFIED
UN38.3, AIS-156 & AIS-004 Certified

ENVIRONMENTAL COMPLIANCE
Environmental compliance as per ISO 16750.

BATTERY PERFORMANCE

7KW
Supports up to 7kw peak power

<2500+
cycle life under normal operating conditions

4000A
Short circuit protection capability up to 4000A

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	7 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	LFP
CELL PACKAGE TYPE	Prismatic
CAPACITY	100 Ah
OPERATION DOD RANGE	90
NOMINAL VOLTAGE	76.8V
VOLTAGE RANGE	60V to 88.8 V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	2C
RATED DISCHARGE CURRENT	0.5C
PEAK DISCHARGE CURRENT	2C for 10 Sec
COMMUNICATION INTERFACE/PROTOCOL	CAN 2.0A/B, BLE
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 55°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 60°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~2500
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	20% drop in initial capacity at the end of <2500 cycles. % drop in capacity at different parts of the life shall be confirmed after simulation.
CYCLE DEFINITION	One complete charging and discharging is considered to be a cycle for the above.
PACKAGE DIMENSION (LxWxH)	598x387x293 mm
IP PROTECTION	67
WEIGHT	<82 Kg
SPECIFIC ENERGY	94 Wh/Kg

51.2V 200Ah

BATTERY **FEATURES**

BLUETOOTH BLE

Monitoring capabilities with companion mobile application.

LONG CYCLE LIFE

LFP chemistry for thermal stability.

SOC ESTIMATION>98%

Capable of withstanding side impact, drop, and top-loading

ACCURATE MANAGEMENT

High accuracy in voltage, current and temperature measurement

COMPACT SIZE

Flexibility in battery pack placement due to compact size under the driver seat or under the cargo.

SERVICE FRIENDLY DESIGN

Service friendly design, allows easy access to electronic and electromechanical components.

3+ YEARS DATA

3+ years of data and event storage locally at the BMS level

THERMAL MANAGEMENT

Thermal management to ensure battery operation at controlled temperature.

AIS-004 CERTIFIED

UN38.3, AIS-156 & AIS-004 Certified

ENVIRONMENTAL COMPLIANCE

Environmental compliance as per ISO 16750.

BATTERY **PERFORMANCE**

10KW

Supports up to 10kw peak power

<2500+

cycle life under normal operating conditions

4000A

Short circuit protection capability up to 4000A

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	10 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	LFP
CELL PACKAGE TYPE	Prismatic
CAPACITY	200 Ah
OPERATION DOD RANGE	90
NOMINAL VOLTAGE	51.2V
VOLTAGE RANGE	40V to 59.2 V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	2C
RATED DISCHARGE CURRENT	0.5C
PEAK DISCHARGE CURRENT	2C for 10 Sec
COMMUNICATION INTERFACE/PROTOCOL	CAN 2.0A/B, BLE
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 55°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 55°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~2500
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	20% drop in initial capacity at the end of <2500 cycles. % drop in capacity at different parts of the life shall be confirmed after simulation.
CYCLE DEFINITION	One complete charging and discharging is considered to be a cycle for the above.
PACKAGE DIMENSION (LxWxH)	645x505x300 mm
IP PROTECTION	67
WEIGHT	<95 Kg
SPECIFIC ENERGY	103 Wh/Kg

MAKE IN INDIA

GREENFUEL®

Two Wheeler
Lithium Batteries

Battery Range

- 50.4 V - 40 Ah to 200 Ah
- 48 V - 40 Ah to 200 Ah

Batteries can be tailored to specific needs*

60V 45AH
BATTERY FEATURES

HANDLE
Heavy Duty Handle.
Plastic Mounded Part.

TOP COVER
Replicable Parts Mounted,
Plastic Molded.
BMS & IoT Mounting On Top Cover.
Battery Handle Molded.

FUSE
Safety Fuse.
To Avoid Short-circuit.
Circuit Breaker.

POWER CONNECTOR
Round Type Connector (2+4) Pin,
Power + CAN Output.
Fixed Mouning.

BUS BAR
Nickel Bus Bar.
Spot wilding Strong Connectivity.

CELL HOLDER
Plastic Molded.
Cell Holder With Screw.
To Hold Cells & Busbar in Particular Pattern.

LOT (OPTIONAL)
2G or 4G Connection.

CELL
Cylindrical Li-ion Cell Ib650 & 33140.
Chemistry LFP (32140) & NMC (18B60).

HOUSING
Aluminum Housing.
Manufacturing Through Extrusion Process.
Housing With lins.
Thermal Conductivity Through Conduction & Convection.

SOC INDICATOR
For Battery Fuel Percentage.
Visual Alarm Indication.

PROTECTIVE VENT
Pressure Relief Vent.

STAINLESS STEEL SCREW
To Avoid Rusting.
Temper-proof Screw For Anti-theft.

BMS
Micro-controller Based Circuit.
Regeneration Protection.
Other Critical Protection.
Audio Alarm.

PCB
To Minimize Wire Routing & Dressing.

THERMAL MANAGEMENT
Option 1- Potting material.
Option 2- Phase change material.

IP
Ip67.

GUIDELINE
AIS 156.
MHI Guidelines.

MODULE WILL BE COVERED
LFP (33140).
48V-30Ah, 45Ah.
60V-30Ah, 45Ah.
NMC (18650).
48V- un to 50Ah.
60V- up to 50Ah.
72V- up to 50Ah.

48V 24AH

BATTERY FEATURES

COMPACT SIZE
Flexibility in battery pack placement due to lower weight & dimensions.

HIGHLY DURABLE
Capable to withstand side impact, drop and top loading

LONG BATTERY LIFE
Long cycle life and LFP chemistry delivering high energy density

PRECISE SOC
Accuracy in SOC estimation > 98%

THERMAL MANAGEMENT
Thermal management to ensure battery operation at controlled temperature

ACCURACY IN VOLTAGE
High accuracy in voltage, current measurement

SMART BMS
3+ years data and event storage locally at BMS level

FRIENDLY DESIGN
Service friendly design, allows easy access to electronic and electro-mechanical components

BATTERY PERFORMANCE

1.2KW
Supports up to 1.2kw peak power

<2500+
cycle life under normal operating conditions

700A
Short circuit protection capability

Ip52
Rugged design

2%
Minimal self-discharge of < 2% per month, longer shelf life

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	1.2 kwh
BATTERY TYPE	Li-ion
CHEMISTRY	LFP
CELL PACKAGE TYPE	Cylindrical
CAPACITY	24Ah
OPERATION DOD RANGE	100
NOMINAL VOLTAGE	48V
VOLTAGE RANGE	40V to 54.7V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	1C
RATED DISCHARGE CURRENT	0.5C
PEAK DISCHARGE CURRENT	1C for 10 Sec
COMMUNICATION INTERFACE/PROTOCOL	CAN
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 50°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 55°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~2500
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	20% drop in initial capacity at the end of <2500 cycles. % drop in capacity at different part of the life shall be confirmed after simulation
CYCLE DEFINITION	One complete charging and discharging considered to be a cycle for the above
PACKAGE DIMENSION (L X W X H)	295 X 165 X 187mm
IP PROTECTION	52
WEIGHT	9 Kg
SPECIFIC ENERGY	128 Wh / Kg

72.2V 40AH

BATTERY FEATURES

COMPACT SIZE

Flexibility in battery pack placement due to lower height: under the driver seat or under the cargo

HIGHLY DURABLE

Capable to withstand side impact, drop and top loading

LONG BATTERY LIFE

Long cycle life and LFP chemistry delivering high energy density

PRECISE SOC

Accuracy in SOC estimation > 98%

THERMAL MANAGEMENT

Thermal management to ensure battery operation at controlled temperature

ACCURACY IN VOLTAGE

High accuracy in voltage, current measurement

SMART BMS

3+ years data and event storage locally at BMS level

FRIENDLY DESIGN

Service friendly design, allows easy access to electronic and electro-mechanical components

BATTERY PERFORMANCE

2.80KW
Supports up to 2.80kw peak power

1000
cycle life under normal operating conditions

4000A
Short circuit protection capability

Ip67
Rugged design

2%
Minimal self-discharge of < 2% per month, longer shelf life

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	2.80 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	NMC
CELL PACKAGE TYPE	Cylindrical
CAPACITY	40Ah
OPERATION DOD RANGE	>85%
NOMINAL VOLTAGE	72V
VOLTAGE RANGE	61V to 83.4V
RATED CHARGING CURRENT (STANDARD)	0.5C
PEAK CHARGING CURRENT	1C
RATED DISCHARGE CURRENT	1sC
PEAK DISCHARGE CURRENT	2C for 10 Sec
SLEEP CURRENT	< 5mA on HV side
COMMUNICATION INTERFACE/PROTOCOL	V1.5
OPERATING AMBIENT TEMPERATURE – CHARGING	0 to 55°C (cell temperature)
OPERATING AMBIENT TEMPERATURE – DISCHARGING	0 to 60°C (cell temperature)
STORAGE TEMPERATURE FOR 6 MONTHS	0 to 35 (50% SOC)
COOLING	Convection using thermal materials
LIFECYCLE @ AMBIENT 25°C	~1000
DETERIORATION IN CAPACITY OVER CYCLES AT 25°C FOR 100% DOD AND 0.5C	~20% drop in initial capacity at the end of 1000 cycles. % drop in capacity at different part of the life shall be confirmed after simulation.
CYCLE DEFINITION	One complete charging and discharging considered to be a cycle for the above.
PACKAGE DIMENSION (L X W X H)	230x165x290mm (lxbxh).
IP PROTECTION	67
WEIGHT	17Kg(±0.5kg).

60V 30AH

BATTERY FEATURES

COMPACT SIZE

Flexibility in battery pack placement due to lower height: under the driver seat or under the cargo

HIGHLY DURABLE

Capable to withstand side impact, drop and top loading

LONG BATTERY LIFE

Long cycle life and LFP chemistry delivering high energy density

PRECISE SOC

Accuracy in SOC estimation > 98%

THERMAL MANAGEMENT

Thermal management to ensure battery operation at controlled temperature

ACCURACY IN VOLTAGE

High accuracy in voltage, current measurement

SMART BMS

3+ years data and event storage locally at BMS level

FRIENDLY DESIGN

Service friendly design, allows easy access to electronic and electro-mechanical components

BATTERY PERFORMANCE

1.8KW
Supports up to 1.8kw peak power

1000
cycle life under normal operating conditions

4000A
Short circuit protection capability

Ip67
Rugged design

2%
Minimal self-discharge of < 2% per month, longer shelf life

BATTERY **SPECIFICATIONS**

BATTERY CAPACITY	1.8 Kwh
BATTERY TYPE	Li-ion
CHEMISTRY	NMC
CELL PACKAGE TYPE	Cylindrical
CAPACITY	30Ah
OPERATION DOD RANGE	90%
PACK UNDER VOLTAGE PROTECTION	46.5V
PACK NOMINAL VOLTAGE	57.6V
PACK OVER VOLTAGE PROTECTION	67.2V
BATTERY DOD	90%
CHARGING MODE	CC-CV
CAPACITY RATING	33AH
BATTERY ENERGY (WATT)	1900 Watt
NOMINAL CHARGING CURRENT	15A
DISCHARGING CURRENT	18A
OVER TEMP. PROTECTION (DISCHARGE)	65 + 2°C
OVER TEMP. PROTECTION RELEASE (DISCHARGE)	60 + 2°C
OVER TEMP. PROTECTION (CHARGE)	60 + 2°C
OVER TEMP. PROTECTION RELEASE (CHARGE)	55 + 2°C
UNDER TEMP. PROTECTION (CHARGE & DISCHARGE)	-10 + 2°C
UNDER TEMP. PROTECTION RELEASE (CHARGE & DISCHARGE)	-5 + 2°C
DIMENSION (L X W X H)	230X180X175MM(±1mm)
IP RATING OF ENCLOSURE	IP65
WEIGHT	11.2Kg (±0.5Kg)

Contact Us

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