



SUNDAK - BHARAT KA APNA SCOOTER



INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY

[A Division of NATRIP Implementation Society (NATIS), Govt. of India]

ICAT/BOV-2438/2019-20/P-0306

Date : 17th February 2020

TEST REPORT

FOR

COMPLIANCE TO G.S.R 291 (E) dated 24.04.2014

1. Company and Vehicle model and it's variant(s) details:

Documental Reference		Vehicle Manufacturer	
Current Document		M/s. SUNDAK SOLAR SOLUTIONS PRIVATE LIMITED	
Company Address		Plant Address	
103, Kasna Ecotech - IV, Greater Noida, Gautam Buddha Nagar, Uttar Pradesh, 201 304		103, Kasna Ecotech - IV, Greater Noida, Gautam Buddha Nagar, Uttar Pradesh, 201 304	
Vehicle Model		Vehicle Description	Working Voltage (V)
YOUNGER		Two Wheeler Battery Operated Vehicle without Pedal Assistance	48
Variant(s)			
	KEAGLE, MARS		

2. Test Objective:

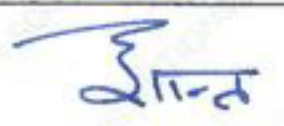

To carry out testing/verification of electric two wheeler having power less than 250W for exemption under CMVR vide GSR 291 (E) dated 24.04.2014.

3. Observations & Test Results: (Refer ANNEXURE - I & II & III for photographs)

Parameter	Requirement	Observed	Compliance Verified
Max Speed	< 25 kmph	18.87 kmph	✓
Max 30 min Power	< 250 W	122 W	
Unladen Weight (Without battery)	≤ 60 kg	53 kg / 59 kg / 58 kg	
Fitment of reflector (Front)	White colour	White colour	
Fitment of reflector (Rear)	Red colour	Red colour	
Suitable braking system	Fitted	Fitted	
Description	Make	Model / Part Id	
Motor	M/s SUNDAK SOLAR SOLUTIONS PRIVATE LIMITED	48V250W	
Controller	M/s SUNDAK SOLAR SOLUTIONS PRIVATE LIMITED	SSC12	

4. Conclusion:

The vehicle model and it's variant(s) mentioned in clause 1 does not deem to be a motor vehicle and complies(y) to CMVR requirements as per the exemption criteria specified in GSR 291 (E) dated 24.04.2014.

Power Test Report No.	CTOPP 0620 Dt. 08.02.2020
ICAT Ref No.	2019-2438 (IOCS NO. 80459)
Please turn over for DISCLAIMER	
AUTHORISED SIGNATORY	
 ICAT PRASHANT VIJAY DEPUTY GENERAL MANAGER	 ICAT DINESH TYAGI DIRECTOR

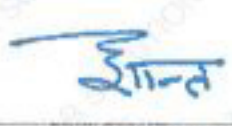

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 Phone : 0124-4586111, Fax : +91-124-2290005. E-mail: team@icat.in, Website : www.icat.in
 (An ISO 9001, ISO 14001 and OHSAS 18001 certified, scope wise NABL accredited and BIS recognised Test House)

ICAT/BOV-2438/2019-20/P-0306

ANNEXURE - I

Date : 17th February 2020



YOUNGER	
AUTHORISED SIGNATORY	
 ICAT PRASHANT VIJAY DEPUTY GENERAL MANAGER	 ICAT DINESH TYAGI DIRECTOR

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ABOUT EVSUNDAK

BHARAT KA APNA SCOOTER

EV SUNDAK Pvt. Ltd. is a 100% Indian electric two wheeler manufacturing company , with a mission to create two wheelers that can drive our present towards a sustainable future with its consistent focus on technological innovation, has attained heights unheard of, in the largely unorganized industry. Having a clear technological edge, creating new benchmarks and upgrading standards for the industry, comes naturally to EV SUNDAK . Today, EV SUNDAK is the established leader in product innovation, design sensibility and sales distribution network.

OUR MISSION

Sundak Remain Committed to provide innovative, Cost effective, and reliable power & Renewable energy solutions. We passionately enhance value for stakeholders following ethical business practices.

To be No. 1 Electric Two-Wheeler Company as a trusted brand by delivering smart, innovative, stylish, comfortable and energy-efficient vehicles and to be the benchmark of affordable eco-friendly technology for the generation to come.

KEAGLE



ALLOY FRONT
DISC



SPORTY LED
HEAD LIGHT



BODY COLORED
MUFFLER COVER



MULTI FUCTIONAL
DIGITAL METER

	KEAGLE
Category	Details
Motor power	1000Watts
	30H Magnet
Controller	12Tube,48V/60V Both Compatible
Vehicle weight	65Kg (Without battery)
Loading Capacity	175Kg
Speed	40-45Kmph
	3Level Speed Change With reverse gear
Rim	Stylish steel Rim 300-10(Tyre Size:90/100-10,3.00-10Tubeless)
Brake system	Front Disk Brake 180mm,Rear Drum
Shock Absorbers	Front Hydraulic telescopic shocker
	Rear Hydraulic Shocker & spring pressure
Lights and Signaling Devices	LED Headlights
	Smart Digital Speedometer(LED)
	DRL Light Features
	Unbreakable PC Lights
Charger	High Quality Micro Charger With Auto Cut
Security and Safety	High Quality 17-20Kg Chassis
	Anti-Theft System
	Remote Lock
Battery Warranty	1Year* On Lead Acid & 2 Years On Lithium Ion
Motor Warranty	3 Years*
ICAT/ARAI Approved	Yes
Mileage	48V/24AH(VRLA)=70+
	60V/24AH(VRLA)=80+
Special Features	Fresh ABS engineer plastic molded body
	Lithium Ion/Lead Acid Compatible
	Tested Climbing of 15°(Highest in segment)
	Best in Class Mileage
	High Quality Piano Paint
	Key-less entry
	Motor Walking Assistance(Forward and Reverse)



YOUNGER



ALLOY FRONT
DISC



SPORTY LED
HEAD LIGHT



BODY COLORED
MUFFLER COVER



MULTI FUCTIONAL
DIGITAL METER

	YOUNGER
Category	Details
Motor power	1000Watts
	30H Magnet
Controller	12Tube,48V/60V Both Compatible
Vehicle weight	60Kg (Without battery)
Loading Capacity	175Kg
Speed	40-45Kmph
	3Level Speed Change With reverse gear
Rim	Stylish steel Rim 300-10(Tyre Size:90/100-10,3.00-10Tubeless)
Brake system	Front Disk Brake 160mm,Rear Drum
Shock Absorbers	Front Hydraulic telescopic shocker
	Rear Hydraulic Shocker & spring pressure
Lights and Signaling Devices	LED Headlights
	Smart Digital Speedometer(LED)
	DRL Light Features
	Unbreakable PC Lights
Charger	High Quality Micro Charger With Auto Cut
Battery Warranty	1Year* On Lead Acid & 2 Years On Lithium Ion
Motor Warranty	3 Years*
ICAT/ARAI Approved	Yes
Security and Safety	High Quality 17-20Kg Chassis
	Anti-Theft System
	Remote Lock
Mileage	48V/24AH(VRLA)=60+
	60V/24AH(VRLA)=80+
Special Features	Fresh ABS engineer plastic molded body
	Lithium Ion/Lead Acid Compatible
	Tested Climbing of 15°(Highest in segment)
	Best in Class Mileage
	High Quality Piano Paint
	Key-less entry
	Motor Walking Assistance(Forward and Reverse)



MARS



ALLOY FRONT
DISC



SPORTY LED
HEAD LIGHT



BODY COLORED
MUFFLER COVER



MULTI FUNCTIONAL
DIGITAL METER

	MARS
Category	Details
Motor power	1000Watts
	30H Magnet
Controller	12Tube,48V/60V Both Compatible
Vehicle weight	68Kg (Without battery)
Loading Capacity	175Kg
Speed	40-45Kmph
	3Level Speed Change With reverse gear
Rim	Stylish steel Rim 300-10(Tyre Size:90/100-10,3.00-10Tubeless)
Brake system	Front Disk Brake 220mm,Rear Drum
Shock Absorbers	Front Hydraulic telescopic shocker
	Rear Hydraulic Shocker & spring pressure
Lights and Signaling Devices	LED Headlights
	Smart Digital Speedometer(LED)
	DRL Light Features
	Unbreakable PC Lights
Charger	High Quality Micro Charger With Auto Cut
Battery Warranty	1Year* On Lead Acid & 2 Years On Lithium Ion
Motor Warranty	3 Years*
ICAT/ARAI Approved	Yes
Security and Safety	High Quality 17-20Kg Chassis
	Anti-Theft System
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	Lithium Ion/Lead Acid Compatible
	Tested Climbing of 15°(Highest in segment)
	Best in Class Mileage
	High Quality Piano Paint
	Key-less entry
	Motor Walking Assistance(Forward and Reverse)



USB
CHARGING



ABS
PLASTIC



REMOTE KEY
& ANTI-THEFT



ANTI FIRE
MAINLINE BUNDLE



E-BICYCLE



FRONT
DISC



SPORTY LED
HEAD LIGHT



RARE DISK
BREAK



MULTI FUCTIONAL
DIGITAL METER

Factors	Specifications
Maintance	Low Maintance
Cost	Low-Cost Under 15 Paise/km
Speed	25KM/HR Speed
Battery	The Battery Used is Lithium-Ion-Battery
Motor	BLDC MOTOR 36W
Registration	For This E-cycle No RTO Registration Needed
License	No License Needed



BACK
LIGHT



BOTTEL
KEEPER



ELECTRIC CYCLE
KIT

EV SUNDAK ELITE



Factors	Specifications
Power	350W Brushless Motor
Battery	48V 12AH Lead-Acid
Controller	48V 6 Pipes
Tyre	14*2.5 Tubeless
Brake System	Front and Rear Drum



BODY COLORED
MUFFLER COVER



SPORTY LED
HEAD LIGHT



ALLOY
WHEEL



EV SUNDIAK LITHIUM ION BATTERY PACK

EV SUNDIAK LITHIUM ION BATTERY PACK

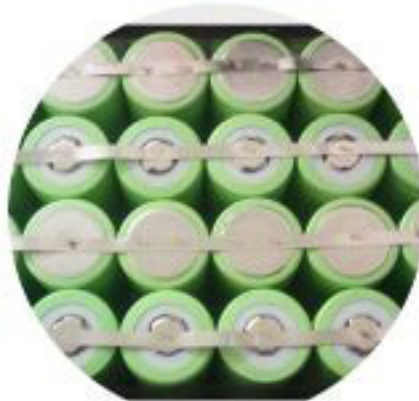
Lithium ion batteries have high energy density and cost less than lithium polymer. Lithium polymer batteries are light weight and have improved safety . However their cost is high (30% average) as compared to lithium ion. Also the the energy density of Li-Polymer battery compared to Li-Ion Batteries is quite less.

ADVANTAGES

- High energy density – potential for yet higher capacities.
- Does not need prolonged priming when new. One regular charge is all that's needed.
- Relatively low self-discharge – self-discharge is less than half that of nickel-based batteries.
- Low Maintenance – no periodic discharge is needed; there is no memory.
- Specialty cells can provide very high current to applications such as power tools.



BATTERY PERCENTAGE INDICATOR



LITHIUM-ION RECHARGEABLE CELL



EV SUNDAK BMS

Battery Management System

This BMS is mainly designed for intelligent management of small series but higher rate discharging.

This series BMS adopt the unique SOC & SOH algorithm, which provide the precision figure about the battery pack. The strong expansibility and various communication interface allowed the user monitoring the battery state through difference medium

At the same time, the intelligent dynamic balancing function to ensure that the lithium battery group work stably and prolong the life of battery group

CHARACTER

- Safety
- Accurate figure
- Extendable Life
- Strong Expansible

FEATURE

- (1) Fully protection function:
Overcharge protection/ Overdischarging protection/Over current protection/Short circuit protection
- (2) Temperature sensor monitoring
- (3) Multiple communication interface
RS485 & UART for connected the bluetooth module or USB connector
- (4) Accurate SOC information
Coulomb electricity calculation, provide the accurate figure about the battery SOC
- (5) Intelligent dynamic balancing
- (6) Excellent heat dissipation
- (7) Support Mosfet failure detection function
- (8) Expansion function through USB dongle, bluetooth module, LCD module and 2G with GPS module



EVSUNDAK LITHIUM BATTERY PACK CHARGER

SPECIFICATIONS



LITHIUM ION BATTERY PACK CHARGER

The charger is safety battery charger to provide the maximum protection of your Li-Po / Li-Ion batteries. The traditional charger only charge your battery pack in series. It will not detect the defective cell in your battery pack. Therefore, you need a charger to charge the individual cell. This charger will charge the cells individually than the full battery. This will ensure a long life of battey and perfect charging of each cell. This charger charges all 2 or 3 cells of the battery individually and has indication for charge and power. This product works on 12VDC.

36V Li Ion Battery Charger :	48V Li Ion Battery Charger :	60V Li Ion Battery Charger :
Charger Type : Li Ion Battery Charger	Charger Type : Li Ion Battery Charger	Charger Type : Li Ion Battery Charger
Mode : CC-CV Charging	Mode : CC-CV Charging	Mode : CC-CV Charging
Stage : 3 Stage Charging	Stage : 4 Stage Charging	Stage : 4 Stage Charging
Indications : 3 Color Red , Green /Orange for Charging and Full Stage	Indications : 4 Stage LEDs to Show Percentage of Charging	Indications : 4 Stage LEDs to Show Percentage of Charging
Input Voltage : 165V ~ 265V AC RMS , Single Phase Supply	Input Voltage : 165V ~ 265V AC RMS , Single Phase Supply	Input Voltage : 165V ~ 265V AC RMS , Single Phase Supply
Frequency : 50/60Hz	Frequency : 50/60Hz	Frequency : 50/60Hz
Peak Output : 42V DC	Peak Output : 54.6-58.8 V DC	Peak Output 67-72 V DC
Nominal Output : 36V DC	Nominal Output : 48-51V DC	Nominal Output : 54V ~ 62.4 V DC
Chemistry Support : NMC, LPO Chemistry	Chemistry Support : NMC, LIFEPO4, LPO Chemistry	Chemistry Support : NMC, LIFEPO4 Chemistry
Peak Current : 2A	Peak Current : 8 A	j. Peak Current : 8 A
Ripple : <2 %	Ripple : <2 %	Ripple : <2 %
Efficiency : >88%	Efficiency : >82%	Efficiency : >82%
Input Power Cord : 2 Core	Input Power Cord : 3 Core	Input Power Cord : 3 Core
Output Power Cord : 2 Cord	Output Power Cord : 3 Core	Output Power Cord : 3 Core
Battery Capacity Support : Upto 12AH	Battery Capacity Support : Upto 30AH	Battery Capacity Support : Upto 30AH
Body Casing : Plastic with Fan Support	Body Casing : Plastic with Fan Support	Body Casing : Plastic with Fan Support / Sheet Metal
Charging Time : 3-4 Hrs.	Charging Time : 3-4 Hrs.	Charging Time : 4-6 Hrs.
Safety : Overload Protection, Under and Over Voltage, Short Circuit, Battery Reve	Safety : Overload Protection, Under and Over Voltage, Short Circuit, Battery Reverse,	Safety : Overload Protection, Under and Over Voltage, Short Circuit, Battery Reverse,
Over Temperature, Over Time.	Over Temperature, Over Time.	Over Temperature, Over Time.
48V Li Ion Battery Charger :	60V Li Ion Battery Charger :	
Charger Type : Li Ion Battery Charger	Charger Type : Li Ion Battery Charger	
Mode : CC-CV Charging	Mode : CC-CV Charging	
Stage : 4 Stage Charging	Stage : 4 Stage Charging	
Indications : 4 Stage LEDs to Show Percentage of Charging	Indications : 4 Stage LEDs to Show Percentage of Charging	
Input Voltage : 165V ~ 265V AC RMS , Single Phase Supply	Input Voltage : 165V ~ 265V AC RMS , Single Phase Supply	
Frequency : 50/60Hz	Frequency : 50/60Hz	
Peak Output : 54.6-58.8 V DC	Peak Output 67-72 V DC	
Nominal Output : 48-51V DC	Nominal Output : 54V ~ 62.4 V DC	
Chemistry Support : NMC, LIFEPO4, LPO Chemistry	Chemistry Support : NMC, LIFEPO4 Chemistry	
Peak Current : 8 A	Peak Current : 8 A	
Ripple : <2 %	Ripple : <2 %	
Efficiency : >82%	Efficiency : >82%	
Input Power Cord : 3 Core	Input Power Cord : 3 Core	
	Output Power Cord : 3 Core	
	Battery Capacity Support : Upto 30AH	
	Body Casing : Plastic with Fan Support / Sheet Metal	
	Charging Time: 4-6 Hrs.	
	Safety: Overload Protection, Under and Over Voltage, Short Circuit, Battery Reverse,	
	Over Temperature, Over Time.	



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