



सत्यमेव जयते

भारत सरकार
Government of India

FORM NO : NTH/ALP/F/5



राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)
National Test House (Eastern Region)

11/1 जजसे कोर्ट रोड, अलीपर, कोलकाता - 700 027
11/1, Judges Court Road, Allipore, Kolkata - 700 027

TEST CERTIFICATE

INTERIM/FINAL REPORT

परीक्षण प्रमाण पत्र सं Test Certificate No	जारी होने की तिथि Date of Issue	कोड नं Code No	पृष्ठ Page	पृष्ठों की संख्या No of Pages
NTH(ER)/EL(B)/2017/0011	09/02/2018	1508841301988	1	2

जिसे जारी करना है
Issued To : OKAYA POWER PRIVATE LIMITED

पता
Address : D-7,Udyog Nagar,Rohtak Road, New Delhi - 110041.

ग्राहक का संदर्भ सं एवं दिनांक Customer's Ref. No.	Email	Date: 25/08/2017
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पंजिका सं एवं दिनांक Register No & Date	: 0011/NTH(ER)/EL(B)/27/10/2017
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परीक्षण सामग्री का विवरण
Description of Test Item : One sample consisting of five nos. stationary Lead Acid Batteries stated to be 12V,40Ah @ C10 rate,Brand:Okaya.

परीक्षण सामग्री का पहचान
Identification of Test Item : Marking:As in the attached sheet "BAT-13369".

नमूना का विशिष्टि (यदि हो)
Product Specification (If any) : Not Applicable.

नमूना प्राप्ति की तिथि
Date of Receipt of the Test Item : 24/10/2017

कार्य सम्पादन की तिथि
Date(s) of Performance of Tests : From: 01/11/2017 To: 31/01/2018

व्यावहृत प्रणाली का पहचान
Method(s) used for Test : IS:13369-1992(Amndt. 1 to 3)

नमूना प्रक्रिया बही प्रासंगिक हो
Sampling Procedure where relevant : Not Applicable.

Tested By

San

Sayantan Das
SO Electrical

Checked By

Pradip

Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa

Biswa Ranjan Mandal
Scientist-SB(Electrical)



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TEST CERTIFICATE

INTERIM/FINAL REPORT

परीक्षण प्रमाण पत्र सं
Test Certificate No
NTH(ER)/EL(B)/2017/0011

जारी होने की तिथि
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Sl. No.	Test Name	Test Result	Limit
1	Interim Report	As in the attached sheet "BAT-13369".	As in the attached sheet

टिप्पणी
Note

'Final Report' will be issued after completion of 'Endurance Test'.

कैफियत
Remarks

The sample so far as it has been examined and tested conforms the requirements of IS:13369-1992 (amends 1 to 3) in respect of tests carried out.

Tested By

Sayan

Sayantana Das
SO Electrical

Checked By

Pradip

Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa

Biswa Ranjan Mandal
Scientist-SB(Electrical)



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"BAT-13369"

Marking: (i) Printed on both wider sides of a Battery :

OKAYA
Chalti Rahe Yeh Zindagi
SOLAR
TUBULAR BATTERY
Zindagi Ka Roop
Badhaye Shaandar Dhoop
ST040H
Capacity 40Ah @ C₁₀ , Sp. Gr.:1.240±0.005 (27°C)

(ii) Sticker pasted on the body of the Battery :

Source of manufacturer : Fujikawa Power
Ah Capacity at 10-h rate: 40Ah
Year of manufacturing : 2017
Country of origin : India

(iii) On the top of a Battery :

Positive polarity embossed with '+' symbol & marked with red colour.
Negative polarity embossed with '-' symbol & marked with blue colour.

(iv) Printed on one narrow side :

SOLAR PHOTOVOLTAIC &
OTHER DEEP CYCLING APPLICATIONS
MAINTENANCE TIPS:

1. Normal recharge voltage to be set 2.25 volts per cell (13.5 for 12Volt battery)
2. The maximum charging current should not exceed 8 Amps.
3. The Battery should be topped with battery grade distilled water upto the bottom of the filling spout approximately once in 4 – 6 months.

DO NOT ADD ACID
CAUTION

1. Keep away from sparks,cigarettes,open flame these can cause EXPLOSIONS.
2. Contact with ACID from battery , can cause SEVERE BURNS.
3. Keep out of reach of CHILDREN.
4. Remove vent caps before INITIAL CHARGING.

Tested By

Sayantan Das
SO (Electrical)

Checked By

Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa Ranjan Mandal
Scientist-SB(Electrical)



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"BAT-13369"

5. Replace with ceramic vent plugs.

OKAYA
SOLAR
MAIN TUBULAR BATTERY

(v) Printed on both narrow sides of the Battery :

Pb

CAUTION

SHIELD EYES EXPLOSIVE GASES

CAN CAUSE BLINDNESS OR INJURY

SULPHURIC ACID CAN CAUSE

BLINDNESS OR SEVERE BURNS

NO SPARKS, FLAMES, SMOKING

FLUSH EYES IMMEDIATELY WITH WATER

GET MEDICAL HELP FAST

KEEP OUT OF REACH OF CHILDREN

STATUTORY WARNING : AFTER USE

- This Battery contains hazardous Lead.
- Do not dispose off after use.
- As per law, after use, this battery must be returned to an authorized dealer.

(vi) Embossed on the top of a Battery :

OKAYA

HSUZR03602866589

The marking of the other Batteries are same & identical except Nos. HSUZR03602866770, HSUZR03602866816, HSUZR03602866595 & HSUXR03603356551. Five nos. 12V,40Ah Batteries were marked randomly as FO1,FO2,FO3,FO4 & FO5 by this laboratory for identification purpose.

Tested By

S.D.M.
Sayantan Das
SO (Electrical)

Checked By

Pradip
Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa
Biswa Ranjan Mandal
Scientist-SB(Electrical)



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"BAT-13369"

Tests :

[Carried out as per IS:13369-1992 (Amndt. no.1 to 3) & customer requirements]

Sl. No.	Test Name	Requirements	Test Result					Remarks	
			Battery marked						
			FO1	FO2	FO3	FO4	FO5		
1	Verification of marking: (Carried out as per Cl.11.3 of the specification)		Fujikawa Power					Satisfactory	
	a) Indicating the source of manufacturer	The information shall be indelibly and durably marked on the outside of the Battery	Fujikawa Power						
	b) Ah capacity at 10-h rate		12V40Ah	12V40Ah	12V40Ah	12V40Ah	12V40Ah		
	c) Year of manufacture		2017						
	d) Country of origin		India	India	India	India	India		
	e) Electrolyte level indicator		Opaque container, level indicator provided.						
2	Verification of dimensions : (Carried out as per Cl.11.4 of the specification)		Test Result					Satisfactory.	
			Battery marked						
			FO1	FO2	FO3	FO4	FO5		
	(i) Length (in mm) :	535 (Max.)	409	408	409	408	409		
	(ii) Width (in mm):	295 (Max.)	178	178	179	178	179		
	(iii) Height (in mm):	450 (Max.)	248	249	248	248	248		

Tested By

Sayantan Das
SO (Electrical)

Checked By

Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa Ranjan Mandal
Scientist-SB(Electrical)



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National Test House (Eastern Region)

11/1 जज्जेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027
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Sl. No.	Test Name	Requirements	Test Result					Remarks
			Battery marked					
			FO1	FO2	FO3	FO4	FO5	
3	First charge: (Carried out as per Cl.10.3 of the specification)	Samples shall be filled with electrolyte and shall be given first charging as per manufacturer's instruction. After full charge specific gravity of electrolyte shall be 1.240±0.005 corrected to 27°C.	The samples were received in electrolyte filled condition. Samples were given freshening charge as per manufacturer's instruction. After full charge specific gravity of electrolyte was found within 1.240 ±0.005 corrected to 27°C.					
4	Test for Capacity : (Carried out as per Cl.11.5 of the specification)							Satisfactory
	Capacity in ampere-hours (Ah) at C ₁₀ rate corrected to 27°C	Shall not be less than the rated capacity and more than 130% of the rated capacity & within 10 discharges	Battery marked					
			FO1	FO2	FO3	FO5		
			48.509 (121.3%)	49.279 (123.2%)	49.193 (123%)	50.831 (127.1%)		
5	Ampere-hour & Watt-hour efficiency Test : (Carried out as per CL.11.8 of the specification)							Satisfactory
			Battery marked					
	(i) Ampere-Hour efficiency:(in %)	Shall not be less than 90%	FO1					
			97					
	(ii) Watt-Hour efficiency :(in %)	Shall not be less than 75%	88					

Tested By

Sayan
Sayanant Das
SO (Electrical)

Checked By

Pradip
Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa
Biswa Ranjan Mandal
Scientist-SB(Electrical)



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National Test House (Eastern Region)

11/1 जजसेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027
11/1, Judges' Court Road, Alipore, Kolkata - 700 027

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Sl. No.	Test Name	Requirements	Test Result	Remarks
6	Test for loss of capacity on storage : (Carried out as per Cl.11.6 of the specification)	Loss of capacity (in %) :	Battery marked	
			FO2	FO3
			6	4
7	Loss of Water Test : (Carried out as per Cl.11.9 of the specification)	Loss of Water (in g/Ah/Battery) :	Battery marked	
			FO5	
			11	
8	Test for Equilibrium Float Current : (Carried out as per Cl.11.10 of the specification)	Equilibrium Float Current (in mA/Ah/Battery) :	Battery marked	
			FO5	
			2	

Tested By

Sayantan Das
SO (Electrical)

Checked By

Pradip Kumar Bera
Scientist-SB(Electrical)

Approved By

Biswa Ranjan Mandal
Scientist-SB(Electrical)



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11/1 जजसेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027

11/1, Judges' Court Road, Alipore, Kolkata - 700 027



TEST CERTIFICATE

INTERIM/FINAL REPORT

परीक्षण प्रमाण पत्र सं. Test Certificate No NTH(ER)/EL(B)/2017/0011	जारी होने की तिथि Date of Issue 23/03/2018	कोड नं Code No 1508841301988	पृष्ठ Page 1	पृष्ठों की संख्या No of Pages 2
जिसे जारी करना है Issued To	OKAYA POWER PRIVATE LIMITED			
पता Address	D-7,Udyog Nagar,Rohtak Road, New Delhi - 110041.			
ग्राहक का संदर्भ सं एवं दिनांक Customer's Ref. No.	Email	Date: 25/08/2017		
पंजिका सं एवं दिनांक Register No & Date	0011/NTH(ER)/EL(B)/27/10/2017			
परीक्षण सामग्री का विवरण Description of Test Item	One sample consisting of five nos stationary lead acid batteries stated to be 12V,40Ah @ C10 rate,Brand:Okaya			
परीक्षण सामग्री का पहचान Identification of Test Item	Marking: Refer "Interim Test Certificate" vide no.NTH(ER)/EL(B)/2017/0011 dated:09/02/2018.			
नमूना का विशिष्टि (यदि हों) Product Specification (If any)	Not Applicable.			
नमूना प्राप्ति की तिथि Date of Receipt of the Test Item	24/10/2017			
कार्य सम्पादन की तिथि Date(s) of Performance of Tests	From: 01/11/2017	To: 22/03/2018		
व्यावहृत प्रणाली का पहचान Method(s) used for Test	IS:13369-1992(Amndt.1 to 3)			
नमूना प्रक्रिया जहाँ प्रासंगिक हों Sampling Procedure where relevant	Not Applicable.			

Tested By

Sayantan Das
SO Electrical

Checked By

Pradip Kumar Bera
Scientist- B (Electrical)

Approved By

Biswa Ranjan Mandal
Scientist- B (Electrical)



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राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)

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11/1 जजेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027

11/1, Judges' Court Road, Alipore, Kolkata - 700 027

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INTERIM/FINAL REPORT

परीक्षण प्रमाण पत्र सं
Test Certificate No
NTH(ER)/EL(B)/2017/0011

जारी होने की तिथि
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Sl. No.	Test Name	Test Result	Limit
1	Interim Report	As in the attached sheet "BAT-13369".	As in attached sheet "BAT-13369".
2	Final Report	As in attached sheet "BAT-13369".	As in attached sheet "BAT-13369".

टिप्पणी

Note

कैफियत

Remarks

The sample so far as it has been examined and tested meets the requirements of IS:13369-1992 (amends 1 to 3).

Tested By

SDen

Sayantant Das
SO Electrical

Checked By

Pradip

Pradip Kumar Bera
Scientist- B (Electrical)

Approved By

Biswa

Biswa Ranjan Mandal
Scientist- B (Electrical)



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11/1 जजसेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027
11/1, Judges' Court Road, Allpore, Kolkata - 700 027

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TEST CERTIFICATE

Test certificate no
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"BAT-13369"

Tests :

[Carried out as per IS:13369-1992 (Amndt. no.1 to 3)]

Sl. No.	Test Name	Requirements	Test Result					Remarks
			Battery marked					
			FO1	FO2	FO3	FO4	FO5	
1.	Verification of constructional requirements : (Carried out as per Cl.11.2 of the specification)							Satisfactory.
	(i) Electrolyte level Indicator :	Each cell shall be provided level indicator	Level Indicators provided in each case.					
	(ii) Terminal Posts:	Positive and negative terminal posts shall be clearly and unmistakably identifiable	Positive and negative terminal posts were clearly embossed in each case.					
	(iii) Connections:	Shall be made of lead plated aluminium/copper strips or of flexible cables	Lead plated in each case.					
	(iv) Terminal Connectors , Nuts & Bolts	Shall be effectively lead coated	Lead coated in each case.					
2.	Endurance Test : (Carried out as per Cl.11.7 of the specification)							Satisfactory.
	Final Discharge duration in Hrs. at C ₁₀ the rate at the end of the Endurance cycles period of 2000 Hrs.	The battery shall give not less than 9 Hrs.of discharge at the final test discharge of the last period of charge	Battery Marked FO4 14.28 Hrs.					

Tested By

S.Das

Sayantana Das
SO (Electrical)

Checked By

Pradip

Pradip Kumar Bera
Scientist-B(Electrical)

Approved By

Biswa

Biswa Ranjan Mandal
Scientist-B(Electrical)