



Ref. Certif. No.

JPTUV-041071

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST
CERTIFICATES FOR ELECTRICAL EQUIPMENT
(IECEE) CB SCHEMESYSTEME CEI D'ACCEPTATION MUTUELLE DE
CERTIFICATS D'ESSAIS DES EQUIPEMENTS
ELECTRIQUES (IECEE) METHODE OC**CB TEST CERTIFICATE**
CERTIFICAT D'ESSAI OCProduct
Produit

Rechargeable Lithium-Ion Battery Cell

Name and address of the applicant
Nom et adresse du demandeurJORDAN GREEN TECHNOLOGY (DG) CO., LTD.
No.19, Qigu E. Rd.
Chenwu Ind. Zone, Houjie, Dongguan, Guangdong, P.R. ChinaName and address of the manufacturer
Nom et adresse du fabricantJORDAN GREEN TECHNOLOGY (DG) CO., LTD.
No.19, Qigu E. Rd.
Chenwu Ind. Zone, Houjie, Dongguan, Guangdong, P.R. ChinaName and address of the factory
Nom et adresse de l'usineJORDAN GREEN TECHNOLOGY (DG) CO., LTD.
No.19, Qigu E. Rd.
Chenwu Ind. Zone, Houjie, Dongguan, Guangdong, P.R. ChinaRating and principal characteristics
Valeurs nominales et caractéristiques principales

3.2V, 50Ah, 160Wh

Trade mark (if any)
Marque de fabrique (si elle existe)

JD

Model/type Ref.
Ref. de type

JD 50Ah(IFP36/130/190)

Additional information (if necessary)
Information complémentaire (si nécessaire)A sample of the product was tested and found
to be in conformity with
Un échantillon de ce produit a été essayé et a été
considéré conforme à laIEC 62133:2002
National differences see test reportAs shown in the Test Report Ref. No. which forms part
of this Certificate
Comme indiqué dans le Rapport d'essais numéro de
référence qui constitue une partie de ce Certificat

17022564 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de CertificationTÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku
Yokohama 224-0021 Japan
Phone + 81 45 914-3888
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Mail: info@jpn.tuv.com
Web: www.tuv.com

Date: 16.11.2011

Signature:

Dipl.-Ing. S. O. Steinke

JORDAN GREEN TECHNOLOGY (DG) CO.,
LTD.

Mr. Hui Zeng

No.19, Qigu E. Rd.
Chenwu Ind. Zone, Houjie
Dongguan, Guangdong
P.R. China

Date : 16.11.2011

Our ref. : LANBLA ZJ

Your ref.: 163083741

Ref : CB Certificate Japan

Type of Equipment : Rechargeable Lithium-Ion Battery Cell

Model Designation : See Certificate

Certificate No. : JPTUV-041071

Report No. : 17022564 001

Dear Mr. Hui Zeng,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services.

Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body

Dipl.-Ing. S. O. Steinke

Enclosure

证书的详细资料请登陆www.tuvdotcom.com查阅,或拨打我司客服热线800 999 3668 / 400 883 1300咨询

**TEST REPORT**
IEC 62133, First Edition**Secondary cells and batteries containing alkaline or other non-acid electrolytes –
Safety requirements for portable sealed secondary cells, and for batteries made from
them, for use in portable applications**

Report Reference No.....: 17022564 001

Date of issue.....: 2011-Nov-14

Total number of pages..... 16 pages

CB Testing Laboratory.....: TÜV Rheinland (Shenzhen) Co., Ltd.Address: 3&4 F, Cybio Technology Building No. 1, Langshan No. 2 Road
South, 5th Industrial Area, High-Tech Industry Park North, Nanshan
District, 518057 Shenzhen, P.R. China**Applicant's name**.....: JORDAN GREEN TECHNOLOGY(DG) CO., LTDAddress: NO.19, QiGu East Road, ChenWu Industrial Zone, Houjie Town,
Dongguan City, Guangdong Province, China.**Test specification:**

Standard: IEC 62133: 2002 (1st Edition)

Test procedure: CB/CAA

Non-standard test method.....: N/A

Test Report Form No.....: IEC62133A

Test Report Form(s) Originator: UL International Demko A/S

Master TRF.....: Dated 2008-02

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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and
appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.****Test item description**: Rechargeable Lithium-Ion Battery Cell

Trade Mark:



Manufacturer: Same as applicant

Address.....: Same as applicant

Model/Type reference.....: JD 50Ah(IFP36/130/190)

Factory: Same as applicant

Address of the factory.....: Same as applicant

Ratings.....: 3.2V, 50Ah, 160Wh

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory: Testing location/ address.....:	TÜV Rheinland (Shenzhen) Co., Ltd. 1 F, Cybio Technology Building No. 1, Langshan No. 2 Road South, 5th Industrial Area, High-Tech Industry Park North, Nanshan District, 518057 Shenzhen, P.R. China
<input type="checkbox"/> Associated CB Test Laboratory: Testing location/ address.....:	
Tested by (name + signature).....:	Black Lang <i>Black. Lange</i>
Approved by (+ signature):	Daniel Dai <i>Daniel Dai</i>
<input type="checkbox"/> Testing procedure: TMP Tested by (name + signature).....: Approved by (+ signature): Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: WMT Tested by (name + signature).....: Witnessed by (+ signature).....: Approved by (+ signature): Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: SMT Tested by (name + signature).....: Approved by (+ signature): Supervised by (+ signature).....: Testing location/ address.....:	
<input type="checkbox"/> Testing procedure: RMT Tested by (name + signature).....: Approved by (+ signature): Supervised by (+ signature).....: Testing location/ address.....:	

Summary of testing:
Tests performed (name of test and test clause):
Test items:

cl.4.1 Charging procedure for test purpose;
 cl.4.2.1 Continuous low-rate charging;
 cl.4.2.2 Vibration;
 cl.4.2.3 Moulded case stress at high ambient temperature;
 cl.4.2.4 Temperature cycling;
 cl.4.3.2 External short circuit;
 cl.4.3.3 Free fall;
 cl.4.3.4 Mechanical shock (crash hazard);
 cl.4.3.5 Thermal abuse;
 cl.4.3.6 Crushing of cells;
 cl.4.3.7 Low pressure;
 cl.4.3.9 Overcharge for lithium systems;
 cl.4.3.10 Forced discharge;
 cl.4.3.11 Cell protection against a high charging rate (lithium systems only).

Tests are made with the number of cells specified in IEC 62133 Table 1.

Testing location:
TÜV Rheinland (Shenzhen) Co., Ltd.

1 F, Cybio Technology Building No. 1, Langshan No. 2 Road South, 5th Industrial Area, High-Tech Industry Park North, Nanshan District, 518057 Shenzhen, P.R. China

Summary of compliance with National Differences:

AT, DE, DK, FI, FR, HU, KR, NL, SA, SE, SG, TR.

AT=Austria, DE=Germany, DK=Denmark, FI=Finland, FR=France, HU=Hungary, KR=Republic of Korea, NL=The Netherlands, SA=Saudi Arabia, SE=Sweden, SG=Singapore, TR=Turkey.

All national differences of EU group considered according to EN 62133: 2003.

Copy of marking plate:


Test item particulars :	
Classification of installation and use..... :	N/A
Supply Connection..... :	DC connector
Cell type..... :	JD 50Ah(IFP36/130/190)
Application..... :	Portable
Nominal Voltage..... :	3.2V
Rated Capacity..... :	50Ah
Recommended charge current..... :	10A
Recommended discharge current..... :	10A
Max. charge current..... :	50A
Max. discharge current..... :	250A
Electrolyte..... :	LiFP6
Dimension(mm)..... :	36 mm x 130 mm x 190 mm
Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing :	
Date of receipt of test item..... :	Oct 12, 2011
Date (s) of performance of tests..... :	Oct 12, 2011 – Nov 14, 2011
General remarks:	
<p>The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. The completed test report includes the attachment 1: Photo documents (2 pages).</p> <p>Throughout this report a point is used as the decimal separator.</p>	

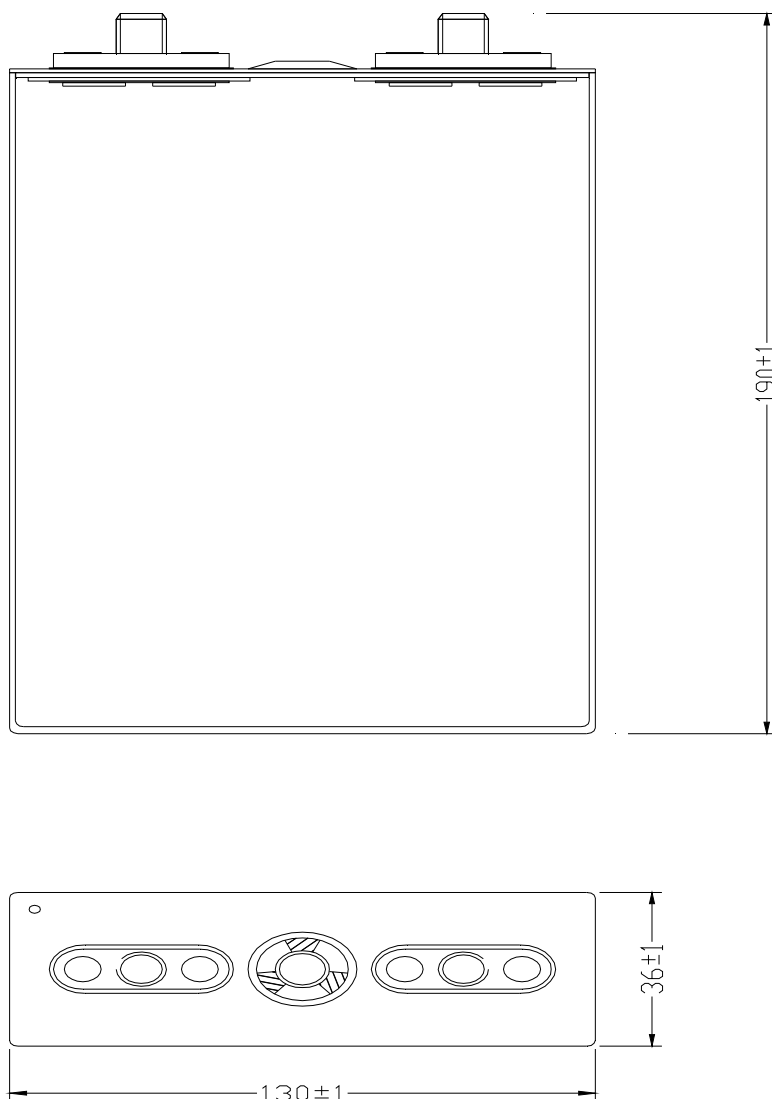
General product information:

The cell consists of the positive electrode plate, negative electrode plate, separator, electrolyte and aluminum case. The positive and negative electrode plates are housed in the case in the state being separated by the separator.

The main features of this model are shown as below:

Model	Nominal capacity	Nominal voltage	Nominal Charge Current	Nominal Discharge Current	Maximum Charge Current	Maximum Discharge Current	Maximum Charge Voltage	Cut-off Voltage
JD 50Ah (IFP36/130/190)	50Ah	3.2V	10A	10A	50A	250A	3.75V	2.3V

Construction:



Circuit diagram:

None, cell only

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
1	General		P
	Parameter measurement tolerances		P
2	General Safety Considerations		P
	Cells and batteries subject to intended use be safe and continue to function in all respects		P
	Cells and batteries subject to reasonably foreseeable misuse do not present significant hazards.		P
2.1	Insulation and Wiring		P
	Insulation Resistance between an accessible metal case (excluding electrical contacts) and positive terminals $\geq 5M\Omega$.	$\geq 5M\Omega$.	P
	Internal wiring and insulation are sufficient to withstand maximum anticipated current, voltage and temperature requirements	No internal wire	N/A
	Orientation of wiring maintains adequate creepage and clearance distances between conductors. Mechanical integrity of internal connections are sufficient to accommodate conditions of reasonably foreseeable misuse.	No internal wire	N/A
2.2	Venting		P
	Battery cases and cells incorporate a pressure relief mechanism or are constructed so that they relieve excessive internal pressure at a value and rate that will preclude rupture, explosion and self-ignition.	Explosion-proof safety valve for venting exists.	P
	Encapsulant used to support cells within an outer casing does not cause the battery to overheat during normal operation no inhibit pressure relief.	Explosion-proof safety valve for venting exists.	P
2.3	Temperature/current management	Cell only	N/A
	The batteries are designed such that abnormal temperature rise conditions are prevented.		N/A
	Means is provided to limit current to safe levels during charge and discharge.		N/A
2.4	Terminal contacts		P
	Terminals have a clear polarity marking on the external surface of the battery.	The "+" and "-" polarity explicitly marked on surface of the battery.	P
	The size and shape of the terminal contacts ensure that they can carry the maximum anticipated current.		P
	External terminal contact surfaces are formed from conductive materials with good mechanical strength and corrosion resistance.		P
	Terminal contacts are arranged to minimize the risk of short circuits.		P
2.5	Assembly of cells into batteries	Cell only	N/A

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
	Cells used in the battery assembly have closely matched capacities, are of the same design, and are of the same chemistry and same manufacturer.		N/A
	The battery incorporates separate circuitry to prevent cell reversal from uneven charges as the pack is designed for the selective discharge of a portion of its series connected cells.		N/A
2.6	Quality Plan		P
	The manufacture has prepared a quality plan defining the procedures for the inspection of materials, components, cells and batteries and which covers the process of producing each type of cell and battery.	Complied.	P
3	Type Test Conditions		P
	Tests were conducted with the number of cells or batteries as outlined in Table 1 of IEC 62133 with cells or batteries that were not more than 3 months old.	Complied.	P
	Unless noted otherwise in the test methods, testing was conducted in an ambient of 20°C ± 5°C.	Tests are carried out at 20°C-25°C.	P
4	Specific requirements and tests		P
4.1	Charging procedure for test purposes	Test is carried out at 22°C-25°C. Charging method: CC=10A, CV=3.75V, Cut off current=500mA.	P
4.2	Intended Use	See below	P
4.2.1	Continuous Low-Rate Charging	CC=10A, CV=3.75V, Duration: 28 days.	P
	Fully charged cells are subjected for 28 days to a charge as specified by the manufacturer.	See above.	P
	Nickel systems: no fire, no explosion	Lithium system.	N/A
	Lithium systems: no fire, no explosion, no leakage	See table 4.2.1.	P
4.2.2	Vibration		N/A
	The measured open circuit voltage of the fully charged cells or batteries is within anticipated parameters	Test complied	P
	The cells or batteries are subjected to a vibration sequence as outlined in Table 2 of IEC 62133 with amplitude of 0.75 mm and a total maximum excursion of 1.52 mm. The frequency was varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies (10 Hz to 55 Hz) and return (55 Hz to 10 Hz) was traversed in 90 min ± 5 min for each mounting position.		P
	The vibration was applied in each of three mutually perpendicular directions.		P
	Results: no fire, no explosion, no leakage	No fire, explosion or leakage.	P

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
4.2.3	Moulded case stress at high ambient temperature	Tested complied.	P
	Fully charged batteries were placed in an air-circulating oven at a temperature of 70°C ± 2°C for 7 hours. Afterwards, they are removed and allowed to return to room temperature.		P
	Results: no physical distortion of the battery casing resulting in exposure if internal components.	No physical distortion	P
4.2.4	Temperature cycling		P
	Fully charged cells or batteries were subjected to temperature cycling (-20°C, +75°C) in forced draught chambers according to the procedure outlined in 4.2.4 b) and Fig. 1 of IEC 62133.	Tested complied.	P
	After the fifth cycle, the cells or batteries were stored for 7 days prior to examination.		P
	Results: No fire, no explosion, no leakage	No fire, explosion or leakage.	P
4.3	Reasonably foreseeable misuse		P
4.3.1	Incorrect installation of a cell (nickel systems only)	Lithium systems.	N/A
	Four fully charged cells of the same brand, type, size and age were connected in series with one of the four cells reversed. The assembly was connected across a 1-ohm resistor until the vent opens or until the temperature of the reversed cell returns to ambient temperature.		N/A
	Alternatively, a stabilized dc power supply was used to simulate the conditions imposed on the reversed cell.		N/A
	Results: no fire, no explosion		N/A
4.3.2	External short circuit		P
	Fully charged cells or batteries were subjected to a short circuit test at 20°C ± 5°C.	Max. temperature rise 30.6K	P
	Fully charged cells or batteries were subjected to a short circuit test at 55°C ± 5°C.	Max. temperature rise 7.1K	P
	The external resistance did not exceed 100 mΩ.	See Table 4.3.2.	P
	The cells or batteries were tested for 24 h or until the case temperature declined by 20% of the maximum temperature rise.	Tested until the case temperature declined by 20% of the maximum temperature rise.	P
	Results: no fire, no explosion.	See Table 4.3.2.	P
4.3.3	Free fall		P
	Fully charged cells or batteries were dropped 3 times from a height of 1.0 m onto a concrete floor.	Tested complied.	P
	Results: no fire, no explosion	No fire or explosion.	P
4.3.4	Mechanical shock (crash hazard)		P

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
	Fully charged cells or batteries were subjected to a total of three shocks of equal magnitude applied in each of three mutually perpendicular directions. At least on of the directions was perpendicular to a flat face. During the initial 3 milliseconds, the minimum average acceleration was 75 g _n . The peak acceleration was between 125 g _n and 175 g _n .	Tested complied.	P
	Results: no fire, no explosion, no leakage	No fire or explosion.	P
4.3.5	Thermal abuse		P
	Fully charged cells were placed in a gravity or circulating air-convection oven. The oven temperature was raised at a rate of 5°C/min ± 2°C/min to a temperature of 130°C ± 2°C. The cell remained at that temperature for 10 minutes before the test was discontinued.	Tested complied.	P
	Results: no fire, no explosion	No fire or explosion.	P
4.3.6	Crushing of cells		P
	Fully charged cells were crushed between two flat surfaces with a hydraulic ram exerting a force of 13 kN ± 1 kN.	Tested complied.	P
	A cylindrical or prismatic cell was crushed with its longitudinal axis parallel to the flat surfaces of the crushing apparatus.		P
	A second set of prismatic cells was tested, rotated 90 degrees around their longitudinal axis compared to the first set.		P
	Results: no fire, no explosion.	No fire or explosion.	P
4.3.7	Low pressure		P
	Fully charged cells are placed in a vacuum chamber whose internal pressure was gradually reduced to a pressure equal to or less than 11.6 kPa and held at that value for 6 hours.	Tested complied.	P
	Results: no fire, no explosion, no leakage	No fire, explosion or leakage.	P
4.3.8	Overcharge for nickel systems	Lithium systems.	N/A
	A discharged cell or battery was subjected to a high-rate charge of 2.5 times the recommended charging current for a time that produced a 250% charge input (250% of rated capacity).		N/A
	Results: no fire, no explosion.		N/A
4.3.9	Overcharge for lithium systems		P
	A discharged cell was charged from a power supply of ≥ 10 V, at a charging current I _{rec} recommended by the manufacturer for 2.5 C ₅ /I _{rec} hours.	10V, 10A, 12.5 hours.	P
	Results: no fire, no explosion.	See table 4.3.9.	P
4.3.10	Forced discharge		P

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
	Discharged cells intended for use in multi-cell applications, were subjected to a reverse charge 1t 1.0 I _t (A) for 90 minutes.	Reverse charge = 50A.	P
	Results: no fire, no explosion	See table 4.3.10.	P
4.3.11	Cell protection against a high charging rate (lithium systems only)		P
	Discharged cells were charged at three times the charging current recommended by the manufacturer until the cells was fully charged or an internal safety devices cut off the charge current before the cell became fully charged.	10A x 3 = 30A	P
	Results: no fire, no explosion		P
5	Information for safety		P
	Information is provided to equipment manufacturers in the form of instructions to minimize and mitigate hazards associated with the cells or batteries in accordance with guidelines outlined in informative Annex A.	Information for safety mentioned in manufacturer's specification.	P
	Information is provided to end-users in the form of instructions to minimize and mitigate hazards associated with the batteries in accordance with guidelines outlined in informative Annex B.	Information for safety mentioned in manufacturer's specification.	P
6	Marking		
6.1	Cell Marking		P
	Nickel system cells are marked in accordance with IEC 61951-1, -2, IEC 61440, or IEC 61436 as applicable. See Copy of Marking Plate item in the beginning of this report.	Lithium system.	N/A
	Lithium system cells are marked in accordance with IEC 61960. See Copy of Marking Plate item in the beginning of this report.	See page 3.	P
6.2	Battery Marking	Cell	N/A
	Batteries of nickel systems are marked in accordance with IEC 61951, or IEC 61951 -2 as applicable. See Copy of Marking Plate item in the beginning of this report	Lithium systems.	N/A
	Batteries of lithium system are marked in accordance with IEC 61960. See Copy of Marking Plate item in the beginning of this report.		N/A
	Batteries are marked with the cautionary marks.		N/A
6.3	Other Information		P
	Disposal instructions are marked on the battery or supplied in the information packaged with the battery.	Information for safety mentioned in manufacturer's specification.	P

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict
	Recommended charging instructions are marked on the battery or supplied in the information packaged with the battery.	Information for safety mentioned in manufacturer's specification.	P
7	Packaging		P
	Cells or batteries were provided with packaging that was adequate to avoid mechanical damage during transport, handling and stacking. The materials and pack design was chosen to prevent the development of unintentional electrical conduction, corrosion of the terminal and ingress of moisture.		P

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict

2.1 – 2.5	TABLE: List of Critical Components (Cell)					P
Object/part No.	Manufacturer/ trademark	Type/Model	Technical Data	Standard	Marks of Conformity	
Cell Case	JinYang	Aluminium	36*130*120mm	--	--	
Cathode	Changs	SFCM3005E	2 < D50 < 8 Cu < 0.1%	--	--	
Anode	HongYuan	F1-20	D50:20±3 C: ≥ 99.2%	--	--	
Separator	Celgard	0.025*104mm	Shutdown Temp:133±3°C	--	--	
Electrolyte	TianJiao	JDP	H ₂ O < 20ppm HF < 30ppm	--	--	
Conductive Adhesive	HaiYue	F-01	Viscosity:2200-2800 mPa·s	--	--	
Insulating tape	SanJing	0.06*12mm/ 0.06*18mm	Width:12±0.05/18±0 .05mm	--	--	
Supplementary information:						

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict

TABLE: 4.2.1 Continuous Low Rate Charge Test (Cell)					P
Model	Recommended Charging Method, CC, CV, or CC/CV	Recommended Charging Voltage Vc, Vdc	Recommended Charging Current Irec, A	OCV at Start of Test, Vdc	Results
#1	CC and CV	3.75	10	3.412	P
#2	CC and CV	3.75	10	3.405	P
#3	CC and CV	3.75	10	3.415	P
#4	CC and CV	3.75	10	3.408	P
#5	CC and CV	3.75	10	3.412	P

Supplementary information: no fire, explosion or leakage observed

TABLE: 4.2.2 – Vibration Test (Cell)			P
Model	OCV at Start of Test, Vdc	Results	
#1	3.412	P	
#2	3.408	P	
#3	3.409	P	
#4	3.387	P	
#5	3.405	P	

Supplementary information: no fire, explosion or leakage observed

TABLE: 4.3.1 – Incorrect Installation of a Cell Test (Nickel Systems)			N/A
Model	OCV (reversed cell) Vdc	Results	

Supplementary information: no fire or explosion

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict

TABLE: 4.3.2 – External Short Circuit Test (Cell)					P
Model	Ambient (At 20°C ± 5°C)	OCV at start of test, Vdc	Resistance of Circuit, Ω	Maximum Case Temperature Rise ΔT, °C	Results
#1	20°C ± 5°C	3.425	0.075	26.4	P
#2	20°C ± 5°C	3.409	0.075	24.8	P
#3	20°C ± 5°C	3.387	0.075	26.8	P
#4	20°C ± 5°C	3.412	0.075	30.4	P
#5	20°C ± 5°C	3.395	0.075	30.6	P
Model	Ambient (At 50°C ± 5°C)	OCV at start of test, Vdc	Resistance of Circuit, Ω	Maximum Case Temperature Rise ΔT, °C	Results
#1	50°C ± 5°C	3.385	0.075	7.1	P
#2	50°C ± 5°C	3.402	0.075	5.4	P
#3	50°C ± 5°C	3.435	0.075	3.3	P
#4	50°C ± 5°C	3.395	0.075	2.6	P
#5	50°C ± 5°C	3.403	0.075	5.6	P

Supplementary information: no fire or explosion

TABLE: 4.3.8 – Overcharge Test (Nickel Systems)				N/A
Model	OCV prior to charging, Vdc	Maximum Charge Current, A	Time for Charging, h	Results

supplementary information: no fire or explosion

TABLE: 4.3.9 – Overcharge Tests (Lithium Systems)					P
Model	OCV at start of test, Vdc	Maximum Charging Current, A	Maximum Charging Voltage, Vdc	Total Time of Charging, h	Results
#1	3.212	10	10	12.5	P
#2	3.184	10	10	12.5	P
#3	3.202	10	10	12.5	P
#4	3.235	10	10	12.5	P
#5	3.217	10	10	12.5	P

Supplementary information: no fire or explosion

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict

TABLE: 4.3.10 – Forced Discharge Test (Cell)				P
Model	OCV before application of reverse charge, Vdc	Measured Reverse Charge It, A	Total Time for Reversed Charge Application, Min	Results
#1	3.214	50	90	P
#2	3.220	50	90	P
#3	3.210	50	90	P
#4	3.216	50	90	P
#5	3.214	50	90	P

Supplementary information: no fire or explosion

TABLE: 4.3.11 – Cell Protection Against a High Charging Rate Test (Lithium Systems)				P
Model	OCV at start of test, Vdc	Maximum Charging Current, A	Maximum Charging Voltage, Vdc	Results
#1	3.196	30	3.75	P
#2	3.198	30	3.75	P
#3	3.235	30	3.75	P
#4	3.197	30	3.75	P
#5	3.205	30	3.75	P

Supplementary information: no fire or explosion

IEC 62133:2002			
Cl.	Requirement - Test	Result - Remark	Verdict

List of test equipment used:

ID #	Equipment	Type	Manufacturer	Date of Calibration	Next Calibration Date
1.901	Low pressure chamber	HG-LQ600	DongGuan HengGong	08/21/2011	08/20/2012
1.902	Crush tester	HY-920HC	XinYu HengYu	09/10/2011	09/09/2012
1.903	Hydraulic shock tester	SY10-50	SuZhou DongLing	06/17/2011	06/16/2012
1.904	Battery charger	BK-7802Z/50	GuangZhou Blue-key	12/03/2010	12/02/2011
1.905	Battery charger	BK-6008A/20	GuangZhou Blue-key	12/03/2010	12/02/2011
1.906	Battery charger	BK-7128L/5	GuangZhou Blue-key	12/03/2010	12/02/2011
1.908	Electro-dynamic vibration test system	V850-440-LPT600/SPA32K	LDS	06/17/2011	06/16/2012
1.909	Steel ruler(2 m)	2m	ZhengJiang YongKang	08/30/2011	08/29/2012
1.915	Hygro-Thermo graph	7210-00	SATO KEIRYOKI	08/25/2011	08/24/2012
1.917	Timer	PC9903	Shenzhen TianFu	09/15/2011	09/14/2012
1.918	Thermal cycling chamber	ESS-KWGD605IIF	YinHe (ChongQing)	08/25/2011	08/24/2012
1.919	Midi logger	GL200A	DATAQ Instruments,	12/07/2010	12/06/2011
1.921	Oven	SPH201	Guangzhou Espec	09/05/2011	09/04/2012
1.922	Multimeter	F117C	Fluke	09/15/2011	09/14/2012

-- End of Report --

Type Designation: JD 50Ah (IFP36/130/190)
Report Number: 17022564 001



Figure 1 Cell view

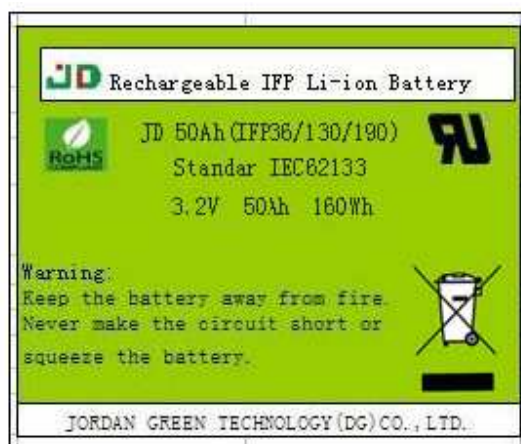


Figure 2 Final version label

Type Designation: JD 50Ah (IFP36/130/190)
Report Number: 17022564 001



Figure 3 Cell terminal side

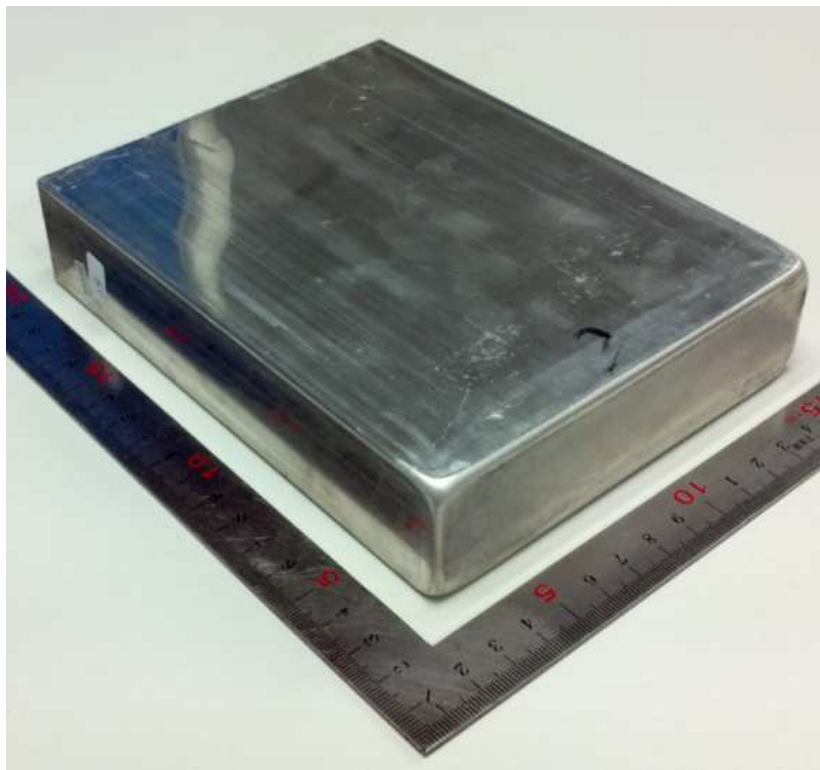


Figure 4 Cell bottom side