



Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Details of order:

Name of customer: Afcon contracting and Services LTD
Address: Hatavor Alley 4, Petah Tikva, 4969104, Israel
Date of order: 18/09/2024

Description of sample:

Rechargeable Li-ion Battery
Models: LV Flex Lite
Manufacturer: Shenzhen BYD Electronics Co., Ltd.
(See additional product information on pages 1-18)

Sampling details:

No sample required

Nature of test:

Review of test reports:

Report number: CN21MVPI 001
Report Standards and Editions: IEC 62619:2017
Report Issued by: TÜV Rheinland (Shenzhen) Co., Ltd.
Report date: 16.08.2021

Report number: A2-4791179004-001
Report Standards and Editions: IEC 62619: 2022
Report Issued by: Shanghai Truron Testing Technology Co., Ltd.
Report date: 05.02.2024

Report number: CN21NDXD 001
Report Standards and Editions: IEC 62040-1:2017
Report Issued by: TÜV Rheinland (Shenzhen) Co., Ltd.
Report date: 16.08.2021

Report number: NN21LCCV 001
Report Standards and Editions: EN IEC 62311: 2020, EN 62477-1: 2012+A11:2014
EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4, EN IEC 61000-6-1: 2019
EN IEC 61000-6-2: 2019, EN 61000-6-3: 2007+A1, EN 61000-6-4: 2007+A1
EN 300 328 V2.2.2
Report Issued by: TÜV Rheinland (Shenzhen) Co., Ltd.
Report date: 17.08.2021

Report number: 01052100003721-1(E)
Report Standards and Editions: ST/SG/AC.10/11/Rev.7, 38.3
Report Issued by: GUANGZHOU CUSTOMS DISTRICT TECHNOLOGY CENTER
Report date: 15.07.2021

This document does not permit marking the product with SII Mark



Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

BMS-P board: Perform charging and discharging operations according to the signal of BMS-M board. Monitoring current and send the information to BMS-M board

Lithium-ion cells: Store and release energy through conversion between electrical and chemical energy.

Relay: Cut off or turn on the charge and discharge circuit.

Fuse: For short circuit protection.

Interconnecting wires and busbar: Interconnection of internal components.

The equipment have 2 main working models:

1. Discharging: The battery received electric energy and and convert it into chemical energy.
2. Charging: Convert the chemical energy of the battery into electrical energy.

1. Definition of circuits inside of the AC Retrofit Battery System.

I. DC circuits

DC circuits are directly connected to the battery and the voltage can be up to 57.6 Vdc. Decisive voltage A considered for the DC voltage side. Consider the DC port should be connected to a PCE that is isolated from the grid.

II. Communication

The communication terminal (RS485, CAN) can be connected to COM-port of a PCE or laptop for monitoring via the host monitoring software. Decisive voltage A1 considered for the communication side of the equipment.

2. Isolation used in the product

N/A

3. Cooling method

Free cooling.

4. Isolation between decisive voltage A and decisive voltage C

N/A

Based on the information provided in the above-mentioned test reports, the above-specified Rechargeable Li-ion Battery **comply** with the Israeli requirements.

This product is used for Energy Storage System

This document does not permit marking the product with SII Mark



Test Certificate No.: 7413218719
In accordance with Clause 12 of the Standards Law – 1953

This document contains 18 pages
and may be used only in full.

**The test results in this report
refer only to the item tested.**

This document alone is not sufficient
for the release of goods from customs.

Test Conclusions:

Matthew Skif
Laboratory Technician
Renewable Energy Section
Mechanic and Hydraulic Laboratory
The Standards Institution of Israel
Date: 22/09/2024

מתי סקיף, הנדסאי בודק
ענף מערכות אנרגיה
הפעולה מכבידת המידע והאליקה
מכון התקנים הישראלי (מתי)

22/09/2024

This document does not permit marking the product with SII Mark



Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 1 of 18 pages

ADDITIONAL PRODUCT INFORMATION
Ratings and Principal Characteristics

Product name	Battery-Box
Model	LV Flex, LV Flex Lite
Rated capacity	97.7Ah
Usable energy	5.0 kWh
Nominal voltage	51.2V
Operating voltage	43.2 - 57.6V
Max output Current	70A
Operating Temperature	-10-50°C
Recommend charging method declared by the manufacturer	CC-CV,20A,57.6V,5Acut-off;
Recommend discharging method declared by the manufacturer	CC,20A,43.2Vcut-off;
Nominal mass (g).....	47kg
External dimensions (mm).....	W x H x D = 441mm x 131mm x 461mm

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 2 of 18 pages

The PCB board included in the sample has two versions, the differences are as follows,

	Version 1	Version 2	Differences compare to version 1
BMS-MP board	V2	V2.3	Added test points on the back of the PCB, not influence to test.
BMS-PS board	V2	V2.8	Input power filter circuit modification
BIC board	V4.0	V5.1	Added test points on the back of the PCB, not influence to test.

According to these differences, all tests were perform on the sample with PCB version 1, no additional tests need to performed on the sample with PCB version 2.

The main features of the cell are shown as below:

Product name	LiFePO ₄ Cell
Model	C47FCSA
Capacity	102Ah
Nominal voltage	3.2V
Standard Charging Current	20A (0.2C)
Standard Full Charging Voltage	3.65V
End of Charging Current	5A (0.05C)
Maximum Charging Current	102A (1C)
Standard Discharging Current	20A (0.2C)
Maximum Discharging Current	150A
End Point Voltage	2.5V
Discharge Temperature range	-20~65°C
Charge temperature range	-10~65°C
Upper limit charging voltage	3.9V
Weight	1.980±0.1Kg
Dimensions	49.9*160*118.5mm

BMS functional safety was evaluated according to IEC 60730-1 Annex H.

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 3 of 18 pages

Model list:

MODELS LIST		LV Flex, LV Flex Lite
BATTERY OUTPUT/OUTPUT	Battery type	LiFePO ₄
	Group approach	16S
	Rated voltage (Vd.c)	51.2
	Voltage range (Vd.c)	43.2-57.6
	Max. continuous charge and discharge current (A)	70
	Rated Capacity (Ah)	97.7
	Usable Energy (kWh)	5
	Overvoltage Category (OVC)	II(Battery), III(considering connect to mains by a non-isolated PCS)
	Recommend charging method declared by the manufacturer	CC-CV,20A,57.6V,5Acut-off;
	Recommend discharging method declared by the manufacturer	CC,20A,43.2Vcut-off;
CO NS	Enclosure Protection (IP)	IP20

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 4 of 18 pages

Operating Temperature Range [°C]	-10 °C to +50°C
Pollution degree (PD)	II(internal)
Battery Cell Technology	Lithium Iron Phosphate (cobalt-free)
Altitude [m]	2000
Size	W x H x D = 441mm x 131mm x 461mm
Weight [kg]	47

The PCB board included in the sample has two versions, the differences are as follows,

	Version 1	Version 2	Differences compare to version 1
BMS-MP board	V2	V2.3	Added test points on the back of the PCB, not influence to test.
BMS-PS board	V2	V2.8	Input power filter circuit modification
BIC board	V4.0	V5.1	Added test points on the back of the PCB, not influence to test.

All tests were perform on the sample with PCB version 1, additional electric strength measurements performed on the sample with PCB version 2.

The main features of the cell are shown as below:

Product name	LiFePO ₄ Cell
Model	C47FCSA
Capacity	102Ah
Nominal voltage	3.2V
Standard Charging Current	20A (0.2C)
Standard Full Charging Voltage	3.65V
End of Charging Current	5A (0.05C)
Maximum Charging Current	102A (1C)
Standard Discharging Current	20A (0.2C)
Maximum Discharging Current	150A
End Point Voltage	2.5V
Discharge Temperature range	-20~65°C
Charge temperature range	-10~65°C
Upper limit charging voltage	3.9V
Weight	1.980±0.1Kg
Dimensions	49.9*160*118.5mm

This document does not permit marking the product with SII Mark

Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 5 of 18 pages



BYD



Battery-Box
Model: LV Flex Lite
Usable energy: 5.0 kWh
Nominal voltage: 51.2 V
Rated capacity: 97.7 Ah
Operating voltage: 43.2~57.6 V
Max output current: 70 A
Operating temperature: -10 °C~50 °C
IFpP/50/160/119/(16S)M/-10+40/90
IP class: IP20
Protective class: I
Manufacturer: Shenzhen BYD Electronics Co.,LTD.
Address: No.1, Yan'an Road,
Kuichong Street, Dapeng New District,
Shenzhen, 518119, P.R. China
E-Mail: bboxservice@byd.com
Website: www.bydbatterybox.com

CE 




P012T020Z2103300001

MADE IN CHINA



Manufacturer : BYD (HUIZHOU) BATTERY COMPANY LTD
Product name : Rechargeable Lithium-ion Cell
Product model : C47FCSA
Power rating : 3.2V 102Ah 326.4Wh
Date of manufacture : 2023-1-1
IFpP/51/161/119/M/-30+60/90

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719
In accordance with Clause 12 of the Standards Law – 1953
APPENDIX
Documents and Certificates

Page 6 of 18 pages

5.1	TABLE: Critical components information					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity	
Material of Label(on module)	Shenzhen Zhengxinyuan	---	PC, UV resistance,0.65 ± 0.15mm,Adhesive:3M9 080A	ISO 4892:2013	Test report No: (2019)委送字 汽车类 079(02)	
Material of Label(on bms box)	Shenzhen Zhengxinyuan	---	PC, UV resistance,0.8 ± 0.15mm,Adhesive:3M9 080A	ISO 4892:2013	Test report No: (2019)委送字 汽车类 079(02)	
Cell	Huizhou BYD Battery Co.,Ltd	C47FCSA	3.2V,102Ah	IEC 62619-2017	DK-108844-UL	
FUSE	BYD company Limited	FC02H100	DC200V, 100A	IEC 60269	TUV 60373112 001	
FUSE(ALT)		FC02H150	DC200V, 150A			
DC Contactor	BYD company Limited	EV12100T-1	Rated Current: 100A Rated Voltage: 60V Pull-in Voltage: ≤9V Release Voltage: ≥0.8V	IEC 60947-4-1:2019	TUV Rheinland R50463275	
VDR	POLYRONIC S Technology CORP.	PVR14D820K	Rated Power: 0.6W Max Allowable Voltage V _{DC} : 65V T _{opr} : -40 ~ 85°C	UL 1449 IEC 61051	UL E475869 IEC 40042411	
VDR (Alternative)	GUANGDON G WELKIN THINKING ELECTRONIC CO.,LTD	TVR10820KS Y	Rated Power: 0.4W MAX Continuous Voltage VDC: 65V T _{opr} : -40°C to +85 C	UL 1449 IEC 61051	UL E314979 TUV J50411784	
Optocoupler	LITE-ON Technology Corp./ Optoelectronics	LTV-816S-TA-C	Viso=5000Vrms Response Time tr: TYP. 4us Input Reverse Voltage: 1.4V MAX Input Reverse Current: 10uA MAX. T _{opr} : -50 ~ 110°C	DIN EN 60747-5-5 (0884-5):2015-11	VDE 40015248	
Optocoupler	Shenzhen	ORPC-817SC	Viso=5000Vrms	DIN EN	VDE	

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719
In accordance with Clause 12 of the Standards Law – 1953

Page 7 of 18 pages

(Alternative)	Orient Components Co., Ltd		Response Time tr: TYP. 4us Input Forward Voltage: 1.3V MAX Input Reverse Current: 10uA MAX. T _{opr} : -55 ~ 110°C	60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	40029733
Optocoupler (Alternative)	China Resources Semiconduct or International Limited	PC817C	Viso=5000Vrms Response Time tr: TYP. 4us Input Forward Voltage: 1.4V MAX Input Reverse Current: 10uA MAX. T _{opr} : -55 ~ 110°C	DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE 40042139
IC	Texas Instruments Incorporated	ISO3082	VOC(pp): 0.5V VOC(ss): 2.6V Input Current: -10mA to +10mA 2500 VRMS T _{opr} : -40 ~ 85°C	DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE 40047657
IC	Texas Instruments Incorporated	ISO1050	VCC: -0.3V to +6V Output Current: -15mA to 15mA Tj: -55 ~ 150°C 2500 VRMS	DIN EN 60747-5-5 (0884-5):2015-11; EN 60747-5-5:2011; A1:2015	VDE 40047657
PCB material	SHENZHEN ZHONG LUO ELECTRONICS CO., LTD.	ZL-02	130°C, V-0	UL796	UL E255554
PCB (Alternative)	DONG GUAN CITY TOP STAR CIRCUIT CO., LTD.	TS-01	130°C, V-0	UL796	UL E341686
PCB (Alternative)	VICTORY GIANT TECHNOLOGY (HUIZHOU)	SH1	130°C, V-0	UL796	UL E248779

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719
In accordance with Clause 12 of the Standards Law – 1953

Page 8 of 18 pages

	CO.LTD				
Enclosure(BMS)	BYD CO.LTD	--	441*140*130mm,steel	IEC 62619	Test with appliance
Enclosure(BAT)	BYD CO.LTD	--	441*343*130mm,steel	IEC 62619	Test with appliance
Wire(L1,L2)	DONGGUAN NISTAR TRANSMITTING TECHNOLOGY CO INC	3577	Rated Voltage: 3000V,150 deg C,16mm ²	UL758	E214184
Alternative	Interchangeable	Interchangeable	Rated Voltage: 3000V,150 deg C,16mm ²	UL758	UL
Y capacitor	EASY-GATHER ELECTRONIC CO., LTD.	DCF222MY5V Q7LB0	Rated Voltage: 250VAC Capacitance: 2200pF I.R: $\geq 10000\Omega$ (500VDC) T _{opr} : -40 ~ +125°C	EN/IEC 60384-14	VDE 40015758
MOS	ALPHA & OMEGA SEMICONDUCTOR	AOB66916L	N-channel Power Dissipation: 277W V _{DS} : 100V MAX V _{GS} : ± 20 V MAX I _b : 120A MAX I _s : 120A MAX	IEC 62619	Test with appliance
MOS (Alternative)	NXP Semiconductors	BUK765R0-100E	N-channel Power Dissipation: 357W V _{DS} : 100V MAX V _{GS} : ± 20 V MAX I _b : 120A MAX I _s : 120A MAX	IEC 62619	Test with appliance
MOS (Alternative)	Hunteck	HGB042N10A	N-channel Power Dissipation: 357W V _{DS} : 100V MAX V _{GS} : ± 20 V MAX I _b : 167A MAX	IEC 62619	Test with appliance
MOS (Alternative)	Infineon Technologies	IPB042N10N3G	N-channel Power Dissipation:	IEC 62619	Test with appliance

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 9 of 18 pages

	AG		214W V _{DS} : 100V MAX V _{GS} : ±20V MAX I _b : 100A MAX		
NTC	Joinset Co., LTD.	ECTH 160808 103F 3435FST	R ₂₅ : 10KΩ ±1% B _{25/85} : 3435K ±1% T _{opr} : -40 ~ +125°C	UL 1434	UL E258805

5.1	TABLE: Critical components information					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹⁾	
Cells	Huizhou BYD Battery Co., Ltd	C47FCSA	3.20V 102Ah	--	--	
- Case	Yuankeyu	C47	aluminium	--	--	
- Electrolyte	BYD	LB-75	LiFP6 dissolved in organic solvent (EC+ DEC+EMC)	--	--	
- Separator	Hebei Jinli new energy technology Co., Ltd	PE_108×0.010	10µm	--	--	
- Insulation Sheet	ZXY	PET	119mm	--	--	
- Insulation film	YDX	PET	0.07mm	--	--	
- Positive Electrode	BYD	C47FCSA	aluminium foil coated by LiFePO4	--	--	
- Negative Electrode	BYD	C47FCSA	copper foil coated by graphite	--	--	
- Vent or pressure release mechanism	BYD	C47	0.3-0.5Mpa	--	--	
Supplementary information: N/A						
¹⁾ Provided evidence ensures the agreed level of compliance. See OD-CB2039.						

This document does not permit marking the product with SII Mark

Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 10 of 18 pages



Prüfbericht - Produkte
Test Report - Products

Prüfbericht-Nr.: Test report no.:	CN21MVPI 001	Auftrags-Nr.: Order no.:	168310249	Seite 1 von 24 Page 1 of 24
Kunden-Referenz-Nr.: Client reference no.:	2126951	Auftragsdatum: Order date:	2021.03.18	
Auftraggeber: Client:	Shenzhen BYD Electronics Co., Ltd. See page 2			
Prüfgegenstand: Test item:	Rechargeable Li-ion Battery			
Bezeichnung / Typ-Nr.: Identification / Type no.:	LV Flex, LV Flex Lite			
Auftrags-Inhalt: Order content:	TUV mark approved			
Prüfgrundlage: Test specification:	IEC 62619: 2017			
Wareneingangsdatum: Date of sample receipt:	2021.05.18			
Prüfmuster-Nr.: Test sample no.:	Engineering sample			
Prüfzeitraum: Testing period:	2021.05.18 - 2021.06.18			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
erstellt von: created by:		genehmigt von: authorized by:		
Datum: 2021.08.16 Date:	 Xun Yu	Datum: 2021.08.16 Date:	Corney Zhang	
Stellung / Position:	Project Engineer	Stellung / Position:	Technical Certifier	
Sonstiges / Other:	N/A			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) P(ass) = passed a.m. test specification(s)	F(all) = entspricht nicht o.g. Prüfgrundlage(n) F(all) = failed a.m. test specification(s)	N/A = nicht anwendbar N/A = not applicable	NT = nicht getestet NT = not tested	
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</p>				

TÜV Rheinland (Shenzhen) Co., Ltd. 1601 R&D Room, 1602-1604, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingke First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China
Mail: info@bi.chn.tuv.com Web: http://www.chn.tuv.com

This document does not permit marking the product with SII Mark



Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 11 of 18 pages

Zertifikat

Certificate



Zertifikat Nr. Certificate No. R 50512851 Blatt Sheet 0001

Ihr Zeichen Client Reference Y.F.W Unser Zeichen Our Reference 02--CN21MVPI 001 Ausstellungsdatum Date of Issue 17.08.2021 (day/mo/yr)

Genehmigungsinhaber License Holder Shenzhen BYD Electronics Co., Ltd. Room 301 of BYD A-4 Building, No.1 Yan'an Road, Kuichong Street, Dapeng New District Shenzhen 518119 Guangdong P.R. China Fertigungsstätte Manufacturing Plant Refer to latest revision of the annex list of factories

Prüfzeichen Test Mark Geprüft nach Tested acc. to IEC 62619:2017



Zertifiziertes Produkt (Geräteidentifikation) Certified Product (Product Identification) Lizenzentgelte - Einheit License Fee - Unit

Lithium-ion battery (Battery-Box)

Type Designation : LV Flex, LV Flex Lite (BYD) 11 Rated Capacity : 97.7Ah Nominal voltage : 51.2V Operating voltage : 43.2 - 57.6V Max output Current : 70A Operating Temperature : -10-+50°C

11

ANLAGE (Appendix): 1.0

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht. This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg Tel.: +49 221 806-1371 e-mail: cert-validity@de.tuv.com Fax: +49 221 806-3935 http://www.tuv.com/safety



This document does not permit marking the product with SII Mark



Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 12 of 18 pages



Test Report issued under the responsibility of:



TEST REPORT IEC 62619 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications	
Report Number.....	A2-4791179004-001
Date of issue	2024-02-05
Total number of pages	24
Name of Testing Laboratory preparing the Report	Shanghai Truron Testing Technology Co., Ltd.
Applicant's name	BYD (HUIZHOU) BATTERY COMPANY LTD
Address	BLDG #9 XIANGSHUI RIVER, ECONOMIC DEVELOPMENT ZONE. DAYA BAY, HUZHOU GUANGDONG SHENG 516083, CHINA
Test specification:	
Standard	IEC 62619:2022
Test procedure.....	CB Scheme
Non-standard test method.....	N/A
TRF template used	IECEE OD-2020-F1:2022, Ed.1.5
Test Report Form No.....	IEC62619B
Test Report Form(s) Originator....	UL Solutions (Demko)
Master TRF	Dated 2023-02-24
Copyright © 2023 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. This report is not valid as a CB Test Report unless signed by an approved IECEE Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
General disclaimer: 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 NCB. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

This document does not permit marking the product with SII Mark



Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 13 of 18 pages

		Ref. Certif. No.
		DK-150177-UL
IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME		
CB TEST CERTIFICATE		
Product	Rechargeable Lithium-ion Cell	
Name and address of the applicant	BYD (HUIZHOU) BATTERY COMPANY LTD BLDG #9 XIANGSHUI RIVER ECONOMIC DEVELOPMENT ZONE DAYA BAY HUIZHOU, Guangdong, 518083 China	
Name and address of the manufacturer	BYD (HUIZHOU) BATTERY COMPANY LTD BLDG #9 XIANGSHUI RIVER ECONOMIC DEVELOPMENT ZONE DAYA BAY HUIZHOU, Guangdong, 518083 China	
Name and address of the factory	BYD (HUIZHOU) BATTERY COMPANY LTD BLDG #9 XIANGSHUI RIVER ECONOMIC DEVELOPMENT ZONE DAYA BAY HUIZHOU, Guangdong, 518083 China	
Note: When more than one factory, please report on page 2	<input type="checkbox"/> Additional Information on page 2	
Ratings and principal characteristics	3.2V,102Ah	
Trademark / Brand (if any)	N/A	
Customer's Testing Facility (CTF) Stage used		
Model / Type Ref.	C47FCSA	
Additional information (if necessary may also be reported on page 2)	Additionally evaluated to: EN IEC 62619:2022 <input type="checkbox"/> Additional Information on page 2	
A sample of the product was tested and found to be in conformity with	IEC 62619:2022	
As shown in the Test Report Ref. No. which forms part of this Certificate	A2-4791179004-001 issued on 2024-02-05	
This CB Test Certificate is issued by the National Certification Body		
	<input type="checkbox"/> UL Solutions (US), 333 Pfingsten Rd IL 60062, Northbrook, USA <input checked="" type="checkbox"/> UL Solutions (Denko), Borupvang 5A DK-2750 Ballerup, DENMARK <input type="checkbox"/> UL Solutions (JP), Marunouchi Trust Tower Main Building 6F, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, JAPAN <input type="checkbox"/> UL Solutions (CA), 7 Underwriters Road, Toronto, M1R 3B4 Ontario, CANADA	
Date: 2024-02-05	Signature: Thomas Wilson	
For full legal entity names see www.ul.com/incbnames		

This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 14 of 18 pages



Prüfbericht - Produkte
Test Report - Products

Prüfbericht-Nr.: Test report no.:	CN21NDXD 001	Auftrags-Nr.: Order no.:	168310249	Seite 1 von 87 Page 1 of 87
Kunden-Referenz-Nr.: Client reference no.:	2126951	Auftragsdatum: Order date:	2021.03.18	
Auftraggeber: Client:	Shenzhen BYD Electronics Co., Ltd. See page 2			
Prüfgegenstand: Test item:	Rechargeable Li-ion Battery			
Bezeichnung / Typ-Nr.: Identification / Type no.:	LV Flex, LV Flex Lite			
Auftrags-Inhalt: Order content:	AK certificate			
Prüfgrundlage: Test specification:	IEC 62040-1:2017			
Wareneingangsdatum: Date of sample receipt:	2021.05.18			
Prüfmuster-Nr.: Test sample no.:	Engineering sample			
Prüfzeitraum: Testing period:	2021.05.18 - 2021.06.18			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
erstellt von: created by:	genehmigt von: authorized by:			
Datum: 2021.08.16 Date:	Datum: 2021.08.16 Date:			
Stellung / Position:	Project Engineer	Stellung / Position:	Technical Certifier	
Sonstiges / Other:	NA			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(all) = entspricht nicht o.g. Prüfgrundlage(n)	NA = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(all) = failed a.m. test specification(s)	NA = not applicable	N/T = not tested
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

TÜV Rheinland (Shenzhen) Co., Ltd. 1801 R&D Room, 1802-1804, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingke First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China
 Mail: info@bi.chn.tuv.com Web: http://www.chn.tuv.com

This document does not permit marking the product with SII Mark



Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 15 of 18 pages

**CERTIFICATE
of Conformity**



Registration No.: **AK 50515157 0001**

Report No.: **CN21NDXD 001**

Holder: Shenzhen BYD Electronics Co., Ltd.
Room 301 of BYD A-4 Building,
No.1 Yan'an Road, Kuichong Street,
Dapeng New District Shenzhen
518119 Guangdong
P.R. China

Product: Battery
Rechargeable LI-ion Battery

Identification: Type Designation : LV Flex, LV Flex Lite
Serial Number : Engineering sample
Remark(s) : Refer to test report CN21NDXD 001
for details.

Tested acc. to: IEC 62040-1:2017

The certificate of conformity refers to the above mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned above. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.



Date 17.08.2021

A. Chen
A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

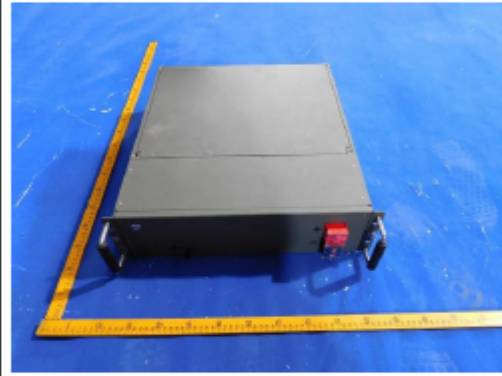
This document does not permit marking the product with SII Mark

Test Certificate No.: 7413218719

In accordance with Clause 12 of the Standards Law – 1953

Page 16 of 18 pages

Prüfbericht - Produkte Test Report - Products			
Prüfbericht-Nr.: Test report no.:	NN21LCCV 001	Auftrags-Nr.: Order no.:	168310249 Seite 1 von 25 Page 1 of 25
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2021-03-18
Auftraggeber: Client:	Shenzhen BYD Electronics Co., Ltd. Room 301 of BYD A-4 Building, No.1 Yan'an Road, Kuichong Street, Dapeng New District, Shenzhen 518119 P. R. China		
Prüfgegenstand: Test item:	Battery-Box		
Bezeichnung / Typ-Nr.: Identification / Type no.:	LV Flex, LV Flex Lite (Trademark: BYD)		
Auftrags-Inhalt: Order content:	RED approval		
Prüfgrundlage: Test specification:	EN IEC 62311: 2020 EN 62477-1: 2012+A11:2014 EN 301 489-1 V2.2.3 EN 301 489-17 V3.2.4 EN IEC 61000-6-1: 2019 EN IEC 61000-6-2: 2019 EN 61000-6-3: 2007+A1 EN 61000-6-4: 2007+A1 EN 300 328 V2.2.2		
Wareneingangsdatum: Date of sample receipt:	2020-03-09		
Prüfmuster-Nr.: Test sample no.:	210625010-1		
Prüfzeitraum: Testing period:	2020-03-09 - 2021-06-30		
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.		
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.		
Prüfresultat: Test result*:	Pass		
geprüft von: tested by:	Ryan Yang	genehmigt von: authorized by:	Sam Lin
Datum: Date:	2021-08-17		
Stellung / Position	Assistant Project Manager	Stellung / Position	Technical Certifier
Sonstiges / Other: This report is for Wi-Fi 802.11b/g/n of Article 3.2 Radio Spectrum and Article 3.1a Health requirements only. Refer to TÜV Rheinland report NN21LCCV 002 for details of Article 3.1b EMC requirements. Refer to TÜV Rheinland report CN21K9FY001 for details of Article 3.1a Electrical Safety requirements.			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged:	
* Legende: 1 - sehr gut 2 - gut 3 - befriedigend P(ass) - entspricht o.g. Prüfgrundlage(n) F(all) - entspricht nicht o.g. Prüfgrundlage(n)		4 - ausreichend 5 - mangelhaft N/A - nicht anwendbar N/T - nicht getestet	
Legend: 1 - very good 2 - good 3 - satisfactory P(ass) - passed a.m. test specification(s) F(all) - failed a.m. test specification(s)		4 - sufficient 5 - poor N/A - not applicable N/T - not tested	
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.			
TÜV Rheinland (Shenzhen) Co., Ltd. 1801 R&D Room, 1602-1604, 17-18F, Building 7 Site C, Vanke Cloud City Phase I, Xingde First Street, Xili Street, Xili Community, Nanshan District, Shenzhen 518052, P.R. China Mail: service@de.tuv.com http://www.tuv.com			



This document does not permit marking the product with SII Mark



Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 17 of 18 pages

**CERTIFICATE
of Conformity**



Registration No.: **AK 50517599 0001**

Report No.: **NN21LCCV 001**

Holder: Shenzhen BYD Electronics Co., Ltd.
Room 301 of BYD A-4 Building,
No.1 Yan'an Road, Kuichong Street,
Dapeng New District Shenzhen
518119 Guangdong
P.R. China

Product: Radio Equipment
(Battery-Box)

Identification: Type Designation: LV Flex LV Flex Lite (BYD)
Serial No. : n.a.
Remark: Refer to test report NN21LCCV 001 for details.
Continued on page 0002

Tested acc. to: EN IEC 62311:2020
EN 62477-1:2012+A11
EN 301489-1 V 2.2.3:2019
EN 301489-17 V 3.2.4:2020
EN IEC 61000-6-1:2019
EN IEC 61000-6-2:2019
EN 61000-6-3:2007+A1

The certificate of conformity refers to the above mentioned product. This is to certify that the specimen is in conformity with the assessment requirement mentioned above. This certificate does not imply assessment of the production of the product and does not permit the use of a TÜV Rheinland mark of conformity.



Date 07.09.2021

A. Chen
A. Chen

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg

This document does not permit marking the product with SII Mark



Test Certificate No.: **7413218719**

In accordance with Clause 12 of the Standards Law – 1953

Page 18 of 18 pages

广州海关技术中心

GUANGZHOU CUSTOMS DISTRICT TECHNOLOGY CENTER



地址: 中国广州市天河区珠江新城花城大道66号B座
网址: www.lqtc.cn 邮编: 510623
Add: Tower B, No.66 Huachong Avenue, Zhujiang Xincheng, Tianhe District, Guangzhou, China
Website: www.lqtc.cn Postcode: 510623

No: 01052100003721-1(E)
Date: 2021-07-15
Page: 1 of 14

UN38.3 报告 UN38.3 Test Report

样品名称: Battery-Box

Sample Name: Battery-Box

委托单位: 深圳比亚迪电子有限公司

Applicant: Shenzhen BYD Electronics Co., Ltd



4M0110OY22

广州海关技术中心

GUANGZHOU CUSTOMS DISTRICT TECHNOLOGY CENTER



1. 本报告结果仅对列检样品负责。The results in this report are relevant only to the sample(s) tested.
2. 未经书面批准不得引用或复制本报告。Without written permission of IQTC, this report shall not be quoted or reproduced except in full.

This document does not permit marking the product with SII Mark



THE STANDARDS INSTITUTION OF ISRAEL

Electrical & Electronics Laboratory