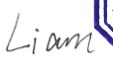
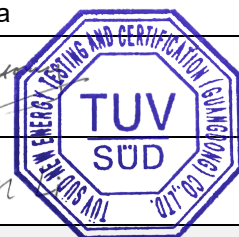


	Test Report issued under the responsibility of: NCB TÜV SÜD PSB Pte Ltd. 15 International Business Park, TÜV SÜD@IBP Singapore 609937 Singapore	
TEST REPORT IEC 62619 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications		
Report Number..... : 085-282560506-000 Date of issue..... : 2025-09-25 Total number of pages : 31 pages		
Name of Testing Laboratory preparing the Report : TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd.		
Applicant's name : Shanghai PYTES Energy Co., Ltd. Address..... : No. 3492 Jinqian Road, Fengxian District, 201406 Shanghai, PEOPLE'S REPUBLIC OF 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		
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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.		

Test item description :	Rechargeable Li-ion Battery System	
Trademark(s)	Pytas	
Manufacturer	Same as the applicant	
Model/Type reference	HV48100 SE BMU-3 HV48100 SE BMU-4 HV48100 SE BMU-5 HV48100 SE BMU-6 HV48100 SE BMU-7 HV48100 SE BMU-8 HV48100 SE BMU-9 HV48100 SE BMU-10 HV48100 SE BMU-11 HV48100 SE BMU-12 HV48100 SE BMU-13 HV48100 SE BMU-14 HV48100 SE BMU-15	
Ratings	HV48100 SE BMU-3: 153.6 Vd.c., 100 Ah HV48100 SE BMU-4: 204.8 Vd.c., 100 Ah HV48100 SE BMU-5: 256 Vd.c., 100 Ah HV48100 SE BMU-6: 307.2 Vd.c., 100 Ah HV48100 SE BMU-7: 358.4 Vd.c., 100 Ah HV48100 SE BMU-8: 409.6 Vd.c., 100 Ah HV48100 SE BMU-9: 460.8 Vd.c., 100 Ah HV48100 SE BMU-10: 512 Vd.c., 100 Ah HV48100 SE BMU-11: 563.2 Vd.c., 100 Ah HV48100 SE BMU-12: 614.4 Vd.c., 100 Ah HV48100 SE BMU-13: 665.6 Vd.c., 100 Ah HV48100 SE BMU-14: 716.8 Vd.c., 100 Ah HV48100 SE BMU-15: 768 Vd.c., 100 Ah	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒	CB Testing Laboratory:	TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd.
Testing location/ address :		North-1/F, 2/F & Unit 301-3/F, TUV SUD Testing Center, D1, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou, Guangdong, China
Tested by (name, function, signature) :		Victor Zeng (Project Handler) 
Approved by (name, function, signature) :		Liam Li (Designated Reviewer) 



☐	Testing procedure: CTF Stage 1:		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Approved by (name, function, signature)....:			
☐	Testing procedure: CTF Stage 2:		
Testing location/ address.....:			
Tested by (name + signature)			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)....:			
☐	Testing procedure: CTF Stage 3:		
☐	Testing procedure: CTF Stage 4:		
Testing location/ address.....:			
Tested by (name, function, signature).....:			
Witnessed by (name, function, signature) .:			
Approved by (name, function, signature)....:			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment): Attachment No. 1: Photo Documentation (25 pages)											
Summary of testing:											
Tests performed (name of test, test clause and date test performed): In section 7 and section 8, test of clause 7.2.3.3 was performed on Rechargeable Li-ion Battery Module, model: HV48100 SE BMU, tests of clause 8.2.2, 8.2.3, 8.2.4 were performed on Rechargeable Li-ion Battery System, model: HV48100 SE BMU-5.	Testing location: (CBTL, SPTL, CTF, Subcontractor) TÜV SÜD New Energy Testing and Certification (Guangdong) Co., Ltd. Address: North-1/F, 2/F & Unit 301-3/F, TUV SUD Testing Center, D1, No. 63 Chuangqi Road, Shilou Town, Panyu District, Guangzhou, Guangdong, China										
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;">Name of test, test clause</th> <th style="width: 40%;">Date of test performed</th> </tr> </thead> <tbody> <tr> <td>- Cl. 7.2.3.3 Edge or corner drop test (cell or cell block and battery system)</td> <td>2025-07-23 to 2025-07-24</td> </tr> <tr> <td>- Cl. 8.2.2 Over charge control of voltage (battery system)</td> <td>2023-07-02</td> </tr> <tr> <td>- Cl. 8.2.3 Over charge control of current (battery system)</td> <td>2023-07-02</td> </tr> <tr> <td>- Cl. 8.2.4 Overheating control (battery system)</td> <td>2023-07-04</td> </tr> </tbody> </table>	Name of test, test clause	Date of test performed	- Cl. 7.2.3.3 Edge or corner drop test (cell or cell block and battery system)	2025-07-23 to 2025-07-24	- Cl. 8.2.2 Over charge control of voltage (battery system)	2023-07-02	- Cl. 8.2.3 Over charge control of current (battery system)	2023-07-02	- Cl. 8.2.4 Overheating control (battery system)	2023-07-04	The samples comply with the above requirements of IEC 62619:2022 (Edition 2.0).
Name of test, test clause	Date of test performed										
- Cl. 7.2.3.3 Edge or corner drop test (cell or cell block and battery system)	2025-07-23 to 2025-07-24										
- Cl. 8.2.2 Over charge control of voltage (battery system)	2023-07-02										
- Cl. 8.2.3 Over charge control of current (battery system)	2023-07-02										
- Cl. 8.2.4 Overheating control (battery system)	2023-07-04										
Summary of compliance with National Differences (List of countries addressed): The product fulfils the requirements of EN IEC 62619:2022.											
Use of uncertainty of measurement for decisions on conformity (decision rule): ☒ No decision rule is specified by the IEC standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule, previously known as "accuracy method"). ☐ Other: ... (to be specified, for example when required by the standard or client, or if national accreditation requirements apply)											
Information on uncertainty of measurement: The uncertainties of measurement are calculated by the laboratory based on application of criteria given by OD-5014 for test equipment and application of test methods, decision sheets and operational procedures of IECEE. IEC Guide 115 provides guidance on the application of measurement uncertainty principles and applying the decision rule when reporting test results within IECEE scheme, noting that the reporting of the measurement uncertainty for measurements is not necessary unless required by the test standard or customer. Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.											

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Pytes

Product: Rechargeable Li-ion Battery System

Rated Capacity: 100Ah

Short-circuit Current: 2200A@8ms

Protection Class: Class I

Rated/Maximum Current: 50A

Ingress Protection Code: IP20

Battery Model	Nominal Voltage	Operating Voltage Range	Rated Energy	Designation Code
☐ HV48100 SE BMU-3	153.6V	142.5V~172.8V	15.36kWh	IFpP54/150/120(((8S)2S)3S)E/-10+50/95
☐ HV48100 SE BMU-4	204.8V	190V~230.4V	20.48kWh	IFpP54/150/120(((8S)2S)4S)E/-10+50/95
☐ HV48100 SE BMU-5	256V	237.5V~288V	25.6kWh	IFpP54/150/120(((8S)2S)5S)E/-10+50/95
☐ HV48100 SE BMU-6	307.2V	285V~345.6V	30.72kWh	IFpP54/150/120(((8S)2S)6S)E/-10+50/95
☐ HV48100 SE BMU-7	358.4V	332.5V~403.2V	35.84kWh	IFpP54/150/120(((8S)2S)7S)E/-10+50/95
☐ HV48100 SE BMU-8	409.6V	380V~460.8V	40.96kWh	IFpP54/150/120(((8S)2S)8S)E/-10+50/95
☐ HV48100 SE BMU-9	460.8V	427.5V~518.4V	46.08kWh	IFpP54/150/120(((8S)2S)9S)E/-10+50/95
☐ HV48100 SE BMU-10	512V	475V~576V	51.2kWh	IFpP54/150/120(((8S)2S)10S)E/-10+50/95
☐ HV48100 SE BMU-11	563.2V	522.5V~633.6V	56.32kWh	IFpP54/150/120(((8S)2S)11S)E/-10+50/95
☐ HV48100 SE BMU-12	614.4V	570V~691.2V	61.44kWh	IFpP54/150/120(((8S)2S)12S)E/-10+50/95
☐ HV48100 SE BMU-13	665.6V	617.5V~748.8V	66.56kWh	IFpP54/150/120(((8S)2S)13S)E/-10+50/95
☐ HV48100 SE BMU-14	716.8V	665V~806.4V	71.68kWh	IFpP54/150/120(((8S)2S)14S)E/-10+50/95
☐ HV48100 SE BMU-15	768V	712.5V~864V	76.8kWh	IFpP54/150/120(((8S)2S)15S)E/-10+50/95

S/N:

Date:



2025-Mar-4



MADE IN CHINA
Shanghai PYTES Energy Co., Ltd.
www.pytesess.com
ess.support@pytesgroup.com

DANGER

Danger! High DC voltage inside
Danger! Arc flash & shock hazard

DANGER ! Haute Tension Continue(DC) interne
DANGER ! Risque d'arc électrique et d'électrocution

Charge the battery every six months to reach 90% SOC, in case of long-term storage.

Recharger la batterie tous les six mois jusqu'à 90% de l'état de charge (SOC) en cas de stockage prolongé.

ATTENTION!

Read the user manual carefully before connecting the wires.
Ensure the grounding connection is properly established before use.
Repairs must be performed by authorized and trained personnel only.
Keep the battery out of reach of children and pets.
Keep the battery away from open flames and flammable materials.
Avoid immersing the battery in or exposing it to water or other liquids.
Avoid exposure to direct sunlight and humid environments.
Do not dismantle the battery unless performed by qualified personnel.
Do not drop, crush, or strike the battery. Do not puncture or cut the battery with sharp objects.
Do not cover or wrap the battery.
Do not place heavy objects on or sit on the battery.
If the battery leaks, catches fire, or is damaged, switch off the breaker on DC side and stay away from the battery.
Contact your supplier immediately within 24 hours of any failure.



ATTENTION!

Lire attentivement le manuel d'utilisation avant de procéder au raccordement des conducteurs des câbles.
S'assurer de la mise à la terre est correctement établie avant toute mise en service.
Toute intervention de maintenance doit impérativement être réalisée par des techniciens certifiés et qualifiés.
Conserver la batterie hors de portée des enfants et des animaux.
Tenir la batterie à l'écart des flammes nues et des matières inflammables.
Éviter toute immersion de la batterie dans l'eau ou tout autre liquide.
Éviter toute exposition directe au soleil et aux environnements humides.
Ne pas démonter la batterie, sauf intervention par un personnel qualifié.
Ne pas laisser tomber, écraser ou heurter la batterie. Éviter tout perçage ou coupure avec des objets tranchants.
Ne pas recouvrir ni envelopper la batterie.
Ne pas placer d'objets lourds sur la batterie ni s'asseoir dessus.
En cas de fuite, d'incendie ou d'endommagement de la batterie: Couper immédiatement le disjoncteur côté continu (DC) et S'éloigner de la batterie.
En cas de dysfonctionnement, veuillez contacter votre fournisseur dans les 24 heures suivant l'incident.

Remark:

1. The S/N code can be used to trace the manufacture information of the battery.
2. The Date "2025-Mar-4" represents the date of manufacture is March 4th, 2025. This is not the actual date of manufacture of the sample and for example only.
3. Polarity "+/-" are marked near the connectors of battery.