BATTERY TEST REPORT

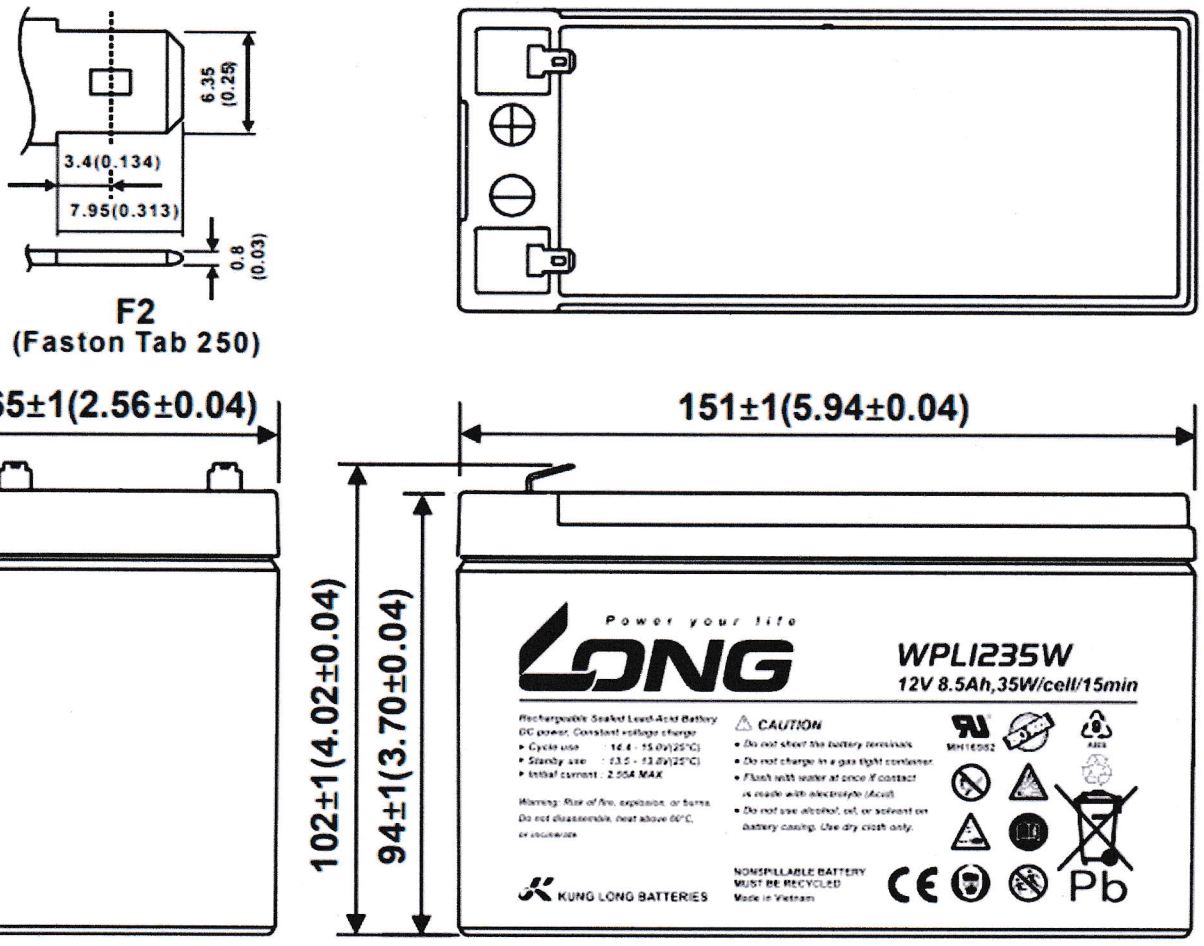
IEC60896-21:2004/TCVN11850-21:2017
IEC60896-22:2004/TCVN11850-22:2017

Report Reference No	**TQ2510008**
Tester (printed name and signature)	Nguyễn
Check by (printed name and signature)	
Approved by (printed name and signature)	
Date of issue (DD/MM/YYYY)	**29/10/2025**
Testing laboratory	**Laboratory Le Long Viet Nam Limited Company**
Address / Địa chỉ	Duc My industrial clusters, My Hanh commune,Tay Ninh province, Viet Nam
Tell	+84-72-3779666
Applicants Name	**LELONG VIETNAM LIMITED COMPANY**
Address	40 Ba Chanh Thau Street, quarter 2, Ben Luc commune, Tay Ninh province, Viet Nam
Tell	84-272-387 2213
Test Specification	
Standard / tiêu chuẩn	**IEC60896-21:2004/TCVN11850-21:2017 ; IEC60896-22:2004/TCVN11850-22:2017**
Non-standard test method	N/A
Test Report Form No	**IEC60896-21:2004/TCVN11850-21:2017 ; IEC60896-22:2004/TCVN11850-22:2017**
Test item description	**Valve Regulated Lead-Acid Battery**
Trade Mark	LONG
Model/Type reference	**WPL1235W**
Series model	**N/A**
Rating(s)	**12V 8.5Ah/10Hr (15mins rate: 35W/Cell to 1.65V/Cell)**
Battery dimension	**151mm x 65mm x 102mm (LxWxH)**
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)

1. *Test results are valid for the namely submitted sample(s) only*
2. *This test report shall not be reproduced, except in full, without the written approval of LELONG VIETNAM*
3. *Laboratory has been certificated by the Vietnamese (BoA) Quality Notarization Office in accordance with ISO/IEC 17025:2017 (VILAS 1048) , (*) will indicate a non-certified items.*
4. *(**) According to laboratory decision-making rules*

Trade Mark And Dimension:

mm(inch)



1. Test Item:

No	Test Item	Clauses.	Verdict
1	Gas Emission	6.1	p
2	High current tolerance (High current discharge capacity)	6.2	P
3	Short circuit current and DC internal resistance	6.3	P
4	Protection against internal ignition from external spark sources	6.4	P
5	Protection against ground short propensity	6.5	P
6	content and durability of required markings	6.6	P
7	Material Identification	6.7	P
8	Valve operation	6.8	P
9	Flammability rating of materials	6.9	P
10	Intercell connector performance	6.10	P
11	Discharge Capacity	6.11	P
12	Charge retention during storage	6.12	P
13	Float service with daily discharges 25℃,80%	6.13	P
14	Recharge behavior	6.14	P
15	Service life at an operating temperature of 40℃ all units to 0.8 C_{rt}	6.15	P
16	Impact of a stress temperature of 60℃,80%	6.16	P
17	Abusive over- discharge	6.17	P
18	Thermal run away sensitivity	6.18	P
19	Low temperature sensitivity	6.19	P
20	Dimensional stability at elevated internal pressure and temperatures	6.20	P
21	Stability against mechanical abuse of units during installation	6.21	P

2. Test Result:

No.	Test Item	Clauses	Technical Specification	Test data
1	Gas Emission (V=Voltage per cell)	6.1	U_{flo}≤0.05ml/cell • h • Ah（25℃）	0.0047
			2.40Vpc≤1.70ml/cell • h • Ah（25℃）	0.0043
2	High current tolerance (High current discharge capacity)	6.2	Discharge with 3 times of 15min rate current, or with a current equal to the maximum allowable discharge current. there is no melting or continuous power loss. V_{5min} >2. 0Vpc	Discharge with 3 times of 15min large current, there is no melting or continuous power loss. V_{5min}=12.94Voltage
3	Short circuit current and DC internal resistance	6.3	I_{sc}	Isc:273A
			Internal Resistance (IEC)	Ri: 0.040Ω
			Internal Resistance(At 1KHz)	14 mΩ
4	Protection against internal ignition from external spark sources	6.4	There is no fast burn or explosive apart from valve	There is no fast burn or explosive apart from valve
5	Protection against ground short propensity	6.5	No earthing short or leakage	No earthing short or leakage
6	content and durability of required markings	6.6	Marks are easy for long-lasting	Marks are easy for long-lasting
7	Material Identification	6.7	ISO symbol is visible, and the symbol is remain after put in chemical reagent place	ISO symbol is visible, and the symbol is remain after put in chemical reagent place
8	Valve operation	6.8	Check the gas outlet before and after high-temp.	Open/close valve pressure (Kpa)is: Bef. high-temp.: 22.3/0.92 After high-temp.: 23.3/1.07
9	Flammability rating of materials	6.9	Indicate sample's value with same thickness of containers and lids	ABS UL94HB (UL94 V-0)
10	Intercell connector performance	6.10	Indicate highest temp. reached	31.3℃
11.	Discharge Capacity	6.11	C_{10} ≥ 8.500Ah C_8 ≥ 7.820Ah C_3 ≥ 6.375Ah C_1 ≥ 5.100Ah $C_{0.25}$ ≥ 4.250Ah	102.4% @0.850A 103.3% @0.978A 106.7% @2.125A 108.1% @5.100A 110.2% @17.000A
12	Charge retention during storage	6.12	≥70%	83.6%
13	Float service with daily discharges 25℃,80%	6.13	Total Cycle times≥300	425 times

14	Recharge behavior	6.14	$R_{bf24h} \geq 90\%$	98.4%
			$R_{bf168h} \geq 98\%$	101.6%
15	Service life at an operating temperature of 40℃ all units to 0.8 C_{rt}	6.15	- Brief duration exposure time≥500d - Medium duration exposure time≥750d - Long duration exposure time≥1100d - Very long duration exposure time≥1700d	1580d (Long duration exposure time)
16	Impact of a stress temperature of 60℃,80%	6.16	- Brief duration exposure time≥105d - Medium duration exposure time175d - Long duration exposure time≥250d - Very long duration exposure time≥350d	340d (Long duration exposure time)
17	Abusive over- discharge	6.17	Unbalanced series over discharge C_{aod}> 0.80	0.82
			Cycle over discharge C_{aoc} > 0.90	0.95
18	Thermal run away sensitivity	6.18	Battery temperature change at 2.40VPC, the temperature after 168h	23.1℃
			Battery temperature change at 2.60VPC, the temperature after 168h	30.4℃
19	Low temperature sensitivity	6.19	C_{als}>95%	96.2%
20	Dimensional stability at elevated internal pressure and temperatures	6.20	percentage deviation over the girth value	ΔL=0.04%
21	Stability against mechanical abuse of units during installation	6.21	No fracture or leak of the battery case	No fracture or leak of the battery case

——— The End of Test Report ———