BATTERY TEST REPORT

48V 60Ah Battery Pack
CHARGE & DISCHARGE TEST

Genuine Samsung INR21700-50G Cells · 13S12P Configuration

Measured discharge 59.38 Ah · 99.0% of rated capacity · Verdict: PASS

DOCUMENT TYPE	Charge & Discharge Test Report
TEST SAMPLE	BOOANT 48V 60Ah Lithium-ion Battery Pack
REPORT NO.	BOOANT-TR-20261016-1-001-1

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48V 60Ah Lithium-ion Battery Pack (13S12P) · Genuine Samsung INR21700-50G Cells

1. Test Information

Report No.	BOOANT-TR-20261016-1-001-1
Test sample	BOOANT 48V 60Ah lithium-ion battery pack — genuine Samsung INR21700-50G cells, 13S12P configuration (156 cells), rated energy 2,880 Wh, 54.6V full-charge voltage
Pack serial no.	Not recorded
Test date	16 October 2026
Test window	10:51:00 to 19:03:01 (8 h 12 min total, incl. rests)
Test equipment	PESKOE FD-0901B Battery High-Current Tester, channel 1-001-1
Sampling	Voltage / current / capacity / energy logged every 30 s (991 records)
Report issued	16 October 2026

2. Test Procedure

Step	Operation	Setpoints	Purpose
1	Constant-current discharge	30A, cut-off 37.0V	Discharge the as-received pack to empty
2	Rest	3 min	Voltage stabilisation
3	CC/CV charge	15A to 54.6V, CV taper to 1A	Full charge from empty
4	Rest	5 min	Voltage stabilisation
5	Constant-current discharge	30A, cut-off 37.0V	Full-capacity discharge test
6	CC/CV charge (partial)	15A, 49.0V limit	Recharge to storage level after test

3. Key Results — Full Discharge (Step 5)

Rated capacity	60.00 Ah (2,880 Wh)	**Measured vs rated**	**99.0% capacity · 97.8% energy**
Discharge capacity	**59.38 Ah**	**Discharge energy**	**2,815.4 Wh**
Charge capacity (Step 3)	59.10 Ah	**Charge energy (Step 3)**	2,939.5 Wh
Average discharge voltage	47.4 V	**Median discharge voltage**	47.8 V
Discharge current	30A constant (approx. 0.5C)	**Round-trip energy efficiency**	95.8%

VERDICT: PASS — measured discharge capacity 59.38 Ah = 99.0% of the 60 Ah rating (acceptance criterion: ≥ 95% of rated capacity).

The pack was charged from empty to 54.6V (59.10 Ah accepted), rested, then discharged at a constant 30A down to the 37.0V cut-off. It delivered 59.38 Ah and 2,815.4 Wh, which is 99.0% of its 60Ah rated capacity, with an average discharge voltage of 47.4V. The discharge curve (Section 5) shows a flat, stable voltage plateau with no abnormal drops, indicating healthy, well-matched cells.

4. Step-by-Step Results

Step	Operation	Avg current	Capacity (Ah)	Energy (Wh)	End voltage	Duration
1	CC discharge	30.0 A	28.084	1,238.5	37.00 V	0:56:10
2	Rest	—	—	—	39.09 V	0:02:30
3	CC/CV charge	14.1 A	59.103	2,939.5	54.60 V	4:11:05
4	Rest	—	—	—	54.52 V	0:05:00
5	CC discharge	30.0 A	59.377	2,815.4	37.00 V	1:58:44
6	CC/CV charge (partial)	15.0 A	14.502	650.5	46.93 V	0:58:00

Capacity and energy are the step totals recorded by the test system. Rest steps carry the running counters forward and are shown as —.

5. Test Curves

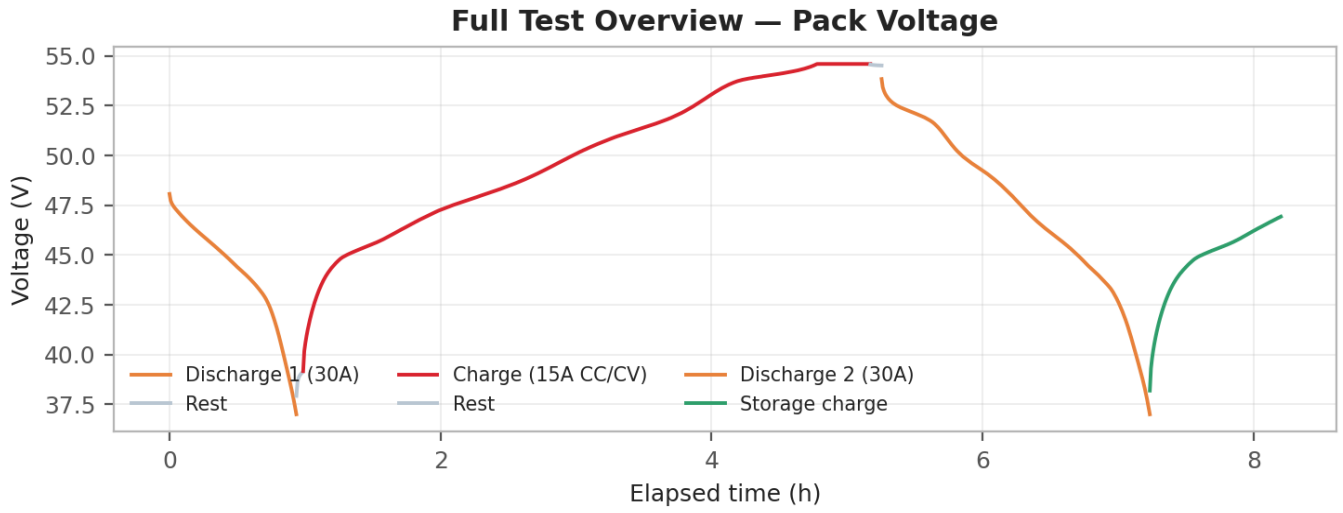

Figure 1 — Pack voltage across the full test sequence (initial discharge, full charge, capacity discharge, storage recharge).

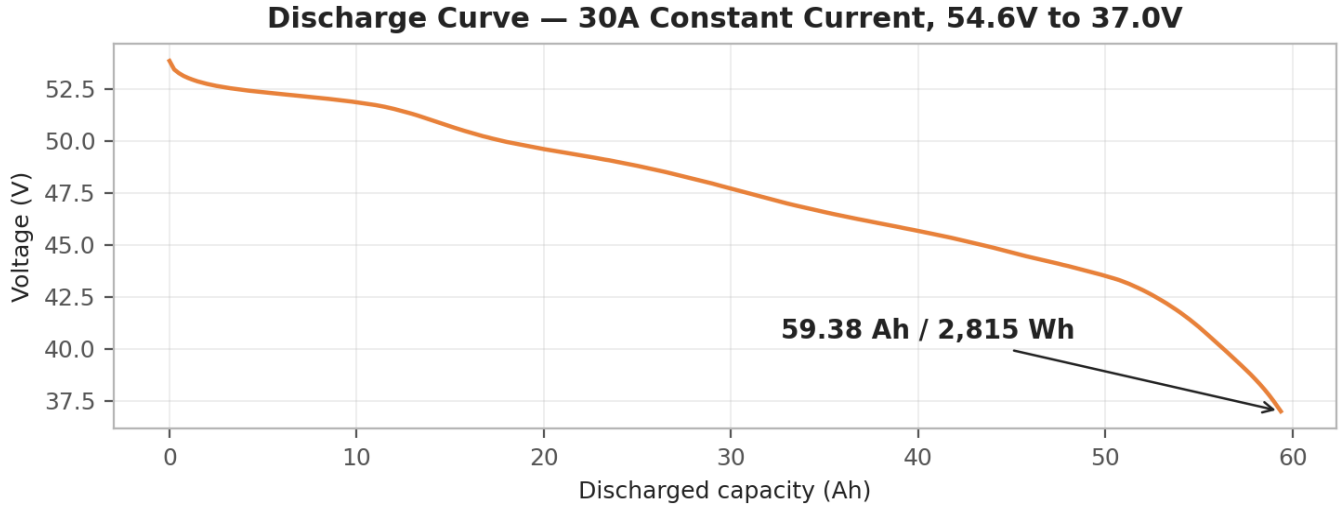

Figure 2 — Step 5 discharge curve: voltage against discharged capacity at 30A constant current.

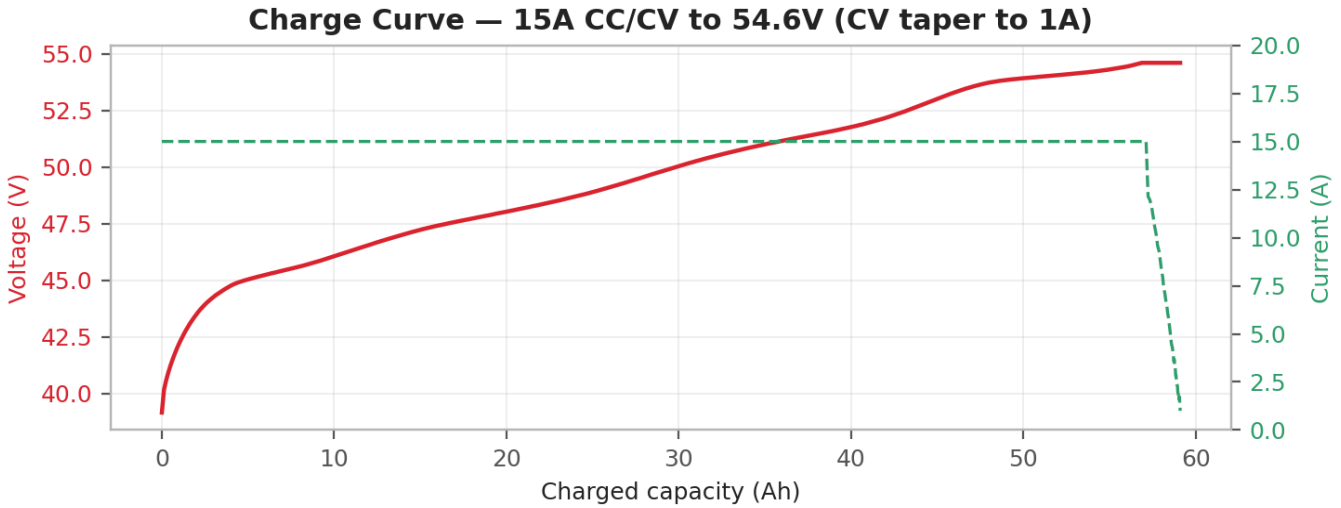

Figure 3 — Step 3 charge curve: voltage and current against charged capacity. Current tapers in the CV phase near 54.6V.

6. Notes

1. All values in this report are taken directly from the test system data export of 16 October 2026 (channel 1-001-1); no values have been adjusted or estimated.
2. Step 1 discharged the pack from its as-received state (28.08 Ah) and is not a full-capacity measurement. The rated full-discharge result is Step 5.
3. The 37.0V discharge cut-off and 54.6V full-charge voltage correspond to the pack's 13S12P configuration and its BMS operating window.
4. This report documents a single bench test of one pack and is intended as production quality evidence.
5. This is an in-house bench test report prepared by BOOANT from the test system data export. It is not a third-party laboratory certificate.