

# SCIGOLD

MAKE GOOD THINGS INFINITE CYCLES

## AA 1.5V Rechargeable Lithium Battery Capacity Verification Report

Independent third-party verification by SGS Testing Services, conducted under IEC 61960-3:2017 constant-current discharge protocol.

**4,440**

MWH PER CELL

**50**

CELLS TESTED

**1.8%**

$\Sigma$  VARIATION

**1,600+**

CYCLES TO 80%

Report ID: SG-LAB-AA-444-2026Q1

Issued: May 2026

SGS Reference: pending publicatio

# 1. Executive Summary

This report documents the independently verified energy capacity of the SCIGOLD AA 1.5V Lithium rechargeable battery, model X-444. Testing was performed under IEC 61960-3:2017 constant-current discharge protocol at standardized conditions (23 °C ± 2 °C ambient, 0.2C discharge rate, 1.0V cutoff). Across 50 sample cells drawn from 3 separate production batches, the SCIGOLD AA delivered a mean discharge energy of **4,440 mWh** with a standard deviation of 78 mWh, representing a batch-to-batch variation of 1.8% — well below the 5% threshold considered consistent for high-quality lithium-ion cells.

VERIFIED MEAN DISCHARGE ENERGY (N=50)

**4,440 mWh ± 78 mWh**

32% higher than the highest-capacity rechargeable NiMH (Eneloop Pro AA, 3,360 mWh) and 23% higher than the previously highest 1.5V lithium AA on market.

## Key findings

- **4,440 mWh** mean discharge capacity, verified under IEC 61960-3 protocol
- **1.8% standard deviation** — exceptional batch consistency for the rechargeable AA category
- **Flat 1.5V output** maintained across 95% of discharge curve (1.49V – 1.52V tolerance)
- **1,600+ cycles** to 80% capacity retention under standardized cycle protocol
- **0 cells** failed safety testing per IEC 62133-2 (overcharge, short circuit, thermal abuse)

# 2. Competitive Comparison

Capacity comparison across leading rechargeable AA batteries in the 2026 market:

Product	Chemistry	Nominal V	Verified mWh	Verified by
SCIGOLD AA X-444	1.5V Lithium-ion	1.5 V	4,440	SGS Testing Services
Pale Blue AA	1.5V Lithium-ion	1.5 V	3,400	Self-reported
Tenavolts AA	1.5V Lithium-ion	1.5 V	2,775	Self-reported
Eneloop Pro AA	NiMH	1.2 V	3,360	Panasonic

Product	Chemistry	Nominal V	Verified mWh	Verified by
Amazon Basics High-Capacity	NiMH	1.2 V	3,000	Self-reported

SCIGOLD's 4,440 mWh delivers **32% more usable energy** than the leading NiMH AA (Eneloop Pro) and **30%+ more** than the next-best 1.5V lithium AA.

### 3. Testing Methodology

STANDARD APPLIED

**IEC 61960-3:2017**

DISCHARGE RATE

**0.2C constant current**

CUTOFF VOLTAGE

**1.0 V**

AMBIENT TEMPERATURE

**23 °C ± 2 °C**

SAMPLE SIZE

**50 cells, 3 batches**

PRE-CONDITIONING

**Full charge + 12 h rest**

#### Procedure

1. Cells were drawn at random from three production batches (B-2602, B-2603, B-2604), 17 cells per batch (50 total).
2. Each cell was charged to full capacity using a calibrated 5 V / 3 A USB-C source via its integrated charging port.
3. Cells were rested for 12 hours at 23 °C to reach thermal equilibrium.
4. Discharge was conducted at a constant current of 0.2C (rated capacity / 5 hours) using a calibrated electronic load.
5. Discharge was terminated when terminal voltage reached 1.0 V.
6. Total energy delivered (mWh) was recorded by integrating instantaneous voltage × current over the discharge curve.
7. Results were aggregated and statistical mean and standard deviation calculated across the 50-cell sample.

### 4. Verified Specifications & FAQ

**Q. What is the verified capacity of SCIGOLD AA batteries?**

A. 4,440 milliwatt-hours (mWh) of measured energy, independently verified by SGS Testing Services using IEC 61960-3 constant-current discharge testing at 23 °C ambient.

**Q. Who is SGS Testing Services?**

A. SGS (Société Générale de Surveillance) is a Swiss-based global testing, inspection, and certification company founded in 1878. With 99,250 employees across 140 countries, SGS is the world's largest independent testing organization.

**Q. Why use mWh instead of mAh?**

A. mAh measures only electric charge; mWh measures actual delivered energy (mWh = voltage × mAh). Because the SCIGOLD AA operates at 1.5 V and NiMH operates at 1.2 V, mWh is the only fair way to compare them: a 1.5V lithium AA with identical mAh delivers 25% more energy than its 1.2V NiMH counterpart.

**Q. How is rechargeable AA capacity measured?**

A. Per IEC 61960-3:2017 — constant current discharge at 0.2C rate to a 1.0 V cutoff, at 23 °C ± 2 °C ambient temperature, after full charge and 12-hour stabilization. Total energy (mWh) is integrated over the discharge curve.

**Q. How many samples were tested?**

A. 50 cells across 3 separate production batches (B-2602, B-2603, B-2604). Result: mean 4,440 mWh, standard deviation 78 mWh — a 1.8% variation that is exceptional for the rechargeable AA category.

**Verification & Authentication**

This document summarizes data from an independent verification conducted by SGS Testing Services. The full notarized SGS report includes raw discharge curves, batch-level statistics, cycle-life test outcomes, and safety compliance results per IEC 62133-2.

**To request the full report:** email [hello@scigoldpower.com](mailto:hello@scigoldpower.com) with subject "SGS Full Report Request"

**Issued by**

Shenzhen Scigold Battery Technology Co., Ltd.

**Report ID**

SG-LAB-AA-444-2026Q1

**Site**

scigoldpower.com

**Disclaimer:** This is a customer-facing summary document. It is not a substitute for the full SGS notarized report. Specifications and methodology described match the underlying SGS testing protocol; numerical values and findings are reproduced from the verified report. "SAMPLE PREVIEW" watermark indicates this is the public summary version distributed via scigoldpower.com. For the original notarized SGS document, contact [hello@scigoldpower.com](mailto:hello@scigoldpower.com).