

REPORT

Technical Report: (5109)085-0077Revision

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July 22, 2009





TEST REPORT

FUJI NOVEL BATTERIES
 300 CORPORATE DRIVE
 MAHWAH, NEW JERSEY 07430

LAB LOCATION: BUFFALO, NY
LAB NUMBER: (5109)085-0077R

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DATE IN: MARCH 26, 2009

MOD. LOG IN: N/A
DATE OUT: JUNE 29, 2009
REVISED DATE: JULY 22, 2009
WORKING DAYS: 67
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OVERALL RATING	
PASS	_____
FAIL	_____
DATA	_____ X _____

**TESTING FOR
 PRIMARY CELL BATTERIES**

Sample Description:	AA ALKALINE BATTERIES								
Manufacturer:	NOT LISTED			P.O. No.:	LAL323				
Buyer:	NOT LISTED			Style:	NOT LISTED				
Country of Origin:	NOT LISTED ON TRF			Country of Destination:	NOT LISTED				
Color:	NOT LISTED			SKU Number:	NOT LISTED				
Re-test:	Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>	Charge Vendor:	Yes:	<input type="checkbox"/>	No:	<input checked="" type="checkbox"/>
Previous Report No.:	N/A								



EXECUTIVE SUMMARY:

The submitted samples were compared to Duracell, Energizer, and Panasonic digital AA batteries, and were subjected to 3 separate discharge profiles.

The results of this test are presented as **DATA** only, per quote Q090003.

The first discharge profile was a discharge of 250 mA for 1 hour per day. This is the ANSI standard test simulating battery performance in electronic games. For this discharge, the ANSI standard minimum service life for Alkaline batteries is 6 hours. The Fuji samples averaged 8.23 hours service life and 2057 mAh capacity. The Duracell samples averaged 7.58 hours service life and 1895 mAh capacity. The Energizer samples averaged 8.51 hours service life and 2125 mAh capacity. The Panasonic samples averaged 7.73 hours service life and 1716 mAh capacity.

The second discharge profile was a discharge of 1000 mA for 10 seconds per minute, 1 hour per day. This is the ANSI standard test simulating battery performance powering a photoflash. For this discharge, the ANSI standard minimum service life for Alkaline batteries is 210 pulses. The Fuji samples averaged 524 pulses and 1458 mAh capacity. The Duracell samples averaged 394 pulses and 1108 mAh capacity. The Energizer samples averaged 366 pulses and 1027mAh capacity. The Panasonic samples averaged 385 pulses and 1080 mAh capacity.

The third discharge profile was a load of 43Ω for 4 hours per day. This is the ANSI standard test simulating battery performance in a radio. For this discharge, the ANSI standard minimum service life for Alkaline batteries is 60.00 hours. The Fuji samples averaged 91.19 hours service life and 2665 mAh capacity. The Duracell samples averaged 78.65 hours service life and 2399 mAh capacity. The Energizer samples averaged 91.00 hours service life and 2660 mAh capacity. The Panasonic samples averaged 87.09 hours service life and 2556 mAh capacity.

250mA, 1 hour per day

Sample	Service life (hours)	Average service life (hours)	Capacity (mAh)	Average Capacity (mAh)
ANSI minimum	6.00	6.00	N/A	N/A
Fuji 1	8.25	Average:8.23	2061	Average: 2057
Fuji 2	8.23		2059	
Fuji 3	8.20		2051	
Duracell 1	7.52	Average:7.58	1881	Average: 1895
Duracell 2	7.62		1905	
Duracell 3	7.60		1899	
Energizer 1	8.27	Average:8.51	2066	Average: 2125
Energizer 2	8.55		2135	
Energizer 3	8.70		2175	
Panasonic 1	7.74	Average: 7.73	1935	Average: 1932
Panasonic 2	7.70		1925	
Panasonic 3	7.75		1936	

43Ω, 4 hours per day

Sample	Service life (hours)	Average service life (hours)	Capacity (mAh)	Average Capacity (mAh)
ANSI minimum	60.00	60.00	N/A	N/A
Fuji 1	92.92	Average: 91.19	2721	Average: 2665
Fuji 2	91.56		2667	
Fuji 3	89.09		2608	
Duracell 1	75.28	Average: 78.65	2383	Average: 2399
Duracell 2	79.06		2381	
Duracell 3	81.61		2434	
Energizer 1	90.77	Average: 91.00	2659	Average: 2660
Energizer 2	90.57		2625	
Energizer 3	91.66		2697	
Panasonic 1	87.85	Average: 87.09	2586	Average: 2556
Panasonic 2	86.86		2550	
Panasonic 3	86.55		2531	



**1000 mA, 10 seconds
per minute, 1 hour per
day**

Sample	Service life (pulses)	Average service life (pulses)	Capacity (mAh)	Average Capacity (mAh)
ANSI minimum	210	210	N/A	N/A
Fuji 1	528	Average: 524	1477	Average: 1458
Fuji 2	516		1440	
Fuji 3	528		1458	
Duracell 1	391	Average: 394	1095	Average: 1108
Duracell 2	383		1082	
Duracell 3	409		1148	
Energizer 1	299	Average: 366	836	Average: 1027
Energizer 2	395		1106	
Energizer 3	405		1138	
Panasonic 1	354	Average: 385	994	Average: 1080
Panasonic 2	396		1109	
Panasonic 3	405		1137	

Note: This report was revised to add results for the 43Ω Load Discharge.

For general inquiries, please contact Bureau Veritas at (716) 505-3300.

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Digital AA, Photoflash simulation: Voltage (V) vs. Test Time (days)



