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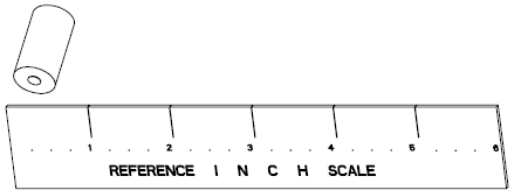
INCH-POUND
MIL-PRF-32271/8
30 October 2008

PERFORMANCE SPECIFICATION SHEET

BATTERY, NON-RECHARGEABLE, LITHIUM

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product herein shall consist of this specification and MIL-PRF-32271.



See NOTES for nominal dimensions; see applicable drawing for dimensional requirements.

Figure 1 – General View, M32271/8 Battery Shape

REQUIREMENTS (see 1.2 for Type, Class, and Features descriptions):

Type – I
Class – 1
Features – A
PIN – M32271/8-11A
Approved chemistry: Lithium manganese dioxide (Li/MnO_2)

Specification requirements: The following requirements of MIL-PRF-32271, identified therein as "when specified", are applicable as indicated below:

Requirement	Specification Reference	Applicability
Parallel cell arrangements	3.4	No
Connectors	3.4.5	No
Battery charger connection	3.4.5.1	No
Connection integrity	3.4.5.2	No
Terminal integrity	3.4.6	Yes
Socket strength	3.4.6.1	No
Terminal strength	3.4.6.2	Yes
Complete discharge device	3.4.7	No
State of charge device	3.4.8	No
State of charge data output	3.4.8e	No
Cell charging	3.5.3	No

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Requirement	Specification Reference	Applicability
Nail penetration	3.5.4	No
Cell series string short circuit	3.5.6	No
Parallel string charge protection	3.5.6.1	No
Charge protection	3.5.11	No
Over-current protection	3.5.13.1	No
Over-temperature protection	3.5.14	No
Surface temperature	3.6h	No
Capacity tests LR and LRT		No
Immersion	3.7.8	Yes
Watertight integrity	3.7.9	No
DO NOT CHARGE! Marking	3.8.1.2b	No
Complete discharge device marking/label	3.8.4	No
State of charge marking	3.8.5	No

Dimensions, marking and configuration

Battery - Drawing A3315885
Battery Connector – Not Applicable
Mating Connector – Not Applicable
Battery Charger Connector – Not Applicable

Battery voltages (3.4.4 & 4.6.1.5):

Battery open-circuit voltage (3.4.4.1 & 4.6.1.5.1):
Maximum – 6.8 volts
Minimum – 6.0 volts

Battery closed circuit voltage (3.4.4.2 & 4.6.1.5.2):
For capacity and initial voltage delay: Minimum – 4.0 volts
For battery closed circuit voltage test: Minimum – 5.0 volts

Cell closed circuit voltage test (3.4.4.3 & 4.6.1.3): Minimum - 2.5 volts per cell

Maximum weight (3.1 & 4.6.1.6): 0.7 ounces (19.8 g)

Capacity test requirements (3.6 & 4.6.4):

Test	Initial voltage delay Time (MAX) to	Volts	Minimum Capacity		Cut-off Volts
			Storage Period		
			1-Week	4-Week	
I	1 second	4.0	100 hours		4.0
L	1 second	4.0	75 hours		4.0
H	1 second	4.0	100 hours		4.0
IT	1 second	4.0	93 hours	90 hours	4.0
LT	1 second	4.0	67 hours	60 hours	4.0
HT	1 second	4.0	93 hours	90 hours	4.0

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Abuse test pulse discharge capacity requirement (3.5.12 & 4.6.2.12i): 0.42 ampere-hours

METHODS OF EXAMINATION AND TEST:

Verification requirements. The following verification requirements of MIL-PRF-32271, identified therein by the phrase “when specified,” are applicable as indicated below:

Test Requirement	Specification Reference	Applicability
Parallel discharges	Tables III, IV, IX & XI	No
Connector	4.6.1.7	No
Battery charger connection test	4.6.1.7.1	No
Static connection integrity	4.6.1.7.2	No
Dynamic connection integrity	4.6.1.7.3	No
Terminal integrity	4.6.1.8	Yes
Socket strength	4.6.1.8.1	No
Terminal strength	4.6.1.8.2	Yes
Complete discharge device	4.6.1.9	No
State of charge device	4.6.1.10	No
Cell charging	4.6.2.3	No
Nail penetration	4.6.2.4	No
Cell series string short	4.6.2.6	No
Parallel cell charge protection	4.6.2.6.1	No
Charge protection test	4.6.2.11	No
Battery over-current protection	4.6.2.13	No
Battery over-temperature protection	4.6.2.14	No
Surface temperature	4.6.4.1	No
Capacity test LR	4.6.4.1.5	No
Capacity test LRT	4.6.4.1.9	No
Immersion	4.6.5.8	Yes
Watertight integrity	4.6.5.9	No

Cell closed-circuit voltage test: When cells are tested as specified in 4.6.1.3, load each cell with 150 ohms, 4.5 milli-amperes, or 9 milli-watts.

Battery closed-circuit voltage test: When tested as specified in 4.6.1.5.2, load each battery with 298.2 ohms, 4.5 milli-amperes, or 18 milli-watts.

Abuse test, pre-discharge: When tested as specified in 4.6.2.12a, discharge with a load of 4.5 milli-amperes for 50 hours.

Abuse test, pulse discharge: When tested as specified in 4.6.2.12i, discharge with a load of 5.5 milli-amperes for 1 minute followed by 4 milli-amperes for 4 minutes, cycled continuously to 4.0 volts.

Immersion: When tested as specified in 4.6.5.8, apply a load of 1 milli-ampere during the storage and immersion time periods specified.

Capacity tests (4.6.4):

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Test	Discharge Rate	Duty Cycle
I	4.5 milli-amperes	Continuous discharge to zero volts, followed by 4.5 milli-ampere forced discharge for 5 minutes.
L	4.5 milli-amperes	Continuous discharge to cut-off voltage
H	4.5 milli-amperes	Continuous discharge to cut-off voltage
IT	4.5 milli-amperes	Continuous discharge to cut-off voltage
LT	4.5 milli-amperes	Continuous discharge to cut-off voltage
HT	4.5 milli-amperes	Continuous discharge to cut-off voltage

NOTES:

(This section contains information of a general nature which may be helpful, but is not mandatory)

Intended use: This battery is intended for memory hold functions in a wide variety of portable and stationary military communications electronics equipment. It is also used to power code transfer keys.

[1]Nominal ratings: The following are the nominal ratings for the battery described by this specification sheet. They are provided for information purposes.

Battery PIN:	**M32271/8-11A (Li/MnO_2)**
Overall Dimensions:	1.3 in L x 0.6525 DIA
MAX Weight:	0.7 ounces (19.8 grams)
Voltage Range:	4.0-6.8
Nominal Capacity: (in ampere-hours)	0.45 Amp-hrs
Nominal Energy: (in watt-hours)	2.3 Watt-hrs
MAX rated power output:	27 milli-watts
MAX continuous load rating:	4.5 milli-amperes
MAX pulse load rating:	5.5 milli-amperes
Instantaneous trip rating:	Not applicable
Operating temperature range:	-20 to 130ºF (-29 to 55ºC)
Storage temperature range:	-40 to 160ºF (-40 to 71ºC)
MAX abusive temperature: (non-operating)	195ºF (91ºC)

Other data:

Military Type Designations. The military type designation that relates to the PIN covered by this specification sheet is as follows: The BA-5372()/U designation has been used for the Type I PIN.

[1] Capacity and energy delivered by a battery are significantly affected by usage conditions, such as temperature and loads applied. If you have any questions about use of this battery in a particular device or circumstance, please visit the following web site (contact info is posted): http://www.cerdec.army.mil/c2d/armypower.

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This battery was exempt from the transportation requirements of 49 CFR 173.185 until January 2008; now it is subject to the test requirements therein beginning in October 2009. Class 9 shipping labels typically won't be needed; consult with 49 CFR 173.185 for package quantity/size limitations. It contains less than 0.5 of lithium per cell and less than 1.0 gram of lithium per battery. It should be noted that all non-rechargeable lithium batteries are restricted from shipment as cargo aboard passenger aircraft within, entering, or leaving the US.

This battery does not have a complete discharge device. It is considered Non-Hazardous Solid Waste per the Resource Conservation and Recovery Act (RCRA). However, it is considered Hazardous Waste in states using Bioassay rules. Check with your local disposal office for rules that apply.

Navy safety tests of NAVSEA S9310-AQ-SAF-010 are required for this battery during first article testing. The test data provided from the testing will be used to evaluate applications for specific using devices and Navy platforms. Devices using this battery may require US Navy Safety Approval prior to use by Department of Navy users unless such approval has already been granted. Please consult with NAVSEA Instruction 9310.1 for further information.

Custodians:
Army – CR
Navy – NW
Air Force – 99
DLA – GS

Review activities:
Navy – SH, AS, MC
Air Force – 71

Preparing activity:
Army – CR
(Project Number 6135-2006-011)

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