

SPECIFICATION

FC

BATTERY, DRY (LECLANCÉ), 90/1.5 V, NO 1, NATO STOCK NO 6135-99-910-1155

(NATO TYPE DESIGNATION NBA 302)

This Supplement supersedes SUPPLEMENT NO 39 to
DEF STAN 61 - 3 (PART 1), dated 19 March 1968

1. This Supplement is to be read in conjunction with the General Specification for primary batteries (Leclanché, mercury, and manganese alkaline types) contained in DEF STAN 61 - 3 (PART 1).

2. NOMINAL VOLTAGE

a. Cell.

1.5

b. Battery.

(1) HT section: 90

(2) LT section: 1.5

3. DIMENSIONS

Dimensions shall be in accordance with the requirements of the attached drawing.

4. MASS

Mass shall not exceed 5 pounds 12 ounces (2.61 kilograms).

5. MARKINGS

Marking shall be in accordance with the requirements of the General Specification contained in DEF STAN 61 - 3 (PART 1), clause 11. and the attached drawing.

6. CONSTRUCTION

a. Assembly.

(1) An HT section and an LT section of 90 and 1.5 volts respectively, combined in a single insulating container.

(a) The HT section normally being 60 layer-type cells connected in series.

(b) The LT section normally being nine cylindrical cells connected in parallel.

(2) Inter-cell connections between cylindrical cells and inter-stack connections for layer-type cells shall be soldered, using wire not thinner than 0.028 in (22 s.w.g.)(0.71 mm).

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6. a. (3) Cell-socket connections shall be soldered, using insulated stranded wire.
- (4) The whole assembly shall be blocked securely to prevent internal movement.
- (5) The socket shall be sealed in such a manner that the seal may be removed and replaced effectively to permit testing of the battery during storage.
- (6) After sealing, the battery shall be dipped in micro-crystalline wax at a temperature of not less than 100°C, for not less than five seconds, in such a manner that the battery is covered completely with a smooth and continuous protective wax film.

b. Cell details.

(1) Size.

(a) Layer-type: 11/64 in (4.37 mm) x 1.11/16 in (42.86 mm) x 1.11/16 in (42.86 mm).

(b) Cylindrical type: R22 (BS 397).

(2) Zinc thickness for cylindrical type.

Shall be not less than 0.014 in (0.36 mm).

c. Terminations.

Special socket in accordance with the requirements of EQD Drawing Book, No 5072 (obtainable from EQD, MOD(PE), 'Aquila', Golf Road, Bromley, Kent BR1 2JB).

7. STORAGE AND PERFORMANCE TESTS

a. Allocation of sample batteries.

(1) For Qualification Approval testing.

Shall be in accordance with the requirements of the General Specification contained in DEF STAN 61 - 3 (PART 1), clause 6.b.

(2) For Quality Assurance testing.

Number of sample batteries supplied shall be in accordance with the requirements of the General Specification contained in DEF STAN 61 - 3 (PART 1), clause 14.b. and shall be divided between tests shown in the table below as follows:

10% Jungle with the balance equally divided between the other four types of storage.

7. b. Storage conditions and performance requirements.

| TYPE OF STORAGE | GENERAL SPECIFICATION CLAUSE | STORAGE PERIOD (WEEKS) | MINIMUM DISCHARGE LIFE AFTER STORAGE (HOURS) |
|------------------------|------------------------------|------------------------|--|
| Temperate (Short term) | 17.a. | 4 | 24 |
| Temperate (Long term) | 17.a. | 52 | 18 |
| ∕ Jungle | 17.c. | 8 | 21 |
| ∅ Desert | 17.b. | 26 | 16 |
| Temperate (Spare) | 18.d. | - | - |

Notes:

1. ∕ indicates insulation resistance after Jungle storage (General Specification DEF STAN 61 - 3 (PART 1), clause 19.) to be not less than 2 megohms.
2. ∅ indicates batteries stored singly.

c. Discharge test conditions.

(1) Resistance loads.

(a) HT section: R1: 2300 ohms.
R2: 10 000 ohms.

(b) LT section: R1: 1.45 ohms.
R2: 1.95 ohms.

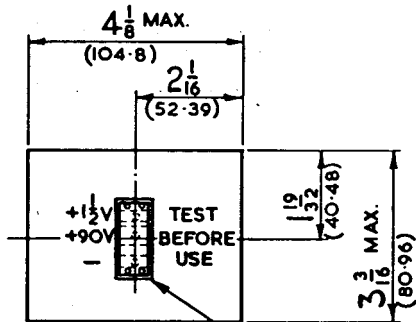
(2) Discharge cycle.

Two minutes discharge through R1 followed by 18 minutes discharge through R2, repeated continuously for eight hours; followed by 16 hours off-load. This cycle to be repeated on five consecutive days per week.

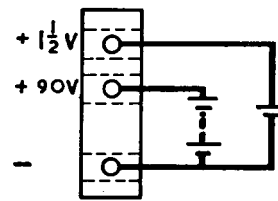
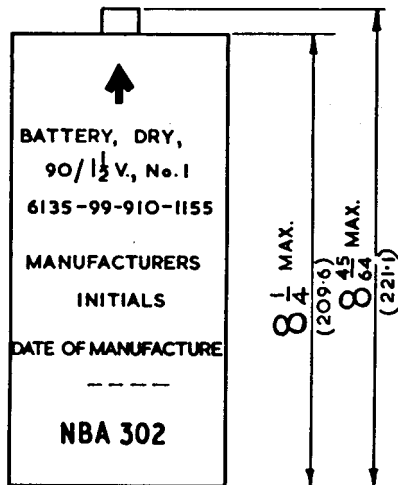
(3) On-load voltage end-points.

(a) HT section: 66 volts.

(b) LT section: 1.2 volts.



SOCKET ASSEMBLY TO E.I.D. DRAWING BOOK 5072.



WIRING DIAGRAM

NOTES :-

1. ALL DIMENSIONS ARE IN INCHES WITH mm EQUIVALENT AND SHALL INCLUDE THICKNESS OF MICRO-CRYSTALLINE WAX COATING

2. UNLESS OTHERWISE SPECIFIED ALL TOLERANCES ARE:- FRACTIONS $\pm \frac{1}{16}$ (1.59)

THIRD ANGLE PROJECTION



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Date : 9 November 1998

Removal of Product Qualification Approval

IMPORTANT ANNOUNCEMENT

1. This Standard contains a Product Qualification Approval (PQA) scheme. ⁱMOD policy requires that all PQA schemes are removed from Defence Standards called up in contracts placed after 1st January 1998.
2. Users of this Standard are to contact the Project Manager (PM), Equipment Support Manager (ESM) or Technical Service Authority (TSA) named in the contract or order, to identify whether there is a continuing need for an approvals scheme.
3. ⁱⁱProduct Conformity Certification (PCC) is a risk based process that replaces PQA. Once a risk has been identified PCC can be included as a contract clause. In exceptional circumstances agreement can be sought from AD/Stan for PCC to be included in a Defence Standard.
4. At the next revision of this Standard the PQA scheme will be removed.

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ⁱ Defence Council Instruction (General) 197/97; Quality Temporary Memorandum 5/98; Chief of Defence Procurement Instruction CDPI/TECH/250 (draft)

ⁱⁱ PCC is certification that a product meets its specification. When PC is required by the contract, the contractor is responsible for obtaining the necessary PCC. Certification shall be provided from a NAMAS accredited laboratory when appropriate. PCC shall apply where a Risk Assessment has been identified by the PM; ESM or TSA.