

INCH-POUND

MIL-L-1130E

26 January 1990

SUPERSEDING

MIL-L-1130D

14 August 1963

MILITARY SPECIFICATION

LANTERN, ELECTRIC, STORAGE BATTERY, FLOODLIGHTING, HAND CARRIED

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

1. SCOPE

1.1 Scope. This specification covers hand carried, flood lighting, storage battery powered electric lanterns.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

MILITARY

MIL-E-917	Electric Power Equipment, Basic Requirements (Naval Shipboard Use)
MIL-E-2036	Enclosures for Electric and Electronic Equipment. Naval Shipboard

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Sea Systems Command, SEA 55Z3, Department of the Navy, Washington, DC 20362-5101 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 6230

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MIL-L-1130E

MIL-F-3222	Floodlights and Lanterns, Packaging of
MIL-P-15024	Plates, Tags and Bands for Identification of Equipment
MIL-P-15024/5	Plates, Identification
MIL-M-15071	Manuals, Technical; Equipment and Systems Content Requirements for
DOD-B-15072	Batteries, Storage, Lead-Acid, Portable; General Specification for (Metric)
DOD-B-15072/3	Battery, Storage, Lead-Acid, Portable, Type 2V - 20 - AH - 4D - A (Metric)
MIL-F-16377	Fixtures, Lighting; and Associated Parts; Shipboard Use, General Specification for

STANDARD

FEDERAL

FED-STD-H28	Screw-Thread Standards for Federal Services
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MILITARY

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MS 15607	Lamps, Incandescent PAR-46, Screw Terminal
MS 16656	Switch, Toggle, Single Pole, Single Throw

(Copies of specifications and standards required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.3 and 6.4).

MIL-L-1130E

3.2 General requirements.

3.2.1 Materials and design. The materials and configuration of the lantern shall be as specified herein and on figures 1 and 2. Materials not definitely specified shall be of the quality best suited for the purpose intended. Steel parts, where used, shall be protected against corrosion.

3.2.2 Construction. The complete lantern shall be compact, simple in construction, and as rugged as practicable.

3.2.3 Finishing.

3.2.3.1 Cleaning. Cleaning shall be in accordance with MIL-E-917.

3.2.3.2 Priming. All metal parts shall be primed in accordance with the best commercial practice. (This operation may be combined with the cleaning specified in 3.2.3.1.)

3.2.3.3 Enamel. All exterior metal surfaces of lantern shall be given a final finish of a high temperature baked-on gray enamel of a good commercial grade which will not chip, scratch or mar (see 3.3.3.5).

3.3 Detail requirements.

3.3.1 Metal parts. Except for associated fastening hardware, all metal parts shall be made of aluminum and of a thickness as will assure the required strength and stiffness to withstand rough handling. The battery case cover shall have a minimum thickness of 0.080 inch. Grade of aluminum used shall be the manufacturer's choice.

3.3.2 Size. The lantern shall not exceed the dimensions shown on figure 1.

3.3.3 Battery case. The case shall be constructed to receive four battery cells (see 3.3.13).

3.3.3.1 The interior shall be subdivided into four compartments, each of which shall accommodate one battery cell. Clearance shall be provided between the battery cell and surrounding walls in order that the cells may be easily removed.

3.3.3.2 Means for ventilation shall be provided in the case (see 3.3.4).

3.3.3.3 Two drain holes approximately 1/4 inch in diameter shall be provided in the bottom of the case, one near each end.

3.3.3.4 The case shall be provided with four windows of sufficient area and so located that the position of the indicating balls of each battery cell may be observed when within 1 inch of the water level line of the cell. The windows shall be made of a clear plastic material of adequate strength and shall be secured to the case.

MIL-L-1130E

3.3.3.5 All interior surfaces of the battery case, including dividers and cover shall be coated with a black acid-resisting paint of a good commercial grade.

3.3.4 Battery case cover. The cover shall be so constructed that when secured to the battery case, it will provide the drip-proofness specified in 3.3.8, yet permit gases to escape through eight breather holes (5/16 inch diameter minimum) protected by a 3/4 inch flange.

3.3.4.1 The interior of the cover shall be provided with a filler block, adequately attached thereto to prevent movement of the battery cells and consequently short-circuiting of the terminals against the cover. This filler block shall be made of a plastic material suitable for the purpose intended.

3.3.4.2 The cover shall be simply and positively attached to the battery case (see figure 1).

3.3.5 Threads. Threads shall conform to FED-STD-H28.

3.3.6 Handle. The lantern shall be provided with a carrying handle, arranged so that the complete unit may be conveniently carried with the lamp housing clamped in any position. The handle may be secured to the cover as shown on figures 1 and 2.

3.3.7 Quadrant. The quadrant and associated parts shall be so constructed as to provide vertical adjustment of the light beam axis from approximately 30 degrees below to approximately 60 degrees above the horizontal. A simple device shall assure positive clamping in any position.

3.3.8 Degree of enclosure. The complete lantern shall be drip-proof. This degree of enclosure requires that solid or liquid material falling from any direction up to a maximum angle of 45 degrees from the vertical shall be effectively excluded from the interior of the case and the lamp housing assembly.

3.3.9 Bolts, nuts, screws, washers and so forth. Unless otherwise specified in the contract or order (see 6.2), all hardware shall be of a good commercial grade. Steel (CRES excepted) shall be zinc plated.

3.3.10 Plating. Zinc plating shall be used on unpainted parts, such as fastening hardware, to prevent corrosion.

3.3.11 Identification and information.

3.3.11.1 Identification plate. An identification plate in accordance with MIL-P-15024 and MIL-P-15024/5 shall be attached to the battery case. This plate shall include the name of the item, symbol number, specification number, federal stock number and the contractor's name or trademark.

MIL-L-1130E

3.3.11.2 Label. A label, containing a wiring diagram as shown in figure 3 and in accordance with MIL-F-16377, shall be attached to the inner surface of the cover.

3.3.12 Lamp housing. The lamp housing shall be of a size that will accommodate the sealed beam lamp specified in 3.3.14. The thickness of material shall provide protection of the lamp against rough handling. The lamp, cushioned by a rubber gasket, shall be securely held to the lamp housing by a retaining ring. A device such as a screw and captive nut may be used for tightening the retaining ring. The gasket shall be a good commercial grade rubber tape at least 1 inch wide and shall completely encircle the lamp to provide a drip-proof seal and to protect the lamp against excessive vibration and rough handling.

3.3.13 Battery. When batteries are specified (see 6.2), they shall be comprised of four cells, type 2V-20AH-4D-A, in accordance with DOD-B-15072 and DOD-B-15072/3.

3.3.14 Lamp. Unless otherwise specified in the contract or order (see 6.2), lamps, industry number 4524 in accordance with MS 15607 shall be furnished.

3.3.15 Cable. Unless otherwise specified (see 6.2), the cable interconnecting the lamp housing and battery case shall be SJO(or SJT)-18/2, UL approved. Rubber grommets of a good commercial grade shall be used to prevent the entrance of moisture where cable enters lamp housing and battery case cover.

3.3.16 Connecting wires. The connecting wires shall be a good commercial type, UL approved, of not less than 950 circular mils. All connecting wires liable to chafing and grounding shall be suitably insulated and coated with a black acid-resisting paint.

3.3.16.1 Wire terminals. Closed lead coated wire terminals, UL approved, shall be provided for connecting to the battery terminals and to the lamp.

3.3.17 Switch. The toggle switch shall be a UL approved type conforming to MS 16656. A rubber boot shall be used to prevent the entrance of moisture into the switch.

3.3.18 Dielectric strength. There shall be no evidence of breakdown (see 4.6.2).

3.3.19 Insulation resistance. The insulation resistance between all current-carrying and non-current-carrying parts shall be not less than 100 megohms (see 4.6.3).

3.3.20 Salt spray. Equipment made of steel or aluminum, subject to weather deck usage, shall satisfactorily withstand the salt spray test (see 4.6.4).

3.3.21 Weight. The total weight of the lantern, complete with batteries, ready for operation, shall not exceed 30 pounds.

MIL-L-1130E

3.4 Repair parts. When specified (see 6.2), repair parts shall consist of two lamps for each complete lantern.

3.5 Manuals. A manual in accordance with type I of MIL-M-15071 shall be furnished with each lantern.

3.6 Workmanship. Workmanship shall be first class in every respect.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order (see 6.2), the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

- (a) First article inspection (see 4.3)
- (b) Quality conformance inspection (see 4.4).

4.3 First article inspection. First article inspection shall consist of the examination and tests specified in 4.5 and 4.6. Production shall not be started until the preproduction inspection report has been approved by the command or agency concerned.

4.4 Quality conformance inspection.

4.4.1 Lot. A lot shall consist of all lanterns offered for delivery at one time.

4.4.2 Sampling for examination. Sample lanterns shall be selected at random in accordance with MIL-STD-105, at inspection level I, for the examination specified in 4.5. The AQL shall be 2.5 defective. Any lantern in the sample containing one or more defects shall not be offered for delivery and if the number of nonconforming lanterns in any sample exceeds the acceptance number for that sample, the lot represented by the sample shall not be offered for delivery.

MIL-L-1130E

4.4.3 Sampling quality conformance tests. Sample lanterns shall be selected at random in accordance with MIL-STD-105 at inspection level L4 for the tests specified in 4.6.1 through 4.6.3. If any sample fails to comply with these tests, the lantern and the lot represented thereby shall not be offered for delivery.

4.4.4 Acceptable commercial parts. For component parts, such as cable, wire, connectors, lamps, switches, wire terminals, tape and so forth the contractor shall certify that the material offered conforms to the following as applicable:

- (a) UL approved
- (b) Conforms to ASA standards
- (c) Complies with specification requirements
- (d) Conforms to known acceptable commercial standards.

4.5 Examination. Each sample selected in accordance with 4.4.2 shall be subjected to a surface examination to ascertain that shape, material, dimensions, marking, weight and workmanship conform to the requirements of this specification.

4.6 Tests.

4.6.1 Operation. The lantern, with batteries installed, shall be operated by actuating the switch ten times. The lamp housing shall operate smoothly throughout its arc. The tightening device shall assure positive locking in any desired position.

4.6.2 Dielectric strength. Each sample selected shall be subjected, for 1 minute, to a dielectric test voltage, the effective potential of which is 1000 volts, applied between points of polarity and also between live parts and ground. The frequency of the test voltage shall be 60 Hertz root mean square, alternating current and shall approximate a true sine wave.

4.6.3 Insulation resistance. Insulation resistance shall be measured between all current-carrying parts and non-current-carrying parts with a megometer at a voltage not less than 500 volts direct current at normal room temperature. This test shall follow the dielectric test.

4.6.4 Salt spray. Salt spray test shall be conducted in accordance with MIL-E-2036.

4.7 Inspection of packaging. Sample packages and packs, and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of section 5 and the documents specified herein.

5. PACKAGING

(The packaging requirements specified herein apply only for direct Government acquisition. For the extent of applicability of the packaging requirements of referenced documents listed in section 2, (see 6.5).)

MIL-L-1130E

5.1 Preservation, packaging, packing and marking. Preservation, packaging, packing and marking shall be in accordance with MIL-F-3222 as specified (see 6.2).

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. This lantern is intended to provide temporary illumination during damage control operations.

6.2 Ordering data. Acquisition documents should specify the following:

- (a) Title, number, and date of this specification
- (b) Type of hardware, if other than specified (see 3.3.9)
- (c) Whether batteries are to be furnished (see 3.3.13)
- (d) Type of lamp, if other than specified (see 3.3.14)
- (e) Type of cable required if other than specified (see 3.3.15)
- (f) Whether repair parts are to be furnished (see 3.4)
- (g) Level of preservation, packaging, packing and marking required (see 5.1).

6.3 Symbol number 105, listed in publication NAVSHIPS 250-560-3, is assigned to this lantern.

6.4 First article. When a first article inspection is required, the item shall be a first article sample. The first article shall consist of one unit. The contracting officer shall include specific instructions in acquisition documents regarding arrangements for examinations, approval of first article test results and disposition of first articles. Invitations for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract.

6.5 Sub-contracted material and parts. The packaging requirements of referenced documents listed in section 2 do not apply when material and parts are acquired by the contractor for incorporation into the equipment and lose their separate identity when the equipment is shipped.

6.6 Subject term (key word) listing.

Cell, battery
Drip-proof
Enamel
Zinc

MIL-L-1130E

6.7 Changes from previous issue. Asterisks are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Army - MO
Navy - SHIPS

Preparing activity:
Navy - SH
(Project 6230-1005)

MIL-L-1130E

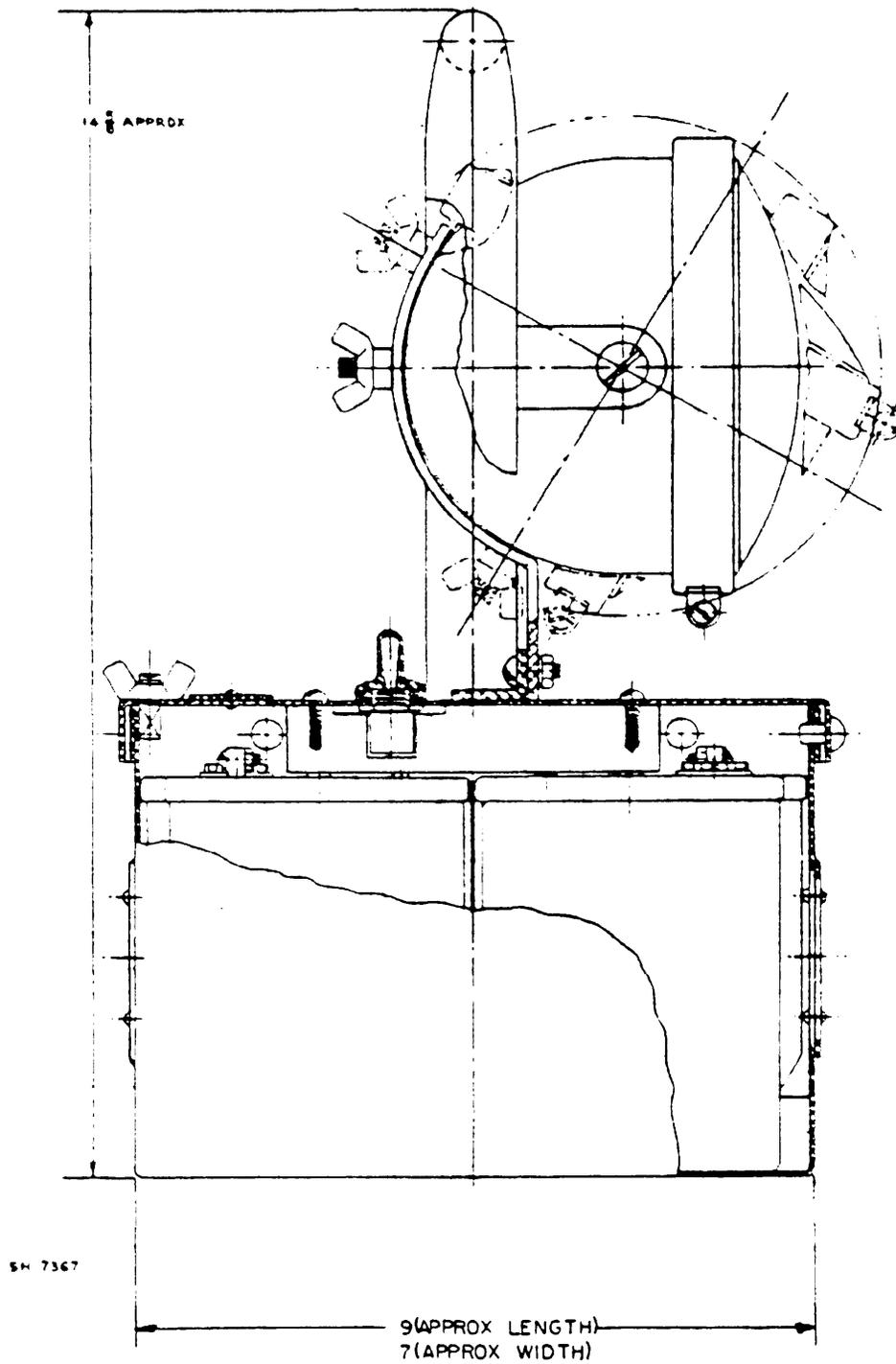


FIGURE 1. *Electric lantern - outline drawing.*

MIL-L-1130E

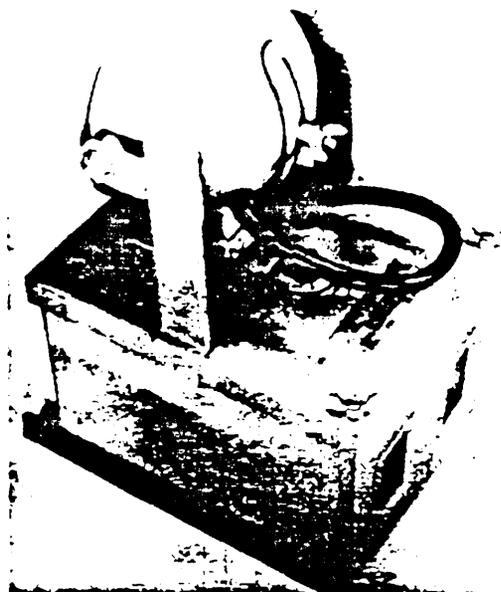
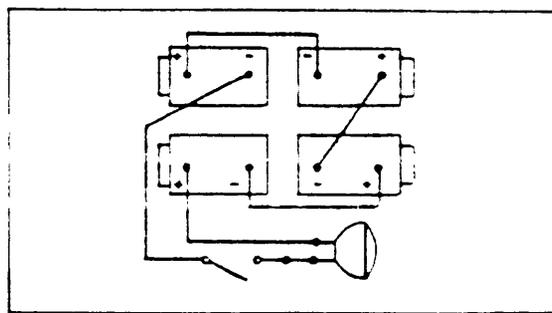


FIGURE 2. *Electric lantern.*



54 76 85

FIGURE 3. *Wiring diagram.*

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-L-1130E		2. DOCUMENT TITLE LANTERN, ELECTRIC, STORAGE BATTERY. FLOODLIGHTING, HAND CARRIED	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
b. ADDRESS (Street, City, State, ZIP Code)		<input type="checkbox"/> VENDOR	
		<input type="checkbox"/> USER	
5. PROBLEM AREAS		<input type="checkbox"/> MANUFACTURER	
		<input type="checkbox"/> OTHER (Specify): _____	
		a. Paragraph Number and Wording:	
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	

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NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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