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MILITARY SPECIFICATION

FLOODLIGHT, ELECTRIC, EXPLOSION PROOF 300 WATTS MAXIMUM, ADJUSTABLE STAND MOUNTED

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

1. SCOPE

1.1 Scope. This specification covers a stand-mounted, explosion-proof floodlight utilizing any of the three medium screw-or skirted-base lamps listed herein.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

* 2.1.1 Specifications and standards. Unless otherwise specified (see 6.2), the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

SPECIFICATIONS

MILITARY

*	DOD-D-1000	-	Drawing, Engineering and Associated List.
	MIL-F-3222	-	Floodlights and Lanterns, Packaging of.
	MIL-C-5756	-	Cable and Wire, Power, Electric, Portable.
	MIL-C-7989	-	Covers, Light-Transmitting, for Aeronautical Lights, General Specifications for.

STANDARDS

MILITARY

*	MIL-STD-130	-	Identification Marking of U. S. Military Property.
	MIL-STD-143	-	Standards and Specifications, Order of Precedence for the Selection of.
*	MIL-STD-810	-	Environmental Test Methods.
	MS25355	-	Floodlight, Explosion Proof, 300 Watts Maximum, Adjustable Stand Mounted.

* Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: the Engineering Division, San Antonio ALC/MMEDO, Kelly AFB, Texas 78241 by using the self addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

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

* 2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

UNDERWRITERS' LABORATORIES, INC.

Standard UL-844 - Electric Lighting Fixtures for Use in Hazardous Locations.

(Application for copies should be addressed to the Underwriters' Laboratories, Incorporated, 333-T Pfingsten Road, Northbrook, Ill. 60662).

* 2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

3. REQUIREMENTS

3.1 First article. When specified, the contractor shall furnish a sample unit for first article inspection and approval (6.2.1).

3.2 Components. The floodlight shall consist of:

Item No.	Quantity	Description	See Requirement
1	1	Fixture assembly	3.7
2	1	Base	3.8
3	1	Mast	3.9
4	1	Cord	3.10
5	1	Connector	3.11

* 3.3 Selection of specifications and standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with MIL-STD-143 except as specified in 3.3.1 and 3.3.2.

3.3.1 Commercial parts. Commercial parts having suitable properties may be used where, on the date of invitation for bids, there are no suitable standard parts. In any case, commercial utility parts, such as screws, bolts, nuts, and cotter pins, having suitable properties may be used provided:

(a) They can be replaced by the standard parts (MS or AN) without alteration.

(b) The corresponding standard part numbers are referenced in the parts list and, if practical, on the contractor's drawings.

* 3.3.2 Standard parts. With the exception specified in 3.3.1, MS and AN standard parts shall be used. They shall be identified on the drawings by their part numbers.

3.4 Materials.

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3.4.1 Metallic parts. Metallic parts for the floodlight shall be made of metals specified. Where ferrous metals are used, they shall be suitably protected against corrosion.

3.4.2 Fungus-proof materials. Materials that are nutrients for fungi shall not be used where it is practical to avoid them. When used and not hermetically sealed, they shall be treated with a fungicidal agent acceptable to the procuring activity. However, if they will be used in a hermetically sealed enclosure, fungicidal treatment will not be necessary.

3.5 Design. The floodlight shall consist essentially of an explosion-proof fixture assembly mounted on an adjustable stand as shown on MS25355. The design shall be such that the floodlight will not cause an explosion if used in areas where explosive mixtures of gasoline vapors are present.

3.6 Construction. The floodlight shall be so constructed that no parts will work loose in service. It shall be built to withstand the strains, jars, vibrations, and other conditions incident to shipping, storage, installation, and service. All exposed metal parts shall be cast or fabricated from non-sparking metal.

3.6.1 Adjustments and repairs. The floodlight shall be so constructed that lamp replacements and all other adjustments and repairs can be easily made by the personnel of operating units and overhaul bases with tools and equipment normally available commercially.

* 3.7 Fixture assembly. The fixture assembly shall conform to MS25355 and shall be designed to accommodate a medium-screw base 120V, 300w, R-40 reflector floodlamp or a medium-skirted base, PAR38 projector floodlamp of either 150w, 120V, or 75w, 30V. The housing shall be fabricated from cast aluminum. The cable entrance into the assembly need not extend to the rear as shown on MS25355, if another position is more advantageous. A support shall be provided for the glass lamp bulb in order to prevent bulb breakage during handling. The support shall not interfere with lamp replacement. Each fixture assembly shall consist of a lens assembly, handle, and yoke.

3.7.1 Lens assembly. The lens assembly shall be designed for removal without the aid of special tools. The glass used in the lens shall be class B, heat-resistant, clear glass in accordance with MIL-C-7989.

3.7.2 Carrying handle. A carrying handle or suitable handgrip shall be provided at the top of the floodlight to facilitate handling.

3.7.3 Mounting yoke. A yoke, designed to mount the fixture assembly on the stand and allow 360° horizontal rotation, shall be provided. Means for holding the yoke in any position in the horizontal plane of rotation shall be provided. The yoke shall be designed to permit the beam to be elevated not less than 45° above and 45° below the horizontal in the vertical plane when base of light is horizontal. Means shall be provided for securely fastening the fixture assembly in any position in the specified vertical plane of rotation without the aid of tools.

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3.8 Base. The base shall consist of three equally spaced legs so designed that they may be folded back against the mast for shipment, or locked in place during use. The legs shall extend out from the stand more than 26 inches. A strap, complete with buckle, shall be provided to maintain the legs in a folded position. The design of the base shall be such that it will support a 150-pound load without failure when the stand is in the operating position.

3.8.1 Caps. The bottom of each leg shall be equipped with a cap of non-sparking metal.

3.9 Mast. The mast shall be of the telescopic type and shall be capable of securely holding the fixture assembly in any position between the extended and retracted positions specified in MS25355.

3.9.1 Tubes. The tubes used for the mast shall be provided with stops to prevent each telescopic section from being pulled out of its mating tube.

3.9.2 Clamp. The design of the clamp for holding the telescoping tubes shall be such that it will hold the tubes in any desired position without causing damage to the tubes. The design of the clamp adjustment shall be such that the clamp may be tightened or loosened without the aid of tools.

3.9.3 Guide. A guide to hold the cord near the mast shall be supplied on the bottom section of the mast. The guide shall be so designed that the cord may be inserted or removed without disconnecting either end of the cord.

3.9.4 Cord bracket. A bracket shall be provided on the mast for storing the cord. The radius of curvature of the surface that supports the cord shall be not less than five times the diameter of the cord.

3.10 Cord. The fixture assembly shall be provided with 100 ±1 feet of No. 16, 3-conductor, heavy-duty, flexible cord in accordance with MIL-C-5756. One end of one conductor of the cord shall be grounded to the fixture assembly and the other end provided with connectors for connecting to the ground terminal of the plug. The other two conductors of the cord shall be used to furnish power to the lamp in the floodlight.

3.11 Connector. The floodlight shall be furnished less plug and receptacle.

3.12 Hazardous locations. The floodlight, including cord and stand, shall conform to Underwriters' Laboratories, Inc., Standard UL-844, Class I, Group D (see 6.3).

* 3.13 Interchangeability. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable. The drawing number requirements of DOD-D-1000 shall govern changes in the manufacturer's part number.

3.14 Dimensions. Dimensions and tolerances not specified shall be as close as is consistent with the best shop practices. Where dimensions and tolerances may affect the interchangeability, operation, or performance of the floodlight, they shall be held or limited accordingly.

3.15 Weight. The weight of the floodlight, without the 100 ±1 feet of extension cord, shall be not more than 50 pounds.

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3.16 Operation markings.

3.16.1 Warning plate. Each floodlight shall have the following information molded into it or provided on a plate securely attached in a convenient and conspicious location:

CAUTION

If the connection to the electrical circuit is in an area where explosive gases are present, an explosion-proof plug and receptable shall be used. If the connection is made outside of the hazardous area, a three-conductor grounded lug may be used.

3.16.2 Lamp replacement warning. The following information shall be molded into the light, provided on a separate plate attached in a conspicious location, or included on the warning plate specified in 3.16.1:

Do not replace lamp or disassemble light in hazardous locations. Use any of the following lamps depending upon the service voltage and desired wattage:

300w, 120V, R-40

150w, 120V, PAR38

75w, 30V, PAR38

3.17 Identification of product. Equipment, assemblies, and parts shall be marked for identification in accordance with MIL-STD-130. The following additional marking shall be included:

MS25355-1

3.18 Workmanship. The floodlight, including all parts and accessories, shall be constructed and finished in a workmanlike manner. Particular attention shall be given to neatness and thoroughness of soldering, wiring, marking of parts and assemblies, welding and brazing, painting, riveting, machine screw assemblies, and freedom of parts from burrs and sharp edges.

* 3.18.1 Riveting. Riveting operations shall be performed to insure that the rivets are tight and satisfactorily headed.

3.18.2 Cleaning. The floodlight shall be thoroughly cleaned, and loose, spattered, or excess solder, metal chips, and other foreign materials removed during and after final assembly.

4. QUALITY ASSURANCE PROVISIONS

* 4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, 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 assure supplies and services conform to prescribed requirements.

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

a. First article inspection (see 4.2.1).

b. Quality conformance inspection (see 4.2.2).

c. Packaging inspection (see 4.5).

* 4.2.1 First article inspection. When specified (see 6.2.1) first article inspection shall be performed on the preproduction sample or first production item. First article inspection shall consist of the examination in 4.3 and the tests of 4.4.1 through 4.4.5. Failure of the first article to pass any examination test shall be cause for rejection.

* 4.2.2 Quality conformance inspection.

* 4.2.2.1 Inspection and tests. Quality conformance inspection shall be applied to production units offered for acceptance under the contract. Inspection shall consist of a. through f. as follows, and failure of any unit to pass an examination or test shall be cause for rejection of the unit.

a. Production examination (see 4.3).

b. Explosion test (see 4.4.1).

c. Pressure test (see 4.4.2).

d. Operating temperature test (see 4.4.3).

e. Cord strain relief test (see 4.4.4).

f. Drop test (see 4.4.5).

* 4.2.2.2 Sampling. Sampling for examination and test shall be performed in accordance with MIL-STD-105, level II AQL of 4.0.

* 4.3 Examination. The floodlight shall be examined for proper operation of all parts in compliance with the requirements specified in the applicable Underwriters' Laboratories, Inc., standards.

4.4 Test.

* 4.4.1 Explosion chamber. The floodlight shall be subjected to the explosion-proof test in accordance with Procedure II, Method 511.1 of MIL-STD-810, except that the rest shall consist of at least 30 explosions which may be made at any simulated altitude from sea level to 5,000 feet. None of the internal explosions shall cause an explosion in the surrounding atmosphere in the explosion chamber. No sparks or flames shall be observed outside of the floodlight assembly. No failure of any part of the assembly, with the exception of the lamp, shall result. The peak explosion pressure shall be determined in this test for use in the pressure test described in 4.4.2.

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4.4.2 Pressure. The floodlight shall be subjected to a maximum hydrostatic pressure equal to four times the maximum pressure recorded in 4.4.1 during an explosion. There shall be no rupture or permaner distortion of any part of the assembly.

4.4.3 Operating temperature. The floodlight shall be operated with a 300w, 120V lamp until temperature stabilization is reached. The maximum observable temperature inside or outside the assembly shall not exceed 275°C., based on an ambient temperature of 40°C.

4.4.4 Cord strain relief. The cord shall be subjected to a 50-pound pull for a period of 1 minute. There shall be no strain placed on the terminals of the lamp socket, and there shall be not more than 1/16 inch slippage.

4.4.5 Drop test. The floodlight shall be allowed to drop in free fall to a concrete surface from a height of 8 feet. It shall be dropped at least three times so that the initial point of contact is at least once on the top of the assembly, once on the side of the assembly, and once on the front of the lens holder. There shall be no failure or weakening of any part, such that the floodlight would no longer retain an explosion. There shall be no damage or deformation of the lamp socket or lamp support.

4.5 Inspection of packaging. The preservation, packing and marking shall be examined to determine compliance with the referenced documents in section 5 of this specification.

* 5. PACKAGING

5.1 Preservation and packaging. Preservation and packaging shall be level A, B or commercial in accordance with MIL-P-3222 as specified (see 6.2.1).

5.2 Packing. Packing shall be level A, B or commercial as specified (see 6.2). Packing shall be accomplished as stipulated in MIL-F-3222.

5.3 Marking. Marking shall be in accordance with MIL-F-3222.

5.3.1 Additional marking. The following marking shall be added:

Floodlight, Electric, Explosion Proof, 300 Watts Maximum, Adjustable Stand Mounted.
MS25355-1

6. NOTES

6.1 Intended use. The floodlight covered by this specification is intended for aircraft maintenance use in areas where explosive gasses may be present.

6.2 Ordering data.

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* 6.2.1 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.

b. Levels of preservation-packaging and packing (see 5.1 and 5.2).

c. Point of first article testing.

6.3 Electrical hazards certification. The bidder will submit proof of the procuring activity that the floodlight which he proposes to supply under this specification conforms to the standards of the Underwriters' Laboratories, Inc., as specified in 3.12. The label or listing of Underwriters' Laboratories, Inc., will be accepted as evidence of conforming to the specification requirements.

6.3.1 In lieu of the label or listing, the bidder may submit independent proof satisfactory to the procuring activity that this floodlight conforms to the published standards including methods of tests, of Underwriters' Laboratories, Inc., for Class I, Group D, hazardous locations. Compliance with the fire and casualty hazard requirements does not absolve the bidder from complete compliance with the other requirements of this specification.

6.3.2 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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1. DOCUMENT NUMBER	2. DOCUMENT TITLE

3a. NAME OF SUBMITTING ORGANIZATION	4. TYPE OF ORGANIZATION *(Mark one)*
	☐ VENDOR ☐ USER ☐ MANUFACTURER ☐ OTHER *(Specify)*:
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5. PROBLEM AREAS

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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