Downloaded from http://www.everyspec.com

INCH-POUND

MIL-DTL-32361A
6 July 2011
SUPERSEDING
MIL-DTL-32361
5 November 2010

DETAIL SPECIFICATION

COMPOSITE LIGHT, TAIL STOP, TURN AND MARKER

Inactive for new design after 6 July 2011. For new design, use MIL-PRF-32212.

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

1. SCOPE

1.1 Scope. This specification covers a vehicular taillight, which includes a stop and turn signal and blackout lighting.

1.2 Classification. The taillights are of the following types and electrical lead lengths as specified below.

1.2.1 Types. The types of taillights are as follows (see 6.2):

Type I - 12 volts direct current (VDC)
Type II - 24 VDC

1.2.2 Electrical lead lengths. The electrical lead lengths are as follows (see 6.2):

Electrical lead length A - 9 ±0.38 inches (all type I taillights)
Electrical lead length B - 15 ±0.38 inches

Comments, suggestions, or questions on this document should be addressed to Defense Logistics Agency Aviation VEB, 8000 Jefferson Davis Highway, Richmond, VA 23297-5616, or e-mailed to STDZNMGT@dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST database at https://assist.daps.dla.mil/.

AMSC N/A FSC 6220

Downloaded from http://www.everyspec.com

1.3 Part or identifying number (PIN). The PIN to be used for taillights acquired to this specification is created as follows:

MS 52125 - X X

Example of reference part number: MS52125 - 1A

Electrical lead length: A - 9 ±0.38 inches (all type I)
B - 15 ±0.38 inches

Type: 1 - I - 12 VDC
2 - II - 24 VDC

Specification number

MS prefix (retaining MS part number)

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of the documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standard. The following specifications and standard form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

FEDERAL STANDARD

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

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-130 - Identification Marking of U.S. Military Property
MIL-STD-202 - Electronic and Electrical Component Parts

(Copies of these documents are available online at https://assist.daps.dla.mil/ or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other government drawing. The following other government drawing forms a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation or contract.

Downloaded from http://www.everyspec.com

DRAWING

ARMY

11614157	- Composite Light, Tail, Stop, Turn & Marker

(Copies of this drawing are available from US Army Tank-Automotive & Armaments Command, Attn: AMSTA-TR-E/ESA, 6501 East 11 Mile Road, Warren, MI 48397-5000.)

2.3 Non-government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

AMERICAN SOCIETY FOR QUALITY (ASQ)

ASQ Z1.4	- Sampling Procedures and Tables for Inspection by Attributes

(Copies of this document are available online at http://www.asq.org or from the American Society for Quality, 600 North Plankinton Avenue, Milwaukee, WI 53023.)

ASTM INTERNATIONAL

ASTM B85/B85M	- Standard Specification for Aluminum-Alloy Die Castings
ASTM G21	- Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

(Copies of these documents are available online at http://www.astm.org/ or from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.)

SAE INTERNATIONAL

SAE J585	- Tail Lamps (Rear Position Lamps) for Use on Motor Vehicles Less than 2032 mm in Overall Width
SAE J586	- Stop Lamps for Use on Motor Vehicles Less than 2032 mm in Overall Width

(Copies of these documents are available from http://www.sae.org/ or from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001.)

Downloaded from http://www.everyspec.com

2.4 Order of precedence. Unless otherwise noted herein or in the contract, in the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The tail, stop, turn, and marker composite light (herein after referred to as "taillight") shall be as shown in figure 1 and as specified herein.

3.2 Design.

3.2.1 Wiring diagram and lamps. The taillight shall use the wiring diagram and lamps shown in 11614157.

3.2.2 Waterproofness. The taillight shall display no evidence of leakage under visual examination and shall be operable, in accordance with 3.4, during and subsequent to submersion when subjected to the tests of 4.4.4.

3.2.3 Salt atmosphere. The taillight shall display no evidence of corrosion under visual examination and shall be fully operational, in accordance with 3.4, following the salt atmosphere test of 4.4.5.

3.2.4 Vibration. The taillight shall display no evidence of damage under visual examination and shall be fully operational, in accordance with 3.4, following the vibration test of 4.4.6.

3.2.5 Shock. The taillight shall display no evidence of damage under visual examination and shall be fully operational, in accordance with 3.4, following the shock test of 4.4.7.

3.2.6 Fungus resistance. Materials that are nutrients for fungi shall not be used where it is practical to avoid them. Where used and not hermetically sealed, they shall be treated with a fungicide agent in accordance with ASTM G21. However, if they will be used in a hermetically sealed enclosure, fungicidal treatment will not be necessary.

3.2.7 Identification. Equipment, assemblies, and parts shall be marked for identification in accordance with MIL-STD-130. Identification shall include the PIN (see 1.3) and the manufacturer's Commercial and Government Entity (CAGE) code.

3.2.8 Photometric requirements. Photometric characteristics are to be in accordance with SAE J585 and SAE J586.

3.2.9 Thermal shock. The taillight shall display no evidence of damage under visual examination and shall be fully operational, in accordance with 3.4, following the thermal shock test of 4.4.8.

Downloaded from http://www.everyspec.com

3.3 Materials.

3.3.1 Housing. The main two-piece housing shall be constructed from aluminum alloy A360 in accordance with ASTM B85/B85M.

3.3.2 Threads. All threads shall be in accordance with FED-STD-H28.

3.3.3 Electrical leads. The electrical leads shall be 9.00 ±0.38 inch for electrical lead length A, and 15.00 ±0.38 inch for electrical lead length B.

3.3.4 Workmanship. Workmanship shall be in accordance with high-grade automotive manufacturing practices appropriate to rugged, high-reliability taillights.

3.3.5 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible, provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.4 Operation. The taillight shall give no indication of electrical or mechanical faults when tested in accordance with 4.4.3.

4. VERIFICATION

4.1 Classification of inspection. The inspection requirement specified herein is classified as conformance inspection (see 4.3).

4.2 Sampling.

4.2.1 Lot. For purposes of sampling, a lot shall consist of not more than 100 taillights of the same type, assembled from the same batch components or subassemblies, and offered for delivery at one time.

4.2.2 Sampling for conformance inspection. A random sample of taillights shall be selected from each lot and subjected to the inspections specified in 4.3. Sampling shall be in accordance with ASQ Z1.4, inspection level III, with the acceptance quality limit (AQL) as specified in the contract (see 6.2).

4.3 Conformance inspection. Unless otherwise specified (see 6.2), each of the sample taillights selected in accordance with 4.2.2 shall be subjected to the examinations and tests specified in table I.

Downloaded from http://www.everyspec.com

TABLE I. Conformance inspection.

Inspection	Requirement	Verification	Examination	Test
Design and materials	3.2 through 3.3.5	4.4.2, 4.4.4, 4.4.5, 4.4.6, 4.4.7, 4.4.8	X	-
Operation	3.4	4.4.3	-	X

4.4 Verification methods. The types of verification methods included in this section are visual, inspection, measurement, sample tests, full-scale demonstration tests, simulation, modeling, engineering evaluation, component properties analysis, and similarity to previously approved or previously-qualified designs.

4.4.1 Verification alternatives. The manufacturer may propose alternative test methods, techniques, or equipment, including the application of statistical process control, tool control, or cost-effective sampling procedures, to verify performance. Refer to contract (see 6.2) for alternatives to verifications required by this specification.

4.4.2 Design and materials. Conformance to 3.2 through 3.3.5 shall be determined by inspection of contractor records providing proof or certification that design, construction, processing, and materials conform to requirements. Visual verification discovering that the required components specified herein are not used shall constitute failure of this test (see 4.4).

4.4.3 Operation. Each sample taillight shall be visually tested by individually energizing each of the four circuits contained within the taillight with 12 VDC for type I or 24 VDC for type II, to verify proper operation and illumination. Failed lamps may be replaced.

4.4.4 Waterproofness. The taillight shall withstand the waterproofness tests of 4.4.4.1 through 4.4.4.4.

4.4.4.1 Saline solution. The salt used shall be sodium chloride containing on a dry basis not more than 0.1 percent of sodium iodide and not more than 0.2 percent of total impurities. The solution shall be prepared by dissolving 5 parts by weight of salt in 95 parts by weight of distilled water or other water containing not more than 200 parts per million of total solids. The solution shall be kept free of sediment by filtration or decantation.

4.4.4.2 Preparation and initial testing. The taillight, with its electrical connections, shall be submerged in a container with the uppermost surface of the assembly a minimum of 1 inch below the surface of the saline solution. The container and assembly shall be installed in a transparent, sealed chamber capable of supporting both vacuum and pressurization. The assembly shall initially be operated while submerged for 30 minutes and shall be carefully observed during its entire period of submersion.

Downloaded from http://www.everyspec.com

4.4.4.3 Vacuum submersion testing. The chamber shall be evacuated to a pressure 6 pounds per square inch (psi) below atmospheric so as to apply a minimum of 6 psi in internal pressure to all voids within the assembly. During this period, the taillight shall be carefully observed for leakage, as evidenced by bubbles escaping from the interior of the assembly. Any leakage shall be considered as noncompliance with the waterproof requirement and the assembly shall be rejected. Bubbles that are the result of entrapped air on the exterior surfaces of the component shall not be considered leakage.

4.4.4.4 Pressure submersion testing. The chamber shall then be pressurized to six pounds above atmospheric and the assembly again operated for 30 minutes. The assembly shall then be disassembled as normally required in servicing and inspection made for the presence of water. If water is present, the assembly shall be rejected. If the assembly is dry, it shall be reassembled and subjected to 15 hours of dry operation (3 separate 5-hour periods). Insulation breakdown or other damage that would impair mechanical or electrical operation of the assembly shall be considered as evidence of failure and the assembly shall be rejected.

4.4.5 Salt atmosphere. The taillight shall successfully withstand 200 hours of salt atmosphere in accordance with MIL-STD-202.

4.4.6 Vibration. The taillight shall successfully withstand one hour in each major axis vibration in accordance with MIL-STD-202, method 201.

4.4.7 Shock. The taillight shall successfully withstand 100 gravity units in each of 3 major axes in accordance with MIL-STD-202, method 202.

4.4.8 Thermal shock. The taillight shall successfully withstand the thermal shock test of MIL-STD-202, method 107.

5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

Downloaded from http://www.everyspec.com

6. NOTES

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

6.1 Intended use. The taillights covered by this specification are intended for use in various types of ground vehicles.

6.2 Acquisition requirements. Acquisition documents should specify the following:

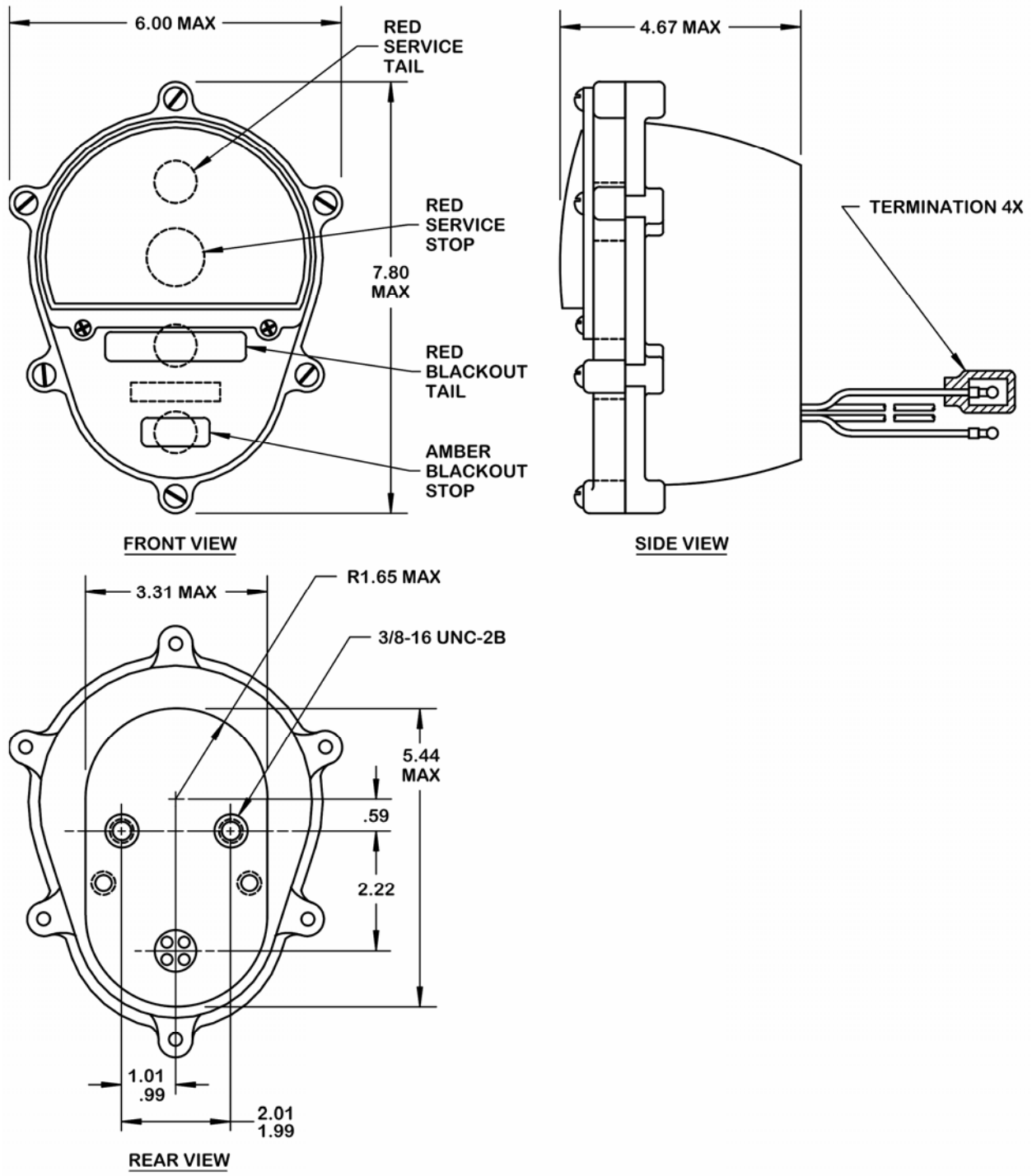
a. Title, number, and date of this specification.
b. Type (see 1.2.1).
c. Electrical lead length (see 1.2.2).
d. AQL (see 4.2.2).
e. Verification alternatives (see 4.4.1).
f. Packaging requirements (see 5.1).

6.3 Subject term (key word) listing.

Fungus resistance
Lamp
Salt atmosphere
Salt spray
Shock
Tactical lighting
Thermal shock
Vehicle lighting
Vibration
Waterproof

6.4 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Downloaded from http://www.everyspec.com



NOTES:
1. All dimensions are in inches.
2. Tolerance: 2-place decimals: ±.01.
3. All radii 0.6 unless otherwise specified.
4. Break all corners R.03.

FIGURE 1. Tail, stop, turn, and marker composite light.

Downloaded from http://www.everyspec.com

Custodians:
Army - AT
DLA - GS

Preparing Activity:
DLA - GS2

(Project 6220-2011-001)

Review Activity:
Army - CR4

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST database at https://assist.daps.dla.mil/.