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# APPROVAL REPORT

**MODEL 2600  
HEADS-UP LITE SEALED HANDHELD FLASHLIGHT  
FOR USE IN  
HAZARDOUS (CLASSIFIED) LOCATIONS**

**Prepared for:**

**Pelican Products  
23215 Early Ave.  
Torrance, CA 90505**

**Project ID: 3013777  
Supplements Project 3D2A5.AX  
Class: 3613, 3611  
Date: May 29, 2002**

Factory Mutual Research Corporation  
1151 Boston-Providence Turnpike  
P.O. Box 9102  
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HEADS-UP LITE HANDHELD FLASHLIGHT  
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May 29, 2002**

**from**

**PELICAN PRODUCTS  
23215 EARLY AVE.  
TORRANCE, CA 90505**

**I INTRODUCTION**

1.1 Pelican Products requested an examination of a Gortex membrane for use in the model 2600 handheld flashlight approved under J.I. 3D2A5.AX. This report supplements this previous Factory Mutual Research Approval Report and outlines only the applicable testing required for this change.

1.2 This report may be reproduced only in its entirety and without modification.

**1.3 Standards:**

| <b>Title</b>   | <b>Class Number</b> | <b>Date</b>   |
|--|---------------------|---------------|
| Electrical Equipment for Use in Hazardous (Classified) Locations, General Requirements   | 3600                | November 1998 |
| Electric Flashlights and Lanterns for Use in Class I, Div. 2, Class I, Zone 2 Hazardous (Classified) Locations                             | 3613                | June 1996     |
| Nonincendive Electrical Equipment for Use in Class I and II, Division 2, and Class III, Divisions 1 and 2 Hazardous (Classified) Locations | 3611                | October 1999  |

1.4 **Listings:** The examination of the new lamp module has not affected the current listing of the flashlight, but the decision to change the part number of the lamp required the listing to be updated..

**2600. HEADS-UP Lite Sealed Handheld Flashlight.**

NI / I / 2 / ABCD / T4A; S / II / 2 / FG / T4A; S / III / 2 / T4A

Special Conditions of Use:

1. When used with 4 "AA" Eveready Energizer E91, Duracell MN1500 or Ray-O-Vac AL-AA or 815-4 Batteries and Lamp Modules  
Cat. No. 2605, Part No. 3753-351-000 or Cat. No. 2604, Part No. 2603-350-050.

## II DESCRIPTION

The model 2600 flashlight is a handheld portable flashlight. The HEADS-UP Lite is sealed for underwater usage and contains a vent valve for pressure relief. It is powered by four series connected "AA" batteries. The lamp is activated by a large On/Off switch located on the side of the flashlight.

## III EXAMINATION AND TESTS

**Enclosure Pressure Test** - Pressure testing was conducted on a series of six samples to determine the maximum internal pressure prior to venting, The test was conducted on fully assembled samples void of batteries. The maximum recorded venting pressure was 0.4 PSI.

## IV MARKING

Marking for the Model 2600 flashlight is specified under 3D2A5.AX . There is no change required on the label as a result of this examination.

## V REMARKS

- 5.1 Only the specific batteries and lamps tested shall be used with this apparatus . The batteries are to be installed according to the manufacturer's instructions.
- 5.2 Only fresh batteries should be used when cells are replaced.
- 5.3 Batteries and lamps must not be replaced in a hazardous area.
- 5.4 Tampering or replacement with non-factory components may adversely affect the safe use of the system.

## VI FACILITIES AND PROCEDURES AUDIT

The manufacturing site in Torrance, CA is subject to follow-up audit inspections. The facilities and quality control procedures in place have been found to be satisfactory to manufacture product identical to that examined and tested as described in this report.

## VII MANUFACTURERS RESPONSIBILITIES

- 7.1 Documentation considered critical to this Approval is on file at Factory Mutual Research and listed in the Documentation File, Section VIII of this report. No changes of any nature shall be implemented unless notice of the proposed change has been given and written authorization obtained from Factory Mutual Research. The Approved Product Revision Report, Form 797, shall be forwarded to Factory Mutual Research as notice of proposed changes.

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**VIII DOCUMENTATION**

The following drawings have been revised and are filed under J.I. 3D2A5.AX.

| <b>Drawing No.</b> | <b>Description</b> | <b>Prev. Issue</b> | <b>New Issue</b> |
|--------------------|--------------------|--------------------|------------------|
| 2600-000           | HEADS-UP ASSY.     | PR                 | C                |
| 2603-350-000       | LAMP HEADS-UP      | PR                 | DELETE           |
| 3753-351-000       | LAMP EMERGENCY     |                    | E                |

**IX CONCLUSION**

The apparatus described in Section 1.1 meets Factory Mutual Research requirements. Approval is effective when the Approval Agreement is signed and received by Factory Mutual Research.

**EXAMINATION AND TESTING BY:** David Denison and Curt Mace

**PROJECT DATA RECORD:** 3013777

**ATTACHMENTS:** None

**REPORT BY:**

**REPORT REVIEWED BY:**



David Denison, Engineer  
Electrical Section  
Approvals Division



Cheryl Gagliardi, Engineer  
Electrical Section  
Approvals Division