Federal Aviation Agency

ADVISORY CIRCULAR CHANGE

AC NO: 150/5345-2 CH 1

AIRPORTS

EFFECTIVE:
10/28/66

SUBJECT: CH 1 TO ADVISORY CIRCULAR 150/5345-2
SUBJ: SPECIFICATION FOR L-810 OBSTRUCTION LIGHT

1. PURPOSE. This advisory circular change transmits page changes to the subject advisory circular. This change provides for a new Alloy 360 in the die casting process.

2. EXPLANATION OF CHANGE. Alloy 360 has been added to page 3, paragraph 6d, line 5.

3. PAGE CONTROL CHART.

Remove Page	Dated	Insert Page	Dated
3	11/4/63	3	10/28/66
4	11/4/63	4	11/4/63

Cole Morrow, Director
Airports Service

Federal Aviation Agency

ADVISORY CIRCULAR

AC NO: AC 150/5345-2
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SUBJECT: SPECIFICATION FOR L-810 OBSTRUCTION LIGHT

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1. PURPOSE. This circular describes the subject specification requirements and is published by the Federal Aviation Agency for the guidance of the public. The use of this specification is required for project activity under the Federal-aid Airport Program.

2. CANCELLATION. This advisory circular replaces FAA Specification L-810, "Obstruction Light," dated September 1, 1961. No substantive changes have been made to the prior specification in placing it in the Advisory Circular System.

3. DESCRIPTION OF PUBLICATION. The specification requirements presented are for an obstruction light for connection to a low voltage circuit. The unit consists essentially of a lens, lamp, socket, and a metal fitting.

4. APPLICABLE SPECIFICATIONS. The following specifications, as referred to hereinafter, of the issues in effect on date of application for qualification (paragraph 8) are applicable to this specification. In case of conflict between this specification and the applicable specification, this specification shall govern.

   a. Federal Specifications. Copies of the Federal Specifications may be obtained from the appropriate regional General Services Administration office.

      (1) QQ-A-591 - Aluminum Alloy Special Shaped Section.

      (2) QQ-A-601 - Aluminum Alloy Sand Castings.

   b. Federal Standards. Copies of Federal standards may be obtained from the office indicated in paragraph 4a.

      (1) Federal Standard No. 595, Colors.

c. Military Specifications. Copies of Military Specifications may be obtained from Armed Service Electro-Standards Agency, Fort Monmouth, New Jersey.

(1) MIL-C-7989 - Covers, Light-Transmitting, For Aeronautical Lights, General Specification For.

(2) MIL-C-25050 - Colors, Aeronautical Lights and Lighting Equipment, General Requirements For.

5. PERFORMANCE REQUIREMENTS.

a. The obstruction light shall be designed to provide a light distribution not less than the minimum candlepower values as shown on Figures 1 and 2 of this specification when tested with a red lens and a 1020 lumen, 6.6 ampere lamp, as specified in paragraph 7a.

(1) The unit shall be designed and constructed for continuous service under the following operating conditions:

(a) Temperature. Any ambient temperature from a minimum of -45°F to a maximum of +120°F at sea level.

(b) Weather. Continuous outdoor operation under all weather conditions.

6. DETAIL REQUIREMENTS.

a. Optical System. The optical system shall consist of a one piece, red glass lens. The lens shall be fabricated from heat-resistant glass conforming to Specification MIL-C-7989, Class B. Color shall be Aviation Red and shall conform to Specification MIL-C-25050, Type I, of the grade having the highest practical transmission. The lens shall have flange dimensions and inside minimum dimensions as shown on Figure 3.

b. Socket. The socket shall be rigidly mounted in the metal fitting. Current carrying parts shall be plated and no material shall be used which carbonizes during flashover.

(1) Medium Screw Base Socket. The socket shall be a medium screw base type. It shall be positioned for use with a lamp having a medium screw base and a 2-7/16 inch light center length. The socket shall provide screw terminals for connection to the incoming leads and shall have a rating of not less than 250 volts and 600 watts.

(2) Medium Prefocus Base Socket. The socket shall be a medium prefocus base type. It shall be positioned for use with a lamp having a medium prefocus base and a 2-3/4 inch light center length. The socket shall provide screw terminals for connection to the incoming leads and shall have a rating suitable for the service intended.

c. Lamps.

(1) Multiple Lamps. 100, 107, and 116 watt, 115-volt, C-9 filament, A-21 clear bulb, 2-7/16 inch light center length, 4-7/16 inch maximum overall length, medium screw base.

(2) Series Lamp. 1020 lumen, 6.6 ampere, C-8 filament, A-21 clear bulb, 2-3/4 inch light center length, 5-5/16 inch maximum overall length, medium prefocus base.

d. Fitting. The fitting for the single obstruction light shall consist of a body, gasket, and a lens-fastening device. The body shall be an aluminum die casting or sand casting. Aluminum sand castings shall conform to Federal Specification QQ-A-601, Alloy 43, 356, or 214, and * aluminum die castings to QQ-A-591, Alloy 13, A13, or 360. The body * shall support and accurately position the lens. Drain holes shall be provided at the bottom of the body and the bottom shall be designed so that condensation and moisture will drain through these holes and not through the conduit entrance. The 2-3/4 inch light center length series lamp or the 2-7/16 inch light center length multiple lamp shall be positioned in the socket to provide the beam elevation specified in Figure 2. The fitting may be made in two types, one with a bottom entrance hub and one with a side entrance hub for mounting vertically on a 1-inch or 3/4-inch pipe or conduit. The lens fastening device shall consist of a lens holding ring, or a separable portion of the body, with not less than two latches provided for holding the lens assembly securely in place on the body of the fitting. The lens shall not become disengaged from the holding ring or separable portion of the body during relamping. The lens assembly shall be attached to the body of the fitting by a chain of adequate length to permit removal for relamping with the lamp in place. A natural or synthetic rubber gasket not less than 1/16 inch in thickness shall be provided between the lens and the lens bearing area of the fitting. This gasket shall be cemented to the fitting and shall not loosen under service conditions.

e. A separate metal socket support may be used. If used, this socket support and all copper bearing hardware in contact with aluminum shall be cadmium, nickel, or zinc plated.

f. Fittings for double obstruction lights shall meet all requirements noted above and shall, in addition, be so designed that the wiring channel can be exposed from the top to facilitate pulling wire.

g. Painting. All exposed surfaces of the obstruction light, except the lens, shall be painted with a prime coat and a finish coat. The finish coat shall be in accordance with Federal Standard No. 595, Colors, Aviation Orange No. 12197.

h. Parts List and Installation Instructions. A complete parts list and installation instructions shall be furnished with each installation. Sufficient drawings or illustrations shall be provided to indicate clearly the method of installation.

7. TESTING.

a. Qualification Testing. The optical performance of the unit shall be determined by photometric readings taken with a 1020 lumen, 6.6 ampere lamp operated at stabilized voltage or current and results corrected to its lumen output. The light shall meet the candlepower requirements of Figures 1 and 2, except that the curve for the vertical distribution may be shifted one degree either side, vertically, to determine photometric compliance. The lamp in the complete assembly shall be lighted one hour prior to testing. Ambient temperature shall not be lower than 70°F nor higher than 90°F.

b. Other inspections and tests will be made as deemed necessary by the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, to determine compliance with this specification.

8. QUALIFICATION.

a. The manufacturer shall furnish a sample obstruction light to a disinterested testing laboratory to be tested as described in paragraph 7 to obtain certification regarding the ability to manufacture equipment meeting the requirements of this specification. The disinterested testing laboratory shall be a laboratory acceptable to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553. The manufacturer shall furnish two copies of the testing laboratory's reports to the Airports Service for review and approval consideration. Upon approval of the test reports which show satisfactory certification of compliance, the Airports Service will list the name of the qualified manufacturer and description of their equipment in Advisory Circular AC 150/5345-1, "Approved Airport Lighting Equipment." The cost of testing shall be borne by the manufacturer offering the material for qualification. In addition, a preproduction model shall be furnished to the Airports Service for physical inspection.

b. The manufacturer shall provide certification from the lens manufacturer that the glassware meets the color and heat-resistant properties specified in paragraph 6a.

c. Parts list and installation instructions shall be submitted with the above test reports to the Federal Aviation Agency, Airports Service, Washington, D. C. 20553.

d. At any time after approval has been granted under the above conditions, a certified copy of factory test reports on the latest production run of equipment produced under this specification shall be made available by the manufacturer upon written request by the Federal Aviation Agency, Airports Service, Washington, D. C. 20553, for review and approval.

9. HOW TO GET THIS PUBLICATION.

a. Order copies of the publication from:

Federal Aviation Agency
Distribution Section, HQ-438
Washington, D. C. 20553

b. Identify the publication in your order as:

FAA Advisory Circular AC 150/5345-2
Specification for L-810 Obstruction Light
Dated 11/4/63

c. There is no charge for this publication.

Chester F. Bowers
Cole Morrow, Director
Airports Service

OBSTRUCTION LIGHT

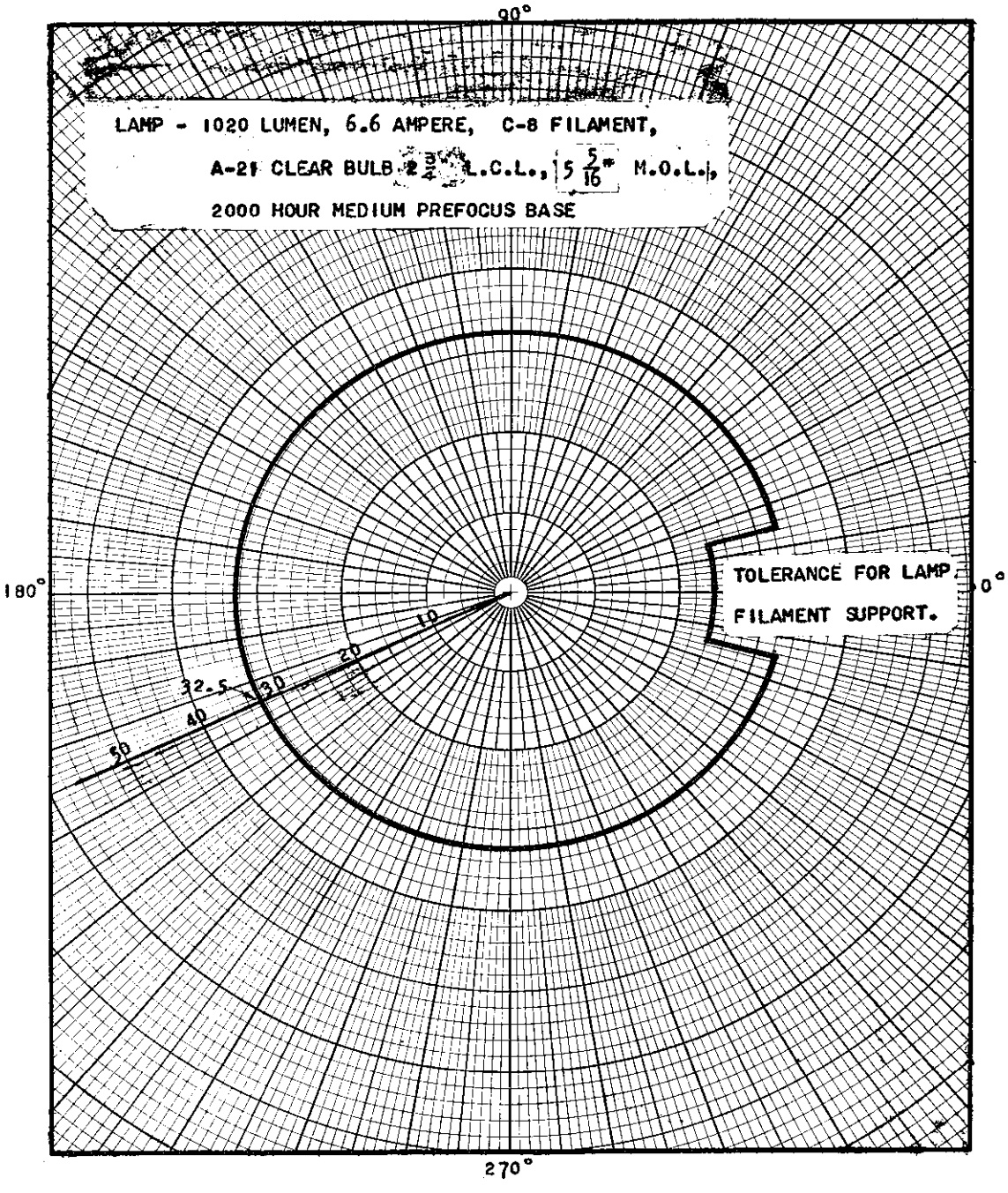


FIGURE 1. MINIMUM HORIZONTAL DISTRIBUTION

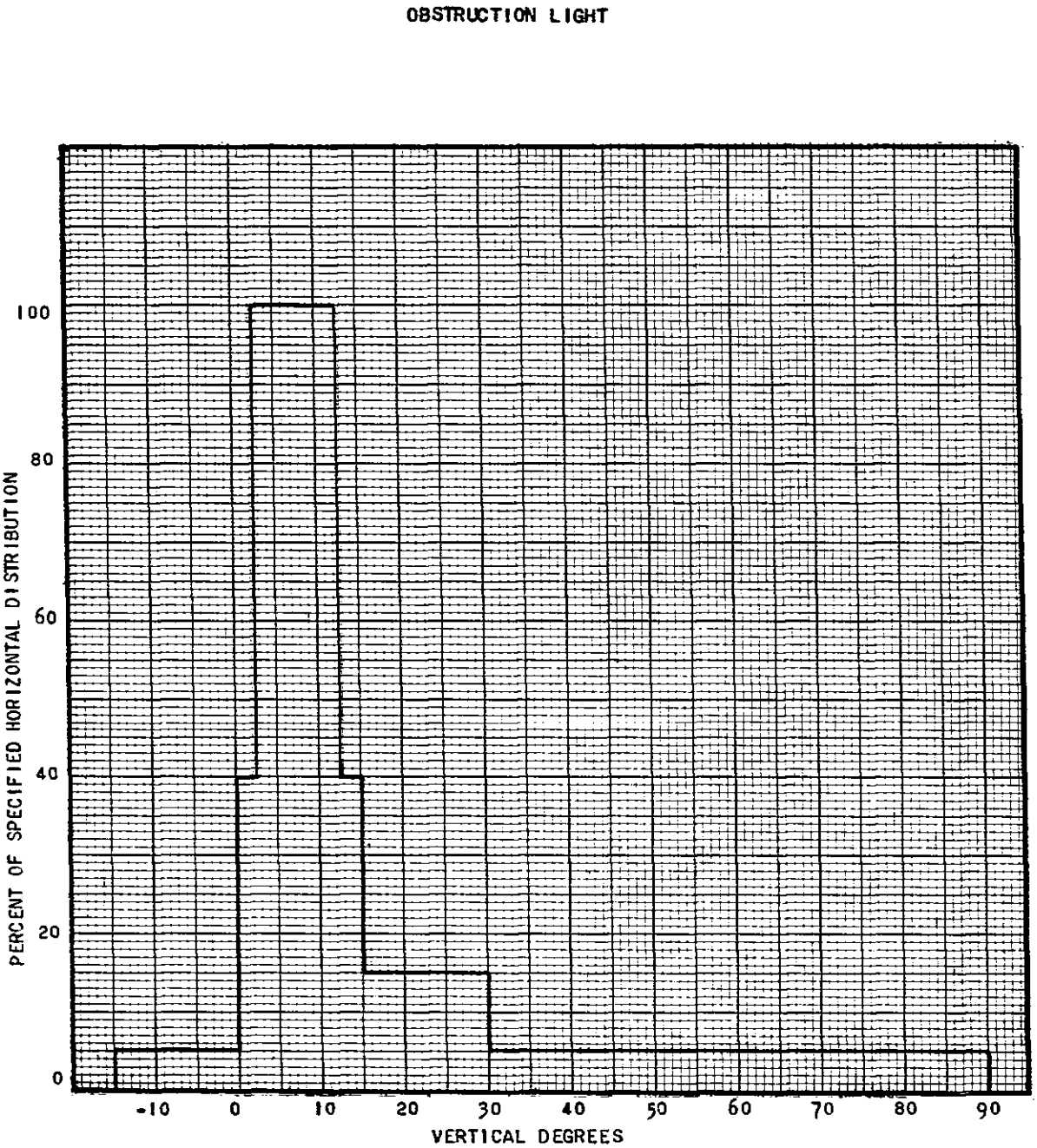
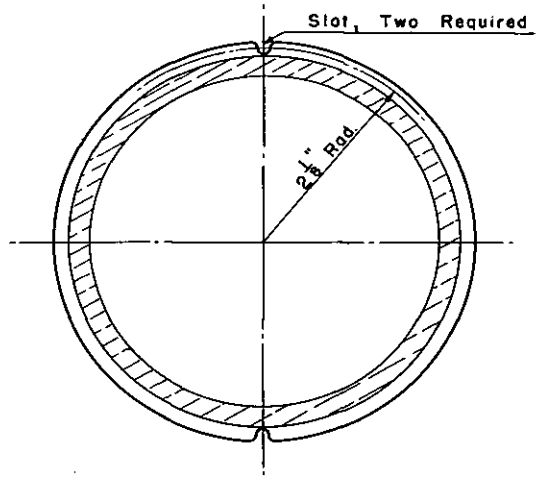
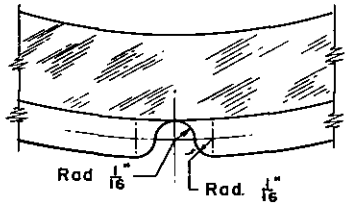


FIGURE 2. VERTICAL DISTRIBUTION THROUGH ANY VERTICAL PLANE

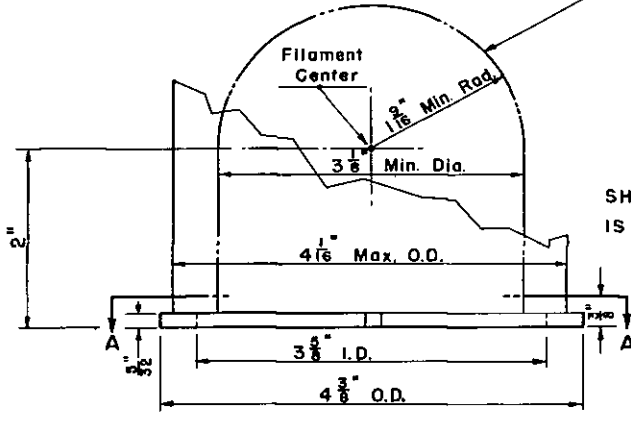


SECTION A-A



ENLARGED VIEW OF SLOT

INSIDE CLEARANCE ABOVE LINE A-A SHALL NOT BE LESS THAN SHOWN BY PHANTOM LINE.



SHAPE ABOVE LINE A-A IS OPTIONAL

FIGURE 3