AC 150/5345-48

CHANGE 2

DATE 1/4/82

ADVISORY CIRCULAR

CHANGE

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Washington, D.C.

Subject: Change 2 to SPECIFICATION FOR RUNWAY AND TAXIWAY EDGE LIGHTS--Revises Equipment Qualification Procedures

1. PURPOSE. This Change revises the procedures for obtaining equipment qualification approval as contained in paragraph 4.

2. EXPLANATION. Procedures for obtaining equipment qualification approval are now contained in AC 150/5345-1G, Approved Airport Lighting Equipment, and supersede those contained in paragraph 4 of this advisory circular.

3. FILING THIS CHANGE. This Change should be filed on the front of the advisory circular. Page changes to reflect this revision will be made at a later date.

Leonard E. Mudd

LEONARD E. MUDD
Director, Office of Airport Standards

Suggest filing this transmittal at the back of the AC. It will provide a reference authority for changes, a method of determining that all Changes have been received, and a check for determining if the AC contains the proper pages.

Initiated by: AAS-200

Reprint Includes Changes 1 and 2

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Initiated by: AAS-200

AC NO: 150/5345-48

DATE: August 1, 1975

ADVISORY CIRCULAR

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

SUBJECT: SPECIFICATION FOR RUNWAY AND TAXIWAY EDGE LIGHTS

1. PURPOSE. This circular contains the specification requirements for airport runway and taxiway edge lights and is for the guidance of the public.

2. CANCELLATIONS. AC 150/5345-9C, Specification for L-819 Fixed Focus Bidirectional High Intensity Runway Light; AC 150/5345-23, Specification for L-822 Taxiway Edge Light; and AC 150/5345-20, Specification for L-802 Runway and Strip Light.

3. REFERENCES. Publications that may be used in connection with this advisory circular are listed in paragraph 2 of the specification.

4. DESCRIPTION OF SPECIFICATION. This equipment specification establishes the performance requirements and pertinent construction details for high intensity, medium intensity and low intensity runway edge lights, and for medium intensity and low intensity taxiway edge lights.

5. BACKGROUND. The need for low intensity runway and taxiway edge lights for use on visual flight rules (VFR) airports has required that a new specification be established. This specification has been included with the consolidation and revision of the current edge light specifications. The high intensity runway lights (HIRL) has been revised to meet ICAO requirements. The medium intensity lights (MIRL) have been revised to provide better circling guidance to pilots.

6. HOW TO OBTAIN THIS CIRCULAR. Additional copies of this circular may be obtained from the Department of Transportation (free of charge), Publications Section, TAD-443.1, Washington, D.C. 20590.

William V. Vitale

WILLIAM V. VITALE
Director, Airports Service

Initiated by: AAS-550

SPECIFICATION FOR RUNWAY AND TAXIWAY EDGE LIGHTS

1. SCOPE.

1.1 Scope. - This specification covers the requirements for edge lights used on airport runways and taxiways.

1.2 Classification. - The following types of edge lights are covered by this specification:

Type	Description
L-860	Low Intensity Runway Edge Light
L-860E	Low Intensity Runway Threshold Light
L-860T	Low Intensity Taxiway Light
L-861	Medium Intensity Runway Edge Light
L-861E	Medium Intensity Runway Threshold Light
L-861SE	Medium Intensity Runway Threshold (Special) Light
L-861T	Medium Intensity Taxiway Light
L-862	High Intensity Runway Light

2. APPLICABLE DOCUMENTS.

2.1 General. - The following documents, of the issue in effect on the date of application for qualification, form part of this specification and are applicable to the extent specified herein.

2.1.1 Federal Specifications and Standards.

QQ-A-591	Aluminum Alloy Die Castings
QQ-A-601	Aluminum Alloy Sand Castings
WW-C-563	Conduit, Metal, Rigid; and Bend and Elbow, Electrical Conduit, Thin-Wall Type (EMT)
Standard 595	Colors

2.1.2 Military Specifications.

MIL-C-7989	Covers, Light-Transmitting, for Aeronautical Lights, General Specifications for.
MIL-C-25050	Colors, Aeronautical Lights and Lighting Equipment, General Requirements for.

2.1.3 ASTM Specifications.

A120-61T	Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Ordinary Uses
AC 150/5345-47	Isolation Transformers for Airport Lighting Systems
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-42	FAA Specification L-857, Airport Light Bases, Transformer Housings, and Junction Boxes

(Information on obtaining Federal specifications and standards may be obtained from General Services Administration offices in Washington, D.C., Atlanta, Boston, Chicago, Denver, Kansas City, Mo., New York, San Francisco, and Seattle.)

(Copies of the referenced military specifications may be obtained from the Commanding Officer, Naval Supply Depot, 5801 Tabor Avenue, Philadelphia, Pennsylvania 19120, Attention: Code CDS.)

(Copies of the referenced ASTM specification may be obtained from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.)

(Copies of the referenced circulars and additional copies of this circular may be obtained from the Department of Transportation, Publications Section, TAD-443.1, Washington, D.C. 20590.)

3. REQUIREMENTS.

3.1 General Functional Requirements. - The lights specified herein are intended for use in delineating the edges of airport runways and taxiways.

3.2 Equipment to be Supplied. - Each light unit shall be furnished complete with all accessories including lamp, connecting leads, frangible fitting, and base plate or mounting stake.

3.3 Environmental Conditions. - The light units shall be designed for use under the following environmental conditions.

3.3.1 Temperature. - Any ambient temperature from a minus 45 degrees celsius to a maximum of plus 50 degrees celsius.

3.3.2 Wind. - Wind velocities up to 350 miles per hour (560 kilometers per hour) for the types L-861 and L-862 units and up to 150 miles per hour (240 kilometers per hour) for the type L-860 units.

3.3.3 Weather. - Continuous outdoor operation under all normal weather conditions.

3.4 Photometric Requirements.

3.4.1 High Intensity Runway Lights (HIRL), Type L-862. - The light units shall meet the photometric requirements as shown in figure 1, when tested with a clear lens and using a lamp rated not more than 210 watts, 6.6 amperes.

3.4.1.1 Light Distribution. - The light distribution shall be asymmetrical with front and rear beams having an elevation of 3.5° and a toe-in of 3.5°.

The beam axis shall be within 1-1/2° of the 3.5° elevation and toe-in angles when the light is level and aimed.

The lights shall show in all angles of azimuth up to 15° above the horizontal with a minimum intensity of 40 candelas.

3.4.1.2 Threshold Light. - The L-862 edge light will be used as a threshold light which will require a 180° aviation green / 180° aviation red filter or lens to meet the intensities as noted on figure 1.

3.4.2 Medium Intensity Runway Lights (MIRL), Type L-861. - The light units shall meet the photometric requirements as shown in figure 2 when tested with a clear lens and a lamp rated not more than 50 watts.

3.4.2.1 Threshold Light, Type L-861E. - The threshold light shall have the light distribution as shown in figure 3 when tested with an aviation green * lens and a lamp of not more than 100 watts. *

3.4.2.2 Threshold Light, Type L-861SE.- An alternate threshold light, required on certain runways, shall have the light distribution as shown in * figure 4 when tested with an aviation green lens, and a lamp of not more than 200 watts. *

3.4.2.3 End of Runway Light. - The end of runway light may be part of the threshold light and shall provide an aviation red signal that, as a minimum, averages 10 candelas over a horizontal angle of 10° and over a vertical angle of 7° above the horizon.

3.4.3 Low Intensity Runway Lights (LIRL), Type L-860. - The light units shall meet the photometric requirements as shown in figure 5 when tested with a clear lens and a lamp of not more than 40 watts.

3.4.3.1 Runway Threshold/End Lights, Type 860E. - Lamps having a rating up to 70 watts maximum may be used to meet the aviation green/red requirements shown in figure 5.

3.4.4 Medium Intensity Taxiway Lights (MITL), Type 861T. - The light unit is identical to the type L-861 runway edge light but with an aviation blue omnidirectional lens and shall meet the intensity requirements as shown in figure 6. Optionally, provide an internal shield for 180° masking.

3.4.5 Low Intensity Taxiway Lights (LITL), Type L-860T. - The light unit is identical to the type L-860 runway edge light but with an aviation blue omnidirectional lens and a lamp to produce 1.5 candelas over a vertical angle of zero to 6 degrees.

3.5 Electrical. - All current-carrying parts of the light units shall be suitable for the service intended and have the capacity to handle at least 10 amperes.

3.6 Detail Requirements.

3.6.1 High Intensity Lights.

3.6.1.1 Optical System. - The optical system shall consist of a glass lens assembly, or combination of lenses, and may include reflectors and shields. This assembly must be easily removed and replaced, and must retain its correct alignment on replacing. Glass lenses shall be fabricated from heat-resistant glass conforming to Military Specification MIL-G-7989, Class B. Colored lenses or colored filters used shall conform to the requirements of Military Specification MIL-C-25050, type I. Reflectors, if used, shall be either stainless steel or aluminum with a specular finish similar and equal to "Alzak".

3.6.1.2 Socket. - The socket shall be mounted rigidly in the housing. The socket shall have a rating suitable for the lamp or range of lamps to be used.

3.6.1.3 Lamp. - The lamp used shall not exceed 210 watts, 6.6 amperes but shall have a rated life of at least 500 hours.

3.6.1.4 Housing. - The housing shall be fabricated from nonferrous metal or from ferrous metal suitably protected against corrosion. Copper bearing hardware in contact with aluminum shall be cadmium-, nickel-, or zinc-plated. Aluminum castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, 360, or 380. Housings shall be of sufficient

strength to cause any breakage to occur at the point of frangibility first. A means for drainage shall be provided in the bottom of the housing to drain condensation and water. The joints between metal and glass shall be sealed by watertight and heat-resistant gaskets, which will withstand 90° celsius temperature without damage, or by a sealing compound where joints are not to be disturbed for relamping.

A continuous flexible, noncorrosive metal band fitted with a trunk latch, or a pressure twist lock arrangement to assure positive holding of the lens shall be provided. The unit shall be designed to require no special tools for relamping or for cleaning the lenses. The housing shall be provided with a means for readily leveling the fixture and orienting the light beams, when mounted.

The housing shall be identified with the Federal Aviation Administration (FAA) designation and the manufacturer's name.

3.6.1.5 Orientation. - The housing shall be marked to indicate correct orientation with respect to the runway centerline. Where the lens and/or reflector assembly is removable for relamping, it shall be keyed for correct orientation. A sighting device or method shall be included on each unit to check alignment of the optical system with respect to adjacent units when installed in place.

3.6.1.6 Leads. - A connecting lead assembly shall be supplied to connect to the receptacle on the secondary lead of an isolation transformer. The lead shall consist of an appropriate length of two-conductor, or two single conductors, 300-volt minimum, No. 16 AWG stranded wire conforming to the provisions of the Underwriters' Laboratories, Incorporated, requirements for type SJ or SJO cord or higher temperature insulation if required. This lead shall terminate in a plug conforming to figure 1(a) of Advisory Circular 150/5345-26. A cable clamp or similar device shall be provided in the fitting or housing to prevent strain at the socket terminals.

3.6.1.7 Mounting Assembly.

3.6.1.7.1 Base Mounts. - The mounting assembly shall consist of an integral or separate breakable coupling, base plate, and pipe column if required. The overall height of the unit, mounted in place, shall not exceed 14 inches above ground level. All parts of the mounting assembly shall be made of nonferrous metal or of ferrous metal suitably protected against corrosion. Aluminum sand castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214; and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, 360, or 380.

The 2-inch breakable coupling shall have a 2"-11-1/2 NPT or NPS male thread for mounting on the base plate. This thread shall conform to the requirements of ASTM Specification A 120-61T. The coupling shall have a "shearing groove" produced by scoring, molding, etc., which will withstand a static load of

300 pounds with less than 1/2-inch deflection when the load is applied perpendicular to the axis of the coupling at a point 12 inches above the shearing groove; and the coupling shall break cleanly at the groove when the static load reaches 500 pounds. The breakable coupling shall have a hexagonal section between the thread and the shearing groove to facilitiate removal of a broken coupling. The breakable coupling shall also be provided with one or more drainage holes near the shearing groove.

The base plate shall have a 2"-11-1/2 NPS female thread to receive the threaded end of the breakable coupling specified above. Means shall be provided for attaching the disconnecting receptacle per figure 1(c) of AC 150/5345-26 to the bottom surface of the base plate to obtain a watertight seal. A weephole or other means shall be used to provide drainage from the space around the disconnecting receptacle to below the watertight seal. The base plate shall be designed so that when the light fixture is assembled to it, the breakable coupling shearing groove shall be not more than 1-1/2 inches above the top of the base flange. The metal base plate shall be cast or fabricated to fit a base conforming to AC 150/5345-42.

A neoprene gasket for the base flange shall be supplied to obtain a watertight seal with the base cover plate. This gasket shall have a minimum effective thickness of 1/8-inch and shall fit the bolt circle of the base flange shown in figure 1 of AC 150/5345-42.

3.6.1.7.2 Stake Mounting. - This mounting shall consist of a supporting column, an integral or separate breakable fitting, a mounting fitting, and a metal stake. The overall height of the unit, mounted in place, shall not exceed 14 inches above the top of the stake.

The breakable fitting shall have a male external thread for mounting into the tapped stake fitting. The fitting shall have a "shearing groove" produced by scoring, molding, etc., which will withstand a static load of 300 pounds with less than 1/2-inch deflection when the load is applied perpendicular to the axis of the coupling at a point 12 inches above the shearing groove; and the coupling shall break cleanly at the groove when a static load of 500 pounds is applied at the same point. The breakable fitting shall have a hexagonal section between the thread and the shearing groove to facilitate removal of a broken fitting. The breakable fitting shall also be provided with one or more drainage holes near the shearing groove.

* The metal stake shall be made of steel angle 2" x 2" x 3/16" with a suitable tapped fitting bolted or welded at the top of the stake for receiving the breakable section. The overall length of the stake with the fitting is to be at least 30 inches. In addition, a removable split holding cup or other holding device shall be provided on the fitting. The fitting and holding device shall be designed to accommodate and hold the rubber receptacle (figure 1(c) of AC 150/5345-26) in a positive position near the disconnect point. *

The metal stake and the breakable fitting shall be so designed that, when assembled, the shearing groove of the fitting shall not be below the top of the stake or more than 2 inches above the stake.

3.6.2 Medium Intensity.

3.6.2.1 Optical System. - The optical system shall consist of a lens assembly that can be easily removed and/or replaced. Glass lenses shall be fabricated from heat-resistant glass conforming to Military Specification MIL-C-7989, Class B. Colored lenses or filters shall conform to the requirements of Military Specification MIL-C-25050, type I.

3.6.2.2 Socket. - The socket shall be mounted rigidly in the lamp housing and shall have a rating suitable to accommodate the lamp of highest wattage to be used.

3.6.2.3 Lamp.- The lamps used shall not exceed 50 watts but shall have a rated life of at least 1,000 hours.

3.6.2.4 Housing. - All metal parts of the housing shall be fabricated from nonferrous metal or from ferrous metal suitably protected against corrosion. Copper bearing hardware in contact with aluminum shall be cadmium-, nickel-, or zinc-plated. Aluminum castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, or 360. Housing shall be of sufficient strength to cause the frangible coupling to break before the housing. A means for drainage shall be provided in the bottom of the housing to drain condensation and water. The joints between metal and glass shall be sealed by watertight and heat-resistant gaskets.

A fastening arrangement to assure a positive holding of the lens shall be provided. The unit shall be designed so that the use of special tools will not be required for relamping or cleaning of lenses and so that lenses will not be damaged in the process. The housing shall be identified with the FAA designation and the manufacturer's name.

3.6.2.5 Leads.

3.6.2.5.1 Multiple Circuits. - A connecting lead of suitable length shall be *supplied with plug and socket to attach to the primary power cable. The lead(s) shall be of No. 16 AWG stranded copper wire conforming to the requirements of type SJ or SJO cord. The male plug shall be premolded to the lead. The female socket may be supplied for making a direct connection or with pigtails for making a spliced connection to the power cable. A cable clamp or similar device shall be provided in the light unit to prevent strain at the socket terminals and allow separation of the plug and socket at the breakable fitting when the fitting breaks. *

3.6.2.5.2 Series Circuits. - A connecting lead assembly shall be supplied to make connections between the socket and the receptacle on the secondary lead

of the isolation transformer. This lead shall consist of an appropriate length of two-conductor or two single-conductor, 300-volt minimum, No. 16 AWG stranded wire conforming to provisions of the Underwriters' Laboratories, Inc., requirements for type SJ or SJO cord. The lead shall be connected to the socket and terminate in a plug conforming to figure 1(a) of Specification L-823, "Plug and Receptacle, Cable Connectors."

A cable clamp, or similar device, shall be provided in the fitting to secure the connecting lead assembly to prevent strain at the socket terminals.

3.6.2.6 Mounting Assembly. - The mounting assembly shall consist of a breakable coupling, pipe column, and base plate or stake, as required. The overall height of the unit, mounted in place, shall not exceed 14 inches above ground level. All parts of the mounting assembly shall be made of nonferrous metal or ferrous metal protected against corrosion. Aluminum sand castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, or 360.

3.6.2.6.1 Stake Mounting. - This mounting shall consist of a supporting column, an integral or separate breakable coupling, a mounting fitting, and a metal stake. The overall height of the unit, mounted in place, shall not exceed 14 inches above the top of the stake.

The column shall be 1-inch National Electrical Code thin-wall steel conduit of the length required and shall conform to Federal Specification WW-C-563 or shall be of other noncorrosive material of equal strength and durability.

The breakable fitting shall have a 1-1/2 -12 UNF-2A male external thread for mounting into the tapped stake fitting. The "shearing groove" produced by scoring, molding, etc., shall withstand a static load of 250 pounds with less than 1/2-inch deflection when the load is applied perpendicular to the axis of the fitting at a point 12 inches above the shearing groove; and shall break cleanly at the groove when a static load of 400 pounds is applied at the same point. There shall be a hexagonal section between the thread and the shearing groove to facilitate removal. The breakable fitting shall also be provided with one or more drainage holes near the shearing * groove. The breakable fitting may optionally have the 2-inch thread (3.6.1.7.1). *

* The metal stake shall be made of steel angle 2" x 2" x 3/16" with a suitable tapped fitting bolted or welded at the top of the stake for receiving the breakable section. The overall length of the stake with the fitting is to be least 30 inches. In addition, a removable split holding cup or other holding device shall be provided on the fitting. The fitting and holding device shall be designed to accommodate and hold the rubber receptacle (figure 1(c) of AC 150/5345-26) in a positive position near the disconnect point. The metal stake and the breakable fitting shall be so designed that, when assembled, the shearing groove shall not be below the top of the stake. *

3.6.2.6.2 Base Mounting. - This mounting shall consist of a supporting column, a breakable section or coupling, and a metal base cover plate with a gasket. The column with breakable section or coupling shall meet the requirements of paragraph 3.6.2.6.1. The base plate shall be designed to receive the threaded end of the breakable coupling specified above. Means shall be provided for attaching the disconnecting receptacle per figure 1(c) of AC 150/5345-26 to the bottom surface of the base plate to obtain a watertight seal. A weephole or other means shall be used to provide drainage from the space around the disconnecting receptacle to below the watertight seal. The base plate shall be designed so that, when the light fixture is assembled to it, the breakable coupling shearing groove shall be not more than 1-1/2 inches above the top of the base flange. The metal base plate shall be cast or fabricated to fit a base conforming to AC 150/5345-42.

A neoprene gasket for the base flange shall be supplied to obtain a watertight seal with the base cover plate. This gasket shall have a minimum thickness of 1/8-inch and shall fit the bolt circle of the base flange shown in figure 1 of AC 150/5345-42.

3.6.3 Low Intensity.

3.6.3.1 Optical System. - The optical system shall consist of a lens assembly that can be easily removed and/or replaced. Glass lenses shall be fabricated from heat-resistant glass conforming to Military Specification MIL-C-7989, Class B. Colored lenses or filters shall conform to the requirements of Military Specification MIL-C-25050, type 1.

3.6.3.2 Socket. - The socket shall be mounted rigidly in the lamp housing and shall have a rating suitable to accommodate the lamp of highest wattage to be used.

3.6.3.3 Lamp. - The lamps used for edge lights shall not exceed 40 watts, 125 V. but shall have a rated life of at least 1,000 hours. Lamps used for threshold lights shall not exceed 70 watts, 125 V.

3.6.3.4 Housing. - All metal parts of the housing shall be fabricated from nonferrous metal or from ferrous metal suitably protected against corrosion. Copper bearing hardware in contact with aluminum shall be cadmium-, nickel-, or zinc-plated. Aluminum castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, 360, or 380. A means for drainage shall be provided in the bottom of the housing to drain condensation and water. The joints between metal and glass shall be sealed by watertight and heat-resistant gaskets. A lens-fastening arrangement and housing identification shall be provided as described in paragraph 3.6.2.4.

3.6.3.5 Leads. - A connecting lead assembly shall be supplied to connect the receptacle to the primary cable. The lead shall consist of an appropriate length of two-conductor, or two single conductors, 300-volt

minimum, No. 16 AWG stranded wire conforming to the provisions of the Underwriters' Laboratories, Incorporated, requirements for type SJ or SJO cord. A cable clamp or similar device shall be provided in the fitting or housing to prevent strain at the socket terminals. If the leads are used on a housing column with a breakable section, the leads shall be supplied with disconnects that will separate at the point of frangibility and leave the leads to the power cable insulated and protected from short circuiting.

3.6.3.6 Mounting Assembly. - The mounting assembly shall consist of a breakable section or fitting, column and/or stake, as required. The overall height of the unit, mounted in place, shall not exceed 14 inches above ground level. All parts of the mounting assembly shall be made of metal or plastic. If of ferrous metal, these parts shall be protected from corrosion. Aluminum sand castings shall conform to Federal Specification QQ-A-601, Alloy 43 or 214, and aluminum die castings shall conform to Federal Specification QQ-A-591, Alloy 13, A13, 360, or 380.

3.6.3.6.1 Stake Mounting. - This mounting may consist of a supporting column, an integral or separate breakable section, and a metal or plastic stake. The column and stake may be combined or composed as one unit. Or, the mounting may consist of a bendable section either as the column or as a combined column/stake.

* Whichever method is used, the overall length of the light housing, column and/or stake shall be at least 44 inches in length in order to provide a stake portion of at least 30 inches. *

The frangibility or bending of the column shall not exceed the limits of frangibility set forth in paragraph 3.6.2.6.1.

3.7 Painting. - Paint for finish coat shall be high quality enamel suitable for the drying process used. The color shall conform to Federal Standard No. 595, Table X, Aviation Yellow, No. 13538. Paint for the prime coat shall be suitable for the metal treatment involved. The parts of the unit to be painted and the number of coats to be applied to the surfaces of each part are as follows:

Base plate and mounting fitting on stake exterior surfaces -- one prime and one finish coat.

Supporting column, breakable coupling, and top fitting (fixture) exterior surfaces -- one prime and one finish coat.

3.8 Parts List and Installation Instructions. - A complete parts list and installation instructions shall be furnished with each new installation and with individual assemblies shipped for maintenance or replacement purposes. Sufficient drawings or illustrations shall be provided to indicate clearly the method of installation. The lamp required to produce the required

photometrics shall be listed. If the light unit is to be used with more than one lamp wattage, specify minimum wattage to meet performance requirements and maximum wattage allowable.

4. QUALITY ASSURANCE PROVISIONS.

4.1 Qualification Procedures. - Manufacturer's producing products, certified by the Federal Aviation Administration (FAA) as having met the requirements specified herein, will be listed as an approved supplier in Advisory Circular 150/5345-1, Approved Airport Lighting Equipment. Requests for qualification should be submitted, in writing, to the Airports Engineering Division, AAS-500, Airports Service, FAA, Washington, D.C. 20591, at least two weeks prior to start of qualification tests. The request shall include: (1) A statement that the manufacturer agrees to comply with all provisions of this specification; (2) A copy of proposed test procedures and test data sheets; and (3) A preliminary copy of drawings, photographs, and installation instructions to permit a preliminary analysis of the manufacturer's design. Successful completion of all tests specified herein and written agreement by the manufacturer to comply with all provisions herein are required for qualification. All tests may be witnessed by an authorized FAA representative and may be conducted at the manufacturer's plant or at an independent testing laboratory acceptable to the FAA. The manufacturer shall bear all testing costs. A certified copy of the test results of all qualification tests shall be submitted to the FAA. A product, once listed in Advisory Circular 150/5345-1, may not be changed as to design, method of manufacture, quality or quantity of materials, or substitution of components without prior concurrence of the FAA.

4.2 Guarantee. - The manufacturer shall provide each customer with at least the following minimum guarantee: That the product has been manufactured in accordance with and will perform as required by the governing specification and that any defect in material or workmanship which may develop during proper and normal use during a period of one year from date of installation or a maximum of two years from date of shipment will be corrected by repair or replacement by the manufacturer f.o.b. factory.

4.3 Qualification Tests.

4.3.1 Visual Examination. - The equipment will be visually inspected for conformance to the applicable design requirements of this specification. In addition, the manufacturer shall furnish a preproduction model to the FAA, Airports Service, Washington, D.C. 20591, for physical inspection and approval.

4.3.2 Photometric Test. - The optical performance of the light units shall be determined by photometric readings taken with the lens and lamp to be furnished with the light unit. The lamp shall be operated at its rated current or voltage during the time photometric measurements are taken.

The resultant isocandela curve may be shifted a maximum of 1^{o} either side, horizontally or vertically, with reference to the applicable specification curve to determine photometric compliance.

4.3.3 Certification.

4.3.3.1 Lens. - A certificate of compliance from the lens manufacturer that the lenses conform to the detail requirements specified in paragraph 3 shall be submitted to the FAA for review and approval.

4.3.3.2 Breakable Fitting. - The manufacturer shall furnish certified test reports showing that the breakable fitting meets the static load requirements of the applicable paragraph(s) dealing with mounting assemblies.

All tests of the breakable fittings shall be performed with the fittings screwed tightly in place in a base plate or stake fitting and with the base plate or stake fitting securely bolted to a firm and rigid foundation.

For these tests, there shall be inserted in the breakable fitting a 16-inch length of round aluminum rod, suitably turned down at one end to fit tightly in the breakable fitting. Do not apply the load faster than 50 pounds per minute, and continue to apply load until the fitting breaks. It is required to test and break five fittings and use the average results obtained in determining the static load tests. The average breaking strength shall not exceed 400 pounds for medium and low intensity lights and 500 pounds for high intensity lights. A description of the test methods, together with test results, shall accompany the request for approval.

Additional inspection and tests will be made, as deemed necessary by the FAA to determine compliance with this specification.

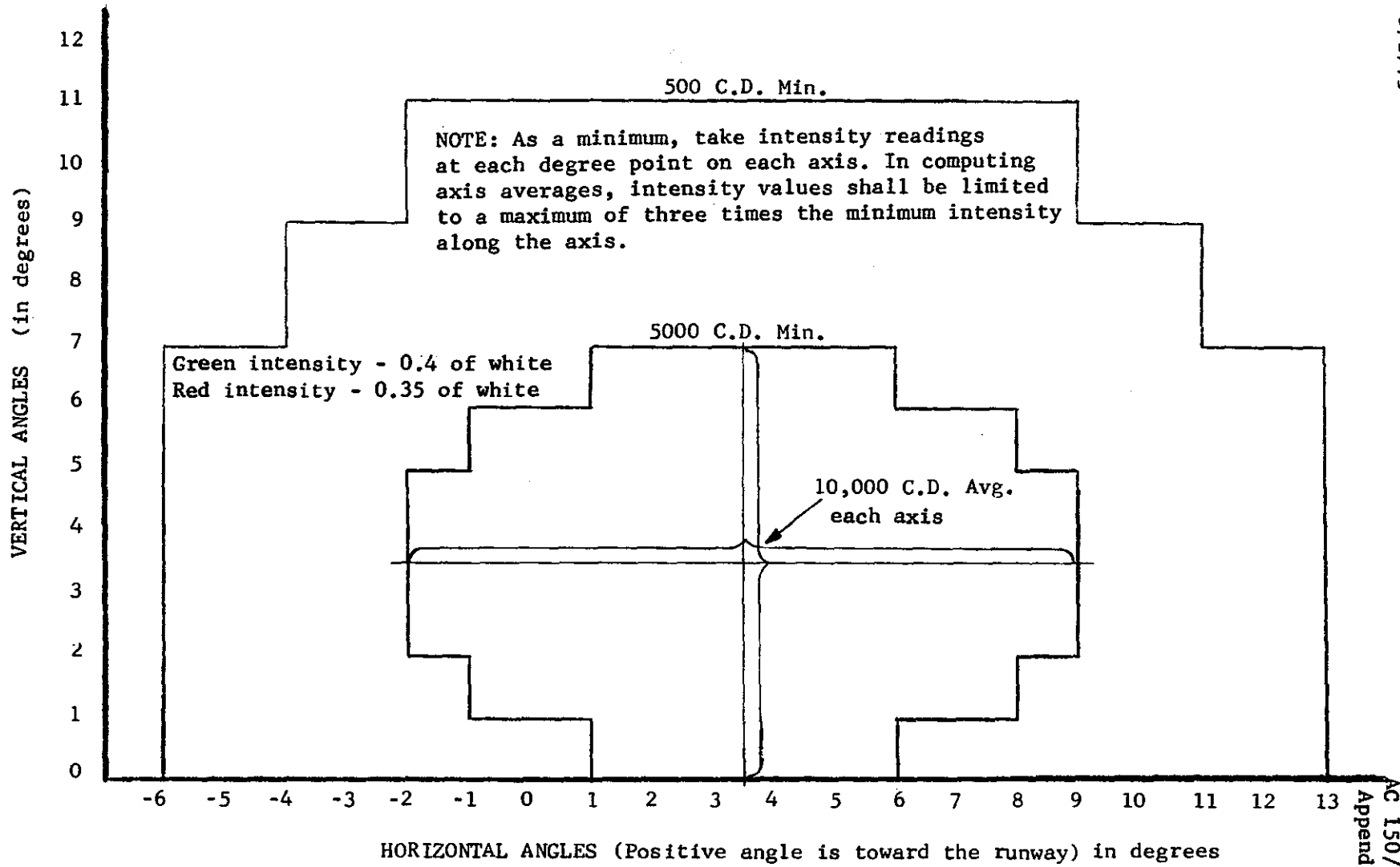


FIGURE 1. ISOCANDELA CURVE FOR MINIMUM OUTPUT IN WHITE LIGHT FOR L-862 HIGH INTENSITY RUNWAY EDGE LIGHT

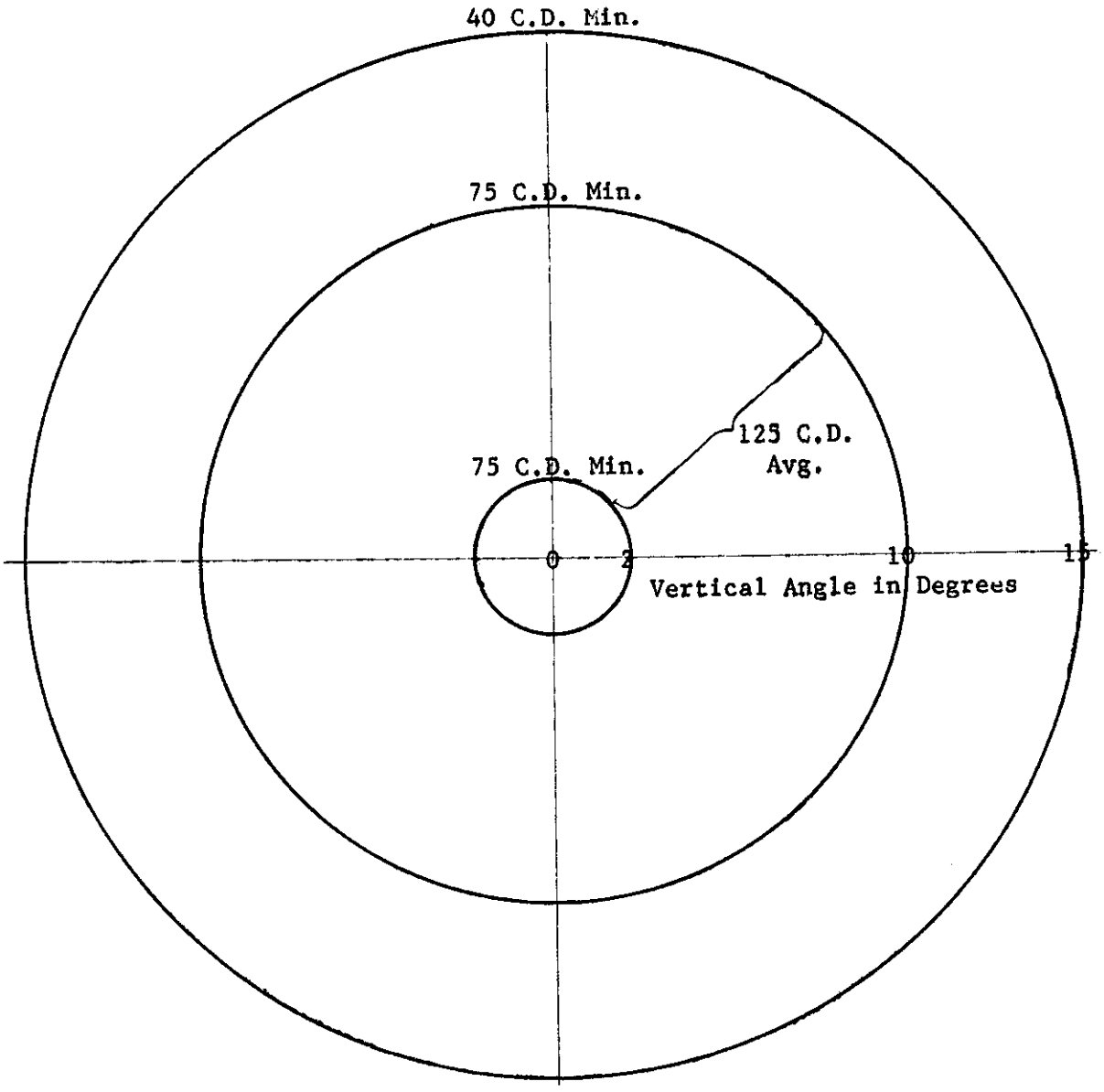


FIGURE 2. Isocandela Curve for Minimum Output in White Light for L-861 Medium Intensity Edge Light.

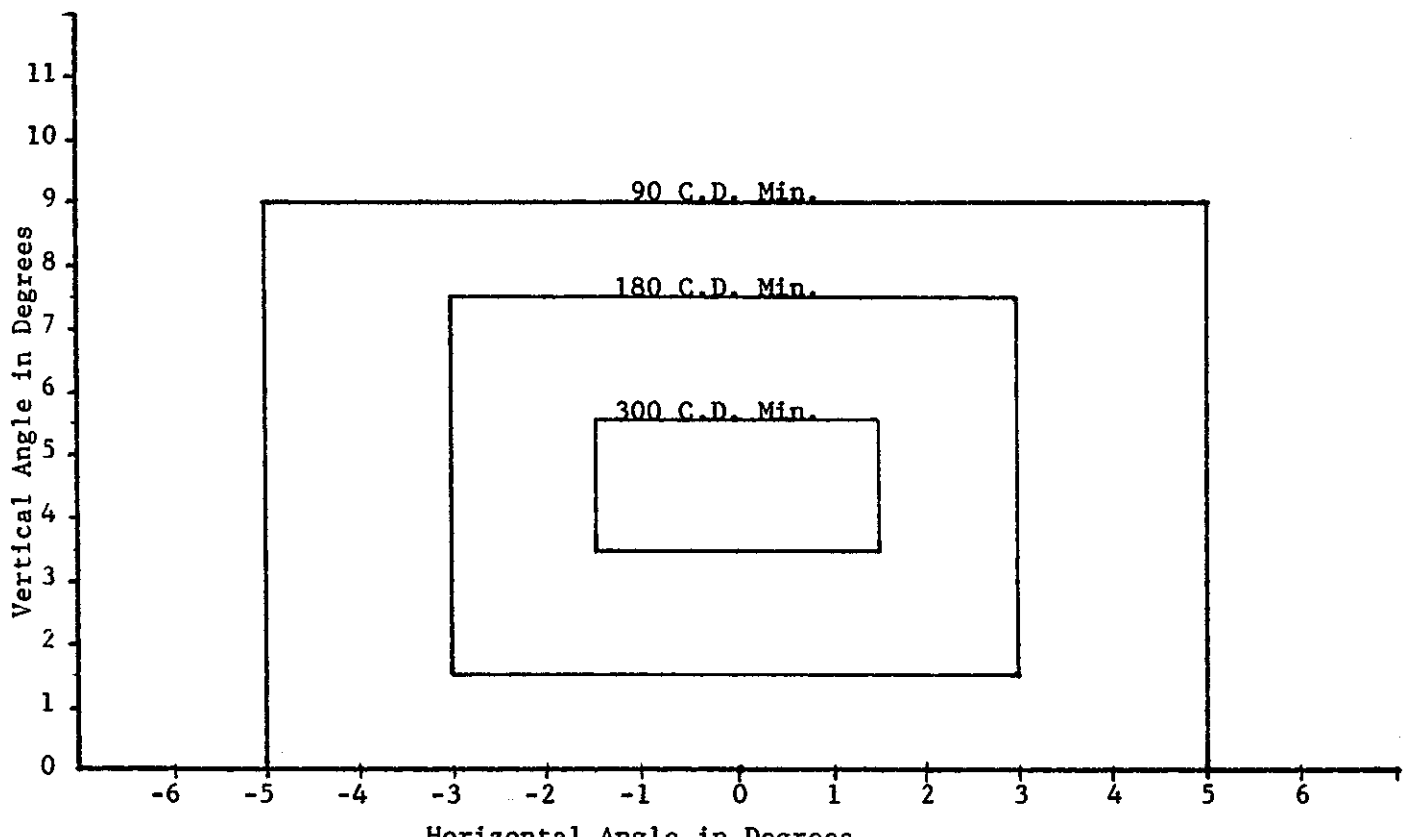


FIGURE 3. ISOCANDELA CURVE FOR MINIMUM OUTPUT IN GREEN LIGHT FOR L-861E MEDIUM INTENSITY THRESHOLD LIGHT.

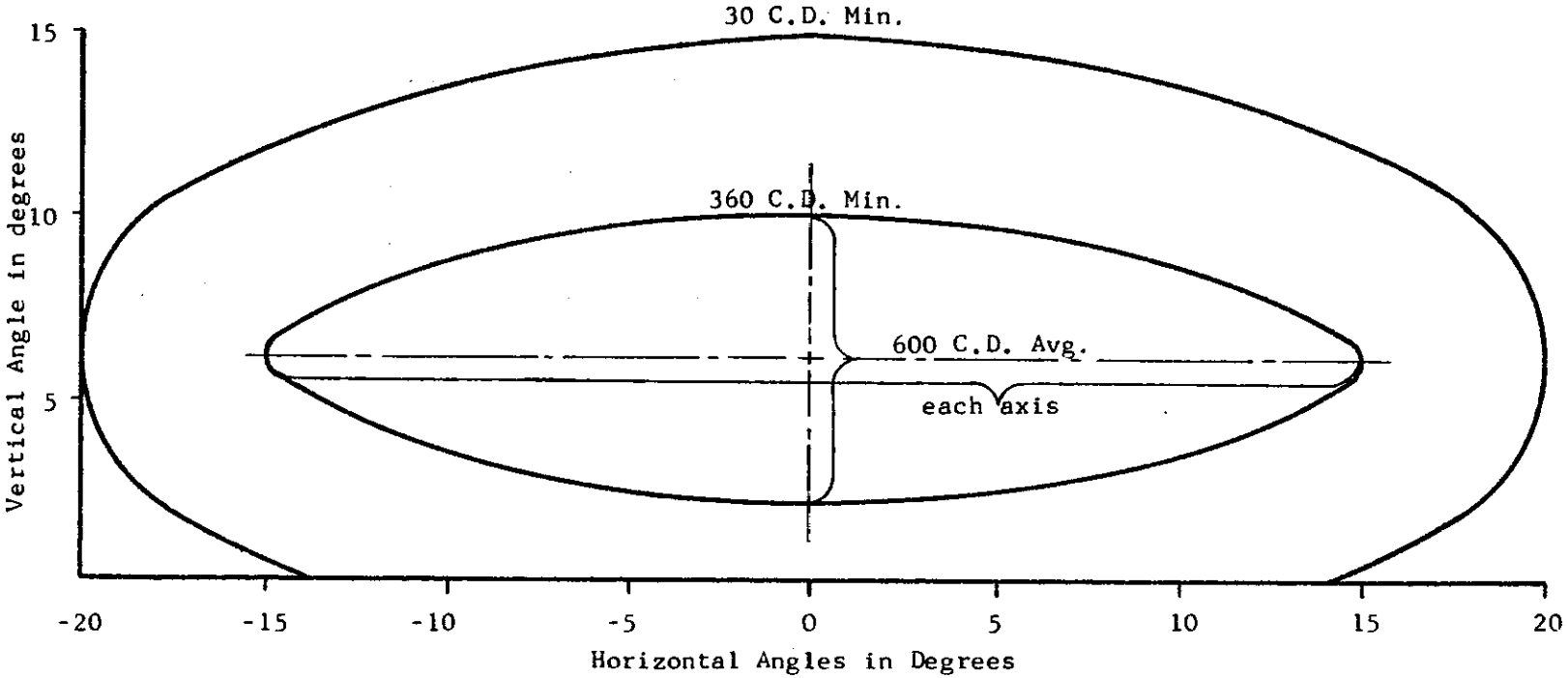
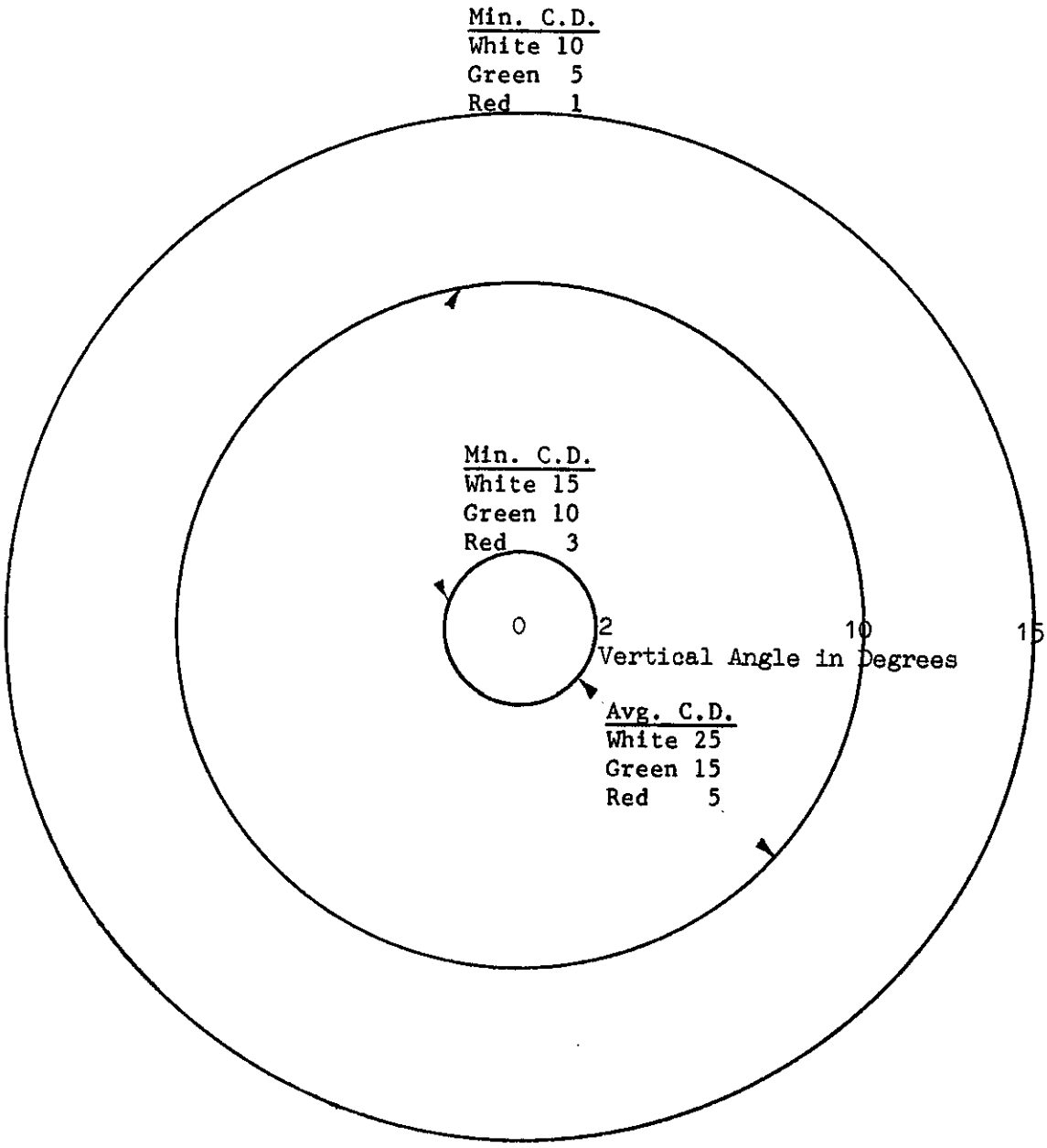
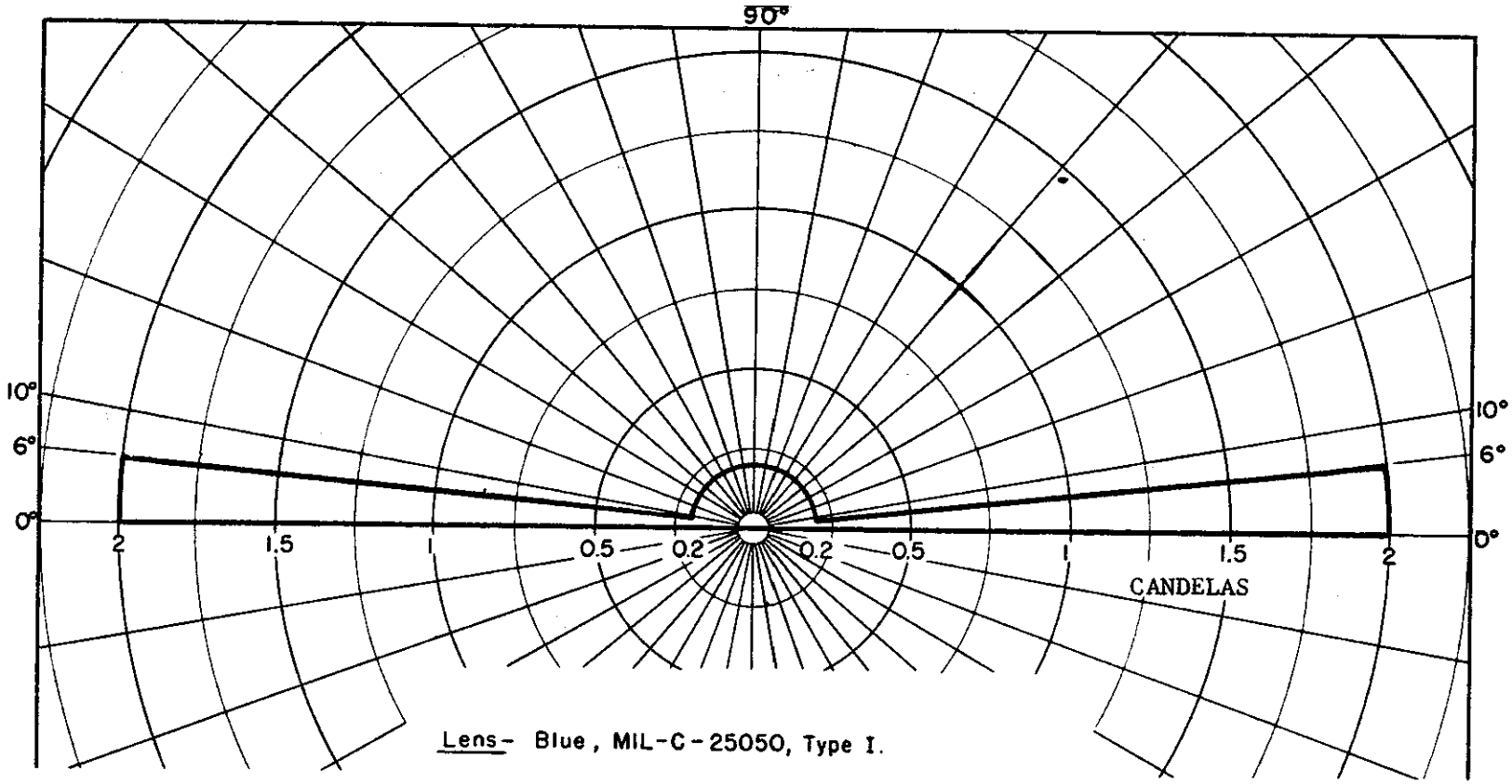


FIGURE 4. ISOCANDELA CURVE FOR MINIMUM OUTPUT IN GREEN LIGHT FOR L-861SE MEDIUM INTENSITY THRESHOLD LIGHT.



360° Horizontal Distribution

FIGURE 5. ISOCANDELA CURVE FOR MINIMUM OUTPUT FOR THE L-860 LOW INTENSITY LIGHT.



VERTICAL DISTRIBUTION THROUGH ANY VERTICAL PLANE

FIGURE 6. ISOCANDELA CURVE FOR MINIMUM OUTPUT IN BLUE LIGHT FOR THE L-861T TAXIWAY LIGHT.