

INTERTEK AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM

IESALC Government Contacts Subcommittee Meeting

Virtual Meeting April 19, 2022

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INTRODUCTION



- **Purpose / Outline**

- Applicability of ALECP
- Update of Current Program Status
- Update on Current Initiatives



AIRPORT LIGHTING EQUIPMENT CERTIFICATION

Certification Program covers all equipment specified in the FAA AC 150/5345 series:

- Rotating Beacons
- Obstruction Lights
- Wind Cones
- Isolation Transformers
- Taxiway/ Runway Inpavement and Elevated Lights
- Retroreflective Markers
- Cable Connectors
- Underground Cable
- Runway & Taxiway Signs
- Portable Runway Lights
- Light Bases
- Constant Current Regulators
- Precision Approach Path Indicators (PAPI)
- Runway End Identification Lights (REIL)



ALECP PURPOSE AND APPLICABILITY



- **Purpose is to assist in enhancing aviation safety by:**
 - Standardizing performance, quality, reliability of airfield lighting and obstruction lighting products
 - Goal is that all pilots receive reliable, standardized visual queues.
- **Applicability of ALECP Certification**
 - **Airfield Lighting Products:**
 - One of the FAA acceptable means to satisfy Title 14 CFR Part 139 Section 139.311 Certification of Airports
 - Mandatory for all projects funded by Federal AIP for PFC monies
 - Widely used around the world to insure a standard level of performance



ALECP PURPOSE AND APPLICABILITY



- **Applicability of ALECP Certification**

- **Obstruction Lighting Products:**

- **FAA Regulations - 14 CFR Part 77**
 - 77.7 – Specifies the requirements for notifying the FAA of construction or alteration of an obstruction.
 - FAA Form 7460-1, Notice of Proposed Construction or Alteration
 - 77.9 - Specifies what types of construction requires notification to the FAA.
 - 77.17 – Provides the definitions of obstructions.
 - 77.29 – Describes the aeronautical study that the FAA does to evaluate the impact of the proposed obstruction.
 - 77.31 – Describes the determination that FAA makes for each obstruction.
 - Determination of No Hazard to Air Navigation is issued with conditions including the lighting and marking.
 - 77.33 – Determination of No Hazard to Air Navigation is good for 18 months.

ALECP PURPOSE AND APPLICABILITY



- **Applicability of ALECP Certification**

- **Obstruction Lighting Products:**

- **FAA AC 70/7460-1M**

- Describes how obstructions must be marked and lighted

- Section 15.4 states that lighting equipment should conform to the latest version of FAA AC 150/5345-43.

FAA AC 150/5345-53 lists the manufacturers that have demonstrated compliance

Other manufacturers' equipment may be used if it meets the requirements of -43

CURRENT ALECP PROGRAM STATISTICS



- 59 program participants
 - (2 new; 8 pending)
- 65 licensed manufacturing facilities
 - (3 new; 9 pending)
- Certifications since the Fall Government Contacts Meeting in October 2021
 - 45 new or full re-qualification certificates
 - 28 revised certificates
 - 8 de-listings

NEW SPECIFICATIONS



Cancelation dates:

Each new AC states that it cancels the previous version

Effective dates:

FAA AC 150/5345-53D section 12.a.v

The previous equipment certificates automatically expire on the given effective date.

Effective dates are usually six months from the issue date.



NEW SPECIFICATIONS

FAA AC 150/5345-39E Specification for L-853, Runway and Taxiway Retroreflective Markers

Issue date: **October 12, 2021**

Effective date: **April 2022**

Principal Change(s):

Addition of red and yellow type II sheet retroreflectors for EMAS

Certification Updates:

4 Program participants

Demonstrate compliance of the red and yellow sheeting material.

ASTM D4956 Certificate of Compliance from sheeting supplier

NEW SPECIFICATIONS



FAA AC 150/5345-27F FAA Specification for Wind Cone Assemblies

Issue date: December 15, 2021

Effective date: None provided (FAA AC 150/5345-53D section 12.a.v also states 6 months) - **June 2022**

Principal Change(s):

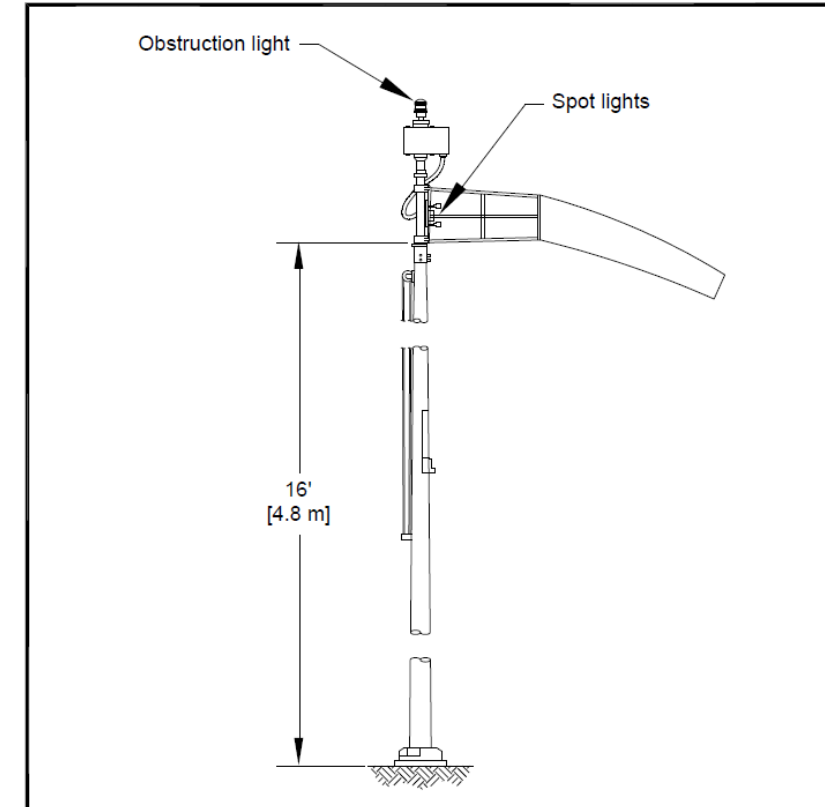
Addition of NEMA 4 enclosure requirement

Certification Updates:

2 Program participants

Demonstrate compliance with NEMA 4 enclosure where applicable

Figure 5-3. Typical Type L-807 (Internally Lit)





NEW SPECIFICATIONS

FAA AC 150/5345-26E FAA Specification for L-823 Plug and Receptacle, Cable Connectors

Issue date: December 16, 2021

Effective date: June 2022

Principal Change(s):

Addition of 4.2.8 Housing Test (Chemical Resistance)

Addition of NEMA compliance for cable used in class A connectors in 3.4.4.1

Certification Updates:

7 Program participants

Conduct Housing Test for each approved molding material

Demonstrate compliance to the NEMA cable standard for all class A

NEW SPECIFICATIONS



FAA AC 150/5345-26E FAA Specification for L-823 Plug and Receptacle, Cable Connectors

Housing Test

Chemicals listed in 3.4.2

Oil

De-icing fluids

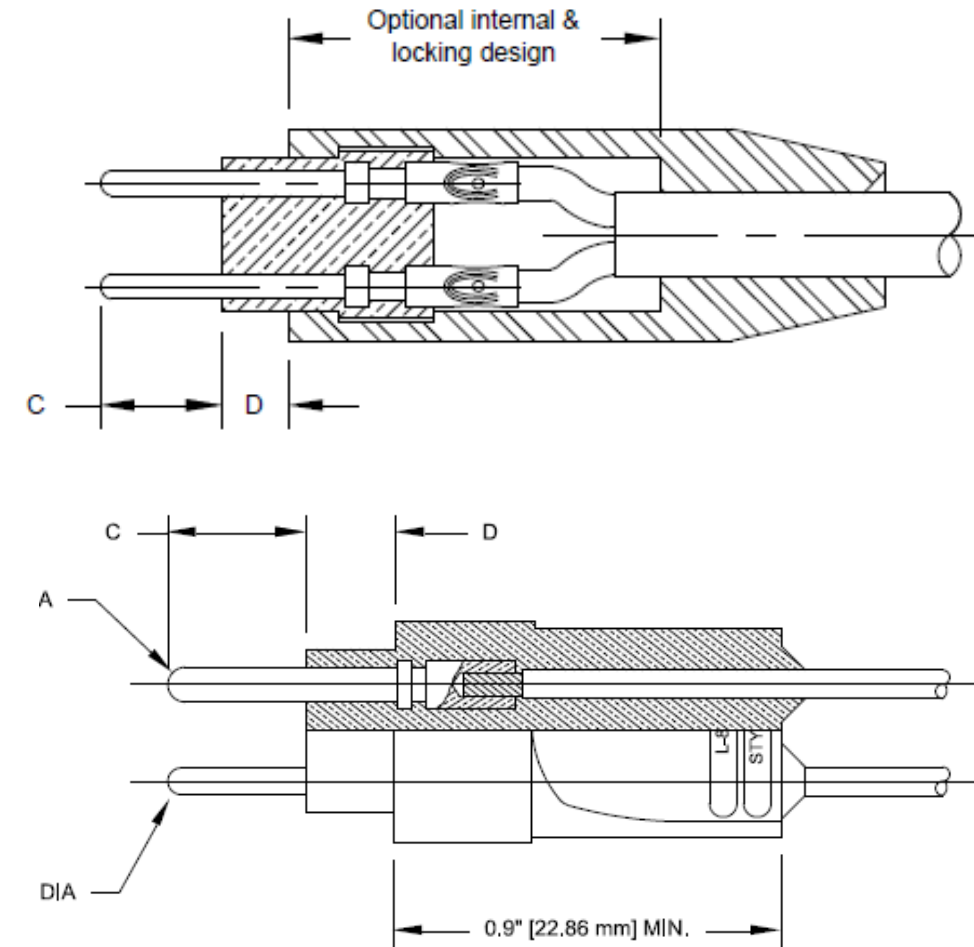
Potassium Acetate

Glycol

Gasoline

“Withstanding limited attack” (not submersion)

20 days at 65C





NEW SPECIFICATIONS

FAA AC 150/5345-26E FAA Specification for L-823 Plug and Receptacle, Cable Connectors

Cable Requirements

ICEA S-95-658 / NEMA WC 70 (for secondary type II)

ICEA S-96-659 / NEMA WC 71 (for primary type I)

Consistent with FAA AC 150/5345-47C

Is not the same as a certification to FAA AC 150/5345-7F

DRAFT SPECIFICATIONS



FAA AC 150/5390-2D Heliport Design

Comments were due April 5, 2021

Principal Changes

Complete re-organization

Incorporation of FAA EB87 (Heliport Perimeter Lights For Visual Meteorological Conditions (VMC)-January 2012) as Appendix F

DRAFT SPECIFICATIONS



FAA AC 150/5390-2D

Applicable Lighting:

L-853 Retroreflective Markers (FAA AC 150/5345-39D)

L-806 Wind cones (FAA AC 150/5345-27E)

L-852T and L-861T Taxiway edge lights (FAA AC 150/5345-46E)

L-852 Taxiway centerline lights (FAA AC 150/5345-46E)

L-801H/802H Heliport beacon (FAA AC 150/5345-12F)

L-882/883 – VGSI (Visual Glideslope Indicator) (FAA AC 150/5345-52A)

HILS (Heliport Instrument Lighting System) – 200W PAR 56

HALS (Heliport Approach Lighting System, or lead-in lights) - 200W PAR 56

L-860HR - Raised heliport perimeter light

L-860HS - Semi-flush heliport perimeter light

DRAFT SPECIFICATIONS

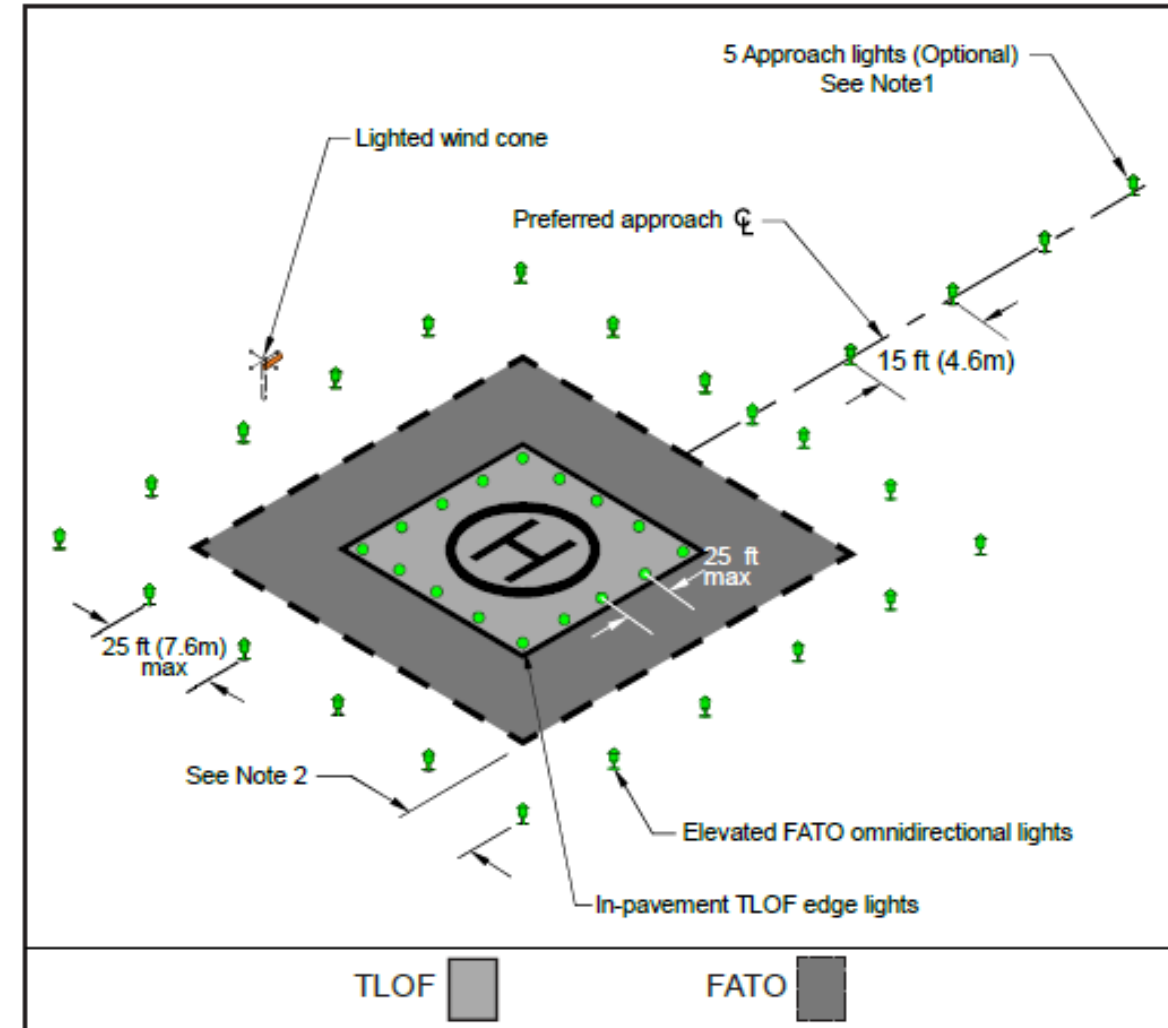


FAA AC 150/5390-2D (continued)

FAA EB 87 / Appendix F

- L-860HR – raised heliport perimeter light
- L-860HS - semi-flush heliport perimeter light

Figure 4-10. TLOF In-pavement and FATO Elevated Perimeter Lighting



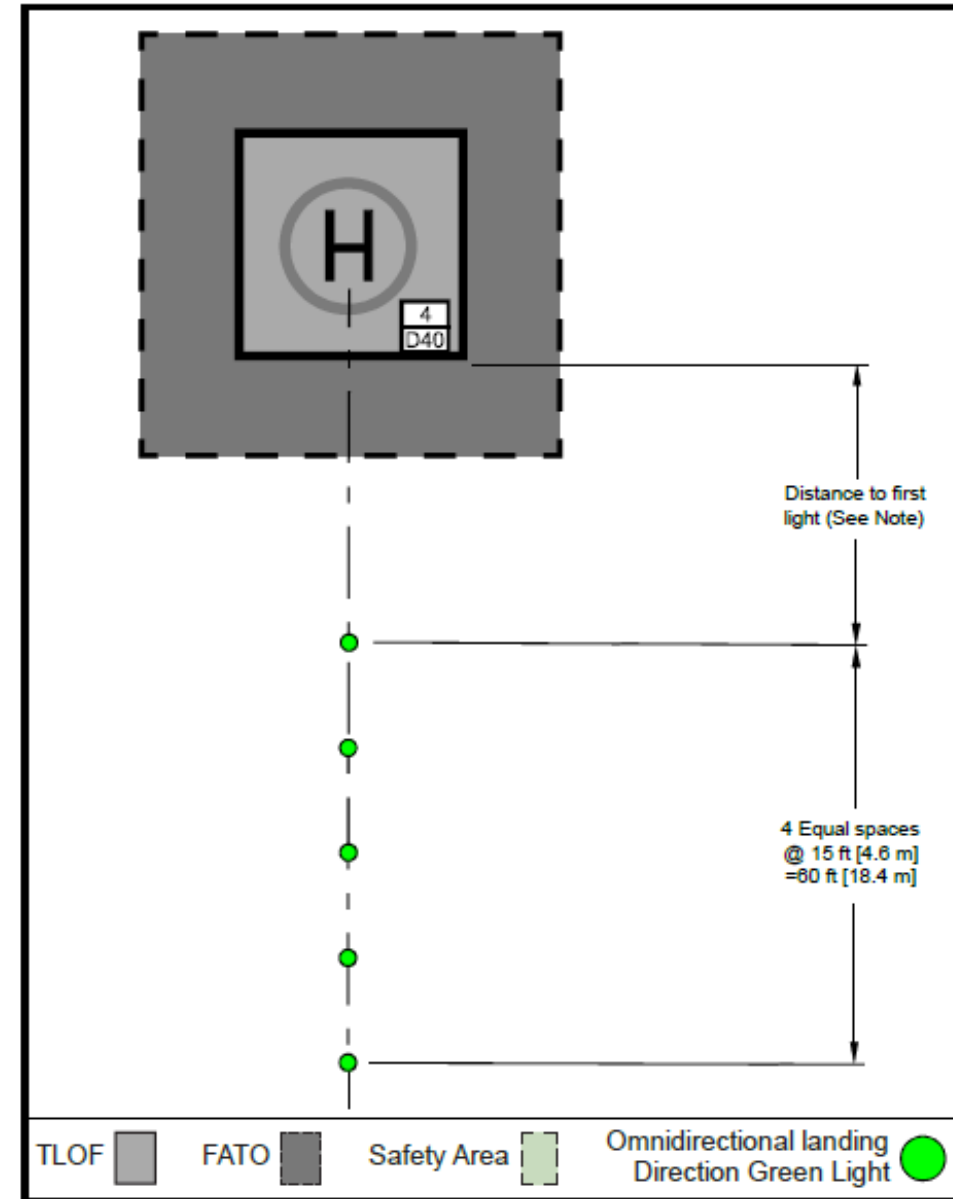
DRAFT SPECIFICATIONS

FAA AC 150/5390-2D (continued)

FAA EB 87 / Appendix F

Landing Direction / Approach

Figure 4-12. Landing Direction **Lights**.



DRAFT SPECIFICATIONS

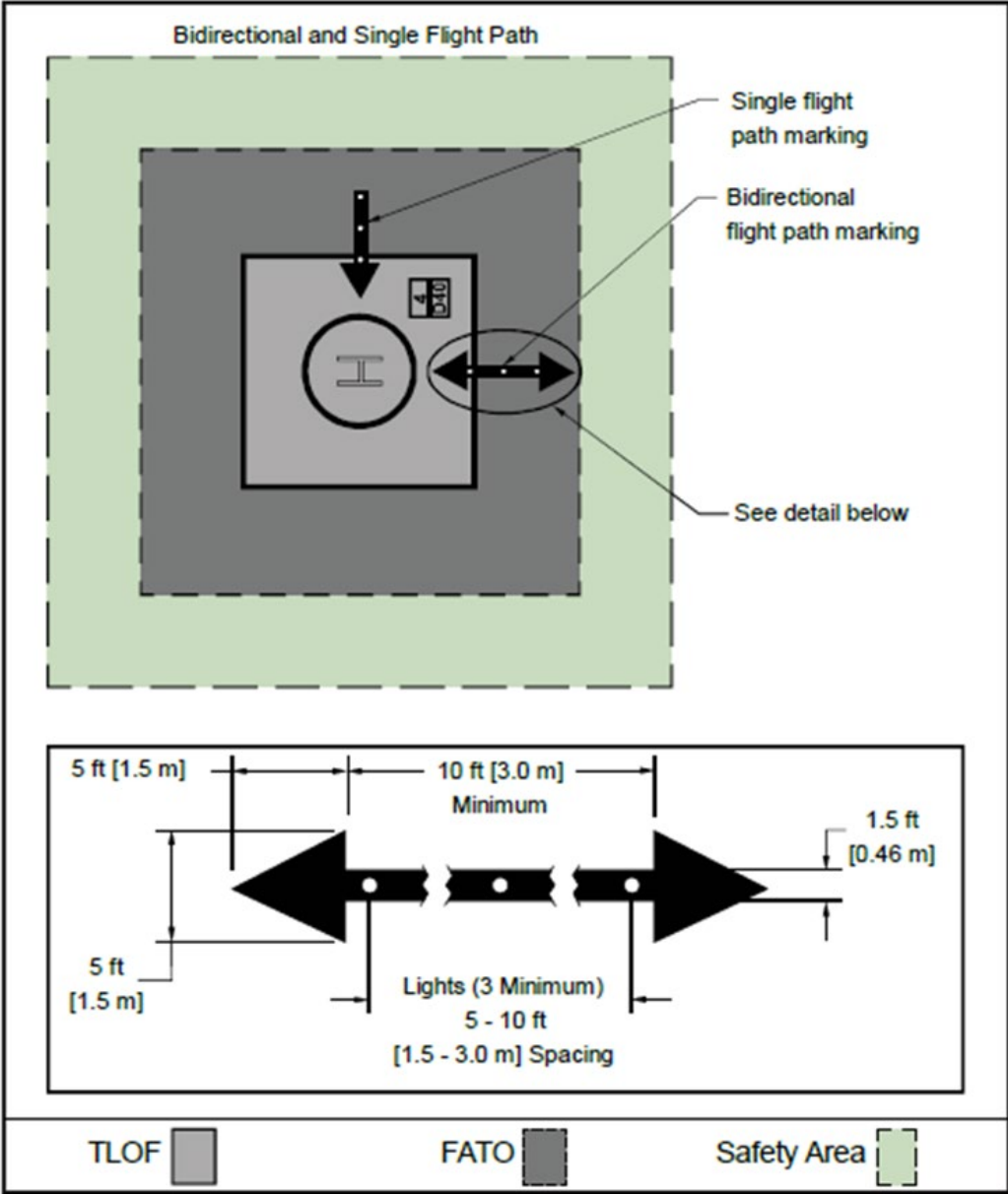
FAA AC 150/5390-2D (continued)

FAA EB 87 / Appendix F

Flight Path Alignment



Figure 2-17. Flight Path Alignment Marking and Lights





ILLUMINATING ENGINEERING SOCIETY
AVIATION LIGHTING COMMITTEE