

Intertek Airport Lighting Equipment Certification Program



IES Government Contacts Subcommittee, October 22, 2013

IES Airport Lighting Conference, Tucson, AZ

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

- Rotating Beacons
- Obstruction Lights
- Wind Cones
- Isolation Transformers
- Taxiway / Runway Inpavement 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)



FAA AC 150/5345-53D

- Third Party Certifier Acceptance Criteria
 - Section 5
- Third Party Certifier Application (every 4 years)
 - Section 6
 - Background as a certification body
 - Competency verification (accreditations)
 - Resumes of related staff
 - Copy of procedural guide and license agreement

GENERAL OUTLINE

- Manufacturer submits certification request via AL-2 application form
- Qualification testing
- Documentation submittal and engineering review
- Initial manufacturing facility audit
- License Agreement
- Certificate issued and product listed in 53D Addendum
- Certification process covered under ANSI accreditation to ISO Guide 65

Qualification Testing

FAA AC 150/5345-53D, Appendix 2, section 5.C.i

Must be done IAW ISO 17025

At Intertek – covered under A2LA accreditation

Outside of Intertek – covered by audit and witness

- Test Plan Review and Acceptance
- Assignment to Intertek Representative
- Formal Report issued by Manufacturer

Qualification Testing

***Per Product Specific FAA
150/5345 Series Advisory
Circulars :***

- Photometry
- Chromaticity
- Accelerated Life
- Vibration (Sinusoidal, Random)
- Mechanical Shock
- Corrosion (Salt Fog) / Accelerated Corrosion
- Moisture, Rain Spray, Immersion, Icing
- Dust
- Wind Load
- Temperature / Humidity Cycling
- EMI / EMC
- Altitude
- Lamp Life Test
- Insulation Resistance
- Thermal Shock
- Operational
- Accelerated Weathering
- Electrical
- Leakage Current
- Dielectric
- Transient Suppression

When is testing required?

1. 8 year re-qualifications (4 years for L-890 ALCMS)
2. Product modifications
 - requires - AL-2 resubmittal
 - associated documentation
 - abbreviated testing
3. Specification updates

Semi-annual Inspections

- AL-7 Audit (follows basic ISO quality assurance requirements)
- AL-1; AL-1A Contact Sheet
- Product Checklist(s)
 - Construction review using the applicable ACs
- Production Testing Requirements
 - As required in the applicable ACs

AL-2 Request for Certification or Revision of Certificate

Exhibit 2 Form AL-2rev, Request for Certification - EQUIPMENT
An Activity Sponsored and Administered by
INTERTEK
AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM
REQUEST FOR EQUIPMENT CERTIFICATION

PROGRAM ADMINISTRATOR
DEPARTMENT ALECP
INTERTEK
3933 US ROUTE 11
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TO BE COMPLETED AND FORWARDED WITH REQUIRED DOCUMENTATION TO THE ADMINISTRATOR pg 1 of 1

DATE:	L-type:	Catalog No./Lamp No. (or attach list):
1. MFG Name:		Contact:
MFG Facility site:		Phone:
		e-mail:
		website:
2. The equipment to be tested is:		3. The Certification is (check applicable note):
<input type="checkbox"/> prototype <input type="checkbox"/> production unit and described as follows		
4. To be tested at:		<input type="checkbox"/> new listing of product (or re-qualification) <input type="checkbox"/> addition of product (issued as new cert)** <input type="checkbox"/> addition of product to Certificate issued** <input type="checkbox"/> addition of lamp to Certified product** <input type="checkbox"/> revision to catalog numbers listed or additional catalog numbers for tested product*** <input type="checkbox"/> a manufacturer listing for non-OEM product** <input type="checkbox"/> a manufacturer name and/or site change** <input type="checkbox"/> modification to certified product** (requires Waiver form submittal and Engineering review fee) Fee for review \$ 800. **List applicable test reports below and submit a copy of report(s) with copy of current C of C:
<input type="checkbox"/> Intertek - Lighting Department - Cortland, NY <input type="checkbox"/> Manufacturer's Facility (see section 5) <input type="checkbox"/> Independent Commercial Laboratory (subject to audit and see section 5) Name: _____ Location: _____ Contact: _____ Phone: _____		
5. WITNESS: Attach the Proposed Test Schedule and test Plan (to be witnessed - Engineering Review for Test Plan required) Authorization for engineering and witness fees required. Request from Program Coordinator: jill.wilson@intertek.com		
6. In addition to copies of applicable test reports and written authorization or PO for ** \$800 fee per certificate, attached to this form are:		
<input type="checkbox"/> (a) List of Types, Classes, Styles, Sizes, manufacturer's catalog numbers. <input type="checkbox"/> (b) Section and part drawings <input type="checkbox"/> (c) Assembly drawings <input type="checkbox"/> (d) Bill of Materials showing manufacturer's name and part numbers <input type="checkbox"/> (e) Statement of Warrantee <input type="checkbox"/> (f) Instruction/installation/operating manual <input type="checkbox"/> (g) Product Description sheet (marketing material) <input type="checkbox"/> (h) AL-2-B Lamp Life Test form		
If submitting electronically, please identify the file name to include the L-type, catalog no, document name, client, date		

BY FILING THIS FORM, THE LICENSEE AGREES TO THE FOLLOWING:

A. THAT THE EQUIPMENT BEING SUBMITTED FOR TEST IS REPRESENTATIVE OF PRODUCTION AND IS A DUPLICATE OF THE TYPE PRODUCT DESIGNATED THAT WILL BE OFFERED FOR SALE, OR THAT IS A PROTOTYPE OF THE PRODUCTION UNITS WHICH WILL BE IDENTICAL TO IT WHEN OFFERED FOR SALE.

B. THAT THE TESTING LABORATORY IS TO VERIFY THE DESIGN CONSTRUCTION OF THE SAMPLE, WHICH LICENSEE WILL DELIVER TO THE LABORATORY, BY REFERENCE TO DRAWINGS AND OTHER DESCRIPTIVE INFORMATION.

C. PERMIT THE ADMINISTRATOR TO WITNESS THE TESTING (AT HIS OPTION) AND HAVE COMPLETE ACCESS TO THE TEST SAMPLE AND ALL DATA PERTAINING THERETO.

D. THAT THE APPLICANT AGREES TO COMPLY WITH THE REQUIREMENTS FOR VERIFICATION AND TO SUPPLY ANY INFORMATION NEEDED FOR EVALUATION OF PRODUCTS TO BE CERTIFIED.

FORM AL-2rev 8/2010

- Copy of all Qual Test Reports
- List of L-type, class, style, size
- List of catalogue number(s)
- Application required by ISO Guide 65

Required Product Documentation listed in section 6 of AL-2

- Section & part drawings
- Assembly drawings and schematics
- BOM with mfg name/catalogue numbers
- Statement of Warrantee
- Instruction/installation/operating manual
- Product Description sheet (marketing)
- AL-2B Lamp Life form



- Identifies the light source
 - Source manufacturer's designation
 - End product manufacturer's designation
- Provides life ratings, or airport lighting equipment manufacturer's life estimates in the end product

AL-2B Lamp Life Form (continued)



- Documents compliance with requirements that are not verified by qualification testing
- FAA AC 150/5345-53D Appendix 5
 - Determines Lamp Life in particular fixture by testing
 - Sources rated for more than 8,750 hours are exempt
- Product ACs contain minimum rated life
 - 46D (runway and taxiway lights)
 - 500 or 1,000 hours
 - 43G (obstruction lights)
 - Xenon – 2 years
 - Incandescent – 2,000 hours
 - LED – 2 years
 - 12F (beacons)
 - 4,000 hours

AL-2B Lamp Life Form (continued)



- LED products still must comply with the specific product AC and 53D
- Also must comply with EB67D
 - LED junction temperature as determined per the LED manufacturer's guidance
 - Must be consistent with life estimate
 - Usually done by product manufacturer

LED supplier's ratings must be submitted with the AL-2B

AL-2B Lamp Life Form (continued)

- This information results in the lamp list contained in the FAA AC 150/5345-53D addendum
- FAA lamp number can also be found on each product's certificate

October 16, 2013

AC 150/5345-53D Appendix 3 Addendum

LAMP DESCRIPTIONS

Lamp	Description	Watts	Volts	Amps	Lamp Manufacturer
(10)	6.6A/T10/1P	30		6.6	General Electric, Sylvania, Philips
(10A)	6.6A/T10/1P	30		6.6	General Electric
(10C)	6.6A/T10/1P	30		6.6	Philips
(11)	6.6A/T10/P	45		6.6	General Electric, Sylvania, Philips
(11A)	6.6A/T10/P	45		6.6	General Electric
(11B)	6.6A/T10/P	45		6.6	Sylvania
(11C)	6.6A/T10/P	45		6.6	Philips
(16)	20058	115		6.6	Crouse-Hinds
(17)	40732	45		6.6	Crouse-Hinds
(18)	40737	30		6.6	Crouse-Hinds
(21)	EWR	150		6.6	General Electric
(31)	FXL	30		6.6	General Electric
(32A)	116A21/TS	116	120		General Electric
(32B)	116A21/TS	116	120		Philips
(32C)	116A21/TS	116	130		Philips
(33)	EXM	45		6.6	General Electric
(36)	EVV	120		6.6	General Electric
(48B)	620PS40P	620	120		GE
(54)	20538	185		6.6	Crouse-Hinds
(66)	64382	200		6.6	Osram

Current Program Status

74 Program Participants

84 Licensed Manufacturing Facilities

- 86 new and requalification certificates issued since the spring meeting
- 53 revised certificates issued since the spring meeting

- FAA AC 150/5345-27E (FAA Specification for Wind Cone Assemblies)
- FAA AC 150/5345-7F (Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits)

- FAA AC 150/5345-27E (FAA Specification for Wind Cone Assemblies)

Principal Change

Addition of size 1 internally lighted wind cones

Required Action

Size 1 internally lighted wind cones will need to be submitted for testing

- FAA AC 150/5345-7F (L-824 cable)

Principal Change

ANSI/ICEA specification references were updated
FAA-STD-013 was replaced with ISO 9001

Required Action

None

- Draft EB86
 - 2/24/11
 - Guidance on cable selection
 - Contained recommendation for -7 update (were not included in 7F)

- FAA AC 150/5340-30H (Design and Installation Details for Airport Visual Aids)
 - Updated many 5300-13A references (Airport Design)
 - Many installation detail clarifications
 - PAPI frost and dew considerations (FAA CertAlert 02-08)
 - No direct impact equipment certifications
 - Deadline for comments was 8/23/13

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Questions?