

INTERTEK AIRPORT LIGHTING EQUIPMENT CERTIFICATION PROGRAM

**IESALC Fall Technology Meeting
Government Contacts Subcommittee**

Dallas, TX – October 23, 2017

Jeremy N. Downs, P.E. – ALECP Program Administrator



INTRODUCTION



- **Purpose / Outline**

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



TESTING VS. CERTIFICATION




• Testing

- One-time event
- May not be all specified tests
- End result is a Test Report
 - (and possibly supplemental document like TVOC)
- No follow-up production monitoring

“Fine Print”:

“ This verification is part of the full test report(s) and should be read in conjunction with them.”

“...This verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.”



Total Quality. Proven.

Test Verification of Conformity


Verification Number: 103111587CRT-001TVOC

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out. This verification is part of the full test report(s) and should be read in conjunction with them.

Applicant Name & Address:	Orga B.V. Strickledeweg 13 3125 AT Schiedam Netherlands
Product Description:	Helipoint Touchdown/Positioning Marker (Yellow Circle) Eight elements (two sub sections) comprise one segment Helipoint Identification Marking (Green H) Eight sub sections comprise one four meter edge
Ratings & Characteristics:	Power Module Input Voltage: 110 - 254 VAC, p/n MPC510 4 yellow LEDs 46cm x 8.5cm, p/n HTP100EX-A 4 green LEDs 46cm x 8.5cm, p/n HTP100EX-G Sub section length is 0.5 meters
Models:	Orga HCH-xxx-xxx system
Relevant Standards:	Civil Aviation Authority CAP 437, "Standards for Offshore Helicopter Landing Areas" 8th Edition Dated December 2016 Appendix C: Photometry Sec. C25-C29 & Chromaticity Sec. C.31 Appendix C: Photometry Sec. C38-C41 & Chromaticity Sec. C.44
Verification Issuing Office:	Intertek Cortland - Lighting 3933 US Route 11 Cortland, NY 13045
Date of Tests:	January 22, 2014 through January 29, 2014
Test Report Number(s):	101493860CRT-001 Dated March 7, 2014

Additional information in Appendix.

Note: This verification supersedes all previous verifications with the noted Verification number dated before this verification.


Signature
Name: Jeremy N. Downs, P.E.
Position: Staff Engineer
Date: 29 August 2017

This verification is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement, entered into on the date of the test. This verification is not to be used for any other purpose, nor is it to be used as evidence of compliance with any other standard or specification. Only the Client is authorized to print, copy or distribute this verification. Any use of the Intertek name or logo for the sale or advertisement of the tested material, product or service must first be approved by Intertek. The observations and test/inspection results referenced in this verification are relevant only to the sample tested/inspected. This verification by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Intertek Page 1 of 2 GFT-OP-11a (28-April-2017)

TESTING VS. CERTIFICATION



Certification

- Must include successful completion of all specified tests
- Must include compliance with all specified requirements
- Not just testing
- Includes follow-up quality assurance provisions
- Includes a authorization to use a mark
- Must be strict configuration management

“Fine Print”:

“This equipment requires continuing validation in accordance with the requirements of AC 150/5345-53, and the Intertek Airport Lighting Equipment Certification Program.”



PROGRAM ADMINISTRATOR
DEPARTMENT ALECP
INTERTEK
3933 U.S. ROUTE 11
CORTLAND, NY 13045-0950

REVISED ISSUE DATE: October 12, 2017

ORIGINAL ISSUE DATE: August 7, 2017

Recertification due: April 2025

An Activity Sponsored and Administered by
Intertek

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Newton Road
Lowton St. Mary's, Warrington UK WA3 2AP

AIRPORT LIGHTING
EQUIPMENT
CERTIFICATION PROGRAM

CERTIFICATE OF
CONFORMANCE

The product described below is hereby approved for listing in the next issue of the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5345-53, Appendix 3 Addendum "Airport Lighting Equipment Certification Program. The approval is based on successful completion of tests in accordance with the specifications listed in, and the requirements for approval described in the Advisory Circular, and the reporting to the Program Administrator the results of such tests, accompanied by related documents by an Intertek recognized testing laboratory. This Certificate is only confirmable in conjunction with equipment being listed in AC 150/5345-53, Appendix 3, Addendum, as currently published by the FAA. The certification is not valid for a product modified with non-OEM replacement parts or non-production components.

L-850 - Lights, Runway, Inpavement (AC 150/5345-48E)				
Manufacturer	Type	Class	Style	Manufacturer's Catalog Number
ATG Airports Ltd.	A	1	2	ZA484-WW-X (126); ZA484-WR-X (126)
	A	1	2	ZA484-WN-1 (126); ZA484-RN-1 (126)
	B	1	2	ZA480-WN-LHT (126)
	B	1	2	ZA480-WN-RHT (126)

1. This Equipment requires continuing validation in accordance with the requirements of AC 150/5345-53, and the Intertek Airport Lighting Equipment Certification Program.

2. Product tested and Report issued by: Intertek

(A) Report No: 102355430CRT-003

(B) Date of Report: 10/2017

NOTE: PLEASE REVIEW, AND ADVISE
ADMINISTRATOR AT INTERTEK IMMEDIATELY
IF DATA, AS SHOWN, NEED TO BE
CORRECTED.

Approved for Certification by:

Jeremy N Downs, PE, Program Administrator
Date: October 12, 2017

Form AL-3 1/2006

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 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:**
 - Insuring good quality, reliable, airfield lighting products
 - Verifying equipment performance so that all pilots receive reliable, standardized visual queues.
- **Applicability**
 - Only 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

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

FAA AC 150/5345-53D



- **GENERAL OUTLINE**

- Manufacturer submits certification request via AL-2 application form
- Qualification testing
- Documentation submittal and engineering review
- Initial manufacturing facility audit (semi-annual inspections continue)
- License Agreement
- Certificate issued and product listed in 53D Addendum
- Certification process covered under ANSI accreditation to ISO 17065

FAA AC 150/5345-53D



- **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

Could be at manufacturer's facility or another independent lab

Test Plan Review and Acceptance

Assignment to Intertek Representative

Formal Report issued by Manufacturer

The Third Party Certifier must be notified prior to testing.

The Third Party Certifier has the authority to witness all qualification testing.

FAA AC 150/5345-53D



- **DOCUMENTATION REVIEW**

- AL-2 Application

- Section & part drawings

- Assembly drawings and schematics

- BOM with mfg name/catalogue numbers

- Statement of Warranty

- Instruction/installation/operating manual

- Product Description sheet (marketing)

- AL-2B Lamp Life form



SEMI-ANNUAL INSPECTIONS

- **First Visit:**
 - AL-7 Audit (follows basic ISO quality assurance requirements)
 - AL-1; AL-1A Contact Sheet
- **Second Visit:**
 - Product Checklist(s)
 - Construction review using the applicable ACs
 - Production Testing Requirements
 - As required in the applicable ACs
 - AL-1; AL-1A Contact Sheet (as needed)
- **Documentation:**
 - Inspector leaves copy of all inspection reports with the manufacturer, and sends copy to Intertek, Cortland for review.
 - Results of the audit/inspection are reviewed and appropriate actions taken.



SEMI-ANNUAL INSPECTIONS

- **AL-7 Audit (follows basic ISO quality assurance requirements)**
 - Existence
 - Adequacy
 - Compliance
 - Objective Evidence
- **Production Testing Requirements**
 - Page 9 of AL-7 (Final Inspection and Testing)
 - As required in the applicable AC's
- **Audit Wrap-up**
 - Summarize issues on page 22.
 - Inspector and manufacturer sign page 22



SEMI-ANNUAL INSPECTIONS

- **Product Checklist(s)**
 - Construction review using the applicable ACs
 - Must also have the applicable AC available for questions/confusion
- **Production Testing Requirements**
 - As required in the applicable ACs
 - Documented as per the ACs
 - Traceability to units
- **AL-5 Inspection Data form**
 - Summary of production status

RESCINDING OF CERTIFICATES



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

- Lack of required documentation

- Failure of manufacturer to honor required warranty

- Unsatisfactory failure rate of equipment in the field

 - Unreliable performance of equipment as determined by the FAA

- Failure of manufacturer to maintain quality system

- Changes made to the equipment without the approval of the third party certifier

- Failure to re-certify

- Non-compliance found during manufacturer challenge process

CURRENT PROGRAM STATISTICS



- 60 participants
- 77 manufacturing facilities
- Certifications since the Spring Government Contacts Meeting
 - 37 new or re-qual. certificates
 - 90 revised certificates
 - 24 de-listings

CERTIFICATE UPDATES IN PROCESS



- FAA AC 150/5345-43H (9/28/2016)
- FAA AC 150/5345-46E (3/2/2016)
- FAA AC 150/5345-42H (11/6/2015)
- FAA Engineering Brief 67D (revision dated 7/25/17)

CERTIFICATE UPDATES IN PROCESS



- FAA AC 150/5345-43H (9/28/2016)
 - 12 month effective date
 - Result of FAA AC 70/7460-1L updates

Key certification updates:

Addition of flashing L-810(F) configuration

Change of L-864 flash rate and duration limits

CERTIFICATE UPDATES IN PROCESS

FAA AC 150/5345-46E (3/2/2016)

Shock Test added for L-852 Taxiway Inpavement Lights

New Inpavement Light Dimensional requirements

Grounding provisions made consistent with -30H

Elevated lights not certified with baseplates



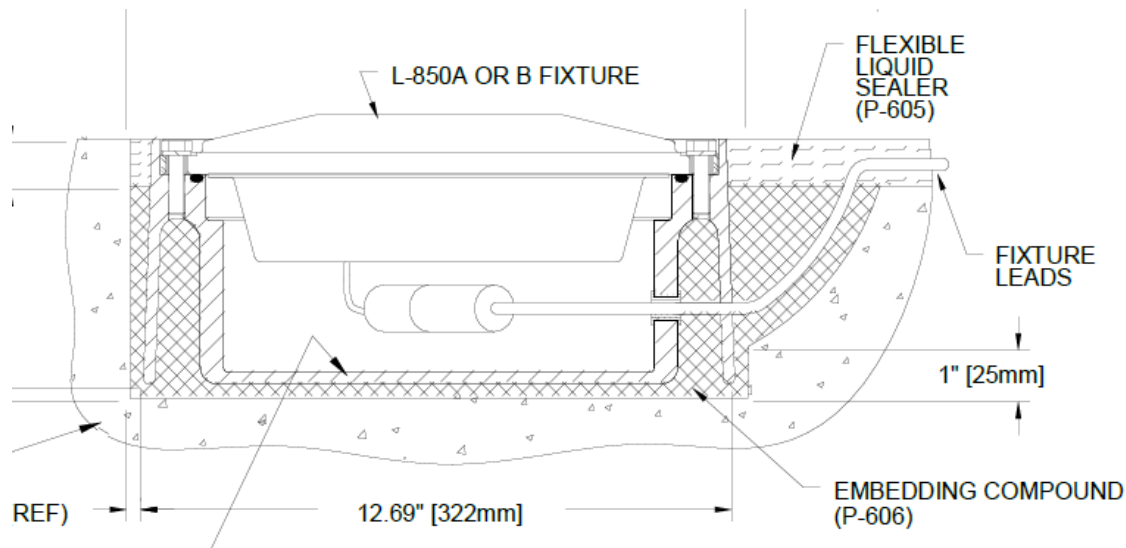
CERTIFICATE UPDATES IN PROCESS

FAA AC 150/5345-46E (3/2/2016)

If the fixture doesn't fit:

Option 1 - Design Modification

Option 2 – Limit certification to Class 1:



CERTIFICATE UPDATES IN PROCESS

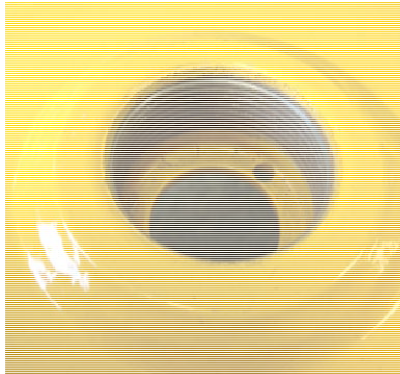


FAA AC 150/5345-42H (11/6/2015)

L-894 – Elevated Light Cover

0.63” max height

0.88” max thread depth



FAA References that require the frangible point to be no more than 3” above grade.

- FAA AC 150/5340-30H, Figure 23
- FAA AC 150/5300-13A, Change 1, paragraph 307b(4)
- FAA AC 150/5220-23, 3.2.c(1)(c)



CERTIFICATE UPDATES IN PROCESS



FAA Engineering Brief 67D (revision dated 7/25/17)

“Note: Oscillation or flicker may be visible to pilots using single-propeller aircraft when interacting with a LED lighting fixture operating at medium or low step which is utilizing a Pulse Width Modulation frequency of 200Hz or less.”

For Certification:

Should 200Hz be required for all applications?

DRAFT SPECIFICATIONS



FAA AC 150/5340-30J (Design and Installation Details for Airport Visual Aids)

Deadline for comments – 5/1/2017

Requirement for separate power for wind cone obstruction lights was removed.

PAPI Obstacle Clearance Surface evaluation guidance

10.2 bolt torque maintenance



DRAFT SPECIFICATIONS

FAA Engineering Brief 98 – “Infrared Specifications for Aviation Obstruction Light Compatibility with Night Vision Imaging Systems (NVIS)”

Required minimum acquisition distances:

1.4 SM for L-810

3.1 SM for L-864

Output wavelength of 800-900 nm

IR radiation distribution matches the visible photometric distribution

Minimum radiant intensity of 4mW/sr

DRAFT SPECIFICATIONS



FAA Engineering Brief 98 – “Infrared Specifications for Aviation Obstruction Light Compatibility with Night Vision Imaging Systems (NVIS)”

Current Note on the FAA AC 150/5345-53D Addendum:

“IR element present is not tested nor certified under this program as to compatibility with any night vision equipment.”

IR elements currently are tested to ensure they do not create any adverse effects that may render the equipment non-compliant with the base standard.

Radiant Intensity will be tested, so the 53D note can change to reflect that.

APPROVED AIRPORT LIGHTING EQUIPMENT – AUGUST 1952



