



**MINISTÈRE  
CHARGÉ  
DES TRANSPORTS**

*Liberté  
Égalité  
Fraternité*



**Service technique de l'Aviation civile**

**Test application**

To email back at the address mentioned opposite

**(once duly filled in, dated and signed)**

Any incomplete application will be returned.

**Please, fill out a form for each light/sign/panel model**

Blank form downloadable at [www.stac.aviation-civile.gouv.fr](http://www.stac.aviation-civile.gouv.fr)

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**Applicant**

**Compagny**

Corporate name :

Postal address :

**Contact person**

NAME, first name :

Phone :

Email :

**Deliverables recipients (If different from the applicant)**

NAME, first name :

Postal address :

**Purpose**

Initial application for certification/approval

(Photometric and colorimetric performance only)

Certificate amendment request(s)

Specify the certificate(s) concerned :

*Requested tests to be mentioned in the table on the next page.*

**Light(s) / Sign(s) / Panel(s) to be tested**

**Characteristics :**

*Please fill in the table on the next page.*

**Delivery address : (for the light(s) / sign(s) / panel(s) to be tested)**

**Direction de la technique et de l'innovation (DSNA/DTI)**

**Bâtiment U – Laboratoire « Aides visuelles »**

**1 avenue du Docteur Grynfoegel**

**31035 Toulouse Cedex 1**

**FRANCE**

***Warning : The transport (including the delivery and the return) of any light / sign / panel is at the expense and risk of the applicant.***

**Engagement**

**Applicant**

I read and accept all the general terms and conditions for use of the service attached in annex

I acknowledge that the equipment covered by this application complies with Directive 2014/35/EU as set out in Decree 2015-1083 of 27 August 2015  
(For more information, see §4.1.2 Annex 1 : General terms and conditions for use of the service)

**Date :**

**Signature :**

**STAC  
Application admissibility**

**FDEM n° :**

Description of the lighting system to be assessed			
Please ensure consistency between these informations, product labelling and associated technical documentation			
<u>Characteristics :</u>			
BRAND			
MODEL			
Inset / Elevated			
Nominal electrical supply voltage or intensity			
Optical center position	Identified / specified : <div style="display: flex; justify-content: space-around;"> <span>On the equipment</span> <span>In the technical documentation</span> </div>		
<u>Lighting systems to be assessed : fill the table on the next page</u>			
<u>Luminous sources characteristics :</u>			
Brand(s)			
Color(s)			
Number			
LED / Halogen / Other ?			
Complete reference(s)			
<u>Information required to ensure the traceability of the lighting system to be assessed</u>			
<u>Identification by manufacturer (clearly identifiable on the equipment covered by this application)</u>			
Code(s) Produit(s)			
Serial n° range			
Batch n°			
<b>Requested tests</b>			
<u>Photometric and colorimetric tests</u>			
Standard (23°C)	High temperature	Specify : +..... °C (max +55°C)	
	Low Temperature	Specify : -..... °C (min -55°C)	
<u>Additional tests</u>			
Surface temperature test <sup>(1)</sup> / <sup>(2)</sup> Static load test <sup>(2)</sup> Watertightness test <sup>(2)</sup> / <sup>(3)</sup> Mechanical impacts test <sup>(2)</sup>			
<sup>(1)</sup> Feux halogènes uniquement <sup>(2)</sup> Feux encastrés uniquement <sup>(3)</sup> Feux alimentés en 6,6 A uniquement			

Lighting system(s) to be assessed (Cf Annex 2 : List of lighting systems)				
Airport lights				
APPROACH	Center line (flashing) / runway threshold identification			
	Center line (no flashing) / crossbar			
	Side row			
	PAPI			
RUNWAY	Edge	Precision approach	Width	45m
			Omnidirectional characteristic	60m
		Non precision approach		
			Night VFR	
	Threshold wing bar	Precision approach	Non precision approach	Night VFR
	Threshold			
	End			
	Center line	Longitudinal spacing 15 m	Cat I ou II	
		Longitudinal spacing 30 m	Cat III	
	Touchdown Zone			
	Rapid exit indicator (RETIL)	Longitudinal spacing 15 m	Cat I ou II	
		Longitudinal spacing 30 m	Cat III	
	Take-off hold (THL)			
	Illuminated crosses, completely closed runway			
TAXIWAY	Runway entrance (REL)	RVR < 350 m	Straight sections (Wide beam)	
	Runway guard	High Intensity	Configuration	A
		Low Intensity		B
	Center line Stop Bar / No-entry bar	with A-SMGCS RVR < 350 m RVR ≥ 350 m	Straight sections	Narrow beam
			Curved sections	Wide beam
	Enhanced rapid exit center line			
	Intermediate Holding Point (IHP)			
	Edge			
	Airport luminescent signs			
Mandatory	Information	RVR < 800m	RVR ≥ 800 m	
Heliport lighting systems				
Heliport beacon	HAPI		TLOF (light)	
Heliport fixed approach	FATO / Aiming point		TLOF (luminescent panel)	
Heliport flashing approach	Heliport taxiway center line			
Flight path alignment guidance lighting system		Heliport taxiway, edge or parking		
Obstruction light				
Horizontal beam spread				
Low Intensity	Type A	Type B	Type E	
Flashing frequency and duration				
Medium Intensity	Type A	Day/Twilight Night	Type B	Type C
	Secondary wind turbine top		Modified beam beacon	
Flashing frequency and duration				
High Intensity	Type A	Day	Twilight	Night
	Type B			
Flashing frequency and duration				

## Annex 1 : General terms and conditions for use of the service

### 1. Object and general terms

This agreement takes effect from the date of its notification by the STAC to the applicant, subject to the receipt by the STAC of the various items to be provided, mentioned in article « **Items to be provided** ».

No tests will be carried out without any application form duly filled in, dated and signed by the STAC and the applicant.

Any incomplete application is returned. Before applying, the applicant may contact the STAC by email at the address mentioned on page 1 (in the top left corner).

### 2. Particular conditions of termination

In the case of a serious breach of this agreement by one of the parties, the latter is denounced by the other party, by registered letter with acknowledgment of receipt, without prejudice to the provisions of article 17. below. The termination of this agreement is then effective at the date of receipt by the breaching party of the letter of denunciation issued by the non-breaching party.

### 3. Time frame

The average processing time for a request (excluding the summer period) is estimated to be less than 3 months from the receipt of the necessary elements indicated in the article « **Items to be provided** ».

### 4. Items to be provided

#### 4.1. List

##### 4.1.1. Technical documentation

The technical documentation of any product to be tested shall contain the information below. The results of any test which has already been carried out may also be provided.

Product	Elements provided by the technical documentation	
Light	<ul style="list-style-type: none"><li>Light source(s): model, brand, number, type (halogen, LED...)</li><li>Optical components: prisms, glass, lens, filters...</li><li>Optical center position</li><li>Body</li><li>Seals</li><li>Connections</li><li>Setting instructions</li><li>Electrical insulation resistance</li></ul>	<ul style="list-style-type: none"><li>Operating and maintenance instructions</li><li>Operating temperature range</li><li>Nominal electrical supply voltage or intensity</li><li>Electrical protection index</li><li>Electrical insulation class</li><li>Frangible or non-frangible type</li></ul>
Luminescent signs or panels	<ul style="list-style-type: none"><li>Light source(s) : model, brand, number, type (halogen, LED...), schema</li><li>Voltage converter : model, brand, conversion range</li><li>Front surface : material, manufacturer, model</li><li>Inner coating : material, manufacturer, model</li></ul>	

##### 4.1.2. Samples and other items

The number of samples to be provided per product to be tested is specified when sending this form duly signed by the STAC. Products with toe-in integrated at the conception are assessed for each of the possible configurations (e.g. inset runway lights).

The other items to be provided are mentioned below.

Products	Inset lights	Elevated lights	Luminescent panel (Heliport lighting)	Luminescent signs (Airport lighting)	
				Mandatory No-entry 08 – 26	Information ← A   B ↑
Other items to be provided					
Support structure (if not standard flush-mounted)	X				
Support for vertical mounting		X (if any)	X		
Specific aligning device / tool					

The applicant is liable for ensuring that any product sample to be tested complies with the following requirements :

- being compliant with Directive 2014/35/EU\* as set out in Decree 2015-1083 of 27 August 2015\*,
- being identified by a serial number,
- being compliant with health and safety at work standards and regulations in force.

\* DIRECTIVE 2014/35/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

\* DECREE 2015-1083 of 27 August 2015\* on the placing on the market of electrical equipment designed for use within certain voltage limits.

#### 4.1.3. Attestations

For any certification / approval request from a distributor, the latter provides an attestation from the manufacturer authorizing the distributor to market its product, if applicable under another brand/model name.

In the case of a request for an already certified product, the distributor must also provide a certificate stating that the newly referenced product has not undergone any modification compared to the initial product affecting its photometric and colorimetric performances. If not, the product must be reassessed.

### 5. Transport

The transport (including the delivery and the return) of any product sample that will be or has already been tested is at the expense and risk of the applicant. Please use the address mentioned on page 1.

### 6. Checks

When receiving the different product samples to be tested, the STAC checks their number, checks that they are not damaged and that they work. Then, the STAC acknowledges receipt, informing the applicant of any damage or defect.

### 7. Keeping of one product sample

The STAC keeps for 10 years, per any tested product, as a control sample (in case of subsequently needed tests), the sample on which only the photometry and the colorimetry tests at +23°C were performed. The other samples are taken back by the applicant, once the tests are completed.

This provision does apply only to aeronautical lights, no-entry luminescent signs and heliport luminescent panel.

### 8. Tests

#### 8.1. List

Tests	Products	Lights			Luminescent panel (Heliport lighting)	Luminescent signs (Airport lighting)	
		Airport or heliport lighting (except PAPI and HAPI)		PAPI HAPI			Obstacle or wind turbine lighting
		Elevated	Inset				
Photometry and colorimetry tests (performed at 23°C±2°C)							
Photometry and colorimetry tests at high and low temperature							
Mechanical impacts test							
Surface temperature test Static load test Watertightness test							

Tests performed on any provided sample Tests performed on one of the provided sample Non performed test

#### 8.2. Methods

Tests are performed in accordance with the normative reference CEI/TS 61827 : 2004 and with the documents PRO/SE/E/VIS/6029 and PRO/SE/E/VIS/6016.

#### 8.3. Methods selection

For fixed light, in case of a deviation between the tests method requested by the applicant and the one defined by the accreditation scope, tests will be performed outside the accreditation scope with the agreement of the applicant.

### 9. Accreditation

The STAC holds an accreditation by the COFRAC to perform photometry and colorimetry tests on fixed aeronautical lights. (Accreditation n° 1-5966 in the field Transport / Lighting and signaling devices / Performance or functional capacity testing). The accreditation scope is available on [www.cofrac.fr](http://www.cofrac.fr).

**The applicant is prohibited from using the accreditation mark of the STAC. Any misuse or abusive use, observed or brought to the attention of the STAC, will be notified to the Cofrac.**

### 10. Price

The tests listed above are free of charge..

## Annex 1 : General terms and conditions for use of the service

### 11. Deliverables

At the end of the tests, the STAC provides the applicant (or the addressee mentioned on page 1), by mail, a copy of the following documents :

- one or several tests reports including the tests results and their analysis,
- if appropriate, copy(ies) of certificate(s) of conformity or approval(s), for each tested product, (signed French version; including English translation (in italics) provided as a courtesy only),

The originals of the certificate(s) of conformity or approval(s) are sent by registered post with acknowledgement of receipt.

### 12. Measurement uncertainty

The uncertainties related to the various quantities sought are indicated for information purposes in the various tables presenting the results. They define 95% confidence level intervals (coverage factor  $k = 2$ ).

### 13. Compliance assessment

#### 13.1. Normative reference

The assessment of the compliance of a product is performed according to the **photometric and colorimetric** specifications in force, defined by the documents SPE/STAC/SE/E/VIS/6008 and SPE/SE/E/VIS/6009 written by the STAC in accordance with :

- ICAO Annex 14 (vol I and/or II),
- EASA CS-ADR-DSN and/or CS-HPT-DSN,
- Amended order of August 2003, 28th on aerodromes approval conditions and operating procedures,
- Amended order of April 2018, 23rd on air navigation obstruction lighting
- Amended order of September 2009, 29th on technical safety characteristics applicable to the design, the construction, the operation and the maintenance of the aeronautical ground infrastructures that are solely used by single main rotor helicopters
- Amended order of July 2003, 18th on the use of illuminated crosses on completely closed runways

These documents can be downloaded from the STAC website at [www.stac.aviation-civile.gouv.fr](http://www.stac.aviation-civile.gouv.fr)

**Any change to a certified or approved product, of whatever kind (optical, electrical, mechanical, structural), requires a re-assessment of the compliance of the product.**

#### 13.2. Decision rules

The expanded measurement uncertainty  $U$  ( $k=2$ ) is taken into account as follows when assessing the compliance of a product :

Photometric performance	<b>Cas 1 :</b> All results comply with regulatory specifications without taking $U$ into account.
	<b>Cas 2 :</b> One of the results complies with regulatory specifications when taking $U$ into account. The other results comply with regulatory specifications without taking $U$ into account.
Colorimetric performance	<b>Cas 1 :</b> All chromatic coordinates pairs comply with regulatory specifications without taking $U$ into account.
	<b>Cas 2 :</b> One or several chromatic coordinates pairs comply with regulatory specifications when taking $U$ into account.
Other performances	Not taken into account for the compliance assessment.

#### 13.3. Validity of certificates of conformity or approvals

A certificate of conformity or an approval issued by STAC does not mention any validity date. In other words, a certificate of conformity remains valid as long as no modification impacting the photometric and colorimetric performances of the certified equipment (optical, electrical or mechanical) is made.

### 14. Responsibilities

#### 14.1. Products to be tested

The STAC is liable for the storage of any product to be tested, once received in its premises. The STAC undertakes to test it in accordance with the operating instructions supplied by the applicant. The applicant will cover any damage that may arise to the staff or to the facilities of the STAC from operating the product in accordance with its operating instructions.

No compensation for the loss sustained by the applicant may be claimed from the STAC, which shall not be held liable, in the following cases related to the product to be tested :

- damages or loss occurring during its transport (to and from the STAC),
- operating defects noted by the STAC upon its receipt,
- unintentional damages occurring during the tests.

#### 14.2. Documentation

The STAC is liable for the management of any information obtained or generated during its activities. Within this framework, no information is made public, except for :

- the information « Model », « Brand », « Inset or elevated type » and « Colour », « Nominal power supply », « Luminous sources type », « Light intensity of the main beam » and « Certificate number and date » which is published on the STAC website in case of successful certification evaluation,
- data made public by the applicant.

Any other information is deemed exclusive and confidential.

### 15. Non-disclosure of intellectual property and personal data

The STAC undertakes to protect and not to disclose any intellectual properties and any personal data of the applicant. Furthermore, the STAC undertakes not to disclose any tests results to any third party which is not part of the DGAC.

Nevertheless, some data may be communicated to third parties (such as regulatory authorities, certification / accreditation bodies or auditors conducting audits dealing with the quality policy of the STAC) and analysed for statistical or scientific purposes.

### 16. Force majeure

Neither of both parties shall be compelled to comply with the terms of this agreement if some causes legitimately beyond its control prevent it from doing so. The affected party will have to notify the other party of the detailed reasons for invoking force majeure, to explain the predictable effects on this agreement and to put forward proposals for a resolution.

### 17. Dispute resolution and claims handling

Both parties shall endeavor to act in good faith to resolve amicably any dispute between them arising from difficulties in complying with the terms of this agreement or from any new event affecting it. In the hypothesis where no negotiated solution, acceptable to both parties, may be found, the parties submit to the exclusive French court jurisdiction.

Any claim by the applicant shall be made by e-mail at the address mentioned on page 1. The claim handling process implemented by the STAC is made available on request.

## Annex 2 : List of lighting systems

Airport lights	Obstruction lights	Heliport lighting systems	Airport luminescent signs
Approach, centre line (flashing) / runway threshold identification	LI A	Heliport beacon	Mandatory (RVR < 800 m)
Approach, centre line (non flashing) / crossbar	LI B	Heliport fixed approach	Mandatory (RVR ≥ 800 m)
Approach, side row	LI E	Heliport flashing approach	Information (RVR < 800 m)
Approach, PAPI	MI A day / twilight	Flight path alignment guidance lighting system	Information (RVR ≥ 800 m)
Runway, edge (precision approaches, width : 45 m, without an omnidirectional characteristic)	MI A night	HAPI	
Runway, edge (precision approaches, width : 60 m, without an omnidirectional characteristic)	MI B	FATO / Aiming point	
Runway, edge (precision approaches, width : 45 m, with an omnidirectional characteristic)	MI C	TLOF (light)	
Runway, edge (precision approaches, width : 60 m, with an omnidirectional characteristic)	Secondary wind turbine top	TLOF (luminescent panel)	
Runway, edge (non-precision approaches)	Modified beam beacon	Heliport taxiway, centre line	
Runway, edge (night VFR)	HI A twilight	Heliport taxiway, edge or parking	
Runway, threshold wing bar (precision approaches)	HI A day		
Runway, threshold (precision approaches)	HI A night		
Runway, threshold and threshold wing bar (non-precision approaches)	HI B twilight		
Runway, threshold and threshold wing bar (night VFR)	HI B day		
Runway, end (precision approaches)	HI B night		
Runway, end (non-precision approaches)			
Runway, end (night VFR)			
Runway, end/threshold (precision approaches)			
Runway, end/threshold (non-precision approaches)			
Runway, end/threshold (night VFR)			
Runway, centre line (longitudinal spacing : 15 m, category I or II)			
Runway, centre line (longitudinal spacing : 15 m, category III)			
Runway, centre line (longitudinal spacing : 30 m)			
Runway, TDZ			
Runway, RETIL (longitudinal spacing : 15 m, category I or II)			
Runway, RETIL (longitudinal spacing : 15 m, category III)			
Runway, RETIL (longitudinal spacing : 30 m)			
Runway, take-off hold : THL			
Runway, Illuminated crosses, completely closed runway			
Taxiway, REL (RVR < 350m, straight sections, wide beam)			
Taxiway, REL (RVR < 350m curved sections)			
Low intensity runway guard (configuration A)			
High intensity runway guard (configuration A)			
Low intensity runway guard (configuration B)			
High intensity runway guard (configuration B)			
Taxiway, centre line (without A-SMCGS, RVR < 350 m, straight sections, wide beam)			
Taxiway, centre line (without A-SMCGS, RVR < 350 m, straight sections, narrow beam)			
Taxiway, centre line (without A-SMCGS, RVR < 350 m, curved sections)			
Taxiway, centre line (without A-SMCGS, RVR ≥ 350 m, straight sections)			
Taxiway, centre line (without A-SMCGS, RVR ≥ 350 m, curved sections)			
Taxiway, centre line (with A-SMCGS, straight sections, wide beam)			
Taxiway, centre line (with A-SMCGS, straight sections, narrow beam)			
Taxiway, centre line (with A-SMCGS, curved sections)			
Taxiway, enhanced rapid exit taxiway centre line			
Taxiway, edge			
Taxiway, SB / NEB (without A-SMCGS, RVR < 350 m, straight sections, wide beam)			
Taxiway, SB / NEB (without A-SMCGS, RVR < 350 m, straight sections, narrow beam)			
Taxiway, SB / NEB (without A-SMCGS, RVR < 350 m, curved sections)			
Taxiway, SB / NEB without A-SMCGS, RVR ≥ 350 m, straight sections)			
Taxiway, SB / NEB (without A-SMCGS, RVR ≥ 350 m, curved sections)			
Taxiway, SB / NEB (with A-SMCGS, straight sections, wide beam)			
Taxiway, SB / NEB (with A-SMCGS, straight sections, narrow beam)			
Taxiway, SB / NEB (with A-SMCGS, curved sections)			
Taxiway, Intermediate Holding Point			

### Legend :

PAPI : Precision approach path indicator  
 VFR : Visual flight rules  
 TDZ : Touchdown zone  
 THL : Take-off and hold light  
 RETIL : Rapid exit taxiway indicator lights

A-SMCGS : Advanced surface movement guidance and control system

RVR : Runway visual range  
 SB : Stop bar  
 NEB : No-entry bar  
 REL : Runway entrance light

HI : High intensity  
 MI : Medium intensity  
 LI : Low intensity

FATO : Final approach and take-off

TLOF : Touchdown and lift-off area

HAPI : Helicopter approach path indicator