



**MINISTÈRE  
CHARGÉ  
DES TRANSPORTS**

*Liberté  
Égalité  
Fraternité*



direction  
générale  
de l'Aviation  
civile

**Service technique de l'Aviation civile**

**Test application**

Contact Persons :

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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**

Applicant	
<u>Compagny</u>	<u>Contact person</u>
Corporate name :	NAME, first name :
Postal address :	Phone :
	Email :
Deliverables recipients (if different from the applicant)	
NAME, first name :	
Postal address :	
Purpose	
<input type="checkbox"/> Certification / Approval (Photometric and colorimetric performance only)	
<input type="checkbox"/> Expert opinion (night VFR)	
Requested tests to be mentioned in the table on the next page.	
Light(s) / Sign(s) / Panel(s) to be tested	
<u>Characteristics :</u>	
Please fill in the table on the next page.	
<u>Delivery address :</u> (for the light(s) / sign(s) / panel(s) to be tested)	
Direction de la technique et de l'innovation Bâtiment U – Laboratoire « Aides visuelles » 1 avenue du Docteur Grynfoegel 31035 Toulouse Cedex 1 FRANCE	
<b>Warning :</b> The transport (including the delivery and the return) of any light / sign / panel is at the expense and risk of the applicant.	
Engagement	
<b>Applicant</b>	<b>STAC</b> <b>Application admissibility</b>
<input type="checkbox"/> I read and accept all the general terms and conditions for use of the service attached in annex	<b>FDEM n° :</b>
Date :	
Signature :	

Description of the equipment to be assessed		
Please ensure consistency between these informations, product labelling and associated technical documentation		
<b>Characteristics :</b>		
BRAND		
MODEL		
Product Code		
Inset / Elevated		
Nominal electrical supply voltage or intensity		
<b>Lighting functions to be assessed : fill the right column table</b>		
<b>Settings (obstacle marker lights only)</b>		
Azimutal coverage angle		
Frequency / Flash duration		
<b>Luminous sources characteristics :</b>		
Brand(s)		
Color(s)		
Number		
Halogen / LED / Other ?		
<b>Complete</b> reference(s)		
<b>Requested tests</b>		
<b>Photometric and colorimetric tests</b>		
<input type="checkbox"/> Standard (23°C)	<input type="checkbox"/> High temperature	Specify : +..... °C (max +55°C)
	<input type="checkbox"/> Low Temperature	Specify : -..... °C (min -55°C)
<b>Additional tests</b>		
<input type="checkbox"/> Accelerated life test *	<input type="checkbox"/> Surface temperature test * / **	
<input type="checkbox"/> Static load test **	<input type="checkbox"/> Watertightness test **	<input type="checkbox"/> Mechanical impacts test **
* Halogen lights only	** Inset lights only	

Tested lighting functions to be assessed (Cf Annex 2 : tested lighting functions)				
<b>Airport lights</b>				
APPROACH	<input type="checkbox"/> Side row <input type="checkbox"/> Center line (no flashing) / crossbar <input type="checkbox"/> Center line (flashing) / runway threshold identification <input type="checkbox"/> PAPI			
	<input type="checkbox"/> Threshold wing bar			
	Center line	Longitudinal spacing 15 m	<input type="checkbox"/> Cat I or II <input type="checkbox"/> Cat III	
		<input type="checkbox"/> Longitudinal spacing 30 m		
RUNWAY	Edge	Precision approach	width	<input type="checkbox"/> 45m <input type="checkbox"/> 60m
		Omnidirectional characteristic	<input type="checkbox"/> with <input type="checkbox"/> without	
	<input type="checkbox"/> Non precision approach			
	<input type="checkbox"/> Night VFR			
	<input type="checkbox"/> Threshold <input type="checkbox"/> End	<input type="checkbox"/> Non precision approach	<input type="checkbox"/> Precision approach	<input type="checkbox"/> night VFR
	Rapid exit indicator		Longitudinal spacing 15 m	<input type="checkbox"/> Cat I or II <input type="checkbox"/> Cat III
<input type="checkbox"/> Longitudinal spacing 30 m				
<input type="checkbox"/> Touch Down Zone / Simple Touch Down Zone				
<input type="checkbox"/> Take-off hold (THL)				
TAXIWAY	<input type="checkbox"/> Center line <input type="checkbox"/> stop Bar / no-entry bar	<input type="checkbox"/> with A-SMGCS <input type="checkbox"/> RVR < 350 m <input type="checkbox"/> RVR ≥ 350 m	<input type="checkbox"/> Curved sections <input type="checkbox"/> Straight sections	<input type="checkbox"/> Narrow beam <input type="checkbox"/> Wide beam
	<input type="checkbox"/> Enhanced rapid exit center line			
	<input type="checkbox"/> Runway entrance (REL)			
	<input type="checkbox"/> Edge			
	Runway guard	<input type="checkbox"/> High Intensity <input type="checkbox"/> Low Intensity	Configuration	<input type="checkbox"/> A <input type="checkbox"/> B
<b>Airport luminescent signs</b>				
<input type="checkbox"/> Mandatory <input type="checkbox"/> Information		<input type="checkbox"/> RVR < 800m <input type="checkbox"/> RVR ≥ 800 m		
<b>Heliport lighting systems</b>				
<input type="checkbox"/> Heliport fixed approach	<input type="checkbox"/> FATO	<input type="checkbox"/> Heliport taxiway center line		
<input type="checkbox"/> Heliport flashing approach	<input type="checkbox"/> Aiming point	<input type="checkbox"/> TLOF (light)		
<input type="checkbox"/> Heliport beacon	<input type="checkbox"/> HAPI	<input type="checkbox"/> TLOF (luminescent panel)		
<input type="checkbox"/> Heliport taxiway, edge or parking				
<b>Obstruction light</b>				
Low Intensity	<input type="checkbox"/> Type A	<input type="checkbox"/> Type B	<input type="checkbox"/> Type E	
Medium Intensity	Type A	<input type="checkbox"/> Day/Twilight <input type="checkbox"/> Night	<input type="checkbox"/> Type B	<input type="checkbox"/> Type C
	<input type="checkbox"/> Secondary wind turbine top			
High Intensity	<input type="checkbox"/> Type A	<input type="checkbox"/> Day	<input type="checkbox"/> Twilight	<input type="checkbox"/> Night
	<input type="checkbox"/> Type B			

## 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 4. below.

No tests will be carried out without any application form dully 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 right 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 STAC undertakes to process within 2 months (except during summer period) from the receipt of the required items to be provided mentioned in article 4. below, any initial application for the certification or the approval of a product (only its photometric and colorimetric performances at 23°C<sup>±2°C</sup>).

### 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	Éléments renseignés par la documentation technique	
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>
	<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>	
Luminescent signs or panels		

##### 4.1.2. Samples and other items

The number of samples to be provided per product to be tested is mentioned by the STAC upon receipt of the application form (in the part reserved for the STAC, in the table listing the products to be tested). 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	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 identified by a serial number and bearing CE marking,
- being compliant with health and safety at work standards and regulations in force.

##### 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 an attestation stating that the newly referenced product has not undergone any change from the original product. If not, the product will 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<sup>±2°C</sup> 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

Products   <
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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

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.

### 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 without its written agreement. 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.

### 11. Deliverables

At the end of the tests, the STAC provides the applicant (or the addressee mentioned on page 1), by post, with the following documents in a single original copy :

- one or several tests reports including the tests results and their analysis,
- if appropriate, one or several certificates of compliance or approvals, for each tested product (signed French version ; including English translation (in italics) only provided as a courtesy).

### 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 = 1.96)

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

### 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,
- EASA CS-ADR-DSN,
- order of April 2018, 23rd on air navigation obstruction lighting.

**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=1.96) is taken into account as follows when assessing the compliance of a product :

Photometric performance	<b>Case 1 :</b> All results comply with regulatory specifications without taking U into account.
	<b>Case 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>Case 1 :</b> All chromatic coordinates pairs comply with regulatory specifications without taking U into account.
	<b>Case 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.

### 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" which is published on the STAC website in case of successful certification evaluation,
- any information which is 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 email at the address mentioned on page 1. The claim handling process implemented by the STAC is made available on request.

## Annex 2 : Tested lighting functions

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

### Legend :

PAPI : Precision approach path indicator

VFR : Visual flight rules

TDZ : Touchdown zone

THL : Take-off and hold light

A-SMCGS : Advanced surface movement guidance and control system

RVR : Runway visual range

SB : Stop bar

NEB : No-entry bar

REL : Runway entrance light

FATO : Final approach and take-off

TLOF : Touchdown and lift-off area

HAPI : Helicopter approach path indicator