

French [Decree of December 27th, 2018](#)
relating to the prevention, reduction and limitation of light pollution

DECREE	<i>COMMENTS and French words or names when required</i>
	<i>"Decree": "Arrêté"</i>
<p>Article 1 This decree applies to lighting installations:</p>	<i>Article 1 lists the lighting installations covered by the decree</i>
<p>art. 1-a) Intended to promote the safety of movements, people and goods, and the comfort of users in outdoor public or private spaces, in particular roads, excluding vehicles lighting, tunnel lighting, lighting installations established to ensure aviation safety, rail safety and maritime and river safety;</p>	<i>Item a) means that nearly all public and private outdoor lighting installations are covered by the decree.</i>
<p>art. 1-b) Highlighting the heritage, as defined in article L. 1 of the Heritage Code, the built environment, as well as private and public parks and gardens accessible to the public or belonging to companies, social landlords or co-ownership;</p> <p>art. 1-c) Assigned to outdoor or discoverable sports equipment;</p> <p>art. 1-d) Assigned to non-residential buildings, covering both the lighting of the buildings and the interior lighting emitting to the outside of these same buildings, excluding toll stations;</p>	<i>« Heritage Code »: « Code du Patrimoine »</i>
<p>art. 1-e) Assigned to uncovered or semi-covered parking areas;</p>	
<p>art. 1-f) Designed for outdoor events, consisting of temporary light installations used for an artistic, cultural, commercial, sporting or leisure event;</p> <p>art. 1-g) Assigned to outdoor worksites.</p>	
<p>Article 2</p>	<i>Article 2 lists the temporality dispositions</i>
<p>art. 2-I. - The outdoor lighting defined in a) of article 1 of this decree, linked to an economic activity and located in an uncovered or semi-covered enclosed space, are switched-off no later than 1 hour after the end of activity and are turned back on at 7 a.m. at the earliest or 1 hour before the start of the activity if effective earlier.</p>	<i>This item means that all outdoor lighting installations inside an enclosed perimeter, must be switched off if there is no activity in the enclosed perimeter. The weakness is the mandatory link to an economic activity.</i>
<p>art. 2-II. - The highlighting of the heritage and the lighting of parks and gardens defined in b) are switched on at sunset at the earliest and are switched off at the latest at 1 a.m. or, in the case of parks and gardens, at the latest 1 hour after closure.</p>	
<p>art. 2-III. – The highlighting of non-residential buildings defined in d) are switched on at sunset at the earliest and are switched off at 1 am at the latest. The interior lighting of professional premises is switched off at the latest one hour after the end of the occupation of these premises and are switched on at 7 a.m. at the earliest or 1 hour before the start of the activity if effective earlier. Shop window lighting for trade or exhibition stores are switched off at 1 a.m. at the latest or 1 hour after the end of the activity if this is later, and are switched on at 7 a.m. at the earliest or 1 hour before the start of the activity if effective earlier.</p>	
<p>art. 2-IV. - The lighting of the parking areas defined in e) of article 1 of this decree which are annexed to an activity zone are switched-on at sunset at the earliest and are switched-off 2 hours after the activity ceases.</p>	<i>The previous weakness in art. 2-I of the mandatory link to an economic activity does not appear in this context. Any activity zone is concerned (sport facility, college, administrative building...)</i>

These lights can be turned-on again at 7 a.m. at the earliest or 1 hour before the start of the activity if it occurs earlier.

art. 2-V. - The lighting of outdoor work sites defined in g), without prejudice to [articles R. 4534-1 and seq.](#) of the Labor Code, are switched-on at sunset at the earliest and are switched-off no later than 1 hour after the activity ceases.

« Labor Code »: « [Code du Travail](#) »

Note

[Art. R4223-4](#) of the Labor Code:

OUTDOOR SPACES	Illuminance MINIMUM VALUES
Exterior traffic areas and routes	10 lux
Outdoor spaces where work of a permanent nature is carried out	40 lux

art. 2-VI. - More restrictive local adaptations can be stated by the prefect to take into account particular sensitivity to the effects of light on fauna and flora species as well as on ecological continuities mentioned in [article L. 371-1](#) of the Environment Code under the conditions defined in [article R. 583-6](#) of the [Environment Code](#).

« Environment Code »: « [Code de l'Environnement](#) »

art. 2-VII. - The requirements of items I to IV can be adapted when these installations are coupled to presence detection devices and natural light control devices. The presence detection devices only generate occasional lighting.

This item allows occasional switch-on of the lighting installation at any time if coupled to a detection device.

« Labor Code »: « [Code du Travail](#) »

The mayor may derogate from the provisions concerning the switch-off of the lighting installations referred to in b) and d) of article 1 (with the exception of those concerning the facades of buildings), at the eve of public holidays and during the Christmas lights.

The prefects may derogate from these same provisions during exceptional events of a local nature defined by prefectural order and in tourist areas and international tourist areas mentioned in [article L.3132-24](#) of the Labor Code.

art. 2-VIII. - If necessary, the managers of lighting installations initiate a reflection on the possibilities of switching-off their installations. This reflection is carried out with the various stakeholders involved in the fight against light pollution at the local level.

Article 3

Article 3 lists the luminaires and lighting installations technical requirements

art. 3-I. - The emissions of artificial light from outdoor lighting installations and indoor lighting emitted towards outside are designed in such a way as to prevent, limit and reduce light pollution, in particular disturbances to people, fauna, flora or ecosystems, resulting in wasted energy or preventing night sky observation.

art. 3-II. - The lighting installations referred to in Article 1 are equipped with luminaires ensuring the following requirements:

1°/ For the outdoor lighting defined in a) and the car parks defined in e) of article 1, the managers ensure that the proportion of light emitted by the luminaire they are acquiring, above of the horizontal, is strictly less than 1%, in and outside urban areas. On site, the lighting installation respects the mounting conditions recommended by the manufacturer and in any case ensures a proportion of light emitted above the horizontal strictly less than 4%.

That is:

- $ULR < 1\%$ (laboratory value)
- $ULR_{\alpha} < 4\%$ (on site, installation conditions value)

To be reminded,

- $ULR \neq ULOR$
- The [EU Green Public Procurement Criteria for Road Lighting](#) (Technical Specification 7) recommends $ULR_{\alpha} = 0\%$ (on site, installation conditions effective value)

« in and outside urban areas »: « en et hors agglomération au sens du Code de la Route ».

According to items art. 1-a) and art.1-e), nearly all public and private outdoor lighting installations are covered by that disposition.

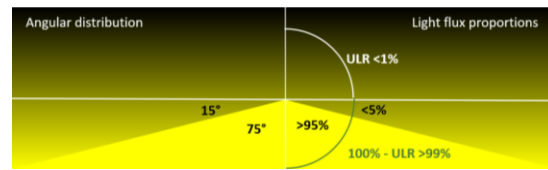
Are exempted from maximum value for their proportion of light flux above the horizontal, until December 31, 2023, luminaires satisfying one of the following conditions:

- the luminaire has been present in its location since 1945;
- the luminaire reproduces a before 1945 model, and has been reconstructed from the archives mentioned in Book II of the Heritage Code;
- the luminaire is protected as a historical monument or by the regulations of a remarkable heritage site mentioned in Book VI of the Heritage Code or is integrated to a building or a housing complex benefiting from the same protections or the provisions of Article L. 151-19 of the Town Planning Code;
- the luminaire is integrated into a building or a building complex having received the label mentioned in article L. 650-1 of the Heritage Code.

« Heritage Code »: « [Code du Patrimoine](#) »
 « Town Planning Code »: « [Code de l'Urbanisme](#) »

2°/ For the outdoor lighting installations defined in a) and the car parks defined in e) of article 1, the proportion of light flux emitted in the lower hemisphere inside a solid angle of $3 \pi/2$ sr (solid angle equivalent to a cone of half-angle 75.5°) with respect to the luminous flux emitted throughout the lower hemisphere (CIE Flux Code #3), is greater than 95%, in and outside urban areas.

According to items art. 1-a) and art.1-e), nearly all public and private outdoor lighting installations are covered by that disposition.



Scheme to scale

« In and outside urban areas »: « en et hors agglomération au sens du Code de la Route ».

Definition of CIE Flux Code #3 may be found [there](#).

3°/ For the outdoor lighting installations defined in a), the non-residential buildings defined in d) and the car parks defined in e) of article 1, the color temperature does not exceed the maximum value of 3,000K in and outside urban areas.

An [environmental performance labelling](#) dedicated to the color temperature.

4°/ The surface density of installed lighting flux (overall flux of light sources relative to the area intended to be lit, in lumens per square meter), complies with the following maximum values:

“The surface density of installed lighting flux” as “la Densité Surfaccique de Flux Lumineux Installé” (“DSFLI”), is an original physical quantity specifically defined for the decree: the overall flux of light sources (bulb or led module light output flux \geq luminaire light output flux), relative to the area intended to be lit (road, sidewalk, car park, working and storage areas,...only, edges, roadside, surroundings... excluded), in lumens (from the light source) per square meter (of the area to be lit).

(lm/m ²)	Inside urban areas	Outside urban areas
Outdoor lighting installations mentioned in art. 1-a/	< 35	< 25
Parks and gardens mentioned in art. 1-b/	< 25	< 10
Non-residential buildings mentioned in art. 1-d/	< 25	< 20
Parking areas mentioned in art. 1-e/	< 25	< 20

It is not an illuminance: it must be understood as a source (bulb, module) light flux allocation per square meter of the area to be lit.

To say it clearly: if one wishes to lit 1m² of an area responding to art. 1-a) application, the bulb or the led module light output, fitted inside the luminaire, cannot exceed 35 lm inside urban areas.

A complete and pictorial definition of the “DSFLI”: [pptx](#), [pdf](#).
 An [environmental performance labelling](#) dedicated to the “DSFLI”.

The surface density of installed lighting flux can be reduced during the night, according to a schedule set by the competent authority.

Redundant disposition covered by the previous item.

For outdoor paths accessible to people with disabilities as well as parking areas and pedestrian paths accessible to people with disabilities, the illuminance does not exceed 20 lux.

The unique disposition of the Decree referring to illuminance. This disposition must comply with the ones on “DSFLI”.

5°/ The lighting installations must not emit excessive intrusive light in the dwellings whatever the origin of this light.

Disposition lacking a definition of excessive intrusive light.

Article 4	Article 4 lists particular cases with strengthened dispositions
<p>art. 4-I. - Within the perimeter of the astronomical observation sites listed in the decree of December 27, 2018, the lighting installations referred to in article 1 and their use, comply with the temporal conditions provided in article 2, and the technical requirements provided in article 3, as prescribed outside urban areas.</p>	<p>“decree”: “arrêté”</p>
<p>For the lighting installations defined in b) of article 1 located in these perimeters, the proportion of light emitted by the luminaire, in installation conditions on site, above the horizontal is 0.</p> <p>In these same perimeters, the color temperature of lighting installations assigned to outdoor worksites may not exceed 3,000K.</p>	<p><i>That is, for lighting installation highlighting the heritage:</i> $ULR_{\alpha} = ULOR_{\alpha} = 0\%$ (on site, installation conditions value)</p>
<p>art. 4-II. - In natural reserves and their perimeter of protection mentioned in the second paragraph of the appendix to the decree of July 12th, 2011, the lighting installations referred to in article 1 and their use, comply with the temporal conditions provided in article 2 and the technical requirements provided in article 3, as prescribed outside urban areas.</p>	<p>Natural reserves and their perimeter of protection:</p> <ul style="list-style-type: none"> • https://www.geoportail.gouv.fr/donnees/reserves-naturelles-nationales • https://www.reserves-naturelles.org
<p>For the lighting installations defined in b) of article 1 located in these perimeters, the proportion of light emitted by the luminaire, in installation conditions on site, above the horizontal is 0.</p> <p>In these same areas, the color temperature of lighting installations defined in a) to f) of article 1 may not exceed 2,400K, and that defined in g) of the same article may not exceed 3,000K.</p>	<p><i>That is, for lighting installation highlighting the heritage:</i> $ULR_{\alpha} = ULOR_{\alpha} = 0\%$ (on site, installation conditions value)</p>
<p>In application of article L. 583-2 of the Environment Code, the Prefect may, after consulting the manager and the consultative committee of a nature reserve, as well as the departmental commission referred to in article R. 583-6 of the same Code, set strengthened requirements for nature reserves and their perimeter of protection. The Prefect consults also the regional council for regional nature reserves and their perimeter of protection or the Corsica local authority for the nature reserves of Corsica and their perimeter of protection.</p> <p>These strengthened requirements may apply to the dispositions defined in articles 2 and 3 as well as in this paragraph, and may be assigned to all or part of the lighting installations defined in article 1.</p>	<p>« Environment Code »: « Code de l'Environnement »</p> <p>« Prefect»: the local government representative (French Department level)</p> <p>Nature reserves and their perimeter of protection:</p> <ul style="list-style-type: none"> • https://www.geoportail.gouv.fr/donnees/reserves-naturelles-nationales • https://www.reserves-naturelles.org
<p>art. 4-III. - In the regional nature parks and the marine nature parks mentioned respectively in the third and fourth items of the appendix to the decree of July 12, 2011, and in the territories of the municipalities that have adhered to the charter of national park, classified by the decrees of creation of the national parks listed in article L. 331-2 of the Environment Code, pursuant to article L. 583-2 of the same Code, the Prefect may, after consulting the municipalities of regional nature parks, the management council of the marine nature park or the board of directors of the public establishment of the national park, and after consulting the departmental commission referred to in article R. 583-6 of the same Code, set strengthened prescriptions.</p> <p>These technical prescriptions adapt the temporality prescriptions defined in article 2, so as to strengthen them, on all or part of the area of these natural spaces. They can adapt the technical prescriptions defined in article 3 on all or part of the municipalities of these natural areas, including the lighting installations defined in b and f of article 1.</p>	<p>« Regional nature parks » and « Marine nature parks » mentioned in the appendix to the decree of July 12, 2011:</p> <ul style="list-style-type: none"> • https://www.parcs-naturels-regionaux.fr/les-parcs/decouvrir-les-58-parcs • https://www.ofb.gouv.fr/les-parcs-naturels-marins-et-le-sanctuaire-de-mammiferes-marins-aqaa <p>« National parks »:</p> <ul style="list-style-type: none"> • http://www.parcsnationaux.fr/fr
<p>Inside the core of national parks classified by the decrees of creation of the national parks mentioned in article L. 331-2 of the same code, the maximum color temperatures of the lighting are 2,700 K in urban areas and 2,400 K outside urban areas.</p>	<p>« National park core »:</p> <ul style="list-style-type: none"> • http://www.parcsnationaux.fr/fr/des-decouvertes/les-parcs-nationaux-de-france/lorganisation-du-territoire-dun-parc-national-francais

<p>art. 4-IV. - Lighting installations of the light beamer type, with a fixed or mobile beam, whose luminous flux is higher than 100,000 lumens, and installations with laser beams, are prohibited in natural areas and in the perimeter of the astronomical observation sites mentioned in article R. 583-4 of the Environment Code, except for the equipment necessary for the activities of these observatories.</p>	<p>« Natural areas »:</p> <ul style="list-style-type: none"> • https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000032061896/ • « Astronomical observation sites »: • https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000037864375
<p>art. 4-V. – The lighting installations referred to in Article 1 do not directly illuminate watercourses, the river public domain (DPF), bodies of water, lakes, ponds, the maritime public domain (DPM) (land and maritime parts), except in the case of prescriptions of the Labor Code concerning the port handling activities, and except for reasons of safety in traffic and parking areas bordering bodies of water, for a particular event or within the framework of a temporary licence to occupy the DPM or the DPF. Excluded from the scope of this article are port facilities for handling or industrial exploitation, commercial and fishing operations, including the body of water immediately adjacent to the facilities, within the DPM and DPF.</p> <p>In order to limit the visibility of the light sources from the sea, any new lighting installation in the coastal zone, and visible from the sea or the beach, is oriented facing back to the DPM, and/or is equipped with device that hides the light source in order to suppress light emission towards the DPM, and illuminates the needed terrestrial area only.</p>	<p>« Labor Code »: « Code du Travail »</p>
<p>art. 4-VI. – Under the conditions defined in article R. 583-6 of the Environment Code, the Prefect may also prohibit temporary or permanently, lighting installations of the light beamer type whose luminous flux is greater than 100,000 lumens, and installations with laser beams, in some areas, to take into account particular sensitivities of faunal species to the effects of light.</p>	
<p>Article 5</p>	<p>Article 5 lists the information that must be made available by the manager of the lighting installation</p>
<p>The manager makes available to the agents carrying out compliance checks with this decree the following technical data concerning the lighting installations for which he is responsible:</p> <ul style="list-style-type: none"> – the proportion (in %) of light emitted by the luminaire above the horizontal; – the proportion (in %) of light emitted by the luminaire within a cone of half-angle 75.5°, relative to the emitted light below the horizontal (CIE Flux Code #3); – the nominal color temperature (in kelvins) of the light emitted by the source; – the maximum electrical power (in watts) of the luminaire in operation; – the maximum light flux (in lumens) of the source in operation; – the date the luminaire head was installed. 	
<p>The manager also provides the controller with the elements to verify the compliance of the lighting installations to the requirements of articles 3 to 4.</p>	<p><i>The lighting installation manager brings the proof of the compliance of its installation to the Decree</i></p>
<p>The compliance check with the requirements defined in article 2 of this decree is carried out visually by the competent authority mentioned in article L. 583-3 of the Environment Code.</p> <p>For the other requirements defined in article 3, the control can be carried out by measurement (color temperature) and by calculation (average installed lighting flux, CIE Flux Code #3).</p>	

Article 6	<i>Article 6 allows possible requirements adaptations within the perimeter of the astronomical observation sites</i>
Communities located within the perimeter of the astronomical observation sites listed in the decree of December 27, 2018 may derogate from the obligations of I of article 4. In this case, they carry out a plan against light pollution to insure the prevention, limitation and elimination of light pollution that could prevent astronomical observation activities at these sites. This plan must demonstrate that the proposed technical choices make it possible to obtain results equivalent to those obtained by compliance with the requirements of the decree.	<i>It is unclear how alternate requirements to ULR, CIE CF #3, color temperature, "DSFLI"..., could lead to equivalent results.</i>
Article 7	<i>Article 7 establishes the repeal of the Decree of January 25, 2013 relating to night lighting of non-residential buildings in order to limit light pollution and energy consumption, and its comprehensive introduction into the Decree of December 27, 2018.</i>
Amended the following provisions, <ul style="list-style-type: none"> - repeals Decree of January 25, 2013 (Ab) - repeals Decree of January 25, 2013 - art. 1 (Ab) - repeals Decree of January 25, 2013 - art. 2 (Ab) - repeals Decree of January 25, 2013 - art. 3 (Ab) - repeals Decree of January 25, 2013 - art. 4 (Ab) - repeals Decree of January 25, 2013 - art. 5 (Ab) - repeals Decree of January 25, 2013 - art. 6 (Ab) - repeals Decree of January 25, 2013 - art. 7 (Ab) 	
Article 8	<i>Article 8 sets the dates of entry into force of the various requirements; most of them are not retroactive.</i>
The provisions of this decree come into force on January 1, 2020 for lighting installations put into service after this date. For lighting installations commissioned before January 1, 2020:	
- the provisions of paragraph III article 2 come into force the day after the publication of the order; - the provisions of article 2 except paragraph III, when they do not require the creation of a separate electrical supply network, come into force on January 1, 2021;	<i>When technically available, switch-off requirements come into force immediately.</i>
- the provisions of article 3 related to the proportion of light emitted by the luminaire above the horizontal in installation conditions on site, for luminaires which allow orientation adjustment, come into force on January 1, 2020;	<i>Luminaires whose orientation is adjustable have to be adjusted since January 1, 2020, to ensure $ULR_a < 4\%$. It is a retroactive provision.</i>
- lighting installations for which the proportion of light emitted by the luminaire above the horizontal in installation conditions on site, is greater than 50%, are replaced by luminaires complying with the provisions of this decree no later than January 1, 2025;	<i>Ball street lamps and the like showing $ULR_a > 50\%$, must be removed from public and private lighting installations, no later than January 1, 2025.</i>
- the provisions relating to the possibility to the Prefect of issuing prescriptions by decree in II, III and VI of Article 4 come into force on January 1, 2020;	
- the provisions of IV of article 4 come into force the day after the publication of this order;	<i>Provisions concerning light-beamers in specific areas.</i>
- the provisions of V of article 4, with the exception of installations intended to promote the safety of movements, people and goods, come into force on January 1, 2020.	<i>Provisions concerning aquatic areas. They are retroactive provisions and essentially concern highlighting of monuments, bridges for example.</i>

Article 9

This decree will be published in the Official Journal of the French Republic

Done on December 27, 2018.

The Minister of State, Minister of “transition écologique et solidaire”,
François de Rugy

The Secretary of State to the Minister of State, Minister of “transition
écologique et solidaire”,
Emmanuelle Wargon