



# UEFA

## Guide for Stadium Entertainment Lighting

(2023 EDITION)

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### Introduction

This document contains a set of recommendations that have been developed in response to the many requests that UEFA has received to provide detailed practical and technical advice with regards to the best practice in using the pitch floodlighting system to provide entertainment effects before a UEFA football match.

Indeed in recent years there has been a substantial change to the technical attributes of some pitch illuminance systems. In the past the traditional light source of the illuminance system would be a HID (high intensity discharge) lamp. A HID light source will not permit the instantaneous control that is required to produce a light show within a stadium environment. However, in recent years some stadium pitch illuminance systems have been installed using LED luminaires which generally allow for a comprehensive element of control which allow effective light shows to be designed whilst importantly ensure that the match illuminance conditions will not be compromised.

The aim of this document is to provide the essential framework to ensure Clubs/National Associations, UEFA onsite representatives and TV Broadcasters are all fully informed about the best practice to ensure a successful implementation of the light show.

In order to provide clear and concise information to the relevant parties the information within this guide should be considered and applied during the process of designing, approval and operation of a stadium light show using the pitch illuminance system.

The information provided in this document should only be used for the purpose of in-stadia lighting effects outside of the 90 minutes. The pitch floodlighting system must not be used in any way that may affect the match illuminance conditions that are clearly specified in the UEFA Stadium Lighting Guide 2020.

Finally, it is essential that good communications are available between the Stadium Management, Club/National Association, UEFA and in some cases the TV Broadcasters to ensure any potential disruption is reduced to a minimum and acceptable level.

### 1.0 SCHEDULE

#### 1.1 Duration of Light Show

In practice a 30-60 second time period for the light show is seen as sufficient in most cases, however different lengths of light show can be accommodated with the correct planning and rehearsal, according to the time slots available below. It is essential that the light show is rehearsed with an exact time sequence and duration that may be used in the 'event production schedule'.

#### 1.2 Light Show Options

There are two separate opportunities to conduct a light show prior to a match. Either option, or both options, are available. For various reasons the event production schedule may need to be altered, sometimes at very short notice. The controllers of the light show must be able to accommodate changes to the event schedule.

##### 1.2.1 Pre Warm-Up

The pre warm-up light show may be used until immediately before the players warm-up starts. As soon as any player (including goalkeepers) appears on the pitch for warm-up, the floodlights must be at match conditions.

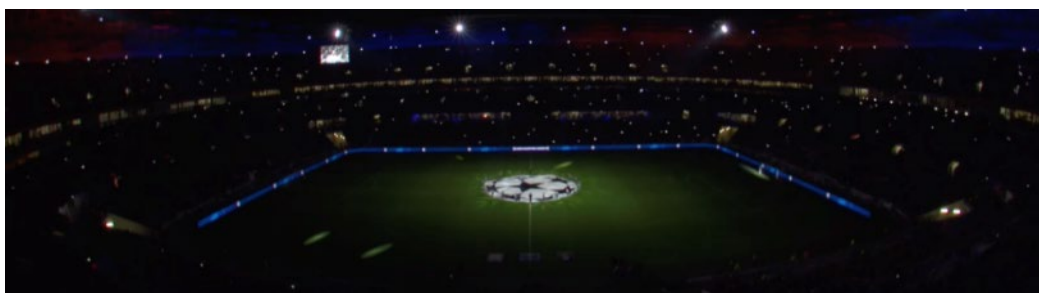
There are no specific UEFA requirements with regards to the design of the pre-warm-up light show.

##### 1.2.2 Post Warm-Up & prior to Player Walk-Out

The post warm-up light show may run anytime from the end of the player warm-up once the players have exited the pitch, but must be completed immediately prior to the players exiting the players tunnel in preparation for the player line-up. The lights should fade up to match conditions starting 10 seconds prior to the players' exit from the tunnel. This means that when the players exit from the tunnel, the light show must have finished and the full match lighting conditions be reinstated to 100%.

During the entire period of any post warm-up light show, UEFA competition brand and pre-match ceremony items have to be prominently illuminated to be clearly observed by spectators and exposed correctly on broadcast pictures. Concretely, this means that the following items must be illuminated with dedicated white-only spotlights (i.e. no coloured lights) throughout the light show. The light(s) focused on the item may "pulse" in intensity but should always remain with some illumination and should have prominent illumination for the majority of the time.

- National Team Competitions: EQ arch & carpet, UNL flag bearer & pitch banner, WUNL pitch banner
- Club Competitions: Full centre circle banner (unless not in place, e.g. due to pitch watering)



### 1.3 Match illuminance conditions

After the player walk-out (as described above), the pitch illuminance system must operate at match illuminance conditions continuously and may not change at any stage during the period of the match (e.g. during goal celebration, substitution etc).

### 1.4 Match half-time illuminance conditions

The pitch illuminance conditions may not be changed during the match half-time period. The pitch illuminance system should operate at match conditions without any disruption.

## 2.0 DESIGN OF A LIGHT SHOW

### 2.1 Lighting Design

The lighting design may be based upon a specific theme that is associated with the stadium or event. Clearly the quality of the design will be subjective; however, the stadium management team should understand that a successful design will provide a visual experience that is enjoyed and beneficial to all viewers. While the objective of the design may be to entertain the stadium spectators, a good design should always consider the host broadcast operations and provide appropriate opportunities for the broadcasters to use the light show within their television production.

In order to maximise the visual experience that may be delivered by the light show it is important for the designer to consider spectator viewing positions and broadcast camera positions at locations all around the stadium.

### 2.2 Projection of Visuals and/or Messages

Any visuals and/or messages foreseen to be projected in the stands and/or onto the pitch and its surroundings must be reviewed by UEFA.

For the European Qualifiers (100% associations only), UEFA Champions League (as of the play-offs), UEFA Europa League and UEFA Conference League (as of the group stage), as well as UEFA Women's Champions League (as of the knock-out stage) such an activation would not be permitted if it had any commercial link or is deemed to be detrimental to the visibility and prominence of the UEFA standardised LED board advertising, competition specific branding and/or consistent approach UEFA applies across all venues.

In general, visuals and/or messages may not at any time be projected onto brand elements put in place by UEFA, nor on any representation of competition logos and club logos or national team flags respectively.

### 2.3 Use of LED Display Boards

For the UEFA Champions League (as of the play-offs), UEFA Europa League and UEFA Conference League (as of the group stage), as well as UEFA Women's Champions League (as of the knock-out stages, where UEFA implements a standard display, the team's use of the pitch perimeter LED boards for the purpose of a light show is allowed in two occasions only, i.e.

- for a maximum of 1 minute immediately after the end of the warm-up (e.g. for display of the team's line-up);
- during the last 1 minute of a pre walk-on lightshow; this 1 minute timeslot may be extended to provide continuity throughout the duration of any team music used before the players walk-out from the tunnel to a maximum period of 2 mins 30 secs.

Furthermore, when it comes to the use of 1st tier LED boards,

- for the UEFA Champions League (as of the play-offs) and UEFA Women's Champions League (as of the knock-out stages), where the 1st tier LED boards is used to display competition specific branding, the team's use of the 1st tier LED boards in relation to a light show is limited to temporarily show the team line-ups;

- for the UEFA Europa League and UEFA Conference League (as of the group stage), the 1st tier LED boards cannot be used for any other purposes than to display competition specific branding and sponsors.

In all of the above cases, whenever (and only if) the team line-ups and/or other match related information are foreseen to be displayed, either a neutral template/background must be used or competition specific brand elements must be integrated and their use be approved by UEFA as part of the overall lightshow approval process (see section 6.0). UEFA brand elements can be downloaded from the relevant competition brand portal accessible under <https://uefa.fame.uefa.com>.

## 3.0 LIGHT, SOUND AND CONTROL

### 3.1 Light and Sound

In most cases the light show will also be accompanied by an audio track. The audio track may also be required in the appropriate format by the Television and Radio Broadcasters. The various parties should communicate to establish the preferred audio format and how it may be supplied to the broadcaster.

### 3.2 Sound disruption to Broadcasters

Where possible any disruption to the broadcasters should be reduced and consideration given to media working positions in the stadium bowl (e.g. media tribune, pitch presentation etc). In specific broadcast locations such as Television Studios the external sound should be baffled to reduce noise interference.

### 3.3 Lighting Control

The light show should be programmed and stored upon a suitable light controller. This is generally a DMX Lighting Console. The lighting console operator must be experienced and competent in the requirements to operate the light show effectively.

### 3.4 System Override Switch

At all times a 'System Override Switch' must be available to reinstate 'Full Match Lighting' conditions in the stadium. The 'System Override Switch' must take precedent over all other light settings.

### 3.5 System Switch-on

On completion of the light show and when the pitch illuminance system is switched back on after operating at 0%, it is recommended that a fade-in time from 0% to 100% is programmed to be a duration of 5-10 seconds. This will provide a greater comfort to the stadium spectators as full illuminance conditions are re-instated. The gradual fade-in time from 0% to 100% will also be beneficial to maintain good camera exposure for broadcasters by providing a smooth transition from low to high illuminance.



## 4.0 BROADCAST REQUIREMENTS

### 4.1 Engineering Requirements

The television broadcasters will require sufficient information about the light show to ensure they are prepared for the changes to the illuminance conditions within the stadium. This will allow the broadcasters to prepare the correct camera shots and camera exposure to ensure the optimum visual experience is captured on camera with good quality images that are correctly exposed.

### 4.2 Tribune illuminance for Broadcasters

It is important to provide a sufficient level of illuminance on the tribunes to allow for the correct camera exposure of broadcast pictures. If the tribunes are too dark to allow for the important 'fan reaction' camera shots to be exposed correctly the whole essence of the pre-match celebration is diminished and will be perceived poorly. To ensure an acceptable level of exposure may be achieved for broadcast pictures it is required that the tribune seating areas must receive a constant illuminance level of no less than 100 lux on the vertical plane facing towards the pitch centre. The illuminance level on the tribune areas should not drop below this level (too dark) even for a fraction of time because the camera exposure and broadcast pictures are negatively affected.

### 4.2 LED Pitch Displays on Broadcast Pictures

It is expected that during the light show the average ambient light level will be significantly lower than normal operating conditions. Therefore, it may be necessary to adjust the LED display intensity to a lower level during the light show to ensure that the optimum exposure of the display on broadcast pictures is obtained.

It will be necessary for persons operating the LED displays to be made fully aware of this requirement and to make the necessary adjustments to the LED intensity levels. During the light show rehearsal all relevant parties should be able to establish the correct operating conditions which may be used for the live event.

## 5.0 HEALTH AND SAFETY REQUIREMENTS

### 5.1 Emergency and Escape Lighting

During the period of the light show it is essential that spectators, employees and other public members at the stadium are able to safely move within the stadium facilities. All emergency and Escape Lighting must remain active.

### 5.2 Stadium Safety Lighting

The stadium must at all times provide a safe environment for spectators, employees and other public members. During a light show the ambient light level within the stadium may be low, however it is important that at no time should the illuminance conditions fail to provide sufficient provision to ensure the safe movement of people within the stadium.

### 5.3 Light Show Warning

It is recommended by UEFA that it is good practise to provide three audio and if possible visual (on large LED screens) warnings that there will be a change to the normal stadium illuminance conditions at the pre-determined time. The pre-warning will reassure the spectators that they are in a safe and ordered environment.

### 5.4 Stroboscopic Lighting Effects

The use of Stroboscopic Lighting Effects is not recommended within a stadium due the large spectator numbers and potential to cause a harmful reaction to people who may be sensitive or susceptible to a seizure in photosensitive epilepsy upon the exposure flashing illuminance levels at a high frequency. If the stadium management are unsure about the exact nature and relevance to this concern and the light show contains a sequence of flashing images a series of warning signs should be provided to inform all spectators and employees at the stadium. The warning signs must clearly state that 'flashing images and light will be used in pre and post-match stadium production lighting'. Television broadcasters may also want to give suitable warning if they are using the light show within the TV coverage.

### 6.0 REVIEW

#### 6.1 Light Show Request

Subject to the guidelines provided in this document, teams shall submit the following for review by UEFA:

- a running order (in line with the competition / match specific countdown to kick-off), clearly indicating start and end (see time limitations specified in section 2.0) of
  - o the light show(s);
  - o any planned use of giant screen and LED display boards;
- any visuals and/or messages projected in the stands and/or onto the pitch and its surroundings;
- a mock-up or demonstration video of each respective light show.

Requests must be submitted according to the following timelines:

- Non-centralised stages: To UEFA match delegate in due time ahead of the organisational meeting.
- Club Competitions (centralised stages): To the UEFA venue director for review within the UEFA venue team and consultation with the host broadcaster, before UEFA HQ is informed by UEFA venue director by latest five business days before the matchday in question.
- National Team Competitions (centralised stages): By the home match manager to the UEFA venue operations and broadcast manager for their review and consultation with the host broadcaster, before UEFA HQ is informed by the match manager two weeks before the matchday in question.

Any information received after the deadline jeopardises the request not being accommodated.

All relevant information (e.g. mock-up or demonstration video) and in particular the countdown to kick-off including the start and end of the light show(s) shall be shared with all relevant stakeholders (including TV Broadcasters) in due course and ultimately be presented in the preparation meetings leading up to the match (e.g. TV meeting(s), MD organisational meeting).

#### 6.2 Light Show Rehearsal

On MD-1 ahead of each match (and irrespectively of whether the same light show has been implemented previously), a full rehearsal of the previously reviewed light show must be conducted with Club/National Association, UEFA onsite representatives and TV Broadcasters to do a test run and check compatibility with the competition / match specific countdown to kick-off.

Furthermore, this will provide the broadcaster the necessary opportunity to prepare and rehearse for the change in illuminance conditions. The rehearsal should therefore ideally be completed with the same ambient light conditions to that of the allotted time in the Event Production Schedule.



UEFA  
ROUTE DE GENÈVE 46  
CH-1260 NYON 2  
SWITZERLAND  
TELEPHONE: +41 848 00 27 27  
TELEFAX: +41 848 01 27 27  
[UEFA.com](http://UEFA.com)