

CASES
014

Best quality possible

LED illumination for stadiums meets HD standards

Sports at the highest level require the best illumination possible. Conventional floodlights managed for a long time to deliver but they have now been surpassed by LED luminaires. High quality LED luminaires provide better illumination, are less demanding on the structure and save significantly on the energy bill.

Illuminating a stadium environment has, for a long time, been the last frontier in terms of LED technology. The distance the light has to bridge to illuminate a field and the demand for achieving sufficient horizontal and vertical light to meet the requirements set by the

"In 2013 AAA-LUX was asked to illuminate the FIH Hockey championship that took place in Boom, Belgium. This was the first international tournament ever to be illuminated with LED. AAA-LUX successfully managed to do so by adding additional AAA-LUX LED luminaires. Based on the input and feedback we received from the organisers and broadcasters after the tournament, we started a research project with the aim to design and assemble an LED luminaire that could be used in a stadium environment," says AAA-LUX CEO Erik Swennen. "Illuminating a stadium field is challenging as luminaires are often fitted far away from the field. They are either placed at greater heights when they are fitted underneath the canopy or further away from the action when fitted on a mast. The illumination has to be of the best quality to allow for achieving sufficient lighting on the field, in line with the requirements set

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Erik Swennen, CEO AAA-LUX

various sports governing bodies, provided challenges for many LED manufacturers. That frontier has now also been taken.

by the organisers, broadcasters or sports governing bodies.”

The luminaire that was developed became the AAA-LUX WS-STAD. “The AAA-LUX WS-STAD manages to produce up to 1.000 lux vertical light. This is important to enable proper high-definition TV registration.”

Swennen continues. “The light quality is achieved by ensuring that the light beam is much more focussed

“The light quality is achieved by ensuring that the light beam is much more focussed and the light more intense”

and the light more intense. We managed to do so by taking our technology to the next level and improving the quality of the lens.” AAA-LUX can do so as it produces all components for its luminaires in-house. “Only by taking responsibility of every element in the process of producing high quality illumination, do we manage to achieve the quality that is needed,” Swennen adds.

Mast replacement prevented

The AAA-LUX WS-STAD has now been tried and tested in various stadiums and competitions in Europe. “The introduction of the AAA-LUX WS-STAD meant that Spal 1907 could continue using the Paolo Mazza stadium in Ferrara,” Marco Calò says. Calò is an illumination consultant in Italy and assisted the municipality in upgrading the floodlights of the stadium. “As Spal 1907 achieved promotion to the Italian 3rd division, the Italian FA instructed them to upgrade their floodlights in order to allow proper registration for HD TV. The problem was that the masts did not have the capacity to carry additional floodlights as they were already loaded to their maximum capacity. Replacing the masts was, however, unaffordable.” As owners of the stadium, the municipality faced a possibly massive investment in new floodlights and masts or the likelihood of its home team moving to a different venue further away.” The AAA-LUX WS-STAD prevented this from happening. The LED luminaires only weigh 25 kg each, compared to 40 kg for conventional luminaires. Due to the quality of light they produce, we managed to achieve a better illumination with fewer luminaires than we initially had.” In total, over 1 000 kg of possible additional weight was saved. “Should Spal 1907 be promoted again we still have enough space and load capacity to add additional luminaires to meet the illumination requirements that have been set for that league.”





No additional energy required

Spal 1907 is not the only professional football club that saved significant money by choosing the AAA-LUX WS-STAD to avoid significant investments in infrastructure. The Belgian 2nd division club Hoogstraten FC also faced some challenges when it was promoted to a higher league. This club also had to upgrade the quality of the illumination but was faced with insufficient energy capacity. Their decision to go for the AAA-LUX WS-STAD saved them an investment of 120.000 euro that would have had to be made to generate sufficient energy (read all about this in case-study 010). The WS-STAD is, however, not just a solution for clubs facing technical challenges. "The WS-STAD was also used to illuminate the 2015 World Hockey League," Swennen points out. "Hockey is currently taking severe strain with membership and global interest

dwindling. The sport also stands a chance to lose its Olympic status. As we had successfully illuminated the 2013 European Hockey Champion we were invited to illuminate this year again, when the tournament

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was held at a different venue. The tournament was a great success." Illuminating a hockey pitch is a real challenge. "As the hockey matches were televised in High-Definition, we had to deliver 1.000 lux vertical illumination. That is where the WS-STAD excels well compared to other luminaires. As a hockey ball is small and travels at high speed, we had to make sure that both players and spectators would be able to see all the action." The success of the tournament has attributed to hockey maintaining its Olympic status. Swennen is confident that this will contribute to the acceptance of LED illumination technology. "It is only a matter of time before LED luminaires will also be used at the event itself, or any other major tournament." What is for sure is that, with the WS-STAD, AAA-LUX can provide a solution. "What is left for sports governing bodies to consider the technology and include it in their standards to enabling clubs and stadiums at even the highest levels to benefit from quality illumination and vastly reduced energy consumption."



About Paolo Mazza Stadium

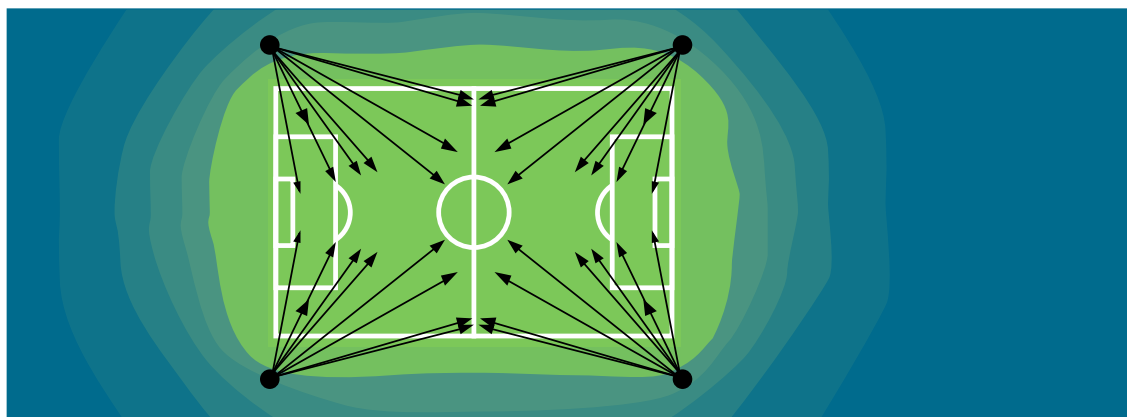
Stadio Paolo Mazza is located in Ferrara, Italy. The stadium has a capacity of 17.955 spectators and is used as the home ground for the local football club SPAL 1907. The club currently plays in the Italian Third Division. Stadio Paolo Mazza was opened in 1928 and is a multi-use stadium owned by the Municipality of Ferrara.

Installation details Paolo Mazza Stadium

Details new set up

	Number of luminaires	Power per lamp (kWh)	Total power consumption (kWh)	Total weight (kg)	Vertical Lux
Old set up	72	2.2	158.400	2.880	200
New set up	68	1.7	115.600	1.650	500

Lightplan



Led Luminaires used



68 x **WS-STAD SERIES**

WS-STAD
SERIES



More information:
<http://www.aaa-lux-lighting.com/products/ws-serie-luminaires/>

LCMS



Controlbox



More information:
<http://www.aaa-lux-lighting.com/products/lcms/>

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