

CASES
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Avoiding additional investment

AAA-LUX LED floodlights overcome capacity problem

Professional and amateur players can continue to practice and play at the same time

Floodlights at the stadium of Belgian football club Hoogstraten FC had to be reviewed following the promotion to the Second Division. The Belgian FA demanded higher lux levels but Hoogstraten FC didn't have sufficient funds to install additional energy generating capacity. The investment in high-power LED floodlights from AAA-LUX avoided the need for serious investments and prevented the club from being handed a penalty.

Matches in the Belgacom League, the Belgian Second Division, are televised every week. The quality of illumination is essential to allow TV crews capturing all the action and ensuring a clear and attractive footage on TV. Good quality illumination also contributes to

the standard of the game. Aware of the need for good quality illumination, the Belgian FA had stipulated the minimum requirements which had to be met. But the stadium floodlights of Hoogstraten FC didn't even come close to the recommended levels. "The 200 Lux light level we had was considered being insufficient. It had to be upgraded to 800 Lux, an improvement we were allowed to do in two steps," says the club's communications officer Stef van Erck. But this demand caused some headaches for Hoogstraten FC. "The supplier of the original system had been taken over by another company, which showed little knowledge about the situation in and around the stadium. Furthermore, we experienced technical limitations as the energy

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Stef van Erck
Hoogstraten FC

supply would have been insufficient to feed additional floodlights, if we had chosen conventional floodlights. Our options were to invest heavily in improving energy capacity, or look for a more energy-friendly alternative."

Quality key

Hoogstraten FC decided to go for LED floodlights. "36 LED armatures together provide the required 400 Lux," explains Rene Eekhoudt of illumination specialist Oostendorp BVBA. "The armatures are placed in the same brackets as were used for the conventional floodlights. They are all placed at 24m height. This will guarantee the stipulated Class II illumination quality," Eekhoudt says. As AAA-LUX LED luminaires are designed with the dimensions and weight of conventional floodlights in mind, LED luminaires from AAA-LUX can be used as a one-on-one replacement of conventional floodlights.

The decision to go for AAA-LUX LED floodlights will see the energy consumption of Hoogstraten FC to be reduced by 40% compared to the conventional lights that were used. The reduction is significant and prevents the club from having to invest in additional

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energy generating capacity. According to Eekhoudt the LED floodlights from AAA-LUX are superior to other LED floodlights in terms of quality of light and equal distribution. "The controls, housing, lights and lenses are all produced by AAA-LUX in-house. This is the best way to assure the quality that is required by the end-user. AAA-LUX luminaires for sports applications are tested to last at least 25 000 hours. Other companies don't dare to take such a stance as they often use technology from various suppliers, meaning that they are reliant on the quality of each component."

Investment well-worthwhile

Eekhoudt admits that the capital layout for LED lights is higher than the capital layout for conventional lights. "But it is merely a matter of months before the moment of the return on investment has been achieved. LED luminaires use less energy, and require hardly any maintenance." The installation in Hoogstraten cost the club EURO 90 000. An upgrade to the existing lights would have cost EURO 60 000, he estimates. "But that would have also meant that the club would have had to invest in a high-voltage unit, which would have come at an additional cost. That would have increased the price for the whole project by another € 160 000 to € 200 000."

The LED floodlights have another added value. "AAA-LUX LED floodlights are controlled wirelessly. This

Hoogstraten FC: the first stadium of a professional football club in the world illuminated by LED floodlights.





allowed for the luminaires to be installed without having had to do any ground work or investing in additional cabling. This advantage contributed to additional savings.”

Smooth operations

The installation has also saved the club organisational headaches. “The stadium field is also used by our Second team as well as our Ladies team. They play on a Friday night. If we would have opted for conventional luminaires we would not have been able to illuminate all our fields simultaneously, as we wouldn’t have had sufficient electricity capacity,” Stef van Erck says. “That would have been unacceptable as Friday night is the evening when all fields are being used for practice purposes by the various teams of our club.” Hoogstraten FC gets away with it as the AAA-LUX LED luminaires are controlled with by a smart Lighting

Control Management System (LCMS). “This allows the club to adjust illumination levels without affecting the uniformity and quality of the illumination. The added benefit is that the club can achieve additional energy savings. As illumination for matches from the Ladies team or the Second team does not require illumination from the highest level, they can reduce the energy consumption by the LED lights in the stadium. The limited energy consumption of the AAA-LUX LED floodlights, enables the club to also illuminate its other fields. This allows multiple teams to practice and train on the various fields simultaneously.” The reduced energy consumption, combined with the ability to dim lights, means Hoogstraten FC currently illuminates all fields on a Friday night and still has excess capacity.

This allows the club to adjust illumination levels without affecting the uniformity and quality of the illumination

“The LED light capacity can be reduced to work at 60% capacity, which means the lights provide only 250 Lux. That is still more than what we had before.”

League of their own

The stadium of Hoogstraten FC was the first stadium of a professional football club in the world that was illuminated by LED floodlights. The project has set the standard. “The successful installation at Hoogstraten FC also caught the eye of football stadiums and clubs in around the world,” AAA-LUX Marketing & Sales Director Michel van Dooren says. “In Ferrara in Italy, undoubtedly one of the most football-loving nations in the world, the local municipality also decided to go for AAA-LUX LED floodlights. They faced similar challenges like Hoogstraten FC as the local club Spal 1907 achieved promotion to the third-division.” The close resemblance of natural light the AAA-LUX luminaires manage to produce contribute to the quality of their training, and their final performance during match day. The experience AAA-LUX has gained from illuminating venues like those of Hoogstraten FC and Spal 1907 has attributed to the development of a new LED floodlight specifically for use in stadium environments. “To me it is only a matter of time before users of this type of venue too will move over to LED technology to illuminate their fields,” Van Dooren concludes.



Hoogstraten FC

Hoogstraten FC plays in the Belgian top amateur league. The club has its own stadium in the Belgian city of Hoogstraten and is one of the major sports clubs in the city.

Installation & investment details

Indicative investment excl. VAT (2013)

LED luminaires	€ 84 000,00
Lighting Control Management System (Switchbox)	€ 3 000,00 +
Total	€ 87 000,00
Conventional luminaires (24 x € 605)	€ 34 000,00 -
Added expense for LED	€ 53 000,00
Conventional lamp replacement costs (€ 100 per year per lamp)	€ 4 000,00
Possible savings on yearly subscription (3x35A i.s.o. 3x50A)	€ 450,00
Savings on use, because of LED lighting	€ 1214,40 +
Total yearly savings	€ 5 664,40
Return on Investment time - for added LED investment	9,36 years

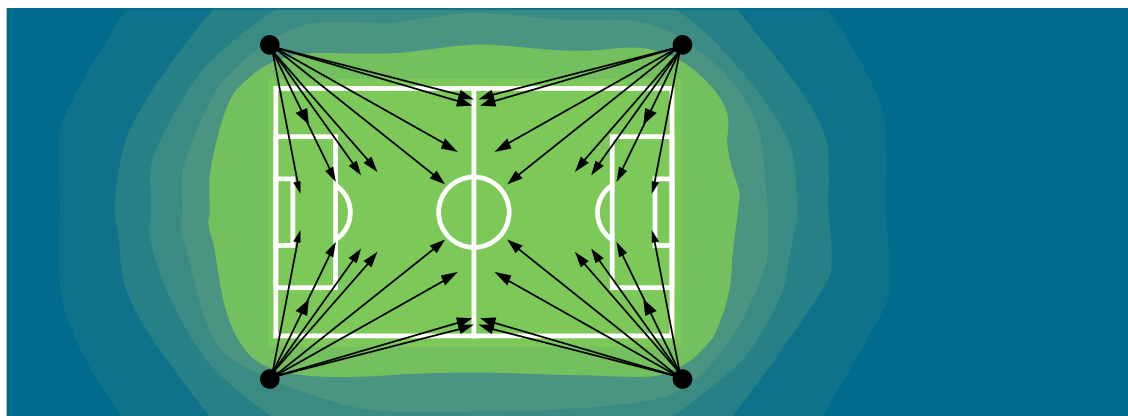
Additional investment

Investment in additional energy capacity for LED	€ 0,00
Investment to generate sufficient electricity capacity for conventional luminaires	€ 120.000,00

Savings

	Number of luminaires	Power per lamp [kWh]	Total power [kWh]	Total power consumption [kWh]	CO ² savings
Old set up	40	2.2	88	13 200 kWh	1875 kg
New set up	40	1.7	68	10 200 kWh	3300 kg

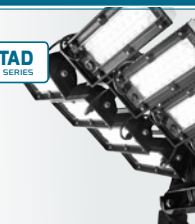
Lightplan



Led Luminaires used



4 x **WS 200 SERIES**
 12 x **WS 250 SERIES**
 20 x **WS-STAD SERIES**



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

LCMS



Controlbox
Switch box



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



AAA-LUX project partner



Oostendorp België