PHILIPS

Case study

Public

Arena and Sports

Pitch Perfect Lighting at St James Park

Location: St James' Park, Newcastle
Philips Lighting: Philips MVF404 ArenaVision

Fast Facts

Customer
Newcastle United Football Club

Location
St James' Park, Newcastle

Philips Products
Philips MVF404 ArenaVision flicker free 2000W floodlights

Project Partners
Direct Technology UK Limited, WSP and CAD21

During the closed season, 342 Philips MVF404 ArenaVision 2000W floodlights were installed in St James Park. The Philips' high-output compact single-ended metal-halide lamps, with dedicated optics, ensure maximum optical efficiency and accurate light distribution with a minimum of upward spill light. The new system achieves enhanced levels of light, exceeding the Premier League requirements and matching the performance criteria of Euro 2012. Towards the main camera 2000 lux has been achieved whilst, when play is covered by the secondary field cameras the same lux level is ensured. Eddie explains; "We have future proofed the system using Philips electronic ballasts to achieve the new flicker rate and used the latest UEFA light levels of 2000 lux all round making St James one of, if not the best lit stadium in the country. "

Customer Challenge

St. James' Park is the oldest football stadium in the North East, football having first been played on the turf as early as 1880. Home to the Magpies, the stadium seats 52,404 supporters and features facilities that are the envy of most clubs in Europe. When the English Football Premier League issued their new lighting requirements to satisfy the latest broadcasting techniques, Newcastle United FC did not hesitate to contact Philips for support in understanding what this meant for the club. Philips undertook a full survey and produced reports detailing what was required to fully satisfy these including electrical and structural elements as well as lighting.

The right lighting

The previous Philips system was installed in 1994, with some further additions made in 1998. The result was a mixture of Philips 1800W and 2000W metal halide floodlights, which delivered 1400 lux vertical towards the main camera only; less than the new requirements which now include field cameras as well as fixed. Eddie Rutherford, Stadium Manager at Newcastle United outlines the decision to upgrade; " The age of the lighting meant that we chose to renew the complete system, rather than adding to it further, in order to benefit from greater efficiencies. Given our long history and the reliability of the existing floodlights, Philips was without doubt the ideal partner. Over the last nine months, I have been working closely with the Philips team to meet the new Premiership requirements. This has been a mammoth task in a short space of time but I am very confident the new installation will be a fantastic enhancement to our fantastic stadium."

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> **Eddie Rutherford**
> **Stadium Manager at Newcastle United**

The new ArenaVision floodlight system is designed to ensure that the flicker effect is reduced in order to produce perfect ultra-slow-motion images up to 1000 fps. It is a requirement to record at 300 frames per second (fps) for super slow motion, rather than the usual 70 fps. Filming at that high frame rate, cameras pick up a slight flicker with conventional floodlighting. To counter this, the electronic ballasts run at 250 Hz square wave and produce light output with a flicker of less than 1%. The outcome of this innovative solution is perfect super slow motion pictures from every camera position, enhancing the viewer's experience with a series of dramatic images and ensuring those at home feel the same emotions as those in the stadium.

Philips Lighting worked with the clubs appointed installers, Direct Technology UK Limited, to provide the solution. The design of the lighting was adapted to suit the structural and electrical challenges the stadium presented. The North and West stands are around 40 metres in height, whereas the East and South stands are actually 20-25 metres high. Therefore to achieve the required uniformity and vertical light levels, the floodlights have been set back on the roof and also placed underneath the roof in some areas to deliver the desired effect. Bespoke frames were created in order to enable this.

The new lighting has been well received. The system has increased the theatrical and emotional impact of the Newcastle games for fans at home and in the stadium, while allowing the players to perform under optimal visual conditions.

If you would like to see more lighting projects or have an enquiry, please visit us at www.philips.co.uk/lighting or email: lighting.uk@philips.com

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