



## Sports Lighting Guide 2024

Manufacturers of quality lighting since 1920



British Electric Lamps Ltd www.**belllighting**.co.uk

# **BELL**lighting Sports Lighting

#### Benefits of BELL LED lighting

Over recent years, LED lighting has become more and more prevalent. As technology has improved, LED lamps and fittings have become more efficient, and with these improvements legislation has been introduced to move manufacturers towards LED lighting. With a 40-60% energy saving as a result of moving from energy hungry high powered Metal Halide Floodlights, to LED Floodlights with an equivalent lumen output, it's no secret that BELL Lighting offer an outstanding and environmentally conscious range of external products. An even higher energy saving is on offer where lower wattage Floodlights are concerned, with our Skyline Slim+ 10-50W LED products providing a 90% saving on average from previous Halogen options.

With LMR80 and B10 credentials stated for our Floodlights, meaning that our customers can expect a maximum 20% lumen depreciation over the stated lifetime hours of our products, and a maximum failure rate of 10% for installed products over the same period, we are an LED Floodlight supplier that you can trust.

Our range covers all bases, from the Skyline Powertron which is ideal for Sports Pitches and Tennis Courts, to the Skyline Virtus which offers a solution for a variety of applications, from Loading Bays, to Dog Tracks, Car Parks, and much more.

#### How much can you save?

Switching from Halogen or Metal Halide to LED lighting is a guaranteed way to save money and reduce emissions. Along with this, LED Floodlights require far less maintenance post installation, and their energy cost is significantly lower than their outdated technology equivalents.

Cost savings are always installation and project dependent, and our Energy Saving Calculator tool which can be found on our website is an excellent starting point in determining the potential benefits of switching to LED. As an example of the level of savings on offer, a recent project using our 600W Skyline Powertron fittings resulted in a £12,000 annual saving, with 20x 2000W Metal Halide Floodlights being replaced by 16x our 600W LED equivalents. This was an 80% saving on the previous costs, and ensured that the cost of installation was recouped in an extremely timely manner.

With exceptional warranties, lifetime hours, and long-term support on offer, our customers can be assured that switching to LED sports lighting is a sound decision which can provide a host of benefits, from immediate costs, maintenance, and lighting quality, to a reduction in the impact which lighting has on the environment.

## BELLlighting

# Lighting Design, a dedicated team of specialist engineers ready to help

Our team of professional lighting designers and engineers have over 50 years of experience in the lighting industry. We know the importance of good lighting design and the benefits a lighting engineer will bring to a project. Our lighting design service ensures correct light levels are achieved in compliance with current regulations.

Our specialised knowledge of lighting and lighting control systems provides a smooth hassle free process, delivering beautiful energy saving lighting solutions on time and on budget.

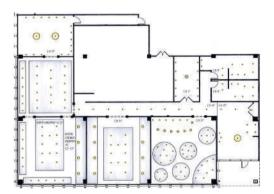


Working within the UK and internationally, the lighting team have established a reputation for designing a broad range of exciting projects of all sizes, from single rooms through to partnerships with multi-disciplined design teams on large infrastructure projects.

We are a responsive and fast moving team who can manage the complete lighting design process from concept through to the tender & supply

For all internal, external & emergency projects contact:

lightingdesign@belllighting.co.uk



technical@belllighting.co.uk sales@belllighting.co.uk

## **BELL**lighting

## Case Study

### The Change Foundation Cricket Centre

The Change Foundation is an award-winning charity that uses sport to change the lives of marginalised young people. They deliver targeted long-term interventions for the most vulnerable young people through Coach Mentors with lived experience, providing regular sport, personalised mentoring and work-related opportunities.

A detailed lighting design scheme was compiled by the Power Plus Group Lighting Design Team, and BELL 150W Illumina Atlas High Bay's with the UGR Honeycomb lens was selected to be the perfect luminaire for the upgrade.

The 36 original fittings were replaced with 18 x 150w fittings. This reduced the rows of fittings to 2 which is a great advantage as there are only 2 lanes so the new fittings did not interfere with the netting installed between the lanes.

The real benefits were; less energy consumption, reduction in glare rating and an improvement in lux levels from 500lux to over 950lux. The combination of these factors means that the players can practice in safety with lighting that delivers high definition, high luminance, low glare and accurate colour rendering.

### Annual Savings: £9419 / CO2 1468kg / Maintenance £600 / Energy Saving 32%



# BELLlighting Case Study

#### Boldon Lawn Tennis Club

Boldon Lawn Tennis Club has 6 outdoor courts, catering for all levels of tennis. To ensure the tennis club provides the best facilities possible for its members, they reached out to Power Plus Group to aid with a lighting upgrade. The brief was simple; install high output energy efficient lighting, to increase the club's playing hours, while reducing their energy bills & carbon footprint.

The first phase of the project saw 3 of the 6 courts illuminated with BELL Skyline Elite Asymmetric Floodlights. As the tennis club is located in a small village, there were inevitably restrictions in place with regards to lighting spillage. The BELL Skyline Elite+ Asymmetric floodlight was chosen to alleviate any light trespass and glare into the surrounding properties.

Due to the layout of the tennis club, 2 of the 3 courts were illuminated using a standard corner/side lit scheme. The remaining court presented a few more challenges, as lighting could only be installed at one side of the court. The Skyline Elite+ Asymmetric Floodlights made "light" work of this and easily achieved the recommended LTA lighting level.

- Over the life of the fittings Boldon Lawn Tennis Club will save £879,323 in energy & maintenance costs,
- Energy Saving 60%
- Annual Savings: Energy 49,140kWh / CO2 27,518kg / Maintenance £600



# BELLlighting Case Study

#### Drumbo Park Stadium

Drumbo Park plays host to a Dog Racing Track, offering a live racing event every Saturday evening. With a large grandstand suitable for a considerable number of guests at any one time, it is vital that conditions for racing and hospitality are up to scratch.

Nicholas Rose, Commercial Director, said:

"The quality of light was a huge factor for the project, not just the potential substantial saving in our ongoing electricity bills and a reduction in the available charge we pay as a large commercial user. We heard horror stories of other stadiums having to revert to Halogen because the LED lights they installed didn't provide the required quality of light. We were recommended to work with BELL Lighting and they worked closely with us to devise a solution that has not only saved us a fortune but has actually improved the quality of light around the track. We are now able to turn the lights on and off in between races to increase the drama of our race nights. Also, their careful installation has focused the light on the running service rather than the grass banking around the track. The overall result is superb and customer service throughout the process was excellent. I cannot recommend the BELL Lighting team highly enough to other stadiums and high use commercial user."

#### Annual Savings: £30,643 / CO2 19051kg / Maintenance £5000 / Energy Saving 50%



# BELLlighting Case Study

### Maryland Gaelic Athletic Association

Maryland GAA is a Gaelic Football club based in Drumraney, Ireland. Founded in 1957, Maryland GAA have a rich history in the Westmeath Intermediate Football Championships. To enhance their pitch and training facilities, Maryland GAA recently updated their lighting to ensure they have the correct light levels for both training and match day events.

A detailed lighting design scheme was compiled by the BELL Lighting Design Team and the Skyline Virtus Asymmetric LED Floodlights were selected to be the perfect luminaire for the upgrade.

Inefficient Metal Halide fittings were replaced with 32 Skyline Virtus Floodlights mounted onto 8.12m columns providing the desired lux levels to ensure the team can perform at their highest level. With a 7 year guarantee & 2 year on-site warranty, maintenance will be a thing of the past. Over the life of the luminaries, Maryland are set to save a large amount of money, while greatly reducing their carbon footprint.

## Annual Savings: £8147 / CO2 688kg / Maintenance £1000 / Energy Saving 40%



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Images show optional ULR Shields

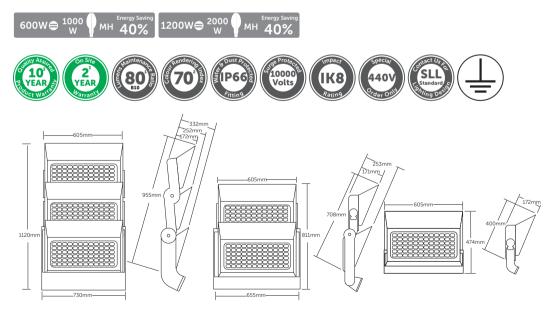
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# Skylinepowertron

## Asymmetric LED Floodlight

The Skyline Powertron Asymmetric LED Floodlight is the highest lumen output floodlight ever produced by BELL. The black powder coated die cast aluminium construction gives an ultra-modern aesthetic combined with a staggering 260,000 lumen output (1800W). The rugged, robust construction of the Powertron makes this fitting ideal for external sports facilities open to the elements.

- 600/1200/1800W Modular Body Design
- Genuine replacement for 1000W/2000W Metal Halide Floodlights
- Up to 146 Lm/W
- IP66
- Fully adjustable angled mounting bracket
- Suitable for multiple row columns installation
- Angle markings on bracket for easy alignment
- Scope available on request for fine on site aiming
- Full cut-off horizontal asymmetric floodlight
- Low weight & windage
- Optional ULR Shields available for 0° upward light, glare and obstructive light reduction
- Remote driver box, can be mounted on ground level for easy maintenance



Dimensions include optional Deep ULR Shields



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# Skylinepowertron

## Asymmetric LED Floodlight

Technical Specificatio	Technical Specification				
Construction	Black powder coated die cast aluminium (RAL 9017)				
Driver	600W & 1200W UPowerTek / 1800W BELL				
LED Chip	OSRAM 3737				
IP Rating	IP66				
Operating Temp	-30°C to +35°C				
Controls	0-10V, PWM as standard (DALI, DMX special order)				
Power Factor	> 0.9				
CRI	70 - Exceeds EU standard of Ra70 for Colour Rendering Index				
LMR	80 - Exceeds EU standard of 70 for Lumens Maintenance Ratio				
Weight	With Driver: 600W 15.5Kg / 1200W 31.8Kg / 1800W 47.7Kg Without Driver: 600W 8.9Kg / 1200W 20.5Kg / 1800W 36.9Kg				
Windage/EPA	600W 0.09m² @ 0° 1200W 0.22m² @ 0° 1800W 0.40m² @ 0°				

Code	V	W	Description	Lm (up to)	Peak Intensity (up to)	Temp	Lm/W (up to)	Hours
11330	200-240	600	Skyline Powertron Asymmetric LED Floodlight	86,000	1730 cd/klm @ 71°	4000K	142	100,000
11331	200-240	1200	Skyline Powertron Asymmetric LED Floodlight	174,000	1730 cd/klm @ 71°	4000K	145	100,000
11332	200-240	1800	Skyline Powertron Asymmetric LED Floodlight	262,300	1730 cd/klm @ 71°	4000K	146	100,000
11341	-	-	Deep Shield for above	-	-	-	-	-
11345	-	-	Shallow Shield for above	-	-	-	-	-
11346	-	-	Aiming Scope for at	oove	-	-	-	-
Please no 1 for 600 2 for 120		elds order:						

3 for 1800W

440V Available on request

<sup>1</sup> Exceeds EU standard of 70 for Lumens Maintenance Ratio

<sup>2</sup> Exceeds EU standard of RA 70 for Colour Rendering Index

<sup>3</sup> Subject to terms & conditions (Contact Customer Service)



Remote driver box which can be mounted at ground level, allowing for easier maintenance and installation.

Up to 1800W meaning that the product can meet lighting requirements for a variety of Classes (I, II and III).

Optional ULR shields are available, ensuring that upward light is avoided so that spillage is reduced and environmental concerns are minimised.





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# Skylineelite+

## Symmetric LED Floodlight

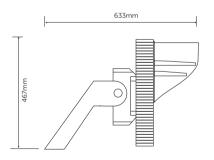
Skyline Elite+ represents the latest technology in sports floodlighting, modern aesthetic & die-cast aluminium construction. With IP66 and low windage ratings this unit can handle the worst weather conditions. Perfect for large external sports facilities or industrial applications, complete with a fully adjustable mounting bracket.

- 600W Symmetric Floodlight
- Genuine replacement for 1500W Metal Halide
- Up to 155 Lm/W
- IP66
- Visor for low upward light
- Low weight  $\boldsymbol{\vartheta}$  windage when compared with HID luminaires
- Fully adjustable mounting bracket
- Angle markings for easy alignment





LMR80: Maximum 20% of lumen depreciation over rated hours. B10: Maximum 10% of fittings failure rate over rated hours





# Skylineeure+

Technical Specificatio	on
Construction	Die Cast LM6 Aluminium & Polycarbonate lens
Driver	Inventronics 1-10V Dim
LED Chip	Sosen
IP Rating	IP66
Operating Temp	-30°C to +35°C
Input Voltage	100 - 277V (277 - 440V special order)
Power Factor	> 0.9
CRI	80 - Exceeds EU standard of Ra 70 for Colour Rendering Index
LMR	80 - Exceeds EU standard of 70 for Lumens Maintenance Ratio
Weight	18.6 Kg
Windage	0.11M <sup>2</sup>

Code	V	W	Description	Lm	Peak Intensity	Temp	Lm/W	Hours
10770	100-277	600	Symmetric LED Floodlight 60°	89000	1192.90 cd/klm @ 10°	4000K	148	70000
10771	100-277	600	Symmetric LED Floodlight 30°	93000	2460.60 cd/klm @ 0°	4000K	155	70000

<sup>1</sup> Exceeds EU standard of 70 for Lumens Maintenance Ratio

<sup>2</sup> Exceeds EU standard of RA 70 for Colour Rendering Index

<sup>3</sup> Subject to terms & conditions (Contact Customer Service)



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# Skylineelite+

# High Output Asymmetric LED Floodlight

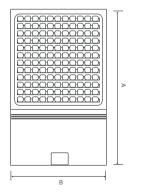
Skyline Elite+ represents the latest technology in sports floodlighting. Modern aesthetic, die-cast aluminium construction. With IP66 and low windage ratings this unit can handle the worst weather conditions. Perfect for large external sports facilities or industrial applications, complete with a fully adjustable mounting bracket.

- Genuine replacement for up to 1500W Metal Halide Floodlight
- Perfect for sports, building facade's, landscape, security & car park lighting
- Asymmetric distribution, low light pollution
- 145 Lm/W
- Aerodynamic, streamlined design for reduced windage
- Fully encapsulated IP66 TUV certified driver
- Nichia GRT-V1 LED
- Fully adjustable mounting bracket





LMR80: Maximum 20% of lumen depreciation over rated hours. B10: Maximum 10% of fittings failure rate over rated hours



	High Output Asymmetric LED Floodlight
А	621mm
В	601mm
С	104mm



# Skylineelite+

# High Output Asymmetric LED Floodlight

Technical Specificatio	n
Construction	Polyester coated die-cast LM6 Marine Grade aluminium & toughened safety glass
Driver	Sosen (1-10V dimmable)
LED Chip	Nichia GRT-V1
IP Rating	IP66
Operating Temp	-30°C to +45°C
Input Voltage	100 - 277V (277 - 440V special order)
Power Factor	> 0.9
CRI	80 - Exceeds EU standard of Ra 70 for Colour Rendering Index
LMR	80 - Exceeds EU standard of 70 for Lumens Maintenance Ratio
Windage	0.37M <sup>2</sup>
Weight	18Кд

Code	V	W	Description	Lm	Peak Intensity	Temp	Lm/W	Hours
08873	110-277	600	Skyline Elite+ Asymmetric Floodlight IP66 Type 2	87000	474.60 cd/klm @ 32°	4000K	145	70000
08874	110-277	600	Skyline Elite+ Asymmetric Floodlight IP66 Type 3	87000	488.20 cd/klm @ 44°	4000K	145	70000
08875	110-277	600	Skyline Elite+ Asymmetric Floodlight IP66 Type 4	87000	546.50 cd/klm @ 60°	4000K	145	70000

<sup>1</sup> Exceeds EU standard of 70 for Lumens Maintenance Ratio

<sup>2</sup> Exceeds EU standard of RA 70 for Colour Rendering Index

<sup>3</sup> Subject to terms & conditions (Contact Customer Service)



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## BELLlighting



# **Skyline**virtus

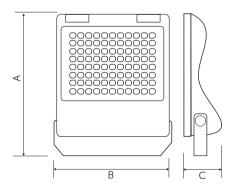
# Asymmetric/Symmetric LED Floodlight

Designed and engineered in the UK specifically to meet the requirements for sports lighting and to reduce light pollution levels. The Skyline Virtus is a high specification floodlight, wattage switchable as standard with a 50,000 hour lifespan, 7 year warranty and 2 year on site warranty.

- Genuine replacement for 250/500/750W Metal Halide/Sodium Floodlight
- Wattage Switchable
- Perfect for sports, building facade's, landscape, security & car park lighting
- Asymmetric distribution, low light pollution (Asymmetric version)
- 155 Lm/W
- Surge protected 10,000V
- Aerodynamic, streamlined design for reduced windage
- Fully encapsulated IP66 TUV certified driver
- Nichia GRT-V1 LED
- Long life 50,000 hours (L80 B10 @ 25°C)
- Robust construction, supplied with standard universal mounting bracket
- Supplied pre-flexed (1.5M)
- Air pressure equalisation feature to eliminate capillary effect



LMR80: Maximum 20% of lumen depreciation over rated hours. B10: Maximum 10% of fittings failure rate over rated hours



	50/75/100W	100/150/200W	100/225/300W
А	353mm	447mm	495mm
В	287mm	359mm	419mm
С	65mm	75mm	75mm

<sup>1</sup> Exceeds EU standard of 70 for Lumens Maintenance Ratio <sup>2</sup> Exceeds EU standard of RA 80 for Colour Rendering Index <sup>3</sup> Subject to terms & conditions (Contact Customer Service)



# Skylinevirtus

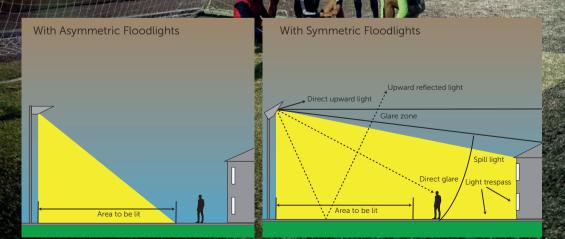
Sports Lighting

Technical Specification	n
Construction	Polyester coated die-cast LM6 Marine Grade aluminium & toughened safety glass
Driver	LiFud
LED Chip	Nichia GRT-V1
IP Rating	IP66
Operating Temp	-30°C to +35°C
Input Voltage	110 - 240V
Power Factor	> 0.9
CRI	80 - Exceeds EU standard of Ra 70 for Colour Rendering Index
LMR	80 - Exceeds EU standard of 70 for Lumens Maintenance Ratio
Windage/EPA	100W 0.067M <sup>2</sup> / 200W 0.112M <sup>2</sup> / 300W 0.144M <sup>2</sup>
Weight	100W - 2.8Kg / 200W - 5.2Kg / 300W - 6.4Kg

Code	V	W	Description	Lm	Peak Intensity	Temp	Lm/W	Hours
11485	110-240	50/75/100	Skyline Virtus Switchable Asymmetric Floodlight	7700- 15450	558 cd/klm @ 53°	4000K	152	50,000
11486	110-240	50/75/100	Skyline Virtus Wattage Switchable Symmetric Floodlight	7500- 15100	1400 cd/klm @ 13°	4000K	148	50,000
11482	110-240	50/75/100	Skyline Virtus Wattage Switchable 30° Floodlight	7400- 15950	3074 cd/klm @ 0°	4000K	157	50,000
11489	110-240	100/150/200	Skyline Virtus Wattage Switchable Asymmetric Floodlight	15450- 30300	518 cd/klm @ 58°	4000K	152	50,000
11490	110-240	100/150/200	Skyline Virtus Wattage Switchable Symmetric Floodlight	15100- 30050	1142 cd/klm @ 11°	4000K	148	50,000
11483	110-240	100/150/200	Skyline Virtus Wattage Switchable 30° Floodlight	15950- 30900	3086 cd/klm @ 0°	4000K	156	50,000
11491	110-240	150/225/300	Skyline Virtus Wattage Switchable Asymmetric Floodlight	22400- 46050	562 cd/klm @ 57°	4000K	154	50,000
11492	110-240	150/225/300	Skyline Virtus Wattage Switchable Symmetric Floodlight	21850- 45650	1311 cd/klm @ 10°	4000K	150	50,000
11484	110-240	150/225/300	Skyline Virtus Wattage Switchable 30° Floodlight	23400- 47800	2890 cd/klm @ 0°	4000K	158	50,000

 $^1$  Exceeds EU standard of 70 for Lumens Maintenance Ratio  $^2$  Exceeds EU standard of RA 70 for Colour Rendering Index  $^3$  Subject to terms  $\vartheta$  conditions (Contact Customer Service)





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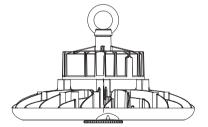
## Switchable Wattage LED High Bay

The Illumina Atlas Switchable Wattage High Bay is a highly efficient versatile LED luminaire, ideally suited to a wide range of industrial applications for both new installations and retrofit applications.

- 60-200 Switchable Wattages
- Seoul Semiconductor LED
- Plug-in PIR & microwave sensors available
- Sensor parameters set by remote control
- Genuine Replacement for 250-600W Metal Halide or Sodium
- Perfect for warehousing, large retail and factories
- Emergency kit available
- 145 Lm/W



LMR80: Maximum 20% of lumen depreciation over rated hours. B10: Maximum 10% of fittings failure rate over rated hours



	100W	150W	200W
Diameter	245mm	245mm	294mm
Height	159mm	174mm	174mm



# Olluminaatlas

## Switchable Wattage LED High Bay

Technica	al Specificatio	n			ļ
Construe	ction	Die Cast Aluminium Body, Polycarbonate Lens			
Driver		Muso			
LED Chi	C	Seoul Semiconductor			
IP Rating	I	IP65			
Operatir	ıg Temp	-30°C to +50°C / Emergency version minimum temperatu	ıre -5°C		
Input Voltage 220 - 240V					
Power Fa	actor	> 0.9			
CRI		85 - Exceeds EU standard of Ra 70 for Colour Rendering In	ndex		
LMR		80 - Exceeds EU standard of 70 for Lumens Maintenance	Ratio		
Weight		60-100W 2Kg / 90-150W 2.1Kg / 120-200W 2.8Kg			
Code	W	Description	Lm	Temp	Hours
11450	60-100	Illumina Atlas Switchable Wattage LED High Bay 120° lens	9000-14000	4000K	50000
11452	90-150	Illumina Atlas Switchable Wattage LED High Bay 120° lens	14000-21000	4000K	50000
11454	120-200	Illumina Atlas Switchable Wattage LED High Bay 120° lens	18000-28000	4000K	50000
11451	60-100	Illumina Atlas Switchable Wattage LED High Bay 90° lens	9000-14000	4000K	50000
11453	90-150	Illumina Atlas Switchable Wattage LED High Bay 90° lens	14000-21000	4000K	50000
11455	120-200	Illumina Atlas Switchable Wattage LED High Bay 90° lens	18000-28000	4000K	50000
11478	-	Plug In Emergency Pack	-	-	-
11463	-	Twist Microwave Sensor for Illumina Atlas Switchable Wattage High Bay	-	-	-
11464	-	Twist PIR Sensor for Illumina Atlas Switchable Wattage High Bay	-	-	-
11465	-	Casambi Bluetooth Wireless Node for Illumina Atlas Switchable Wattage High Bay	-	-	-
11471	-	Polycarbonate Reflector for 60/70/100W and 90/120/150W Illumina Atlas Switchable Wattage High Bay	-	-	-
11472	-	Polycarbonate Reflector for 120/160/200W Illumina Atlas Switchable Wattage High Bay	-	-	-
11473	-	Aluminium Reflector for 60/70/100W and 90/120/150W Illumina Atlas Switchable Wattage High Bay	-	-	-
11474	-	Aluminium Reflector for 120/160/200W Illumina Atlas Switchable Wattage High Bay	-	-	-
11475	-	Reflector Cover for 60/70/100W and 90/120/150W Illumina Atlas Switchable Wattage High Bay	-	-	-
11476	-	Reflector Cover for 120/160/200W Illumina Atlas Switchable Wattage High Bay	-	-	-
11477	-	60° Adjustable Bracket for Illumina Atlas Switchable Wattage High Bay	-	-	-
11466	-	Infra-red remote control	-	-	-

<sup>1</sup> Exceeds EU standard of 70 for Lumens Maintenance Ratio

<sup>2</sup> Exceeds EU standard of RA 70 for Colour Rendering Index <sup>3</sup> Subject to terms & conditions (Contact Customer Service)



90° optic available to ensure a narrow light distribution, allowing for maximum illuminance on each lane.

Up to 28,000lm per fitting, providing high levels of light to each lane so that batsmen are able to view the ball as clearly as possible.

Reflectors and covers available to reduce glare if needed to ensure there are no distractions for training players.



Optional infra-red remote control available for PIR & microwave sensor versions. Quick and easy adjustment for multiple fittings.



# Tennis Court Lighting

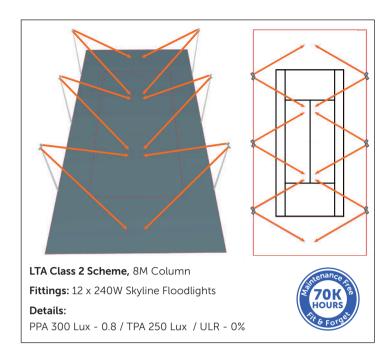
#### Benefits of LED lighting for tennis clubs

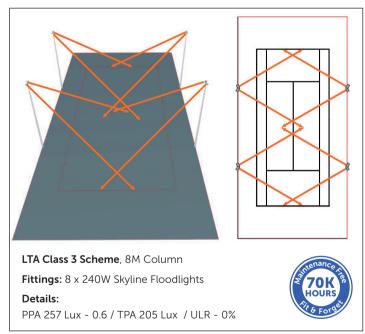
As with many other outdoor sports, lighting gives the opportunity to play tennis for an increased amount of time throughout the year and encourage and support participation, coaching and development for all levels of play.

Taking bad weather into account, an all-weather court in England is available for about 2500 hours of daylight playing time per year. Clubs with lighting have an enormous advantage over those without lighting, attracting coaches, more players, extending playing times and gaining increased revenue from court fees during the winter months.

These same benefits will also be available to floodlit tennis court providers in all other sectors e.g. schools, colleges and Local Authority sports centres. The problem is that, of the estimated 30,000 courts available to tennis players in Great Britain, less than 1.5% are floodlit.

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## Football Lighting

#### Benefits of LED lighting for football

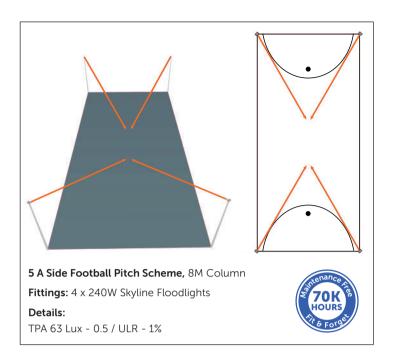
Outdoor sports lighting provides a great way of extending the use and the overall value of outdoor football venues. In the summer period, England enjoys long hours of daylight that give the opportunity to take part in football during the long summer evenings.

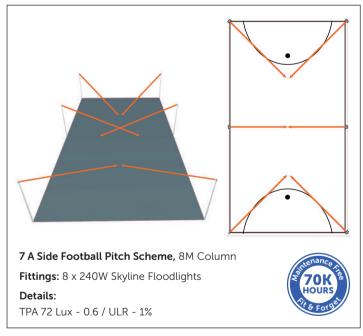
In contrast, the winter daylight can be as short as 7 hours a day and can restrict opportunities for football to short periods during the weekends.

In numerical terms, outdoor sports lighting can extend the playing hours by some 1000-1500 additional hours per annum and this can allow people to train or play in the evening all year round, increasing your revenue stream.

Typical use after the installation of floodlights can include: playing, training and coaching sessions for all adult and junior teams during the dark autumn/winter evenings.

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# Outdoor Bowls Lighting

#### Benefits of LED lighting for outdoor bowls

Artificial lighting at outdoor bowls centres can fundamentally affect the enjoyment and quality of play. As well as being critical during a game, the quality of the lighting can have a major impact on the overall ambience.

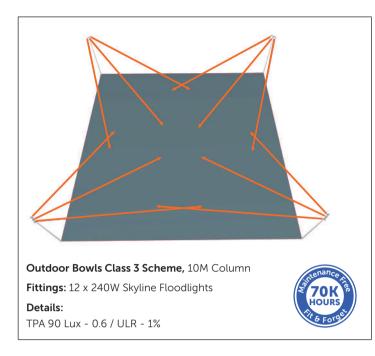
Artificial lighting must be considered as an integral element of the overall design and planning of all areas. The colours and types of surface must be carefully selected in conjunction with the lighting scheme to achieve the optimum overall visual quality, and to provide an attractive environment.

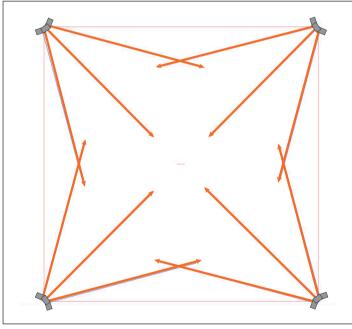
Visual requirements are for players to clearly see the jack and the locations of the woods around it together with being able to follow the run of the live wood from the far end of the rink.

Because of the large playing area, the uniformity of the brightness of the green is very important. The material of the green itself may influence the apparent uniformity.



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