ROMANSO®

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Happy Passionate Enjoy Your Sport

with our EnjoyPlay recreational sports lighting approach

The right lighting for your sports facility

The world is constantly evolving, and so is the way we communicate and interact with each other. The sports industry is no exception. More than ever, people are finding it harder to make time to play the sport they love, and even harder to interact and keep in touch with team members. As a result, individual sports, such as running, are gaining popularity while teams and the unity they provide are fading.

Social media has impacted how we interact with each other in the world of sports. Through social platforms such as Twitter, Facebook or apps we can communicate with our teams, share scores, and much more. New technologies like fitness trackers allow us to share our activities and compare results, even with professional athletes.

Whether you play a sport to stay fit, set a personal record, or for socialization, the way we participate in sports is ever changing.

The impact on sports clubs

Understanding how the industry is changing is key for sports clubs to remain afloat financially and socially.

Surprisingly, lighting can play a major role in allowing sports clubs to provide a welcoming and inspiring environment for people to practice whenever they'd like.

Of course, proper illumination when playing sports is a basic necessity. However, the quality of the lighting is crucial not only for the athletes, but for the sports facility owners. At Romanso, we can support you with best-in-class lighting to improve athlete results, while using minimum energy, minimize the impact on the environment and increasing potential revenue streams.

While our lighting systems provide the players and trainers with the flexibility to play whenever they want, they also provide facility operators insight on the status of all lighting in their facility.

Contents

Our EnjoyPlay approach

Romanso Lighting has the expertise in sports lighting to support you through every step of your journey.

Sports lighting systems from Romanso reduce energy consumption and minimize light pollution and overspill. The result? Happier club members, surrounded residents, and facility owners - who enjoy the low energy bills.

Whether illumination is needed for an indoor or outdoor facility, each project is unique due to the variety of stakeholders involved in the process.

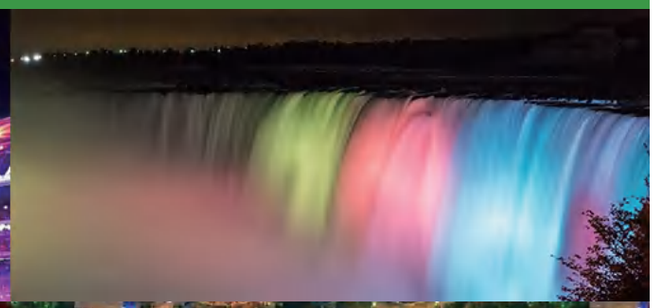
Romanso has a reliable reputation in working with local authorities and private property owners to assess issues with glare and overspill. We can provide lighting designs to display maximum lux in any areas of concern within the property.

Complete LED lighting portfolio

Aside from the illumination of the field, our lighting systems can also offer solutions for other areas of your sports facility such as the clubhouse, locker rooms, restrooms, parking area, walkways and stands.

Lighting Up the World of Sports

RGB+W brings together the best of two worlds:
colourful show lighting full of emotion and standard-compliant for top sporting performances,thus enhancing the overall entertainment atmosphere.






Outdoor sports lighting

Romanso offers the latest high-efficiency LED sports lighting floodlights, providing a complete lighting solution communicating via the EnjoyPlay control system, for the smallest through to the most complex outdoor sports facilities.

Superb Series

Unique and compact design.

• 240-1800W (composed of 1-6 lamps)
• Flexible multi-installation ways, Free combination of different beam angles to get more perfect lighting.
• Asymmetric lighting helps to cut down the spill light and glare light.
• CREE/LUMILEDS LED chips and MeanWell driver guarantee lower maintenance.

Sharp Series

Modular design, minimize wind resistance.

• 100-1600W (stacked up to get a bigger power)
• Low glare, high uniformity and flicker-free delivery excellent and comfortable lighting

Spider Series

Round-shape design, bigger shield minimized the upwarlight & get more useful lighting.

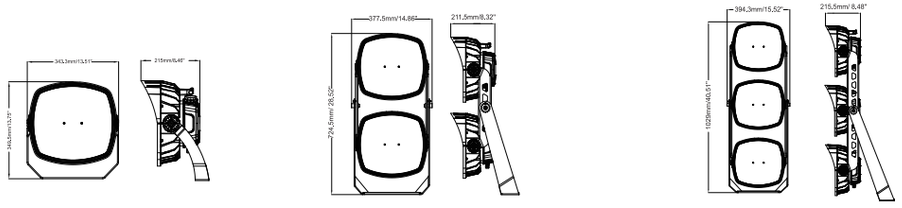
• 500-1200W meets more applications
• High lumen high efficiency 150lm/w helps to save energy at least 60%

Superb LED Stadium Light

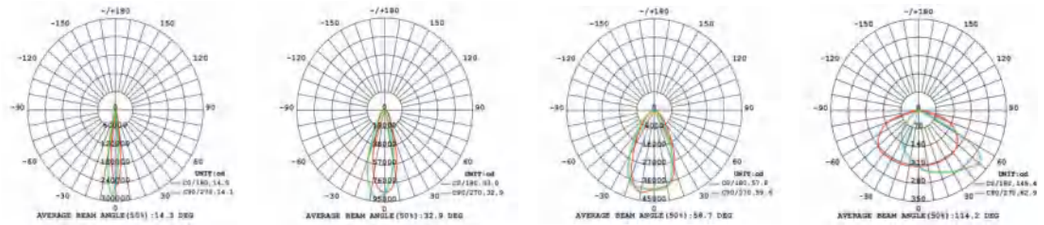
Product Features

- Stitching design, 240W~1800W are composed of 1-6 lights;
- Light Efficiency: 150lm/W;
- High bright LUMILEDS/CREE LEDs;
- Optics of 15º/30º/60º/60º×120º available on request;
- High-transmittance and anti-UV Frosted Polycarbonate lens;
- High reliable Meanwell/Inventronics Driver;
- Excellent thermal management design;
- Die-casting aluminum with polyester powder coat finish;
- IP66/IK10 rating for outdoor usage;
- Easy installation and low maintenance;
- Energy savings, no UV and IR radiations, emits low heat;
- Intelligent dimming system: 0-10V, DMX and DALI dimming modes;
- UL/cUL/ETL/cETL/TUV/SAA/FCC/CE/RoHS/approval;
- 5 years warranty

Dimensions[mm]



Beam Angle



Item NO.	Watt	Lumen	LED Driver	Surge Voltage	LED Type& Beam Angle	CCT	Voltage	CRI	PF	IP Rating IK Rating
RMS-L2106240	240W	36000LM±10%	Meanwell/ Inventronics	4KV; 10KV/20KV optional	CREE XTE: 15° LUMILEDS SMD5050:30°/ 60°/60×120°	3000K 4000K 5000K 5700K 6500K	100-277Vac/ 200-480Vac, 50/60Hz	>70	>0.9	IP66/IK10
RMS-L2106300	300W	45000LM±10%								
RMS-L2106400	400W	60000LM±10%								
RMS-L2106500	500W	75000LM±10%								
RMS-L2106600	600W	90000LM±10%								
RMS-L2106800	800W	120000LM±10%								
RMS-L2106900	900W	135000LM±10%								
RMS-L21061000	1000W	150000LM±10%								
RMS-L21061200	1200W	180000LM±10%								
RMS-L21061500	1500W	225000LM±10%								
RMS-L21061600	1600W	240000LM±10%								
RMS-L21061800	1800W	270000LM±10%								

Superb LED Stadium Light

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- High reliable Meanwell/Inventronics Driver;
- Excellent thermal management design;
- Die-casting aluminum with polyester powder coat finish;
- IP66/IK10 rating for outdoor usage;
- Easy installation and low maintenance;
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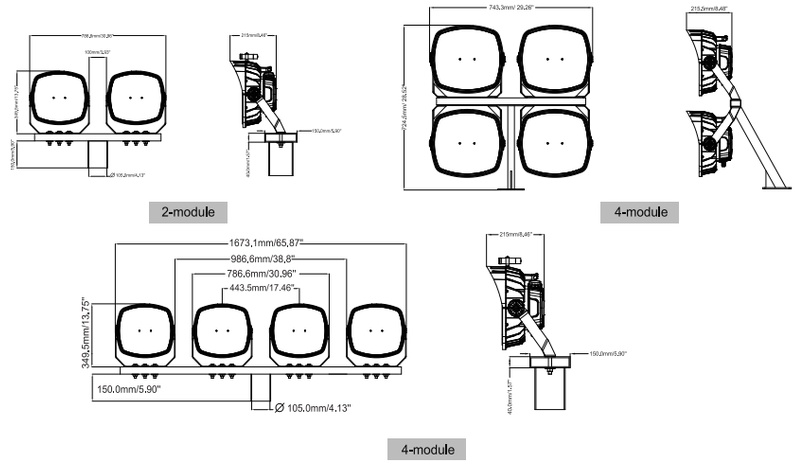
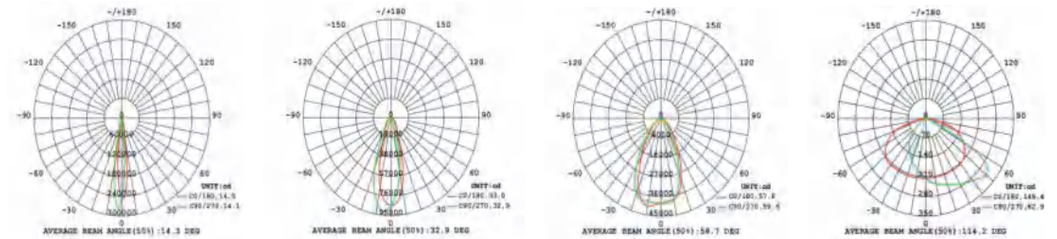
- Intelligent dimming system: 0-10V, DMX and DALI dimming modes;
- UL/cUL/ETL/cETL/TUV/SAA/FCC/CE/RoHS/approval;
- 5 years warranty

Dimensions[mm]



Beam Angle



Item NO.	Watt	Lumen	LED Driver	Surge Voltage	LED Type& Beam Angle	CCT	Voltage	CRI	PF	IP Rating IK Rating
RMS-L2106240	240W	36000LM±10%	Meanwell/ Inventronics	4KV; 10KV/20KV optional	CREE XTE: 15° LUMILEDS SMD5050:30°/ 60°/60×120°	3000K 4000K 5000K 5700K 6500K	100-277Vac/ 200-480Vac, 50/60Hz	>70	>0.9	IP66/IK10
RMS-L2106300	300W	45000LM±10%								
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RMS-L2106800	800W	120000LM±10%								
RMS-L2106900	900W	135000LM±10%								
RMS-L21061000	1000W	150000LM±10%								
RMS-L21061200	1200W	180000LM±10%								
RMS-L21061500	1500W	225000LM±10%								
RMS-L21061600	1600W	240000LM±10%								

Superb LED Stadium Light

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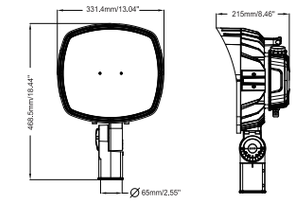
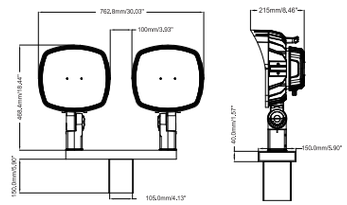
- Intelligent dimming system: 0-10V, DMX and DALI dimming modes;
- UL/cUL/ETL/cETL/TUV/SAA/FCC/CE/RoHS/approval;
- 5 years warranty

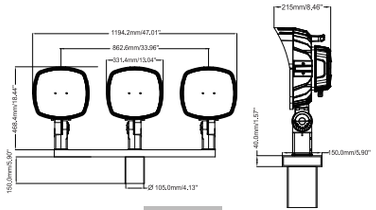
Dimensions[mm]



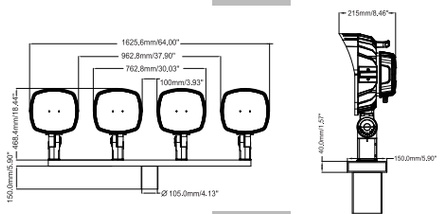
1-module



2-module

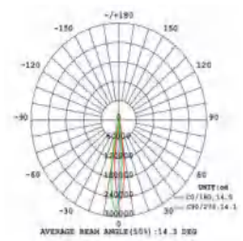


3-module

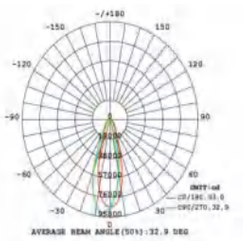


4-module

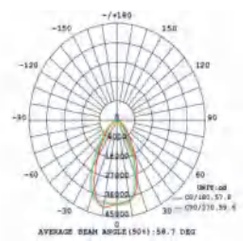
Beam Angle



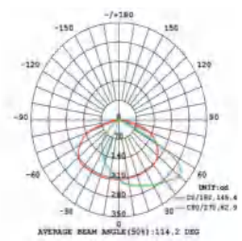
15°



30°



60°



60x120°

Item NO.	Watt	Lumen	LED Driver	Surge Voltage	LED Type& Beam Angle	CCT	Voltage	CRI	PF	IP Rating IK Rating
RMS-L2106240	240W	36000LM±10%	Meanwell/ Inventronics	4KV; 10KV/20KV optional	CREE XTE: 15° LUMILEDS SMD5050:30°/ 60°/60×120°	3000K 4000K 5000K 5700K 6500K	100-277Vac/ 200-480Vac, 50/60Hz	>70	>0.9	IP66/IK10
RMS-L2106300	300W	45000LM±10%								
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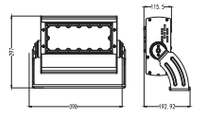
RMS-L2106900	900W	135000LM±10%								
RMS-L21061000	1000W	150000LM±10%								
RMS-L21061200	1200W	180000LM±10%								
RMS-L21061500	1500W	225000LM±10%								
RMS-L21061600	1600W	240000LM±10%								

Sharp LED Stadium Light

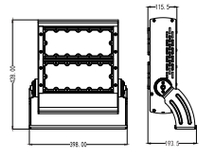
Product Features

- High reliable Meanwell driver and high bright LUMILEDS LEDs;
- Multiple optical lenses are available to meet a variety of lighting needs.
- High strength aluminium structure with excellent thermal management design;
- Corrosion resistant polyester powder coat finish;
- IP66 rating against dust,waterproof,weather for outdoor usage;
- Easy installation and maintenance,longer lifetime with high lumen maintenance;
- Energy savings, no UV and IR radiations, emits low heat;
- Ideal replacement to traditional metal halide lamp of 300W to 4000W;
- Intelligent dimming system:0-10V, DMX and DALI dimming modes are available;
- UL/cUL/ETL/cETL/ UKCA /FCC/CE/RoHS/SAA/C-TICK approval

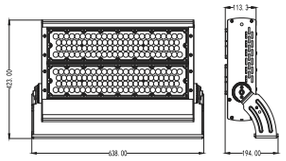
Dimensions[mm]



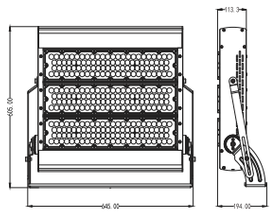
100W



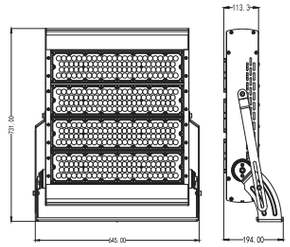
200W/300W



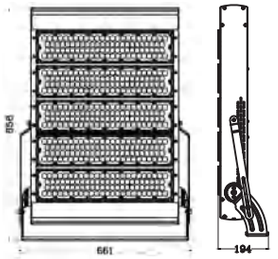
400W/500W/600W



700W800W

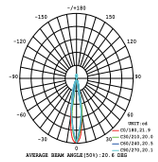


1000W/1200W

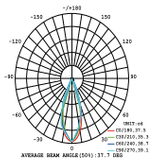


1500W/1600W

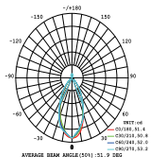
Beam Angle



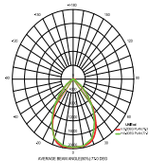
20°



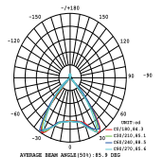
40°



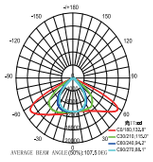
60°



76°



90°



90°x135°

Item NO.	Watt	Lumen	LED Driver	Surge Voltage	LED Type& Beam Angle	CCT	Voltage	CRI	PF	IP Rating IK Rating
RMS-FL-L2-100W	100W	15000LM±10%	Meanwell/ Inventronics	4KV; 10KV/20KV optional	LUMILEDS: 20°/40°/60°/76° /90°/90°x135°	3000K 4000K 5000K 5700K 6500K	100-277Vac/ 200-480Vac, 50/60Hz	>70	>0.9	IP66/IK10
RMS-FL-L2-200W	200W	30000LM±10%								
RMS-FL-L2-300W	300W	45000LM±10%								
RMS-FL-L2-400W	400W	60000LM±10%								
RMS-FL-L2-500W	500W	75000LM±10%								
RMS-FL-L2-600W	600W	90000LM±10%								
RMS-FL-L2-700W	700W	105000LM±10%								
RMS-FL-L2-800W	800W	120000LM±10%								
RMS-FL-L2-1000W	1000W	150000LM±10%								
RMS-FL-L2-1200W	1200W	180000LM±10%								
RMS-FL-L2-1500W	1500W	225000LM±10%								
RMS-FL-L2-1600W	1600W	240000LM±10%								

Spider LED Stadium Light

Product Features

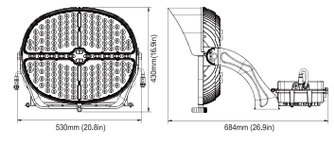
- High bright LUMILEDS LEDs, light Efficiency up to 150 LM/W
- High reliable Meanwell driver, designed with Remote Power System
- Remote Power System makes easy installation and convenient for the driver maintenance operation
- Ultra-wide input voltage: 200-480VAC or 120-277V or 347-480VA
- Multiple optical lenses available in NEMA 2Hx2V, 3Hx3V, 4Hx4V,5Hx-5V,6Hx6V distributions
- Sealed die-casting profile for outdoor applications
- Low profile, compact design minimizes wind load requirements
- Light engines are available in standard 4000 K, 5000K and 5700 K (70/80/90 CRI) configurations
- IP66 rating against dust,waterproof,weather for outdoor usage
- Intelligent dimming system:0-10V, DMX and DALI dimming modes are available
- Estimated 100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations
- Suitable for use in -40°C to 50°C (-40°F to 122°F)
- UL/cUL/ETL/cETL/UKCA/FCC/CE/RoHS approval
- 5 years warranty



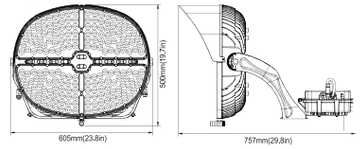
Dimensions[mm]

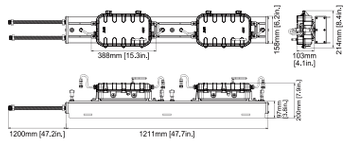
With Power Box Attached

Small Size: 500W & 600W



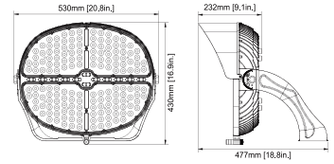
Large Size: 850W & 1200W



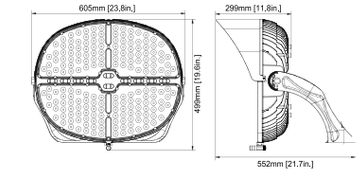


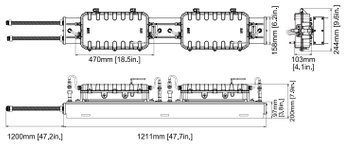
With Remote Power Box

Small Size: 500W & 600W

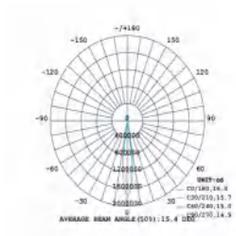


Large Size: 850W & 1200W

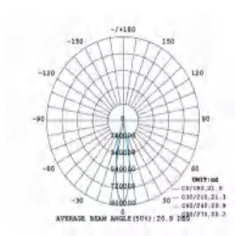




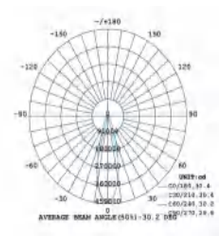
Beam Angle



2Hx2V



3Hx3V



4Hx4V

Item NO.	Watt	Lumen	LED Driver	Surge Voltage	LED Type& Beam Angle	CCT	Voltage	CRI	PF	IP Rating IK Rating
RMS-FL-L3-500W	500W	75000lm±10%	Meanwell/ Inventronics	4KV; 10KV/20KV optional	NEMA 2Hx2V, 3Hx3V, 4Hx4V,	3000K 4000K 5000K 5700K 6500K	100-277Vac/ 200-480Vac, 50/60Hz	>70	>0.9	IP66/IK08
RMS-FL-L3-600W	600W	90000lm±10%								
RMS-FL-L5-850W	850W	127500lm±10%								
RMS-FL-L5-1000W	1000W	150000lm±10%								
RMS-FL-L5-1200W	1200W	180000lm±10%								

Lighting **Requirements**

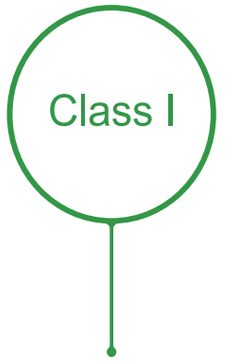
The main goal when installing a lighting system on a field, is to meet specific standards. Usually, the lighting requirements are linked to the sport. In practice, the light level for a training field is lower than a match field. Specific lighting is also needed based on the type of game, speed of action, and viewing distance.

The lighting classes specified for most sports are laid down in NEN-EN standards. Depending on the class, the level may vary from 75 to 500 lux on the field. Demands are also made on the uniformity of illumination, the maximum working glare value and the light source's ability to render color. In addition to the functional need for light to perform a sport, sports facilities are also social meeting places where revenue is generated, making lighting an important component to creating a pleasant environment.

Each field and each sport requires different lighting needs, and no two installations are the same. With this brochure, the objective is to give an overview of standard lighting schemes for most popular recreational sports and which lighting system is the best for your need. This brochure serves as a basis to assist with decision making when beginning a sports lighting project.

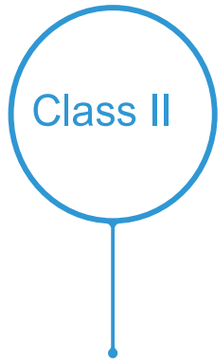
It is important to note that lighting design and installation requires specialist engineering knowledge and must be carried out by competent experienced professionals following the guidelines required by government or any other relevant public authorities.

It is also important to note that this brochure is not intended to provide lighting recommendations and solutions in case of television coverage for which specialist knowledge is required.



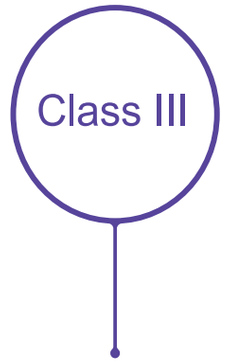
Top-level competition

National and international matches, which generally involve large spectator capacities with potentially long viewing distances. Top-level training may also be included in this class.



Mid-level competition

Regional or local club matches, which generally involve mediumsize spectator capacities with medium viewing distances. Highlevel training may also be included in this class.



Low-level competition

Local or small matches, which do not usually involve spectators. General training and recreation also come into this class.

FIFA Lighting Standards

Levels / Requirements	FIFA Lighting Standard A	FIFA Lighting Standard B	FIFA Lighting Standard C	FIFA Lighting Standard D	Grade 1	Grade 2	Grade 3
Requirements	World Cup; Women's world Cup.	Women's world Cup; FIFA Club/ U-20 World Cup; Olympic.	FIFA U-20 Women's World Cup; FIFA U-17 World Cup.	FIFA U-20 Women's World Cup; FIFA U-17 World Cup.	World Cup training	Match practice	Standard training
Eh ave	Minimum > 1500 lux Average > 2500lux	Minimum > 1200 lux Average > 2000lux	Minimum > 800 lux Average > 1250lux	> 1000 lux	Average > 750lux	Average > 500lux	Average >300lux
Uniformity U1h	>0.50	>0.50	>0.40	>0.40	>0.40	>0.40	>0.40
Uniformity U2h	>0.70	>0.70	>0.60	>0.60	>0.60	>0.60	>0.60
CCT	5000-6200K	5000-6200K	4200-6200K	4200-6200K	5000-6200K	5000-6200K	4200-6200K
GR	<50	<50	<50	<50	<50	<50	<50
Ra	≥80	≥80	≥80	≥70	≥80	≥70	≥70

Level of Competition

	Class I	Class II	Class III
International/ National	●		
Regional	●	●	
Local	●	●	●
Training		●	●
Recreational			●

Lighting a football field

Because recreational football is usually played in the evening after work, effective lighting maximizes the opportunity for people to take part in the game.

Although the lighting level will obviously be lower than for broadcasted matches, the lighting quality should remain high in terms of uniformity, visual comfort and limitation of obtrusive light, especially in residential areas where leisure sports facilities are often located.

These types of facilities will usually be stand-alone, in residential areas, with little or no spectator capacity. The lighting for non-televised events should be planned so that the horizontal surface of the pitch can be illuminated uniformly regardless of the pole arrangement chosen.

The poles must be positioned outside the normal direction of view for players with regard to their alignment with both goal lines and touch lines.

Source: Society of Light and Lighting UK

EN12193 Requirements

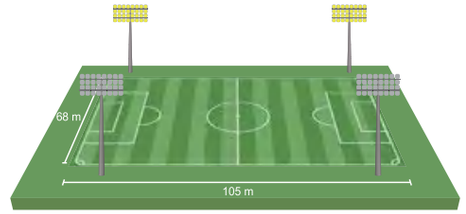
		Class		
		I	II	III
Horizontal illuminance	$\bar{E}_m$ lx	500	200	75
	$E_{min}/\bar{E}_m$	0.7	0.6	0.5
GR		50	50	55
Ra		60	60	20

Football FIFA Grade A

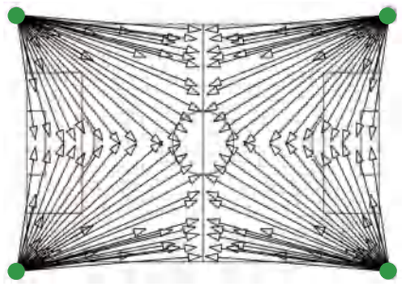
EN12193: Eh ave >1500lux

Superb Series

Football



Specifications	Superb Series
Poles	4 x 35 m
Floodlight	128x1200W: 15°
Floodlight Model	RMS-L21061200
Eav[lx]	1559lux
Emin[lx]	1183lux
Emax[lx]	1974lux
Ra	>80
U0	0.76
Emin/Emax	0.60
GR	< 45
ULR (Upward Light Ratio)	4.5%

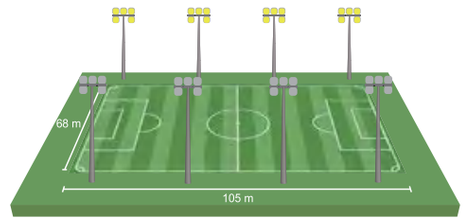


Floodlight aiming

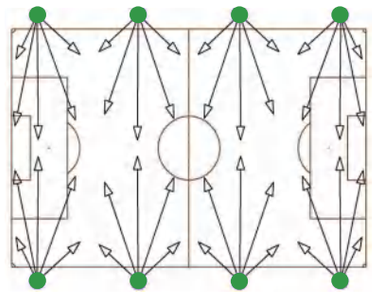
Football FIFA Grade 2 Match Practice

EN12193: Eh ave >500lux

Superb Series



Specifications	Superb Series
Poles	8 x 18 m
Floodlight	24x1200W: 15° & 16x1200W: 60°
Floodlight Model	RMS-L21061200
Eav[lx]	524lux
Emin[lx]	427lux
Emax[lx]	673lux
Ra	>80
U0	0.82
Emin/Emax	0.63
GR	< 48(Max), < 34(Min)
ULR (Upward Light Ratio)	5.5%



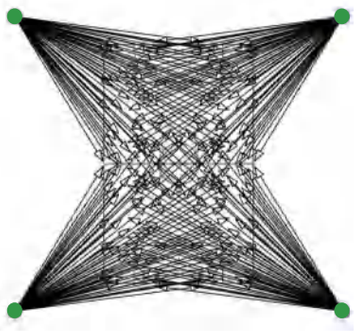
Floodlight aiming

Football Class I

EN12193: Eh ave >2000lux

Superb Series

Specifications	Superb Series
Poles	4 x 65 m
Floodlight	220x1500W: 15°
Floodlight Model	RMS-L21061500
Eav[lx]	2224lux
Emin[lx]	1858lux
Emax[lx]	2418lux
Ra	>80
U0	0.84
Emin/Emax	0.77
GR	< 39(Max), < 16(Min)
ULR (Upward Light Ratio)	3.5%

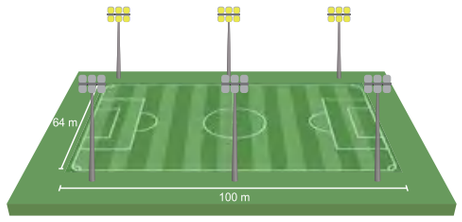


Floodlight aiming

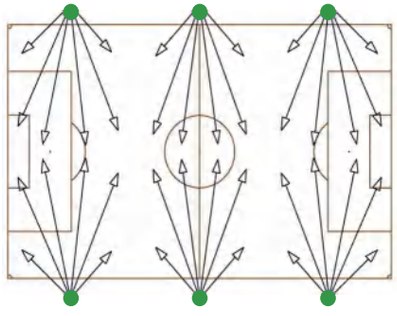
Football Class I

EN12193: Eh ave >500lux

Superb Series



Specifications	Superb Series
Poles	6 x 20 m
Floodlight	36x1200W: 30°
Floodlight Model	RMS-L21061200
Eav[lx]	544lux
Emax[lx]	363lux
Emax[lx]	719lux
Ra	>80
U0	0.67
Emin/Emax	0.5
GR	< 42(Max), < 37(Min)
ULR (Upward Light Ratio)	5.5%

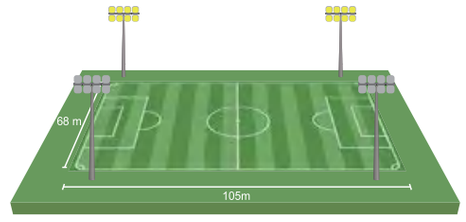


Floodlight aiming

Football Class II

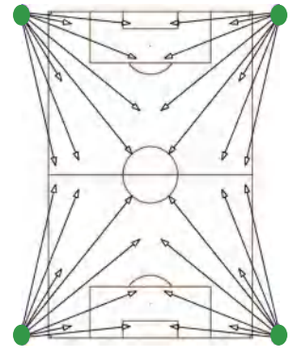
EN12193: Eh ave >400lux

Superb Series



Football

Specifications	Superb Series
Poles	4 x 16 m
Floodlight	32x1200W: 20°
Floodlight Model	RMS-L21061200
Eav[lx]	406lux
Emin[lx]	343lux
Emax[lx]	497lux
Ra	>80
U0	0.85
Emin/Emax	0.69
GR	< 33(Max), < 30(Min)
ULR (Upward Light Ratio)	2.5%

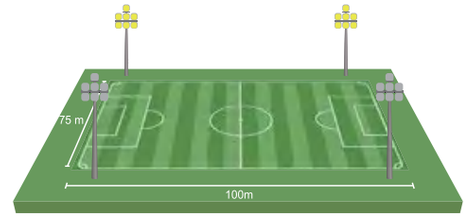


Floodlight aiming

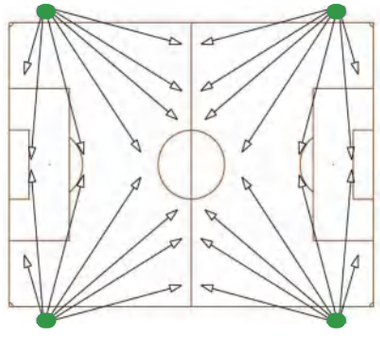
Football Class II

EN12193: Eh ave >300lux

Superb Series



Specifications	Superb Series
Poles	4 x 16 m
Floodlight	20x1200W: 15° & 4x1200W: 30° & 4x1200W: 60°
Floodlight Model	RMS-L21061200
Eav[lx]	333lux
Emin[lx]	239lux
Emax[lx]	476lux
Ra	>80
U0	0.72
Emin/Emax	0.5
GR	<50
ULR (Upward Light Ratio)	11.5%

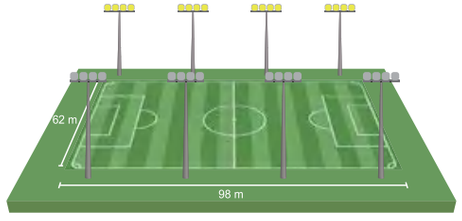


Floodlight aiming

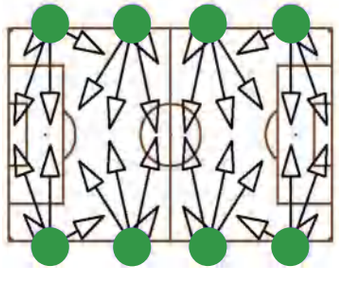
Football Class II

EN12193: Eh ave >250lux

Superb Series



Specifications	Superb Series
Poles	8 x 15 m
Floodlight	20x600W: 30° & 12x600W: 60°
Floodlight Model	RMS-L2106600
Eav[lx]	255lux
Emin[lx]	172lux
Emax[lx]	353lux
Ra	>80
U0	0.67
Emin/Emax	0.49
GR	-
ULR (Upward Light Ratio)	7.0%

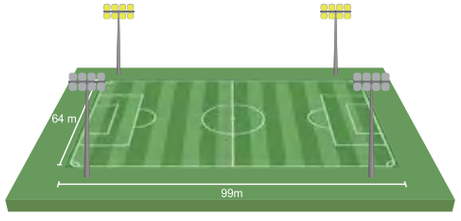


Floodlight aiming

Football Class II

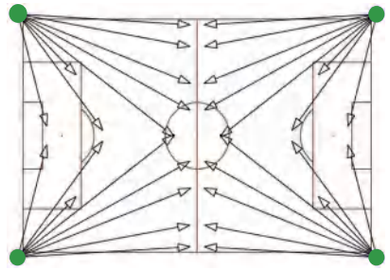
EN12193: Eh ave >200lux

Superb Series



Football

Specifications	Superb Series
Poles	4 x 15 m
Floodlight	28x600W: 15° & 4x600W: 60°
Floodlight Model	RMS-L2106600
Eav[lx]	213lux
Emin[lx]	163lux
Emax[lx]	302lux
Ra	>80
U0	0.76
Emin/Emax	0.54
GR	-
ULR (Upward Light Ratio)	-

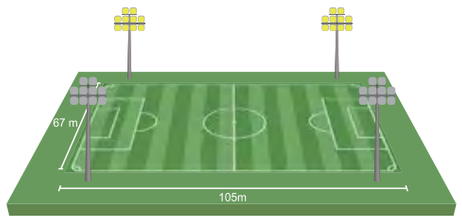


Floodlight aiming

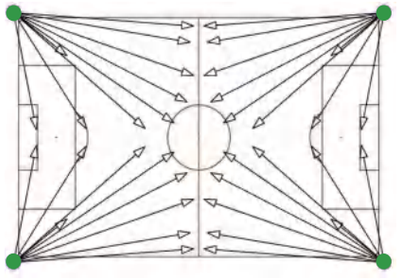
Football Class II

EN12193: Eh ave >200lux

Superb Series



Specifications	Superb Series
Poles	4 x 15 m
Floodlight	36x600W: 15° & 4x600W: 60°
Floodlight Model	RMS-L2106600
Eav[lx]	209lux
Emin[lx]	164lux
Emax[lx]	261lux
Ra	>80
U0	0.78
Emin/Emax	0.63
GR	-
ULR (Upward Light Ratio)	-

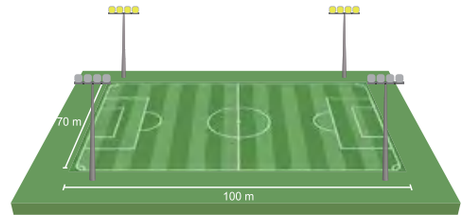


Floodlight aiming

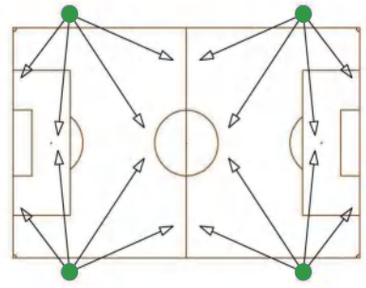
Football Class II

EN12193: Eh ave >200lux

Superb Series



Specifications	Superb Series
Poles	4 x 16 m
Floodlight	12x1200W: 30° & 4x1200W: 60°
Floodlight Model	RMS-L21061200
Eav[lx]	222lux
Emin[lx]	143lux
Emax[lx]	333lux
Ra	>80
U0	0.64
Emin/Emax	0.43
GR	-
ULR (Upward Light Ratio)	-

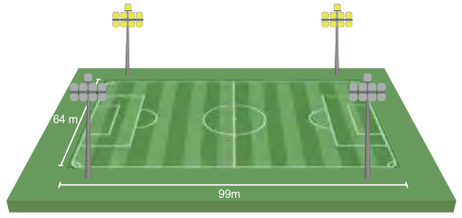


Floodlight aiming

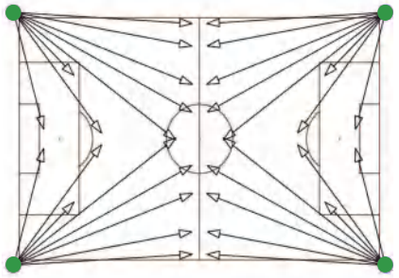
Football Class II

EN12193: Eh ave >200lux

Superb Series



Specifications	Superb Series
Poles	4 x 15 m
Floodlight	32x600W: 15° & 4x600W: 60°
Floodlight Model	RMS-L2106600
Eav[lx]	217lux
Emin[lx]	171lux
Emax[lx]	291lux
Ra	>80
U0	0.79
Emin/Emax	0.59
GR	-
ULR (Upward Light Ratio)	-

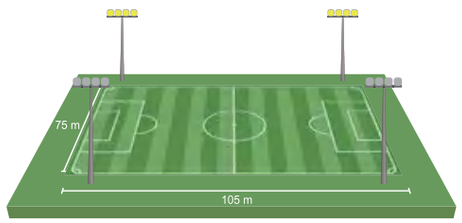


Floodlight aiming

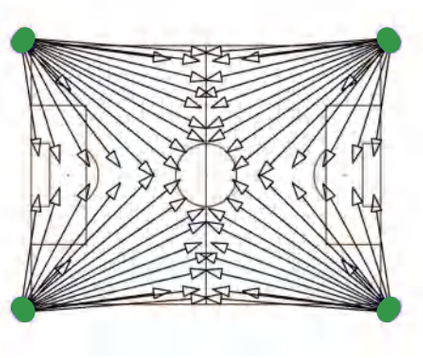
Football Class III

EN12193: Eh ave >120lux

Superb Series



Specifications	Superb Series
Poles	4 x 16.5 m
Floodlight	16x1200W: 15°/30°
Floodlight Model	RMS-L21061200
Eav[lx]	160lux
Emin[lx]	124lux
Emax[lx]	203lux
Ra	>80
U0	0.78
Emin/Emax	0.61
GR	-
ULR (Upward Light Ratio)	14.5%



Floodlight aiming

Football Class III

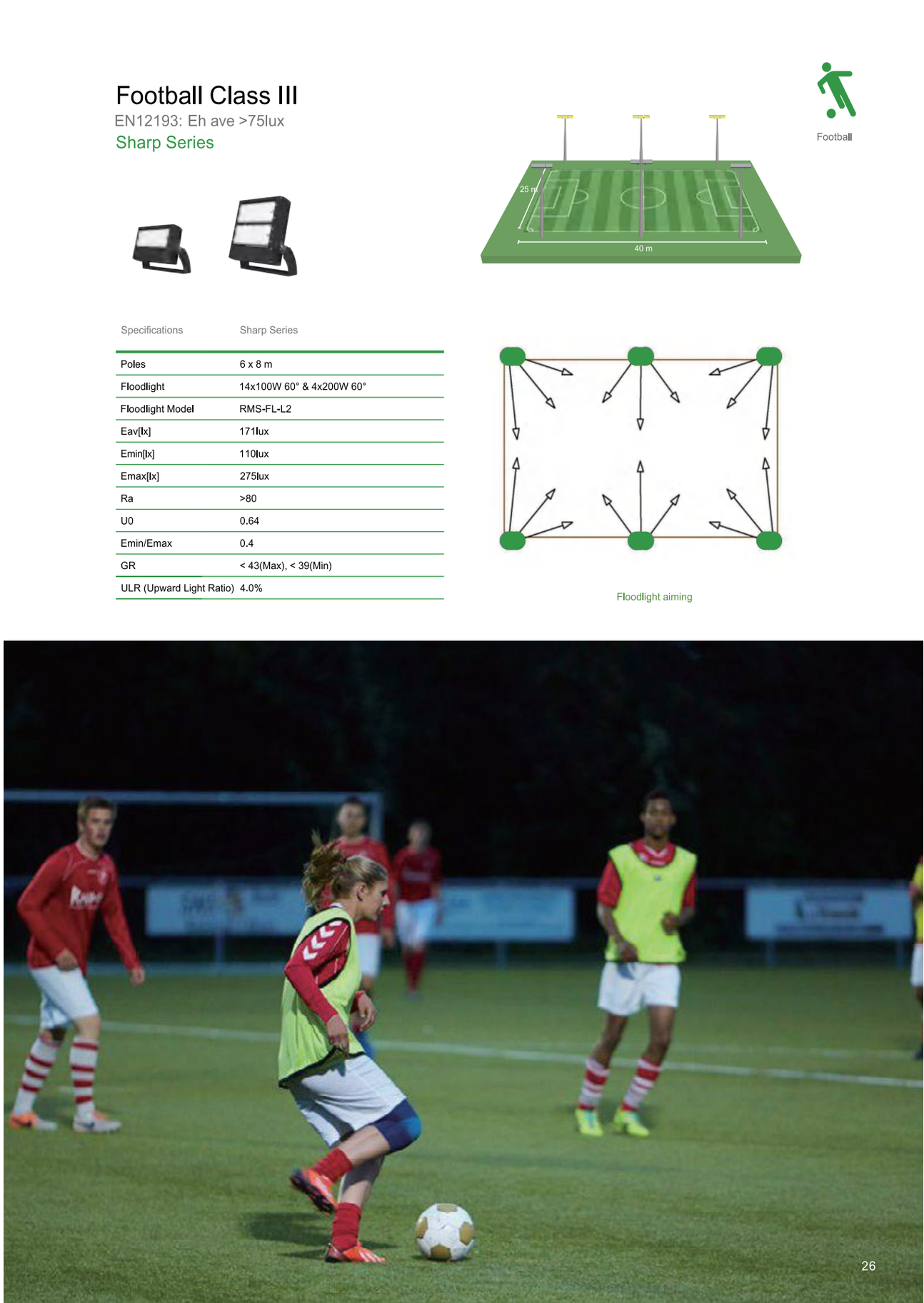
EN12193: Eh ave >75lux

Sharp Series

Football

Specifications	Sharp Series
Poles	6 x 8 m
Floodlight	14x100W 60° & 4x200W 60°
Floodlight Model	RMS-FL-L2
Eav[lx]	171lux
Emin[lx]	110lux
Emax[lx]	275lux
Ra	>80
U0	0.64
Emin/Emax	0.4
GR	< 43(Max), < 39(Min)
ULR (Upward Light Ratio)	4.0%

Floodlight aiming



Lighting a tennis court

When lighting a tennis court, the objective is to ensure good visibility enabling both players and spectators to follow the progress of a game. The ball, regardless of its location and speed, should always be clearly visible.

Creating good visibility requires sufficient contrast to be created between objects and their backgrounds, good illumination levels and even distribution of light across the playing surface (uniformity) and by minimizing glare.

Source: ITF lighting requirements.

EN12193 Requirements

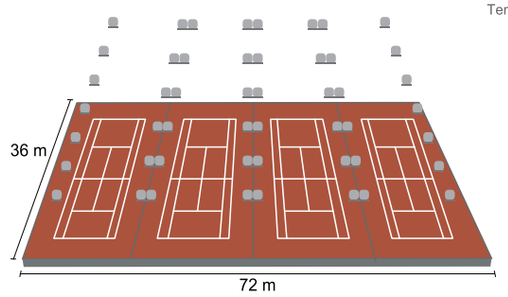
		Class		
		I	II	III
Horizontal illuminance	$\bar{E}_m$ lx	500	300	200
	$E_{min}/\bar{E}_m$	0.7	0.7	0.6
GR		50	50	55
Ra		60	60	20

Tennis Class I

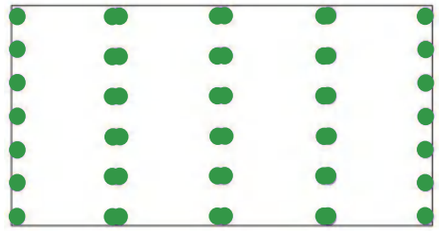
EN12193: Eh ave >500lux

Superb Series

Tennis



Specifications	Superb Series
Poles	Hang installation: Height 7.2m
Floodlight	50x240W: 60°x120°
Floodlight Model	RMS-L2106240
Eav[lx]	527lux
Emin[lx]	369lux
Emax[lx]	655lux
Ra	>80
U0	0.7
Emin/Emax	0.563
GR	< 28(Max), < 20(Min)
ULR (Upward Light Ratio)	-

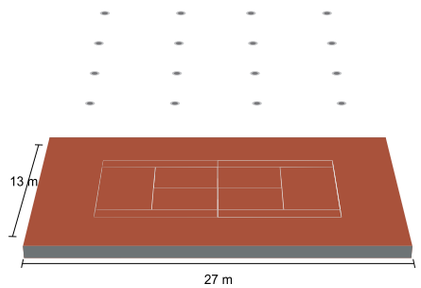


Floodlight aiming

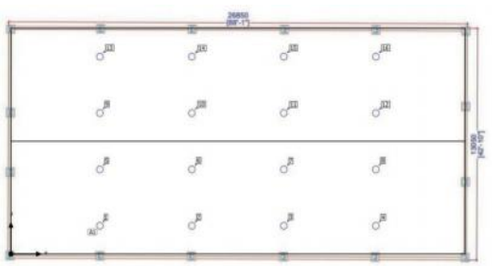
Tennis Class I

EN12193: Eh ave >500lux

LED Linear High Bay Light



Specifications	LED Linear High Bay Light
Poles	16 x 25ft/7.6m
Floodlight	16x150W: 90°
Floodlight Model	RMS-L2312150
Eav[lx]	563lux
Emin[lx]	262lux
Emax[lx]	753lux
Ra	>80
U0	0.47
Emin/Emax	0.35
GR	-
ULR (Upward Light Ratio)	-

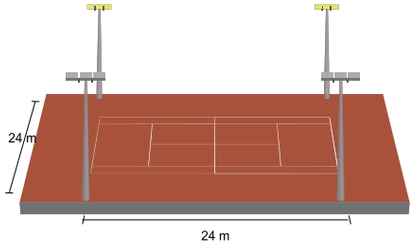


Floodlight aiming

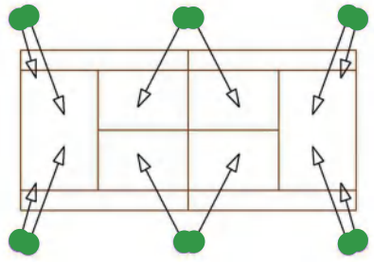
Tennis Class I

EN12193: Eh ave >500lux

Sharp Series



Specifications	Sharp Series
Poles	6 x 16 m
Floodlight	4x200W: 40° & 4x200W: 60° & 4x400W: 60°
Floodlight Model	RMS-FL-L2
Eav[lx]	559lux
Emin[lx]	470lux
Emax[lx]	637lux
Ra	>80
U0	0.84
Emin/Emax	0.74
GR	< 19(Max), < 10(Min)
ULR (Upward Light Ratio)	0.5%

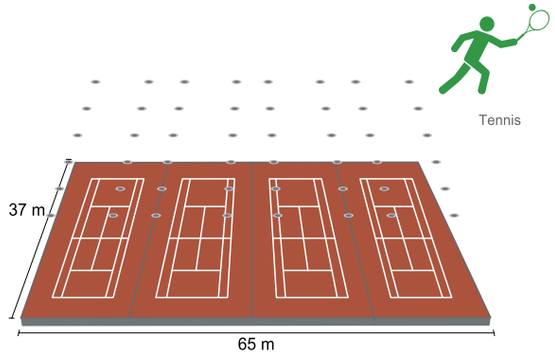


Floodlight aiming

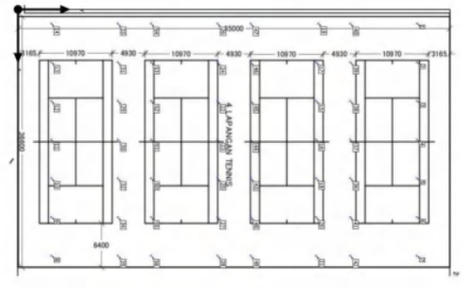
Tennis Class II

EN12193: Eh ave >500lux

LED Linear High Bay Light



Specifications	LED Linear High Bay Light
Poles	No poles. Heights: 8, 7, 6 & 4m
Floodlight	56x200W: 90°
Floodlight Model	RMS-L2312200
Eav[lx]	499lux
Emin[lx]	115lux
Emax[lx]	936lux
Ra	>80
U0	0.23
Emin/Emax	0.12
GR	< 20(Max)
ULR (Upward Light Ratio)	-

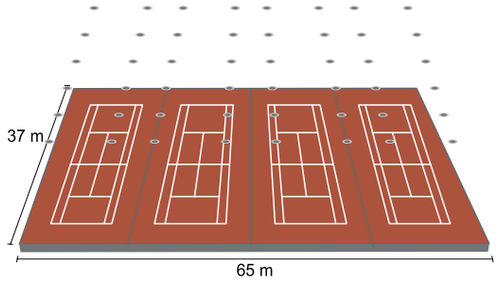


Floodlight aiming

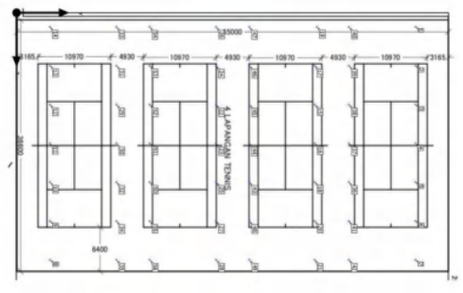
Tennis Class I

EN12193: Eh ave >500lux

LED Linear High Bay Light



Specifications	LED Linear High Bay Light
Poles	No poles. Heights: 8, 7, 6 & 4m
Floodlight	56x200W: 90°
Floodlight Model	RMS-L2312200
Eav[lx]	500lux
Emin[lx]	147lux
Emax[lx]	1008lux
Ra	>80
U0	0.29
Emin/Emax	0.15
GR	< 20(Max)
ULR (Upward Light Ratio)	-

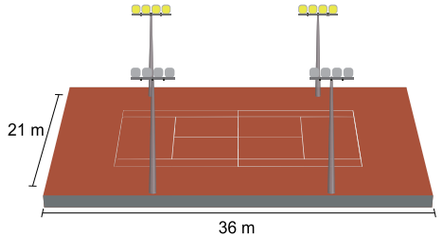


Floodlight aiming

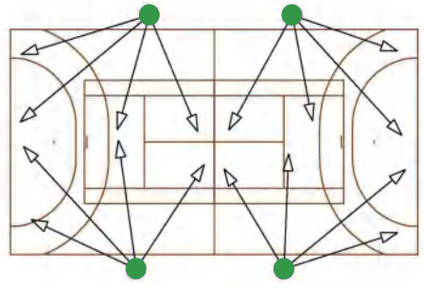
Tennis Class III

EN12193: Eh ave >200lux

Superb Series



Specifications	Superb Series
Poles	4 x 12m
Floodlight	8x300W: 30° & 8x300W: 60°
Floodlight Model	RMS-L2106300
Eav[lx]	441lux
Emin[lx]	269lux
Emax[lx]	552lux
Ra	>80
U0	0.61
Emin/Emax	0.49
GR	< 37(Max), < 30(Min)
ULR (Upward Light Ratio)	-



Floodlight aiming

Lighting a playing court

Playing courts designed for multi-sports should ensure that their proposed lighting considers the needs of all the various sports to be played. Care must be taken to ensure that the lighting design produces uniformity of the required illumination and that glare and light pollution are minimized.

If the playing court is to be employed at evening and night-times; it may be advisable to foresee a floodlighting system with lighting towers possibly with light directed towards the free throws midline; this will avoid glare problems to players from the sidelines. Appropriate care should be taken to distribute lighting as uniformly as possible on the playing court; lighting capacity should actually be adjustable according to requirements and when applicable the different competitions being hosted.

Source: Society of Light and Lighting UK

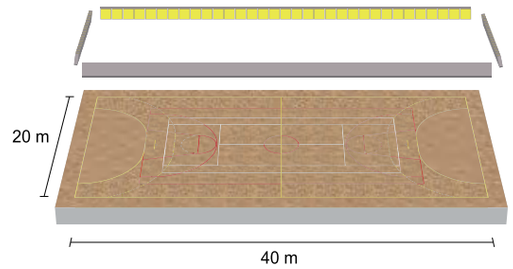
EN12193 Requirements
For Indoor Basketball Court

		Class		
		I	II	III
Horizontal illuminance	$\bar{E}_m$ lx	750	500	300
	$E_{min}/\bar{E}_m$	0.7	0.6	0.5
GR		30	30	35
Ra		70	65	65

Basketball Court FIFA approval

EN12193: Eh ave >2000lux

Sharp Series



Playing

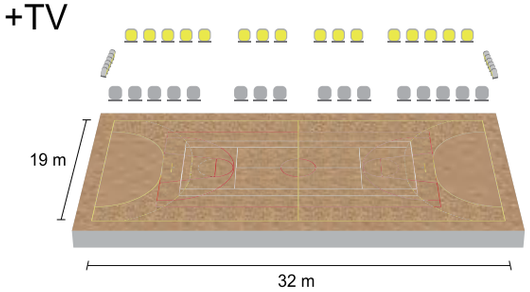
Specifications	Sharp Series
Poles	all around
Floodlight	100x1200W: 90°
Floodlight Model	RMS-FL-L2-1200W
Eav[lx]	3779lux
Emin[lx]	3599lux
Emax[lx]	4041lux
Ra	>80
U0	0.95
Emin/Emax	0.89
GR	< 30(Max)
ULR (Upward Light Ratio)	-

Floodlight aiming

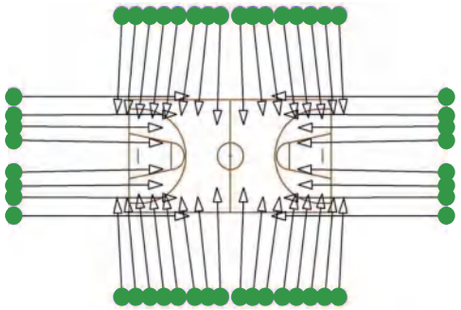
Basketball Court FIBA Class I +TV

EN12193: Eh ave >6000lux

Superb Series



Specifications	Superb Series
Poles	all aroundx20m
Floodlight	48x1500W: 30°
Floodlight Model	RMS-L21061500
Eav[lx]	6581lux
Emin[lx]	5788lux
Emax[lx]	7148lux
Ra	>80
U0	0.88
Emin/Emax	0.81
GR	< 34(Max), < 26(Min)
ULR (Upward Light Ratio)	2%

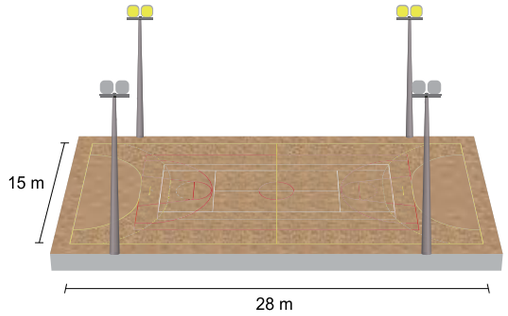


Floodlight aiming

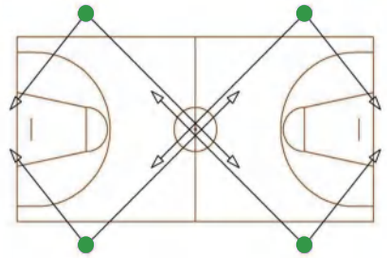
Playing Court Class II

EN12193: Eh ave >200lux

Superb Series



Specifications	Superb Series
Poles	4x8m
Floodlight	8x240W: 60°x120°
Floodlight Model	RMS-L2106240
Eav[lx]	228lux
Emin[lx]	174lux
Emax[lx]	320lux
Ra	>80
U0	0.76
Emin/Emax	0.54
GR	< 35(Max), < 30(Min)
ULR (Upward Light Ratio)	0.0%



Floodlight aiming

Lighting other court

Playing courts designed for multi-sports should ensure that their proposed lighting considers the needs of all the various sports to be played. Care must be taken to ensure that the lighting design produces uniformity of the required illumination and that glare and light pollution are minimized.

If the playing court is to be employed at evening and night-times; it may be advisable to foresee a floodlighting system with lighting towers possibly with light directed towards the free throws midline; this will avoid glare problems to players from the sidelines. Appropriate care should be taken to distribute lighting as uniformly as possible on the playing court; lighting capacity should actually be adjustableaccording to requirements and when applicable the different competitions being hosted.

Source: Society of Light and Lighting UK

EN12193 Requirements
For Indoor Badminton Court

		Class		
		I	II	III
Horizontal illuminance	$\bar{E}_m$ lx	750	500	300
	$E_{min}/\bar{E}_m$	500	300	200
GR		0.7	0.7	0.5
Ra		0.5	0.5	0.3

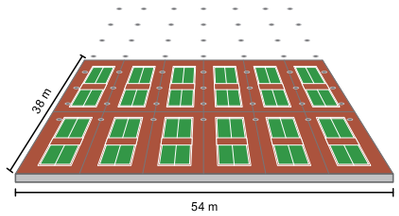
EN12193 Requirements
For Baseball Field

			Class		
			I	II	III
Horizontal illuminance	$\bar{E}_m$ lx	In Field	750	500	300
		Out Field	500	300	200
	$E_{min}/\bar{E}_m$	In Field	0.7	0.7	0.5
		Out Field	0.5	0.5	0.3
GR		In Field	50	50	55
		Out Field	50	50	55
Ra		In Field	70	70	65
		Out Field			

Badminton Court Class I

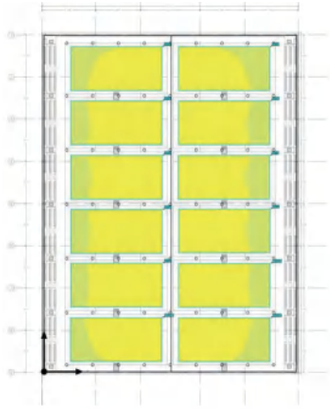
EN12193: Eh ave >700lux

LED Linear High Bay Light



Badminton

Specifications	LED Linear High Bay Light
Poles	No pole x8.5m
Floodlight	63x200W: 90°
Floodlight Model	RMS-L2312200
Eav[lx]	738lux
Emin[lx]	128lux
Emax[lx]	878lux
Ra	>80
U0	0.17
Emin/Emax	0.15

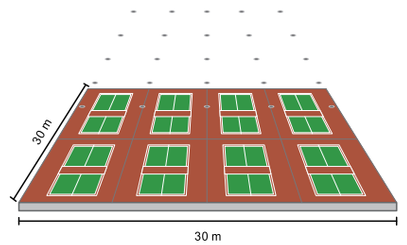


Floodlight aiming

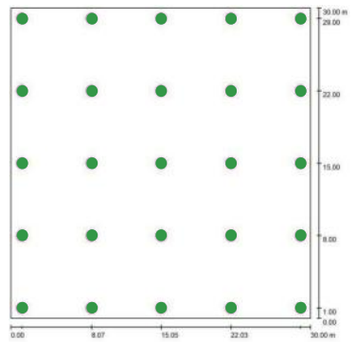
Badminton Court Class III

EN12193: Eh ave >200lux

LED Linear High Bay Light



Specifications	LED Linear High Bay Light
Poles	NO pole x6m
Floodlight	25x100W: 120°
Floodlight Model	RMS-L2312100
Eav[lx]	253lux
Emin[lx]	221lux
Emax[lx]	296lux
Ra	>80
U0	0.873
Emin/Emax	0.764

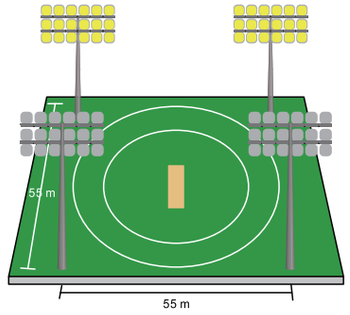


Floodlight aiming

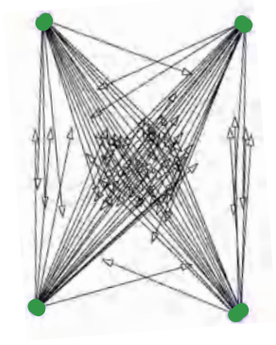
Cricket Field Class III

EN12193: Eh ave >425lux

Superb Series



Specifications	Superb Series
Poles	4x23m
Floodlight	72x1200W: 15°
Floodlight Model	RMS-L21061200
Eav[lx]	471lux
Emin[lx]	157lux
Emax[lx]	514lux
Ra	>80
U0	0.75
Emin/Emax	0.69
GR	-
ULR (Upward Light Ratio)	16.5%

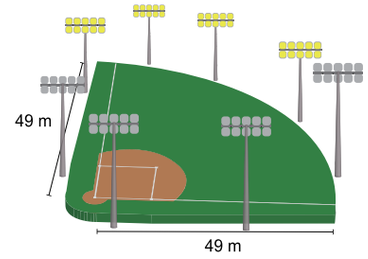


Floodlight aiming

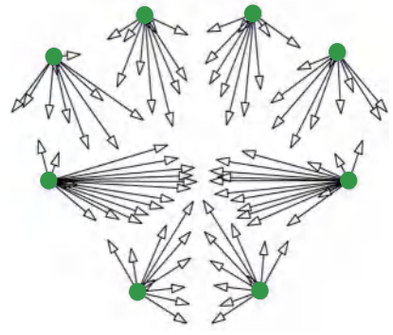
Baseball Field Class I

EN12193: Eh ave >1000lux

Superb Series



Specifications	Superb Series
Poles	8x25m
Floodlight	79x1200W: 15 ° & 11x1200W: 30°
Floodlight Model	RMS-L21061200
Eav[lx]	1042lux (Infield)
Eav[lx]	788lux (Outfield)
Ra	>80
U0	0.71(Infield)
U0	0.49 (Outfield)
Emin/Emax	0.603
GR	< 48(Max), < 32(Min)
ULR (Upward Light Ratio)	4.50%

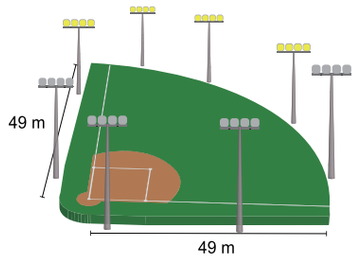


Floodlight aiming

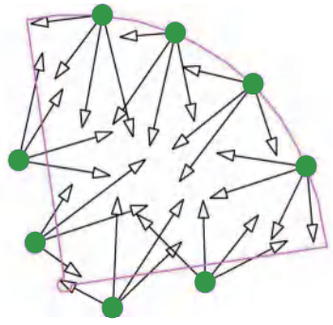
Softball Field Class II

EN12193: Eh ave >500lux

Superb Series



Specifications	Superb Series
Poles	8 x9.9m
Floodlight	20x1200W: 30° & 12x1200W:60°
Floodlight Model	RMS-L21061200
Eav[lx]	505lux
Emin[lx]	215lux
Emax[lx]	766lux
Ra	>80
U0	0.425
Emin/Emax	0.28
GR	-
ULR (Upward Light Ratio)	15%

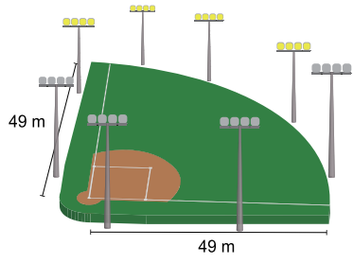


Floodlight aiming

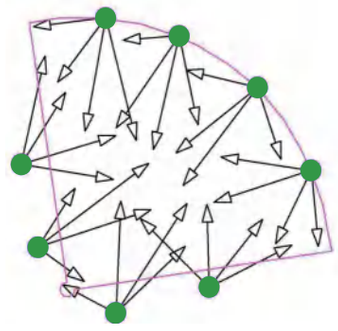
Softball Field Class III

EN12193: Eh ave >300lux

Superb Series



Specifications	Superb Series
Poles	8x9.9m
Floodlight	20x800W: 30° & 12x800W: 60°
Floodlight Model	RMS-L2106800
Eav[lx]	338lux
Emin[lx]	132lux
Emax[lx]	494lux
Ra	>80
U0	0.389
Emin/Emax	0.266
GR	-
ULR (Upward Light Ratio)	15%

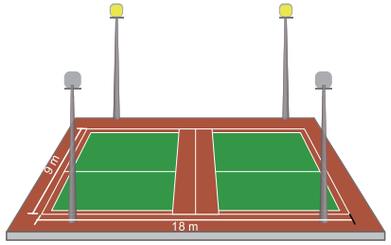


Floodlight aiming

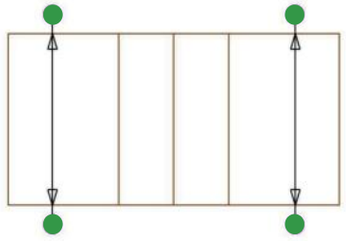
Volleyball Court Class II

EN12193: Eh ave >300lux

Superb Series



Specifications	Superb Series
Poles	4x8m
Floodlight	4x300W: 60°x120°
Floodlight Model	RMS-L2106300
Eav[lx]	312lux
Emin[lx]	263lux
Emax[lx]	467lux
Ra	>80
U0	0.84
Emin/Emax	0.56
GR	< 29(Max), < 26(Min)
ULR (Upward Light Ratio)	0.0%

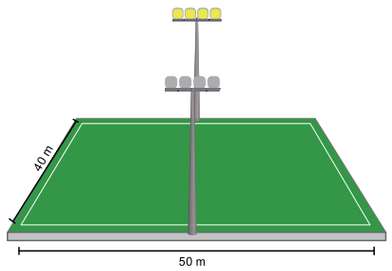


Floodlight aiming

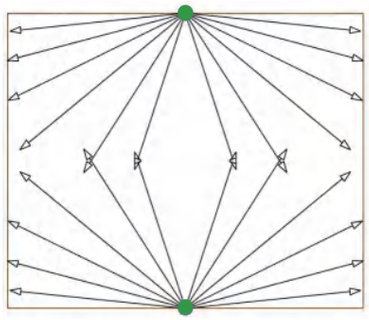
Stud-farm Field

EN12193: Eh ave >300lux

Superb Series



Specifications	Superb Series
Poles	2 x11m
Floodlight	8x1500W: 30°
Floodlight Model	RMS-L21061500
Eav[lx]	310lux
Emin[lx]	101lux
Emax[lx]	461lux
Ra	>80
U0	0.5
Emin/Emax	0.33
GR	< 50(Max), < 37(Min)
ULR (Upward Light Ratio)	-



Floodlight aiming

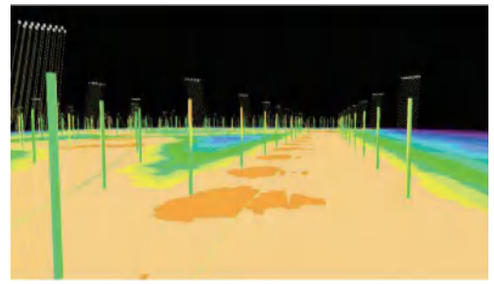
Kart Racing Class I

EN12193: Eh ave >1000lux

Superb Series

Karting

Specifications	Superb Series
Poles	-
Floodlight	2900x300W: 60°x120° & 656x600W: 60°x120°
Floodlight Model	RMS-L2106300 & RMS-L2106600
Eav[lx]	1554lx
Emin[lx]	1131lx
Emax[lx]	2132lx
Ra	>80
U0 (g_1)	0.73
Emin/Emax (g_1)	0.53



Floodlight aiming

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