



TECHNICAL MANUAL

S p o r t s F a c i l i t i e s D e s i g n



Football Lighting Requirements

The lighting requirements are linked primarily the type of activity in progress, then training, match or maintenance. Second point, based on the minimum size dictated by the F.I.G.C. and LND.



L1XL2 DIM: 65X105 METERS
National amateur championship
championship of excellence
promotion championship.



L1XL2 DIM: 50X100 METERS
First category championship
Second category championship.



L1XL2 DIM: 45X90 METERS
Third category and amateur
championship Youth and School
Activities Championship.

Manual LND FIGC

Football field Dimensions	Class	Em	Uniformity		Glare	Pmax
			E_{min}/E_{med}	E_{min}/E_{max}		
105x65	1	300	0,70	0,60	50	70
			0,70	0,60	50	70
			0,70	0,60	50	78
			0,70	0,60	50	70
100x50	2	150	0,60	0,50	50	40
			0,60	0,50	50	40
			0,60	0,50	50	35
			0,70	0,60	50	60
90x45	1	300	0,70	0,60	50	60
			0,70	0,60	50	55
	2	150	0,60	0,50	50	35
			0,60	0,50	50	35
	3	100	0,60	0,40	55	25
			0,60	0,40	55	25

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**.

According to the manuale LND FIGC

CLASS I

Class I is intended for type A and B playgrounds with a sports facility capacity of up to 20,000 spectators. CLASS I is for top-level competition matches.

CLASS II

Class II is scheduled for playgrounds A and B with sports facility capacity of up to 5,000 spectators. CLASS II is for Mid-level competition, for example regional or local matches.

CLASS III

Class III is scheduled for playgrounds C with sports facility capacity for up to 3,000 spectators. CLASS III is for low-level competition.

	CLASS I	CLASS II	CLASS III
International	X		
Regional	X	X	
Local	X	X	X
Training		X	X
Recreational			X

Reference temperature scenarios 25° outdoor – 35° indoor

OUTDOOR



CONI



5-a-side football

EN12193 Requirements

		Class I	Class II	Class III
Horizontal illuminance	Em (lx)	500	200	75
	Emin/Em	0.7	0.6	0.5
GR		55	55	55
Ra		70	60	60

outdoor
sport
lighting



Football-5 Class I EN12193

ALO3 0C36

Asymmetric optics
Code: BAR/BAL 757-160-9M
166250lm
1615W



Details

Area PA	40 x 20 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO3 - 9M
System Power	6460w
Em (lx)	500
Emin/Em	0.8
Ra	70
GR max	47
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
GR	55
Ra	70

Floodlight



Football-5 Class II EN12193

ALO2 0C36

Asymmetric optics
Code: BAR/BAL 757-80-6M
71250lm
525W



Details

Area PA	40 x 20 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO2 - 6M
System Power	2100W
Em (lx)	200
Emin/Em	0.8
Ra	70
GR max	46
MF	0.9

Specifications

Em (lx)	200
Emin/Em	0.6
GR	55
Ra	60

Floodlight



EXTERNAL SHIELD
Guaranteed lighting results even with the
ES anti-light pollution screen application.

Football-5 Class III EN12193

ALO 1 OC36
Asymmetric optics
Code: BAR/BAL 757-80-3M
36300lm
265W



Details

Area PA	40 x 20 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO1 - 3M
System Power	1060w
Em (lx)	100lx
Emin/Em	0.8
Ra	70
GR max	45.5
MF	0.9

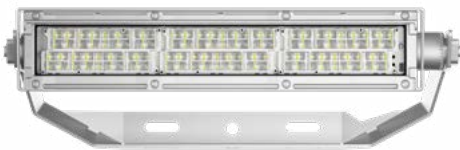


EXTERNAL SHIELD
Guaranteed lighting results even with the
ES anti-light pollution screen application.

Specifications

Em (lx)	75
Emin/Em	0.5
GR	55
Ra	60

Floodlight



AEC solutions for every sport



OUTDOOR



CONI



11-a-side football

EN12193 Requirements

		Class I	Class II	Class III
Horizontal illuminance	Em (lx)	500	200	75
	Emin/Em	0.7	0.6	0.5
GR		55	55	55
Ra		70	60	60

Ref.	Class	Eh (lux)	Uniformity			GR	Ra	Tc
			U2	U1	U2%			
UNI / CONI	I	500	0,7	0,5	25/5 m	50	60	4000 ≤ T ≤ 6500 (1)
	II	200	0,6	0,5	25/5 m	50	60	4000 ≤ T ≤ 6500 (1)
	III	75	0,5	0,5	25/5 m	55	20	4000 ≤ T ≤ 6500 (1)
LND	1 < 20.000	300	0,7	0,6		50		4200 ≤ T ≤ 5600
	2 < 5000	150	0,6	0,6		50		4200 ≤ T ≤ 5600
	3 < 3000	100	0,6	0,4		55		4200 ≤ T ≤ 5600
FIFA	III	750 (3)	0,7		30/10m		65	T ≥ 4000
	II	500 (3)	0,6		30/10m		65	T ≥ 4000
	I	200 (3)	0,5		30/10m		65	T ≥ 4000

ENJOY
THE
SPORT
with a
comfort
lighting

Football Class I EN12193

ALO3 0C36

Asymmetric optics
Code: BAR/BAL 757-150-9M
160800lm
1510W



Details

Area PA	105 x 65 m
Pole	4 x 18m
Floodlight	36 (n° luminaires) x ALO3-9M
System Power	54360W
Em (lx)	500
Emin/Em	0.7
Ra	70
GR max	48
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
GR	55
Ra	70

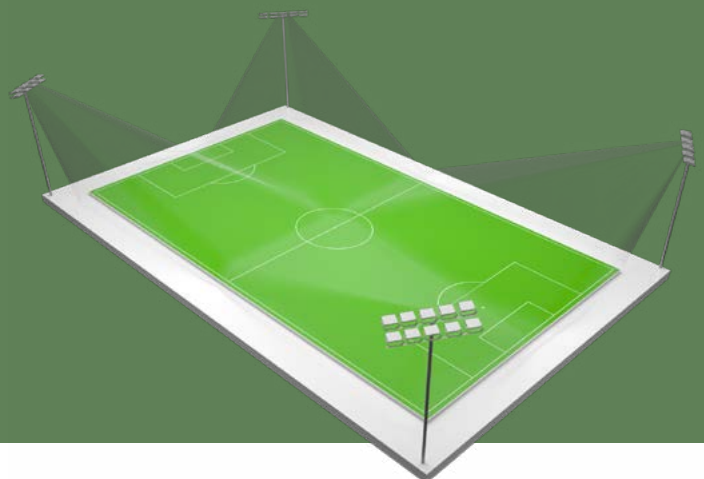
Floodlight



Football Class I EN12193

ALO3 0C36

Asymmetric optics
Code: ASN/ASW 757-160-9M
166250lm
1615W



Details

Area PA	105 x 65 m
Pole	4 x 25m
Floodlight	40 (n° luminaires) x ALO3- 9M
System Power	64600w
Em (lx)	500
Emin/Em	0.7
Ra	70
GR max	49.5
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
GR	55
Ra	70

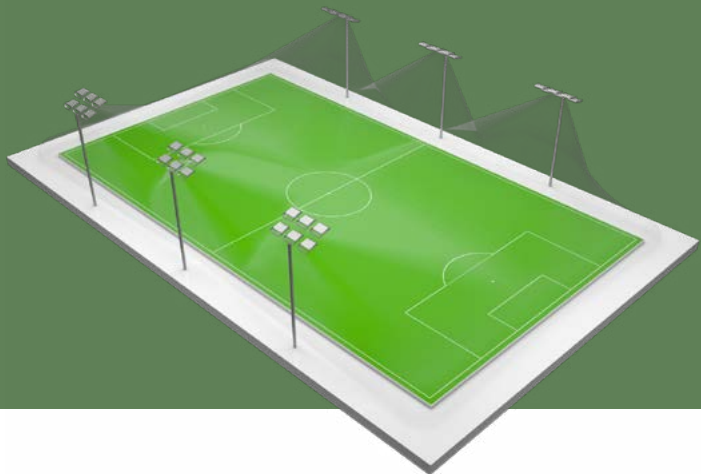
Floodlight



Football Class I EN12193

ALO 3 0C36

Asymmetric optics
Code: BAC/BAR/BAL 757-150-9M
160800lm
1510W



Details

Area PA	105 x 65 m
Pole	6 x 18m
Floodlight	36 (n° luminaires) x ALO3 - 9M
System Power	54360w
Em (lx)	500
Emin/Em	0.7
Ra	70
GR max	48
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
GR	55
Ra	70

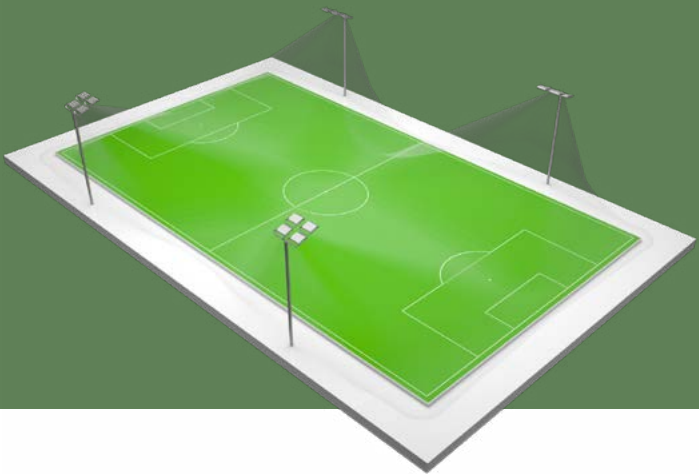
Floodlight



Football Class II EN12193

ALO 3 0C36

Asymmetric optics
Code: BAR/BAL 757.130-9M
148000lm
1300W



Details

Area PA	105 x 65 m
Pole	4 x 18m
Floodlight	16 (n° luminaires) x ALO3 - 9M
System Power	20800W
Em (lx)	200
Emin/Em	0.7
Ra	70
GR max	47
MF	0.9

Specifications

Em (lx)	200
Emin/Em	0.6
GR	55
Ra	60

Floodlight



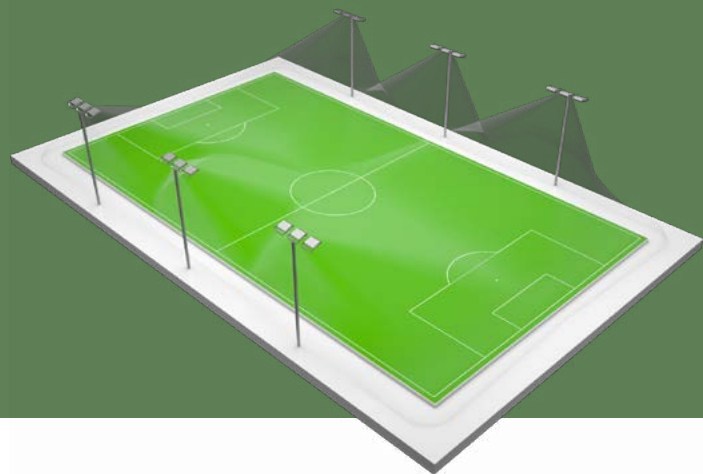
Football Class II EN12193

2 x ALO3 0C36

Asymmetric optics
Code: BAC/BAR/BAL 757-160-9M
166250lm
1615W

1 x ALO1 0C36

Asymmetric optics
Code: BAC/BAR/BAL 757-110-3M
45950lm
365W



Details

Area PA	105 x 65 m
Pole	6 x 18m
Floodlight	12 (n° luminaires) x ALO3 - 9M 6 (n° luminaires) x ALO1 - 3M
System Power	19620
Em (lx)	200
Emin/Em	0.7
Ra	70
GR max	47
MF	0.9

Specifications

Em (lx)	200
Emin/Em	0.6
GR	55
Ra	60

Floodlight



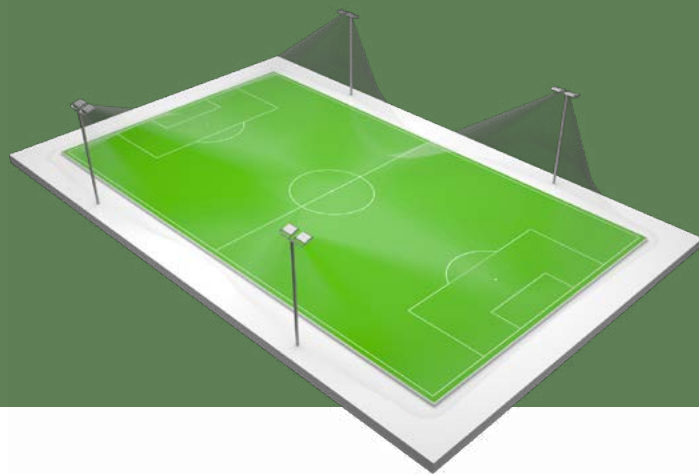
Football Class III EN12193

ALO1 0C36

Asymmetric optics
Code: BAR/BAL 757-130-3M
51300lm
435W

ALO3 0C36

Asymmetric optics
Code: BAR/BAL 757-150-9M
160800lm
1510W



Details

Area PA	105 x 65 m
Pole	4 x 18m
Floodlight	4 (n° luminaires) x ALO1 - 3M 4 (n° luminaires) x ALO3 - 9M
System Power	7780w
Em (lx)	75lx
Emin/Em	0.65
Ra	70
GR max	46.5
MF	0.9

Specifications

Em (lx)	75
Emin/Em	0.5
GR	55
Ra	60

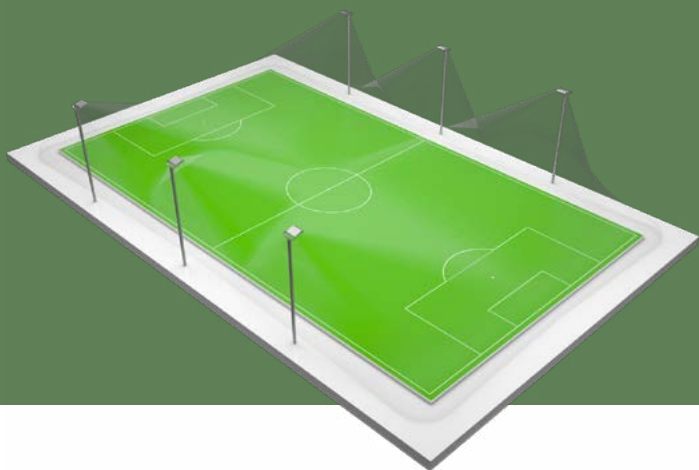
Floodlight



Football Class III
EN12193

ALO 3 0C36

Asymmetric optics
Code: BAC/BAR/BAL 757-130-9M
148000lm
1300W



AEC
sport
lighting
solutions

Details

Area PA	105 x 65 m
Pole	6 x 18m
Floodlight	6 (n° luminaires) x ALO3 - 9M
System Power	7800w
Em (lx)	75lx
Emin/Em	0.7
Ra	70
GR max	44
MF	0.9

Specifications

Em (lx)	75
Emin/Em	0.5
GR	55
Ra	60

Floodlight



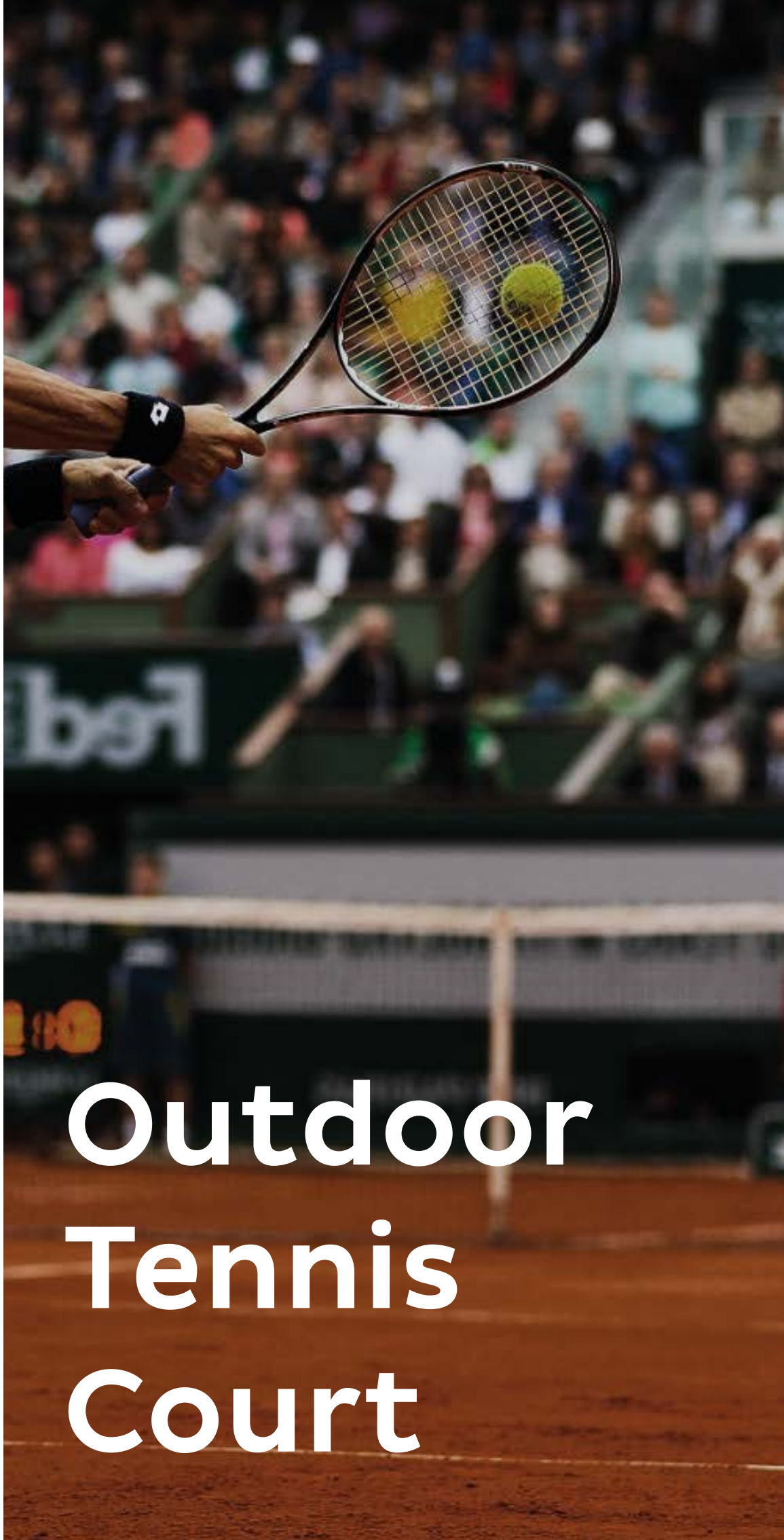
OUTDOOR



TENNIS OUTDOOR

EN12193 Requirements

		Class I	Class II	Class III
Horizontal illuminance	Em (lx)	500	300	200
	Emin/Em	0.7	0.7	0.7
GR		50	50	55
Ra		70	60	60

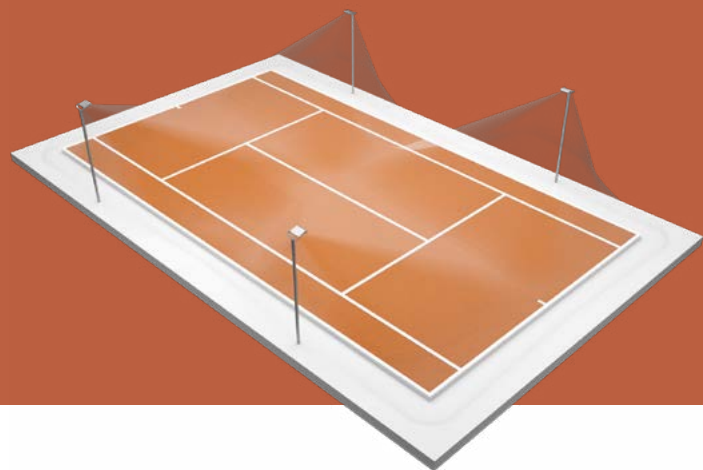


Outdoor
Tennis
Court

Tennis Class I EN12193

ALO 3 0C36

Asymmetric optics
Code: BAL 757.110-9M
132600lm
1090W



Details

Area PA	30 x 15 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO3 - 9M
System Power (W)	4360
Em (lx)	500
Emin/Em	0.7
Ra	70
GR max	44
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
GR	50
Ra	70

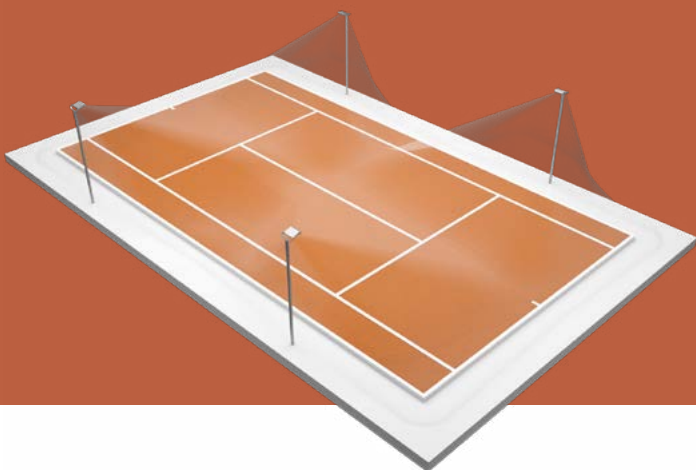
Floodlight



Tennis Class II EN12193

ALO 2 0C36

Asymmetric optics
Code: BAL 757.90-6M
78000lm
595W



Details

Area PA	30 x 15 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO2 - 6M
System Power (W)	2380
Em (lx)	300
Emin/Em	0.7
Ra	70
GR max	42
MF	0.9

Specifications

Em (lx)	300
Emin/Em	0.7
GR	50
Ra	60

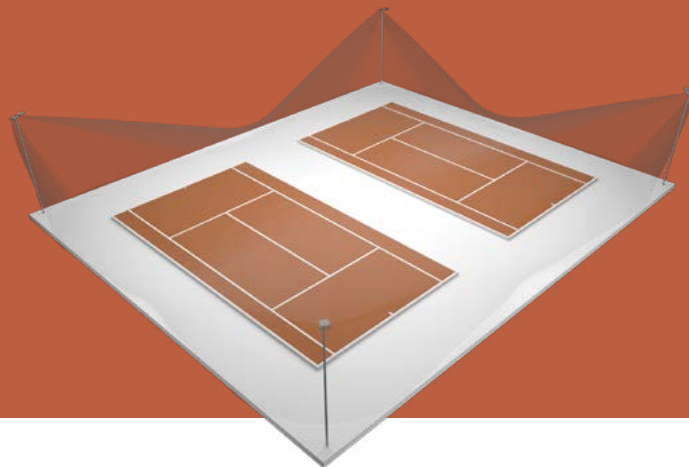
Floodlight



Tennis Class II EN12193

ALO 3 0C36

Asymmetric optics
Code: ASN/ASW 757-140-9M
154700lm
1405W



Details

Area PA	n° 2 fields: 30 x 15 m
Pole	4 x 10m
X/Y Position	0.5m / 5.5m
Floodlight	4 (n° luminaires) x ALO3 - 9M
System Power (W)	5620W
Em (lx)	300
Emin/Em	0.7
Ra	70
GR max	44
MF	0.9

Specifications

Em (lx)	300
Emin/Em	0.7
GR	50
Ra	60

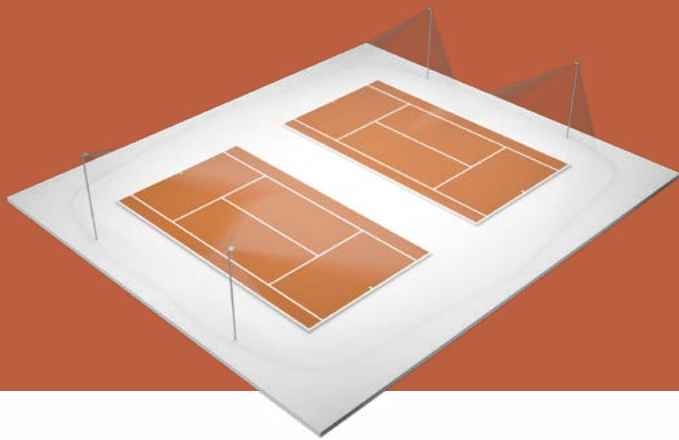
Floodlight



Tennis Class II EN12193

ALO3 0C36

Asymmetric optics
Code: BAL/BAR 757-130-9M
148000lm
1300W



Details

Area PA	n° 2 fields: 30 x 15 m
Pole	4 x 10m
Floodlight	4 (n° luminaires) x ALO3-9M
System Power (W)	5200W
Em (lx)	300
Emin/Em	0.7
Ra	70
GR max	44
MF	0.9

Specifications

Em (lx)	300
Emin/Em	0.7
GR	50
Ra	60

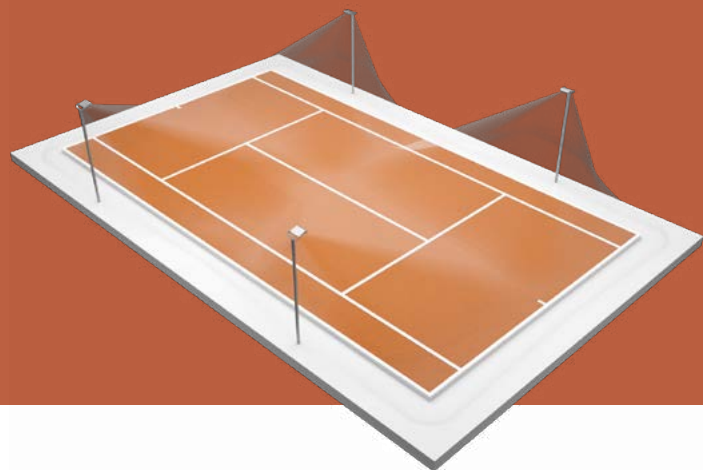
Floodlight



Tennis Class III EN12193

ALO1 0C36

Asymmetric optics
Code: BAR/BAL 757-130-3M
51300lm
435W



Details

Area PA	30 x 15 m
Pole	4 x 8m
Floodlight	4 (n° luminaires) x ALO1 - 3M
System Power (W)	1740W
Em (lx)	200
Emin/Em	0.7
Ra	70
GR max	42
MF	0.9

Specifications

Em (lx)	200
Emin/Em	0.7
GR	55
Ra	60

Floodlight



Choose
the best
LED lighting.



INDOOR



TENNIS INDOOR

EN12193 Requirements

		Class I	Class II	Class III
Horizontal illuminance	Em (lx)	750	500	300
	Emin/Em	0.7	0.7	0.5
Ra		80	60	60

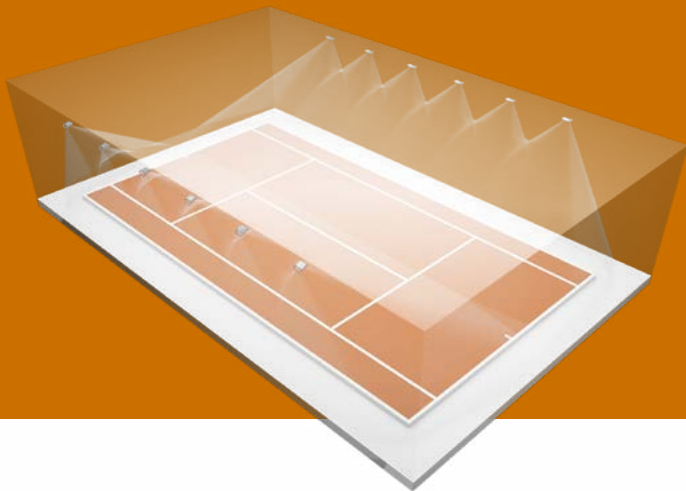
Performance
Safety
Quality
Indoor Tennis Court



Tennis Class I EN12193

ALO 1 0C36

Asymmetric optics
Code: BAC 857.120-3M
41900lm
400W



Details

Area PA	30 x 15 m
Pole	Fila da H=7m
Floodlight	12 (n° luminaires) X ALO1-3M
System Power (W)	4800W
Em (lx)	750
Emin/Em	0.7
Ra	70
MF	0.9

Specifications

Em (lx)	750
Emin/Em	0.7
Ra	80

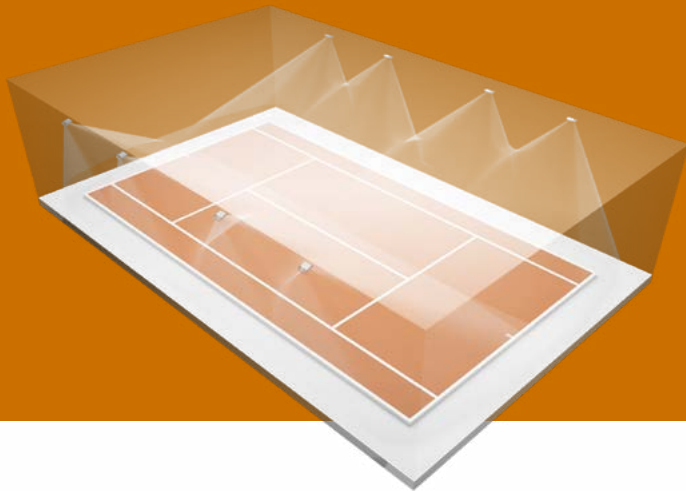
Floodlight



Tennis Class II EN12193

ALO 1 0C36

Asymmetric optics
Code: BAC 757.110-3M
44600lm
365W



Details

Area PA	30 x 15 m
Pole	Fila da H=7m
Floodlight	8 (n° luminaires) X ALO1-3M
System Power (W)	2920W
Em (lx)	500
Emin/Em	0.7
Ra	70
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
Ra	60

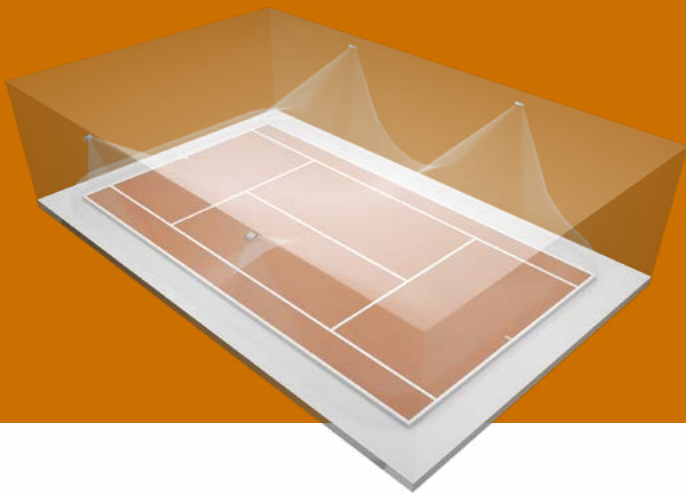
Floodlight



Tennis Class III EN12193

ALO 1 0C36

Asymmetric optics
Code: BAL 757.130-3M
49800lm
435W



Details

Area PA	30 x 15 m
Pole	Fila da H=7m
Floodlight	4 (n° luminaires) x ALO1-3M
System Power (W)	1740W
Em (lx)	300
Emin/Em	0.7
Ra	70
MF	0.9

Specifications

Em (lx)	300
Emin/Em	0.7
Ra	60

Floodlight



How to light
efficiently
an outdoor
tennis court



INDOOR

MULTISPORT

EN12193 Requirements

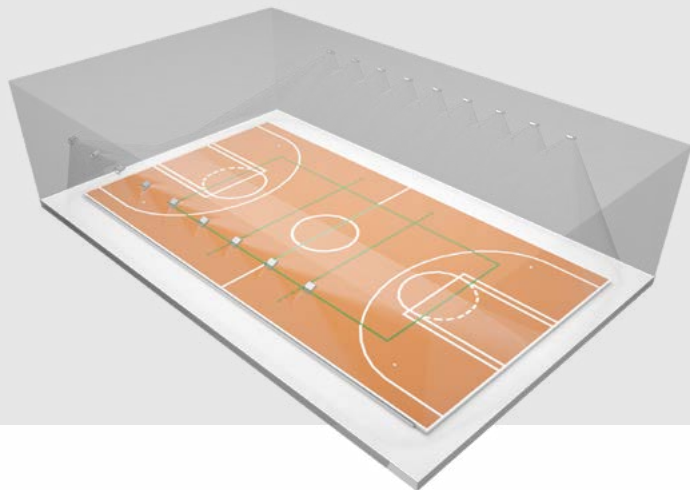
		Class I	Class II	Class III
Horizontal illuminance	Em (lx)	750	500	200
	Emin/Em	0.7	0.7	0.5
Ra		80	60	60



Indoor Sport Class I EN12193

ALO 1 0C36

Asymmetric optics
Code: BAC 857.130-3M
44100m
435W



Details

Area PA	40 x 20 m
Pole	Fila da H=7m
Floodlight	20 (n° luminaires) x ALO1-3M
System Power (W)	8700W
Em (lx)	750
Emin/Em	0.7
Ra	70
GR max	/
MF	0.9

Specifications

Em (lx)	750
Emin/Em	0.7
Ra	80

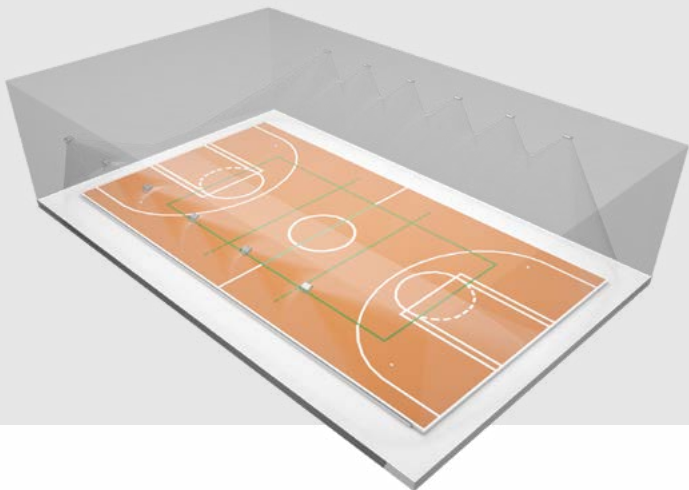
Floodlight



Indoor Sport Class II EN12193

ALO 1 0C36

Asymmetric optics
Code: BAC 757.120-3M
47300lm
400W



Details

Area PA	40 x 20 m
Pole	Fila da H=7m
Floodlight	12 (n° luminaires) x ALO1 - 3M
System Power (W)	4800W
Em (lx)	500
Emin/Em	0.7
Ra	70
MF	0.9

Specifications

Em (lx)	500
Emin/Em	0.7
Ra	60

Floodlight



Indoor Sport Class III EN12193

ALO 1 0C36

Asymmetric optics
Code: BAC 757.90-3M
38600lm
295W



Details

Area PA	40 x 20 m
Pole	Fila da H=7m
Floodlight	6 (n° luminaires) X ALO1-3M
System Power (W)	1770W
Em (lx)	200
Emin/Em	0.7
Ra	70
MF	0.9

Specifications

Em (lx)	200
Emin/Em	0.5
Ra	60

Floodlight



The right
solutions
for every
sport facility



EASY light

EASY Light allows you to adjust the **lighting level** according to **pre-set and customizable scenarios** with a simple gesture. Using **simple buttons**, the lighting can be adjusted according to preset scenarios, for example for the **training session**, for **the match** or for **other particular needs**.



EASY Light is a very functional and easy lighting app to use.

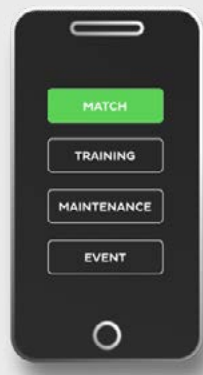


The luminaires are controlled, **with wireless commands**, directly by the device on which the APP is installed. All the typical control functions are guaranteed and the commands are sent to the floodlights **in real time**.



EASY Light is a simple installation and easily configurable panel kit. Commissioning of the system can be carried out **without the intervention of qualified personnel**.

The most easy app you have ever seen



Manageable via mobile phone directly on site

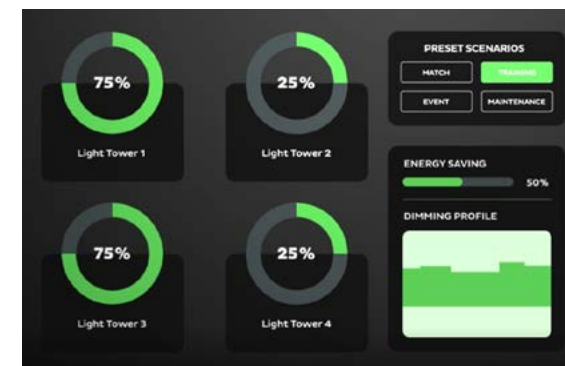


Manageable via tablet directly on site.

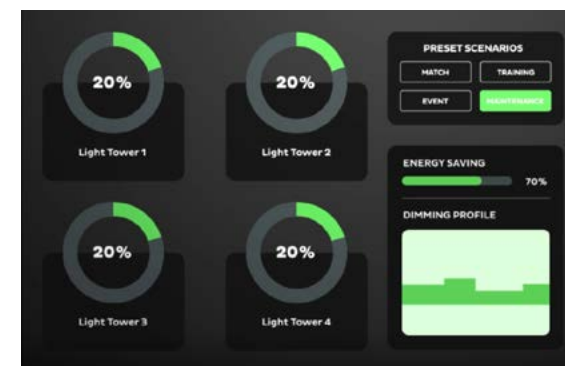
Match



Training



Maintenance





ART DIRECTION
COPYWRITING - EDITING



AEC ILLUMINAZIONE
MAY 2020