

# Floodlight 20 Sport

The innovative floodlight family for wide area and sports lighting.

[www.dael.pt](http://www.dael.pt)



# Efficient lighting for sports grounds and stadiums

Bright, pleasant and optimally illuminated surfaces. The Floodlight 20 family is synonymous with efficiency, high performance LED technology and modern lighting technology and thus represents the ideal solution for illuminating playing fields uniformly and precisely. Floodlight 20 maxi and midi – floodlighting solutions for sports grounds and stadiums in Class I to III.



Floodlight 20 midi



Floodlight 20 micro

## Floodlight 20 Highlights



Standard-compliant lighting level to suit the particular sports discipline



Uniform illumination



Minimum light immissions



Floodlight 20 maxi



Floodlight 20 mini

iF Design Award 2015 for:  
Floodlight 20 **midi**  
Floodlight 20 **mini**  
Floodlight 20 **micro**



Flexibility in different usage of sports grounds



Swift retrofitting and installation



Efficient operation with long service life



Minimum maintenance



Flicker-free light for video recordings also in slow motion



100% light immediately after being switched on

# The superstar for popular sports: Floodlight 20 maxi

Robust, durable and modular – Floodlight 20 delivers brilliant light



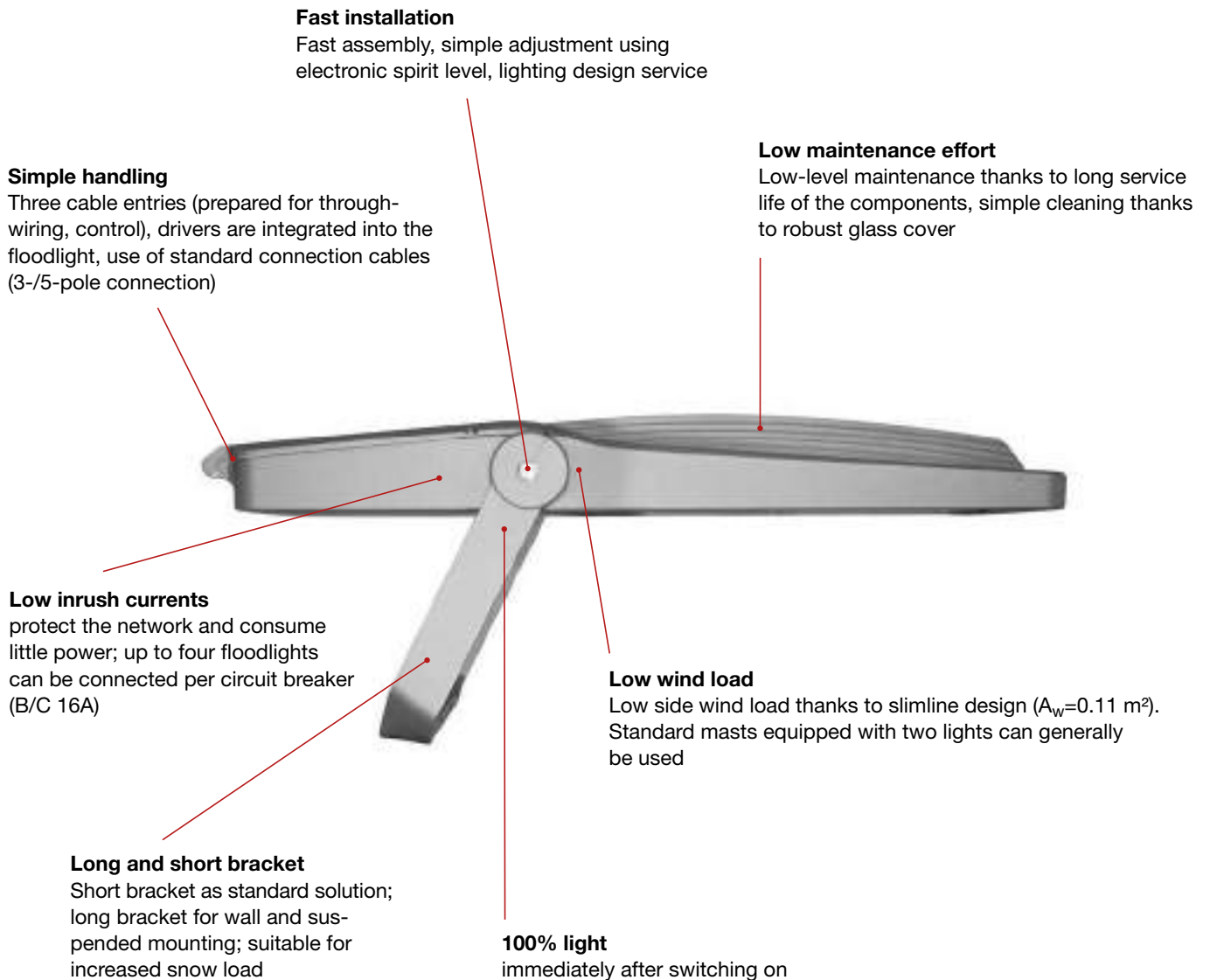
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## Technical data at a glance

- Rated luminous flux of up to 124,000 lm
- Up to 147 lm/W @100% / up to 161 lm/W @50%
- Rated service life of up to 100,000 h
- IP66-compliant drivers are already integrated into the luminaire
- Light color in 3,000 K, 4,000 K and 5,000 K
- Flicker-free
- Nine light distributions (asymmetrical, rotationally symmetric)

\* May vary depending on the type of luminaire. Refer to our order brochure or website for more precise details.





## Resistant to atmospheric conditions for each area of application

### Temperature-resistant

Outdoors up to 55°C,  
cold-resistant up to -30°C\*



### Snow load stability

long Brackets enable excellent  
pressure load resistance of  
400 kg/m<sup>2</sup>  $\cong$  snow height of up to 1.5 m



### Safe in storms

and with other surge voltages:  
Surge protection up to  
10 kV/10 kA



# The right lighting solution for your needs

## Construction sizes at a glance

The Floodlight 20 family is not only the ideal solution for illuminating playing surfaces, rather also offers a universal design concept for a host of different lighting tasks. Thanks to different construction sizes and light distributions, the floodlights are also ideal for illuminating access roads,

parking lots and forecourts. In addition, Floodlight 20 micro decoratively accentuates facades.

Discover the right floodlight for all types of applications for your sports grounds as well as small to medium-sized stadiums:



Floodlight 20 micro

Floodlight 20 mini

Floodlight 20 midi

Floodlight 20 maxi

<b>Mounting height (recommended)</b>	approx. 2...5 m	up to 10 m	up to 14 m	from 14 m
<b>Light colors</b>	4,000 K 3,000 K	4,000 K 3,000 K	5,000 K 4,000 K 3,000 K	5,000 K 4,000 K 3,000 K
<b>Light distributions</b>	PL43, PL52, PL61, RS17	PL43, PL52, PL61, RS17	PL43, PL52, PL61, RS17, RS05	PL33, PL43, PL44T, PL52, PL61, RS05, RS17, RS08, SSN
<b>Rated luminous flux (measured)</b>	2,410 lm...3250 lm	4,930 lm...13,030 lm	14,130 lm...38,700 lm	68,030 lm...124,000 lm
<b>Luminaire output</b>	27 W	51 W...96 W	142 W...306 W	629 W...884 W
<b>Dimensions (L/H/W)</b>	304 mm / 222 mm / 55 mm	446 mm / 335 mm / 62 mm	654 mm / 450 mm / 76 mm	975 mm / 748 mm / 115 mm
<b>Weight (without flange, bracket)</b>	2.4 kg	5.6 kg	12.0 kg	26.0 kg*

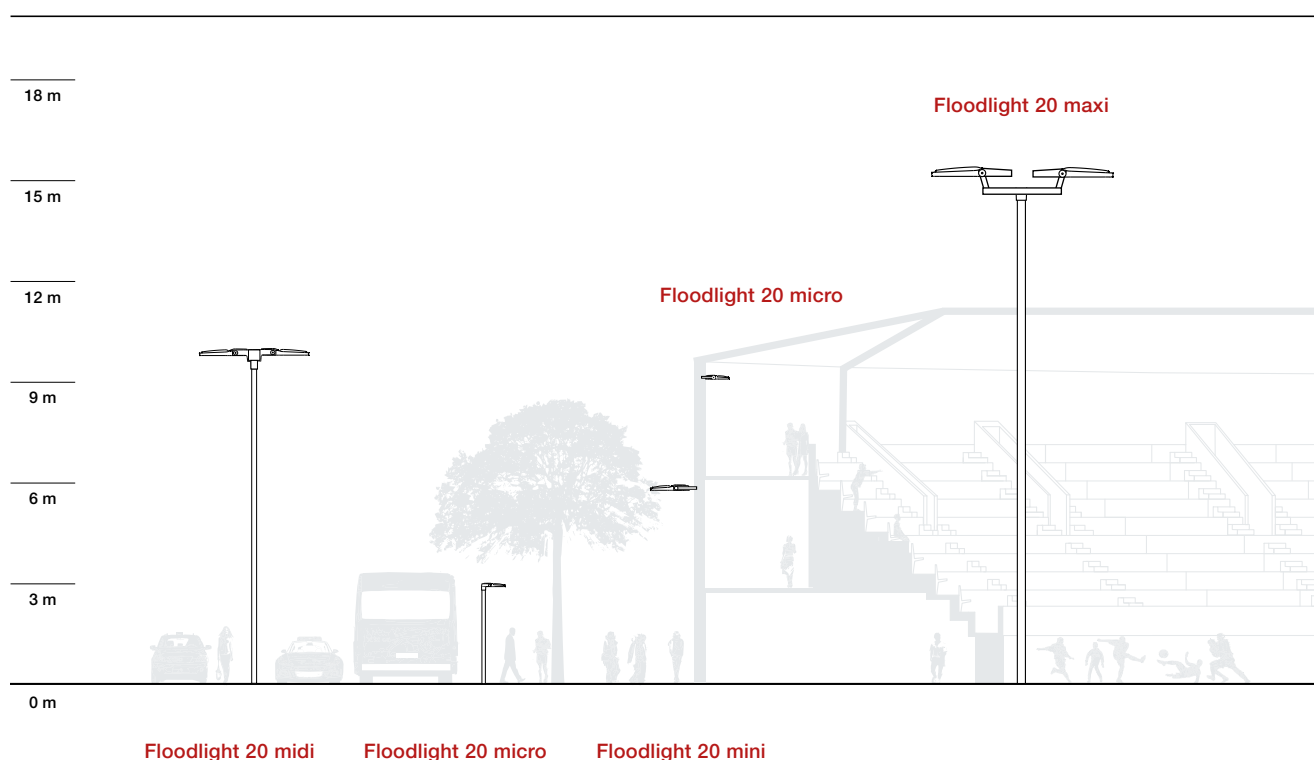
### Applications:

<b>Sports grounds (small playing fields)</b>			×	×
<b>Sports grounds / stadiums (large playing fields)</b>				×
<b>Facade</b>	×	×	×	×
<b>Parking lot</b>	×	×	×	×
<b>Streets and access routes</b>	×	×	×	
<b>Cycle paths and footpaths</b>	×	×		

\* Weight of short bracket (standard): 4 kg; long bracket: 8 kg

## Lighting design made simple

High-precision lens technology with different light distributions enables uniform and efficient wide-area and sports ground lighting.



## Football, hockey, tennis, basketball and handball

Different playing fields. Different types of sport.  
Different requirements.

Yet, they have one thing in common: wherever speed, precision and quick, pivotal moments occur, good light is needed – for athletes, referees and spectators. And good light is not a matter of taste, rather can be measured objectively and harshly based on different quality attributes, such as uniformity, color rendering and lighting intensity.

The following rule of thumb applies for sports lighting: the faster the sports discipline and the more compact the sports equipment, the more light is needed – horizontal lighting intensity and high uniformity are essential for awareness.

# Football in its best light

The quality of light is extremely important for football pitches and stadiums. Regional sports grounds and small to medium-sized football stadiums can be illuminated optimally with Floodlight 20 maxi. The high performance floodlight delivers excellent quality of light, uniformly illuminating the playing field in accordance with EN 12193 and ensuring high visual comfort and minimum light spill for adjacent residential areas and nature.



## Quick refitting: Existing light points can continue to be used.

Simply use the masts and post tops from your existing floodlight system\*. Refitting is quick and easy with Floodlight 20.

\* Subject to structural analysis of the mast





# Application examples

## Class II football pitch

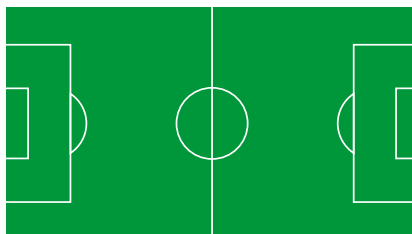
EN 12193  $\geq 200$  lx

Floodlight 20 maxi power

### 4-mast system

5x PL43

5x PL43



5x PL43

5x PL43

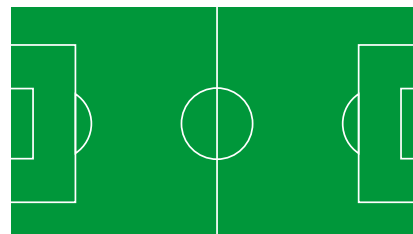
$E_m \geq 200$  lx,  $g1 \geq 0.6$   
 Light point height: 16 m  
 Playing field: 105 x 68 m  
 Total of 20 floodlights and 4 masts  
 Floodlight 20 maxi power:  
 20x PL43, 5,000 K

### 6-mast system

3x PL44T

5x PL33

3x PL44T



3x PL44T

5x PL33

3x PL44T

$E_m \geq 200$  lx,  $g1 \geq 0.6$   
 Light point height: 16 m  
 Playing field: 105 x 68 m  
 Total of 22 floodlights and 6 masts  
 Floodlight 20 maxi power:  
 12x PL44T, 5,000 K  
 10x PL33, 5,000 K

## Class III football pitch

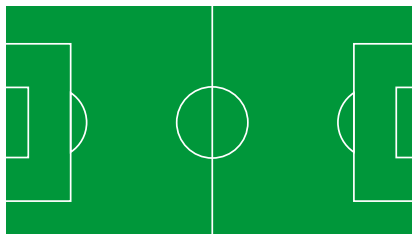
EN 12193  $\geq 75$  lx

Floodlight 20 maxi power

### 4-mast system

2x PL43

2x PL43



2x PL43

2x PL43

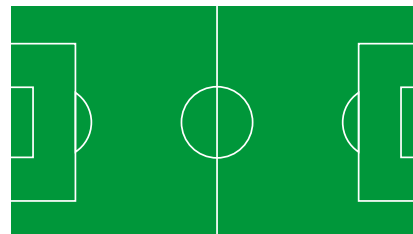
$E_m \geq 75$  lx,  $g1 \geq 0.5$   
 Light point height: 16 m  
 Playing field: 105 x 68 m  
 Total of 8 floodlights and 4 masts  
 Floodlight 20 maxi power:  
 8x PL43, 5,000 K

### 6-mast system

1x PL44T

2x PL33

1x PL44T



1x PL44T

2x PL33

1x PL44T

$E_m \geq 75$  lx,  $g1 \geq 0.5$   
 Light point height: 16 m  
 Playing field: 105 x 68 m  
 Total of 8 floodlights and 6 masts  
 Floodlight 20 maxi power:  
 4x PL44T, 5,000 K  
 4x PL33, 5,000 K

Light distribution, e.g. PL43:  
 plaza (PL) | wide distribution (4) |  
 narrow distribution (3) with  
 coefficient to mounting height |  
 optional: triangular distribution (T)

Class	Horizontal Lighting intensity		GR	Color rendering index $R_a$
	$E_{av}$ lx	$E_{min}/E_{av}$		
I	500	0.7	50	60
II	200	0.6	50	60
III	75	0.5	55	60

# Game, set, light

Tennis requires especially bright lighting to allow the rapid movements to be followed. The court and players are illuminated with high contrast, with each move being captured seamlessly. The floodlight must be non-glare as a consequence. Floodlight 20 maxi and Floodlight 20 midi are the ideal solution for this challenging task.



Rafa Nadal Academy, Manacor, Mallorca



## Flicker-free lighting for super slow motion

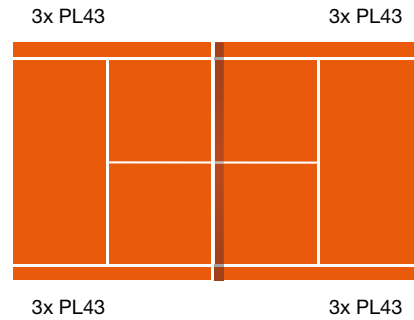
Floodlight 20 enables sports lighting for TV: You can create pleasant, flicker-free lighting scenarios with this floodlight. High-resolution recordings in super slow motion can also be created using a smartphone, so amateur filmmakers can take their sports ground around the globe in stunning images.

# Application examples

## Class II tennis court

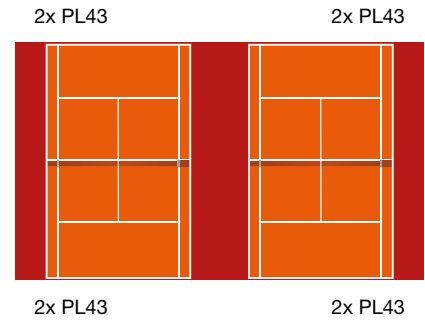
EN 12193  $\geq 300$  lx  
Floodlight 20 midi and  
Floodlight 20 maxi power

### Single court



$E_m \geq 300$  lx,  $g1 \geq 0.7$   
Light point height: 8 m  
Playing field: 18 x 36 m  
Total of 12 floodlights and 4 masts  
Floodlight 20 midi:  
PL43, 5,000 K

### Two courts

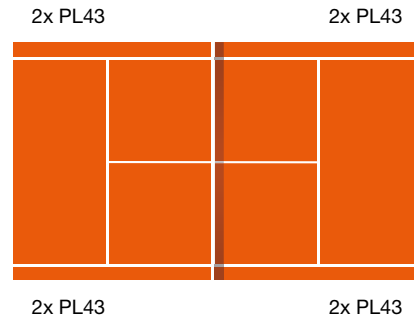


$E_m \geq 300$  lx,  $g1 \geq 0.7$   
Light point height: 12 m  
Playing field: 36 x 36 m  
Total of 8 floodlights and 4 masts  
Floodlight 20 maxi power:  
PL43, 5,000 K

## Class III tennis court

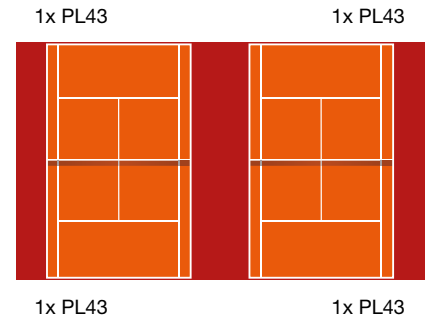
EN 12193  $\geq 200$  lx  
Floodlight 20 midi and  
Floodlight 20 maxi power

### Single court



$E_m \geq 200$  lx,  $g1 \geq 0.6$   
Light point height: 8 m  
Playing field: 18 x 36 m  
Total of 8 floodlights and 4 masts  
Floodlight 20 midi power:  
PL43, 5,000 K

### Two courts



$E_m \geq 200$  lx,  $g1 \geq 0.6$   
Light point height: 12 m  
Playing field: 36 x 36 m  
Total of 4 floodlights and 4 masts  
Floodlight 20 maxi power:  
PL43, 5,000 K

### Rule of thumb for masts and floodlights for tennis courts

12 m mast  $\rightarrow$  Floodlight 20 maxi

8 m mast  $\rightarrow$  Floodlight 20 midi

Light distribution, e.g. PL43:  
plaza (PL) | wide distribution (4) |  
narrow distribution (3) with  
coefficient to mounting height

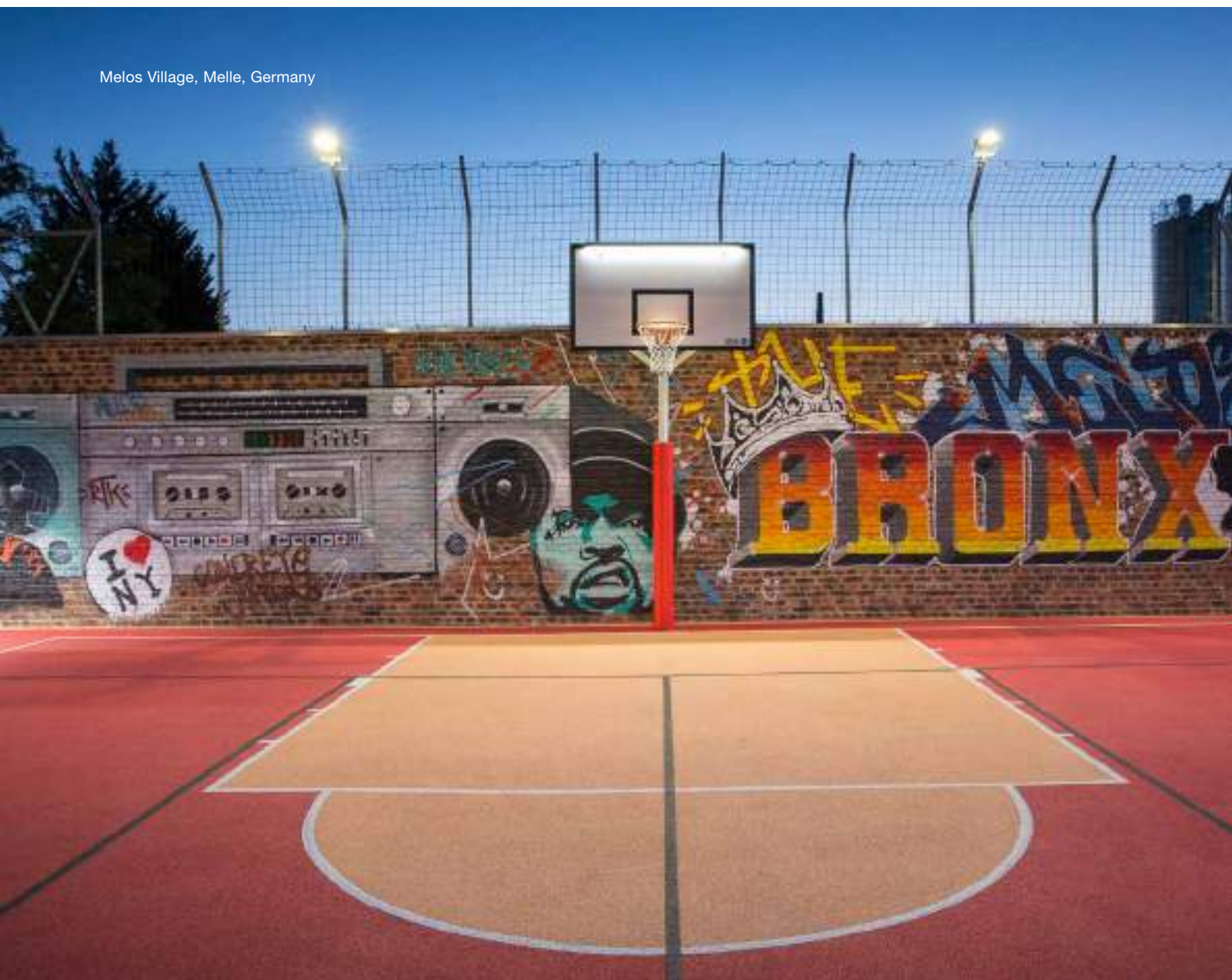
Class	Horizontal Lighting intensity		GR	Color rendering index $R_a$
	$E_{av}$ lx	$E_{min}/E_{av}$		
I	500	0.7	50	60
II	300	0.7	50	60
III	200	0.6	55	60

# Important moments in bright light

Multifunctional playing fields for basketball and football, for example, can be bathed in pleasant and standard-compliant light with Floodlight 20 midi. Minimum light spill ensures additionally that adjacent residents are not disturbed. And interestingly for smaller playing fields, 100% light is achieved immediately after being switched on. Warming-up phases and wait times are thus a thing of the past. Floodlight 20 ensures a good atmosphere on the playing field too: the high quality of light allows amateur filmmakers to make flicker-free recordings using a camera or smartphone. We would be pleased to help you with light planning support.



Melos Village, Melle, Germany



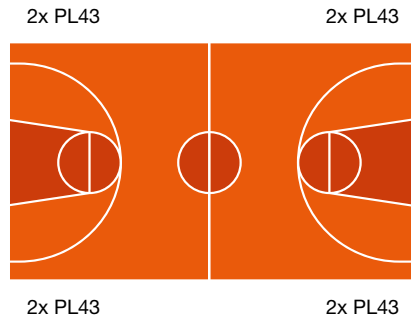


# Application examples

## Class II multifunctional sports pitch

EN 12193  $\geq 200$  lx

Floodlight 20 midi

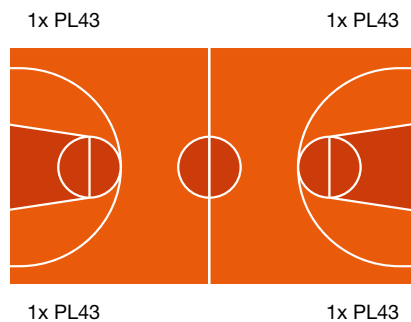


$E_m \geq 200$  lx,  $g_1 \geq 0.6$   
 Light point height: 8 m  
 Playing field: 28 x 15 m  
 Total of 8 floodlights and 4 masts  
 Floodlight 20 midi:  
 PL43, 5,000 K

## Class III multifunctional sports pitch

EN 12193  $\geq 75$  lx

Floodlight 20 midi



$E_m \geq 75$  lx,  $g_1 \geq 0.5$   
 Light point height: 8 m  
 Playing field: 28 x 15 m  
 Total of 4 floodlights and 4 masts  
 Floodlight 20 midi:  
 PL43, 5,000 K

Light distribution, e.g. PL43:  
 plaza (PL) | wide distribution (4) |  
 narrow distribution (3) with coefficient  
 to mounting height

Class	Horizontal Lighting intensity		GR	Color rendering index $R_a$
	$E_{av}$ lx	$E_{min}/E_{av}$		
I	500	0.7	50	60
II	200	0.6	50	60
III	75	0.5	55	60

## Needs-based light colors

Different lighting scenarios have different requirements with respect to the light color. In addition to a colder light color of 5,000 K, our Floodlight 20 family is also available in a neutral white light color of 4,000 K and

a warm white light color of 3,000 K. Downtown sports grounds thus blend harmoniously into the urban design thanks to the appropriate choice of light color.



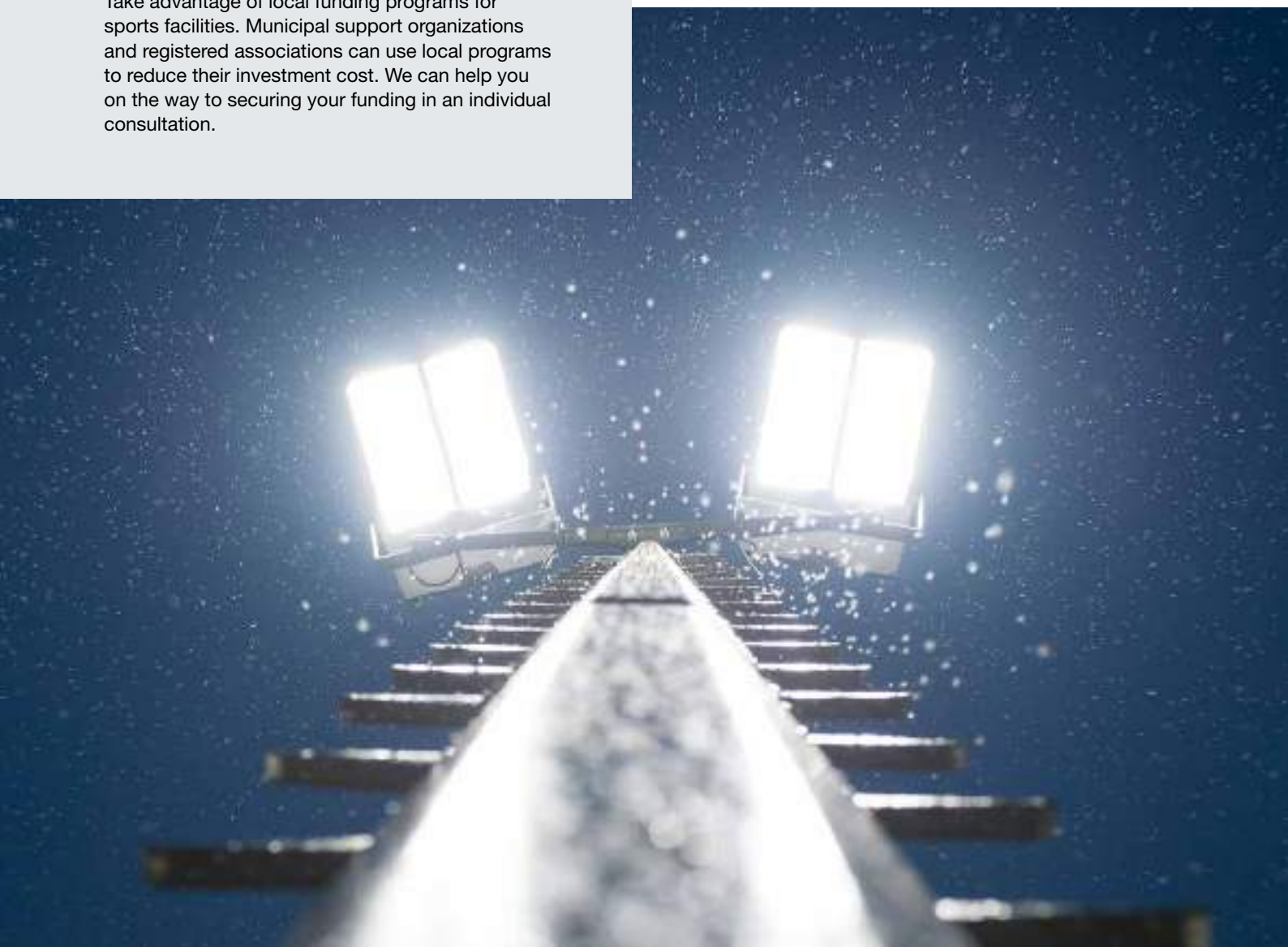
# Whether retrofit or new— Floodlight 20 quickly pays off

LEDs are more efficient and durable than high pressure discharge lamps in traditional floodlights. By switching to Floodlight 20, you will enjoy lower running costs thanks to reduced power consumption. Further energy savings can also be achieved by dimming the floodlights, for example during goal keeper training sessions.

When all investment and operation costs for a luminaire's service life are added up, one thing is clear: the investment costs of Floodlight 20 pay off within a few short years. Would you like to complete a quick cost-efficiency calculation for your individual project? Then do not hesitate to contact one of our expert advisors.

## Gain from funding for sports facilities

Take advantage of local funding programs for sports facilities. Municipal support organizations and registered associations can use local programs to reduce their investment cost. We can help you on the way to securing your funding in an individual consultation.

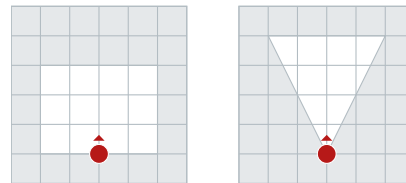


# Light where it is needed

Floodlight 20 directs its light precisely where needed thanks to asymmetrical light distribution, in other words on the playing field. The light immission values are therefore reduced considerably and the emitted light is used efficiently.

## Outstandingly uniform light distribution

Use Floodlight 20 to illuminate surfaces especially uniformly and precisely into every corner. Different light distributions offer flexibility when it comes to lighting design, with requirements being calculated with ease. Costs are reduced additionally since fewer luminaires are often needed for a lighting task.



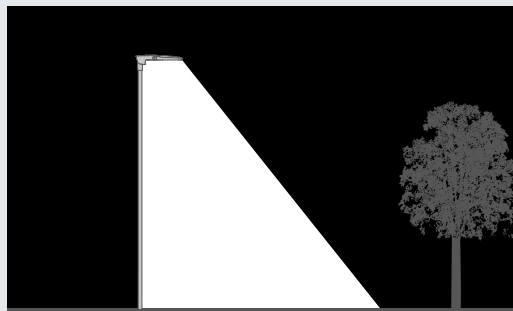
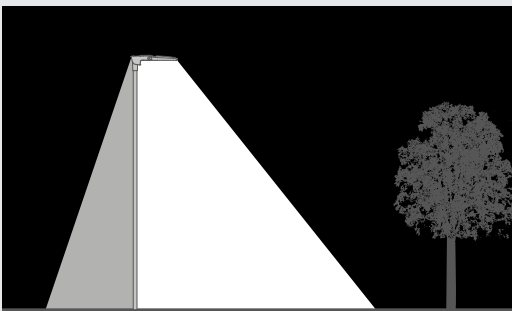
### Lighting design made simple

Different light distributions offer flexibility in lighting design, with requirements being calculated with ease.

## The added touch for a peaceful sleep downtown

Floodlight 20 can be fitted additionally with an integrated shield especially for downtown sports grounds with directly adjacent residential areas.

This further reduces the already low light spill and eases the implementation of local guidelines on light immissions.



Floodlight 20 can be fitted with a shield for reducing rear light spill to an absolute minimum.

