

# DecoScene LED

Magical light from below





Parks and gardens in Chaumont-sur-Loire, France

Lighting design: Neo Light



#### DecoScene LED -Magical light from below

Whether floodlighting a piece of architecture or creating accent effects, for many designers the ideal luminaire would be invisible. With their recessed housings, in ground floodlights are about as close as it gets to this ideal situation. DecoScene LED has been designed to deliver the optimal upward lighting effect – from high powered floodlighting to more subtle effects such as accent lighting. Its unique collimating optic delivers a uniform light output and ensures optimum colour mixing. Square and round housings fit snugly into paving, concrete or grass, leaving the surface flush and unobtrusive during the day.

The combination of the latest LED technology and best-in-class optics makes DecoScene LED a totally flexible solution – easy to install, no matter where, and creating a perfect lighting effect.





### A proven product concept

DecoScene LED has been developed with the same intelligent, modular concept as the original range for traditional lamps.

DecoScene LED not only provides a stunning lighting performance that brings the scene to life at night and makes for an elegant, unobtrusive presence during the day, but it can also withstand tough installation conditions. It meets environmental requirements and can be installed in applications where it is in contact with earth and water.

In short, DecoScene LED simply brings new LED technologies into a proven product concept.

## The shape you want, wherever you want

DecoScene LED is available in two sizes and two shapes: round for installation in earth or concrete, and square for installation in pavements.



#### Ingress protection IP67

To ensure that IP67 is maintained and that no water can get into the product, the small static version of DecoScene LED is supplied pre-cabled and the large version comes with the electrical connectors in a separate connection box. There is no need to access the main housing to connect the product.

A high IP rating demands good ventilation, so a membrane ensures that the housing can breathe.

#### Driver unit

In the small version the driver is integrated into the main housing, while in the large version it is in a separate box fixed under the main housing. The driver box can then be placed next to the main housing using a dedicated recessed tube if a low height is required (on request only). DecoScene LED is available with a class I or a class II gear unit.

#### Recessed tube

The recessed tube is made of plastic for the small version and metal for the large version to ensure the best possible thermal dissipation. For the large version, the recessed tube is also available in an L shape so that the gearbox can be installed next to the product (on request only).

### Easy handling

DecoScene LED has been optimised to facilitate installation. The recessed tube is always supplied with a cover that prevents dirt or concrete from getting in and ensures site safety. The cover can easily be removed when the concrete is dry and for luminaire installation. A direction guide on the cover helps the installer to orientate the recessed tube properly. Before placing the installation tube in the ground, it is important to arrange stones at the bottom of the hole to ensure adequate drainage. For the small version we recommend that the cable supplied with the product is not removed. The mains connection for the large version is made in the separate connection box. Two cable glands allow through-wiring. When the DecoScene LED luminaire is in place, the beam can easily be adjusted by rotating and locking the bowl. After the glass has been put in place, a guide helps you to close the product and to make sure that the fixing screws are properly aligned.











#### Accessories

DecoScene LED offers several accessories for changing the lighting effect, improving the colour mix, assuring optimum safety for pedestrians, or simply for aesthetic reasons.



Frosted glass can be provided instead of the traditional clear glass to soften the beam of monochromatic versions and create diffuse and uniform light.

Frosted glass is used by default on RGB or Tuneable White products because it enables optimum colour mixing. In this case it is no longer an accessory.



Anti-slip glass is a safety option instead of clear glass when products are used in pedestrian areas. It will also have an impact on the lighting effect by softening the beam.



An elegant round frame in stainless steel can be selected for aesthetical reasons.



If DecoScene LED is to be installed in pavement, a decorative square cover is available. In that case the recessed tube will be delivered with the square cover so that the external decorative enclosure fits flush with the pavement.

### Low front glass temperature

The new DecoScene LED range complies with the GIEC 60598-2-13 norm. It offers a front glass temperature below 50 °C under all circumstances, thanks to the use of LED technology combined with effective thermal management of the optical system and the main housing. The LEDs are fixed in a bowl, which ensures excellent contact with the main housing at all times.

### Optical performance

The bowl is adjustable in all directions, which means maximum flexibility of installation. The optical block can then be adjusted by up to 20°. The optic is locked with two screws after adjustment.





#### Optical performance -DecoScene LED BBP621

- BBP621 15xLED/HB
- Neutral White 4000 K
- Warm White 2700 K
- Solid colours: red, blue or green (amber on request)
- Tuneable White (TWH) and RGB versions







Warm White 2700 K Luminaire Lumen Output: 1104 lm

Neutral White 4000 K Luminaire Lumen Output: 1367 Im





Warm White 2700 K Luminaire Lumen Output: 1091 lm

Neutral White 4000 K Luminaire Lumen Output: 1350 lm





Warm White 2700 K Luminaire Lumen Output: 1064 lm

Neutral White 4000 K Luminaire Lumen Output: 1316 lm



#### Optical performance -DecoScene LED BBP623

- BBP623 34xLED/HB
- Warm White 2700 K
- Neutral White 4000 K
- Solid colours: red, blue or green (amber on request)
- Tuneable White (TWH) and RGB versions







Warm White 2700 K Luminaire Lumen Output: 2503 lm

Neutral White 4000 K Luminaire Lumen Output: 3098 Im





In addition to accent lighting, DecoScene LED BBP623 enables facades to be illuminated uniformly with an optical plate specially designed for wall washing applications.



Warm White 2700 K Luminaire Lumen Output: 2472 lm

Neutral White 4000 K Luminaire Lumen Output: 3060 lm



Warm White 2700 K Luminaire Lumen Output: 2411 lm

Neutral White 4000 K Luminaire Lumen Output: 2984 Im



Warm White 2700 K Luminaire Lumen Output: 2479 lm

Neutral White 4000 K Luminaire Lumen Output: 3068 lm

Parks and gardens in Chaumont-sur-Loire, France

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Lighting design: Neo Light

#### DecoScene LED: the quality of white



Warm White, 2700 K



Neutral White, 4000 K

#### DecoScene LED offers a choice of three versions of white LEDs:

• Warm White: available in a static or dynamic mode (via DMX/ RDM protocol), the 2700 K option gives you a golden white that can be highly impressive when used on materials like stone or bricks.

- **Neutral White:** available in a static or dynamic mode (via DMX/ RDM protocol), the 4000 K option gives you a powerful white that could be the right choice when used on concrete or plant life.
- **Tuneable White**, also called TWH: based on a 3-channel mounting system with 2700, 4000 and 6500 K LEDs, this version fine tunes the perfect white ambiance needed for a specific application. The guide below shows colour temperature differences as a function of the input values. At full output, the colour temperature is about 4100 K. For perfect colour mixing this version is always delivered with frosted glass instead of the traditional clear glass.



### DecoScene LED: powerful colours









The saturated colour of the LEDs will transform the natural colour of the material, creating a strong saturation effect.

The lumen output of coloured light is low compared with that of white. This gives rise to incorrect conclusions regarding the number of products required. The human eye is much more sensitive to coloured light. Moreover, the perception of brightness varies from one colour to another.

We used this analysis as the basis for deciding how to cluster our LEDs within DecoScene LED. In all our RGB floodlights you will find more blue LEDs than red or green ones. These are all the configurations of our LEDs:

BBP621: 5xRed - 3xGreen - 7xBlue BBP623: 12xRed - 6xGreen - 16xBlue

With this approach, the lumen outputs of each single colour are also quite similar. And when mixing all colours together at full output we get the following lighting point coordinates:

x = 0.240 - y = 0.170

Then, to get a pure white, levels will need to be adapted. For a white with a CCT close to 4000 K (x = 0.365 - y = 0.295), green can stay at around 100%, while red and blue should be adapted to around 82% and 19% respectively.

For other combinations the guide below shows colour differences as a function of the input values. For perfect colour mixing this version is always delivered with frosted glass instead of the traditional clear glass.





Yellow is created by mixing red and green



Cyan is created by mixing green and blue



Magenta is created by mixing red and blue

Carrières du Hainaut, Soignies, Belgium LED & Material workshop with Hogeschool Sint-Lukas of Brussels

> Lighting design: Floor Loos (student)

#### Colour effects with DecoScene LED

This page gives technical lighting details about each configuration of floodlight: luminaire lumen outputs, power consumption and efficacies are specified.

All the following values apply to a configuration with the narrowest beam angle and clear glass (where available).

Туре	Colours				Colour temperatures		
	Green	Blue	Red	RGB	Warm White	Neutral White	Tuneable White
	200	Sec.	2 Contraction	200			
	Seale -	Ser Com	Sec.	Sector -			
	Restard		Reak Mile	10000			
BBP621		Concernant for the					
0	• 1110 lm	• 513 lm	• 719 lm	• 623 lm	• 1104 lm	• 1367 lm	• 1040 lm
THE O	• 26.6 W	• 26.2 W	• 17.8 W	• 24.8 W	• 28.0 W	• 28.0 W	• 28.0 W
W	• 41.7 lm/W	• 20.3 lm/W	• 40.4 lm/W	• 25.1 lm/W	• 39.4 lm/W	• 48.8 lm/W	• 37.1 lm/W
BBP623							
	• 2516 lm	• 1204 Im	• 1630 lm	• 1387 lm	• 2503 lm	• 3098 lm	• 2358 lm
	• 52.1 W	• 50.9 W	• 36.8 W	• 48.4 W	• 54.0 W	• 54.0 W	• 54.0 W
	• 48.3 lm/W	• 23.6 lm/W	• 44.3 lm/W	• 28.7 lm/W	• 46.4 lm/W	• 57.4 lm/W	• 43.7 lm/W



Orangerie Gardens in Strasbourg, France

Lighting design: L'Acte Lumière

#### DecoScene LED: installation

#### Numbers of DecoScene LED luminaires per main circuit breaker

All DecoScene LED luminaires must be connected to a fused power supply. The number of DecoScene LED luminaires that can be connected depends on the circuit breakers used. The data below can be used to determine the maximum power consumption of your installation.

The inrush current of the DecoScene LED is higher than the nominal current, so you should keep a safety margin when calculating. This depends on the characteristic of the circuit breakers used.

Inrush current  $^{1\!/_{\!2}}$  value time at typical mains impedance: 35 A / 350  $\mu s$ 

Model type	Type of main o	Type of main circuit-breaker				
	B10A	B16A	C10A	C16A		
BBP621	13	22	22	37		
BBP623	13	22	22	37		

#### Example: max. number of DecoScene LED luminaires per main circuit breaker type:

#### DMX/RDM control and network setup

With DMX512 you are able to control the light output of each DecoScene LED floodlight (intensity and colour). This can be a slow colour change or fast dynamic scenes. Additionally, the DecoScene LED range supports RDM (Remote Device Management). This enables you to configure your whole DecoScene LED installation remotely from a single point.

Using a Smart Jack PRO you can set the DMX start address of each luminaire. Only DMX/RDM is needed to configure each floodlight. Any DMX512 controller can be used.

#### How DMX control works

In a DMX controlled installation there is a controller sending out commands to all connected luminaires.

From this start address setting the luminaire derives the required intensity level of each LED color.

In our factory all DecoScene LED luminaires will be set to start address 1. This means when the luminaire receives data from a controller it will derive the values (0-100%) of:

- Channel 1 for the intensity of the red LED
- Channel 2 for the intensity of the green LED
- Channel 3 for the intensity of the blue LED

It is possible that several DMX luminaires have the same start address. They will have the same light output.

#### DMX/RDM addressing

If you do not want to control each DecoScene LED separately, no changes to the addressing have to be made. If individual control of each luminaire is required, all DecoScene LED luminaires must have their own DMX start address. The start address must be set via the RDM communication with the DecoScene LED. This can be done with the Philips Smart Jack PRO.



#### Technical data

#### DecoScene LED BBP621

Product features	Variations		
Ingress Protection	IP67		
Safety class	I, II		
Impact resistance	IK10		
Power consumption	28 W (White)		
Beam angle	12° (narrow beam), 24° (medium beam) and 40° (wide beam)		
Average luminous flux	1085 lm (warm white, 2700 K) or 1345 lm (neutral white, 4000 K)		
Average fixture efficacy	38.7 lm/W (warm white, 2700 K) or 48.0 lm/W (neutral white, 4000 K)		
Correlated Colour Temperature	Warm white: 2700 K, Neutral white: 4000 K		
	Tuneable white: 2700 to 6500 K		
Colour Rendering Index	> 80 (2700 K),> 75 (4000 K)		
Maintenance of lumen output - L70	50,000 hours		
Driver failure rate	5% per 60,000 hours		
Operating temperature range	-20 to 35 °C		
Mains voltage	100-277 VAC / 50-60 Hz		
Inrush current	35 A / 350 µs		
Dimming	DMX 512 control and RDM discovery and addressing, one address per fixture		
Options	Possibilities to have on request DMX protocol for all versions with RDM discovery		
	and addressing		
Optic	Circular Narrow beam - Circular Medium beam - Circular Wide beam		
Optical cover	Extra white glass (+10% transmission) for all Mono Colour versions and frosted		
	glass for RGB or TWH versions		
Material	Housing, front ring: high pressure die cast aluminium		
Material	Recessed tube: plastic and stainless steel		
	Gaskets: silicone rubber		
	Optical cover: glass, extra white, tempered, 15 mm thick		
Colour	Front ring: ultra dark grey, RAL10714		
	Other RAL or AKZO Futura colours available on request		
Connection	In the fixture, push-in connector 3 poles mains and control signal		
Maintenance	Driver access by opening the bottom part of the housing with four Allen screws		
Installation	Ground mounting at the recessed tube		
	Fixture is pre-wired delivered a cable length of 2 m		
	Tilting of the fixture: +/- 20°		
	Static load: 3000 kg		
Cable gland	2 x M20 for mains cables and through-wiring facilities		
Cable giand	$2 \times 1120$ for data cables (data IN and OUT in case of dynamic version)		
Remarks	Static versions available in 2 types of white (warm white - WW, 2700 K or neutral		
Rellidi KS			
	white - NW, 4000 K) as well as 3 solid colours (red, blue, green), amber is available		
	on request		
	Dynamic versions are available in RGB and TWH (tuneable white based on 2700,		
	4000 or 6500 K LEDs)		
	All monochromatic versions are also available on request with DMX protocol		
	Fixtures can be marine-salt protected on request		
	Compliant with IEC 598 and EN60598		





#### DecoScene LED BBP623

Product features	Variations	
Ingress Protection	IP67	
Safety class	l, II	
Impact resistance	IK10	
Power consumption	54 W (White)	
Beam angle	12° (narrow beam), 24° (medium beam), 40° (wide beam) and asymmetrical beam	
Average luminous flux	2460 lm (warm white, 2700 K) or 3050 lm (neutral white, 4000 K)	
Average fixture efficacy	45.5 lm/W (warm white, 2700 K) or 56.4 lm/W (neutral white, 4000 K)	
Correlated Colour Temperature	Warm white: 2700 K, Neutral white: 4000 K	
	Tuneable white: 2700 to 6500 K	
Colour Rendering Index	> 80 (2700 K),> 75 (4000 K)	
Maintenance of lumen output - L70	50,000 hours	
Driver failure rate	5% per 60,000 hours	
Operating temperature range	-20 to 35 °C	
Mains voltage	100-277 VAC / 50-60 Hz	
Inrush current	35 A / 350 µs	
Dimming	DMX 512 control and RDM discovery and addressing, one address per fixture	
Options	Possibilities to have on request DMX protocol for all versions with RDM discovery	
e puòlic	and addressing	
Optic	Circular Narrow beam - Circular Medium beam - Circular Wide beam -	
opue	Asymmetrical beam	
Optical cover	Extra white glass (+10% transmission) for all Mono Colour versions and frosted	
Optical cover	glass for RGB or TWH versions	
Material	Housing, front ring: high pressure die cast aluminum	
Tatenai		
	Recessed tube: steel, galvanised Gaskets: silicone rubber	
<u></u>	Optical cover: glass, extra white, tempered, 19 mm thick	
Colour	Front ring: ultra dark grey, RAL10714	
<b>.</b> .	Other RAL or AKZO Futura colours available on request	
Connection	Via the connection box, push-in connector, 3 poles mains and control signal	
Maintenance	Driver access by opening the driver box under the housing	
Installation	Ground mounting at the recessed tube	
	Tilting of the fixture +/- 20°	
	Static load: 5000 kg	
Cable gland	2 x M20 for mains cables and through-wiring facilities	
	2 x M12 for data cables (data IN and OUT in case of dynamic version)	
Remarks	Static versions available in 2 types of white (warm white - WW, 2700 K or neutral	
	white - NW, 4000 K) as well as 3 solid colours (red, blue, green), amber is available	
	on request	
	Dynamic versions are available in RGB and TWH (tuneable white based on 2700,	
	4000 or 6500 K LEDs)	
	All monochromatic versions are also available on request with DMX protocol	
	Fixtures can be marine-salt protected on request	
	Compliant with IEC 598 and EN60598	







### DecoScene LED ordering information

With DecoScene LED, several configurations are possible. Because the choice looks unlimited, the table below will give you a quick overview of all the possibilities.

BBP621	15xLED-HB/	RGB	NB	1	DMX	GR	GC	RMR		
Designation	Product features									
BBP621	Product type		BBP623	BBP623						
15xLED-HB/	HB/ Light Source			34xLED-HB						
RGB	Light Source Colour		NW = Ne	NW = Neutral White 4000 K • WW = Warm White 2700 K • RGB = Red/Green/Blue • TWH = Tuneable White						
			2700/4000	2700/4000/6500 K • RD = Red • BL = Blue • GN = Green						
NB	Optic		NB = Nar	NB = Narrow Beam • MB = Medium Beam • WB = Wide Beam • A = Asymmetrical beam for wall washing						
T	Electrical class		I = Safety	I = Safety Class I • II = Safety Class II						
DMX	Controls "nothing" = static product • DMX = DMX controllable product									
GR	Colour			GR = Philips dark grey 10714 • RALxxx = RAL colour with its reference number						
GF	Front glass		GC = Glas	GC = Glass Clear • GF = Glass Frosted						
RMR	Mounting device			RMR = delivered with recessed tube						

The following table gives some ordering information based on a selection of floodlights. On request, several other possibilities are also available.

Designation	LED version	Optic	Electrical class	Code (EOC)
DecoScene LED BBP621				
BBP621 15xLED-HB/NW NB I GR GC RMR	Neutral White 4000 K	12°	I	418788 00
BBP621 15xLED-HB/NW MB I GR GC RMR	Neutral White 4000 K	24°	I	418795 00
BBP621 15xLED-HB/NW WB I GR GC RMR	Neutral White 4000 K	40°	I	418801 00
BBP621 15xLED-HB/WW NB I GR GC RMR	Warm White 2700 K	12°	I	418849 00
BBP621 15xLED-HB/WW MB I GR GC RMR	Warm White 2700 K	24°	I	418856 00
BBP621 15xLED-HB/WW WB I GR GC RMR	Warm White 2700 K	40°	I	418863 00
BBP621 15xLED-HB/RGB NB I DMX GR GF RMR	RGB	12°	I	418900 00
BBP621 15xLED-HB/RGB MB I DMX GR GF RMR	RGB	24°	I	418917 00
BBP621 15xLED-HB/RGB WB I DMX GR GF RMR	RGB	40°		418924 00
DecoScene LED BBP623 BBP623 34xLED-HB/NW NB I GR GC RMR	Neutral White 4000 K	12°	1	419020 00
BBP623 34xLED-HB/NW NB I GR GC RMR	Neutral White 4000 K		I	419020 00
BBP623 34xLED-HB/NW MB I GR GC RMR	Neutral White 4000 K	24°	I	419037 00
BBP623 34xLED-HB/NW WB I GR GC RMR	Neutral White 4000 K	40°		419044 00
BBP623 34xLED-HB/NW A I GR GC RMR	Neutral White 4000 K	A		419051 00
BBP623 34xLED-HB/WW NB I GR GC RMR	Warm White 2700 K	12°	I	419105 00
BBP623 34xLED-HB/WW MB I GR GC RMR	Warm White 2700 K	24°	I	419112 00
BBP623 34xLED-HB/WW WB I GR GC RMR	Warm White 2700 K	40°	1	419129 00
BBP623 34xLED-HB/WW A I GR GC RMR	Warm White 2700 K	A	I	419136 00
BBP623 34xLED-HB/RGB NB I DMX GR GF RMR	RGB	12°	I	419181 00
BBP623 34xLED-HB/RGB MB I DMX GR GF RMR	RGB	24°	I	419198 00
BBP623 34xLED-HB/RGB WB I DMX GR GF RMR	RGB	40°	I	419204 00
BBP623 34xLED-HB/RGB A I DMX GR GF RMR	RGB	А		419211 00

### DecoScene LED Guidance: showing the way!

In addition to this new product, DecoScene LED Guidance BBP521 is still available. With this robust ground recessed luminaire, featuring LED light sources, it is possible to mark out a luminous path through a public park or garden, enhance a city centre, or highlight parking places.

DecoScene LED Guidance BBP521 is available in white, blue, amber, green, red and RGB. The LED modules can easily be exchanged to extend the lifetime of the luminaire.









Glare shield, four openings

Square tile



Glare shield, one opening

### Technical data and ordering information

#### DecoScene LED Guidance BBP521

Product features	Variations
Ingress Protection	IP67
Safety class	L'II
Impact resistance	IK10
Light source	12 x SMD LED-HB
Power consumption	max.5W
Light color	Mono colour: white (WH), blue (BL), amber (AM), red (RD), green GN) • Tri color: red, green, blue (RGB)
Operating temperature range	-20 to 25 °C
Mains voltage	220-240 VAC / 50-60 Hz
Controls	The RGB version is compatible with full line of Philips DMX controllers
	DMX 512 control and RDM discovery and addressing, one address per fixture
Optical cover	Clear glass with internal diffuser • Shallow glass bowl with internal diffuser
Material	Housing, front ring: high pressure die cast aluminium • Recessed tube: plastic and stainless steel
	Gaskets: silicone rubber • Optical cover: glass, tempered, 15 mm thick
Color	Front ring: ultra dark grey, RAL10714 • Other RAL colours available on request
Maintenance	At the end of the lifetime of the LED module, the external ring just needs to be opened, then the module and its holder can easily be exchanged
Installation	Ground mounting at the recessed tube • Static load: 3000 kg
Cable gland	2 x M20 for mains cables and through-wiring facilities • 2 x M12 for data cables (data IN and OUT in case of RGB version)
Accessories	Square tile (SV), stainless steel decorative ring (DR), anti-vandal screws (SVP), radial shields (GS1, GS4)

Designation	LED version	Optic	Electrical class	Code (EOC)
BBP521 LED-MD I GR GC RMR	RGB	Clear glass	I	294897 00
BBP521 LED-LP WH I GR GC RMR	White	Clear glass	I	294903 00
BBP521 LED-LP GN I GR GC RMR	Green	Clear glass	I	294910 00
BBP521 LED-LP BL I GR GC RMR	Blue	Clear glass	I	294927 00
BBP521 LED-LP AM I GR GC RMR	Amber	Clear glass	I	294934 00
BBP521 LED-LP RD I GR GC RMR	Red	Clear glass	I	294941 00
BBP521 LED-MD I GR GB RMR	RGB	Shallow glass bowl	I	294958 00
BBP521 LED-LP WH I GR GB RMR	White	Shallow glass bowl	I	294965 00
BBP521 LED-LP GN I GR GB RMR	Green	Shallow glass bowl	I	294972 00
BBP521 LED-LP BL I GR GB RMR	Blue	Shallow glass bowl	I	294989 00
BBP521 LED-LP AM I GR GB RMR	Amber	Shallow glass bowl	I	294996 00
BBP521 LED-LP RD I GR GB RMR	Red	Shallow glass bowl	I	295009 00



Parks and gardens in Chaumont-sur-Loire, France

Lighting design: Neo Light

### Accent lighting with DecoScene LED

All rotation-symmetrical collimators provided with DecoScene LED BBP621 and BBP623 recessed luminaires are dedicated to accent lighting, as well as modelling of architectural details.

In both products, three beams are provided to highlight one or more architectural details, depending on width. The impact of the effect will depend on the brightness of the element compared with that of its surroundings. Plants and trees can be illuminated with a narrow beam as well as a wide beam, depending on the position of the recessed luminaire.

In this section we will mainly concentrate on accent lighting effects created by a recessed floodlight positioned close to the object. The maximum intensity is aimed at the top of the element (maximum tilt of optical system is 20°).



All of the following illuminance maps are based on neutral white luminaires (4000 K). Where warm white floodlights are opted for, illuminance heights may be lower.



d = 15 cm







#### Wall washing with DecoScene LED

With DecoScene LED BBP623, a dedicated optical plate has been developed for a wall washing effect. Recessed in the ground, DecoScene LED will create a uniform lighting effect, starting from the bottom and going to the top of the wall with a smooth gradient of light. Walls 8-10 m high can be uniformly illuminated with a spacing of 3 m between luminaires.



h = 8-10 md = 1.5 ms = 2 d

The following illuminance map is based on neutral white luminaires (4000 K). If warm white floodlights are selected, illuminance levels may be lower.



d = 1.5 m • s = 3 m

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