



EDGE LANE RETAIL EXTERNAL LIGHTING REPORT

Revision	Date	Details	Changes	Author
0	30/09/10	Report	N/A	Lukasz Ciolczynski



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1. Introduction

VZDV has been requested to provide a proposal for the external car park lighting for Edge Lane Retail.

In the absence of a Client brief or Employer's requirements, the proposed performance criteria for the design are summarised as follows:

1. Use metal halide, Cosmopolitan or LED (white light) as the primary lamp source. This is a low energy discharge lamp. This is the preferred light source as stipulated by 'Secured by Design' and it does provide a better colour rendition which is preferred in instances where CCTV coverage is required.
2. BS 5489-1:2003 and EN 13201-2:2003(E) provide guidelines for lighting performance criteria. The following assumptions are made:
 - (i) The area to be illuminated is classified as a mixed vehicular and pedestrian area on same surface.
 - (ii) The traffic flow in this car park is normal

This defines the area as a class CE2 in accordance with EN 13201-2:2003(E) Table 2. The lighting criteria are hence $\bar{E} = 20$ lux and uniformity 0.4 uniformity for access road, in accordance with BS 5489-1:2003 Table 5, $\bar{E} = 20$ lux and uniformity 0.25 for Car Parks and in accordance with EN 13201-2:2003(E) Table 4 $\bar{E} = 20$ lux and uniformity 0.15 for walkways.

3. There are no specific emergency lighting requirements as far as the Car Park is concerned. The emergency lighting from the buildings will be provided as part of the building lighting.
4. The external lighting strategy has been designed in compliance with Table 1 (and accompanying notes) of the ILE Guidance notes for reduction of obtrusive light, 2005,
5. All external lighting (except for safety and security lighting) can be automatically switched off between 2300hrs and 0700hrs. This can be achieved by providing a timer for all external lighting set to appropriate hours.
6. If safety or security lighting is provided and will be used between 2300hrs and 0700hrs, this part of lighting system complies with the lower levels of lighting recommended during these hours in Table 1 of the ILE's notes, for example to reduce the lighting levels at 2300 or earlier.
7. Illuminated advertisements, where specified must be designed in compliance with ILE Technical Report 5 – The Brightness of Illuminated Advertisements.



8. All external light fittings for the building, access ways and path ways have a luminous efficacy of at least 50 lumens/circuit Watt when the lamp colour rendering index (Ra) greater than or equal to 60 or 60 lumens/circuit Watt when the lamp colour rendering index (Ra) less than 60.
9. All external light fittings to the car parking areas, associated roads and floodlighting has a luminous efficacy of at least 70 lumens/circuit Watt when the lamp has a colour rendering index (Ra) greater than or equal to 60 or 80 lumens/circuit Watt when the lamp has a colour rendering index (Ra) less than 60.
10. All external light fitting for signs and uplighters have a luminous efficacy of at least 60 lumen/ circuit Watt when the lamp wattage is greater than or equal 25W or 50 lamp lumens/circuit Watt when the lamp wattage is less than 25W.
11. External light fittings are controlled through a time switch, or daylight sensor to prevent operation during daylight hours. Daylight sensor override on manually switched lighting circuit is acceptable
12. The effects of the lighting scheme on residential properties were taken into consideration. The ILE Guidance Notes for the Reduction of Obtrusive Light 2005 does recommend that that when carrying out a vertical calculation, 2-5 lux should not be exceeded when light trespass into windows is taken into account. This recommendation is for lighting in an urban area and is at a post curfew time.



2. Lighting Design

The extent of the area for illumination is as shown on the enclosed drawing 1400-EL-S-100. The design criteria are met as shown on the drawing.

The following luminaires has been proposed:

Q3 Quadro, 60W COSMO lamp, 8m mounting height.

Kaos, 60W COSMO lamp, 8m mounting height.

Q5 pro, 400W HIT lamp, 8m mounting height.

Promenade, 90W COSMO, 4m mounting height.

It is proposed that the lighting is interlocked with a photocell and 7 day timer and is powered from the Common Area Landlord supply.

3. Recommendations

The lighting criteria should be approved by the Client, building control, CCTV specialist, and any other interested party.

The cost of the scheme should be approved as again, alternative luminaires may have different photometrics.



4. Appendices

1400-EL-S-100



Kaos

Kaos 1 & 2

Street Lighting

A contemporary styled street lighting luminaire utilising the latest road lighting optics to maximise spacing between lighting columns on roads and highways.

- Die cast aluminium lower body in black with upper canopy in light grey available in technopolymer or die cast aluminium.
- Single piece anodised aluminium reflector.
- Optics and control gear sealed to IP66.
- Versatile range of lighting distributions including road, cycle and pedestrian to ensure an optimum lighting scheme.
- Drop Bowl or Flat glass version ensuring zero upward light.
- Easy access to lamp and gear via upper canopy, release a stainless steel catch for tool-less access and positive closure.
- Quick release removable gear tray.
- Automatic electrical disconnection upon opening canopy for safe installation and maintenance.
- Available with Electronic Control Gear.
- Factory supplied photocell option (standard or mini), along with a range of monitoring systems.
- Universal mounting system for post top mounting (60/76) and side entry (42/60mm).
- Typical mounting height of 5m to 10m.



Applications

- Residential roads.
- Access roads.
- Car parks.
- General security.

Kaos 1

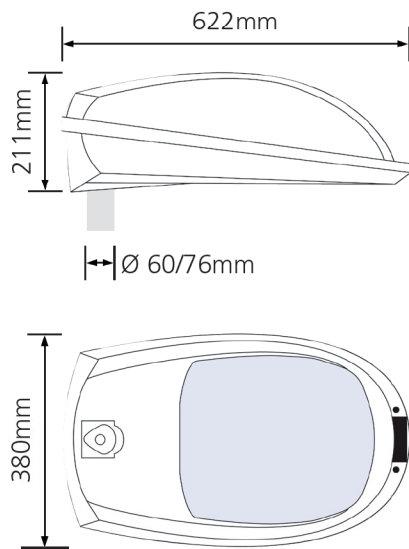
Product Codes

Code	Lamp Wattage	Lamp Type	Lamp Holder	Lamp Style	Lamp Lumens	BREEAM COMPLIANCE Lamp Lumens per circuit watt Pathways (50) Car Parks (70) Flood (70)		
		High Pressure Sodium						
RLK1070S	70	SON	E27	Tubular	6800	✓	✓	N/A
RLK1100S	100	SON	E40	Tubular	10500	✓	✓	N/A
RLK1150S	150	SON	E40	Tubular	17500	✓	✓	N/A
		Metal Halide						
RLK1070H	70	MH	E27	Elliptical	4800	✓	✗	N/A
RLK1100H	100	MH	E40	Tubular	8100	✓	✓	N/A
RLK1150H	150	MH	E40	Tubular	12600	✓	✓	N/A
		Ceramic Metal Halide						
RLK1070CH	70	CDO-TT	E27	Tubular	6300	✓	✓	N/A

For aluminium version insert AL into code Eg. RLK1ALI50H.
Add suffix CO - Cycle Optic, OP - Pedestrian Crossing Optic.

Code	Accessories
PECP5	Factory Supplied NEMA Photocell (Standard)
FF/PEC	Factory Supplied Photocell (Miniature)
PECNEMASOCKET	NEMA Socket

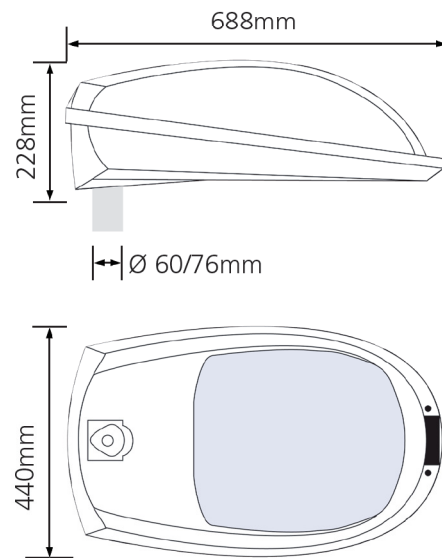
Kaos 1



Weight & Windage (Max in range)

Weight	8.0kg
Windage	0.13m ²

Kaos 2



Weight & Windage (Max in range)

Weight	12.0kg
Windage	0.16m ²

Kaos 2

Product Codes

Code	Lamp Wattage	Lamp Type	Lamp Holder	Lamp Style	Lamp Lumens	BREEAM COMPLIANCE Lamp Lumens per circuit watt Pathways (50) Car Parks (70) Flood (70)		
		High Pressure Sodium						
RLK2250S	250	SON	E40	Tubular	33000	N/A	✓	N/A
RLK2400S	400	SON	E40	Tubular	50500	N/A	✓	N/A
		Metal Halide						
RLK2250H	250	MH	E40	Tubular	17100	N/A	✗	N/A
RLK2400H	400	MH	E40	Tubular	32400	N/A	✓	N/A
		Ceramic Metal Halide						
RLK2250CH	250	CDO-TT	E40	Tubular	22500	N/A	✓	N/A

For aluminium version insert AL into code Eg. RLK2AL400H
Add suffix OP - Pedestrian Crossing Optic



Code	Accessories
FF/PEC	Factory Supplied Photocell

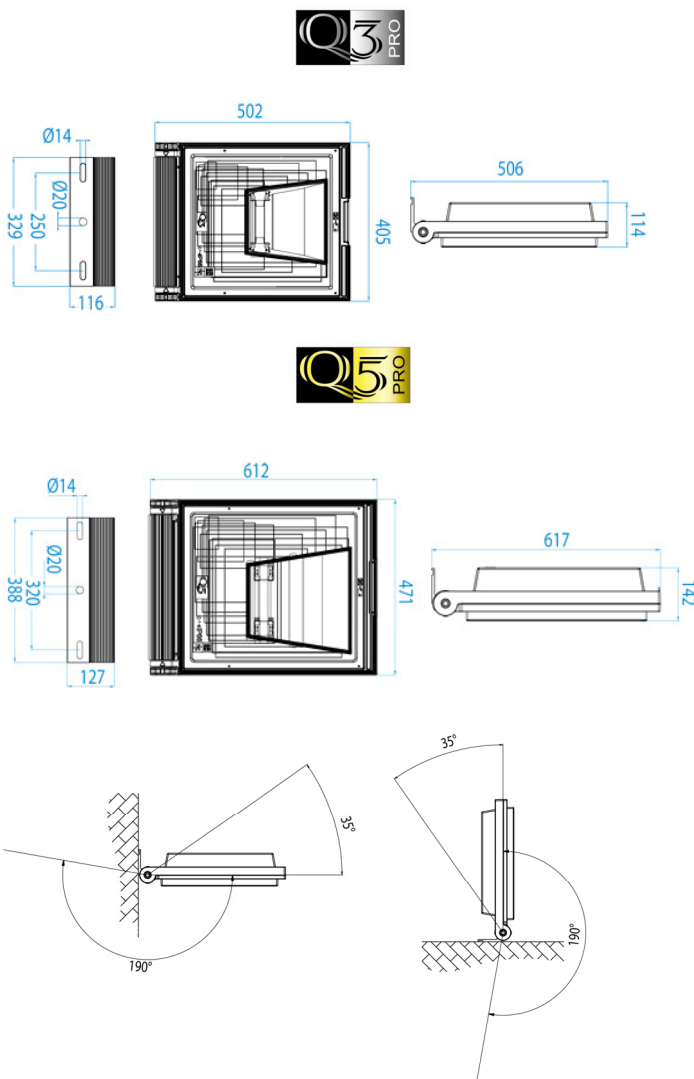


Q5 Pro








MATERIALS	
Frame	Pressure die-cast aluminium UNI EN 1706
Mounting support	Aluminium or galvanised and coated steel Wall mounting support
Optic	99,85% aluminium -AS,SM: metallized aluminium -ST,SP: funnelled aluminium, anodized and polished
Gaskets	Made in Silicone
Screen	Flat tempered glass 4mm (IK08)
Cable tray	Metallic insulated with plastic spacer
Standard colour	Graphite grey, satiny cod.01
Optional colour	Metallic silver, satiny cod.03

GENERAL CHARACTERISTICS	
Insulation class	II
Protection degree	-IP66 control-gear -IP66 optic
Photometric classification	Cut-off
Optical group	AS Asymmetrical optic for architectural and wide areas lighting. 45° or 65° Opening. SM45 optic for architectural and wide areas lighting. 45° Opening. SP Spot optic for architectural lighting ST optic for street lighting applications
On-load switch	Automatic, included as standard for class II
Weight	12 ÷ 13 Kg 13 ÷ 17 Kg
Side surface	0.07 m ² 0.10 m ²
  (in progress)	

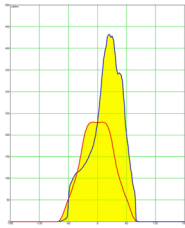


ELECTRICAL CHARACTERISTICS	
Protection fuse	Optional, available upon request
Input nominal voltage	-230Vac, 50Hz -Other available, upon request
Double-power wiring	Optional, available upon request
Ignitor	- Electronic, 3 wires - With timer, upon request
Lamp wattage	<div> 50 ÷ 150W SHP 35 ÷ 100W SHP White 35 ÷ 150W MHL 26 ÷ 57W FS 60W ÷ 140W Cosmopolis </div> <div> 100 ÷ 600W SHP 100W SHP White 100 ÷ 400W MHL 2x400W SHP/MHL 1000W SHP/MHL 140W Cosmopolis </div>
Terminal section	3 x 4mm ² Cascade connection available with double cable clamp

LAMP TYPES	
Edison Tubular	
Edison Ellipsoidale	
RX7S / FC2	
G12	
GX24	

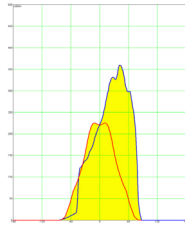


AS45



SHP 50-70-100-150W
WHITE SON 35-50-100W
MHL 35-50-70-100-150W
COSMOPOLIS 60-140W
FS 26-32-42W

AS65



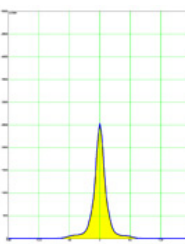
SHP 50-70-100-150W
WHITE SON 35-50-100W
MHL 35-50-70-100-150W
COSMOPOLIS 60-140W
FS 26-32-42W

SM45



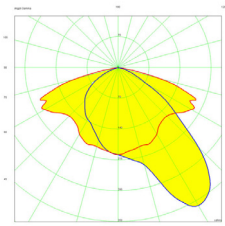
SHP 50-70-100-150W
WHITE SON 35-50-100W
MHL 35-50-70-100-150W
COSMOPOLIS 60-140W
FS 26-32-42W

SP



SHP 50-70W
WHITE SON 35-50-100W
MHL 35-50-70-100-150W
COSMOPOLIS 60-140W
FS 26-32W

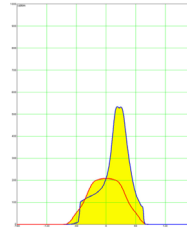
ST



SHP 50-70-100-150W
WHITE SON 35-50-100W
MHL 35-50-70-100-150W
COSMOPOLIS 60-140W
FS 26-32-42-57W

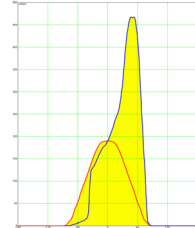


AS45



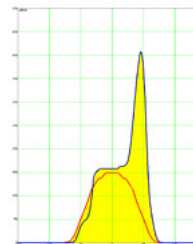
SHP 100-150-250-400W
600W(External ballast)
WHITE SON 100W
MHL 100-150-250-400W
COSMOPOLIS 140W

AS65



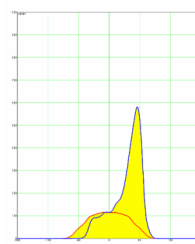
SHP 100-150-250-400W
600W(With external ballast)
WHITE SON 100W
MHL 100-150-250-400W
COSMOPOLIS 140W

AS65-D6



SHP 2x400-2x600W (External ballast)
MHL 2x400W (External ballast)

AS65-1K



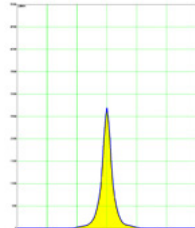
SHP/MHL 1000W (External ballast)

SM45



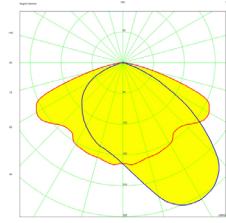
SHP 100-150-250-400W
600W(External ballast)
WHITE SON 100W
MHL 100-150-250-400W
COSMOPOLIS 140W

SP



SHP 100-150-250-400W
WHITE SON 100W
MHL 100-150-250-400W
COSMOPOLIS 140W

ST



SHP 100-150-250-400W
WHITE SON 100W
MHL 100-150-250-400W
COSMOPOLIS 140W



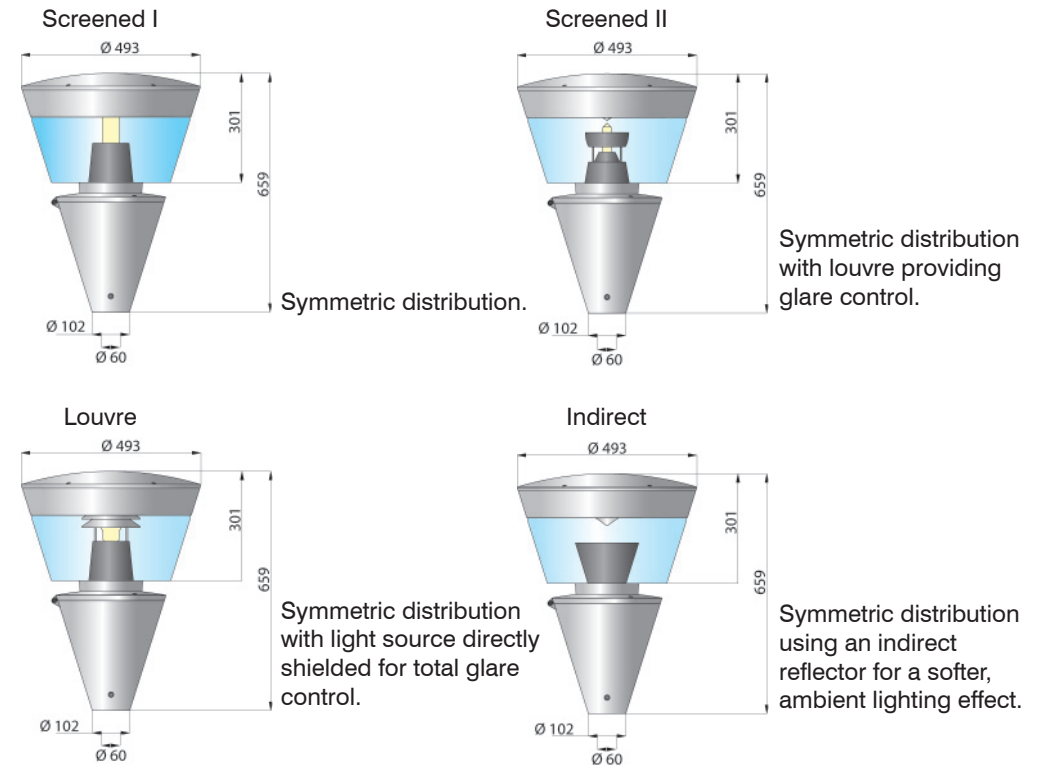
Promenade

A versatile amenity lantern with a classic style.

Specification

- High pressure die cast aluminium body finished polyester powder coated.
- UV stabilised polycarbonate diffuser impact tested to IK08 providing high degree of vandal resistance.
- Optics and control gear sealed to IP66.
- Lighting options include standard screened, louvre and indirect.
- Designed to accommodate range of energy efficient light sources including CosmoPolis (90w/140w) and Ceramic Metal Halide (max 250w)
- Practical access to lamp and gear via hinged top section.
- Automatic disconnection on opening for safe installation and maintenance.
- Suitable for post top mounting (60mm)
- Typical mounting height of 5m to 8m.

Weight (max in range) = 14.1kg
Windage = 0.19m²

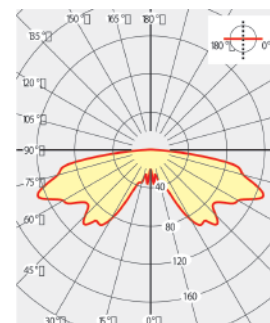


Lamp Data	Lamp Wattage	Lamp Holder	Lamp Style	Lamp Lumens	BREEAM COMPLIANCE Lamp Lumens per circuit watt		
					Pathways (50)	Car Parks (70)	Flood (70)

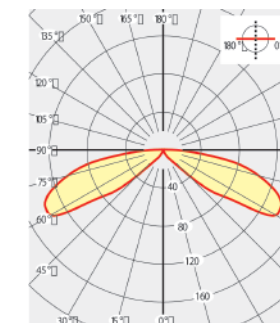
Ceramic Metal Halide	100w	E40	Tubular	8700	✓	✓	n/a
	150w	E40	Tubular	13500	✓	✓	n/a
	250w	E40	Tubular	22500	✓	✓	n/a
Cosmopolis	90w	PGZ12	Tubular	10450	✓	✓	n/a
	140w	PGZ12	Tubular	16500	✓	✓	n/a
High Pressure Sodium	150w	E40	Tubular	17500	✓	✓	n/a
	250w	E40	Tubular	33000	✓	✓	n/a
Metal Halide	70w	G12	Tubular	5600	✓	✗	n/a
	150w	G12	Tubular		✓	✓	n/a
	250w	G12	Tubular		✓	✓	n/a

Photometric Data

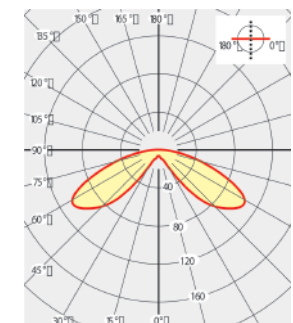
Standard
150w Ceramic Metal Halide



Screened
150w Metal Halide



Indirect
150w Metal Halide



Ordering Details

Screened Optic I



CODE	Lamp Wattage	Lamp Style	Lamp Holder	Lamp Lumens
S7280	100w	Ceramic Metal Halide	E40	8700
S7281	150w	Ceramic Metal Halide	E40	13500
S7282	250w	Ceramic Metal Halide	E40	22500
S7286	150w	High Pressure Sodium	E40	17500
S7287	250w	High Pressure Sodium	E40	33000
S7288	90w	CosmoPolis	PGZ12	10450
S7289	140w	CosmoPolis	PGZ12	16500

Screened Optic II



CODE	Lamp Wattage	Lamp Style	Lamp Style	Lamp Lumens
S7260	70w	Metal Halide	G12	5600
S7261	150w	Metal Halide	G12	
S7262	250w	Metal Halide	G12	
S7264	90w	CosmoPolis	PGZ12	10450
S7265	140w	CosmoPolis	PGZ12	16500

Promenade is available in a polyester powder coated finish in two standard colours (Metalic Grey or Aluminium)
At time of ordering please add the corresponding colour reference to the product code

Colour	Code
--------	------

Metallic Grey	16
Aluminium	21

Louvre Optic



CODE	Lamp Wattage	Lamp Style	Lamp Holder	Lamp Lumens
S7290	100w	Ceramic Metal Halide	E40	8700
S7291	150w	Ceramic Metal Halide	E40	13500
S7293	150w	High Pressure Sodium	E40	17500
S7294	250w	High Pressure Sodium	E40	33000

Indirect Optic



CODE	Lamp Wattage	Lamp Style	Lamp Holder	Lamp Lumens
S7250	150w	Metal Halide	G12	
S7254	250w	Metal Halide	G12	
S7255	90w	CosmoPolis	PGZ12	10450
S7258	140w	CosmoPolis	PGZ12	16500

Promenade is supplied with a non illuminated ring as standard.
To specify a decorative illuminated ring please add the following code after the colour reference

Code	Colour
------	--------

IRW	White	○
IRR	Red	●
IRY	Yellow	●
IRG	Green	●
IRB	Blue	●



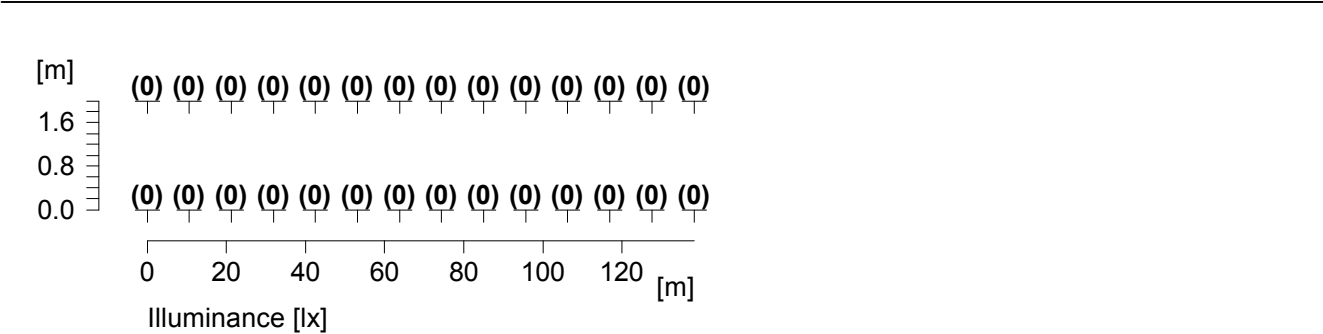


Vertical grid 1



2.3 Calculation results, Exterior 1

2.3.15 Table, vertical grid 1 (E)



Average illuminance	Eav	: 0 lx
Minimum illuminance	Emin	: 0 lx
Maximum illuminance	Emax	: 0 lx
Uniformity g1	Emin/Eav	: ---
Uniformity g2	Emin/Emax	: ---

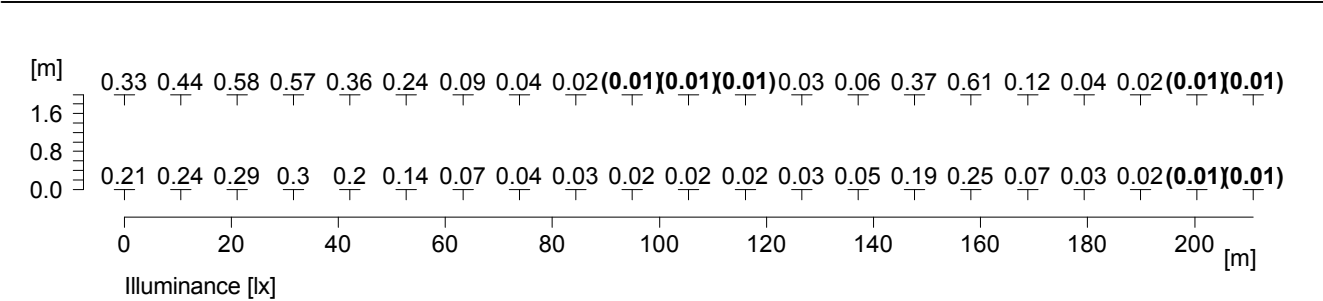


Vertical grid 2



2.3 Calculation results, Exterior 1

2.3.16 Table, vertical grid 2 (E)



Average illuminance	Eav	: 0.14 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 0.9 lx
Uniformity g1	Emin/Eav	: 1 : 19.07 (0.05)
Uniformity g2	Emin/Emax	: 1 : 119.94 (0.01)

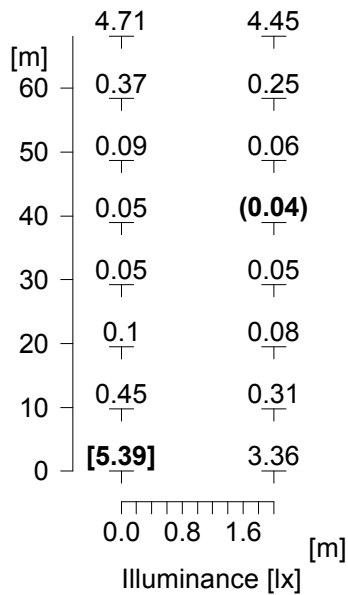


Vertical grid 3



2.3 Calculation results, Exterior 1

2.3.17 Table, vertical grid 3 (E)



Average illuminance	Eav	: 0.5 lx
Minimum illuminance	Emin	: 0.04 lx
Maximum illuminance	Emax	: 5.39 lx
Uniformity g1	Emin/Eav	: 1 : 12.09 (0.08)
Uniformity g2	Emin/Emax	: 1 : 130.61 (0.01)

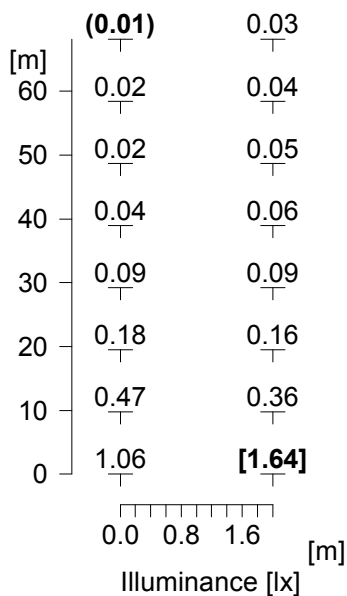


Vertical grid 4



2.3 Calculation results, Exterior 1

2.3.18 Table, vertical grid 4 (E)



Average illuminance	Eav	: 0.18 lx
Minimum illuminance	Emin	: 0.01 lx
Maximum illuminance	Emax	: 1.64 lx
Uniformity g1	Emin/Eav	: 1 : 13.43 (0.07)
Uniformity g2	Emin/Emax	: 1 : 119.27 (0.01)