

# Standard Lighting Calculation



## King Points Exterior

30-05-2018

Revision 03 Issued by DRT



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Orlight offers an in-house lighting design service, with designers covering a number of specialisms, ranging from architectural and lighting design to graphic design and civil engineering. Building on the strengths of Orlight's technical department, the lighting design team are able to provide designs that are conceptually cutting edge and aesthetically pleasing, always exceeding the client's expectations.

The lighting designers are based in Orlight's Chelsea showroom, in the heart of the Kings Road, which offers a unique space to showcase Orlight products and illustrate the clear benefit of Orlight's full service approach. The team are able to provide innovative solutions to private residential developments, renovations and commercial buildings across a range of different scales and sizes.

The team focuses on creating the right lighting scheme for the needs of each bespoke client, endeavouring to uphold CIBSE recommendations through our care and expertise. Orlight's design team take light seriously, striving to provide each client with the best solution available for their diverse requirements.

# Lighting Design Team



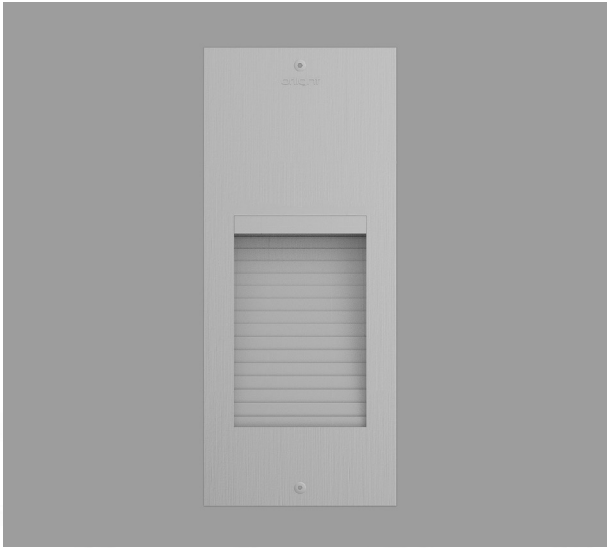
Head Office: Victor Way | Radlett Road | Colney Street | St. Albans | AL2 2FL | T: 01923 851 890

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# Luminaires specification

**ORL6736 - External Wall Light**



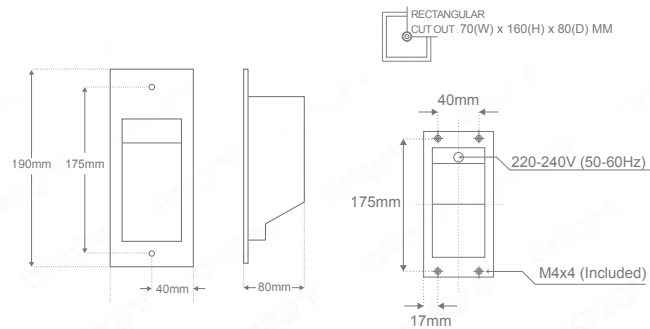
**Description**

Recessed feature fitting, vertically mounted and IP65 rated. The stepped louvre provides a soft downward emission of light. Integrated mains dimmable LED driver for ease of installation. Cast Aluminium face plate construction with Solid State CREE LED light source and CRI >80 to ensure light quality.

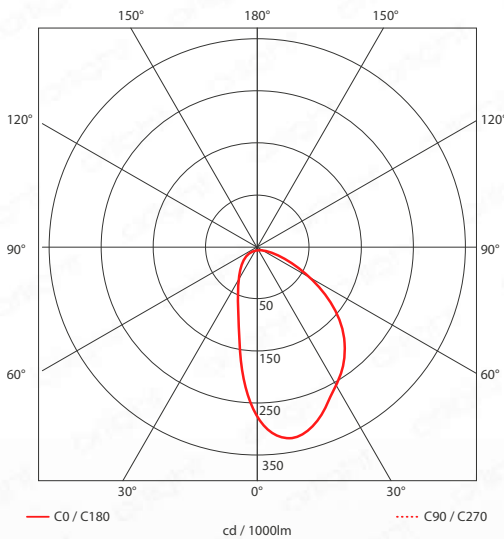
**Dimensions**

**Fixing**

**Standards**



**Polar Report**



**Specifications**

|                      |                                   |
|----------------------|-----------------------------------|
| Chipset              | 5050 - CREE                       |
| Dimming Options      | Mains (Leading and Trailing edge) |
| Driver               | Integral                          |
| Driver Output        | 550mA (Consant Current 1-16.5VDC) |
| Power Consumption    | 9W                                |
| Voltage Input        | 220-240V (50-60Hz)                |
| Colour Temperature   | 3000K                             |
| Light Output ~       | 551lm                             |
| lm Per Watt ~        | 62lm/W                            |
| CRI                  | >80                               |
| Beam Angle           | 100°                              |
| Binning              | 4 Step MacAdams Ellipse           |
| Chip Life TM-21      | L70 > 60,000 hours                |
| Install Information  | Recessed (Cut-out required)       |
| IP Rating            | 65                                |
| Operating Ambit Temp | -20~50°C                          |
| Weight               | 390g                              |
| Finish               | Cast Aluminium / RAL9023          |

**Colourmetrics**

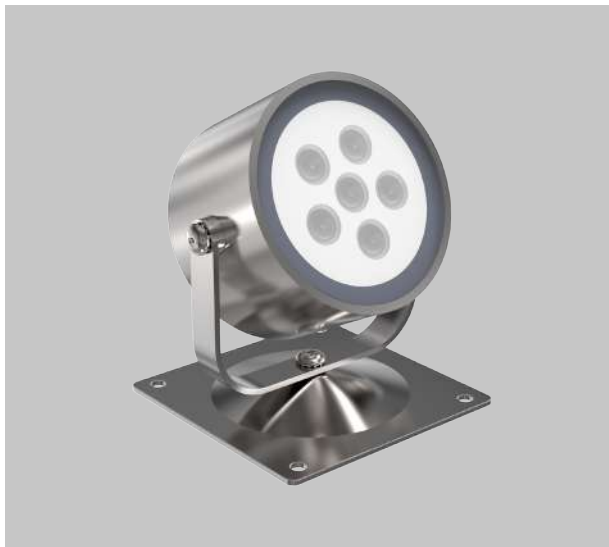
3000K

| R1 | R2  | R3  | R4  | R5  | R6  | R7  | R8 |
|----|-----|-----|-----|-----|-----|-----|----|
| 79 | 86  | 93  | 82  | 78  | 83  | 86  | 62 |
| R9 | R10 | R11 | R12 | R13 | R14 | R15 |    |
| 7  | 68  | 80  | 61  | 81  | 96  | 72  |    |

Product Coding: Example: ORL6736-3000K

| CODE    | COLOUR TEMP. |
|---------|--------------|
| ORL6736 | 3000K        |

**ORLLM104 - Marine Grade Midi Projector**

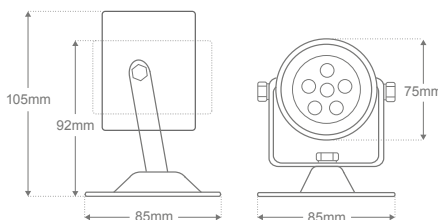


**Description**

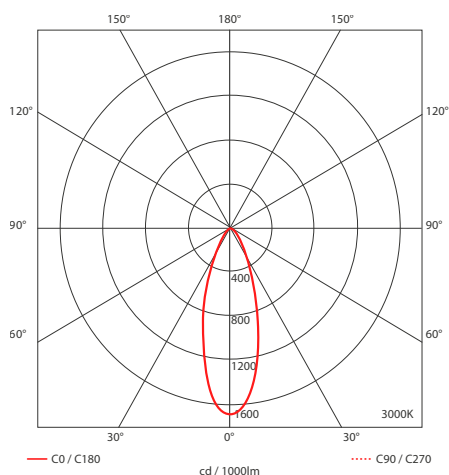
Marine Grade 316 stainless steel miniature surface mounted fixture complete with integral CREE LED package. Fixture rated to IP68 allowing submersion in water thus negating common issues arising from lack of soil drainage. Configured to 35 degree beam as standard. No mechanical joints to light source ensures robust protection against water ingress. Product runs cool meeting all touch temperature requirements. Ideal as a surface mounted miniature marker light.

**Dimensions**

**Standards**



**Polar Report**



**Specifications**

|                                 |                                                  |
|---------------------------------|--------------------------------------------------|
| Chipset                         | 5050 CREE                                        |
| Dimming Options                 | 1-10V; DALI                                      |
| Power Consumption               | 6W                                               |
| Voltage                         | 15V                                              |
| Colour Temperature              | 3000K                                            |
| Light Output ~                  | 579lm                                            |
| lm Per Watt ~                   | 67lm/W                                           |
| CRI                             | >80                                              |
| Beam Angle                      | 35°                                              |
| Binning                         | 2 Step MacAdams Ellipse                          |
| Chip Life TM-21                 | L70 > 60,500 hours                               |
| IP Rating                       | 68                                               |
| Ik Rating                       | 10                                               |
| Touch Temperature (Glass)       | 42.5°C                                           |
| Touch Temperature (Body Casing) | 37.0°C                                           |
| Operating Ambient Temp          | -20~50°C                                         |
| Max Surface Operating Temp      | 65°C                                             |
| Weight                          | 1050g                                            |
| Finish                          | 316 Marine Grade Stainless Steel / White / Black |

**Finishes**



**Colourmetrics**

| 3000K |     |     |     |     |     |     |    | 6000K |     |     |     |     |     |     |    |
|-------|-----|-----|-----|-----|-----|-----|----|-------|-----|-----|-----|-----|-----|-----|----|
| R1    | R2  | R3  | R4  | R5  | R6  | R7  | R8 | R1    | R2  | R3  | R4  | R5  | R6  | R7  | R8 |
| 80    | 87  | 93  | 83  | 79  | 83  | 86  | 63 | 69    | 71  | 72  | 71  | 70  | 62  | 75  | 60 |
| R9    | R10 | R11 | R12 | R13 | R14 | R15 |    | R9    | R10 | R11 | R12 | R13 | R14 | R15 |    |
| 10    | 69  | 81  | 62  | 81  | 96  | 72  |    | 0     | 31  | 71  | 42  | 68  | 84  | 62  |    |

Product Coding: Example: ORLLM104-SS-6000K-DALI

\*Accessories

| CODE     | FINISH                   | COLOUR TEMP | DIMMING OPTION        | DRIVERS                   |
|----------|--------------------------|-------------|-----------------------|---------------------------|
| ORLLM104 | SS - ( STAINLESS STEEL ) | 3000K       | ND - (SWITCHED)       | ORLRPV350CC - (IP68)      |
|          | WH - ( WHITE )           | 6000K       | 1-10V                 | JOLLY-MINI-1-10V - (IP20) |
|          | BL - ( BLACK )           |             | DALI                  | JOLLY-MINI-DALI - (IP20)  |
|          |                          |             | *Refer to Accessories |                           |

**LUCIA-350 - Mid Size LED Wall Light**

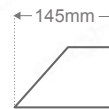
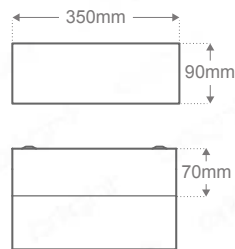


**Description**

Architectural surface fixture constructed from Stainless Steel to IP54. Solid State chipset with downward light emission and wide beam distribution. Integral power supply unit available in switched, 1-10V and DALI dimmable configurations. Light quality assurance with CRI >80.

Finishes available in Polished Stainless Steel, White or Black Epoxy Power Coat.

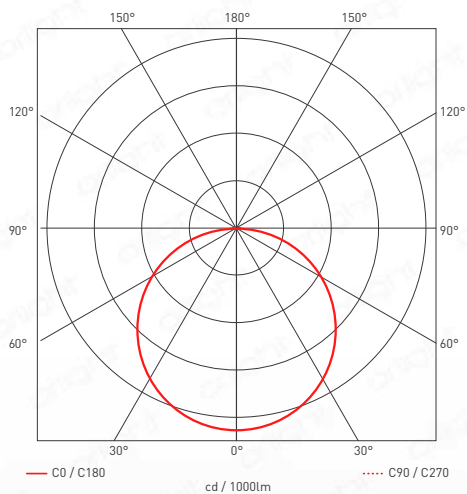
**Dimensions**



**Standards**



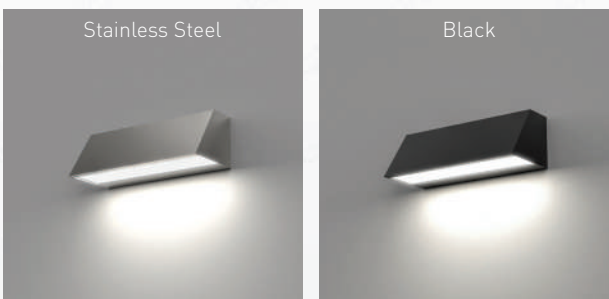
**Polar Report**



**Specifications**

|                                        |                                        |        |
|----------------------------------------|----------------------------------------|--------|
| <b>Chipset</b>                         | Solid State Chipset                    |        |
| <b>Dimming Options</b>                 | 1-10V; DALI                            |        |
| <b>Power Consumption</b>               | 10W                                    |        |
| <b>Voltage</b>                         | 240V                                   |        |
| <b>Colour Temperature</b>              | 3000K                                  | 4000K  |
| <b>Light Output ~</b>                  | 550lm                                  | 600lm  |
| <b>lm Per Watt ~</b>                   | 55lm/W                                 | 60lm/W |
| <b>CRI</b>                             | >80                                    | >80    |
| <b>Beam Angle</b>                      | 110°                                   |        |
| <b>Binning</b>                         | 4 Step MacAdams Ellipse                |        |
| <b>Chip Life TM-21</b>                 | -                                      |        |
| <b>IP Rating</b>                       | 54                                     |        |
| <b>Touch Temperature (Glass)</b>       | 33.6°C                                 |        |
| <b>Touch Temperature (Body Casing)</b> | 36.9°C                                 |        |
| <b>Weight</b>                          | 1693g                                  |        |
| <b>Finish</b>                          | Polished Stainless Steel; White; Black |        |

**Finish**



**Colourmetrics**

| 3000K |     |     |     |     |     |     |    | 4000K |     |     |     |     |     |     |    |
|-------|-----|-----|-----|-----|-----|-----|----|-------|-----|-----|-----|-----|-----|-----|----|
| R1    | R2  | R3  | R4  | R5  | R6  | R7  | R8 | R1    | R2  | R3  | R4  | R5  | R6  | R7  | R8 |
| 81    | 87  | 93  | 83  | 81  | 83  | 87  | 65 | 82    | 92  | 96  | 80  | 81  | 88  | 85  | 63 |
| R9    | R10 | R11 | R12 | R13 | R14 | R15 |    | R9    | R10 | R11 | R12 | R13 | R14 | R15 |    |
| 8     | 70  | 82  | 64  | 82  | 96  | 73  |    | 11    | 79  | 79  | 62  | 85  | 99  | 75  |    |

Product Coding: Example: LUCIA-350-SS-3000K-DALI

| CODE      | FINISH                 | COLOUR TEMP | DIMMING OPTION        |
|-----------|------------------------|-------------|-----------------------|
| LUCIA-350 | WH - (WHITE)           | 3000K       | ND - (SWITCHED)       |
|           | SS - (STAINLESS STEEL) | 4000K       | 1-10V                 |
|           | BL - (BLACK)           |             | DALI                  |
|           |                        |             | *Refer to Accessories |

**LUCIA-500 - LED Wall Light**



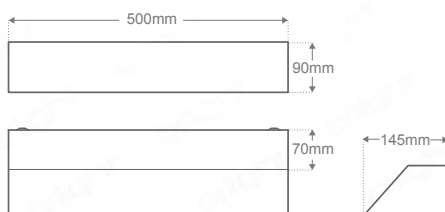
**Description**

Architectural surface fixture constructed from Stainless Steel to IP54. 2 x E27 lamp holders compatible with Retrofit light sources. Downward light emission and wide beam distribution. Direct 240V input for ease of installation.

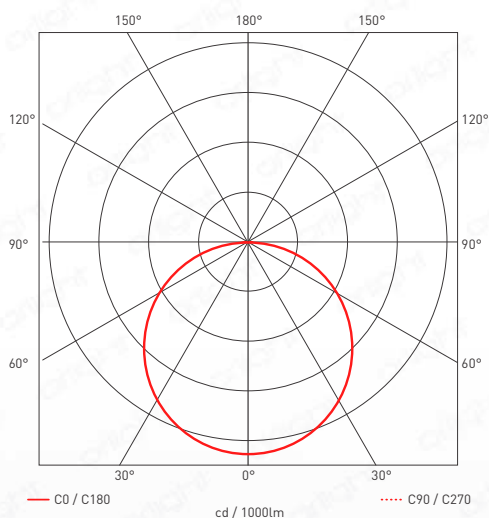
Finishes available in Polished Stainless Steel, White or Black Epoxy Power Coat.

**Dimensions**

**Standards**



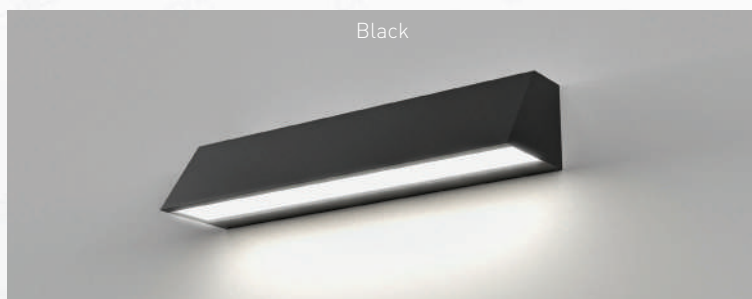
**Polar Report**



**Specifications**

|                                        |                                        |
|----------------------------------------|----------------------------------------|
| <b>Lamps</b>                           | TDE27LED                               |
| <b>Construction</b>                    | Stainless Steel                        |
| <b>Lamp Change</b>                     | Removable Fascia                       |
| <b>Power Consumption</b>               | Variable Light Source - E27            |
| <b>Voltage</b>                         | Max. 240V                              |
| <b>Beam Angle</b>                      | 115°                                   |
| <b>Tilt</b>                            | Fixed                                  |
| <b>Rotation</b>                        | Fixed                                  |
| <b>Mounting</b>                        | Surface                                |
| <b>IP Rating</b>                       | 54                                     |
| <b>Accessories</b>                     | N/A                                    |
| <b>Touch Temperature (Glass)</b>       | 34.5°C                                 |
| <b>Touch Temperature (Body Casing)</b> | 36.8°C                                 |
| <b>Weight</b>                          | 2410g                                  |
| <b>Finish</b>                          | Polished Stainless Steel; White; Black |

**Finish**



Product Coding: Example: LUCIA-500-SS-3000K

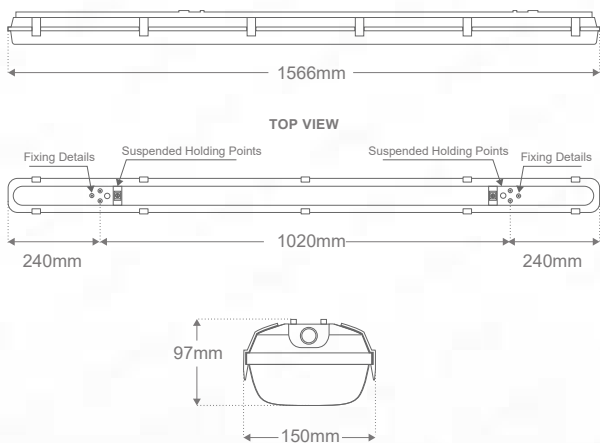
| CODE      |
|-----------|
| LUCIA-500 |

| FINISH                 |
|------------------------|
| WH - (WHITE)           |
| SS - (STAINLESS STEEL) |
| BL - (BLACK)           |

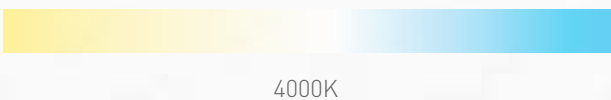
**ORLWP222LED-NC - Twin LED Non Corrosive Weather Pack**



**Dimensions**



**Colourmetrics**



**Description**

Orlight IP65 rated twin LED weather packs are ideal for back of house areas, car parks, storage areas, warehousing, under canopy, walkways and general industrial use. Available in 5ft lengths with injection moulded Polycarbonate body and diffuser. Supplied with stainless steel clips for added durability.

**Standards**



**Specifications - Standard**

|                           |                                                           |
|---------------------------|-----------------------------------------------------------|
| <b>Chipset</b>            | EPISTAR 2835 LED Tube                                     |
| <b>Control Option</b>     | Switched                                                  |
| <b>Power Consumption</b>  | 45W                                                       |
| <b>Emergency Power</b>    | 45W                                                       |
| <b>Voltage</b>            | 240V                                                      |
| <b>Colour Temperature</b> | 4000K                                                     |
| <b>Light Output ~</b>     | 4706lm                                                    |
| <b>lm Per Watt ~</b>      | 108lm/W                                                   |
| <b>CRI</b>                | >80                                                       |
| <b>Binning</b>            | 4 Step McAdams Ellipse                                    |
| <b>Chip Life TM-21</b>    | Reported L70 > 36,000 hours / Calculated L70 55,000 hours |
| <b>IP Rating</b>          | 65                                                        |
| <b>Weight</b>             | -                                                         |
| <b>Finish</b>             | Polycarbonate / Stainless Steel Clips                     |

**Specifications - Emergency Mode**

|                          |                              |
|--------------------------|------------------------------|
| <b>Battery Pack</b>      | NI-CD SC-2000mAh 3.6V 3 Cell |
| <b>Power Consumption</b> | 3.5W                         |
| <b>Light Output ~</b>    | 300lm                        |
| <b>Battery Life</b>      | 3 hours                      |

**Product Coding: Example: ORLWP222LED-NC-4000K-ND-EM**

| CODE        | FITTING              | COLOUR TEMP | CONTROL OPTION  | EMERGENCY OPTION |
|-------------|----------------------|-------------|-----------------|------------------|
| ORLWP222LED | NC - (NON-CORROSIVE) | 4000K       | ND - (SWITCHED) | EM - EMERGENCY   |
|             |                      |             |                 | EM - EMERGENCY   |

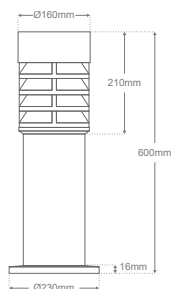
**ORL4570-42 - Ground Mounted Exterior Bollard**



**Description**

Ground mounted exterior bollard complete with louvre and transparent polycarbonate diffuser. Structure in extruded aluminium with aluminium alloy detailing. integrated universal E27 lamp base suitable for Max. 100W lamp types or low energy retrofit equivalents. Also available in 1090mm.

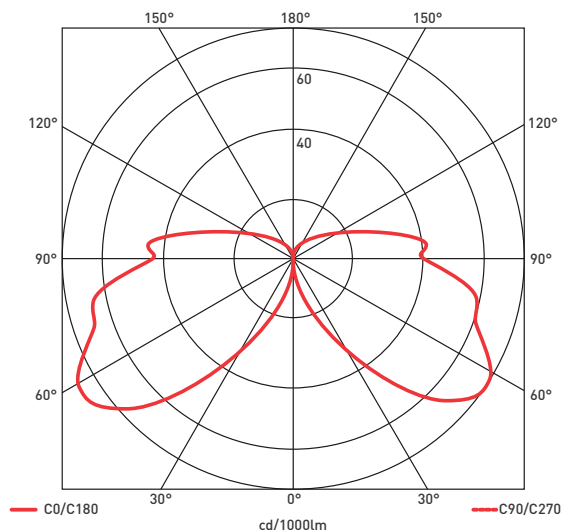
**Dimensions**



**Standards**



**Polar Report**



**Specifications**

|                      |                                          |
|----------------------|------------------------------------------|
| Chipset              | SMD                                      |
| Construction         | Aluminium Alloy / Polycarbonate Diffuser |
| Power Consumption    | 10W                                      |
| Voltage              | 240V                                     |
| Colour Temperature   | 3000K                                    |
| Light Output (up to) | 1074lm                                   |
| lm Per Watt (up to)  | 107lm/W                                  |
| CRI                  | 80                                       |
| Beam Angle           | 310°                                     |
| Binning              | 2 Step MacAdams Ellipse-                 |
| Chip Life TM-21      | ND                                       |
| IP Rating            | 20                                       |
| Weight               | -                                        |
| Finish               | Frosted & Black                          |

**Colourmetrics**



4000K

|    |     |     |     |     |     |     |    |
|----|-----|-----|-----|-----|-----|-----|----|
| R1 | R2  | R3  | R4  | R5  | R6  | R7  | R8 |
| R9 | R10 | R11 | R12 | R13 | R14 | R15 |    |

Product Coding: Example: ORL4570-42-4000K

CODE

ORL4570

WATTAGE

42

COLOUR TEMP

4000K

**\*\* PRELIMINARY DATASHEET - INFORMATION SUBJECT TO CHANGE \*\***

# Lighting Plan



- Notes:
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  2. All contractors must visit site and be responsible for taking and checking all dimensions related to the works shown on the drawing.
  3. Orlight do not produce construction drawings

- Legend:
- ORL4570LED LED Bollard
  - ⌋ ORL6736-3000K Low Level Recessed Brick Light
  - ⊕ ORLLM104-3000K Tree Uplighter
  - ▭ LUCIA-350-4000K Bulkhead
  - ▭ LUCIA-500-4000K-EM Emergency Bulkhead at Doorways
  - ▬ ORLWP222LED-NC IP65 LED Weather Pack

|         |              |     |       |
|---------|--------------|-----|-------|
|         |              |     |       |
|         |              |     |       |
|         |              |     |       |
|         |              |     |       |
| Rev No: | Description: | By: | Date: |

NOT A CONSTRUCTION DRAWING

**orlight**  
FROM SOURCE TO SITE

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Victor Way, Radlett Rd, Colney Street, St Albans, AL2 2FL  
01923 851890

Design Studio:  
The Plaza, 535 King's Road, Chelsea, London, SW10 0SZ  
02073521799  
lightingdesignsteam@Orlight.com

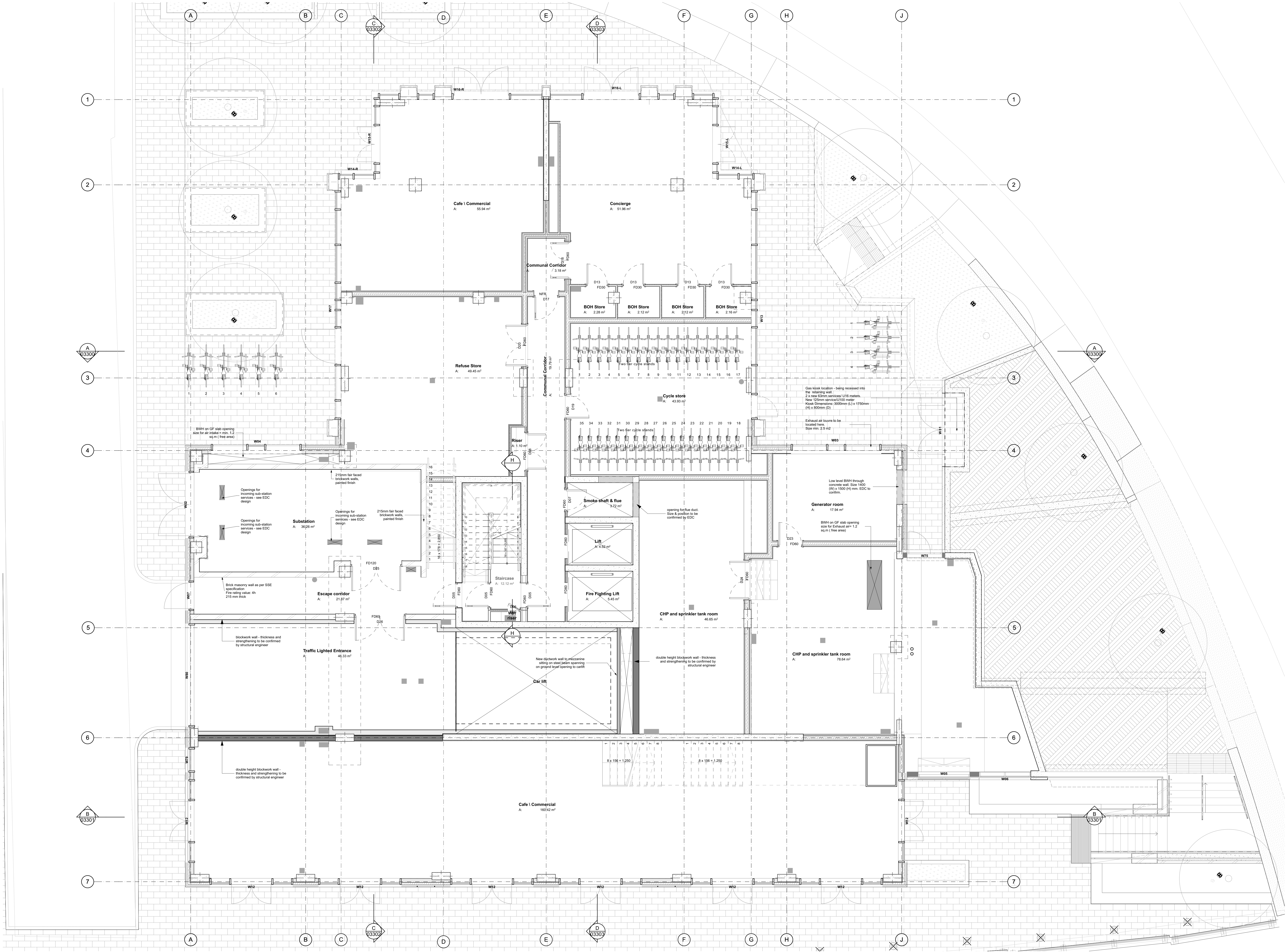
CLIENT: EDC

PROJECT: Kings Point

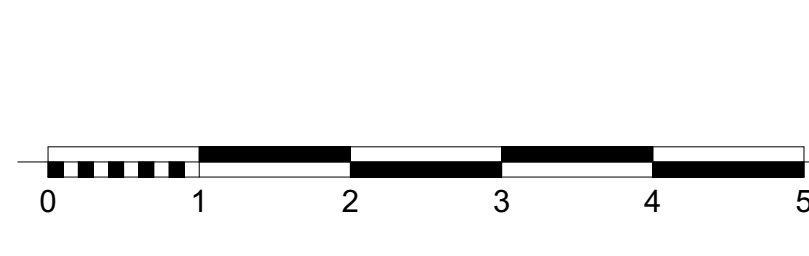
TITLE: Exterior Lighting Plan

|        |            |         |           |             |
|--------|------------|---------|-----------|-------------|
| SCALE: | DATE:      | REV NO: | DRAWN BY: | CHECKED BY: |
| NTS@A3 | 24-04-2018 | 2       | CD        | CD          |

## CAD Plan



Ground Floor Plan



Please read in conjunction with  
Manhire Associates Engineer drawings

|     |                         |            |           |            |            |
|-----|-------------------------|------------|-----------|------------|------------|
| Rev | Issue                   | Date       | Issued by | Checked by | Date       |
| 11  | Issued for Construction | 27/11/2017 | BA        | BA         | 27/11/2017 |

**HENRY CONSTRUCTION** Parkway Farm, Church Rd, Cranford, Middlesex TW9 5RT, London, UK  
Phone: +44 (0)20 8754 1227  
Email: office@henryconstruction.co.uk

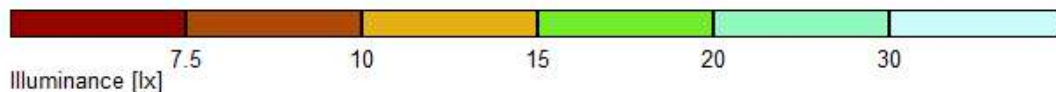
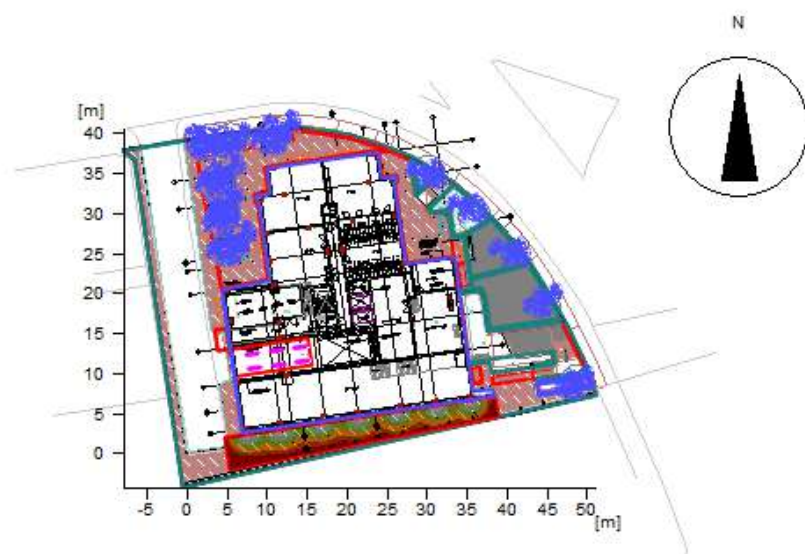
**GERAGHTY TAYLOR**  
geraghtytaylor.com

Seaton House 48 Southwark Street London SE1 1UN 020 3696 5530

|             |                                                            |
|-------------|------------------------------------------------------------|
| Client      | CNM Estates                                                |
| Project     | King's Point, Reading<br>120 King's Road, Reading, RG1 3ES |
| Drawing     | General arrangement drawings - Ground Floor GA plan        |
| Drawing no. | P16039-GT-00-GF-DR-A-03201                                 |
| Scale       | 1:50 @A0                                                   |
| Revision    | 11                                                         |
| Date        | 27/11/2017                                                 |
| Drawn       | EP, IB                                                     |
| Checked     | BA                                                         |
| Status      | S4 - Issued for approval                                   |

Do not scale from this drawing. All dimensions to be checked on site prior to fabrication. This document and its design content are copyright © and is to be used in conjunction with all other associated project documents, including reports, specifications, schedules and related construction documents. Any discrepancies to be reported immediately to Geraghty Taylor.

# Lighting Calculations



## Standard Calculation

### General

|                              |                           |
|------------------------------|---------------------------|
| Calculation algorithm used   | Average indirect fraction |
| Height of evaluation surface | 0.10 m                    |
| Maintenance factor           | 0.80                      |

|                                                |                       |
|------------------------------------------------|-----------------------|
| Total luminous flux of all lamps               | 67364 lm              |
| Total power                                    | 830 W                 |
| Total power per area (1792.00 m <sup>2</sup> ) | 0.46 W/m <sup>2</sup> |

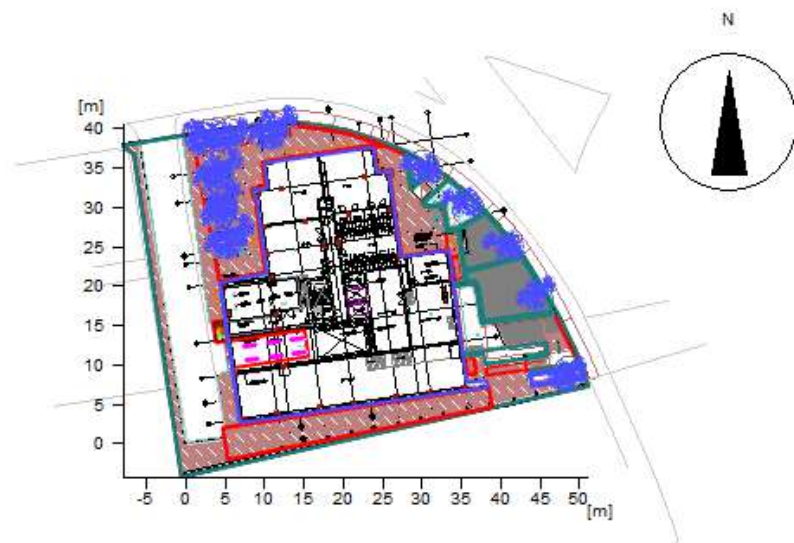
### Illuminance

|                     |         |               |
|---------------------|---------|---------------|
| Average illuminance | Eav     | 13.7 lx       |
| Minimum illuminance | Emin    | 3.1 lx        |
| Maximum illuminance | Emax    | 36.4 lx       |
| Uniformity Uo       | Emin/Em | 1:4.46 (0.22) |

## Emergency Calculation

|                              |        |
|------------------------------|--------|
| Required minimum illuminance | : 1 lx |
|------------------------------|--------|

|                            |           |                                                       |
|----------------------------|-----------|-------------------------------------------------------|
| Minimum illuminance        | Emin      | : 0.2 lx (* 0.2 lx)                                   |
| Maximum illuminance        | Emax      | : 8.9 lx (* 9.8 lx)                                   |
| Uniformity                 | Emin/Emax | : 1 : 36.20 (0.03) (Threshold value 1:40) (* 1:36.00) |
| Height                     |           | : 0.1 m                                               |
| Calculation algorithm used |           | : Direct component                                    |
| Maintenance factor         |           | : 0.8                                                 |



## Standard Calculation

### General

Calculation algorithm used  
Height of evaluation surface  
Maintenance factor

Average indirect fraction  
0.06 m  
0.80

Total luminous flux of all lamps  
Total power  
Total power per area (1792.00 m<sup>2</sup>)

67364 lm  
830 W  
0.46 W/m<sup>2</sup>

### Illuminance

Average illuminance  
Minimum illuminance  
Maximum illuminance  
Uniformity U<sub>0</sub>

E<sub>av</sub> 65 lx  
E<sub>min</sub> 24 lx  
E<sub>max</sub> 138 lx  
E<sub>min</sub>/E<sub>max</sub> 1:2.72 (0.37)

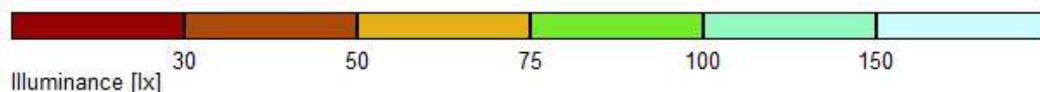
## Emergency Calculation

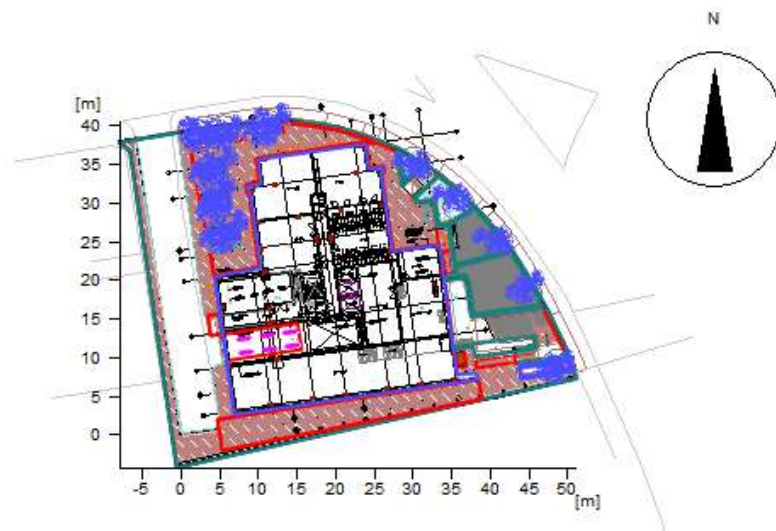
Required minimum illuminance

: 1 lx

Minimum illuminance  
Maximum illuminance  
Uniformity  
Height  
Calculation algorithm used  
Maintenance factor

E<sub>min</sub> : 2.5 lx (\* 1.9 lx)  
E<sub>max</sub> : 9.5 lx (\* 9.7 lx)  
E<sub>min</sub>/E<sub>max</sub> : 1 : 3.85 (0.26) (Threshold value 1:40) (\* 1:3.90)  
: 0.1 m  
: Direct component  
: 0.8





## Standard Calculation

### General

|                              |                           |
|------------------------------|---------------------------|
| Calculation algorithm used   | Average indirect fraction |
| Height of evaluation surface | 0.06 m                    |
| Maintenance factor           | 0.80                      |

|                                                |                       |
|------------------------------------------------|-----------------------|
| Total luminous flux of all lamps               | 67364 lm              |
| Total power                                    | 830 W                 |
| Total power per area (1792.00 m <sup>2</sup> ) | 0.46 W/m <sup>2</sup> |

### Illuminance

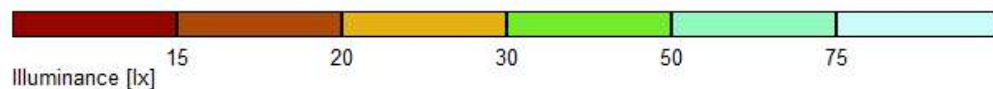
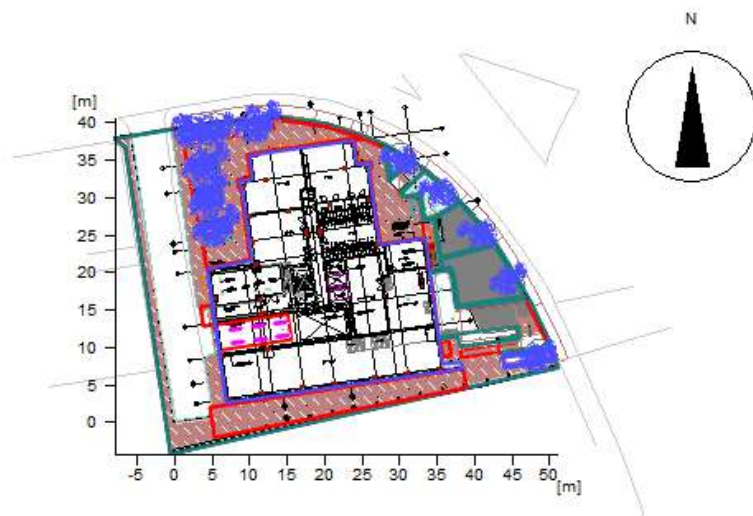
|                     |         |               |
|---------------------|---------|---------------|
| Average illuminance | Eav     | 41.7 lx       |
| Minimum illuminance | Emin    | 21.6 lx       |
| Maximum illuminance | Emax    | 64.6 lx       |
| Uniformity Uo       | Emin/Em | 1:1.94 (0.52) |

## Emergency Calculation

|                              |        |
|------------------------------|--------|
| Required minimum illuminance | : 1 lx |
|------------------------------|--------|

|                            |           |                                                     |
|----------------------------|-----------|-----------------------------------------------------|
| Minimum illuminance        | Emin      | : 2.9 lx (* 2.3 lx)                                 |
| Maximum illuminance        | Emax      | : 9.3 lx (* 9.6 lx)                                 |
| Uniformity                 | Emin/Emax | : 1 : 3.19 (0.31) (Threshold value 1:40) (* 1:3.20) |
| Height                     |           | : 0.1 m                                             |
| Calculation algorithm used |           | : Direct component                                  |
| Maintenance factor         |           | : 0.8                                               |





## Standard Calculation

### General

|                              |                           |
|------------------------------|---------------------------|
| Calculation algorithm used   | Average indirect fraction |
| Height of evaluation surface | 0.00 m                    |
| Maintenance factor           | 0.80                      |

|                                                |                       |
|------------------------------------------------|-----------------------|
| Total luminous flux of all lamps               | 67364 lm              |
| Total power                                    | 830 W                 |
| Total power per area (1792.00 m <sup>2</sup> ) | 0.46 W/m <sup>2</sup> |

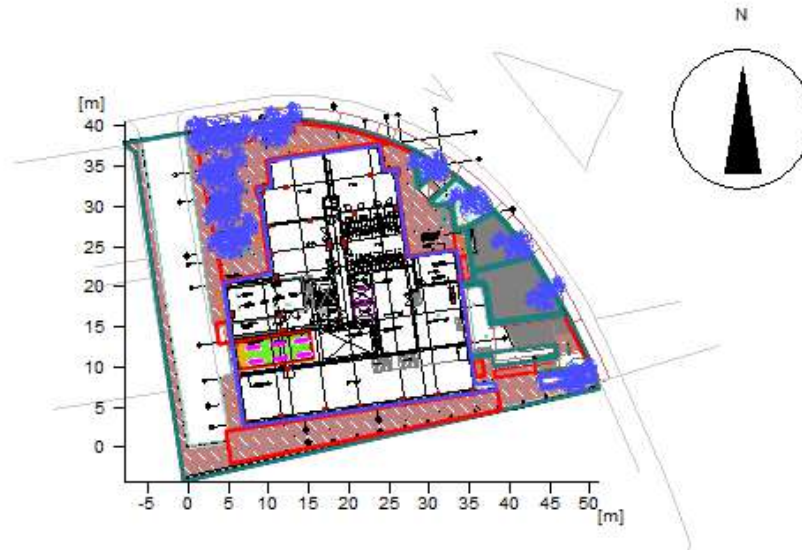
### Illuminance

|                     |         |              |
|---------------------|---------|--------------|
| Average illuminance | Eav     | 34.2 lx      |
| Minimum illuminance | Emin    | 10.3 lx      |
| Maximum illuminance | Emax    | 62 lx        |
| Uniformity Uo       | Emin/Em | 1:3.32 (0.3) |

## Emergency Calculation

|                              |           |                                                     |
|------------------------------|-----------|-----------------------------------------------------|
| Required minimum illuminance |           | : 1 lx                                              |
| Minimum illuminance          | Emin      | : 1.4 lx (* 1.3 lx)                                 |
| Maximum illuminance          | Emax      | : 9 lx (* 9.1 lx)                                   |
| Uniformity                   | Emin/Emax | : 1 : 6.37 (0.16) (Threshold value 1:40) (* 1:6.40) |
| Height                       |           | : 0 m                                               |
| Calculation algorithm used   |           | : Direct component                                  |
| Maintenance factor           |           | : 0.8                                               |

## Standard Calculation



### General

Calculation algorithm used  
Height of evaluation surface  
Maintenance factor

Average indirect fraction  
0.00 m  
0.80

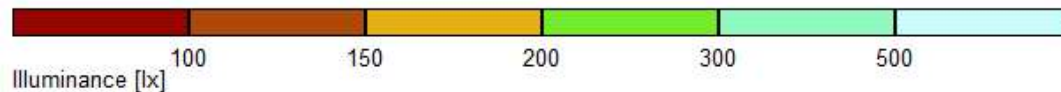
Total luminous flux of all lamps  
Total power  
Total power per area (1792.00 m<sup>2</sup>)

67364 lm  
830 W  
0.46 W/m<sup>2</sup>

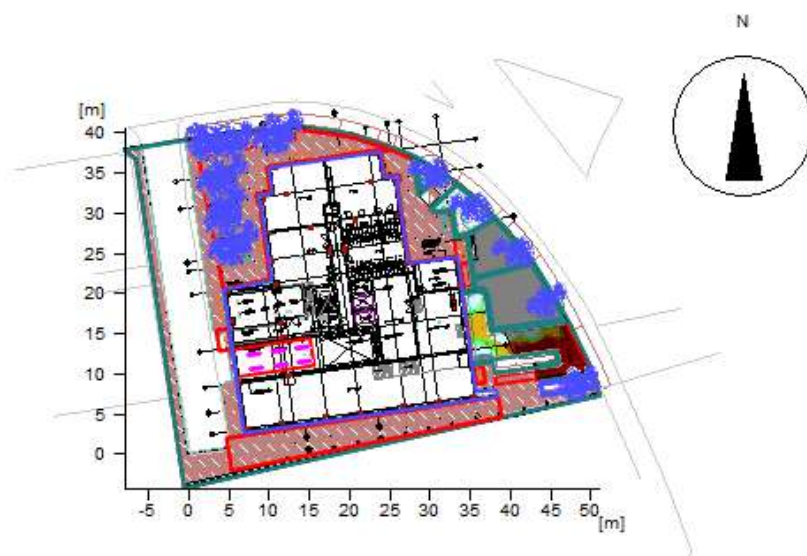
### Illuminance

Average illuminance  
Minimum illuminance  
Maximum illuminance  
Uniformity U<sub>0</sub>

|                                    |               |
|------------------------------------|---------------|
| E <sub>av</sub>                    | 229 lx        |
| E <sub>min</sub>                   | 102 lx        |
| E <sub>max</sub>                   | 287 lx        |
| E <sub>min</sub> /E <sub>max</sub> | 1:2.24 (0.45) |



## Standard Calculation



### General

Calculation algorithm used  
Height of evaluation surface  
Maintenance factor

Average indirect fraction  
0.10 m  
0.80

Total luminous flux of all lamps  
Total power  
Total power per area (1792.00 m<sup>2</sup>)

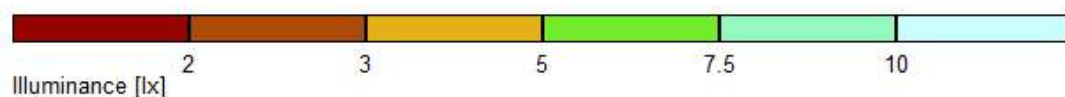
67364 lm  
830 W  
0.46 W/m<sup>2</sup>

### Illuminance

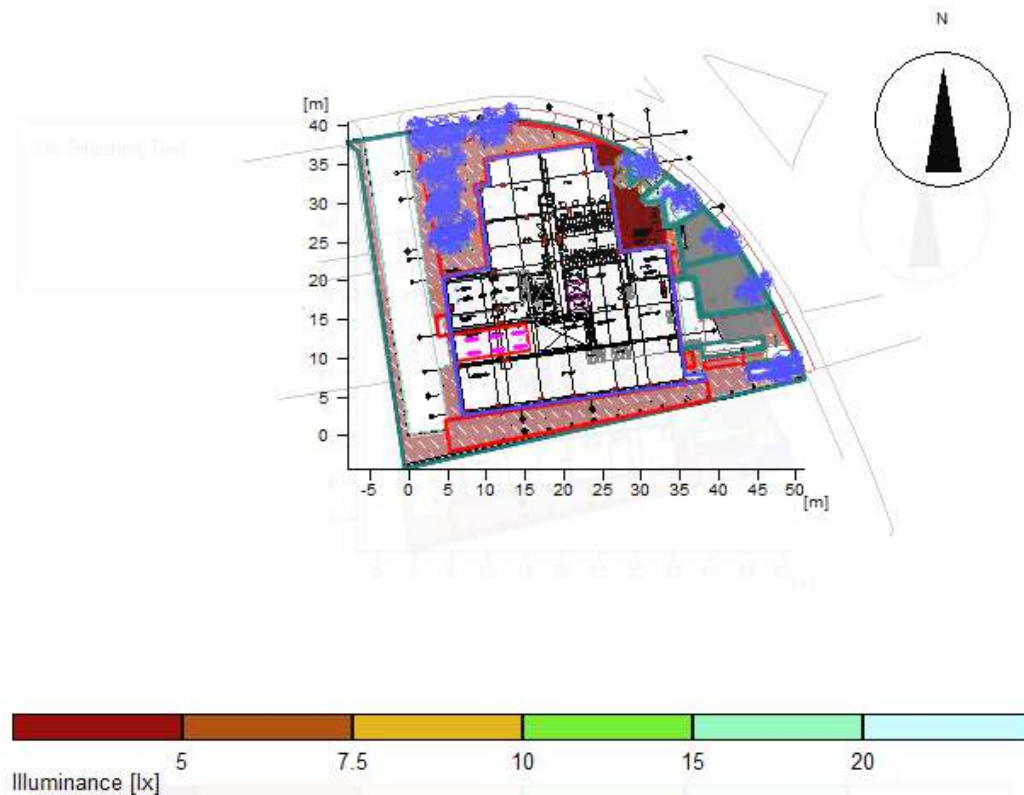
Average illuminance  
Minimum illuminance  
Maximum illuminance  
Uniformity U<sub>0</sub>

E<sub>av</sub>  
E<sub>min</sub>  
E<sub>max</sub>  
E<sub>min</sub>/E<sub>max</sub>

6.1 lx  
0.2 lx  
77.1 lx  
1:29.7 (0.03)



## Standard Calculation



### General

Calculation algorithm used  
Height of evaluation surface  
Maintenance factor

Average indirect fraction  
0.10 m  
0.80

Total luminous flux of all lamps  
Total power  
Total power per area (1792.00 m<sup>2</sup>)

39164 lm  
566 W  
0.32 W/m<sup>2</sup>

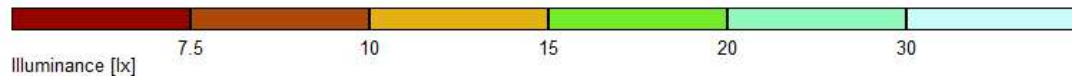
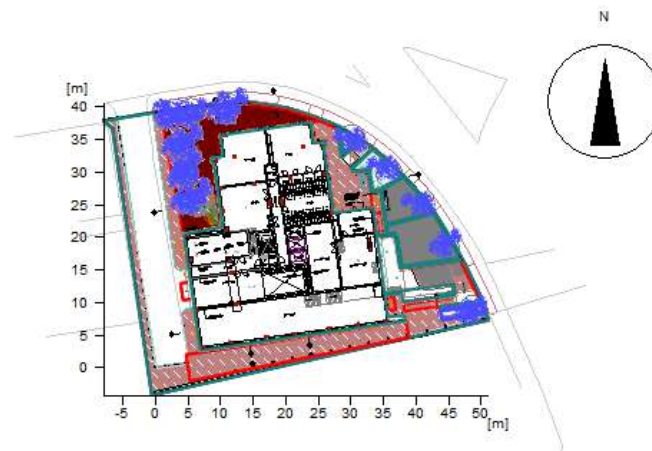
### Illuminance

Average illuminance  
Minimum illuminance  
Maximum illuminance  
Uniformity U<sub>0</sub>

E<sub>av</sub>  
E<sub>min</sub>  
E<sub>max</sub>  
E<sub>min</sub>/E<sub>m</sub>

11.2 lx  
0.1 lx  
96.1 lx  
1:143 (0.01)

## Standard Calculation



### General

Calculation algorithm used  
Height of evaluation surface  
Maintenance factor

Average indirect fraction  
0.10 m  
0.80

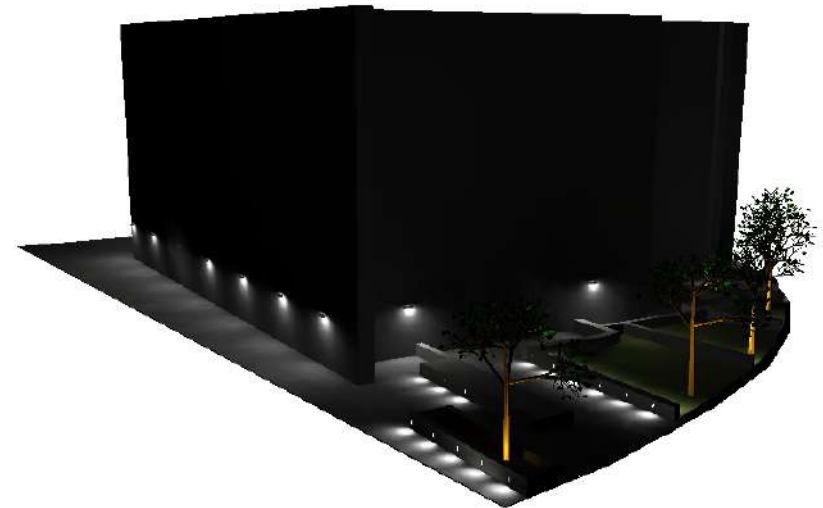
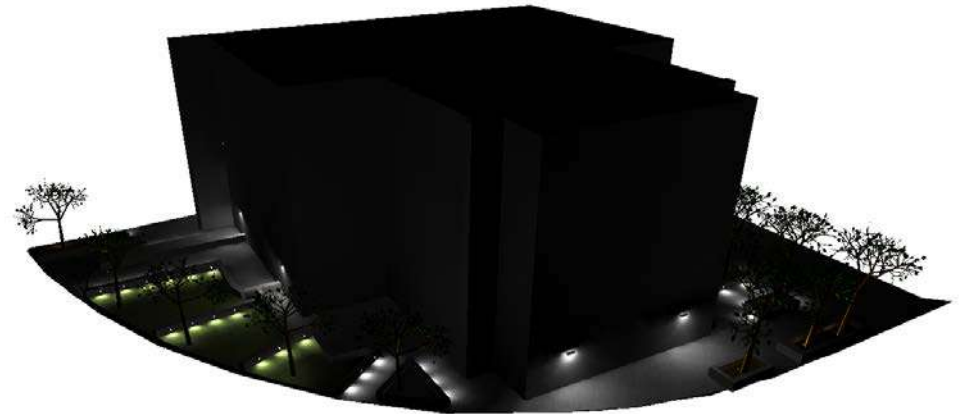
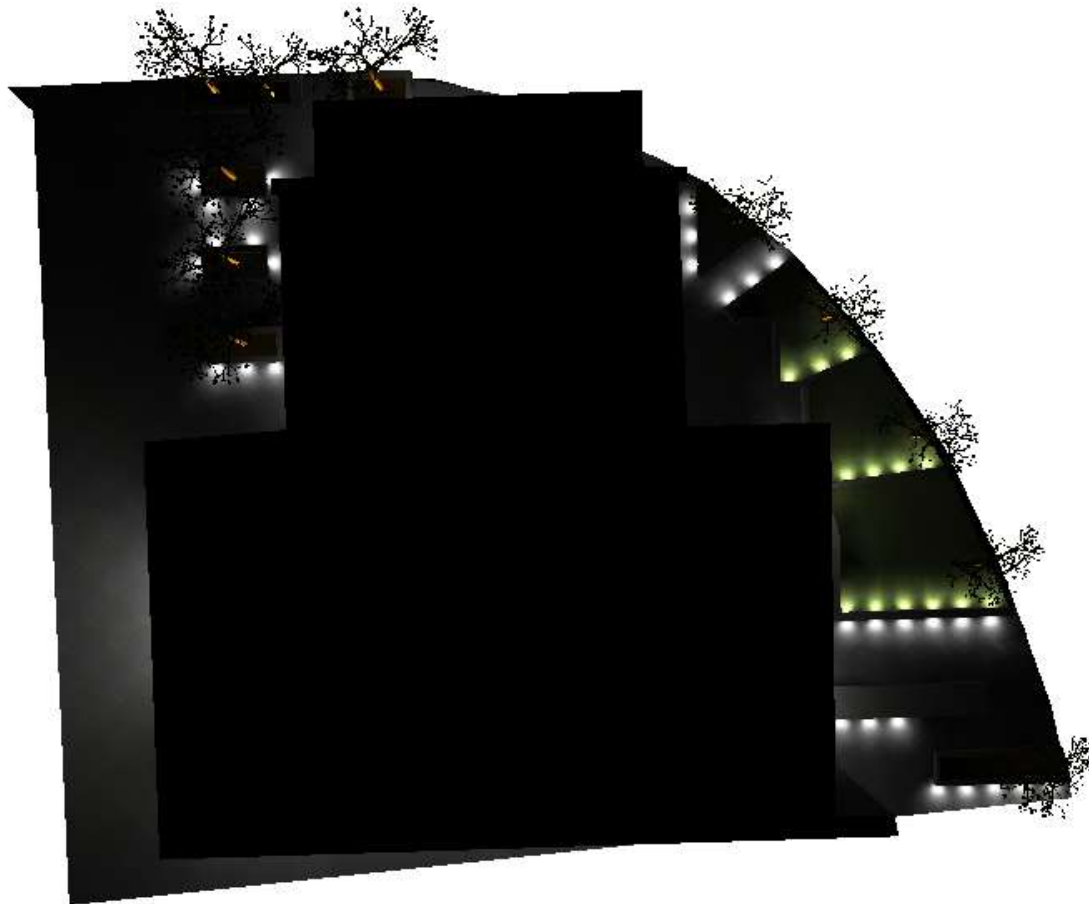
Total luminous flux of all lamps  
Total power  
Total power per area (1792.00 m<sup>2</sup>)

37214 lm  
536 W  
0.30 W/m<sup>2</sup>

### Illuminance

Average illuminance  
Minimum illuminance  
Maximum illuminance  
Uniformity U<sub>0</sub>

|                                  |             |
|----------------------------------|-------------|
| E <sub>av</sub>                  | 16 lx       |
| E <sub>min</sub>                 | 0 lx        |
| E <sub>max</sub>                 | 439 lx      |
| E <sub>min</sub> /E <sub>m</sub> | 1:--- (---) |



Please note Orlight offer light level calculations as a bespoke complimentary service to valued clients. Orlight only act as a supplier of lighting and as such calculations are provided for informative purposes only.

All information is provided in good faith and is dependent on a multitude of variables including drawing scales and finishes. Adjustment of any such parameters may result in an alteration in light levels. As such Orlight will not be held responsible for and inaccuracies whatsoever.