PUBLIC LIGHTING REPORT

RESIDENTIAL DEVELOPMENT AT

MOUNT St. MARY'S,

DUNDRUM ROAD,

DUBLIN 14.

Residential Development

Mount St. Mary's,

Dundrum Road,

Dublin 14

Project: 2440
Issue: Planning
Rev: 4
Date: 06.03.25

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Project Details

Project: Residential Development at:
Mount St. Mary's,
Dundrum Road,
Dublin 14.

Applicant: Dún Laoghaire- Rathdown County Council,
2 Marine Road,
Dún Laoghaire,
Dublin,
A96 K6C9

Architect: Reddy Architecture.
Dartry Mills,
Dartry Road,
Dublin 6.

M&E Consultant: Fallon Design Ltd.
Avocet House,
Riverwalk,
Arklow,
Co. Wicklow.
Y14 XD68

Document Details:

Version	Issue Date	Title	Author
Rev 0	09.10.2024	Public Lighting Report	Fallon Design Ltd
Rev 1	11.10.2024	Public Lighting Report	Fallon Design Ltd
Rev 2	21.10.2024	Public Lighting Report	Fallon Design Ltd
Rev 3	24.10.2024	Public Lighting Report	Fallon Design Ltd
Rev 4	06.03.2025	Public Lighting Report	Fallon Design Ltd

1. Introduction

This report will outline the design intent for the public lighting design for the proposed development at Mount St. Mary's, Dundrum Road, Dublin 14.

This report outlines the lighting design as developed by Fallon Design to provide adequate illuminance to meet all regulations and requirements as follows:

- To provide adequate illumination to contribute toward the safe use of the access roads and pathways for vehicular and pedestrians.
- Minimise lighting pollution on surrounding areas and neighbours
- Reduce glare on pedestrians and other users of the access areas
- Use of highly efficient artificial lighting to reduce energy consumption

The complete installation will be required to meet the following regulatory standards and policies:

- S.I. No. 291 of 2013: Safety, Health and Welfare at work (Construction Reg. 2013)
- ETCI National Rules for electrical Installation ET101-2008
- BS 5489-1:2013 Code of Practice for the design of road lighting
- IS EN 13201-1 & 2 -2015
- IS EN 13201-5-2015 S2 & ME4A
- CIBSE Lighting Guide 7
- Housing Scheme: Guidebook ESB Networks Standards for Electrical Services
- Guidance Note 08/18:Bats and artificial lighting in the UK (Bat Conservation Trust, 2018)
- Bats & Lighting Guidance notes for: Planners, engineers, architects and developers (12/2010)
- Local County Council Street Lighting Technical Specification

2. Development Description

The development will consist of 129 No. Residential units together with associated infrastructure including open space and car/cycle parking and is a mixture of duplexes and apartments in 3 no. buildings ranging in height from two to part six storeys.

3. Design Concept

The public lighting design for residential development is to provide adequate illuminance for vehicular and pedestrian access for the residents and general public.

The design of the public lighting includes low energy LED lighting throughout. Energy efficient light fittings are a key element in reducing the developments energy consumption.

4. Detailed Design

The design now uses the following:
13 x City Streetlight 27w LED 2700K (4 x Forward Throw A Optic and 9 x Street Optic R01) mounted on 6m columns with no tilt
7 x City Streetlight 19w LED 2700K Street Optic R03 with black shield mounted on 6m columns with no tilt along the perimeter pathways

The average light level is 5.5 lux with a minimum of 1.0 lux (0.20 uniformity). This complies with IS EN 13201-2:2015 / BS 5489-1:2020 for residential roads & paths – class P4 (5.0 lux average, 1.0 lux minimum).

Proposed luminaire design layout as per drawings:

MSM-FDE-60-SW-DR-EE-1000

Lighting Calculations:

Results

Eav	5.56
Emin	1.09
Emax	21.98
Emin/Emax	0.05
Emin/Eav	0.20

5. Luminaires:

Luminaire A Data

Supplier	
Type	Veelite City Streetlight 27w LED Forward Thr ow A Optic
Lamp(s)	12 LED 2700K G4
Lamp Flux (klm)	2.81
File Name	5MTA10LGA-FTA.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	401.3, 47.0, 0.5
No. in Project	4

Luminaire B Data

Supplier	
Type	Veelite City Streetlight 27w LED Street Optic R01
Lamp(s)	12 LED 2700K G4
Lamp Flux (klm)	2.68
File Name	5MTA10LGA-R01.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	680.3, 387.6, 0.6
No. in Project	9

Luminaire C Data

Supplier	
Type	Veelite City Streetlight 19w LED Street Optic R03
Lamp(s)	8 LED 2700K - with Black Shield
Lamp Flux (klm)	1.44
File Name	City Streetlight 38w 16LED 4K - R03 Optic wit h Black Shield.ies
Maintenance Factor	0.80
Imax70,80,90(cd/klm)	518.1, 10.5, 0.4
No. in Project	7

5.1 City Streetlight

City Streetlight

External Lighting

Modern functional LED luminaire, easy access for maintenance. Ideal for roadway applications.

Construction: Die-cast aluminium. IP66. IK08 as standard. Driver and LED Modules are accessible for maintenance or replacement.

Lens: Tempered glass as standard.

Installation: Luminaire supplied with 76mm mastfitter for direct post-top mount. 60mm mastfitter as an option for side entry or post-top mount. Tiltable: -10°to +10°

Finish: Grey RAL 9006 as standard. Other RAL colours on request.

LED: Available in 10w to 36w LED (see ordering codes). CRI 70 4000K as standard. 3000K or other on request. Asymmetric street optic as standard. See ordering codes for more details.

Life: L90 B10 >100,000 hours. (at 25°C).

Driver: 220-240V AC 50/60 Hz. 700mA as Standard. 350mA, 500mA, 1050mA or custom setting on request. Lifetime (<10% failures): 100,000 hrs.

Mains Surge Protection: 10kV device included as standard.

Temperature: -30°C +50°C

Options: Dimming, DALI, Photocell, various optics available. Internal Shield for reduced backlight available.

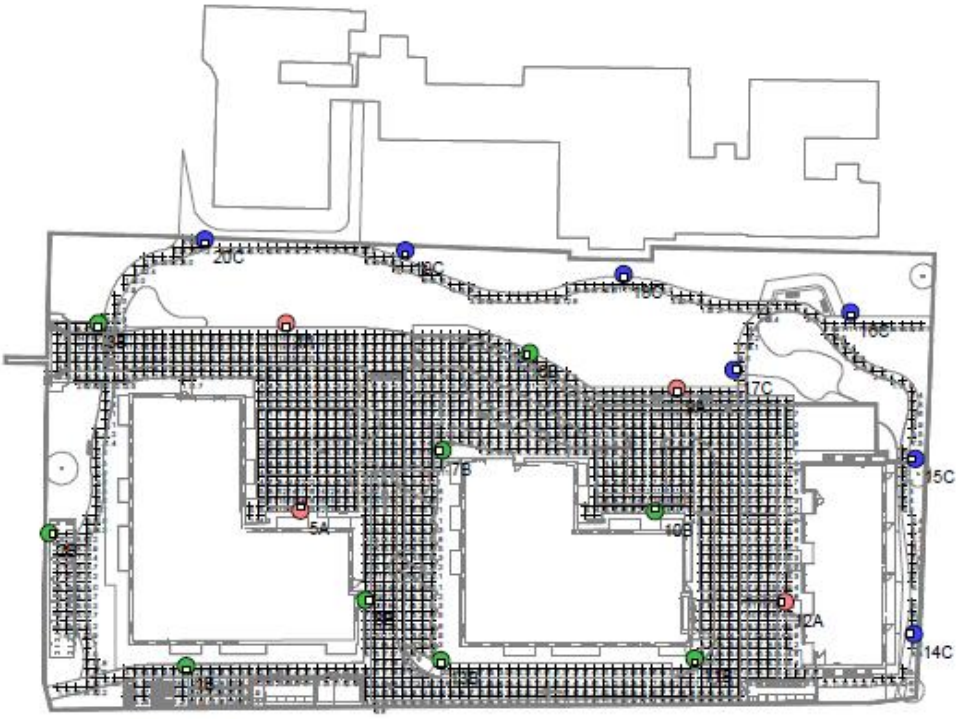
Manufactured: Ireland

Product Compliance: EN 60598; CE.

VeeLite

6. Grid Results

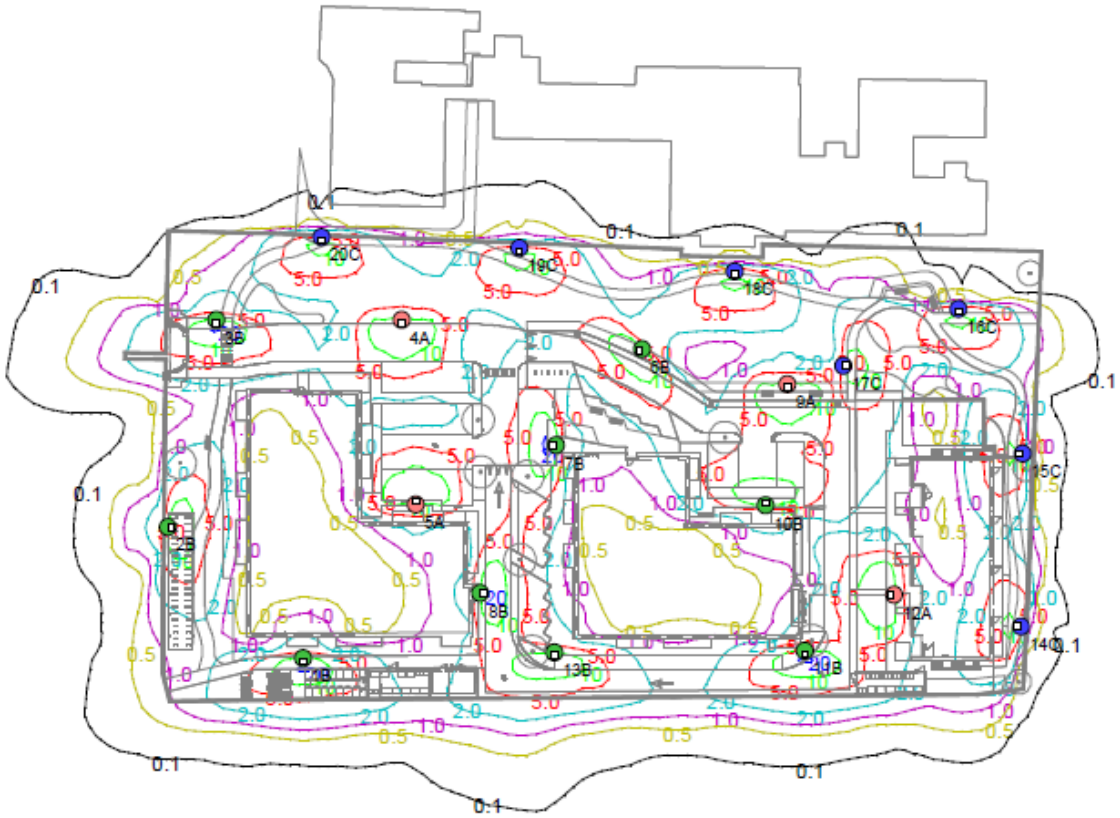
6.1 Horizontal Illuminance (lux) – Road & Paths



Results

Eav	5.56
Emin	1.09
Emax	21.98
Emin/Emax	0.05
Emin/Eav	0.20

6.2 Horizontal Illuminance (lux) – Road & Paths

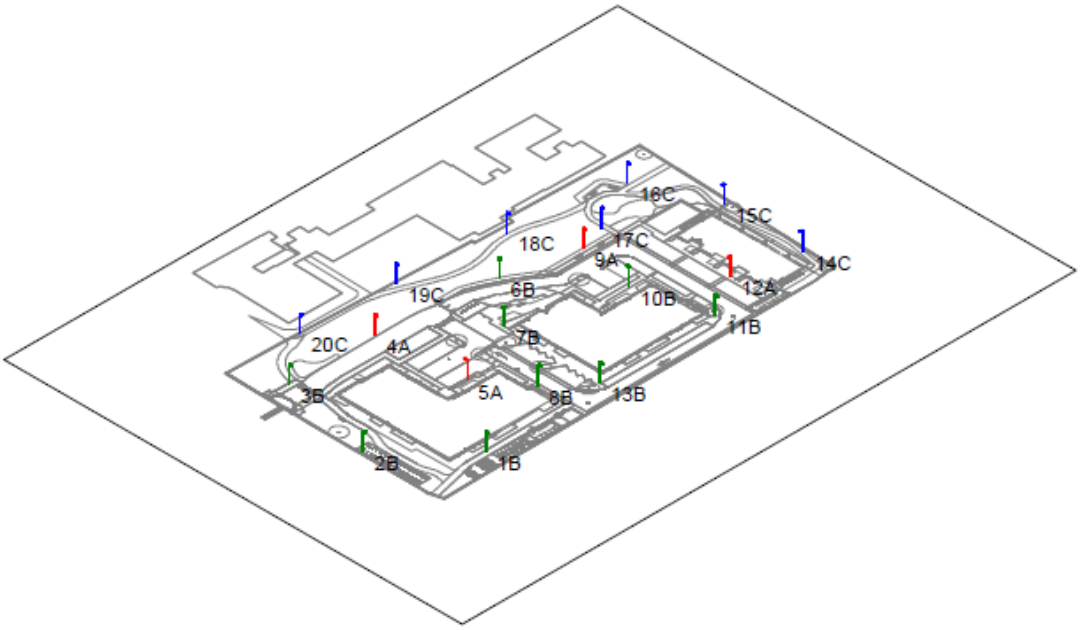


Results

Eav	5.56
Emin	1.09
Emax	21.98
Emin/Emax	0.05
Emin/Eav	0.20

6.3 Horizontal Illuminance (lux) – Road & Paths

6.4 Horizontal Illuminance (lux) – Road & Paths



Results

Eav	5.56
Emin	1.09
Emax	21.98
Emin/Emax	0.05
Emin/Eav	0.20

6.5 **Lux Point Levels**

Reference drawing MSM-FDE-60-SW-DR-EE-1000 for a full lux plot across the development.

7. Energy Efficiency

The design of Public Lighting with regard to the energy consumption has been carefully considered for the lifetime of the development.

- Low energy LED light fittings with high quality efficient lamps will provide considerable operational saving for the development.

- Greater energy savings will also result using the inbuilt multi-step dimming program during late hours of darkens along the public lighting spaces.

8. Ecological Impact Design Considerations:

Careful consideration has been given to the design of Public Lighting with regard to the existing natural habitat and the wildlife. The chosen luminaire Veelight Tech Series has a full cut off lantern type, that offers with a G6 Glare rating and no upward light making it dark sky friendly.

- An inbuilt multi step dimming program within this luminaire allows for night time hours to be dimmed by up to 25%. This means during peak hours of nocturnal foraging, feeding and activity the adjacent public lighting can be further designed to minimize impact on the local wildlife.

- The colour rendering of the selected light fitting is 2700k making the LED fittings a warmer light, helping to further minimize the impact on the local wildlife.

- Greater energy savings will also result using the inbuilt multi-step dimming program during late hours of darkens along the public lighting spaces.

- Unnecessary light spill controlled through a combination of directional lighting and luminaire optics design.

- No floodlighting will be used on the scheme.

The public lighting design references the following documents and best practice guides as outlined below:

- Bats and Lighting in the UK – Bats and the Built Environment Series (Institute of Lighting Professionals, September 2011;

- Guidance Notes for the Reduction of Obtrusive Light GN01 (Institute of Lighting Professionals, 2011.

- Bats and Lighting – Guidance Notes for Planners, Engineers, Architects and Developers (Bat Conservation Ireland);

- The Eurobats Mitigation of Lighting Document

Appendix.

City Streetlight

External Lighting

Modern functional LED luminaire, easy access for maintenance. Ideal for roadway applications.

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LED: Available in 10w to 36w LED (see ordering codes). CRI 70 4000K as standard. 3000K or other on request. Asymmetric street optic as standard. See ordering codes for more details.

Life: L90 B10 >100,000 hours. (at 25°C).

Driver: 220-240V AC 50/60 Hz. 700mA as Standard. 350mA, 500mA, 1050mA or custom setting on request. Lifetime (<10% failures): 100,000 hrs.

Mains Surge Protection: 10kV device included as standard.

Temperature: -30°C +50°C

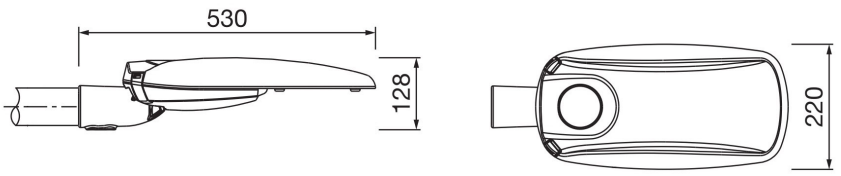
Options: Dimming, DALI, Photocell, various optics available. Internal Shield for reduced backlight available.

Manufactured: Ireland

Product Compliance: EN 60598; CE.

VeeLite

DIMENSIONS

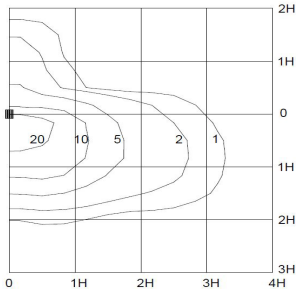


Weight: 6.9kgs EPA: 0.04m²

All Dimensions in mm.

APPLICATION GUIDE

City - Street Optic R03
36w 16LED @700mA 4000K
6m Height
Contours in Lux
M. Factor = 0.90



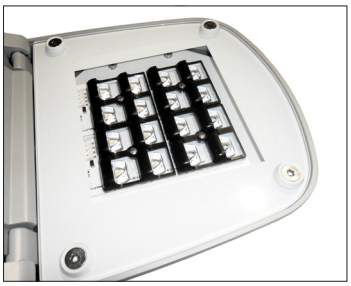
ORDERING CODE

Wattage	Type	Code - Size 1	Details	Lumens*
10w	8 LED	5CTA08LGC	City Streetlight, Street Optic R03, 350mA, 4000K	1305 lm
14w	8LED	5CTA08LGB	City Streetlight, Street Optic R03, 500mA, 4000K	1789 lm
19w	8 LED	5CTA08LGA	City Streetlight, Street Optic R03, 700mA, 4000K	2450 lm
14w	12 LED	5CTA10LGC	City Streetlight, Street Optic R03, 350mA, 4000K	1955 lm
19w	12 LED	5CTA10LGB	City Streetlight, Street Optic R03, 500mA, 4000K	2683 lm
27w	12 LED	5CTA10LGA	City Streetlight, Street Optic R03, 700mA, 4000K	3675 lm
18w	16 LED	5CTA12LGC	City Streetlight, Street Optic R03, 350mA, 4000K	2607 lm
26w	16 LED	5CTA12LGB	City Streetlight, Street Optic R03, 500mA, 4000K	3577 lm
36w	16 LED	5CTA12LGA	City Streetlight, Street Optic R03, 700mA, 4000K	4901 lm

* Luminaire lumen output, and will vary slightly depending on the optic used. Data shown for standard street optic R03

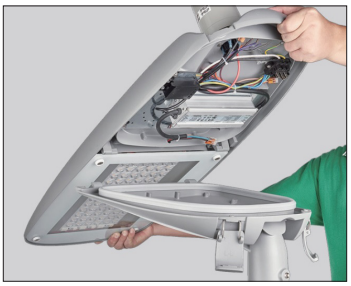
OPTIONS

RAL: Pls specify
D60: 60mm Mastfitter
PC: Photocell (NEMA)
DALI: DALI Dimmable
D4i: D4i Driver
2.7K: 2700K, Warm White
3K: 3000K, Warm White
1-10V: 1-10V Dimmable
CLO: Constant Lumen Output
PRO: Programmed Dimming
MS: Motion Sensor
R01: Street Optic R01
R02: Street Optic R02
R03: Street Optic R03
R04: Street Optic R04
R05: Street Optic R05
FTA: Forward Throw A Optic
FTB: Forward Throw B Optic
SYM: Symmetric Optic
PXL: Pedestrian Crossing Optic (Left)
IS: Internal Shield (for reduced backlight)



Internal Shields to Reduce Backlight

60mm Mastfitter Option



Easy Maintenance Access