

External Lighting Report,
The Martlets Shopping Centre, Burgess Hill

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The Martlets Shopping Centre, Burgess Hill

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I. Revision Schedule

Revision	Date	Comments
P01	28/04/25	Draft Issue
P01	02/05/25	Updated Issue

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2. Introduction

This report has been prepared to support the proposed redevelopment of the Martlets Shopping Centre, Burgess Hill. The report describes the extent of the proposed external lighting scheme, lighting levels, lighting controls and prospective light fittings.

3. Description of Development

Demolition of multi-storey car park, public library and offices. The conversion of existing buildings and erection of new buildings to provide, additional retail floor space (Class A1 – A5), residential units (Class C3) with undercroft car parking, a multi-screen cinema (Class D2), bowling alley (Class D2), gymnasium (Class D2), a hotel (Class C1), the reconfiguration and expansion of existing public car park, amendments to the site access, public realm improvements including landscaping, and other associated works (revision of DM/19/3331, previously DM/15/3858 and DM/18/1580).

To confirm, the scheme will comprise:

- New floorspace**

- A1 retail (including kiosk) = 2643 sq.m.
- A3 units (F&B) restaurant/café = 894 sq.m.
- Residential – 172 apartments
- Supermarket = 1,946.54 sq.m
- Hotel = 102 rooms

Leisure Block = 3,327.7 sq.m.

- Gym = 676.2 sq.m.
- Cinema = 1106.5 (185 seats in 4 screens).
- Bowling = 558.2 sq.m (5 alleys).
- A3 units (F&B) restaurant/café = 904.9 sq.m.

- Existing space**

- A1 retail (refurbished and retained) – 1,115.2 sqm
- A1/A3 retail/restaurant (refurbished and retained) – 517 sqm
- B1a office (change of use from A1) – 1,338.2 sqm
- D2 gym (change of use from A1) – 698.2 sqm

4. Lighting Design Criteria

4.1 Luminaire Technology

The external lighting scheme shall consist of energy efficient luminaires to meet energy efficient standards and BREEAM requirements of the project.

The scheme shall comprise of a various luminaire types with the primary and predominant lighting source being high efficiency LED.

4.2 CCTV Installations

Where CCTV is located the external lighting scheme shall be designed such that it will not impede in the operational and recording capabilities of the system, This may prohibit employing profiling/adaptive lighting levels and associated controls.

4.3 External Lighting Areas

External areas lighting design shall be in accordance with CIBSE Lighting Guide 6 (2016): The Exterior Environment, relevant British standards and Secured By Design commercial guide (2023).

The following areas shall be provided with external lighting and safety / security lighting:

- Covered and open pedestrian walkways
- Circulation spaces
- Surface Car Parks
- Access Roads
- Storage areas
- Bicycle Racks
- Service areas
- Stairways
- Basement car park area

4.4 External Light Levels (General)

Area	Lighting Level	Comments
Open pedestrian walkways	75 lux	BS5489 Part 1 (2020)
Enclosed arcade, canopied area	Day 250 lux Night 150 lux	BS5489 Part 1 (2020)
Surface car parks	10lux min	BS5489 Part 1 (2020)
Storage areas	50lux min	BS EN 12464-2 (2024)
Bicycle racks	5lux min	BS EN 12464-2 (2024)
Service areas	50lux min	BS5489 Part 1 (2020) BS EN 13201 (2016) BS EN 12464-2 (2024)
Stairways	75lux	BS5489 Part 1 (2020) Part of open walkways.

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Basement (covered) car parks

75lux min

BS EN 12464-1 (2014)

Below are screenshots illustrating the lighting design concept in the various areas of the development. The later full lighting design will include a layout plan showing vertical and horizontal illuminance & a schedule of the luminaires equipment in the design.

4.5 External Car Park Lighting

The external Car Park Lighting shall be by LED luminaires fitted to 6m to 10m steel columns (as required), generally 6 metre. The proposed car park fitting shall be as DW Windsor Kirium Pro or similar. The layout will, where possible, continue the spacing and arrangement of the adjacent car park to reduce the visual impact of the new columns. Typical details of prospective fittings are detailed within the [External Car Park Lighting](#) appendices.

During the design process the final light fitting requirements shall be reviewed to ensure that the most appropriate energy efficient units are utilised, there by ensuring that the minimum of fittings are employed to prevent over lighting.

All fittings where possible shall be of the low glare / minimum light pollution types and suitable IP rating.

Figure 1 - New External Car Park Lighting Area



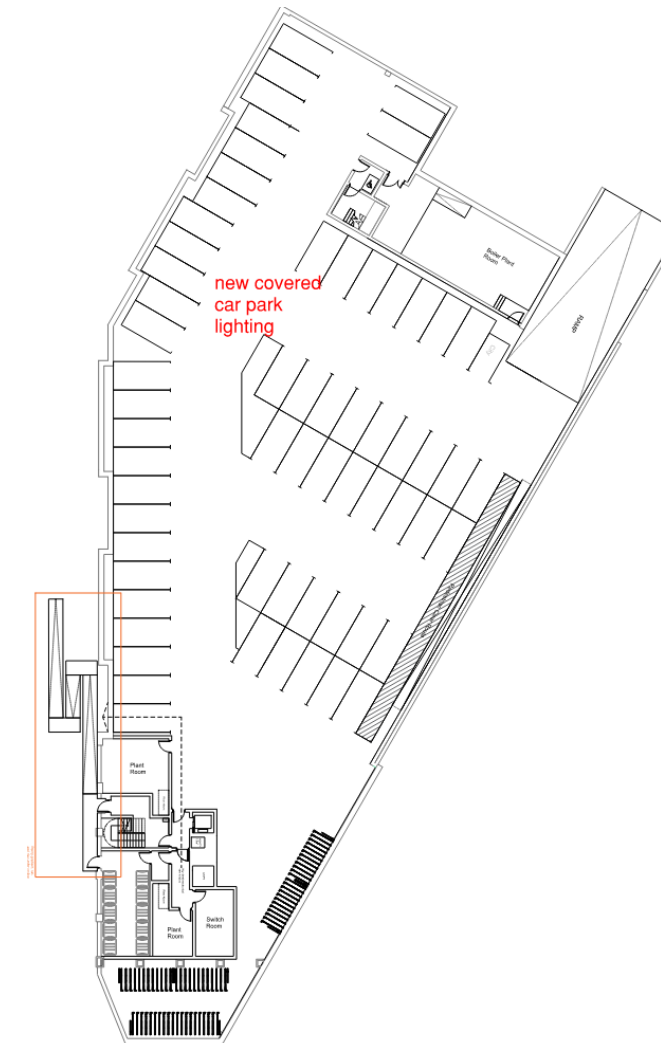
4.6 Under Cover Parking.

The under-cover parking shall comprise of linear or circular LED fittings.

All fittings where possible shall be of the low glare / minimum light pollution types and suitable IP rated. Also, the installation shall provide shall a luminous efficacy of circa 60 lamp lumens/circuit Watt. The lamp shall have a minimum colour rendering index (Ra) of 60.

Typical details of prospective fittings are detailed within [Covered Car park Lighting](#) appendices.

Figure 2 - New Covered Car park Lighting Area



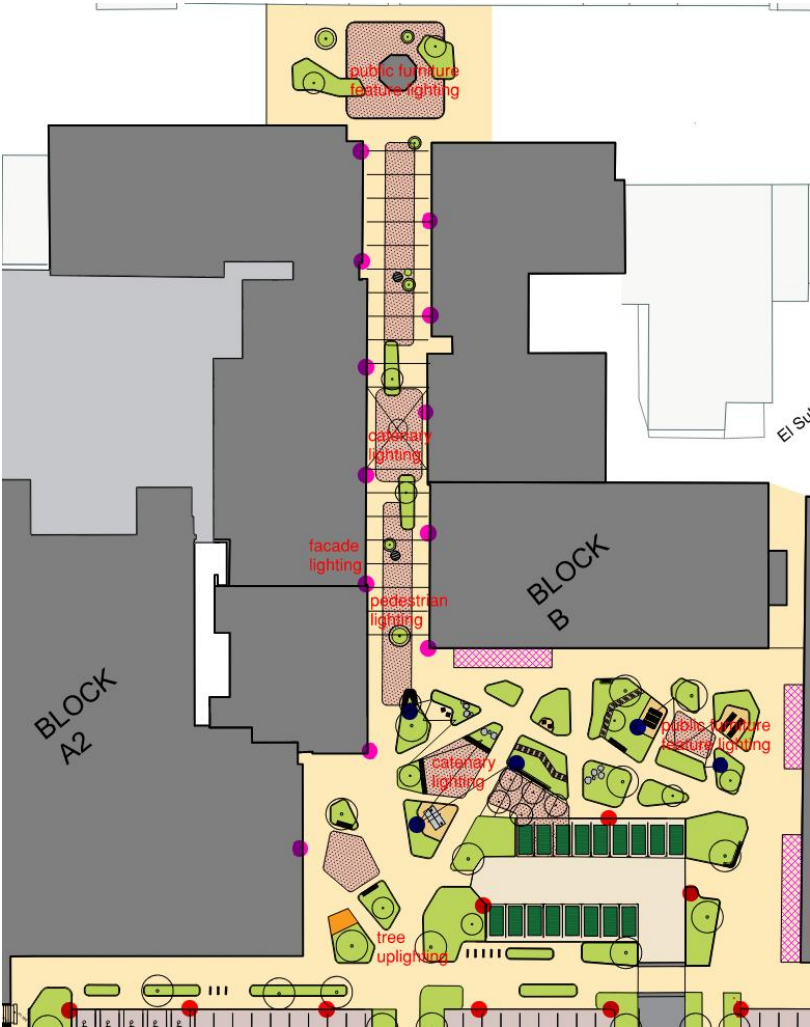
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4.7 Pedestrian Lighting

A mixture of facade mounted luminaires, inground recessed and catenary type lighting shall be provided. The overall scheme shall provide a luminous efficacy of circa 60 lamp lumens/circuit Watt, the lamp shall have a minimum colour rendering index (Ra) of 60.

Architectural lighting shall also be provided for seating / steps and building facade which will be developed with the Architect. Typical details of prospective fittings are detailed within [Pedestrian Lighting](#) appendices.

Figure 3 - Pedestrian Lighting Area



4.8 Light Pollution

To ensure that night-time lighting is concentrated in appropriate areas and that upward lighting is minimised, external lighting shall be designed in accordance with the following recommendations where possible:

The external lighting design shall be in compliance with Table I of the ILP Guidance notes, for the reduction of obtrusive lighting, GN01 (2021).

In addition in accordance with West Sussex Policy DP29 (Light Pollution), with the validation checklist referencing the Light Pollution PPG; referring to the Institution of Lighting Engineers (ILE) "Guidelines for the Reduction of Light Pollution" using low-impact lighting warmer colour temperatures.

Illuminated wayfinding and advertisements shall be in compliance with ILP TR05 (2014) – The Brightness of Illuminated Advertisements.

All external lighting (except for safety and security lighting) shall be automatically switched off between 2300 and 0700, via an adjustable time switch arrangement (subject to operational requirements of the centre). Refer to [Automatic Lighting Control](#).

Any safety or security lighting is used between 0000 and 0700, shall comply with the lower levels of lighting recommended during these hours in Table I of GN01 2021. Refer to [Automatic Lighting Control](#).

4.9 Automatic Lighting Control

4.9.1 Control Methodology

All external lighting shall be arranged into zoned areas and fed from the most local supply source using multiple circuits to minimise cable lengths and cross-sectional areas of conductors.

At each supply source the outgoing lighting circuits shall be switched by via contactors which in turn shall be controlled via an astronomical time clock / Photo Electric Cell configuration with manual override facility. All lighting controls maybe grouped at a central location depending on the final management centre operational requirements (i.e. the controls would be located within the centre management. Security offices).

A typical lighting control arrangement is shown in [Section 5.2 Typical Lighting Control Block Schematic](#).

Timing equipment shall be fully adjustable to suit centre and local requirements.

4.9.2 Timings

The external lighting would be switched within the following time bands:

Fittings / Area	Time Zones	Comments
General external car park lighting (except safety and security lighting)	ON 15:00 [if light levels high PEC will prevent ON signal]	Light levels switched in accordance with the recommendations of the Institute of Lighting Professionals (ILP, PLG08 GUIDANCE ON THE APPLICATION OF ADAPTIVE LIGHTING WITHIN THE PUBLIC REALM, 2016)
	OFF 00:00	
	ON 06:00 [if light levels high PEC will prevent ON signal]	
General external pedestrian lighting (except safety and security lighting)	OFF 09:00	
	ON 15:00 [if light levels high PEC will prevent ON signal]	
	OFF 0:00	
Safety and security lighting	ON 06:00 [if light levels high PEC will prevent ON signal]	
	OFF 09:00	
	ON 00:00	
Under cover parking	OFF 06:00	Switched in groups by PIR's.
	24/7	

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5. Appendices

5.1 Typical Luminaires & Mounting Details

The following product details are typical units. Final selection would be determined on availability, technical suitability and architectural choice.

5.1.1 External Car Park Lighting



Kirium Pro

Kirium Pro

IP66 | IK08 | CLASS I | CLASS II

Features:

Our most comprehensive range of LED road lanterns, available in 4 sizes
Extensive optical solutions; introducing Diamond+ the ultimate in flexible, precise lighting control. 23 standard optical solutions available
Simple, speedy and safe installation and maintenance via tool-free, quick-release latches. Lift-off head and automatic electrical disconnect

Options:

Kirium Pro Mini (4 / 8 / 16 LEDs) for mounting at 4-6 metres
Kirium Pro 1 (8 / 16 / 24 / 32 LEDs) for mounting at 5-8 metres
Kirium Pro 2 (32 / 48 / 64 LEDs) for mounting at 6-10 metres
Kirium Pro 3 (64 / 80 / 96 / 128 LEDs) for mounting at 8+ metres

Diamond+ Optical Control:

Diamond+ A Optic - Wide Road (A1, A2, A3, A4, A5)
Diamond+ B Optic - Footpath (B1, B2, B3, B4, B5)
Diamond+ C Optic - Area (C1, C2, C3, C4, C5)
Diamond+ D Optic - Standard Road (D1, D2, D3, D4, D5)
Diamond+ Z Optic - Pedestrian Crossing (ZL, ZR, ZF)
Optional obtrusive light shield(s) available and can be fitted post installation without opening the luminaire

Light Source:

High power LEDs

L90 lifetime prediction:

In excess of 100,000 hours

Total luminaire lumens:

Kirium Pro Mini: 320-5734lm
Kirium Pro 1: 839-12284lm
Kirium Pro 2: 2372-24315lm
Kirium Pro 3: 4762-46109lm

Colour temperature:

2700K / 3000K / 3500K / 4000K

Colour rendering index:

70Ra / 80Ra

Drive current:

From 200mA - 1000mA (in 50mA increments)

Mounting:

Post top [80-76mm Ø]
Side entry [34-42mmØ]
Post top/side entry inclination: -15° -10° -5° 0° +5° +10° +15°
Adaptors available for various spigot diameters

Control:

CLD: Constant Light Output enabled - for energy savings and dependable light throughout the lifetime of the luminaire
Smart City Sensor Ready: Able to support new Sensor Ready (SR) products
Switch: On/off through conventional PEC, Miniature or Nema
Dim: Factory set dimmed / customer specified dimming
CMS: Compatible with all available CMS systems

Colours:

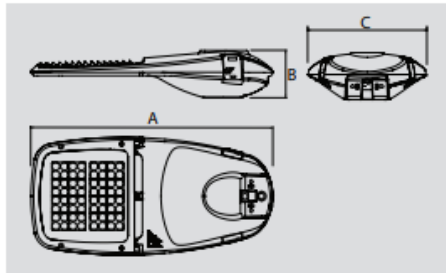
RAL 9005 Black
RAL 7046 Grey
RAL 7035 Light Grey
Other RAL colours on request

Materials:

Body: High pressure die cast aluminium (LM6)
Glazing: Toughened low iron glass
Seals: Silicone
Finish: Polyester powder coat

Installation and maintenance:

Available with various cable tail options prefitted
New short form UMSUG codes available on the website
Operational temperature range: -45°C to +50°C
Surge protection: 10kV



	Dimensions (mm)			Weight (kg)	CdS (m²)
	A	B	C		
Kirium Pro Mini	390	80	227	3.6	0.021
Kirium Pro 1	690	140	350	7.1	0.039
Kirium Pro 2	720	140	350	9.5	0.034
Kirium Pro 3	1010	167	415	17.5	0.066

Kirium® Pro is a registered design

Due to continuous product development the details within this brochure are subject to change at any time, please contact us for the most up-to-date information or visit: www.dwindsor.com
*Please note, features are applicable to core Kirium Pro range only and not to the Kirium Pro Mini.

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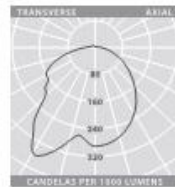
5.1.2 Covered Car park Lighting



PHOTOMETRIC GUIDE

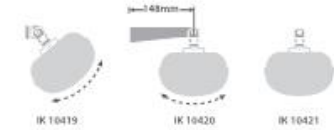


30W
Luminaire Lumen Output:
30W = 4870 lm



60W
Luminaire Lumen Output:
60W = 9470 lm

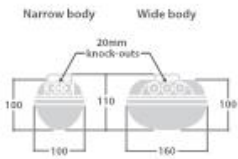
ACCESSORIES



DESCRIPTION	CAT. No.	APPROX. kg
IP65 20mm weatherproof compression gland kit with sealing washers	IK 6389	0.02
Stainless steel adjustable bracket (Short) - two per pack	IK 10419	0.13
Stainless steel adjustable bracket (148mm long) - two per pack	IK 10420	0.24
Stainless steel adjustable hook - two per pack	IK 10421	0.05
Stainless steel cover clip - ten required per luminaire	TP 10541	



DIMENSIONS



THOROPROOF

DIRECT

Pair of stainless steel brackets supplied. Provides clearance for thermal expansion and fixing.

PENDANT

Pair of steel spring loops supplied

Wide body

Narrow body

ANTI-CORROSIVE POLYCARBONATE LUMINAIRES

IP65 IP54 SMART VERSION CE LED

SPECIFICATION

- High-impact and corrosion-resistant light grey, injection moulded polycarbonate body
- Frosted prismatic polycarbonate cover
- Body and cover fire-retardant
- Smooth easy-clean lines
- Snug-fit polycarbonate cover clips (stainless steel option)
- Fast installation via external stainless-steel brackets preserves IP rating
- Complies with M.O.D. JSP482 Chapter 8 Document for 'Category C' areas
- Complies with food production standards IFS and HACCP
- SmartScan wireless technology removes the need for control cabling. Ideal for retro-fit
- Fitted with 4000K LEDs

RANGE

	NOMINAL SIZE (mm)	LED	CAT. No.	LENGTH (mm)	FIXINGS	APPROX. kg	CIRCUIT
SMART	1500	30W ■	TP 16486	1570	1150mm centres	2.5	D/SS
		60W ▲	TP 16487				
STANDARD	1500	30W ■	TP 15906L	1570	1150mm centres	2.4	D/SS
		60W ▲	TP 15907L				

FACTORY FITTED THROUGH WIRING - add 'TW' after catalogue number eg. TP 16486LTW

CIRCUIT TYPE - suffix catalogue number with:
SMART D - Smart / SS - SmartScan
STANDARD L - non-dimming (LED) e.g. TP 16486SS etc.

EMERGENCY VERSION - prefix catalogue number with:
ETP - Emergency (Not available when selecting the 'SS' suffix)
TTP - AutoTest (Not available when selecting the 'SS' suffix)
WTP - SmartScan (Only available when selecting the 'SS' suffix)
e.g. WTP 16486SS etc.
Add 0.3kg to weights listed.

■ Narrow body
▲ Wide body

LED CHARACTERISTICS

CRI	80+
COLOUR TEMPERATURE	4000K
RATED LIFE (HOURS)	100K - L70/B10
PROTECTION	-
DRIVER EFFICIENCY	>88%
REPLACEABLE	YES
POWER FACTOR	>0.95
LL/CW	139.3

For LED characteristics explanation see www.thorlux.com/led-guide

AMBIENT OPERATING TEMPERATURES

LED	STANDARD/SMART		EMERGENCY	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
30W	-20°C	50°C	0°C	25°C
60W	-20°C	40°C	0°C	25°C

For ambient temperatures below the stated minimum contact the Thorlux Technical department

SmartScan Configurations

Find out more at www.thorlux.com/smartsan

WEB LINKS

www.thorlux.com/controls

1

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5.1.3 Pedestrian Lighting
Catenary fitting (refer to picture insert)



Kingfisher Lighting

Datasheet

Italo 2 Urban

The Italo 2 Urban gives high performance, versatility and a wide variety of optics. The body styling is designed with urban and amenity applications in mind.



Key Features

- 525mA & 700mA
- Efficacy 138 luminaire lm/W
- 4000K, CRI >70
- Lifetime >100,000hr L80
- Post-top 60mm only
- Driver included
- Suspended mount option



Applications

- Area lighting
- Car parks
- Parks & plazas
- Urban environments

Italo also available in street and flood options.
See separate datasheets for details.

Buried ground uplighter.



Kingfisher Lighting

Datasheet

Inground

The Inground series is an LED luminaire for in-ground installation for a variety of architectural applications.



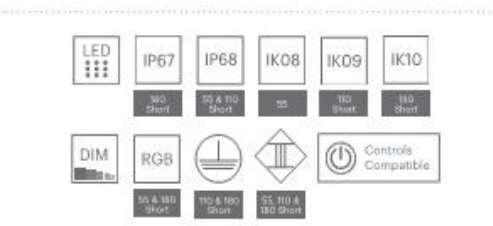
Key Features

	Luminaire Lumens	LED Lumens	Power	Efficacy
Inground 55	310 - 390	520 - 560	4W (3W RGB)	142 luminaire lm/W
Inground 110 Short	100 - 410	320 - 530	1.8W - 4W	131 luminaire lm/W
Inground 180 Short	270 - 840	1,100 - 1,300	9W - 10W	131 luminaire lm/W

- 350mA
- 3000K, 4000K, CRI >70
- Lifetime >50,000hr L80
- Recessed floor fitting
- Remote drivers required
- RGB option (55 & 180 Short only)
- Inground 110 Short & Inground 180 Short - fixtures with stainless steel trim are suggested for walk-over or drive-over applications. Upon request fixtures can be supplied with anti-slip glass.

Applications

- Paths & walkways
- Stairwells
- Pedestrian areas
- Accent lighting
- Retail
- Hotels & leisure
- Bars & restaurants
- Gardens & landscaping



Optics

Inground One-way, radial illumination

See page 6, 7 and 8 for optic diagrams.

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Furniture fitting.



Key Features

- Luminaire Lumens 1,150-3,100
- LED Lumens 2,000-4,300
- 500mA
- Power 18W-36W (20W-40W RGB)
- Efficacy 126 luminaire lm/W
- 3000K, 4000K, CRI >80
- Lifetime >50,000hr L80
- Wall & floor mounted
- Driver included



Optics

Fila Symmetrical, one-way illumination



Applications

- Façades including wall-washing
- Stairwells
- Pathways & pedestrian areas
- Retail
- Hotels & leisure
- Bars & restaurants
- Refrigerating rooms & back of house

kingfisherlighting.com | 01623 415900 | sales@kingfisherlighting.com
KF Fila VERSION 2

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Façade lighting.



Specification Text

The luminaire shall be manufactured from high pressure die-cast aluminium. It shall have an LED efficacy of up to 114.2 luminaire lm/W and will be capable of producing up to 1,542 luminaire lumens at 4000K with a CRI >70. It shall have an asymmetric forward throw optic and is rated at IP65 and IK10.

Specification

Weight: 4.26kg Max.
Windage: 0.05m² Max.
Material: Die-cast Aluminium
Paint Finish: Anthracite Grey

Key Features

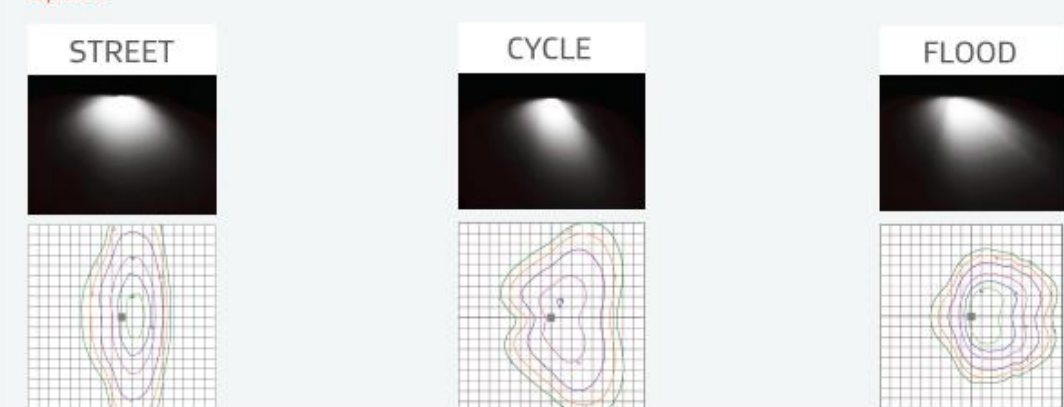
- 7.5W & 13.5W
- 857 - 1542 Luminaire Lumens
- Efficacy up to 114.2 lm/W
- 2700K, 3000K & 4000K
- Lifetime >100,000hr L80
- Asymmetrical
- Dali Dimmable options



Dimensions



Optics



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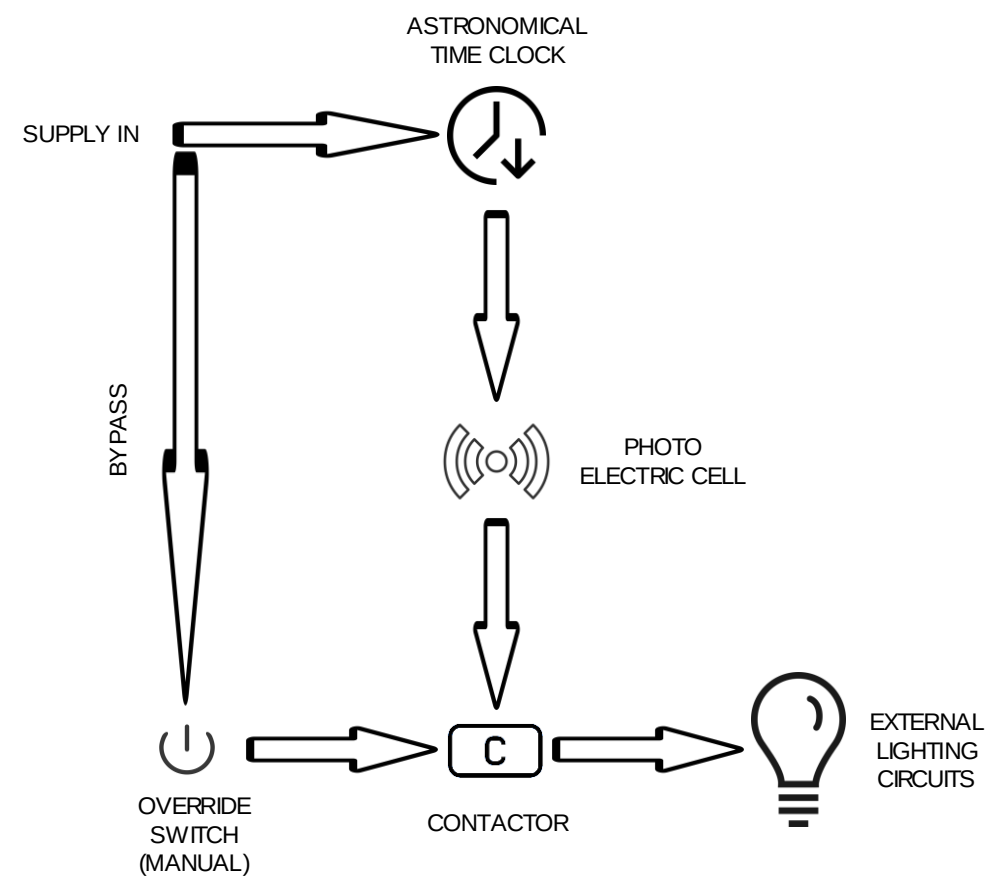
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5.2 Typical Lighting Control Block Schematic

5.2.1 Generic Controls Schematic



5.2.2 Generic Cause and Effect

Cause	Effect
Time clock within ON time zone	Supply to Photo Electric Cell = "ON"
External lighting level below photo electric cell threshold	Supply to contactor = "OFF"
Time clock within OFF time zone	Supply to Photo Electric Cell = "OFF"
External Lighting level above photo electric cell threshold	Supply to contactor = "ON"
Supply to contactor ON	External lighting = "ON"
Supply to contactor OFF	External lighting = "OFF"
Override switch OFF	Supply to Contactor = "OFF" thus supply to external lighting = "OFF" unless "ON" supply from photo electric cell.
Override switch ON	Supply to Contactor = "ON" thus supply to external lighting = "ON" regardless of "ON or OFF" supply from photo electric cell.