

Spencers Wood Primary School External Lighting Strategy

Report Title: External Lighting Strategy
Report Status: Final
Project no. RSS1075
Date: July 2024

Quality Control: Revisions

Version	Date	Issued By
Final	17/07/24	DT

Executive Summary

The proposed development is for the delivery of a new primary school with associated hard and soft landscaping. Full details of the development should be referred to within other documents forming this reserved matters application.

The development site is located at Church Lane, Hyde End Lane and Hyde End Road, Three Mile Cross, Spencer's Wood, RG7 1TL (Grid ref: SU 77741 93130).

The proposed development site measures approximately 2.2ha and consists of grassland and recently cleared / bareground. No buildings or mature trees are located within the development boundary.

The site is considered to be of moderate potential for foraging and traversing bats, due to the open parcels of grassland, suitable connecting habitats (woodland and grassland) and high records of common species within the local landscape. Bat species are light sensitive, and the proposals must incorporate an appropriately designed landscaping scheme, that will enhance the site for traversing and foraging bats.

This report has been written in order to discharge condition 44 of the outline planning application reference F/2013/0347.

The strategy for external lighting within the primary school is consistent with the Outline Hedgerow Management Strategy – Final Report P11/06 (EPR, December 2012).

The lighting has been designed to provide the minimum level to meet legal and safety requirements and to prevent light pollution wherever possible.



Aerial view of the development site and surrounds

Methodology

The external lighting has been designed according to the following key prescriptions:

- Artificial lighting has been provided to the minimum level to meet legal and safety requirements.
- Non-reflective surfaces have been used within the area to be lit in order to minimise indirect (reflected) spillage of light. Planting is used at boundaries to add screening.
- Lighting will be time controlled and will not be on when the school is not occupied.
- LED lighting has been specified which provides no UV output. White and blue wavelengths of the light spectrum have avoided to reduce insect attraction and where light sources are required in order to manage the blue short wave length content, they are of a warm/ neutral colour temperature <4,200 kelvin.
- Luminaires have been designed and oriented to restrict light directionality only to the areas necessary. This includes double asymmetrical luminaires and full horizontal cut-off designs to prevent light spill.
- In pedestrian or cycleway areas, lights are low-level cowled lighting design.

The drawing overleaf illustrates the site wide external lighting plan and indicates the different types of luminaire used in the development proposal.

Whitecroft luminaire data sheets are included on following pages.

Luminaire key

-  Mistral Medium post top luminaire
-  Mistral Small post top luminaire
-  Mirage soffit recessed LED luminaire
-  Kolo 1000mm black LED bollard
-  Spectre wall mounted cylindrical luminaire

Spencers Wood Primary School External Lighting Plan



Mistral Medium

Whitecroft
lighting

140+
LL/CW

IK08

IP66



Mistral Midi

Overview

Mistral Medium is a post-top luminaire crafted to meet lighting standards while being environmentally conscious. Offering diverse light distributions and colour temperatures of 2700K and 4000K, it ensures optimal illumination and safety in any outdoor space. Designed with sustainability in mind, this luminaire reduces energy consumption and minimizes light pollution, positively impacting both the environment and community well-being.

Mistral Medium can be mounted on the side or top of a compatible column, or on a wall mounting bracket (supplied separately). It features a robust die-cast aluminium housing with 4mm clear tempered glass, a ventilation gland, and a durable polyester powder coat finish. A galvanized adapter is available for order to reduce the column top diameter from 76mm to a 60mm diameter ensuring simple, hassle free installation.

Lighting performance

- Special design, clear, acrylic (PMMA) optic lens

- 4mm thick, clear tempered glass
- Colour temperature options
 - 2700K LED as standard
 - 4000K LED available
- Light distribution
 - Area optics
 - Square optics
- Light output
 - 13600lm-18300lm (95W-161W)
- Efficacy up to 153 LL/CW
- Adjustable tilt between -10° and +10° at 5-degree intervals

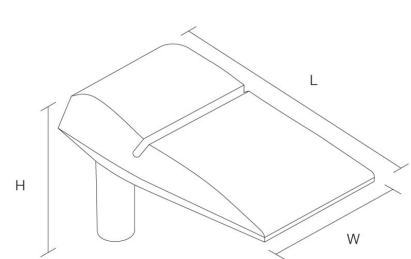
Construction

- Electrostatic powder coating, resistant to UV rays.
- IP66
- Impact resistance
 - BODY: IK10
 - GLASS: IK08
- Finished in Jet black RAL9005
- Suitable for ambient temperatures between -40° and +40°
- Fixed output or DALI dimming driver option
- Zhaga Book 18 socket available
- Wide range of lighting columns and accessories available. See ‘columns’ pages for details
- 76mm to a 60mm diameter luminaire entry adapter available

LED Performance

Colour Temp	RA (CRI)	Life expectancy	Colour consistency
2700K	70	L80B10>93,000hrs	MacAdam 3 SDCM
4000K	70	L80B10>93,000hrs	MacAdam 3 SDCM

Dimensions



VERSION	L	W	H	KG	Side windage (m2)
All versions	550	344	266	8.9	0.06

Mistral Small



High performance LED post top luminaire for road, pathway and area lighting.



Overview

Introducing Mistral Small, our post-top luminaire developed to meet lighting standards whilst being environmentally conscious. Offering diverse light distributions and colour temperatures of 2700K and 4000K, Mistral ensures optimal illumination and safety in any outdoor space. Designed with sustainability in mind, Mistral reduces energy consumption and minimises light pollution, positively impacting both the environment and community well-being.

Mistral Small can be mounted from the side, on top of a compatible column, or on a wall mounting bracket (supplied separately). Designed for longevity, Mistral features a robust die-cast aluminium housing with 4mm clear tempered glass, a ventilation gland, and a durable polyester powder coat finish. A galvanized adapter is available for order to reduce the column top diameter from 76mm to a 60mm diameter ensuring simple, hassle free installation.

Lighting performance

- Special design, clear, acrylic (PMMA) optic lens
- 4mm thick, clear tempered glass
- Colour temperature options
 - 2700K LED as standard
 - 4000K LED available
- Light distribution
 - Road optics
 - Pathway optics
 - Area optics
- Light output
 - 3000lm-8600lm (18W-73W)
- Efficacy up to 168 LL/CW
- Adjustable tilt between -10° and +10° at 5-degree intervals

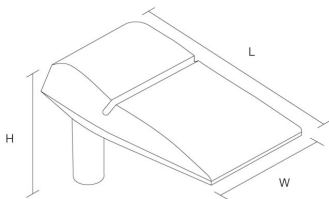
Construction

- Aluminium injection housing
- Electrostatic powder coating, resistant to UV rays.
- IP66
- Impact resistance
 - BODY: IK10
 - GLASS: IK08
- Finished in Jet black RAL9005
- Suitable for ambient temperatures between -40° and +40°
- Fixed output or DALI dimming driver option
- Zhaga Book 18 socket available
- Wide range of lighting columns and accessories available. See 'columns' pages for details
- 76mm to a 60mm diameter luminaire entry adapter available

LED Performance

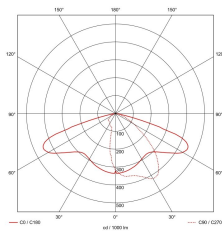
Colour Temp	RA (CRI)	Life expectancy	Colour consistency
2700K	70	100,000 hrs at L90B10	MacAdam 3 SDCM
4000K	70	100,000 hrs at L90B10	MacAdam 3 SDCM

Dimensions

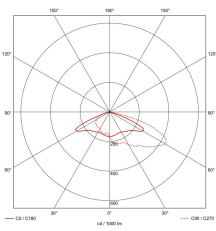


VERSION	L	W	H	KG	Side windage (m2)
All versions	422	288	269	6.3	0.05

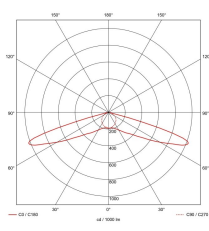
Photometric Performance



Road Optics
LOR = 100%



Area Optics
LOR = 100%



Path Optics
LOR = 100%

To Specify

Post Top luminaire for side or post top mounting on to compatible column or wall mounting bracket (supplied separately). Die cast aluminium housing with 4mm clear tempered glass, ventilation gland and finished in polyester powder coat. – as Whitecroft Lighting MISTRAL SMALL

Mirage LED IP65

Ceiling recessed LED luminaire for outdoor applications



Optics

- Light output options:
 - 2500 lumens, 21W - 4000K
 - 2325 lumens, 21W - 3000K
- Wide beam symmetrical distribution
- 3000 and 4000K colour temperature options

Body

- Die-cast aluminium body and bezel
- IP65, IK10 rated protection
- Finished in Anthracite Grey
- Clear flat acrylic diffuser in bezel
- Matt anodised aluminium reflector
- Supplied complete with driver contained within main body
- To suit ceiling thickness 5 – 50mm
- Dali dimming driver as standard

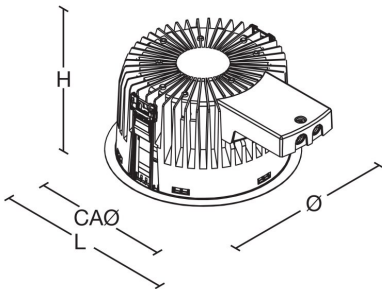
Order codes

Description	Code	LL/CW	L80	L90
LED 4000K, 2500 lumen,21W	M6Y14K	119	>100k	>100k
LED 3000K, 2325 lumen, 21W	M6Y13K	110	>100k	>100k

LED Performance

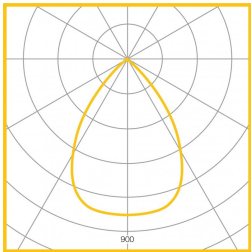
Colour Temp	RA (CRI)	Colour consistency
4000K	>80	MacAdam 3 SDCM

Dimensions



L	H	KG	Ø	Cut Aperture
270	147	2.3	220	210

Photometric Performance



21W 2500 Lumen
LOR = 100.0%

To Specify

IP65/IK10 Recessed LED downlighter with aluminium body, clear diffuser and DALI driver. With wide beam distribution – as Whitecroft Lighting MIRAGE LED IP65.

Kolo Bollard

Robust and weatherproof versatile LED bollard



Kolo Bollard Asymmetric Black



Kolo Bollard 1000mm Black



Kolo Bollard Root Mount



Kolo Bollard 1000mm Silver

Optics

- Light output options, symmetric 4000K versions:
 - 404 lumens (648mm high versions)
 - 404, 709 or 1500 lumens (998mm high version)
- Emergency output:
 - 300 lumens - symmetrical optic
- 3000K options
- 360 degree distribution (symmetric) or 180 degree distribution (asymmetric)

Body

- Die cast aluminium lid and extruded aluminium body
- IP66 IK10 rated protection
- Finished in Black RAL 9005 or Silver RAL 9006
- High grade paint finish, suitable for inland and coastal applications
- Moulded polycarbonate diffuser
- Spun internal reflector
- Anti-condensation ventilation valve
- DALI driver as standard
- Planted root and flange mounted versions
- Integral 3 hour and DALI addressable emergency options on 998mm high body
- Emergency variants supplied with Lithium Iron Phosphate (LiFePO4) battery technology; featuring extended design life reducing replacement frequency to lower total cost of ownership, and advancing sustainability through support for end of life recycling
- Integral Air Control module available for use with Air Control Outdoor wireless presence/daylight detector
- IP65 versions require TORX6-KEY for connecting plug terminals

Order codes

Root Mounted, symmetric, black, 4000K

B50					
Version	Order Code	3hr Emergency	LL/CW	L80	L90
648mm high, 404 lumen, 4.2W	BLY114KSRB	N/A	96	54k	49k
998mm high, 404 lumen, 4.2W	BLY214KSRB	BLY214KSRBLEM	96	54k	49k
998mm high, 709 lumen, 6.6W	BLY224KSRB	BLY224KSRBLEM	107	54k	49k
998mm high, 1500 lumen, 13.8W	BLY234KSRB	BLY234KSRBLEM	108	54k	49k

Root mounted, asymmetric, black, 4000K

B50					
Version	Order Code	3hr Emergency	LL/CW	L80	L90
648mm high, 410 lumen, 5.2W	BLY114KARB	N/A	79	54k	49k
998mm high, 410 lumen, 5.2W	BLY214KARB	BLY214KARBLEM	79	54k	49k
998mm high, 703 lumen, 9.1W	BLY224KARB	BLY224KARBLEM	77	54k	49k

Options

Description	How to change	For example
3000K LED	Change '4K' to '3K'	i.e. BLY113KSRB
Air Control Module	Add 'AC' before 'Y'	i.e. BLACY114KSRB
Silver finish	Change 'B' to 'S'	i.e. BLY114KSRS
Flange mounted body	Change 'R' to 'F'	i.e. BLY114KSFB
COMEPS addressable emergency (998mm high only)	Change 'EM' to 'EP'	i.e. BLY224KSRBEP

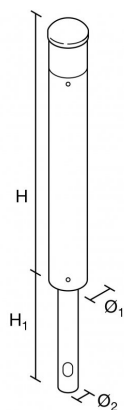
Accessories

Description	Order Code
Tool for IP65 connections	TORX6-KEY

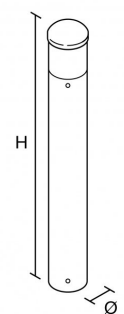
LED Performance

Colour Temp	RA (CRI)	Colour consistency
3000/4000K	>80	MacAdam 3 SDCM

Dimensions

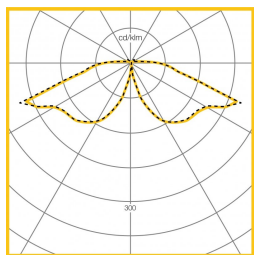


VERSION	H	H1	KG	KG(EM)	Ø1	Ø2
Root Mounted, tall	998	400	9.3	10.6	152	76
Root Mounted, short	648	400	7.5	8.8	152	76

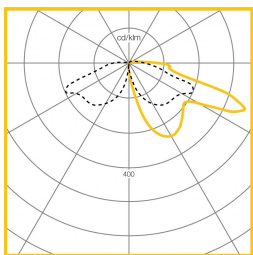


VERSION	H	KG	KG(EM)	Ø
Flange Mounted, tall	998	7.3	8.6	152
Flange Mounted, short	648	5.5	6.8	152

Photometric Performance



Symmetric
LOR = 100%
(ULR 6.1%)



Asymmetric
LOR = 100%
(ULR 4.9%)

To Specify

Robust and weatherproof illuminated bollard with aluminium body and clear polycarbonate diffuser. IK10, IP66 rated for maximum protection. Root or flange mounted with fitted lead and plug for easy installation - as Whitecroft KOLO BOLLARD

Spectre WR

Wall mounted cylindrical luminaire for outdoor applications



IK08

IP65



Optics

- Light output 2850 lumens (4000K - 26W)
- 100% downward distribution
- 4000K and 3000K LED options
- Bi-symmetrical 130° x 70° beam
- Zero light pollution
- 4mm thick, thermal shock resistant, tempered clear flat glass

Body

- Die cast aluminium
- Coated for corrosion and saline environment resistance
- For outdoor applications within 3km of the coast, an enhanced paint finish can be offered on request
- IP65 IK08 rated protection
- Requires wall mounting bracket (order separately)
- Finished in Graphite Grey with Silver/grey trim
- RAL Colour: Grey RAL7024. Silver/grey RAL9007.
- Fixed output driver as standard, DALI optional
- Suitable for ambient temperatures between -20°C to +40°C

Order codes

4000K LED	Code - Fixed Output	LL/CW	L70
LED 2850 lumen (26W)	SPRAH14K	121	60k

Accessories

Wall mounting bracket	SPRWMBRK
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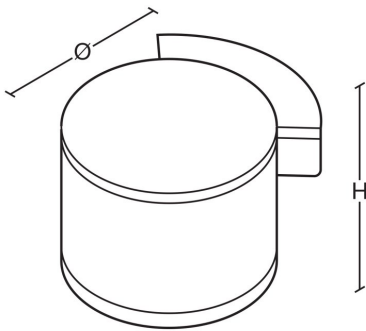
Options

DALI driver	Change 'H' to 'Y'	i.e. SPRAY14K
3000K LED	Change 4K to 3K	i.e. SPRAH13K

LED Performance

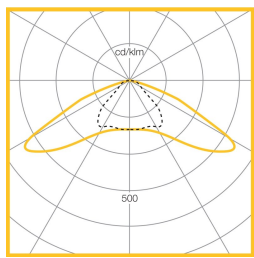
Colour Temp	RA (CRI)	Colour consistency
4000K	>80	MacAdam 4 SDCM

Dimensions



H	KG	Ø
225	4.5	256

Photometric Performance



4000K 26W 2850
Lumen
LOR = 100.0%



To Specify

IP65 Wall mounted cylindrical LED luminaire with die cast aluminium body. With downward distribution having zero upward light – as Whitecroft Lighting SPECTRE WR.

