Public Lighting Report

Proposed Development

at Bishop Lucey Park, Cork

Project No. H648

17th January 2021

Public Lighting Report

NOTICE

DOCUMENT CONTROL & HISTORY

OCSC Job No.: H648	Project Code	Originator Code	Zone Code	Level Code	File Type	Role Type	Number Series	Status/ Suitability Code	Revision
	H648	OCSC	XX	XX	RP	E	0001	S8	P01

Rev.	Status	Authors	Checked	Authorised	Issue Date
P02	S8	BOB	EO	EO	17.06.21
P01	S8	BOB	EO	EO	29.01.21

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1. INTRODUCTION

This report outlines the design criteria and considerations taken into account with regard to the lighting scheme within the proposed public realm scheme at Bishop Lucey Park, Cork.

The proposals include the renewal of Bishop Lucey Park, which is located in the medieval core of Cork city centre. The site is characterised by the presence of the medieval city wall to the east, an additional area of which will be exposed and celebrated as part of the proposals. A new water feature will be located adjacent to the eastern face of the city wall. To provide a focus to the space, the proposals include for the insertion of a plinth to the centre of the site. Also included is a new pavilion addressing the city wall, with a bridge proposed to take visitors from Grand Parade onto the plinth and onwards through the park. To the west, a new tower sits adjacent to South Main Street and a small shelter addresses Christchurch Lane to the Northwest. A small portal marks the threshold from Tuckey Street into the park. The proposals support the brief's aspiration for improving pedestrian permeability through the park, whilst also cultivating its legibility within the context of the wider city.

The report considers the lighting design as developed by O'Connor Sutton Cronin (OCSC), and should be read in conjunction with OCSC drawing number:
H648-OCSC-XX-XX-DR-E-0001

The drawing is provided to demonstrate:

- Compliance with DLRCC public lighting standards for areas to be taken in charge,
- Sets out design criteria for areas remaining under control of the management company.
- Compliance with BS 8300 regulations for lighting of access routes into the buildings.

Standards and guidelines in relation to the lighting design are:

- BS 5489-1-2013
- Cork City Council Public Lighting General Specification.
- BS 8300

The electrical services for the external lighting installation will be designed in accordance with ETCI National Rules for Electrical Installations ET101:2008.

2. THE DESIGN

The lighting design has been developed with the following principal considerations:

- Provide adequate illumination to contribute towards the safe use of Bishop Lucey Park.
- Achieve compliance with BS 8300:2018 - standard for the design of an accessible and inclusive built environment
- Provide the required illumination with minimum energy use.
- To control the lighting to prevent energy wastage.

All lighting within the area to be taken in charge is to be powered via a new lighting minipillar to meet CCC specification.

The minimum lux level is to be in compliance with BS5489-2013 while also taking into consideration BS8300 for accessibility.

As per BS5489:2013 the requirement for this Bishop Lucey park will need to meet lux levels described in Annex A for pedestrians and cyclists only as a P4 class.

In order to comply with BS8300:2018 it is required that sufficient light level is kept on all access routes as 5 lux average which is being met while achieving the P4 class as described above.

The luminaires to be LED, 1.5 S/P Ratio, 4000k CCT, LM80 >15 years using TM21-11 test results, driver current < 750mA, minimum IK08 impact resistance, at least IP65 ingress protection, as required by CCC specification.

The lighting shall be by individual electronic solid state photocell per luminaire, with test switch in column base, to CCC specification.

The luminaires proposed for these areas are combination of catenary lighting and low level feature lighting ineffective to the horizontal illuminance in order to comply with standards and regulations.

Any lighting columns shall be tubular type, galvanised steel, fully in accordance with CCC standard specification.

All wiring to be to CCC standard specification and to ETCI ET101 National Rules for Electrical Installations.

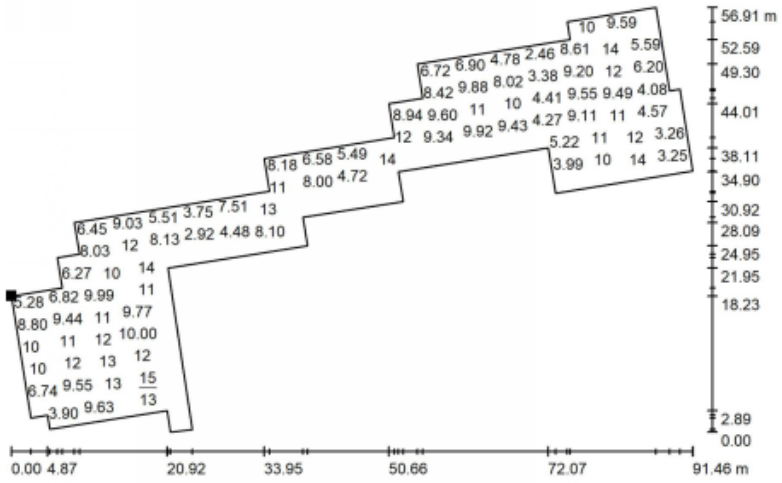
Calculation results are presented in the Appendix A.

The desired lighting design may also be achieved by other luminaires and the final lighting installation may use other luminaires, with modified positioning and aiming to achieve the same result. Manufacturers' stated performance characteristics are subject to change. Any changes to be agreed with CCC Public Lighting Department.

Manufacturer's data sheets for the selected luminaires are attached to this document as Appendix B.

Operator
Telephone
Fax
e-Mail

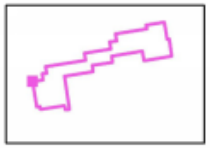
Copy of Exterior Scene 1 / Calculation Surface 1 / Value Chart (E, Perpendicular)



Values in Lux, Scale 1 : 654

Not all calculated values could be displayed.

Position of surface in external scene:
Marked point:
(48.943 m, 35.113 m, 0.000 m)



Grid: 1000 x 1000 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
8.22	1.10	15	0.133	0.074

APPENDIX A. CALCULATION RESULTS.

APPENDIX B MAUNFACTURERS DATA SHEET.

PHILIPS

Lighting

DigiStreet Catenary

BSP764 LED64-4S/740 DW10 PSD-SR SRT SRB

DigiStreet Suspended - LED module 6400 lm - 740 neutral white - Safety class I - Distribution wide 10 - Aluminum - Luminaire surge protection level until 6 kV differential mode and 6 kV common mode - Frame for recessed mounting

Philips DigiStreet Catenary is a new member of the DigiStreet Road & Street family, and it enables you to benefit from the same lighting quality, distinctive design and the advantages of connected lighting systems in applications requiring catenary solutions. Supporting Smart City initiatives, the full DigiStreet range can be equipped with two System Ready (SR) sockets to enable your city to opt in for existing and future controls, sensors and applications such as the Philips CityTouch remote light management system. ;In addition, each individual luminaire is uniquely identifiable, thanks to the Philips Service tag, which is based on QR coding. With a simple scan of the QR code, which is located on the inside of the mast door, you gain instant access to the luminaire configuration, making maintenance and programming operations faster and easier, throughout the luminaire's entire lifetime.

Product data

General Information	
Lamp family code	LED64 [LED module 6400 lm]
Light source color	740 neutral white
Light source replaceable	Yes
Number of gear units	1 unit
Driver/power unit/transformer	Power supply unit with DALI interface
Driver included	Yes
Optical cover/lens type	Flat glass
Luminaire light beam spread	52° - 7° x 151°
Control interface	DALI

Connection	-
Cable	-
Protection class IEC	Safety class I
Flammability mark	For mounting on normally flammable surfaces
CE mark	CE mark
ENEC mark	ENEC mark
Warranty period	5 years
Optic type outdoor	Distribution wide 10
Remarks	*-Per Lighting Europe guidance paper "Evaluating performance of LED based luminaires - January 2018":

	statistically there is no relevant difference in lumen maintenance between B50 and for example B10. Therefore, the median useful life (B50) value also represents the B10 value. SR compatibility: Luminaire prepared for SR drivers and socket, offering a standardized futureproof platform for connectivity and sensors. For SR based luminaires only SR Certified components/sensors are to be used (see also: http://www.lighting.philips.co.uk/oem-emea/products/driving-connected-lighting) . Functional compatibility of 2 (SR certified) components/sensors to be used in combination as well as override possibility of any lineswitch function used in a SR based luminaire, is to be released by the master component/sensor supplier. For the use of NEMA 7pin socket on a SR based luminaire a full system verification is required. Not following these advises can/will cause risk of damage and non-compliance for which Signify cannot take any responsibility. * At extreme ambient temperatures the luminaire might automatically dim down to protect components
Constant light output	No
Number of products on MCB of 16 A type B	10
EU RoHS compliant	Yes
Light source engine type	LED
Serviceability class	Class A, luminaire is equipped with serviceable parts (when applicable): LED board, driver, control units, surge protection device, optics, front cover and mechanical parts
Product family code	BSP764 [DigiStreet Suspended]

Light Technical

Upward light output ratio	0
Standard tilt angle posttop	-
Standard tilt angle side entry	-

Operating and Electrical

Input Voltage	220 to 240 V
Input Frequency	50 to 60 Hz
Inrush current	43 A
Inrush time	0.26 ms
Power Factor (Min)	0.97

Controls and Dimming

Dimmable	Yes

Mechanical and Housing

Housing Material	Aluminum die cast
Reflector material	-
Optic material	Polycarbonate
Optical cover/lens material	Glass
Fixation material	Aluminum
Mounting device	Frame for recessed mounting
Optical cover/lens shape	Flat
Optical cover/lens finish	Clear
Overall length	580 mm
Overall width	530 mm
Overall height	86.5 mm
Effective projected area	0.037 m²
Color	Aluminum
Dimensions (Height x Width x Depth)	87 x 530 x 580 mm (3.4 x 20.9 x 22.8 in)

Approval and Application

Ingress protection code	IP66 [Dust penetration-protected, jet-proof]
Mech. impact protection code	IK09 [10 J]
Surge Protection (Common/Differential)	Luminaire surge protection level until 6 kV differential mode and 6 kV common mode

Initial Performance (IEC Compliant)

Initial luminous flux (system flux)	5888 lm
Luminous flux tolerance	+/-7%
Initial LED luminaire efficacy	155 lm/W
Init. Corr. Color Temperature	4000 K
Init. Color Rendering Index	>70
Initial chromaticity	(0.382; 0.380) SDCM < 5
Initial input power	38 W
Power consumption tolerance	+/-11%

Over Time Performance (IEC Compliant)

Control gear failure rate at median useful life 100000 h	10 %
Lumen maintenance at median useful life* 100000 h	L98

Application Conditions

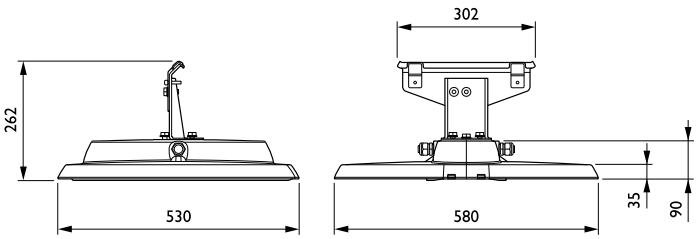
Ambient temperature range	-40 to +50 °C
Performance ambient temperature Tq	25 °C
Maximum dim level	10%

Product Data

Full product code	871869945022900
Order product name	BSP764 LED64-4S/740 DW10 PSD-SR SRT SRB
EAN/UPC - Product	8718699450229
Order code	912300023970
Numerator - Quantity Per Pack	1
Numerator - Packs per outer box	1
Material Nr. (12NC)	912300023970
Net Weight (Piece)	8.800 kg

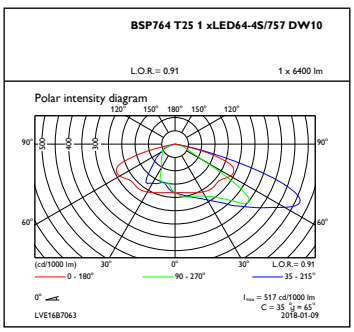
DigiStreet Catenary

Dimensional drawing



DigiStreet BGP760-BTP764

Photometric data



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