

Tidal Lagoon Swansea Bay

Construction and Security Lighting Scheme

Works 7a

DCO Requirement 24

CEMP Supporting Information

April 2020

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Table of Contents

1 Introduction	3
1.1 The development.....	3
1.2 DCO Requirement.....	3
1.3 Construction Environmental Management Plan (CEMP)	4
1.4 Linkages to other plans.....	4
2 Scope of work	5
3 Construction phase lighting.....	6
3.1 Temporary lighting	6
3.2 Lighting design and installation	6

Figure 3.1 Typical LED Luminaire Data Sheet 1 of 2

Figure 3.2 Typical LED Luminaire Data Sheet 2 of 2

1 Introduction

1.1 The development

- 1.1.1 Tidal Lagoon Swansea Bay (TLSB) will be the world's first purpose built tidal energy lagoon. The generating station will have an installed capacity of 320 Mega Watts (MW) and will enclose part of Swansea Bay, from the eastern side of the River Tawe to the eastern edge of the new Swansea University Bay-Campus. In total the seawall will form an approximately 9.5km-long, U-shaped seawall which will encompass approximately 11.5km² of the seabed, foreshore and intertidal area of Swansea Bay.
- 1.1.2 TLSB made an application for development consent to the Planning Inspectorate on 7 February 2014 for a Development Consent Order (DCO) for a tidal lagoon (the Project) in Swansea Bay, South Wales. Examination of the application closed on 10 December 2014 and development consent was awarded by the Secretary of State (SoS) on 9 June 2015.

1.2 DCO Requirement

- 1.2.1 The development of a Construction and Security Lighting Scheme is a requirement of the DCO for the Project and as such has been prepared by TLSB for approval by the relevant planning authorities in accordance with the DCO
- 1.2.2 DCO Requirement 24 – Construction and Security Lighting scheme
 - 24—(1) No phase of the authorised development is to commence until a detailed written construction and security lighting scheme in accordance with the design and access statement has been submitted and approved by the relevant planning authorities.*
 - (2) The construction and security lighting scheme must provide for—*
 - (a) appropriate lighting of any safety zone in place or dredging activity taking place during construction;*
 - (b) the avoidance of direct light spill onto open water within the authorised development including the use of fencing to minimise light spill and avoidance of the use of white mercury lamps;*
 - (c) the minimisation of light spill, including the use of directional lighting and positioning of lights, baffles, cowls and hoods; and*
 - (d) measures to ensure that any such lighting will be directional and sensitive to relevant ecological receptors.*
 - (3) Construction of the authorised development must be carried out in accordance with the approved scheme.*
- 1.2.3 This Construction and Security Lighting Scheme provides details with regard to DCO Requirement 24 in relation to Works 7a. This plan is submitted to City and County of

Swansea Council (CCSC) only since all proposed Works 7a operational activities are within the County boundary.

- 1.2.4 The Construction and Security Lighting Scheme has been produced to satisfy the criteria of DCO Requirement 24 in accordance with the Construction Phasing Scheme (DCO Requirement 3) This document will be updated, as appropriate, at the relevant phases of construction following on from works 7a to include details relevant to that phase of DCO Works.

1.3 Construction Environmental Management Plan (CEMP)

- 1.3.1 The Construction and Security Lighting Scheme has been included as supporting information to the Construction Environmental Management Plan (CEMP), to ensure accordance with DCO Requirement 5 (CEMP) and to ensure that all construction related information is easily accessible to the relevant authorities, construction contractors and TLSB.

1.4 Linkages to other plans

- 1.4.1 The following DCO plans and environmental strategies provide information relevant to this Construction Site Perimeter Plan:
- DCO Requirement 3 – Construction Phasing Scheme
 - DCO Requirement 5 - CEMP
- 1.4.2 The plans listed above are not required for approval of this Construction and Security Lighting Scheme but are listed for ease of reference only.

2 Scope of work

- 2.1.1 The scope of Works 7a land-based works comprises construction of access roads into the site plus associated compounds and landscape areas.
- 2.1.2 The site includes the following areas.
 - a) Distinct route for access to the Swansea Bay Tidal Lagoon;
 - b) Landscape areas;
 - c) Areas of land adjacent to Swansea Docks to be utilised as temporary lay down areas; and
 - d) Demolition of buildings in Laydown Area 1A.

3 Construction phase lighting

3.1 Temporary lighting

- 3.1.1 The construction phase of the 7a works which may require temporary lighting entails the following activities;
- 3.1.2 The installation of all temporary access facilities to include:
 - a) Eastern gate entrance and access gate houses accommodating both pedestrian and vehicular access;
 - b) temporary car parks;
 - c) access route to the western landfall; and
 - d) laydown areas.
 - e) demolition of buildings in Laydown Area 1A
- 3.1.3 The construction of a permanent un-adopted road from the Eastern docks access gate to the yet to be built western bund maintenance facility and visitor centre.
- 3.1.4 All 7a works construction activities will be undertaken during daylight hours but lighting will be required at a later stage for other following works package contractors for their various access, parking and compound/storage/laydown facilities at all times.

3.2 Lighting design and installation

- 3.2.1 When required for following Works contractors, low level lighting will be provided by means of standard steel lighting columns not exceeding eight metres in height.
- 3.2.2 In order to reduce trespass, glare and spillage the temporary lighting will utilise LED luminaires with a zero degree inclination and with a glare rating of G4, 5 or 6. Luminaires with these glare ratings are classed as full cut-off. Typically, luminaires of the type detailed in Figure 3.1 will be used which when mounted at 90 degrees to the ground satisfy these conditions.
- 3.2.3 Construction buildings, equipment and lighting including site lighting shall be sited so as to minimise visual intrusion and light spillage to nearby residential properties, in so far as is consistent with the safe and efficient operation of each worksite.
- 3.2.4 So far as is practicable, all power to temporary traffic signals, lighting etc shall be taken from mains supplies rather than from portable generators. Where portable generators are used, industry best practice shall be followed to minimise noise and pollution from such generators.
- 3.2.5 The method of implementing the works shall comply with the Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light 2005 in so far as is reasonably practicable and applicable to the construction works.

- 3.2.6 All lighting will be directed away from the sea in order to ensure that the lighting does not interfere with observation of navigation marks, buoys and ships' navigation lights, or affect night vision of shipping crew members.
- 3.2.7 It is not anticipated that shields will be required for protection of shipping but any adjustments will be undertaken as required after installation.
- 3.2.8 Lighting will be positioned and shielded so not to cause any harm to known sensitive environmental receptors, such as bats, otters and feeding grounds.
- 3.2.9 White mercury lamps will not be used on the site.
- 3.2.10 Lighting will be energised through underground LV cables from a distribution point adjacent to the main site office and activated by photocell in order to ensure that adequate illumination is provided at all times during the hours of darkness.
- 3.2.11 Lighting, where required, will be periodically monitored by night time security personnel and any defective units repaired the following day.

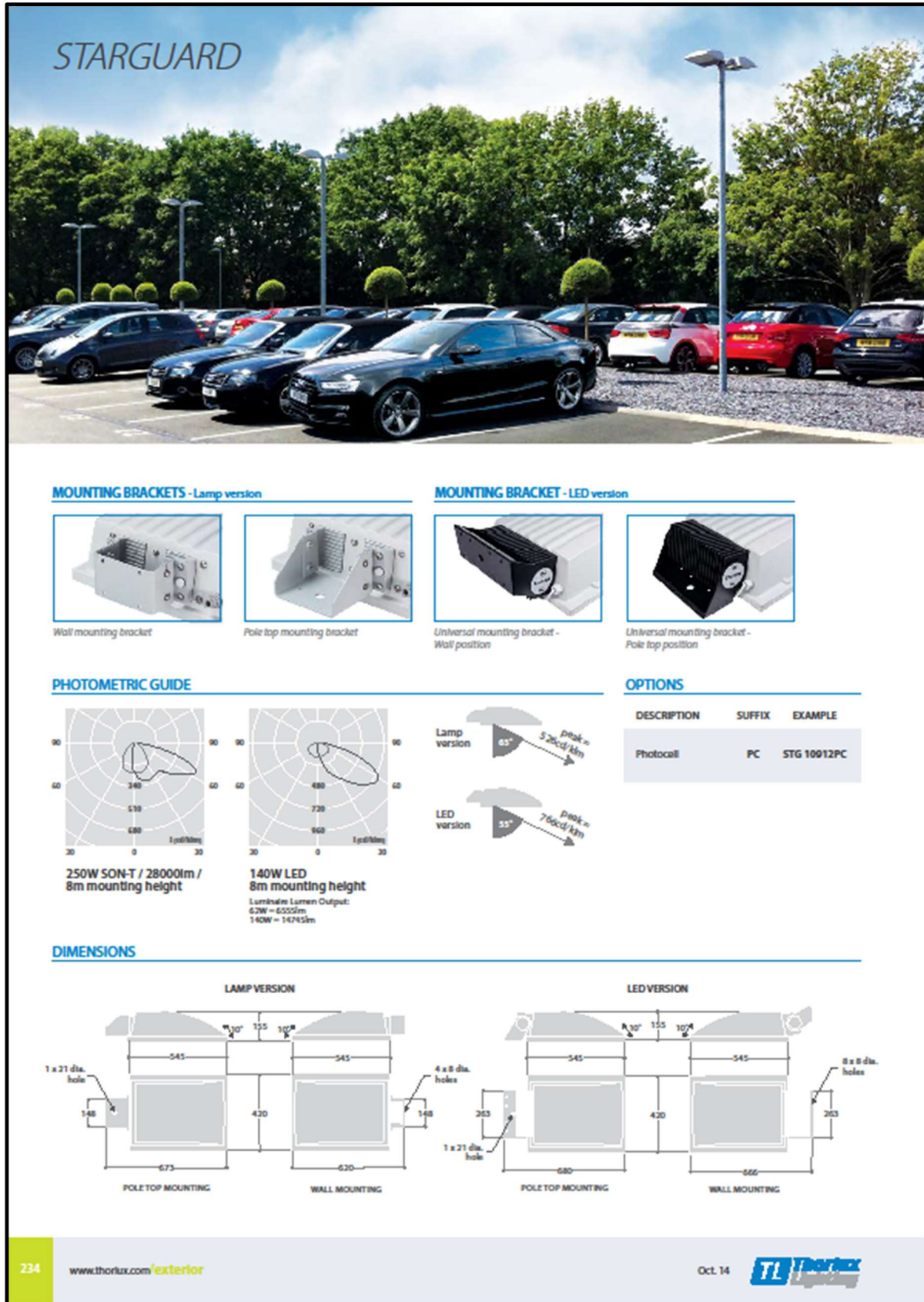


Figure 3.1 Typical LED Luminaire Data Sheet 1 of 2

STARGUARD




ZERO UPWARD LIGHT, AREA AND ROADWAY LUMINAIRES

IP65 ■ TC-T ■ SON-T ■ MBI-T ■ LED

WINDAGE - 0.10m²

SPECIFICATION

- Corrosion-resistant and fire-retardant GRP moulded body - light grey finish
- Clear toughened/safety glass cover
- Aluminium heat sink ensures cool running of control gear and LEDs for optimum life in high ambient temperatures
- ZERO upward light pollution
- High elevation peak beam angle for outstanding area coverage relative to mounting height
- High beam efficiency with low glare
- Pole top or wall mounted versions (LED version features a universal mounting bracket)
- Photocell option
- Fitted with lamp or 5700K LEDs

LED CHARACTERISTICS

Ra	°K	L70/B10	98.3
70+	5700	90K	
P/U	%	R/Rx	PF
P	>90	R	>0.90

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

LED RANGE

LED	CAT. No.	APPROX. kg
62W ■	STG 16354L	11.8
140W ■	STG 16355L	11.8

LAMP RANGE

LAMP	WALL MOUNTED VERSION	APPROX. kg	POLE TOP VERSION	APPROX. kg
High pressure sodium lamps				
150W SON-T	STG 10012	10.3	STG 11000	10.5
250W SON-T	STG 10013	10.8	STG 11001	11.0
Metal halide lamps - compatible with high pressure sodium control gear				
150W MBI-T ▲	STG 10009	10.3	STG 10097	10.5
250W MBI-T ▲	STG 10010	10.8	STG 10098	11.0
Compact fluorescent lamps				
42W TC-T ●	STG 13428J	7.1	STG 13426J	7.3
57W TC-T ●	STG 13429J	7.1	STG 13427J	7.3

CIRCUIT TYPE - J - non-dimming (HF fluorescent) / L - non-dimming (LED)

IMPORTANT: DO NOT USE LAMPS WITH AN INTERNAL STARTING DEVICE

NOTE: Pole top versions - Mounting pots or crossarms are required for this fitting and must be ordered separately

▲ Venture Whitelux 4000K fitted
● 4000K lamp fitted
■ Universal mounting bracket suitable for wall or pole mounting

Web link: Columns >



Oct. 14

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235

Figure 3.2 Typical LED Luminaire Data Sheet 2 of 2