**NOTTINGHAMSHIRE COUNTY COUNCIL**

**HIGHWAY LIGHTING SPECIFICATION - 5/13(20) R&L**

Nottinghamshire County Council

## 1.0 COLUMN

1.1 To comply with the requirements of BS EN40 and to conform to the shape and dimensions shown on Standard Detail drawing No. ESD6/5.

1.2 Base hinged column shall be installed in the 'lowered' position to maintain safe clearances from overhead obstructions to guarantee clearances when lowered.

1.3 Base hinged columns shall be lowered using a spring loaded counterbalance unit and have a section of 20mm plastic copex supplied and fitted by the manufacturer to provide mechanical protection to the internal wiring system.

1.4 The column shall be numbered in 50mm high figures on the shaft at 150mm above the base of the column facing the road in accordance with the numbering as given on the drawings. This shall be carried out using good quality stick-on labels (black on white background).

1.5 The columns shall have a design life of 50 years.

## 2.0 LUMINAIRES

2.1 The lantern shall be for post top installations and of totally enclosed construction. The complete assembly shall have a protection rating of IP66.

2.2 Luminaries shall incorporate the following features:-

i) Integrated Programmable Driver
*(Shall be programmed as stipulated on the highway lighting and electrical design drawing)*

ii) Integral LED Module

2.3 Luminaries shall be fitted with a 5/7 PIN NEMA socket located in the canopy (unless otherwise specified) and be wired for a one part photo electric cell as specified in section 4.

2.4 Luminaries shall be from the same manufacturer throughout the development.

## 3.0 LIGHT SOURCE AND CONTROL GEAR

3.1 The light source shall be an integral LED module. (See equipment section for manufacturer details)

3.2 The driver shall include be able to start and control the light source whilst maintaining a power factor of no less than 0.85. It shall be integral within the lantern.

3.2 Control equipment must be designed and installed so that the limits of radio interference given in BS800 are not exceeded.

## SWITCHING CONTROL

4.1 The fully electronic solid state photo-electric light intensity operated switch, of one part construction, shall be provided and shall be fitted on top of the lantern in the 5/7 PIN NEMA socket.

4.2 The circuit shall contain a filtered silicon photo-diode and be designed for zero crossover control to reduce high inrush currents. The detector shall be embedded in the same Silicone as the control circuit.

4.3 The photocell switch shall have a unity switching level of 20:20 lux and be a 5/7 PIN NEMA.

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4.4 The control shall carry a guarantee period of not less than 15 years with an IP classification of IP67.

## 5.0 GENERAL

5.1 All equipment shall conform to current European and British Standards.

## 6.0 EMC EMISSIONS AND IMMUNITY

6.1 All equipment shall conform for EMC emission to BSEN 50081 and EMC immunity to BSEN 50082.

## 7.0 WIRING

7.1 All cables shall be correctly colour coded throughout their length and labelled appropriately at each termination.

7.2 The final connection between the consumer isolator and DNO / IDNO equipment shall be PVC or XLPE insulated and sheathed single core cable, appropriately sized for current carrying capacity and of a minimum C.S.A of 2.5mm².

7.3 Internal wiring between the consumer isolator / cut-out and the luminaire shall be PVC/PVC Flexible Cord cable with Plain Annealed Flexible Copper (Cu) conductors to BS EN50525-2-11. Conductors shall be no less than 1.5mm² cross sectional area.

7.4 All cables shall be appropriately clipped or cleated neatly.

## 8.0 EARTHING

8.1 The whole of the installation shall be earthed in accordance with the requirements of the current IET Regulations and to British Standard Code of Practice CP 1013 “Earthing” and to the satisfaction of the Distribution Network Operator (DNO). A 6.0mm$^2$ PVC or equivalent tri-rated G/Y earth wire shall be connected to the earth terminal for the DNO / IDNO to connect at service positions.

## 9.0 ELECTRICITY SUPPLY

9.1 This should be undertaken by the appropriate Distribution Network Operator (DNO) or Independent Distribution Network Operator (IDNO) unless otherwise stated as Private Network supplies on the approved lighting design drawing(s).

9.2 The DNO / IDNO service cut-out for 25A supplies shall be BS88 fused with protective device rated in accordance with the DNO / IDNO standard practice. Where the DNO / IDNO cannot provide double pole isolation, separate double pole isolation shall be provided in accordance with HESD ‘DNO / IDNO Isolation Arrangements’

9.3 Installation of Private Network systems shall be undertaken by a competent and certified Street Lighting Electrical Contractor appointed by the developer.

9.4 The developer will be responsible for all energy charges prior to the development being adopted.

## 10.0 NOTIFICATION AND INSPECTION CERTIFICATE

10.1 A DNO / IDNO unmetered supply form must be completed and returned to the Engineer detailing the lighting columns and illuminated highway asset installed.

10.2 Formal notification of the DNO / IDNO whose network has been installed must be provided to ensure the Local Authority can update its asset inventory and make the correct energy payments.

10.3 An appropriate High Rupturing Capacity (BS88) fuse must be left taped to the DNO / IDNO cut-out where a service is required.

## 11.0 COMPLETION AND INSPECTION CERTIFICATE

11.1 A completed NICEIC Completion and Inspection Certificate for each lighting column and Illuminated highway asset and as installed site drawings must be passed to the maintaining authority upon adoption of the development.

11.2 A twelve digit grid reference point must be entered onto the test certificate to indicate exact location of each lighting point.

11.3 Points of supply must be identified on the installed drawings.

11.4 Prior to adoption a full clean shall be carried out by the developer before acceptance of project by the Road Lighting Maintenance Section.

## 12.0 ROAD LIGHTING DESIGN DRAWING

12.1 The design of this project is valid for up to **three** years after which the drawing shall be resubmitted to the County Council for approval in accordance with current standards.

**NOTES ON SUPPLIES OF EQUIPMENT AND INSTALLATION CONTRACTORS**

**The equipment for this specification shall be as follows, or of alternative approved manufacture and/or type (Alternatives must be approved by the County Council prior to any installation works on site).**

| DESCRIPTION | MANUFACTURER | PRODUCT REFERENCE |
|---|---|---|
| **Tubular steel column** | Fabrikat (Nottingham) Ltd<br>Hamilton Road,<br>Sutton In Ashfield,<br>Nottinghamshire<br>NG17 5LN | As NCC Spec Drawing No: ESD6/5 |
| **Lanterns/Control Gear** | Holophane Europe Ltd<br>Bond Avenue,<br>Bletchley,<br>Milton Keynes<br>MK1 1JG | V-Max Neutral White using;<br>(VMX.L024.V1.X2L2) |
| **Photo-Electric Control** | Lucy Zodion Ltd<br>Station Road<br>Sowerby Bridge<br>West Yorkshire<br>HX6 3AF | Lucy Zodion ZCell (20:20 Lux)<br>5/7 PIN NEMA Photocell |
| **Cut-out / Isolators** | Lucy Zodion Ltd<br>Station Road<br>Sowerby Bridge<br>West Yorkshire<br>HX6 3AF | Titan (PN) or Trojan (DNO) |