PROPOSED BUS SHELTER ADVERTISING UNIT

Specification

- Bus Shelter Advertising unit with integrated LCD digital display(s)

- Integrates with Bus Shelters within the CCUK portfolio

- Two configurations:
  - Double-sided Digital;
  - Single Digital with non-advertising, non-illuminated Council or Community panel on reverse side

- Robust fully weatherproof design, including heat strengthened laminated glass
- Comprehensive remote management and monitoring system
- Secure remote Content Management System
- In-built sensor control system adapts display(s) luminance to ambient light levels
- 50% less power consumption compared with previous comparable displays
- 4G connectivity with roaming across multiple mobile networks. 5G will be added when available
- Unit dimensions: H 2213mm, W 1370mm, D 222mm
- Display active area dimensions: H 1635mm, W 924mm
- UK manufactured

Digital display operation

As per the established norm, the Digital display(s) would portray static advertising images that change sequentially, every 10 seconds. Between midnight and 5am, the displays are turned off.

Daytime
The latest authority document on illuminated advertisements is 'PLG 05/23 The Brightness of Illuminated Advertisements including Digital Displays', published in 2023 by the Institute of Lighting Professionals. PLG 05/23 recognizes that in daytime, appropriate advertisement luminance is dependent on ambient light conditions and, as such, is variable. Therefore, PLG 05/23 recommends that digital displays have a control system or similar technology that ensures the display luminance relates to ambient light levels.

In accordance with PLG 05/23, the display(s) have an in-built sensor control system. In daytime, this control system reads ambient light levels and adjusts display luminance to the ambient light level prevailing; this means lower display luminance when ambient light levels are lower, and higher display luminance when ambient light levels are higher.

For information, on average brightness days, average luminance of bright colours within advertisements is around 2,500 cdsq.m. This Specification states that the maximum Daytime luminance for displaying full white (which is the brightest content) is 3,500 cdsq.m. This value, which is the maximum potential luminance during daytime, is applicable only to full white content in very bright ambient light conditions as and when detected by the in-built sensor control system. For noting, on bright sunny days, ambient light levels can reach 47,000+ lux.

Darkness
In darkness, the display(s) operate at set very low levels not exceeding 300 cdsq.m.

Therefore, in both daytime and darkness, the displays operate in full accordance with recommendations within the latest authority document on illuminated advertisements, 'PLG 05/23 The Brightness of Illuminated Advertisements including Digital Displays' (2023), specifically Table 10.4 (Recommended maximum night-time permitted values of display luminance) and Table 10.5 (Recommended maximum daytime permitted values of sign luminance) therein. These Tables are reproduced below.

Extracts from PLG 05/23 The Brightness of Illuminated Advertisements including Digital Displays

Table 10.1: Lighting environmental zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark	Astronomical Observable dark skies, UNESCO starlight reserves, IDA dark sky places
E1	Natural	Dark	Relatively uninhabited rural areas, National Parks, Areas of Outstanding Natural Beauty, IDA buffer zones etc.
E2	Rural	Low district brightness	Sparsely inhabited rural areas, village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Well inhabited rural and urban settlements, small town centres or suburban locations
E4	Urban	High district brightness	Town and city centres and other commercial areas with high levels of night-time activity

Table 10.4: Recommended maximum night-time permitted values of display luminance

Light Technical Parameter	Maximum sign luminance (L_s) cd/m²				
	Environmental zones				
Sign surface area	**E0**	**E1**	**E2**	**E3**	**E4**
0 to < 5 m²	0	25	200	300	300
5 to < 20 m²	0	0	200	300	300
≥ 20 m²	0	0	100	200	300

Table 10.5 – Recommended maximum daytime permitted values of sign luminance.

Daylight ambient Illuminance (Eh) [lux]	Sign Luminance [cd/m²]
Up to 3,500	≤ 400
3,501 to 8,500 (overcast day)	≤ 1,000
8,501 to 15,000 (bright day with cloud cover)	≤ 2,500
15,001 to 25,000 (bright sunny day)	≤ 3,500
25,001 to 42,000 (direct sunlight)	≤ 5,000
42,001 and above	> 5,000

Digital Display(s)	
Technology	LCD
Orientation	Portrait
Viewability	Direct sunlight readable
Luminance (full white) Day	3500 cd/m2 (maximum). Only applicable in very bright ambient light conditions as detected by sensor control system
Luminance (full white) Night	300 cd/m2 (maximum)
Display Active Area	H 1635mm x W 924mm
Power	
Power Supply	220-240VAC, 50Hz single phase mains
Internal Protection	Mains voltage surge protection and EMC filter
External Protection	Digital - 10A Type C
Unit Enclosure	
Digital panel glass	9mm thick heat strengthened laminated construction
Ventilation	Top and bottom for simple integration
Materials	Stainless steel and aluminium
IP Rating	IP55