

BT SH 3.0 Screen Testing for CCTV Overexposure & Glare - (Revised with Additional Testing in Reading, March 2025)

1. Glass Composition

The BT SH 3.0 unit uses Pilkington OptiView glass in combination with an integrated ambient light sensor to adapt the luminance of the display to the environmental lighting conditions. The glass has a light reflection level of just 5%. See Figure 1 Source: NSGSpectrum Version 2.1.0.20220425, Pilkington (2023)

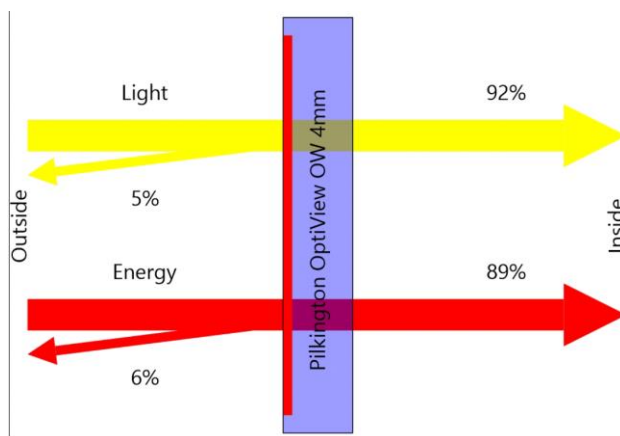


Figure 1 – anti-reflective design of Pilkington OptiView

Figure 2 is a cross-sectional diagram of the glass that shows the location of the anti-reflective coating on the glass' external surface. The glass is bonded to the LCD using an optically clear resin, which eliminates any internal reflections on the glass. This means additional anti-reflective coating on the inner surface of the glass is not required.

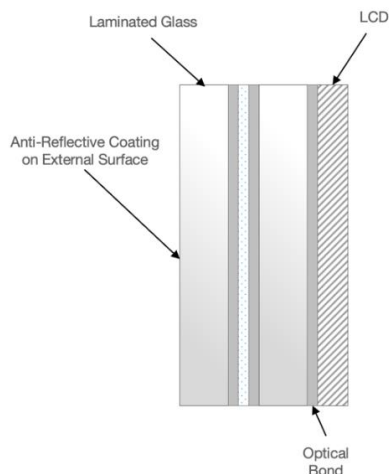


Figure 2 - composition cross section

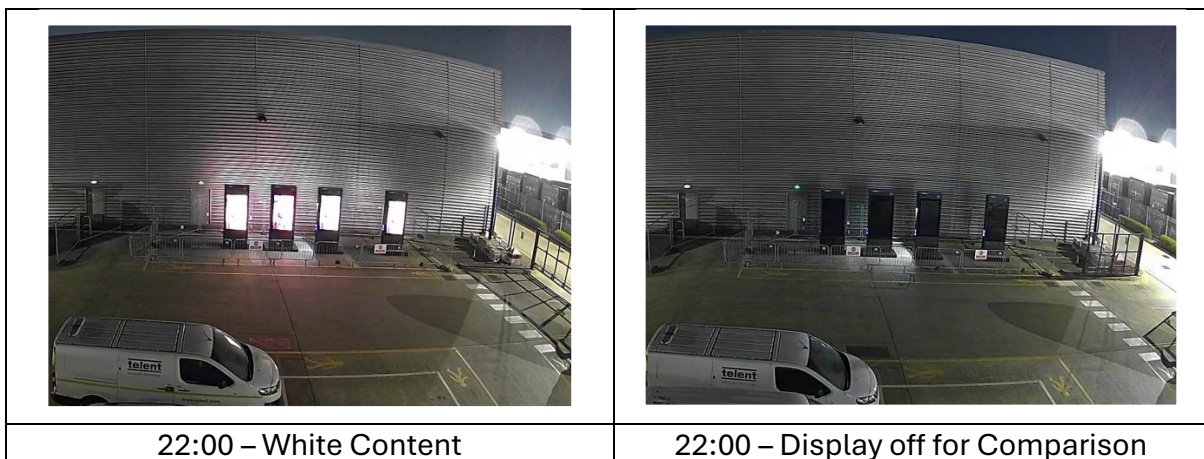
Testing on prototypes in bright sunlight demonstrated that reflection on the glass is minimal. See Figure 3 below.

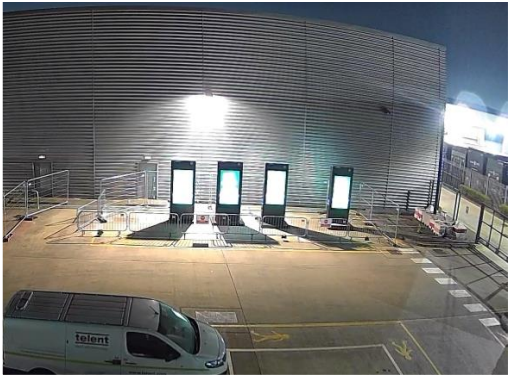
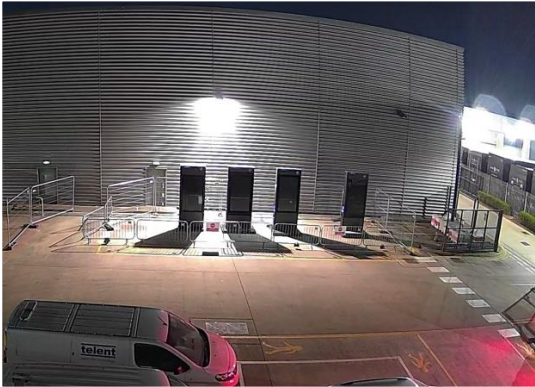
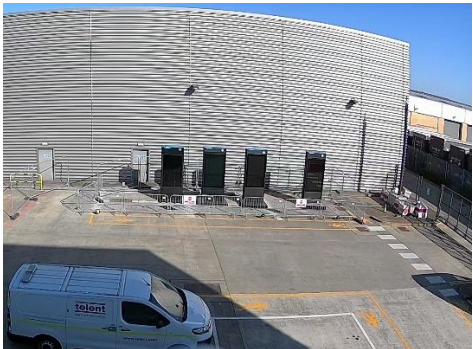


Figure 3 - close up image of screens in direct sunlight

2. CCTV Testing

A CCTV camera (TP-Link C501GW 1.0) was used to monitor the behaviour of four units at various times of the day. The following still images were captured to demonstrate the effect on the performance of the CCTV camera.



	
22:00 – Content with additional rear lighting	00:00 – Display off with additional rear lighting
	
06:00 – Content at dawn	Units off in direct sunlight

The images show that there is no loss of detail in the CCTV image caused by the BT SH 3.0. There is however evidence of overexposure caused by other light sources in the images, particularly very bright light sources at elevated positions; as annotated in Figure 4.

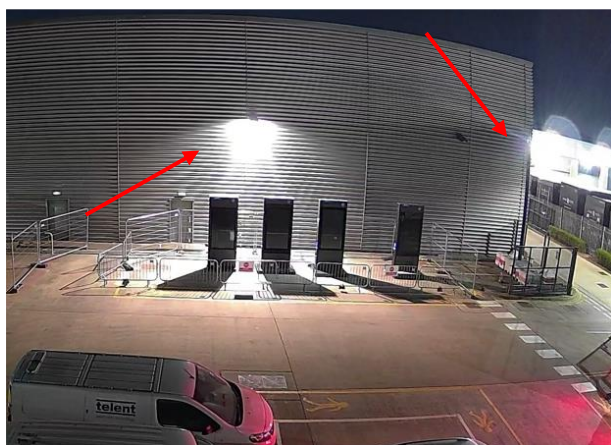


Figure 4 - demonstration of building lights causing overexposure

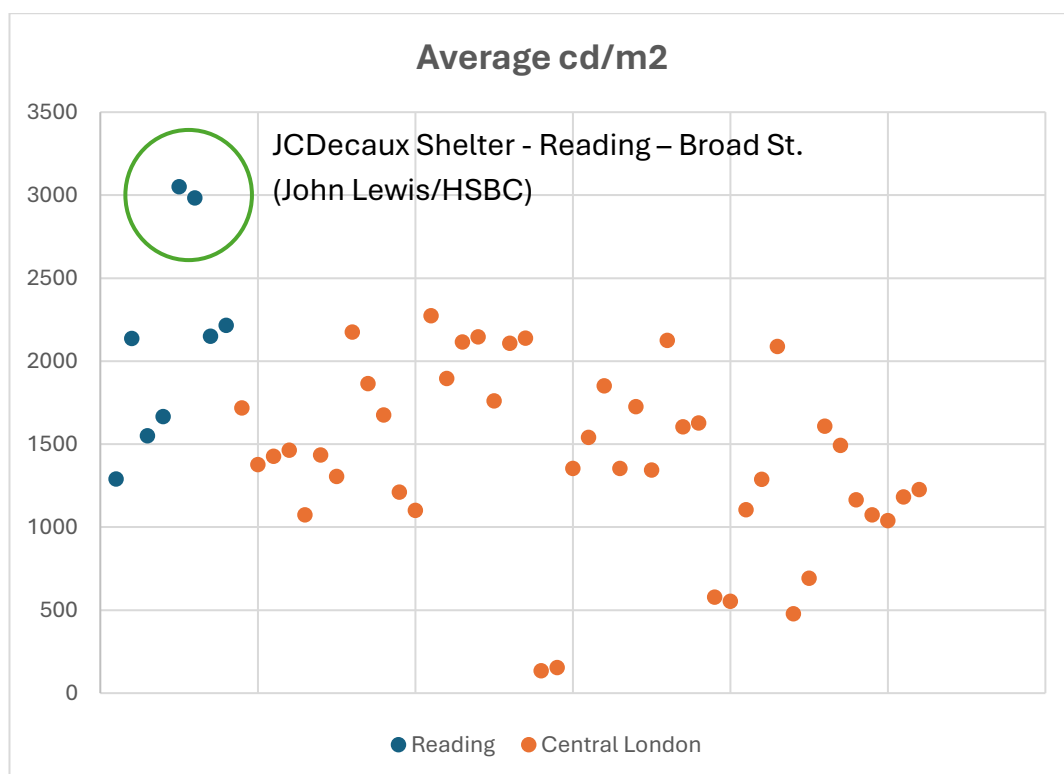
3. BT SH 3.0 Display Brightness vs. Existing Installations in Reading and Central London

As part of the evaluation of the SH 3.0 screen, luminance readings were taken from other, existing outdoor advertising installations using a light meter (Konica Minolta CS-150) at a 0.5m distance.

The test locations were Reading Broad Street and several Central London locations, including Oxford Street, Edgware Road, Tottenham Court Road and Wardour Street. Readings were taken at various times of day.

The brightest measurements taken by a large margin were taken from a JCDecaux bus shelter in Broad Street, Reading. There is therefore evidence that the CCTV issue experienced on Broad Street may be due to excessive luminance settings.

The BT Street Hub units approved in Reading have a condition limiting the maximum luminance to just **250 cd/m2 between 17:00 to 06:00 hours and 600 cd/m2 between 06:01 – 16:59 hours**.



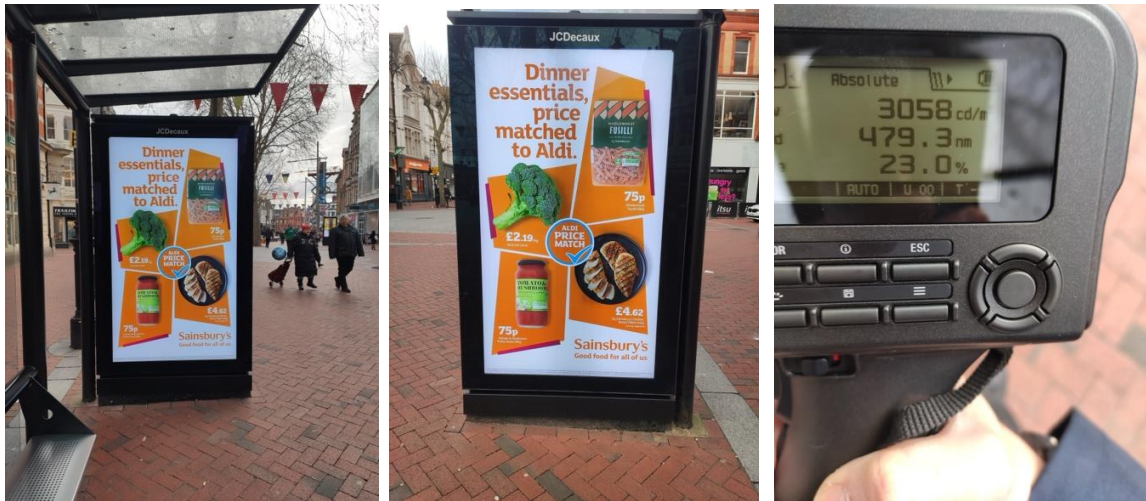


Figure 5 - reading of JCDecaux bus shelter screen on Broad Street, Reading