



Installation, Operation Manual for the LED Simulated Floodlight X13600/*

Approval and Authorisation

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This manual covers the following Simulated Headlight part numbers:

Part No	Description	PADS No
X13600/1	LED Simulated Headlight 24V DC 40 Watts, for 89mm Diameter post.	086/000088
X13600/2	LED Simulated Headlight 24V DC 40 Watts, for 114mm Diameter post.	086/000089
X13600/3	LED Simulated Headlight 24V DC 40 Watts, for 76mm Diameter post.	086/000090

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1.0 Revision Record.

Issue	Date	Instruction	Author	Comments
A	05/07/19		W Gregory	First Issue
B	28/01/20	ECN412	W. Gregory	Pictures updated, wording added.

2.0 Introduction.

The Signal House Ltd LED Simulated Headlight is designed to illuminate a Level crossing area as seen from the Train driver. Being LED it is suited to replace Halogen units providing a much longer service life.

The Simulated Headlight is designed to be mounted on a circular post, of which three different post diameters are supported, 76, 89 and 114mm. The unit is directional providing a horizontal beam of 60 degrees, but vertically it can be adjusted from Horizontal [0 degrees] to tilt down 30 degrees or 60 degrees. This adjustment will assist in providing a spread of light to meet the 20 lux requirement 1 meter above ground level from differing mounting heights.

The hood provides a 'light cut off' such that local off railway areas do not get affected by light bleed or glare.

Coverage Plot diagrams are provided in the appendix A.

The Led light has a colour of around 3800K, provided by 18 high power Leds. The units are powered by 24 volts Direct Current [DC] at a nominal 40 watts. The DC supply can vary from 20 to 28Volts with an absolute maximum of 30Volts. The Terminal box has a IP65 cable gland sealing hole to accept 13 to 19mm diameter cable, designed for the C2 2 core type [OD 14.9-18.8mm type] Cat No 006/120140.

3.0 Identification.

The LED Simulated Floodlight unit carries a label mounted on the outside rear of the terminal box. This displays the product type number together with the relevant Network Rail Cat Number. There is also a unique serial number for that particular Simulated Floodlight.



Picture 1, Identification & Serial Number plate



4.0 Installation.

4.1 Preparation.

Survey the site and from the light level plot details in appendix A determine the Lamp height and direction it will be fitted.

Confirm the correct Lamp type for the diameter of the post to be fitted to [see Identification above].

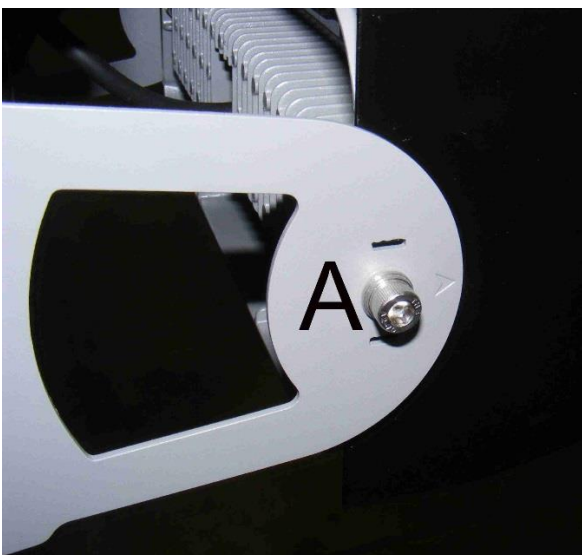
Confirm all fittings have been supplied, two clamp brackets, four M8 x 40 bolts, four M8 nuts, eight M8 plain, four spring washers in a separate bag.

4.2 Lifting.

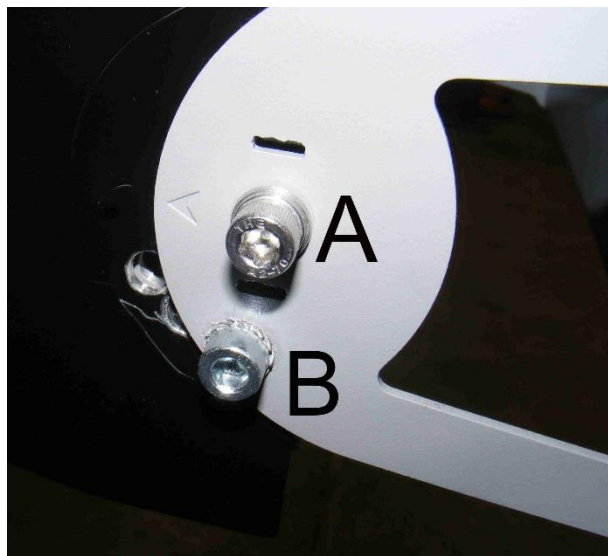
The SHL signal weighs less than 5kg, and whilst it can be easily lifted by one person, it is strongly suggested two (or more) people are used to mount the lamp at height to the post. Health and safety guidance applicable and in force at the time should be observed, including working at height etc.

4.3 Changing the Vertical tilt angle

The vertical tilt position and angle can be set from 0 degrees, horizontal [as supplied], to tilt down 30 degrees or 60 degrees. This is achieved by releasing the two pivot bolts [A] in Pictures 2 and 3, and releasing and removing the bolt B in Picture 3. The Hood and Led body will now rotate to the 30 degree down and/or 60 degree down holes. Select the required tilt and refit the bolt B and tighten. Re tighten the pivot bolts A. It is suggested the tilt option is set prior to fitting the Unit in the field.



Picture 2



Picture 3



4.4 Mounting.

This is a two person job, requiring one person to hold the unit in place whilst the second person fits the first top clamp, then the second bottom clamp can be fitted. The arrangement is shown in Picture 4 with the nuts tightened such that the C clamp meets the frame. The fixings run from the bolt head, plain washer, then frame, C clamp, plain washer, spring washer then nut.



Picture 4, Mounting arrangement.

4.5 Connections

The unit is designed to accept the C2 type cable, Cat Number 006/120140. However provided the outer diameter of 14.9-18.8mm is achieved then other types can be used [maintains the IP65 rating of the terminal box]. The outer sheath will need stripping back, it is suggested by 60 mm prior to fitting through gland.

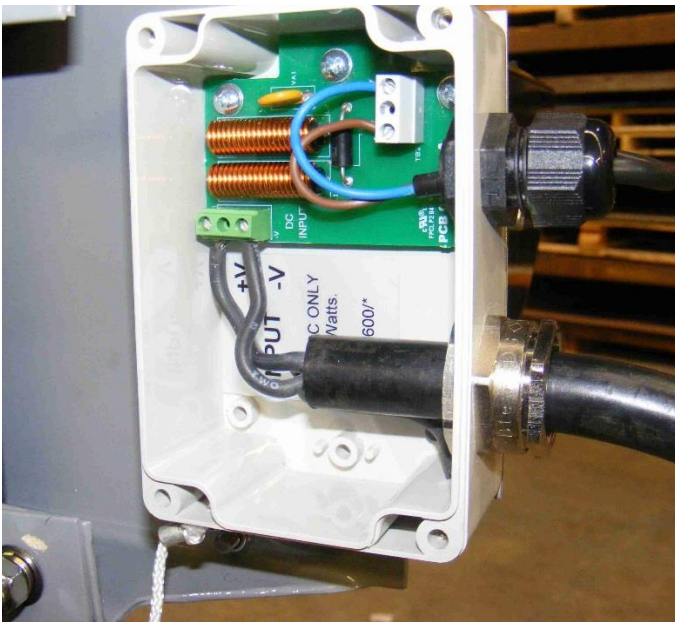
Remove the terminal box lid by undoing the four captive screws. The lid is retained on a cord so as not to fall away.

The gland has a rubber film that needs cutting, then loosen the gland nut. Feed the cable through the gland to a depth of 40 mm. Tighten the gland nut so the cable cannot be pulled out. Reference Picture 5.

It should be known which conductor is the positive and negative of the incoming DC supply. **If it is NOT known, then a test is required to ascertain the polarity of the supply.** Fit the positive feed conductor to the top + terminal block and tighten. Fit the negative conductor to the bottom – terminal and tighten, see Picture 5.

The cable should adopt a route as shown in picture 6, so as not to strain the gland and give a 90 degree entry.

Refit the terminal box cover.



Picture 5 Cable and input connections.



Picture 6 Cable Route

4.6 Testing & Commissioning

Verification of function is achieved by applying the **correct polarity DC supply** and confirming the unit lights. Do not look directly at the light as it is very bright and can cause eye discomfort and/or damage.

Confirm the lit area is as required and achieves the 20 lux level at 1 meter above the ground in the lit area [see appendix and design criteria].

Confirm the light does not produce excessive light in areas where it is liable to cause annoyance or glare.

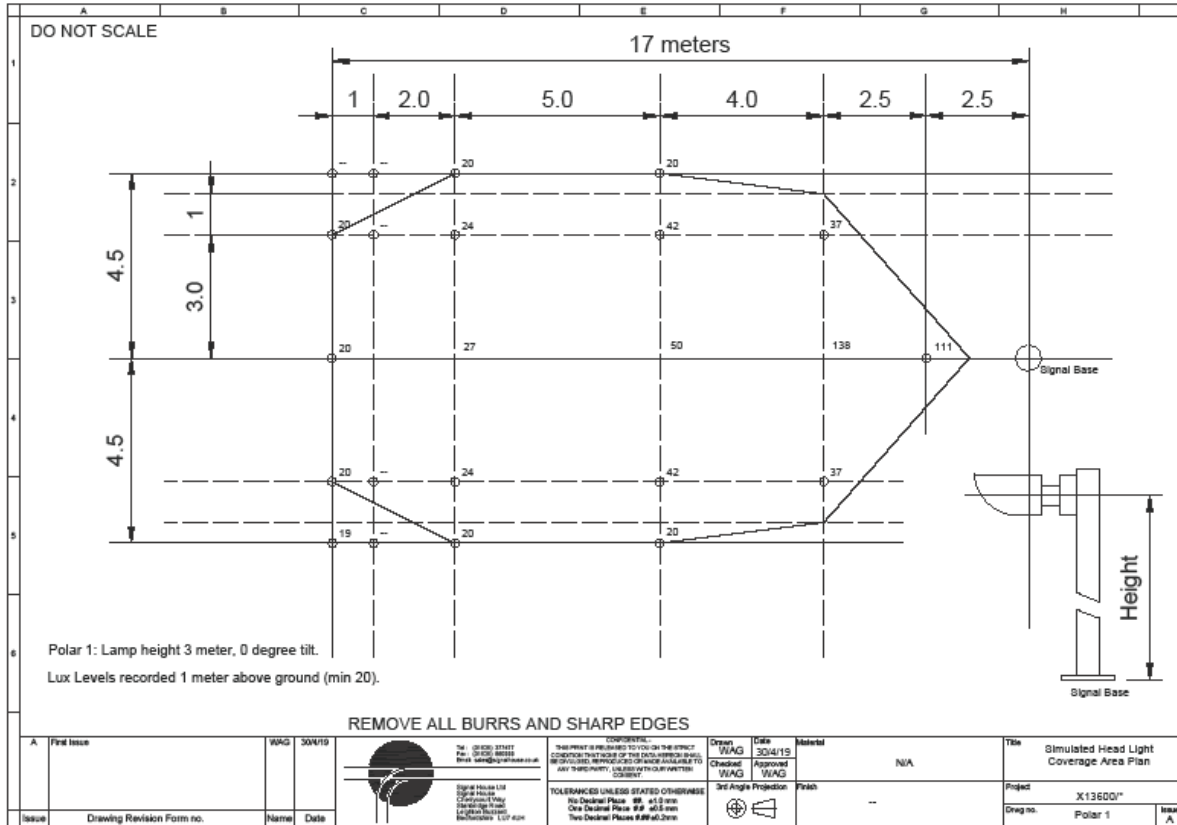
5 Maintenance.

There is no maintenance plan requirements, except that of confirming the lamp lights when required and this can be achieved by visual checking by train driver report back or an annual inspection.



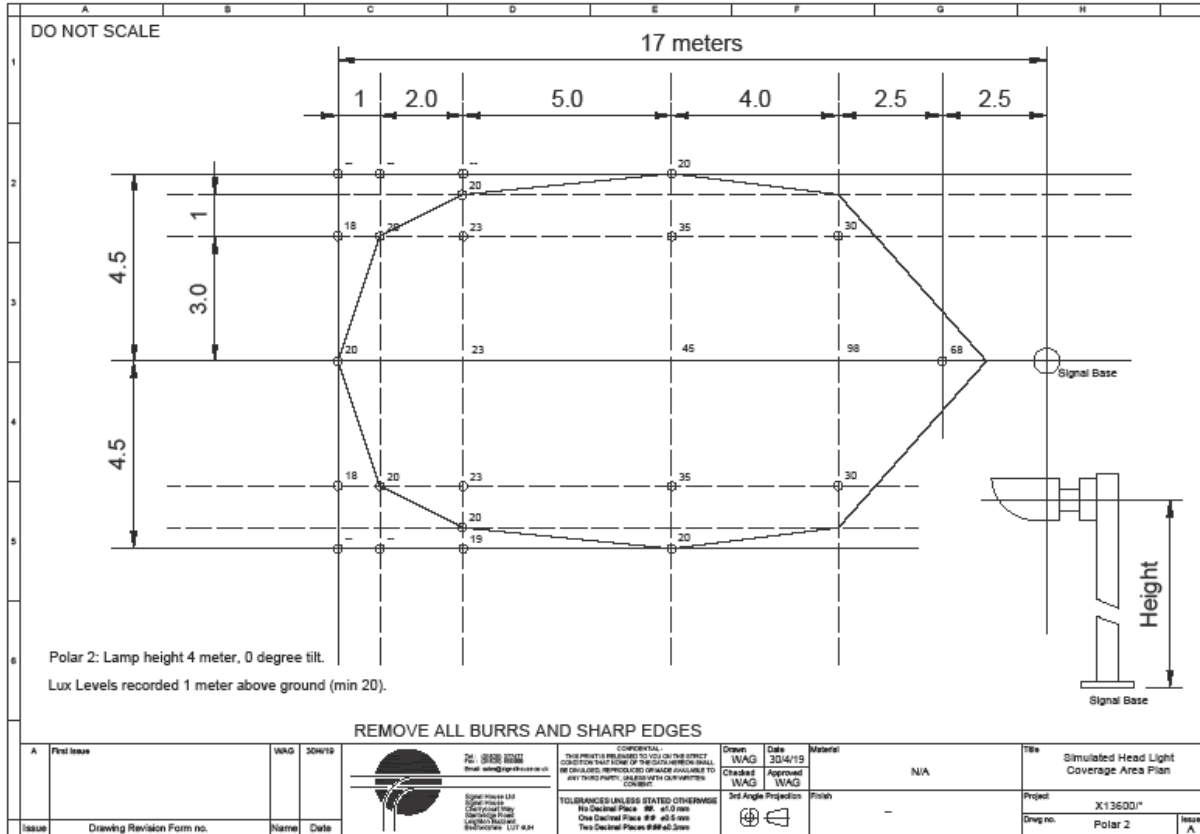
Appendix A.

Plot 1: Headlight Height 3 meters, Tilt angle 0 degrees.



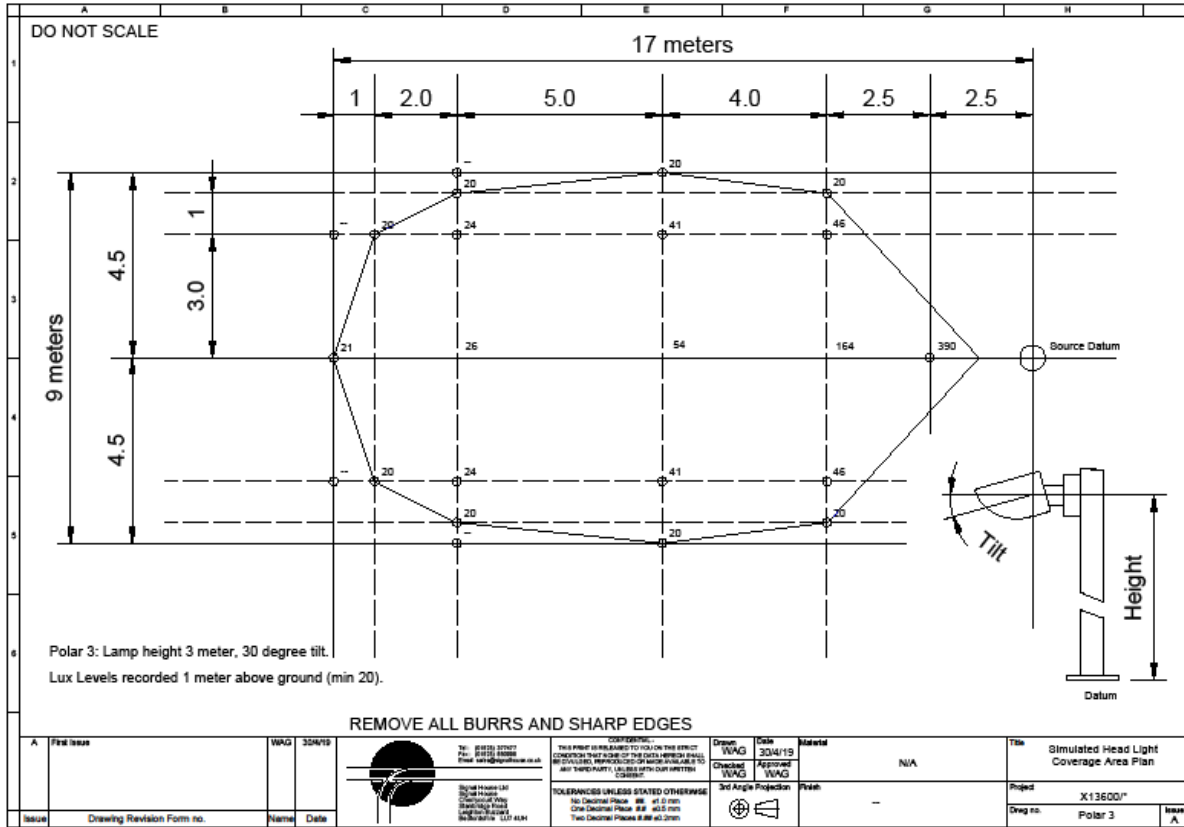


Plot 2: Headlight Height 4 meters, Tilt angle 0 degrees.





Plot 3: Headlight Height 3 meters, Tilt angle 30 degrees.





Plot 4: Headlight Height 4 meters, Tilt angle 30 degrees.

