

The Digital Screen Checker from Harkness Screens is a low-cost digital cinema device for accurately measuring screen brightness, expressed in foot lamberts. The battery powered unit provides instant readings for both 2D and 3D screens and is calibrated to be accurate even in the lower ranges used in 3D projection. The foot lambert reading is shown on an LED digital display and is expressed to at least one decimal place.

Understand how the Digital Screen Checker Works

1. Fit the PP3 battery.
2. Press the 'ON' button and observe that the digital screen illuminates. If three dots appears between the numbers, this indicates that the battery needs replacing.
3. Digital Screen Checker is now ready for use. To save battery life, it will turn itself off after approximately five minutes. To manually turn the unit off, hold the power button down for approximately 3 seconds.
4. Screen brightness indication is shown using the digital display registering 0 to 30 foot-lamberts (fL).

Before attempting to take readings with Digital Screen Checker, certain conditions must be observed.

- The first action must be to have all house lights and side wash lights etc. turned off, as Screen Checker can detect a light from other light sources.
- A white light through the lens must be put on the screen for measuring purposes.
- Do not try measuring while projecting an image.
- It is recommended that white light be put through the lens for about one minute periods only. Longer periods can seriously damage lenses - close the douser and give the lens a chance to cool between readings.

User positioning is important (Fig. 1)

As with a 1° spot meter, the recommended user position is centre of auditorium 3/4 of the way back from the screen. Not only is this the optimum position to get an all round feel for the auditorium but always using the same position allows for consistency of results.

Using its photo diode and expensive optics, a 1° spot meter can accurately measure a very small area of the cinema screen. Screen Checker works in a similar fashion but without the expensive optics. This is the fundamental difference and means that it must be used in a slightly different way.

Screen Checker takes its measurement over a wider spread of screen (4°) rather than a tight 1°. Screen Checker averages the light reflected over its spread area. Due to Screen Checker averaging, it will pick up what a 1° spot meter sees as high fL readings next to an area of low fL readings and translate as a medium result. Some users have commented that this is more useful, as many are not interested in the light reading for an area as small as a few centimetres, but rather the broader readings such as the centre of the screen. In practice, tests undertaken against Jeti and Minolta spot meters have given very like for like readings to within +/-0.2 fL.

The Digital Screen Checker does not have the optics of a spot meter, so it is important to know how to aim the unit. A 'viewfinder' is fitted, comprising of a small lens, mirror and viewing screen. In a dark auditorium with Screen Checker pointed at the screen, an image of the illuminated (white light only) screen can be seen in the viewer (Fig 2.)

Taking readings for 2D and 3D Digital Cinema

For accurate and consistent results, it is recommended that the Digital Screen Checker is mounted on its tripod. Ensure that the tripod is fully extended and the legs are locked in place. Simply place the device over the top of the tripod unit and screw the unit in to place.

For 3D readings, set up the tripod, place the Digital Screen Checker and the chosen 3D glasses inside the 3D glasses holder. Screw the complete assembly to the tripod. Note that glasses must be placed on the unit horizontally as if being worn by a person (but can be placed upside down for ease of use). An example of the set up is shown in Figure 3.

Understanding your readings:

Once you are familiar with how to read results, useful information can be obtained such as the following:

• Xenon lamp installation:

When the lamp is first ignited and focused, a reading should be taken. Ideally a reading of 14 fL (for 2D) or 5fL (for 3D) should be achieved in the centre of the screen (recommended industry standards). Screen Checker can assist with either refocusing or current adjustment. Initial hot spots or unevenness will be highlighted and can be corrected.

• Routine intervals:

At predetermined times, decided by the cinema, the Screen Checker should be used to see if the picture has degraded or focused unevenly. Over the course of a lamp's life, the light output will reduce. Consequently, a lamp which correctly began life at the lower end of its current range can have its rectifier current increased (observing the upper limits of the range) which will increase its brightness. Focusing can also be adjusted to even up the screen brightness again. In the event of nothing having changed, the rectifier and focusing can be left alone. Unnecessary current increase will reduce lamp life.

Should your results fall below recommended industry standards, you should check the operating hours of the projector's lamp. If the lamp is at the beginning of its life, this may indicate that it is not bright enough to meet industry standards. You may choose to replace the lamp with a more powerful alternative however, this will increase power consumption and therefore operating costs, in some cases substantially. A more cost effective solution may be to replace your existing screen with a higher gain screen. Gain screens like Harkness Screens Perlux and Spectral ranges direct more light back to the audience and are proven to reduce digital operating costs by enabling reduced power consumption, smaller lamps and less frequent lamp replacements. For more information, visit www.harkness-screens.com.

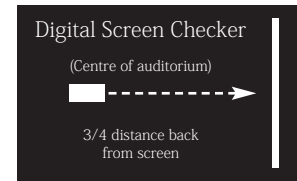


Fig 1: DSC Positioning

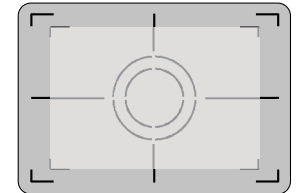


Fig 2: View Finder

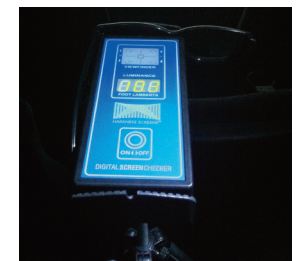


Fig 3: 3D Assembly

In the interest of product enhancement, Harkness Screens reserves the right to introduce modifications or alterations without notice.



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