

FILM-TECH

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**SCREEN CHECKER
PRODUCT DATA SHEET**

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The new Harkness Hall Screen Checker is a low cost alternative to a 1° Spot Meter.

A directional reading of screen illumination is displayed using a line of amber, green and red LEDs. This represents a range between 3 and 30 foot-lamberts, allowing the operator to measure the different illumination levels over the entire screen.

Application

- Measure screen brightness
- Allows accurate focusing of lamp
- Take periodic readings to check degradation of illumination
- Verify screen consistency throughout the cinema complex
- Potentially increase running hours from lamps

Procedure

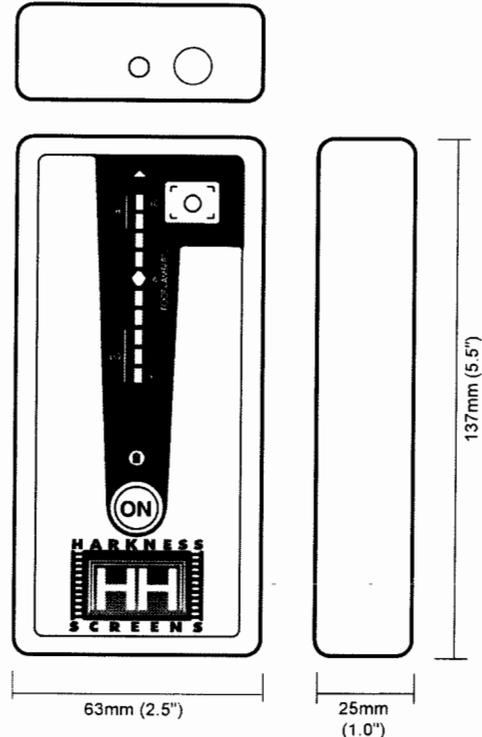
Screen Checker will aid projectionists to focus the lamp in the lamp house, optimising the distribution of light on screen and improving the quality of film presentation.

It will now be possible to determine if an ideal light reading is being achieved or not.

For example - a centre reading of 16 fL and a uniform reading of less than 10% degradation at the edges. This is ideally used when installing a new Xenon lamp and then periodically to measure illumination degradation of the system. This can determine when the rectifier current must be increased due to dull light, or the need for the lamp, or screen, to be changed.

General Detail

Operation	Handheld / Directional
Control	Depress button
Measurement Range	3 - 30 foot-lamberts
Display	Amber, Green and Red LEDs
Construction	High impact polypropylene
Service	No serviceable parts (except battery)
Colour	Grey
Size	63mm (2.5in) x 137mm (5.5in) x 25mm (1in)
Weight	145g (5oz) - including battery
Power	1 x PP3 Battery



The low cost of the unit enables a cinema chain to issue a Screen Checker to each location, therefore ensuring a consistent standard of film presentation.

Operating Instructions

Detailed operating instructions are provided with each product.

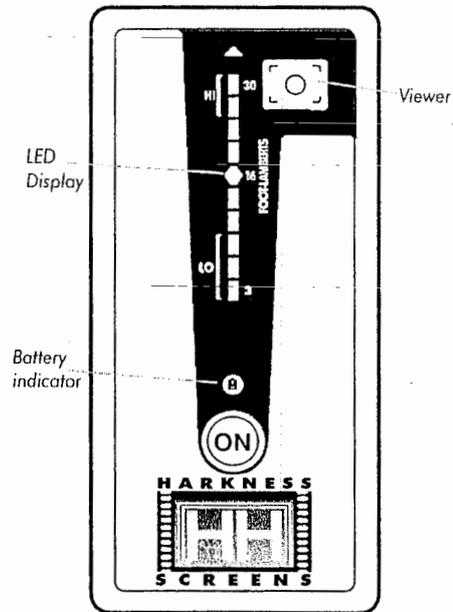
Screen Checker is used in dark conditions with 'white' light from the projector (no film running).



Screen Checker User Instructions

Understanding how Screen Checker works:

1. Fit the PP3 battery.
2. Press the 'ON' button and observe that the battery indicator illuminates green. If the indicator is not green, then Screen Checker does not have sufficient power to take readings.
3. Screen Checker is now ready for use. To save battery life, it will turn itself off after approximately one minute. For continuous use keep pressing the 'ON' button.
4. Screen brightness indication is shown using a line of LEDs representing 3 to 30 foot-lamberts (fL). The LEDs are coloured red, amber and green. Red suggests that light is too bright or too dim, amber suggests that things are not ideal and green suggests that the light is in the region required with 16 fL highlighted with its own LED.



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

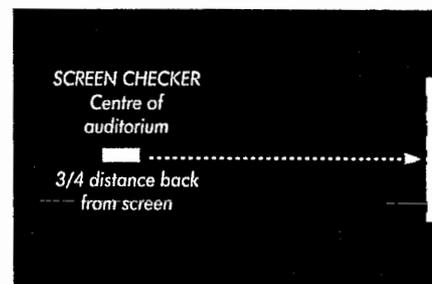
The first action must be to have all house lights and side wash lights etc. turned off, as Screen Checker can detect a light from other light sources.

A white light through the lens must be put on the screen for measuring purposes. Do not try measuring while running film.

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. As with a 1° spot meter, the recommended user position is centre of auditorium $\frac{3}{4}$ 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 rather than a tight 1°. (Some users have commented that from a projectionist's point of view, this is more usable). Screen Checker averages the light reflected over its spread area.

Due to the above mentioned differences, it must be appreciated that the meter is not a replacement for the pinpoint accuracy of a spot meter and may give slightly different results, as explained below.

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. (Again to some users this is more useful, as not many are interested in the light reading for an area as small as a few centimetres, but rather the broader readings such as the 'top', 'centre' or 'bottom').

In practice, tests undertaken against Minolta and Spectra spot meters have given very like for like readings.

Screen Checker does not have the optics of a spot meter, so it is important to know how to aim the Screen Checker. A 'viewfinder' is fitted, comprising of a small lens, mirror and viewing screen.

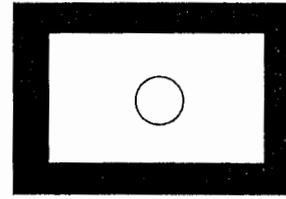
In a dark auditorium with Screen Checker pointed at the screen, an image of the illuminated (white light only) screen can be seen in the viewer. The aiming circle can clearly be seen in the centre of the illuminated screen (1). Screen Checker can then be panned up/down, left/right to measure the brightness of different areas of the screen.

For example, (2) shows Screen Checker measuring the centre/bottom of the screen.

The one thing to be aware of is that 'left' and 'right' movements are shown on the viewfinder as reversed. This is due to the mirror arrangement; (3) shows a right/centre reading.

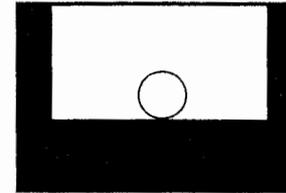
It must also be remembered that Screen Checker averages a spread when it is aimed. Therefore to measure an edge of screen, ensure that the aiming circle is only on the illuminated screen edge and not overlapping into the blackness off screen (4). This prevents the blackness being measured and bringing down the average result (5).

(1)



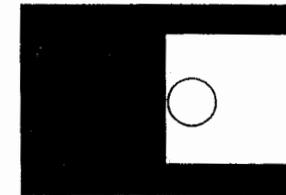
Aiming circle

(2)



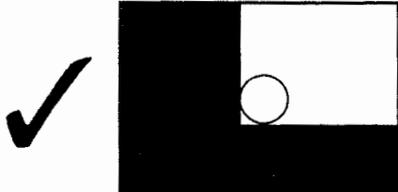
Measuring centre/bottom

(3)



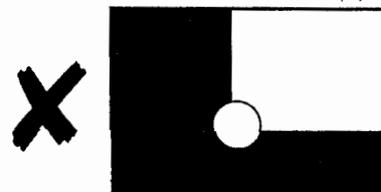
Measuring right/centre

(4)



Measure illuminated screen only

(5)



Avoid overlapping into blackness off screen

Once you are familiar with how to read results from Screen Checker, useful information can be attained such as the following:

- **On Xenon lamp installation:**
When the lamp is first ignited and focused, a Screen Checker reading should be taken. Ideally a reading of 16 fL should be achieved in the centre of the screen, with not less than 10% degradation around the edges. Should this reading not be attained, 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 again to see if the picture has degraded or focused unevenly. Over the natural 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 current range). This will increase its brightness and Screen Checker will allow the projectionist to aim for 16 fL again. 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.



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