

Below is a guide for measuring digital cinema auditoria. The equipment specified is recommended for efficient and accurate measurement. These dimensions can be used in Harkness Screens' Digital Screen Modeller and Digital Screen Archiver tools.

Equipment necessary to measure an auditorium

1. Electronic Distometer Laser Measurer with Pythagoras Feature
2. Manual or Electronic Clinometer (Apps for Smart Phones are available)
3. Wooden or metal strut measuring minimum 1.2m or 4ft in length
4. A4 piece of paper or card, folded in half (to A5 size)

Measuring the auditorium length, width and height.

To measure the length, place the Distometer on the back wall of the auditorium and point the distometer in a straight line to the screen.

To measure the width, place the Distometer on either side wall of the auditorium and point the distometer in a straight line to the opposite wall. Note that in many cases the auditorium widens progressively from the screen. It is recommended to measure at the widest point.

To measure the ceiling, place the Distometer on the floor directly in front of the screen and point up to the ceiling.

Measuring the Bottom Picture Line (BPL).

Place the Distometer level with the bottom of the screen and point to the floor. Note that this will vary for screens with variable height (top and bottom or bottom masking).

Measuring the distance to the screen from the front row of seats.

Place the Distometer at head height in the middle seat of the front row and point at the bottom of the screen directly in front.

Measuring the height of the projector (Fig 1).

Set the Distometer to Pythagoras mode. Position the Distometer at floor height from the back row of seats in the auditorium either side of the port glass window (in order to shoot onto a solid surface). Point/tilt the Distometer up the wall to the height of the port glass. Secondly, shoot directly to the bottom of the wall. The two measurements should provide you with the height of the projector.

Measuring projector offset.

Stand beneath the port glass and point the Distometer at the wall. If a visible offset exists, point the Distometer at the closest wall. Subtract the measurement from half the overall width of the auditorium. For example:-

8.5m (distance to wall) - 10m (half the overall width of a 20m auditorium) = 1.5m offset.

Measuring seating rake for stadium or sloped seating (Fig 2).

In auditoria with sloped flooring (rather than steps) place the Clinometer on the floor to obtain the seating rake.

In auditoria with steps, place the wooden or metal strut over the back of a seat with the other end touching the back of the seat behind. Place the Clinometer on top of the strut to obtain the rake.

Measuring screen width.

Place the folded piece of paper or cardboard on the floor directly parallel to the edge of the screen. Place the Distometer at the other end of the screen on the floor and point at the piece of paper.

Measuring screen tilt.

Place the Clinometer against the edge of the frame of the screen taking care not to place the Clinometer on the screen surface and take the reading.

Measuring screen curve.

Stand at the centre of the screen facing the screen. Position the Distometer in line with the approximate edges of the screen. Take a measurement. Divide the measurement by the overall screen width to ascertain screen curvature percentage. For example:-

1m (distance to screen / 20m (width of screen) = 5% curvature.

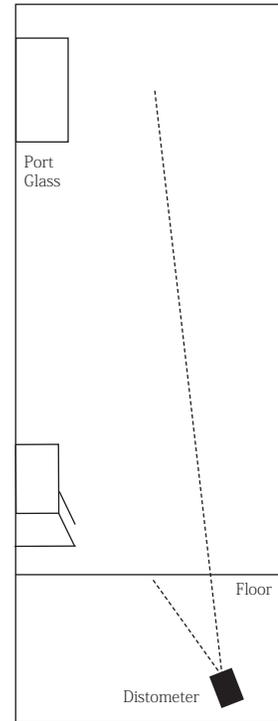


Fig 1: Measuring height of projector

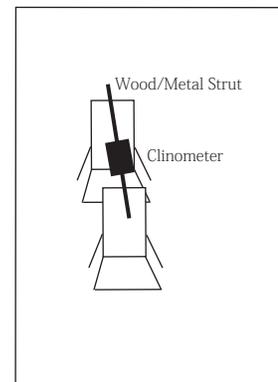


Fig 2: Measuring seating rake