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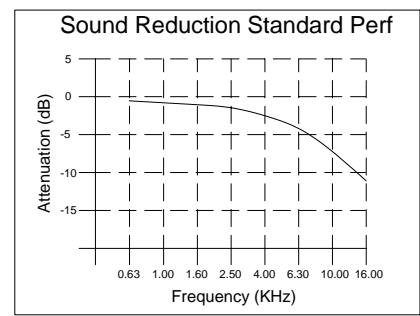
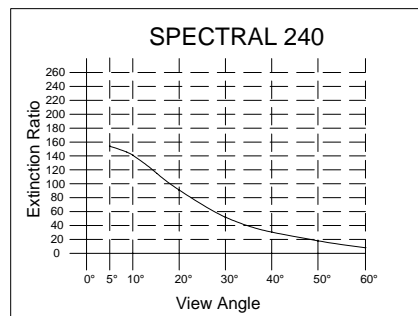
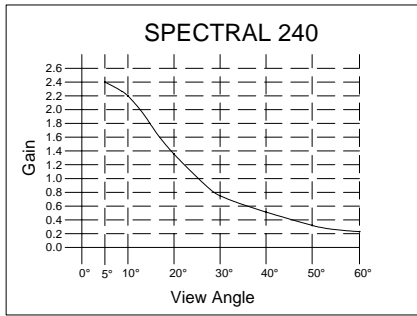
**SPECTRAL™ 240 3D
FRONT PROJECTION SCREEN
DATA SHEET**

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Spectral™ 240 3D screens are considered by leading cinema exhibitors and special venue operators worldwide to be the optimum 3D projection surfaces. Silver aluminium flake based coating applied to a unique base material provides high gain characteristics, very low depolarisation level (extinction ratio) and excellent colour temperature. The surface type also supports conventional 2D pictures. Noted for invisible seams under normal projection conditions.

Application

Spectral™ 240 3D screens are recommended for lace-in stretching to wrap-round (floating) or conventional style flat or curved frames. Harkness manufactured roller screens and Easi-Rect systems are other ideal applications. The surface cannot be folded for transit or storage; roll packing must always be used. Available in full screen perforated form where behind screen speakers are required (see attenuation curve). Mini-perforated and non-perforated options are also available.



General Detail

View Distance Minimum of 5mtr (15') recommended on perforated surfaces

Maximum Size USA manufacture 24.1m x 12.4m (79'3" x 40'7")
Europe manufacture 26.5m x 11.0m (87' x 36')

Perforation Size Ø1.2mm (0.047")
Perforation Density 4.5%
Weight 0.50kg/m² (0.10lb/ft²)
Eyelet Spacing 150mm (6") nominal (US) / 200mm (8") France

Typical Packing

Rolled in a cardboard tube; packed in a long wooden box when height is over 7m (23').

Surface Edging Options

- Web and eye (grommet). Triple fold web integral with surface
- Preformed pipe pocket any size on any side
- Cloth web and fixings (snaps) for press stud frames
- Straight sides or shaped to special order
- Cut square (unfinished edge)

Fire Retardancy Certification to the following standards:

- UK
- USA NFPA 701
- France M2
- Germany B1
- Japan BT-08-050 (regulation requires certification by importing company)
- Korea (regulation requires certification by importing company)
- Australia

Despatch/Storage

Screens should normally be transported and stored at temperatures between 5°C and 30°C (40°F and 85°F), with relative humidity less than 80%. If screens are very cold (e.g. following air transport) then they must be allowed to warm up before unpacking, otherwise cold cracking may occur. Screens should be installed within a maximum of 2 months of shipping. Packages should be handled with care to avoid damage.

Installation

The following principles should be followed when installing Harkness Spectral™ 240 3D screen surfaces:

- The auditorium should be clean with no building works taking place.
- Installation should be at ambient temperature (20/24°C-68/75°F).
- Care should be taken to avoid the screen coming into contact with sharp objects during installation.
- Excessive loads should not be placed on any specific point of the screen.
- Use of cotton gloves is recommended.
- The viewing surface should not be touched (the rear of the screen is identified by the product label).
- The surface should not be creased during installation.

There are two principal methods to install the screen:

- Flying the screen by attaching several tie lines to the top of the screen, passing these over the top of the frame and using them to pull the screen into place.
- Unrolling the screen vertically across the front of the frame.

Using one of these methods, the screen surface is loosely attached to the top of the frame. After this, the top of the screen is fully attached to the top lacing bar by working from the centre outwards using each eyelet.

The lower edge of the screen should then be laced from the centre outwards, applying sufficient tension to pull the screen flat. Typically, the screen can be stretched up to 5% of its height at ambient temperature of 20/24°C-68/75°F using sisal cord lacing. Side lacing should be from the top down and sufficient to remove the flutes. Excessive side tension should be avoided, particularly on a curved frame, as it will result in straightening of the screen across the curve (belly).

Springs or elasticated ties are not recommended to install Harkness screen surfaces.

The above method can be used for both lace-in and for wrap-round frames. Normally, two people are sufficient to install a screen surface.

Care and Maintenance

The general environment where the screen is installed should be kept reasonably clean to avoid dirt and dust build-up. Screens can be periodically cleaned using a soft brush or cloth, doing this vertically with limited pressure. Screens can be cleaned using a damp cloth wetted with water and a mild detergent. Under no circumstances should screens be cleaned with abrasive materials or harsh chemicals such as acids, bleaches or solvents. Harkness Screens is not liable for damage caused to screens through the use of inappropriate cleaning methods or chemicals.

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