



# SCREEN SURFACES FOR DIGITAL CINEMA

The world's most popular screen surfaces for 2D and 3D digital cinema

Screen selection is important to optimise screen brightness and costs of buying and operating digital projectors. Screen surfaces are specially formulated for digital cinema and give excellent colour and contrast. Seams are invisible under projection conditions.

## Types of screen and application

### Matt Plus

For smaller screens; made from optically brightened PVC matt white screen.

### Perlur™

Perlur screens have specially formulated coatings to enhance brightness without 'hot spotting'. Gain levels of 1.4, 1.8 and 2.2 are available.

Perlur 220 is an ultra high-gain surface for use with certain 3D projection systems and very large 2D screens.

### Spectral™

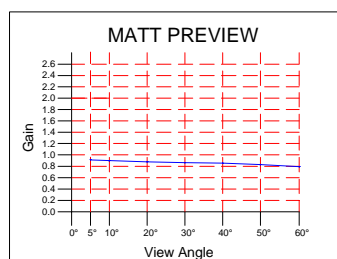
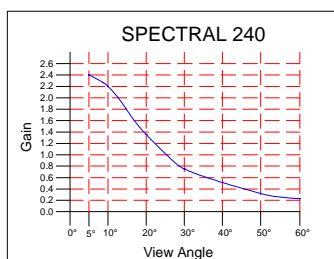
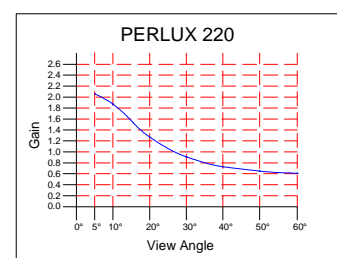
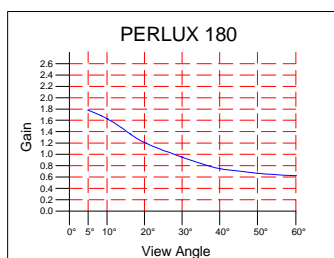
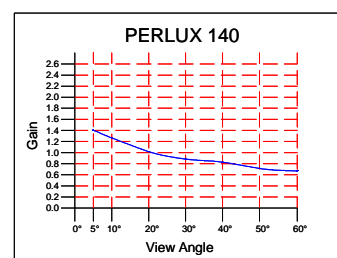
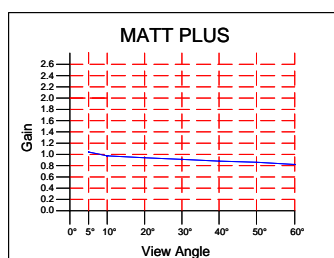
Spectral 240 has a special aluminium coating, which gives extremely good performance with passive 3D projection using polarised light. Spectral also performs very well under 2D projection, making it very suitable for 2D/3D programming.

### Matt Preview

A coated screen recommended for post-production, screening rooms and preview theatres.

It is particularly suitable for close viewing and high luminance levels.

For recommendations on gain level for screen sizes, see separate data sheet DS-205.



## Acoustic performance / screen perforations

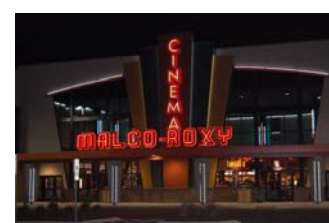
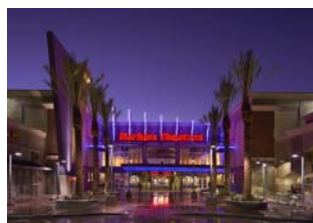
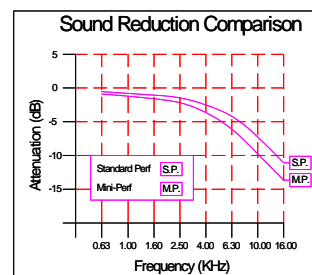
Harkness screens are perforated for behind screen speakers.

The usual perforation pattern for cinema operations is 'standard perf'.

For viewing distances of less than 5m, mini-perf (MP) is recommended.

Mini-perf should be used as an alternative to standard perf when moiré fringes are evident under digital projection. Where there are no speakers behind the screen, non-perforated screens are available.

Perforated Form	Hole Size	Open Area
Standard Perf	1.2mm (0.047")	4.5%
Mini-Perf	0.5mm (0.020")	1.7%



Increasing the gain level of the screen can significantly reduce operating costs of digital projectors. In retrofits, screen change costs can usually be recovered in 2 years or less.

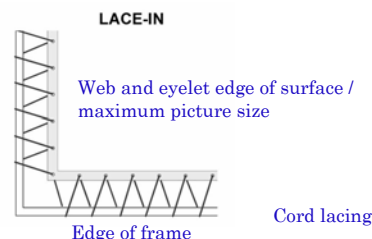
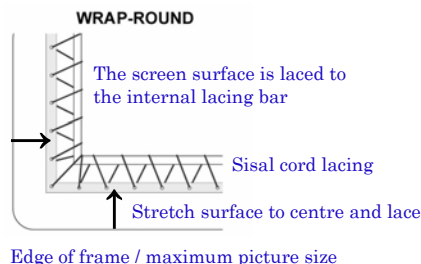
## Edge finishing

Harkness cinema screens have a triple fold web edge. Grommets are spaced at 150mm and have metal inserts for strength.

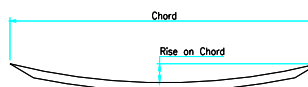
## Frames/Masking

Harkness screens can be used in 'wrap-round' frames or 'lace-in' frames. Normally, wrap-round frames are used when no moving masking curtains are specified. Lace-in frames are used with moving masking systems.

**Wrap-Round frame (rear view).**  
The wrap-round frame provides a full frame picture.



It is recommended to curve screen frames for Perlux and Spectral. With digital projection in retrofit situations, it is acceptable to put Perlux 140 on to an existing flat frame (but not higher gain screens). For most auditoria, suggested curvature is depth of curve (rise on chord), 5% of the screen width (chord).



Harkness can supply frames and masking systems and a special acoustically transparent cloth (Sound 2000M).

## Despatch/Storage

Perlux 140/180 and Matt Plus can be folded for transport and easy access to site. Screens should not be stored for longer than 2 months if rolled or 1 month if folded. 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. Packing must be protected from mechanical damage at all times.

	USA Manufacture (max)		Europe Manufacture (max)		Packing Method	Weight (Kgm <sup>2</sup> )
	(m)	(ft)	(m)	(ft)		
Matt Plus*	30 x 20	98' x 65' 6"	30 x 20	98' x 65' 6"	Folded	0.43
Perlux 140/180	23.5 x 11.8	77' 3" x 38' 11"	Not available		Folded	0.43
Perlux 140+/180+/220+	24.1 x 12.4	79' 3" x 40' 7"	26.5 x 11	87' x 36'	Rolled	0.50
Spectral 240	24.1 x 12.4	79' 3" x 40' 7"	26.5 x 11	87' x 36'	Rolled	0.50
Matt Preview	24.1 x 12.4	79' 3" x 40' 7"	26.5 x 11	87' x 36'	Rolled	0.50

### Packing Method

Folded screens: Packed as a parcel up to 90m<sup>2</sup> (1000ft<sup>2</sup>); above this in a wooden crate.

Rolled screens: packed in a tube up to 7m (23ft) height; above this in a long wooden box.

All Spectral screens from USA are in long wooden boxes.

\* Matt Plus - larger sizes are available to special order

## Fire Certification

Harkness screens have fire certification for most markets in the world.

## Installation

The following principles should be followed when installing Harkness cinema screen surfaces:

- The auditorium should be clean with no building works taking place.
- Installation should be at ambient temperature (20/24°C - 68/74°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 must not be touched (the rear of the screen is identified by the product label).
- All coated roll-packed surfaces must never be creased during installation.
- Sisal cord is recommended to install Harkness cinema screens. Please refer to Data Sheet Ref DS-036 for detailed installation procedures.

## 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 brushed using a long handle soft brush, doing this vertically with limited pressure.

Professional cleaning solutions are also available.

*For full information regarding Harkness Cinema Screen Surfaces and other products, please refer to Product Data Sheets available from our website (pdf format)*



Harkness Cinema Screen Surfaces - the world's most popular screen surfaces

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