

BARLO[®] CAST vision

Technical datasheet



BARLO CAST VISION

1. PRODUCT IDENTIFICATION

BARLO CAST vision is the brand name for a range of products that have been developed for use as projection screens. BARLO CAST vision's special characteristics will revolutionize the audiovisual sector.

BARLO CAST vision front (3014 ARF*/ARD**) for frontal projection

BARLO CAST vision rear (2950 ARF*/ARD**) specially designed for rear projection

BARLO CAST vision through (2051) rear projection with low contrast

* ARF: anti-reflexive one side

**ARD: anti-reflexive two sides

2. CHARACTERISTICS

BARLO CAST vision front is a white opaque rigid screen to be used in frontal projections.

BARLO CAST vision rear is a neutral grey coloured sheet specially developed for rear projection, but due to its special transmission values, images can be seen on both sides of the screen simultaneously. In rear projection applications bright and clear images completely eliminate the "hot spots" often seen with conventional projection screens. The neutral colour of BARLO CAST vision Rear 2950 makes it suitable for applications under different light conditions and images can be viewed without colour bias. The satin surface allows a reflection free image and reduces the risk of finger marking during fabrication or set up.

BARLO CAST vision through is an almost transparent sheet that allows the projection of images but also permits a clear view through the sheet in zones where no image is projected. This screen has a very low contrast and it would be the right choice in areas with low ambient light.

BARLO CAST vision's properties, like impact strength, mechanical and chemical resistance make it an excellent choice in applications where vandalism could be an issue (compared to traditional textile projection screens). It can be used in external applications without any risk of colour fading and is easy to clean. In rear projection applications, BARLO CAST vision also helps to absorb distracting projector fan and motor noise.

3. APPLICATIONS

- Frontal projection screens
- Rear projection screens
- Double-sided projection screens for images without text (due to reversal of lettering)



4. FABRICATION AND FINISHING TECHNIQUES

BARLO CAST vision sheets are as easy to handle as standard material. Sawing, drilling, gluing, printing, milling, mechanical polishing, thermoforming, or hot bending does not offer any problems to this special product. More detailed information on these items can be found in the "USER GUIDE", available on request.

5. TECHNICAL INFORMATION

PROPERTY	METHOD	UNITS	BARLO CAST VISION
GENERAL			
Density	ISO 1183	g/cm ³	1.19
Rockwell Hardness	ISO 2039-2	M-scale	105
MECHANICAL			
Flexural Modulus	ISO 178	MPa	3000
Flexural Strength	ISO 178	MPa	125
Tensile Modulus	ISO 527	MPa	3300
Tensile Strength	ISO 527	Mpa	75
Elongation	ISO 527	%	6
THERMAL			
Vicat Temp. (VST/B 50)	ISO 306	°C	115
Heat Deflection Temp. (A)	ISO R 75	°C	105
Specific Heat Capacity (60°C)	ISO 3146	J/gK	2.16
Coefficient of linear thermal expansion	ISO 11359-2	K ⁻¹ x10 ⁻⁵	7
Thermal conductivity	DIN 52612	W/mK	0.19
Degradation temperature		°C	> 280
Max. service temperature continuous use		°C	80
Max. service temperature short term use		°C	90
Sheet forming temp. range		°C	160-190
IMPACT STRENGTHS			
Izod (notched)	ISO 180	kJ/m ²	-
Charpy (notched)	ISO 179	kJ/m ²	2
Charpy (unnotched)	ISO 179		15
ELECTRICAL			
Dielectric constant (50 HZ)	DIN 53483		3.6
Volume Resistivity	DIN 53482	Ω.cm	10 ¹⁵
Surface Resistivity	DIN 53482		10 ¹⁴
Dielectric strength	DIN 53481	Ω	30
Dissipation Factor (50 HZ)	DIN 53483	kV/mm	0.06

RESISTANCE TO CHEMICALS

BARLO CAST vision sheets are – at room temperature – resistant to saturated hydrocarbons, aromatic free fuel and mineral oils, vegetable and animal fats and oils, water, aqueous salt solutions as well as diluted acids and alkalis. Aromatic hydrocarbons and hydrogen chlorides, ester, ether and ketones attack BARLO CAST vision.

6. SPECIAL PROPERTIES

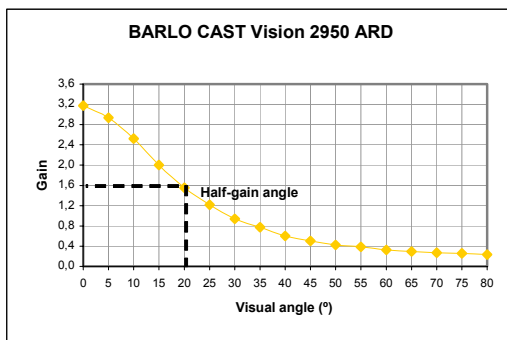
Gain Data:

Gain is a measure of the brightness of a screen compared to a standard white matt screen¹. In frontal projection, the reflected light is measured. For rear projection, light transmission is measured.

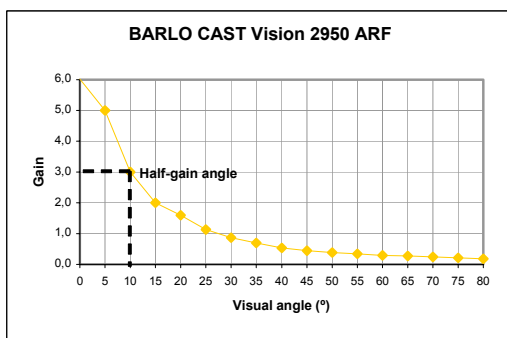
Product	Reference	Gain
BARLO CAST vision front	3014 ARD	1
BARLO CAST vision rear	2950 ARD	3, 2:1
BARLO CAST vision rear	2950 ARF	6:1
BARLO CAST vision through	2051	-

BARLO CAST vision rear:

BARLO CAST 2950 ARD:



BARLO CAST 2950 ARF:

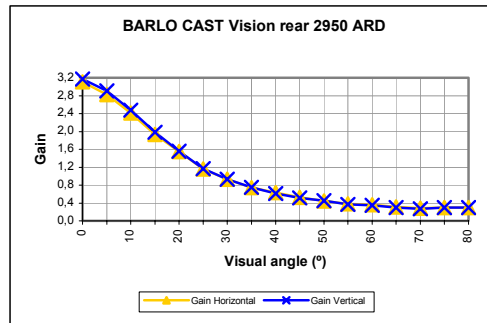


NOTE: the curve is symmetrical for negative angles.

¹ Normally reference screen is a block of Magnesium Carbonate. In this case, measures have been done taking as reference BARLO CAST 3014 ARD (Departament d'Òptica, UAB)

Visual angle:

Horizontal and vertical visual angle is the same due to the homogeneous satin surface. Visual angle is defined as the angle where gain value has been reduced by half (Half-Gain angle).



Contrast:

Contrast value depends on the ambient light. We show some values obtained with a 2500W power projector with a BARLO CAST vision rear 2950ARD screen:

- 400:1 (dark room)
- 50:1 (high ambient lighting)

Image quality/resolution: Image quality depends on the projector used. The lower the thickness of the screen, the better the quality of the image (4mm thickness is optimal when allowed by the installation).

Screen brightness: Due to its matt surface, BARLO CAST vision avoids reflections produced by external lighting. The finish of references ARF and ARD are slightly different in appearance (ARF is smoother than ARD) and the final choice will depend on the specific application.

Matt finish	Gloss (60°) ASTM D2457
BARLO CAST ARD	10
BARLO CAST ARF	20

NOTE: measured values change from one colour reference to another.

Maximum size:

Aspect ratio 4:3 2706 x 2030 mm (133" screen)
 Aspect ratio 16:9 3050 x 1716 mm (138" screen)

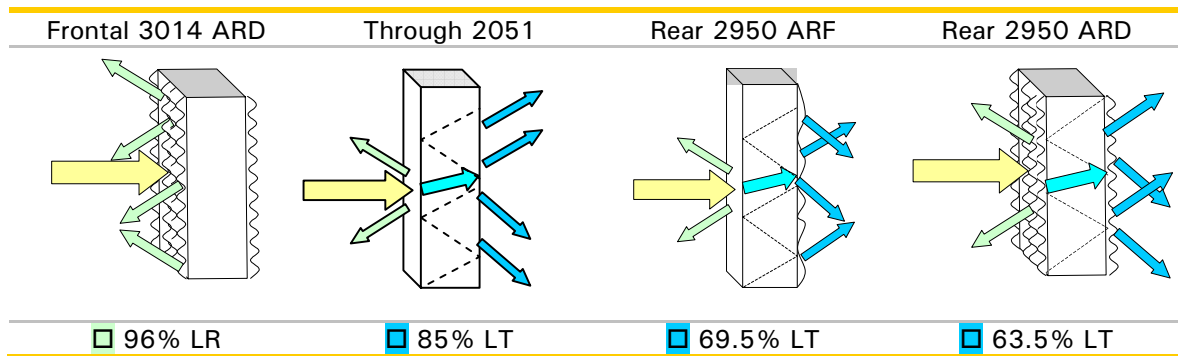
NOTE: Sheets are supplied in dimensions 3050 x 2030 mm

	Height (mm)	Width (mm)	Diagonal (in)	Screen weight (kg)		
				Screen thickness		
				4 mm	5 mm	6 mm
Format 4:3	750	1000	49.2"	3.6	4.5	5.4
Format 4:3	1500	2000	98.4"	14.3	17.8	21.4
Format 4:3	1800	2400	118.1"	20.6	25.7	30.8

	Height (mm)	Width (mm)	Diagonal (in)	Screen weight (kg)		
				Screen thickness		
				4 mm	5 mm	6 mm
Format 16:9	625	1111	50"	3.3	4	5
Format 16:9	1250	2222	100"	13.2	16.5	19.8
Format 16:9	1500	2666	120.5"	19	23.8	28.6

All technical data measured on a 4mm thickness screen.

7. LIGHT BEHAVIOUR



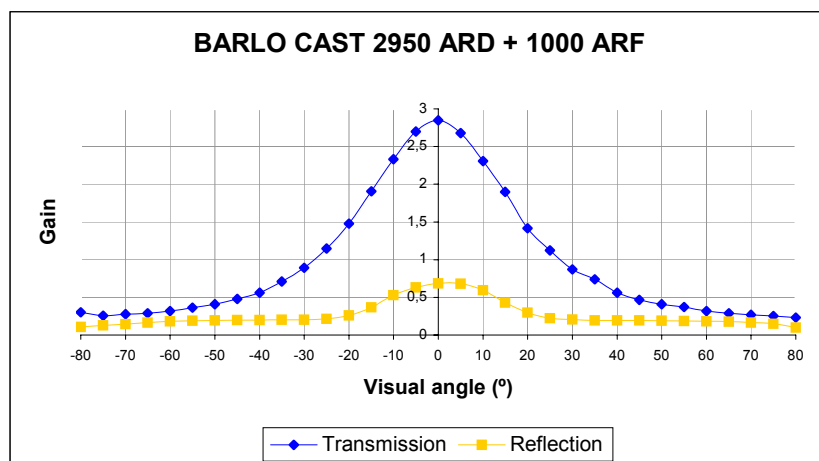
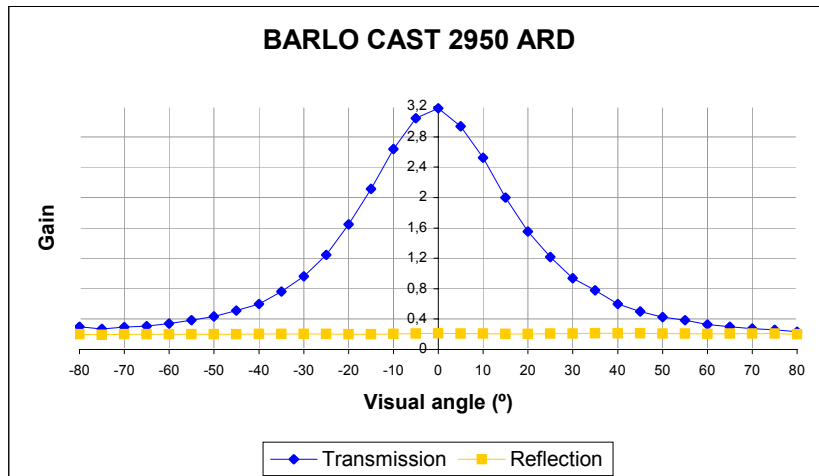
Values of light transmission/light reflection for a standard in 4mm.

8. SPECIAL RECOMMENDATIONS

In order to optimise the performance of BARLO CAST vision, the following points should be noted:

- Due to the special properties of transmission/reflection of BARLO CAST vision 2950 ARD, images can be seen on both sides of the screen. By projecting onto one side, images would be inverted on the opposite side. Therefore, BARLO CAST vision 2950 ARD should only be used for double side projection where no text is present in the images. In any case, the quality of the image is always better on the opposite side to the projector side.

In double side projection, increased brightness in the front side is obtained by placing a BARLO CAST 1000 ARF on the projection side:



- Distance from the projector to the screen depends on the screen size and the projector itself. As illustrative values:

Screen size	Distance
50 "	1500-2000mm
100"	2600-4500mm
120"	2600-5000mm

- The projection distance can be reduced by the use of special optical quality mirrors. Conventional mirrors are not suitable as they will produce double images. First surface or front surface mirrors need to be used (float glass flatness, optical grade, 94% reflective). Each mirror can reduce the projection distance by half.
- The contrast of an image displayed by BARLO CAST vision depends on the ambient lighting and the power and quality of the projector. For these reasons, the values included in this technical catalogue are only illustrative.
- As a rule of thumb, the following indications should be considered when installing a projection screen:
 - Viewers should be placed at a distance between 1.5 to 2 times the width of the screen.
 - Viewers' line of vision should be 1/3 of the height from the bottom of the screen.These are only illustrative data; space considerations will determine actual distances.
- BARLO CAST vision can be laser cut to almost any shape - allowing designers to break free from the usual rectangular viewing screen format.
- BARLO CAST vision can also be curved, giving further design possibilities and widening visual angle.

For information not included in this catalogue, please contact our technical department.