

SOLARIS

PRECISION CAST
ACRYLIC SHEET

Solaris™ Optical Grade Colour Correction Cast Acrylic is recognised for its outstanding optical and mechanical properties. It forms the ideal base material for display window solutions where optical performance, high light transmission, low weight, thickness uniformity and easy machining are of the essence. All Solaris Standard grades contain UV-absorbing material, blocking efficiently up to approximately 400 nm.

The **Solaris™ S range** is an endless range of transparent coloured optical filters used in a variety of applications for contrast enhancement, colour conversion or colour correction in displays.

Solaris™ S optical filters are used to control or manipulate the light emitting from a display. This is done by adapting the filter's transmittance characteristic, to the colour of the light emitted from the display.

They are therefore often used in applications in which contrast enhancement is required without loss of the full colour spectrum. Selective filters are designed to only transmit specific wavelengths of the light, i.e. specific colours. They are especially suitable for applications requiring colour correction and contrast enhancement of monochrome displays.

Colour:

More than 60 standard colours are available within the Solaris™ and the Solaris™ LS, DS, VFD and IR range.

Colour Matching:

Panel Graphic also offers a colour matching service.

Customer-specified colour references can be matched and produced accordingly. Either by matching a reference colour sample or by creating a colour filter which changes the colour of a known light source to the desired colour or chromaticity.

Working with our Polymer Chemists & their proprietary computer based C&L simulation software, we can calculate and create coloured filters and Colour Conversion Filters meeting almost any customer specified colour or chromaticity target.



Casting



Colour Matching



Application -
Window for casino chip counter*

*2.0mm Solaris S728 VFD colour conversion filter / dense black reverse print detail to rear / 3M adhesive gasket and white logo / encapsulated with Optiguard 60 Non-Glare Hardcoat



TECHNICAL DATA

| MECHANICAL PROPERTIES | | |
|----------------------------|-----------|-----------|
| Parameter | Test | Values |
| Tensile Strength (Rupture) | DIN 53455 | 65-68 Mpa |
| Elongation | DIN 53455 | 3-4% |
| Flexural Rupture Strength | DIN 53452 | 120 Mpa |
| Compressive Strength | DIN 53454 | 125 Mpa |
| Impact Strength | DIN 53453 | 12 N/mm |
| Modulus of Elasticity | DIN 53457 | 3000 Mpa |
| Hardness | DIN 53456 | 175 N/mm |

| THERMAL PROPERTIES | | |
|--------------------------------------|-----------|--------------|
| Parameter | Test | Values |
| Specific Heat | - | 1.46 J/g°C |
| Heat Stability - Vicat (3.0mm) | DIN 53460 | 115°C |
| Linear Thermal Expansion Coefficient | VDE 0304 | 0.08mm/m°C |
| Thermal conductivity | - | 0.186 W/m K |
| Forming Temperature | - | 150 to 170°C |

| ELECTRIC PROPERTIES | | |
|---------------------|------------|--------------|
| Parameter | Test | Values |
| Dielectric Strength | DIN 53481 | 40 Kv/mm |
| Volume Resistivity | DIN 53482 | 10 15 Ohm cm |
| Dielectric Constant | DIN 53483 | 3.4 |
| Dissipation Factor | DIN 453483 | 0.06 |

| OTHER PROPERTIES | | |
|----------------------------|-------------|----------------|
| Parameter | Test | Values |
| Density | DIN 53479 | 1.18-1.19 g/cm |
| Water Absorption | 20°C in 34h | 0.17% |
| Light Transmission (Clear) | 450-900 nm | 92% |
| Refractive Index | - | 1.49 |
| Fire Behaviour | UL94 | HB |

| PRODUCT AVAILABILITY | |
|----------------------------|--|
| Product Thickness: | 0.5mm - 4.0mm (other thicknesses available on request) |
| Product Dimensions: | 1500mm x 1000mm |

| MECHANICAL PROCESSING |
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| Sawing, CNC milling and laser cutting into desired size and shape, optimized for application-specific needs. |

| SURFACE TREATMENT |
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| Optiguard™ surface treatments can be applied to all Solaris™ materials. |