GE Advanced Materials
Specialty Film & Sheet

Product Datasheet

# LEXAN* Solar Control IR Solid Sheet

## Description

LEXAN* Solar Control IR Solid Sheet is a member of the LEXAN Exell D Clear Sheet family. LEXAN Solar Control IR solid sheet is a transparent polycarbonate sheet with proprietary UV protection on both sides offering excellent weathering properties and IR absorption with a **Light to Solar gain ratio** of **1.24*** for the colour **GN9A047T** and **1.18*** for the colour **GN8A081T**, resulting in outstanding heat management properties . With its excellent impact resistance it is ideally suited to a wide variety of building and construction applications. LEXAN Exell-D SC IR sheet can be easily cold formed into gentle curves which make it ideal for skylights, covered walkways, barrel vaults etc. LEXAN Exell-D SC IR are thermo-formable and can be thermoformed into the desired geometry whilst retaining the UV resistant properties specially developed for weather resistant applications.

## Product Range

LEXAN Exell-D SC IR sheet is normally manufactured in the standard sizes listed below. Deliveries from stock or cut to size can be ordered via our customer service organization.

**Standard gauge :**
3.00 mm , 6.00mm and 8.00mm ( other gauges possible upon request with a max. of 12.00mm )

| **Standard sizes:** | **Masking:** | |
|---|---|---|
| 2050 x 3050 mm | Top side: | Co-ex opal white PE/ purple print |
| 2050 x 6050 mm | Bottom side : | Co-ex transparent PE clear |

## Light Transmission

Transparent LEXAN Exell-D SC IR sheets have an excellent light transmission and solar-transmission
Colour : Natural GN8A081T at 3.00mm LT value : 74 % ( +/- 4% ) Solar Transmission 61% (max.68%)*
Colour : Natural GN9A047T at 3.00mm LT value : 63 % ( +/-4% ) Solar transmission 50% (max. 55%)*

## UV Protection

LEXAN Exell-D SC IR sheet has proprietary UV protected surfaces, giving excellent durability to outdoor weathering. Exell-D SC IR is essential opaque to all wave lengths below 385 nanometers. This useful shielding property can prevent discoloration of sensitive materials placed under or behind LEXAN Exell-D SC IR sheet.
*) see tolerances

* These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local GE Advance Materials, Specialty Film & Sheet representative or the GE Advance Materials, Specialty Film & Sheet Quality Services Department.
** Reported Values are Based on 0.125" Thickness.
Note: This preliminary data sheet is provided to assist you in the evaluation of the product that is under development. Until GE releases this product for general sales, GE reserves the right to alter prices, specifications, features, capabilities, function, release dates, and even general availability of the product at any time.

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## Preliminary Product Data Sheet

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| Polycarbonate resin typical properties [1] | Typical value | Unit | Standard |
|---|---|---|---|
| **Physical** | | | |
| Density | 1.23 | g/cm³ | ISO 1183 |
| Water absorption, 24 hours | 10 | mg. | ISO 62 |
| Water absorption, saturation /23°C | 0.35 | % | ISO 62 |
| Poison's Ratio | 0.38 | - | ASTM-D638 |
| **Mechanical** | | | |
| Tensile stress at yield 50 mm/min | 60 | MPa | ISO 527 |
| Tensile stress at break 50 mm/min | 70 | Mpa | ISO 527 |
| Tensile strain at yield 50 mm/min | 6 | % | ISO 527 |
| Tensile strain at break 50 mm/min | 120 | % | ISO 527 |
| Tensile Modulus 1 mm/min | 2350 | MPa | ISO 527 |
| Flexural stress at yield 2 mm/min | 90 | Mpa | ISO 178 |
| Flexural Modulus 2 mm/min | 2300 | Mpa | ISO 178 |
| **Impact** | | | |
| Charpy impact, notched | 35 | kJ/m² | ISO 179/2C |
| Izod impact, notched 23°C | 65 | kJ/m² | ISO 180/1A |
| Izod impact, notched -30°C | 10 | kJ/m² | ISO 180/1A |
| **Thermal** | | | |
| Vicat Softening Temperature, Rate B/120 | 145 | °C | ISO 306 |
| Heat deflection temperature 0.45 MPa | 138 | °C | ISO 75/Be |
| Thermal Conductivity | 0.2 | W/m °C | ASTM C 177 |
| Coeff. of Thermal Expansion | 7.10-5 | 1/ °C | ASTM D696 |
| **Flammability** | | | |
| Oxygen Index [2] | 25 | % | ISO 4589 |
| Glow Wire Test, 850°C, passes at | 1 | mm | IEC695-2-1 |
| Glow Wire Test, 960°C, passes at | 3.2 | mm | IEC695-2-1 |
| **Optical** | | | |
| Light transmission [3] GN8A081T | 74 * | % | ASTM-D1003 |
| Light transmission [3] GN9A047T | 63 * | % | ASTM-D1003 |
| *measured at a gauge of 3.00mm | | | |

1) Typical values only. Variations within normal tolerances are possible for various colours.
All values are measured at least after 48 hours storage at 23°C/50% relative humidity.
All properties are measured on injection moulded samples.
All samples are prepared according ISO 294.
2) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
3) Light transmission value and Solar Transmission may vary by + or –4 %.

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