

PLEXIGLAS® LED

For backlighting, light covers, 0M200 SC

Product

The translucent extruded sheet material 0M200 SC, which belongs to the PLEXIGLAS® LED product family, was developed as a cover for LED light fixtures (Fig. 1). Combined with an LED light source, this makes it possible to obtain a higher optical output ratio with superior light diffusion.

Particularly where there is little space between the LED and the material, it distributes light in an excellent manner and blends the light cones in the best possible way. There are no dazzling LED light spots; the light is distributed across the surface. When the light is switched off, the cover conceals the inner workings of the light fixture.

The material can also be provided with a satin surface on one side. This eliminates disturbing reflections on the light fixture (when the satin surface is installed facing outwards), or gives the light fixture a stylish sheen when the special high-gloss surface faces outwards. The satin surface is obtained by incorporating micro beads into the surface.

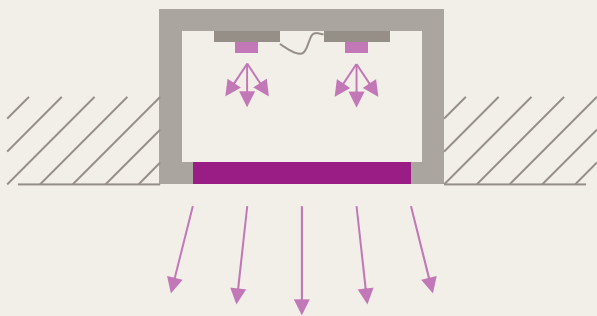


Fig. 1: Installation in an LED light fixture

Properties

In addition to the well-known and proven properties of PLEXIGLAS®, such as

- excellent light transmission and brilliance,
- extremely high weather resistance,
- ease of fabrication,
- low weight – half the weight of glass,
- 100% recyclability,

PLEXIGLAS® LED 0M200 SC offers the following special features:

- Very high light transmission combined with strong light diffusion. Fig. 2 shows the light distribution curve of a strongly focused light source.
- If the satin surface is installed facing outwards, the satin effect suppresses reflections. The satin surface can be thermoformed with no reduction in the satin effect.
- Installing the high-gloss surface on the outside gives the light fixture a noble appearance.
- The micro bead technology provides specific, efficient frontal light diffusion.

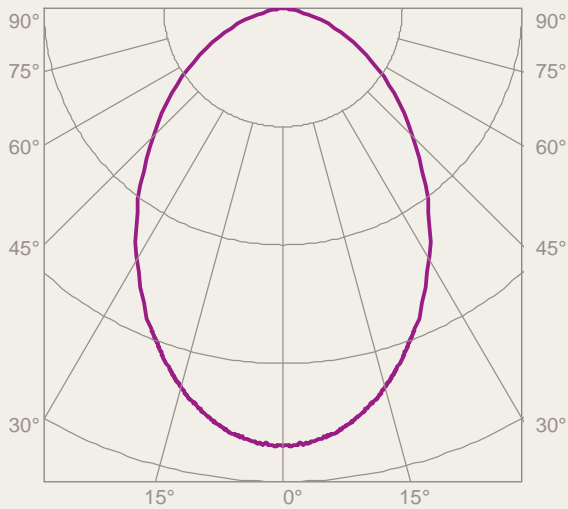


Fig. 2: Light distribution curve



Fig. 3: Light channel with LEDs spaced at 8 mm. Cover spaced at 10 mm.

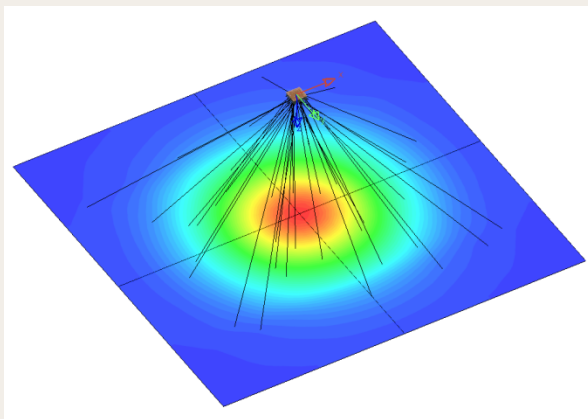


Fig. 4: Optical simulation with LightTools

Applications

This option makes PLEXIGLAS® LED 0M200 SC particularly suitable as a cover for

- light fixtures with a high-gloss surface, or with a reflection-suppressing, satin surface
- light channels, strip lights, luminous ceilings (see Fig. 3 for example)

Machining

PLEXIGLAS® LED 0M200 SC can be machined just like standard PLEXIGLAS® GS. The following Guidelines for Workshop Practice are available for PLEXIGLAS®:

- Machining PLEXIGLAS® (Ref. No. 311-1)
- Forming PLEXIGLAS® (Ref. No. 311-2)
- Joining PLEXIGLAS® (Ref. No. 311-3)
We recommend ACRIFIX® 2R 0195 for bonding with satin joints.
- Surface Treatment of PLEXIGLAS® (Ref. No. 311-4)
- Fabricating Tips for PLEXIGLAS® Solid Sheet (Ref. No. 311-5)

Development of light fixtures using optical simulations

The characteristics of PLEXIGLAS® LED 0M200 SC were precisely measured and modeled. Light sources and 0M200 SC can be constructed using the LightTools software from Synopsys (OEC in Germany) in order to simulate light distribution for light fixture development. You will find the demo file (see Fig. 4) of a light fixture incorporating 0M200 SC at www.evonik.com/plexiglas-led-0m200sc.

Physical forms

PLEXIGLAS® LED 0M200 SC is available as follows:

PLEXIGLAS® LED 0M200 SC

Size	3050 x 2050 mm
Thickness	3 mm
Light transmission τ_{D65} (DIN 5033)	58 %

Other thicknesses and sizes are available on request.

You can find more details in the PLEXIGLAS® Sales Handbook. For more typical values, please consult the Technical Information sheet PLEXIGLAS® GS/XT (211-1).

0M200 SC belongs to the PLEXIGLAS® LED product family and was specially developed for the illuminated signage industry. You can find other interesting products developed for LED applications in the information sheet "PLEXIGLAS® LED, Overview" (Ref. No. 212-6).

® = registered trademark PLEXIGLAS is a registered trademark of Evonik Röhm GmbH, Darmstadt, Germany. Certified to DIN EN ISO 9001 (Quality) and DIN EN ISO 14001 (Environment)

Evonik is a worldwide manufacturer of PMMA products sold under the PLEXIGLAS® trademark on the European, Asian, African and Australian continents and under the ACRYLITE® trademark in the Americas.

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

Evonik Performance Materials GmbH

Acrylic Polymers

Kirschenallee, 64293 Darmstadt, Germany
info@plexiglas.net www.plexiglas.net www.evonik.com

Ref. No. 232-22 July 2015