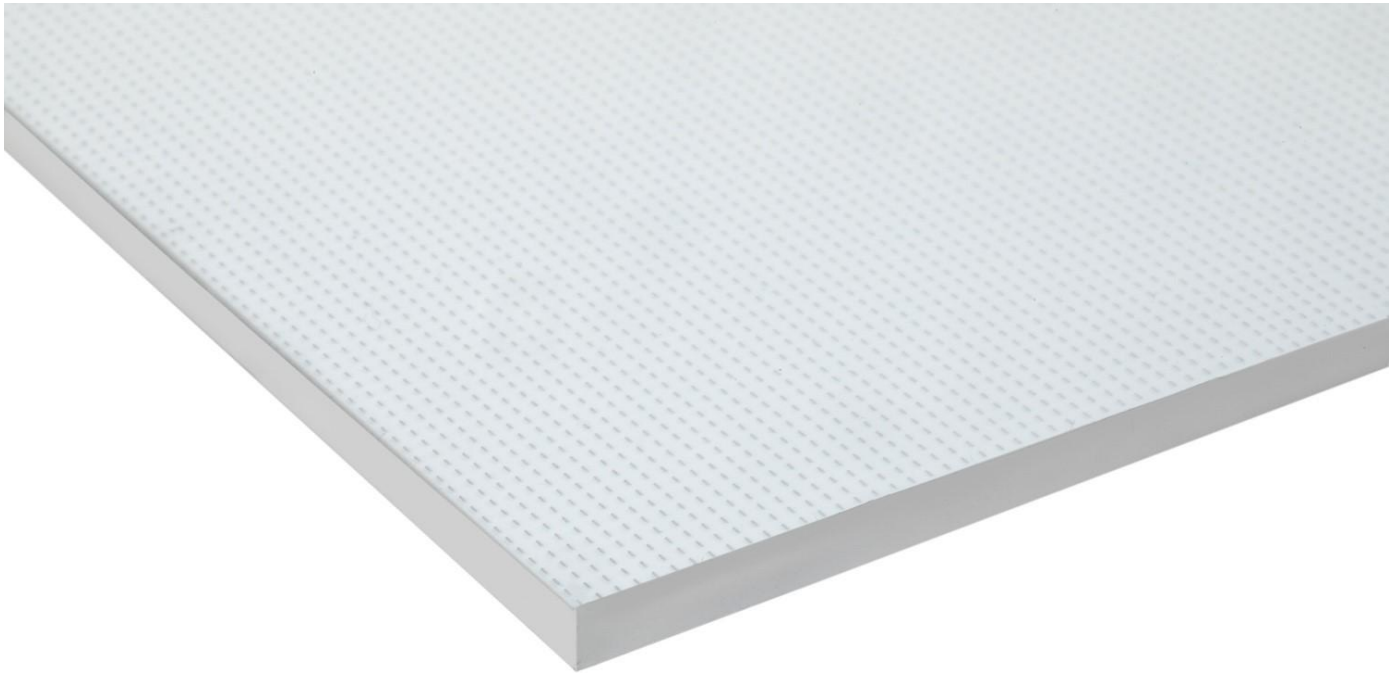
TECHNICAL DATA SHEET
CRYSTAL PANEL LED (CPL)

CRYSTAL PANEL



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01 / CONFIGURATION OF THE LIGHT

- Illuminated edges - depending on the expected light effect and panel size - one, two or four illuminated edges.

- Standard colour temperature: 3000 K, 4000 K, 5000 K, 6500 K, 7000 K, 10000 K. Other colour temperature values are available upon the Customer's request.

- In case of standard orders with 12V, we apply flexible LED strips with an output power of 17 W/rm with SMD 2835 diodes, 102 chips/running meter and 30 mm module lengths. Upon the Customer's request we can provide strips with different parameters.

02 / PARAMETRY ELEKTRYCZNE

- Voltage supply: 12 V - standard, optional 24 V or 5 V. Possible power supply, for example using a phone charger, USB port of A type (version 2.0 and newer), battery or using power bank.
- Power supply type: we recommend using MeanWell impulse power supply.
- Temperature of panel during work measured on the radiator - from **38-40 °C** and may vary depending on the place and method of installation.
- Maximum current:

for 12 V:	1,4 A/running meter LED strip
for 24 V:	0,9 A/running meter LED strip
for 5 V:	2,5 A/running meter LED strip

- Power consumption:

for 12 V:	17 W/running meter LED strip
for 24 V:	21 W/running meter LED strip
for 5 V:	12,5 W/running meter LED strip

- Control: dimmers, interrupters and other electronics controlling diodes suitable for constant voltage supply for 5, 12 and 24 V respectively.

03 / TECHNOLOGY, MATERIALS AND DISTANCES

A. Components of CPL
- Engraved PMMA plexiglass pleksi PMMA
- PVC reflective film Or HIPS Brigid reflective sheet
- Adhesive reflective tape – PP on aluminium base, acrylic adhesive
- Radiator in the form of a thin-walled L-profile made from anodized alluminium
- Flexible, constant voltage LED strip

B. Plexi thickness: 4 and 6 mm – standard; other thickness upon request

C. Available engraving patterns: dots - standard; line – on a plexiglass plate min. 6mm trick, upon request

Attention! In some cases, the distance from the LED panel to the illumunated material is required to obtain proper light dispersion!

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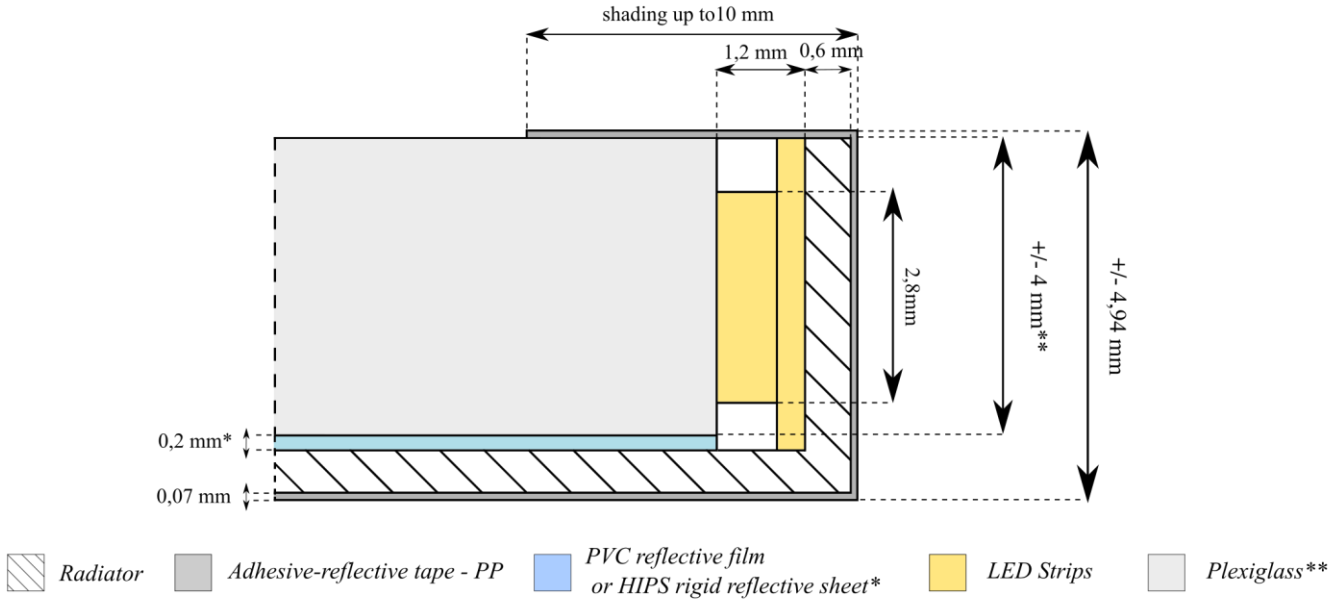
D. Applied materials: PMMA, PVC, aluminium, polypropylene, high impacy polystyrene

E. Weight : in case of Plexiglas 4mm: from 4,72 kg/m^2; in case of Plexiglass of 6 mm: from 7,08 kg/m^2

F. Possible overall dimensions of the panel:
- Dots: 3000 x 1450 mm
- Lines: 3000 x 1500 mm
- It is possible to put panels side by side using appropriate distance to the light diffusing material (min. 70 mm)

TECHNICAL PROFILE SECTION CPL



* *If HIPS plate is used, the specified thickness increases to 1 mm*

** *Engineering tolerance of plexiglass total 20%*

G. The required distance between the panel and the material to be illuminated:
- CPM/CPL 4mm: light path up to 1,2m - without distance, more than 1,2m – distance 5mm from the surface of the engraved element or formity is not guarandteed
- CPM/CPL 6mm: light path up to 1,5m

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H. Available shapes:

A rectangle or a square are recommended shapes of the panel as they are optimal for the even light diffusion on the surface. Additionally, other shapes are possible, for example, a circle, a trapezoid or a triangle. Nevertheless, the aforementioned shapes may not guarantee perfect uniformity of the light on surface or adequate cooling of the diodes. We ask you to consult the shape impact on the panel's properties directly with our Consultant.

I. Length of cord:

In case of standard orders we install 2x0.35 cords, 1.5 m long. Other lengths of power cords (if it is not standard it requires an additional charge) are available upon request of the Customer after agreeing this with the Consultant and considering the voltage drops.

04 / INSTRUCTIONS CONCERINING INSTALLATION

RECOMMENDED METHOD INSTALLATION

- In suitable aluminium frames, for ex ample with a magnetic or snape front
- Directly in a properly shaped piece of furniture or structure
- Ussing suport or shaped brackets

Aluminium profile with proper shape constitute a part of our standard offer. Profiles are available in 3m long beams, they can be cut to meet indicated transport dimension upon the Customer's request.

NON-STANDARD INSTALLATION METHOD

- By screws through drilled or laser cut installation holes (subject to additional charge)
- In wooden frames
- In beam structures (for example, imitation of windows)
- In a relaxed state

The aforementioned methods or other non-standard methods of installation have to be determined with our Consultant as they can affect the selection of materials to be used, the production process or the method of securing particular elements of the product.

05 / DURABILITY AND LIMITATIONS OF APLICATION

- Expected diode life span: 50.000h (with proper power supply).
- Optimum working temperature range: 10-25°C (non-condensing environment)
- Protection ratings: IP40. LED panel cannot be exposed to direct contact with water. Indoor use only.

06 / LIGHT DISPENSING MATERIALS

- Material for illumination (image carrier and light diffuser): backlit foil, polyester fabric,
- Opal (min. 3 mm thickness) with an appropriate light diffusing index
- Other materials aimed for translucent illumination (we recommend a diffusion test on the sample before the final order)

07 / BEFORE PLACING THE ORDER

A. Measurements:

- During the measurement of a place where the panel is to be installed, one should pay attention to angular deviations. Always use the appropriate tolerance when you indicate the expected external dimensions of the panel.
- Bear in mind that the outer dimensions of the panel are not the same as the dimensions of the luminous surface! Your design should include shaded areas (conform to the Standard od Realization CPL)
- Depending on the dimensions of the luminous space, make sure there is proper distance to diffuse the light.

B. Placement of the power supply:

Find the proper place to install the power supply as it has to be always available in case of malfunction. The length of the cord between the power supply to the panel should not exceed 2.5 m due to voltage drops. If the situation is specific, please contact the Consultant - he will find the right solution in each case!

C. Color temperature:

Based on our experience the most universal colour temperature for illuminating various types of graphics is 6 000-6 500 K. Nevertheless, it is significant to remember that other colour temperatures of diodes are available on demand.

CP-KP-CPLS/01/2020

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08 / INFORMATION CONCERING THE USAGE AND WARNINGS

It is recomended to:

- Transport the panel in the original packaging, possibly in vertical position, protect like glass sheet
- Store and handle in vertical position, avoid placing it on the edge with LED strip or electrical cord
- **Remove the protective foil from the panel ONLY during the final stage of installation**
- Clean the panel using a window cleaner with low alcohol content (such as Clin Anti-Fog)
- Protect the edges with LEDs from accidental damage or ripping the power cord
- **Make sure that the power supply cord is not connected to 230 V**

It is not allowed to:

- **Place graphics, adhesive tapes, foils and other materials directly on the panel surface**
- **Overload the panel**
- **Pull on the cord**
- **Put the panel in water**
- **Bend the panel in a manner not covered by the project. All acceptable bends of the panel are to be discussed with the Consultant in advance.**
- **Install the panel by gluing it to the rear wall**

09 / FINAL REMARKS

• Any modifications made without the written consent of the Producer will void the guarantee.

• In case of any doubts concerning the application of our products, we encourage you to contact Crystal Panel Consultants.

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