

## Luminous Panels

### Safety notes

- The electrical connection must be carried out by qualified electricians only. Make sure that the circuit is de-energized before connecting. If any malfunction or damage is detected after switching on, the supply voltage must be switched off immediately.
- Only use original parts from the manufacturer for maintenance and repair.
- The manufacturer accepts no liability for damage caused by improper use or extreme external influences. These are for example:
  - **Mistakes during transport and installation:**
    - mechanical modifications to the Luminous Panels (e.g. by sawing, drilling or grinding)
    - bending of the acrylic glass panes during transport, installation, and in built-in condition
    - scratching of the surface due to improper handling
    - scratching or streaking due to improper cleaning of the surface
    - overloading due to an incorrect supply voltage
    - heat accumulation due to thermally insulated installation
  - **Environmental and natural influences:**
    - overheating due to excessive ambient temperatures
    - chemical influences in the environment (e.g. sulphur)
    - overvoltage due to lightning

Please keep these instructions with the documentation of your installation.

### Intended use

- The **hansen** Luminous Panel is a component part, i.e. an electrotechnical component which is combined by the user with other components into an electrical device as final product in accordance with CE/VDE regulations or the product liability act respectively.
- It is designed for backlighting translucent surfaces such as acrylic glass panes, fabric banners or foils.
- Operation of the panel is only permitted with the appropriate **hansen** and Meanwell converters and power supplies.
- The intended use includes observance of the associated technical data sheet, connection diagram and installation instructions.

### Unpacking and checking the content

- The packaging must be opened in such a way that the content cannot be damaged.
- Particular care must be taken when using sharp tools.
- After unpacking, immediately check the content for damage and compliance with the delivery note.
- Any defects must be reported to the manufacturer immediately.
- Damaged goods must not be transported or used any further.

### Planning and preparing the installation

- It must be checked whether the intended installation site is freely accessible and is easily accessible for the fitter. Any other existing parts (e.g. struts, frames or other objects) must be removed or the installation location must be changed.
- Fastening the panel light to the substrate (e.g. wall, ceiling or façade), ceiling or façade): The solid surface must be suitable for force-fit fastening. As a rule, fastening with screws is required, i.e. holes must be drilled into the substrate.
- Position and laying of the electrical connection cables: Any junction boxes and the location of the power supply unit as well as the maximum permissible cable length must also be planned or taken into account in accordance with the electrical engineering regulations applicable at the installation site.

### Transporting Luminous Panels

Luminous Panels must be handled very carefully. Particular care must be taken not to damage the surface of the acrylic glass panes (e.g. by scratching) and not to bend the Luminous Panels.

Especially larger Luminous Panels should be transported and stored vertically (i.e. standing upright). Larger Luminous Panels with an edge length of more than 1 m must be carried by two persons.

### Do not bend the Luminous Panels!



### Thermal expansion of acrylic

The Luminous Panels mainly consist of multiple acrylic glass panes screwed together.

When installing and fixing the Luminous Panels, the specific properties of acrylic glass must be taken into account. This particularly applies to the thermal expansion of the material with a coefficient of 0.07 mm/(m\*K).

In order to allow the acrylic to expand and to avoid damage, the enclosure housing the Luminous Panel must provide sufficient space.

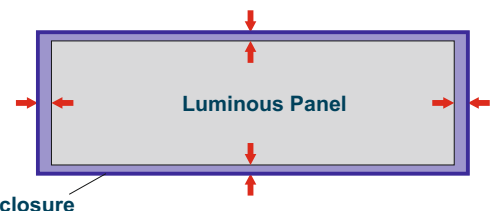
Guide values for the expansion per metre edge length are:

- Indoor systems – temperature difference of up to 20 K: 2 mm
- Outdoor systems – temperature difference up to 70 K: 5 mm

**It is recommended that twice the distance of the guide values as a distance.**

Thermal expansion of acrylic cannot be prevented – not even “by forced measures” such as fixing the panel with screws. In this case, the Luminous Panel will deform into a wave shape.

### Leave sufficient space for expansion all round



Further information on the properties of acrylic can be found on page 2 of this instruction.

## Luminous Panels

### Check prior to installation

The Luminous Panel must be taken into operation prior to its final installation to check the luminous surface for possible defects, which may be visible only when the panel is illuminated. Any defects must be notified to us immediately.

### Labelling

The Luminous Panels are provided with a label on the rear containing technical information about the product.

### Acrylic glass

The Luminous Panels are made of cast acrylic glass with a thickness tolerance of

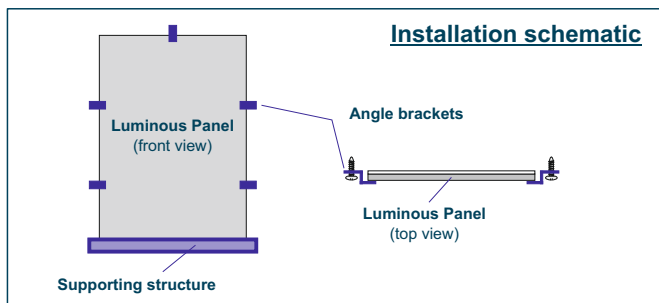
- $\pm 1.2$  mm for the light-transmitting pane
- $\pm 0.7$  mm for the rear panel

### Installation and fixing

Due to the special material properties of the acrylic glass, some rules must be observed during installation and subsequent operation.

The Luminous Panel must be allowed to expand and contract by some millimetres during operation. So sufficient clearance to other structures must be ensured.

Preferably, the Luminous Panel is installed standing on a sturdy base (housing wall or other structural parts). The panel is held upright by means of angle brackets installed on the sides and the top edge.



### Cleaning

To clean the surfaces, only a damp, soft cloth should be used, which has been soaked with relaxed water (e.g. by adding dishwashing liquid) or isopropanol 60 %. Organic solvents (e.g. acetone) must not be used.

### Protection against moisture

Luminous Panels which are to be used outdoors (i.e. in environments subject to moisture), must be specially ordered "for outdoor applications" in which case the LED circuit boards are protected against moisture.

**Please note that the air gap between the two acrylic panes is not protected. Suitable protection against ingress of moisture between the acrylic panes must be provided by the customer.**

### Power supplies and electrical connection

The Luminous Panels must only be operated with the power supplies or converters supplied by hansen (brand: **hansen** or Meanwell). The respective installation instructions for the power supplies or converters must be observed.

Please refer to the enclosed connection diagram for the electrical connection of the panel. It is important to differentiate between parallel (12 V or 24 V system) and series connection (25, 50 or 100 mA system) of the LEDs.

### Gluing together the acrylic panes

The two acrylic panes must on no account be glued together or wetted with gels or liquids as this would have a significant negative effect on the brightness distribution over the luminous surface.

### Pasting onto the surface

Stickers etc. should not be pasted directly onto the surface of the Luminous Panel as this would affect the light distribution. This particularly applies to dark-coloured and large stickers.

### Additional opal/coloured covers

Covers, for example additional panes made of acrylic, should not be fitted with the smooth surface onto the Luminous Panel. Among other things, the panes may attract each other by electrostatic charging causing bright spots to appear.

We recommend:

- fitting a cover with a satin surface finish, or
- fitting the cover with a space, or
- inserting a matt backlit film between the Luminous Panel and the cover

### What is "indoor" and what is "outdoor"?

**Indoor** = installation in heated rooms with low moisture levels. Saunas, swimming pools and similar rooms are not considered "indoor" installation areas.

Luminous Panels designed for indoor installation are equipped with a flexible 12 V LED circuit board (parallel connection).

➔ Degree of protection: **IP 20**

**Outdoor** = installation outside heated rooms, typically on building facades, subject to moisture and changing temperatures (up to 70 °C for short periods). Saunas, swimming pools and similar rooms are "outdoor" installation areas.

Luminous Panels designed for outdoor installation are supplied with the LEDs enclosed in heat shrink tubing (series connection).

Suitable protection against ingress of moisture between the acrylic panes must be provided by the customer as this may lead to visible differences in brightness.

Luminous Panel (acrylic parts) ➔ **IP 20**

Luminous Panel (LEDs and electrical parts) ➔ **IP 65**