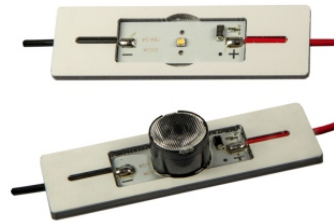


Shaped LED Boards



Aluminium composite boards fitted with LEDs



Technical description

The ***hansen*** Shaped LED Boards are compact light sources designed for backlighting acrylic glass, banner fabric or similar translucent materials. As such, they can be used for the illumination of channel letters or banners.

In addition, the boards can be used as light sources for lighting purposes. The shape as well as the LED arrangement can be largely adapted to the customer's needs and local conditions.

Two types of base material are available:

Rigid foam boards

These are simpler to process and better suited for less powerful LEDs (e.g. letter-shaped LED boards).

Aluminium composite boards

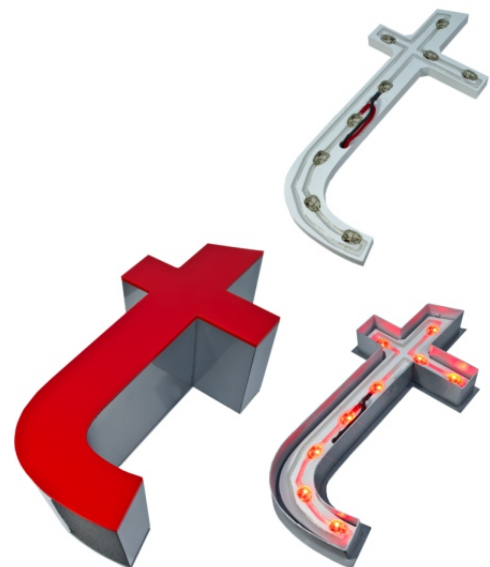
These are mechanically stronger and well suited for more powerful LEDs due to their better cooling characteristics.

Both materials are very similar in terms of design and processing: First, recesses (grooves) for the LEDs and connecting and, if required, additional mounting holes are milled into the boards. Then the outer shape is milled out of the material.

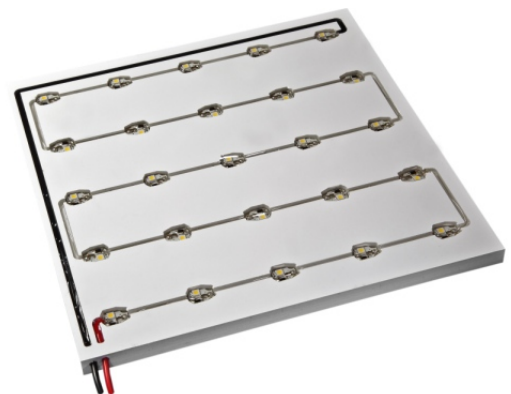
The LEDs and connecting wires are placed into the grooves and soldered together. Finally, the grooves are filled with a transparent, watertight potting compound.

The boards can be equipped with different types of LEDs ranging from LEDs with a low power rating (0.1 W/25 mA) to High-Power LEDs (2.5 W/750 mA) with various light colours (3,000 K–6,500 K). If required, the High-Power LEDs can be fitted with additional lenses.

The LEDs are always connected in series. Suitable converters to power the LEDs are also available from ***hansen***.



Rigid foam boards fitted with LEDs



Shaped LED Boards - Rigid Foam

Milling files

Before the LED Boards can be produced, an electronic drawing of the desired shape must be available. All common formats such as .dwg, .eps, .ai, .pdf or .cdr can be processed.

Based on this drawing, we will add the necessary grooves and recesses for the LEDs and connecting wires. This is done in consultation with the customer. Additional mounting holes or other special features can be considered and incorporated into the milling file.

Base material

The base material for the LED Boards is a PVC foam sheet (e.g. Kömacell, Simona) with a thickness of 10 mm. These sheets feature a foamed and thus very light inner core. The surface is hardened on both sides.

The material is both very light and dimensionally stable. It can be processed with CNC milling machines as well as with simple manual tools (e.g. knife, drilling machine).

Rigid foam boards are well known in the signmaking industry where they have been successfully applied in indoor and outdoor installations for many years.

Light source: LED

The LEDs used are equipped with a protective diode mounted on the same small printed circuit board. In addition, the LEDs are protected by a small dome preventing a change in light colour after potting.

We offer LEDs in three power classes:

- Standard LEDs (0.1 W)
- Standard-PLUS LEDs (0.175 W)
- Power LEDs (0.32 W)

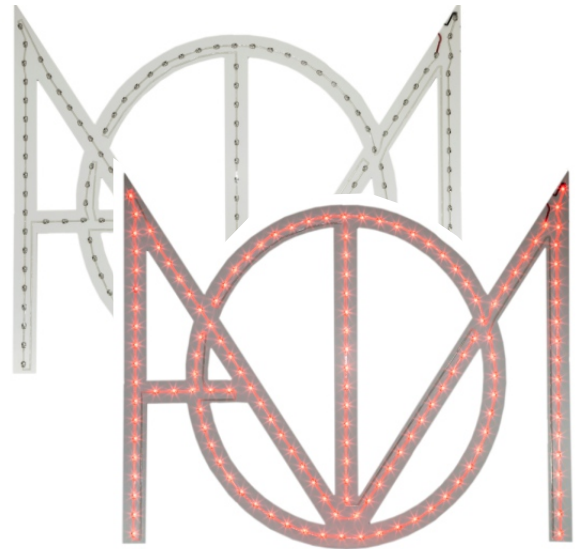
The LEDs can be supplied in coloured and white (3,000 K–6,500 K) variants.

Converters

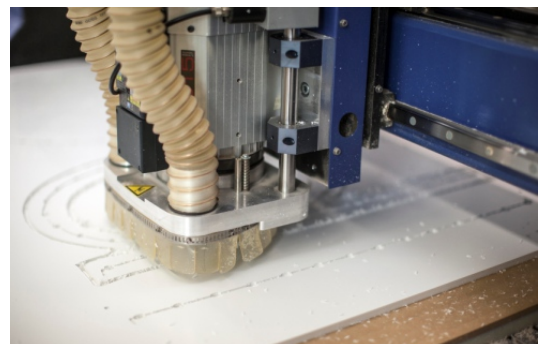
The LEDs are operated in series connection. Various converters with 25 mA, 50 mA and 100 mA as well as dimmable variants can be supplied to power the LEDs.

Transparent potting

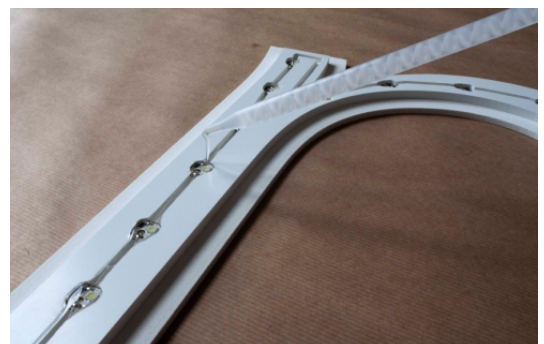
The transparent potting compound protects and insulates all electrical components. It consists of a two-component polyurethane plastic material, which has been successfully applied for many years, particularly in outdoor applications.



Sophisticated illumination of a letter-shaped board



CNC milling machine at work



Potting of a rigid foam board

Shaped LED Boards - Aluminium Compound Boards

Milling files

Before the LED Boards can be produced, an electronic drawing of the desired shape must be available. All common formats such as .dwg, .eps, .ai, .pdf or .cdr can be processed.

Based on this drawing, we will add the necessary grooves and recesses for the LEDs and connecting wires. This is done in consultation with the customer. Additional mounting holes or other special features can be considered and incorporated into the milling file.

Base material

The aluminium compound boards consist of two aluminium sheets glued to a polyethylene core (brand name: Dibond, Gutbond). The thickness of the boards is 4 mm or 6 mm depending on the application.

The aluminium compound boards combine very high stability with low weight and very small dimensions.

Aluminium compound boards are well known in the signmaking industry where they have been successfully applied in indoor and outdoor installations for many years.

Aluminium as heat sink

The use of High-Power LEDs requires passive cooling measures. The metal sheets on the top and underside of the boards are well suited for this purpose.

Light source: LED

The boards are equipped with power LEDs or High-Power LEDs. The LEDs are protected against colour shifts caused by potting. The necessary cooling is provided by the aluminium compound board.

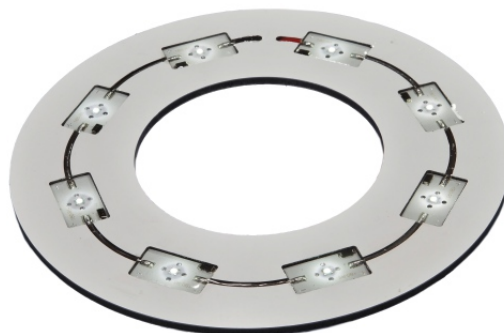
If a more directed or focused light is required, the LEDs can be fitted with additional lenses. We offer lenses producing angles from 10° to 50°.

Converters

The LEDs are operated in series connection. Different converters with 350 mA, 500 mA or 750 mA as well as dimmable variants can be supplied to power the LEDs.

Transparent potting

The transparent potting compound protects and insulates all electrical components. It consists of a two-component polyurethane plastic material, which has been successfully applied for many years, particularly in outdoor applications.



Ring-shaped luminaire insert with 8 High-Power LEDs with 2.5 W each