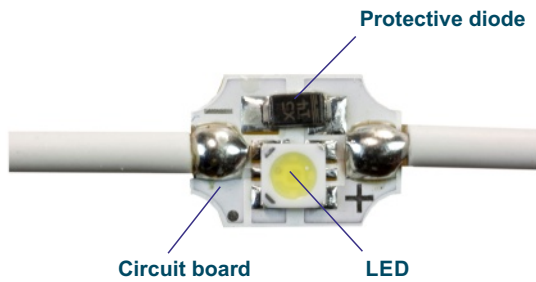


Description

LED Tube



Technical description

The ***hansen*** LED Tube is a highly flexible system designed for backlighting acrylic, banner fabric or similar translucent materials. Its primary application is the illumination of channel letters and light boxes for illuminated advertising purposes.

The **LED Tube** consists of the following main components:

- Light-emitting diode (LED)
- Protective diode (Zener diode)
- Heat shrink tubing
- Converter
- Mounting material

Each LED and protective diode is fitted to a small circuit board. The individual circuit boards are connected by wires of the same length soldered to the circuit boards. For better protection, these components are enclosed in a transparent heat shrink tubing.

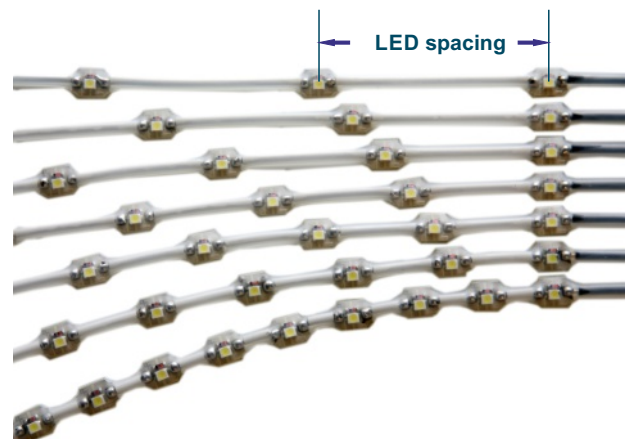
The connecting wires between the LEDs can be bent allowing the **LED Tube** to be flexibly adapted to the surrounding conditions to achieve a uniform illumination of channel letters.

The following parameters can be varied:

- LED spacing
- LED power rating (brightness)
- Light colour (coloured or white)
- Colour temperature (for white LEDs)

The **LED Tube** can also be supplied with two LEDs on each circuit board. This “duo” variant **LED Tube 2x100** offers double light output. Fitted with two coloured LEDs, mixed colours such as turquoise, yellow or magenta can be generated.

Electrically, the LEDs form a series connection. Special converters for the operation of the LED Tube can be supplied as well. They supply a constant current protecting the LEDs against overloading.



LED Tube
Standard and Power



LED Tube 2x100
Protective diode for each LED

LED Tube

LED power rating

The **hansen** LED Tube can be supplied with four different LED power ratings:

- Standard-LEDs w | b | g with 0.08 W (25 mA)
- Standard-LEDs r | y | o with 0.11 W (50 mA)
- Power-LEDs w | b | g with 0.28 W (100 mA)
- Power-LEDs red with 0.2 W (100 mA)
- 2x100 LEDs white with 0.56 W (100 mA)

Light colours

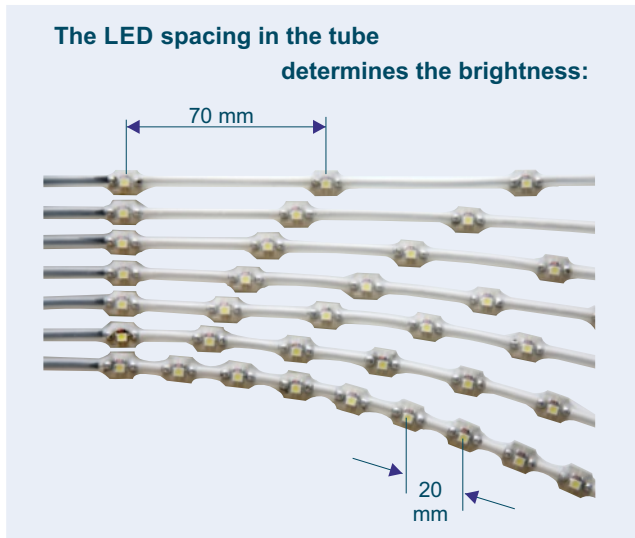
The table on the right shows the available LED types with the respective current values and light colours. The group of white LEDs subdivides into the colour temperatures 2,700 K (warm white), 3000K, 4,000 K, 5,000 K and 6,500 K (cool white).

LED types and light colours:

	Standard LED	Power LED	Power 2x100 LED
25 mA	○ ● ●		
50 mA	● ● ● ●		
100 mA		○ ● ● ●	○

LED spacing

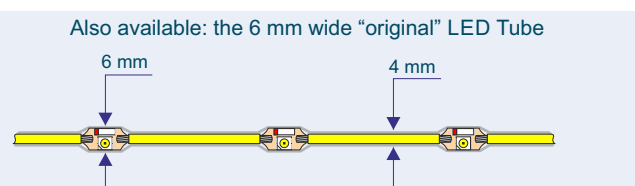
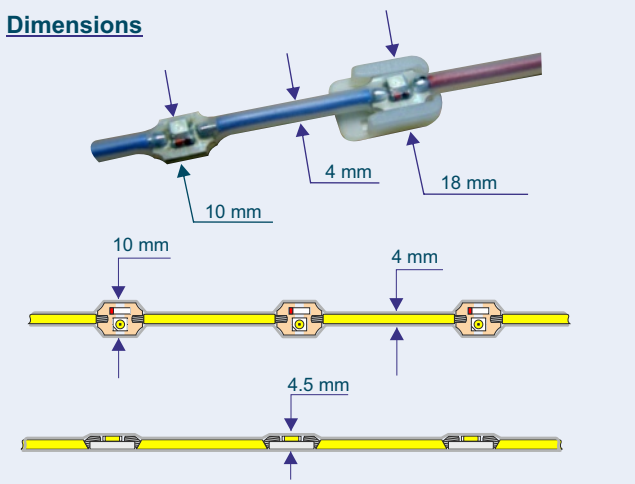
To allow very different channel letters to be illuminated, the LED Tube can be produced with LED spacings from 20 mm to approx. 200 mm. Which spacing is appropriate depends on the geometry of the letters, the power rating of the LEDs and the desired brightness.



LED Tube 2x100

If a higher brightness is desired, the LED Tube can be supplied with a “duo” circuit board. Another application is the illumination of large light boxes with a depth of approx. 150 - 300 mm.

Dimensions



Self-adhesive tube holders for simple and secure installation inside channel letters

Type 1

19 x 19 mm



Type 3

20 x 27 mm



Type 4

19 x 18 mm

