Instructions

Art-Nr. 7050/7051/7052/7053/7054/7055 2 Pieces LED
micro red / micro yellow / mini white

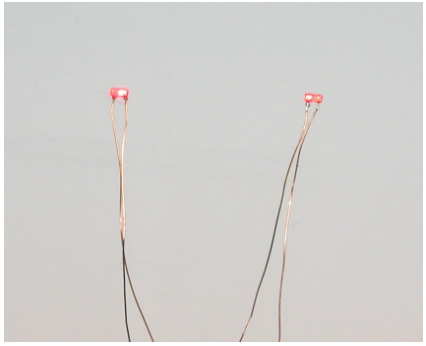
figure 1: Red LEDs with black marking

1. These parts are not suitable for small children. There is a danger of swallowing.
2. The product can be seen in figure 1. These instructions are part of the product. Please retain them well.
3. The LEDs red and yellow are the smallest that exist. Their design is called 0402 and they have a length of 1 mm, a width of 0,5 mm, and a height of 0,8 mm including the soldered wires. The LED white also is the smallest existing on the market in this specific color. Its design is called 0603 and it has a length of 1,6 mm, a width of 0,8 mm, and a height of 0,6 mm including the soldered wires.
4. The LEDs are always delivered in pairs. The wires are soldered reciprocally, since the illuminant chip is not in the center of the LED. When mounted onto the left and right side of a wagon, both spots are shining on the same height while the wires of each LED go off towards the inside.
5. The LEDs are selected by hand and accurately checked. This shall guarantee that you always get two LEDs shining with the same brightness. But still a slight difference of the brightness cannot be avoided completely. This is likely to appear mainly in complete darkness and with a very high luminosity.
6. The LEDs are already premounted with two leads with a diameter of 0,1mm. This has the advantage that when affixing an LED onto the model, a 0,3 mm hole is sufficient to thread the wires. Disguised with a little color, they should be almost invisible afterwards.
7. With their small size and respectively the soldering spots of only 0,3 mm and the very thin wires it is only logical that the LEDs do not withstand any heavier impacts. Do not unnecessarily pull on the wires or turn them to and fro, they can easily break off. We use special soldering irons for the mounting since it is not possible to solder the wires with the usual soldering irons. The illuminant semiconductor chip for sure would be damaged. So please take this warning seriously:
   Do not try to solder the wires onto the small LEDs yourself!!
8. In case a wire has broken off, please contact your local dealer who might still be able to save something before your try to fix it yourself and probably end up in a total economic loss.
9. The wire at the cathode or the negative pole is marked in black. The wire at the anode or the positive pole is a usual magnet wire. All these wires are insulated with a very resistant clear coat, so no extra insulation is necessary. At the LED, the wires have been cut as short as possible. At their other endings, the wires have already been pre-tinned and kept short on purpose. The pre-tinned parts are supposed to be embedded completely into the soldering points. If a tinned ending of a wire appears to be too long for a small soldering point, shorten it in the tinned area. As experience has shown, a 1,-1,5 mm ending of a wire is sufficient for a reliable solder connection.
10. If an overall shortening of the wire is necessary, no problem. It can be tinned again with a temperature of 350 degrees Celsius (662 degrees Fahrenheit), often a higher temperature is even better. With such thin wires, it can happen sometimes that due to a chemical process the wire does not directly burn when bein tinned, but simply disappears. This can easily be prevented by using copper-endowed solder. The wire at the LED should not be shorter than 10 – 15 mm, since otherwise when tinnig it the temperatures near the LED get too high.
11. The wires at each LED more or less have the same length, but due to manufacturing reasons, the wires at different LEDs can have a different length. However, this does not affect the installation or the subsequent operation.
12. The LEDs are particularly adapted and recommended for any kind of our lighting components. For those who want to build something themselves, here are the technical technical data:
    voltage 1,8 volt, current 1,5 mA, design 0402, lighting color red
    voltage 1,9 volt, current 1,5 mA, design 0402, lighting color yellow
    voltage 2,9 volt, current 2,0 mA, design 0603, lighting color white, absolutely without any bluish cast.
13. High Tech Modellbahnen manufactures its products with the greatest possible care. We issue a guarantee and warranty according to legal regulation. Should you find any new product you just bought defective, please contact your local dealer.

And now, enjoy working with your new micro LEDs!

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