

# LED Interior Lighting Sets

## Instruction Manual

50700 (255mm) warm-white

50702 (255mm) yellow

Manual version 1.0

December 2010



# Interior Lighting Sets

## General Features

The ESU LED Interior lighting set uses the most contemporary technique to supply its 11 yellow or warm-white light-emitting diodes (LEDs) with a constantly smooth and warm light. Thanks to its small measurements it is universally usable for gauges 0 to G.

The following features make the ESU Interior lighting sets so special:

- Pre-installed constant voltage source for a constantly bright and even light, independent of the track voltage.
- Individually adjustable brightness.
- The lighting boards can be cut off arbitrarily to fit the cars of all manufacturers.
- An installed buffer capacitor bridges small current interruptions.

- To bridge prolonged power interruptions a „PowerPack“ energy storage (ESU art.no. 50706) can be optionally connected.
- Each Interior lighting set comes with a red taillight.
- Appropriate for DC and AC layouts as well as digital voltage.

# Interior Lighting Sets

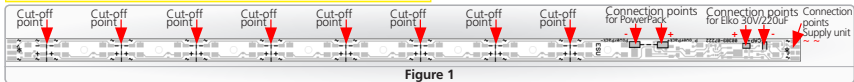
## Warning Notices - Please read before use

- The LED Interior lighting sets are exclusively intended for the use with electrical model train layouts.
- The supply voltage must be switched off any time while connection work is carried out!
- When connecting the lighting sets please always stick to the principles expressed here in this manual.
- Protect from humidity! Please do not unnecessarily bend the lighting boards to avoid damage.
- The colour and the brightness of the LEDs may vary a little within the framework of manufacturer's tolerances.

## Installation

First of all the lighting board should be shortened to the required length. In order to do so break off the lighting board by hand at one of the pre-carved and marked cut-off points (as shown in figure 1). When breaking off the board please make sure that none of the components and conducting paths will be damaged; the circuit board is meant to break at the exact desired point! Alternatively, you can use a saw.

Oddments can be connected to other interior lighting sets, provided that the maximum of 11 LEDs is not exceeded.



# Interior Lighting Sets

If not needed, remove the taillights

You might need to shorten the soldered supplying cables to the required length. All left and right terminal points on the lighting board are already connected with each other. Therefore one cable per side is sufficient. One side will be connected with the left collector (respectively with the wagon ground of Märklin® models), the other side with the right collector of the wagon (respectively with the middle conductor of Märklin® models). Polarity is not important, every lighting board has an intern rectifier.

If your waggons have current-carrying couplers connect the two supplying circuits alternatively with the coupler contacts.

Fix the lighting boards under the carriage roof with double-faced adhesive tape. Alternatively you may

sweep the interior equipment for appropriate anchorage points. In many cases toilet facilities / rest rooms are perfectly suitable for this purpose.

## **Brightness adjustment**

Via the potentiometer as shown in figure 2 the brightness of the yellow and white LEDs can be individually adjusted, as desired.

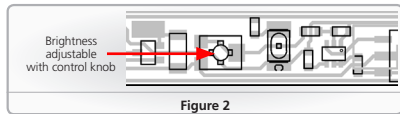


Figure 2

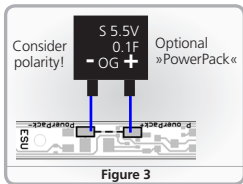
# Interior Lighting Sets

## PowerPack

If you wish to have the lighting functions maintained during a longer-lasting current interruption (e.g. in front of red signals) you are able to connect a separately available energy storage (ESU art.no. 50706).

Figure 3 shows the according connection points marked with "PowerPack+" and "PowerPack-".

Please consider the correct polarity as otherwise the storage capacitor could be destroyed!



## Taillight

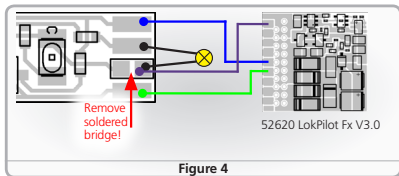
The taillight can be used on both ends of the lighting board. Please consider the correct polarity when soldering the wires.

## Digital operation

If you wish to switch the circuit board digitally (e.g. with a LokPilot Fx V3.0) you simply need to connect the blue wire with the left supply connection and the green wire (AUX1) with the right supply connection (compare figure 4).

To be able to switch the taillight separately you need to solder the violet wire of the decoder (AUX2) to the highlighted point in figure 3 and remove the present solder point.

# Interior Lighting Sets



## Technical data

Supply voltage	4-24V = / ~
Constant brightness	from 6V
Current consumption	50700: max. 25mA
	50702: max. 35mA
Dimensions	255mm x 7mm