# startube 4 HiRes

## 120cm (4x36 Watt) incl. startube 4 Splitter

# Instruction Manual

from software version 4.1

(Instruction version 1.1)

GERMAN LIGHT PRODUCTS

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# 1 Description of Device and Functions

- The startube 4 HiRes is a fluorescent tube lighting concept for professional architecture and stage lighting.
- The system consists of 4x T8 fluorescent tubes 36W in the colors red, green, blue and white.
- Each of the 4 tubes of the startube 4 HiRes is individually controllable over a DMX-512 channel.
- Internal high resolution control electronics allows a continuously and smooth dimming between 0% and 100%.
- By means of additive color mixing with a very high resolution, one receives a homogeneous color mixing behavior with very high luminous efficiency.
- Moreover the tubes show a very fast responding behavior, with which the system suits also application like fast running light programs and stroboscope-similar effects.
- In Seven-Channel-Mode the possibility exists to turn off the pre-heating of the tubes, to choose between two dimmer curves, to turn on a stroboscope effect and to regulate the maximum brightness of all tubes.
- The DMX start address is adjusted simply over keys at the system and directly indicated over the display. In Seven-Channel-Mode the Display goes out 10 seconds after the last key press to enable operation in darker settings.
- The mode switchover takes place by pushing two keys of the Display simultaneously. (100 and 10: Four-Channel-Mode, 100 and 1: Seven-Channel-Mode )
- The fourth fluorescent tube serves the background brightness increase in the white color. Furthermore also the possibility exists to exchange this tube by another color to obtain there a higher brightness.
- A further advantage is the lockable single-connector-system and the very low power consumption, which is reached by a very good compensation. Thus it is possible to attach up to 15 startube 4 HiRes in a row connected to one startube 4 **Splitter** at each single 16A phase.
- Integrated threaded bushes M10 for a clamp, a CAMLOC quick-lock-system, a fitting for a safety rope and the removable feet simplifying the handling within the tour exercise.

- By the possibility to mount the devices both, lengthwise as well as in transversal direction without any gaps, large coherent shining surfaces can be constructed.
- As accessories, cable connections are available in the lengths 1m, 2m, 5m, 10m and 20m.

## 1.1 Safety Instructions

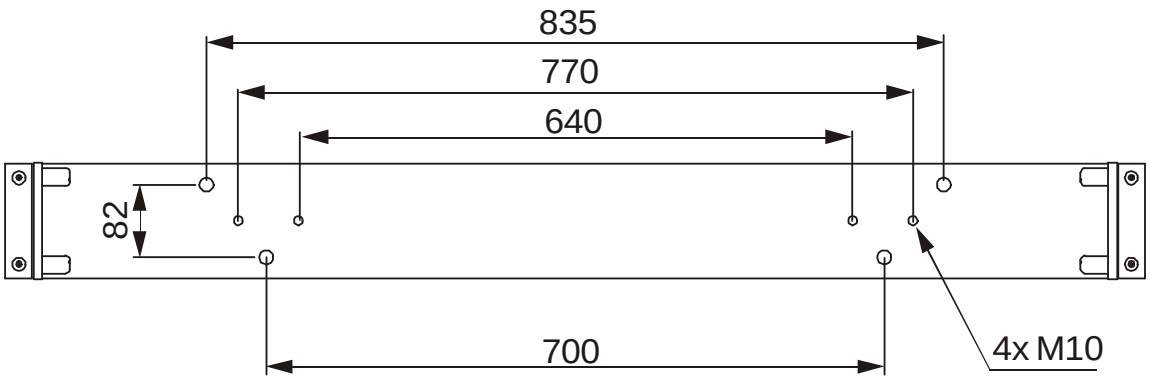
The startube 4 HiRes is a High-Tech product. To guarantee a smooth operation it is necessary to keep the following rules.
The manufacturer of this device will not take responsibility of damages through disregard of the information given in this manual. Warranty adjustments will be canceled.

1. Never try to repair or to dismantle the startube 4 HiRes yourself. Opening the internal housing can lead to current impacts or other injuries. Turn for arising problems always to an authorized specialist dealer or directly to GLP.
2. The startube 4 HiRes is exclusively meant for the use in the internal area. Never use or store the system out of doors.
3. When installation the devices attention is to be paid to a sufficient temperature heat sink. Take advised from the GLP - support if an installation in restrained or badly ventilated conditions is planned.
4. Protect the equipment against humidity and wetness as well as against increased vibrations.
5. **Unplug the startube 4 HiRes from the AC outlet before any service.**
6. To allow a secure operation, follow also the installation guide described in chapter 2.1. Operating the startube 4 HiRes without suited safety aids like Safety cables or clamps/hooks can increase the risk of accident.
7. The installation should be done by qualified staff only. You need to pay attention to the common rules of technology that are not explicit mentioned in this manual.
8. Use only original spare parts. Any structural modification will cancel all warranty adjustments.

# 2 Preparation and Installation

## 2.1 Mounting

The startube 4 HiRes can be mounted in any arbitrary position without any gaps. To ensure a safe installation under all circumstances, the system offers various possibilities like screw-on standings and assembly angle, different attaching by means of a hook, classical M10 hook or CAMLOC quick-lock-systems.




## 2.2 Secure the startube 4 HiRes

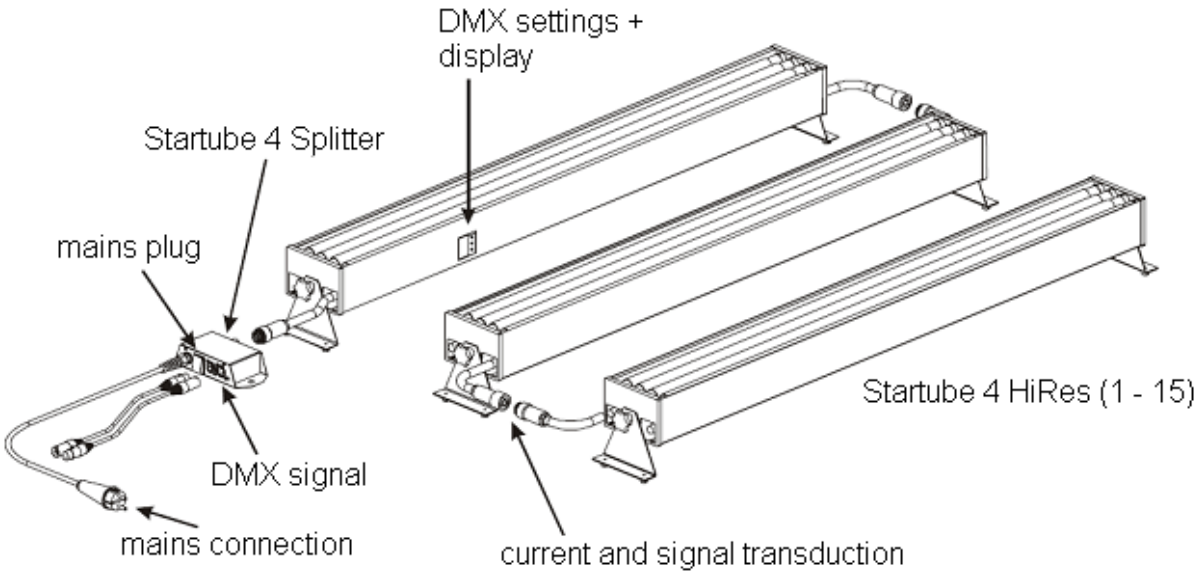
Regardless of the rigging of the startube 4 HiRes you have to use a stipulated safety wire. Therefore you have to thread a safety wire through the intended application at the fixture and connect it with the truss-support. Pay attention to a safe and proper fastening.

**Pay attention to the regulations of: BGV C1 (former VBG 70) and DIN VDE 0711-217 !**
**The installation should be done by qualified staff only.**

## 2.3 Connections

You can connect up to 15 startube 4 HiRes in one row. The startube 4 **Splitter** is therefore connected to a single 16A phase. Also the DMX signal for all 15 startube 4 HiRes is attached directly to this device. Power and the DMX signal will be both transmitted over the multi-core cable, connected firmly with the system. For forwarding the power and DMX signal, differently manufactured cables are available as accessories.

**<u>During mounting and dismounting, the system must be disconnected from the mains supply. Otherwise the connectors can by damaged!</u>**



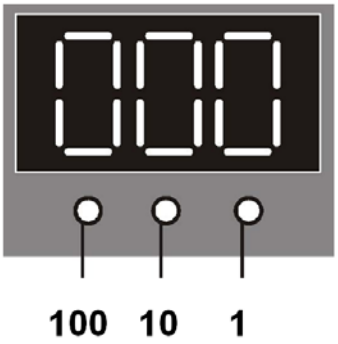

### 2.4 Adjust the DMX- Address

To adjust the DMX- (Start) Address please use the three keys underneath the display.

“Key 100” for the 100 digits.

“Key 10” for the 10 digits.

“Key 1” for the 1 digits. Counting upwards.




Each startube 4 HiRes unit uses four or seven DMX channels.

Channel 1 = white
Channel 2 = red
Channel 3 = green
Channel 4 = blue

*in Seven-channel-mode:*
Channel 5 = pre-heating off, dimmer curve selectable
Channel 6 = Stroboscope effect
Channel 7 = superior dimmer

**Example:**

| | *In Four-channel-mode* | *In Seven-channel-mode* |
|---|---|---|
| startube 4 HiRes no. 1 | DMX Channel 001 | DMX Channel 001 |
| startube 4 HiRes no. 2 | DMX Channel 005 | DMX Channel 008 |
| startube 4 HiRes no. 3 | DMX Channel 009 | DMX Channel 015 |

### 2.5 Channel configuration and operation mode

The startube 4 HiRes comes with two operation mode which vary in functionality and number of DMX channels. In the compatibility mode (Display Key 100 and 10 pushed simultaneously; Display shows “H0”) four DMX channels are needed. Thereby each channel controls the brightness of a tube. Thereby the pre-heating of the tubes is on durably.

In Seven-channel-mode (Display Key 100 and 1 pushed simultaneously; Display shows “H1”) channel 5 is intended to be used to turn of the pre-heating of the tubes and choose between old and new dimmer curve. Channel 6 conduces to adjust the stroboscope effect. Channel 7 controls the maximum brightness of all tubes. Thereby the brightness depends on the settings of channel 1-4.

### 2.6 DMX-Table

| | |
|---|---|
| Channel 1 | Brightness of the first tube in 255 steps |
| Channel 2 | Brightness of the second tube in 255 steps |
| Channel 3 | Brightness of the third tube in 255 steps |
| Channel 4 | Brightness of the fourth tube in 255 steps |
| In Seven-channel-mode | |
| Channel 5 | 0-99 linear dimmer curve<br>100-199 dimmer curve softer in lower sector<br>200-255 pre-heating of the tubes off |
| Channel 6 | 0-15 tubes OFF<br>16-239 strobe; frequency: 0.2Hz - 50Hz<br>240-255 tubes ON |
| Channel 7 | Maximum brightness of all tubes in 255 steps |

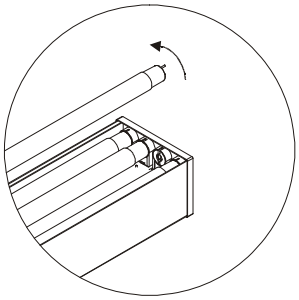
## 3 Operating

During operating the startube 4 HiRes the following points are to be considered:

a) After the system is switched on, the tubes need a certain time (a few minutes) to reach their operating temperature. Easy flickering is not to be avoided in this time.

b) After this period the system should operate smooth. If you have still those flickering and glowing effects at DMX value 000, please turn around the main plug at the startube 4 **Splitter** by 180° (zero-lead and phase exchange).

# 4 Maintenance / Tube change



Dependent on the operating conditions you should clean the startube 4 HiRes in regular intervals. Make sure that the system is disconnected from the mains supply. The housing can simply be cleaned with a dampish cloth. The fluorescent tubes should be abraded with a lint-free cloth very carefully. For your own protection it is recommendable to wear safety gloves. To change a fluorescent tube turns it carefully by approx. 90° in the socket. For this e.g. loop a narrow band leather around the tube ends and slue it around carefully.

If the vertical slot of the socket is visible the tube can be then removed. Insert the tube in reverse order again.

**New tubes should be operated approx. 100 hours for reaching an optimal operational behavior on full efficiency.**

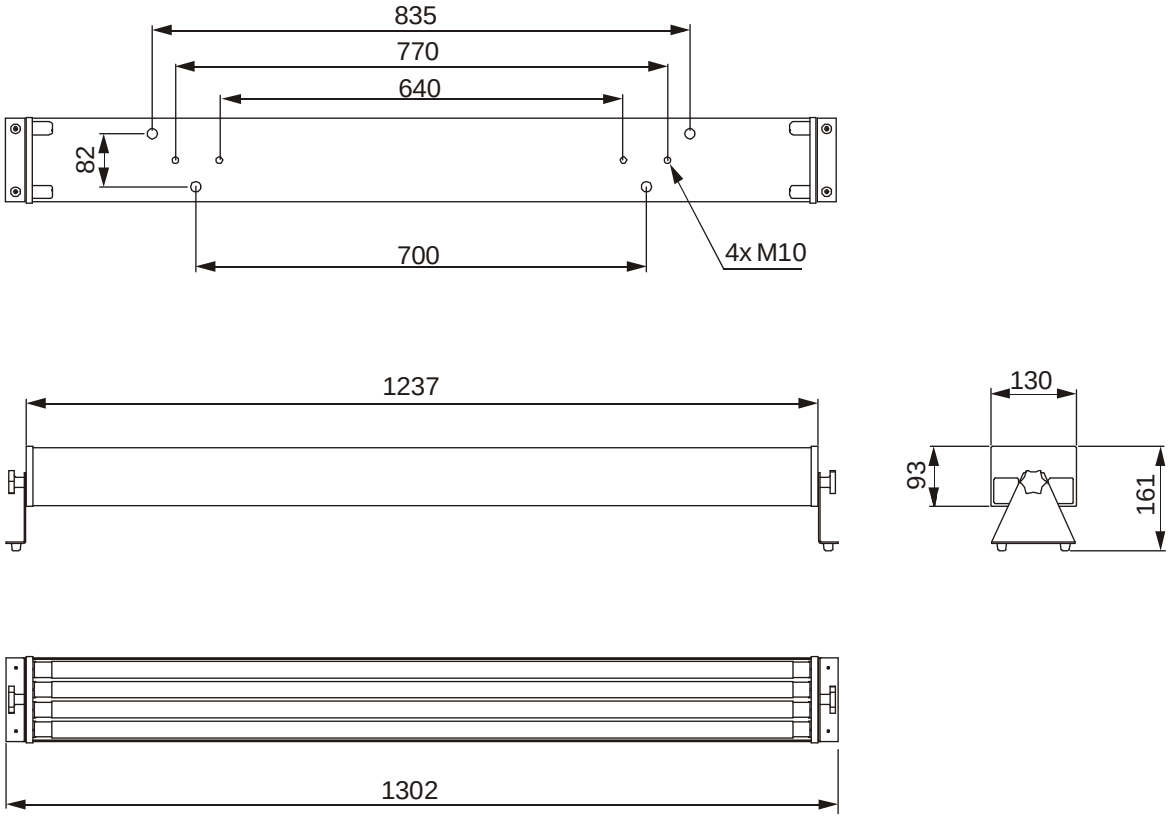
**Only fluorescent tubes of the type T8, 36W must be used!**

# 5 Technical Specification

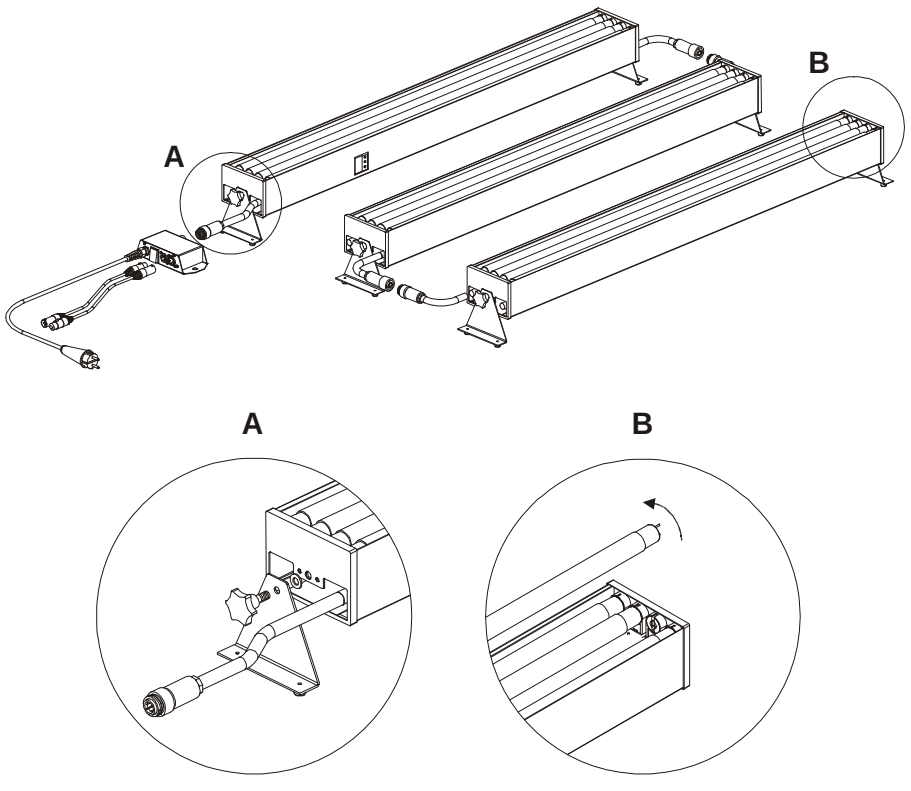
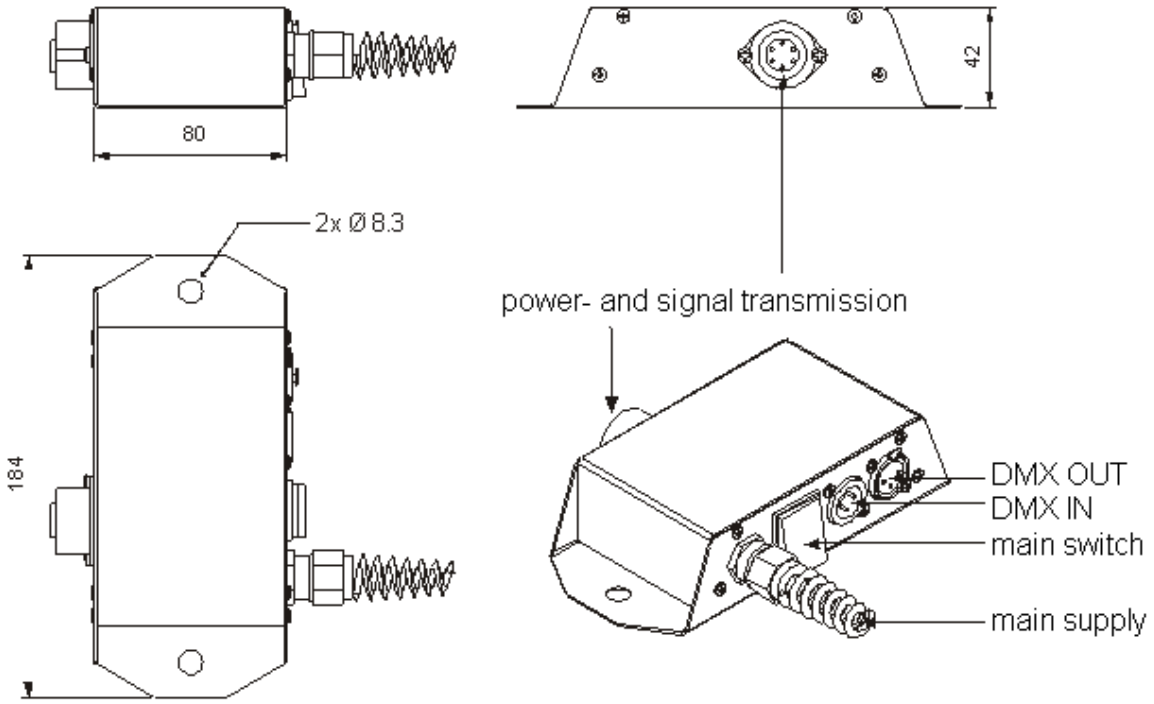
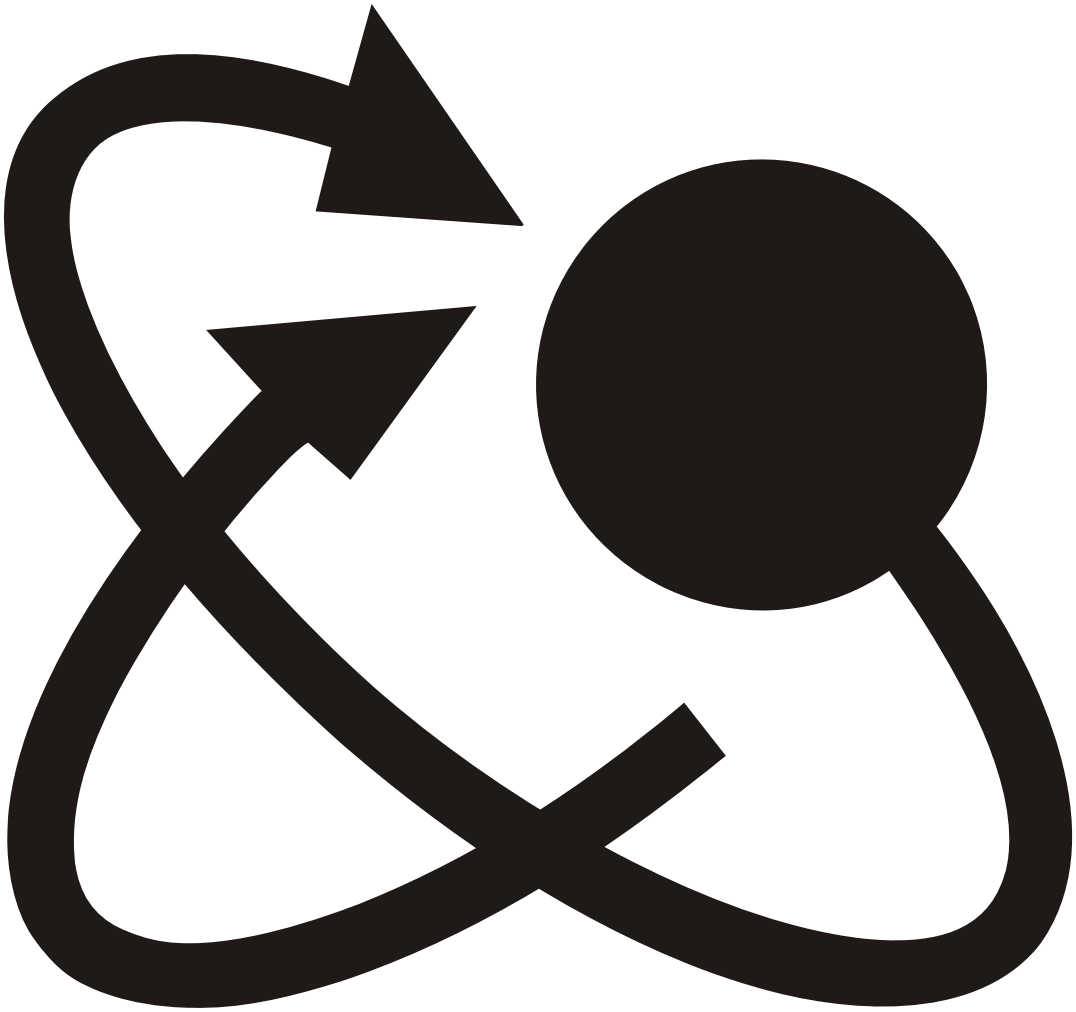
## 5.1 Startube 4 HiRes

| | |
|---|---|
| **Power consumption** | each system 4x T8 fluorescent tubes 36W |
| **RGB- Color mixing system** | red, green, blue, white |
| **DMX-512 control** | 4 DMX channels each 0-100% dimming |
| **max. ambient temperature** | 45°C |
| **Dimensions WxLxH** | 1237mm x 133mm x 104mm<br>(with mounted feet +65mm) |
| **Weight** | 11 kg |
| **CAMLOC- quick-lock-systems** | |
| **Connecting system over multi-core cables and startube 4 Splitter system** | |

## 5.2 Assembly and dimensions




## 5.3 General view



## 5.4 Accessory: startube 4 Splitter