

## USER MANUAL

# eurolite®

## TB-250 DMX-Barrel-Effect



### CAUTION!

Keep this device away from rain and moisture!  
Unplug mains lead before opening the housing!

For your own safety, please read this user manual carefully before you initially start-up.

Every person involved with the installation, operation and maintenance of this device has to

- be qualified
- follow the instructions of this manual
- consider this manual to be part of the total product
- keep this manual for the entire service life of the product
- pass this manual on to every further owner or user of the product
- download the latest version of the user manual from the Internet

## INTRODUCTION

Thank you for having chosen a EUROLITE TB-250. You will see you have acquired a powerful and versatile device.

Unpack your TB-250.

## SAFETY INSTRUCTIONS



### CAUTION!

Be careful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching the wires!

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



### Important:

*Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.*

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Please make sure that there are no obvious transport damages. Should you notice any damages on the A/C connection cable or on the casing, do not take the device into operation and immediately consult your local dealer.

This device falls under protection-class I. The power plug must only be plugged into a protection class I outlet. The voltage and frequency must exactly be the same as stated on the device. Wrong voltages or power outlets can lead to the destruction of the device and to mortal electrical shock.

Always plug in the power plug last. The power plug must always be inserted without force. Make sure that the plug is tightly connected with the outlet.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution! Never touch them with wet hands, as this could lead to mortal electrical shock.

Never modify, bend, strain mechanically, put pressure on, pull or heat up the power cord. Never operate next to sources of heat or cold. Disregard can lead to power cord damages, fire or mortal electrical shock.

The cable insert or the female part in the device must never be strained. There must always be sufficient cable to the device. Otherwise, the cable may be damaged which may lead to mortal damage.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

If extension cords are used, make sure that the core diameter is sufficient for the required power consumption of the device. All warnings concerning the power cords are also valid for possible extension cords.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord. Otherwise, the cable or plug can be damaged leading to mortal electrical shock. If the power plug or the power switch is not accessible, the device must be disconnected via the mains.

If the power plug or the device is dusty, the device must be taken out of operation, disconnected and then be cleaned with a dry cloth. Dust can reduce the insulation which may lead to mortal electrical shock. More severe dirt in and at the device should only be removed by a specialist.

There must never enter any liquid into power outlets, extension cords or any holes in the housing of the device. If you suppose that also a minimal amount of liquid may have entered the device, it must immediately be disconnected. This is also valid, if the device was exposed to high humidity. Also if the device is still running, the device must be checked by a specialist if the liquid has reduced any insulation. Reduced insulation can cause mortal electrical shock.

There must never be any objects entering into the device. This is especially valid for metal parts. If any metal parts like staples or coarse metal chips enter into the device, the device must be taken out of operation and disconnected immediately. Malfunction or short-circuits caused by metal parts may cause mortal injuries.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

**Caution:** During the operation, the housing becomes very hot.

Do not switch the device on and off in short intervals as this would reduce the lamp's life.



**HEALTH HAZARD!**

**Never look directly into the light source, as sensitive persons may suffer an epileptic shock (especially meant for epileptics)!**

Keep away children and amateurs!  
Never leave this device running unattended.

## OPERATING DETERMINATIONS

This device is a lighting effect for creating decorative effects. This product is only allowed to be operated with an alternating voltage of 230 V, 50 Hz and was designed for indoor use only.

This device is designed for professional use, e.g. on stages, in discotheques, theatres etc.

Lighting effects are not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

Do not shake the device. Avoid brute force when installing or operating the device.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

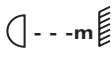
This device must never be operated or stockpiled in surroundings where splash water, rain, moisture or fog may harm the device. Moisture or very high humidity can reduce the insulation and lead to mortal electrical shocks. When using smoke machines, make sure that the device is never exposed to the direct smoke jet and is installed in a distance of 0.5 meters between smoke machine and device. The room must only be saturated with an amount of smoke that the visibility will always be more than 10 meters.

The ambient temperature must always be between  $-5^{\circ}\text{C}$  and  $+45^{\circ}\text{C}$ . Keep away from direct insulation (particularly in cars) and heaters.

The relative humidity must not exceed 50 % with an ambient temperature of  $45^{\circ}\text{C}$ .

This device must only be operated in an altitude between -20 and 2000 m over NN.

Never use the device during thunderstorms. Over voltage could destroy the device. Always disconnect the device during thunderstorms.

The symbol  determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than 0.5 meters.

This device is only allowed for an installation via the mounting bracket. In order to safeguard sufficient ventilation, leave 50 cm of free space around the device.

The housing must never touch surrounding surfaces or objects.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Always fix the fixture with an appropriate safety-rope.

The maximum ambient temperature  $T_a = 45^{\circ}\text{C}$  must never be exceeded.

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

Never use solvents or aggressive detergents in order to clean the device! Rather use a soft and damp cloth.

Please use the original packaging if the device is to be transported.

Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

Never remove the serial barcode from the device as this would make the guarantee void.

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc.

## DESCRIPTION OF THE DEVICE

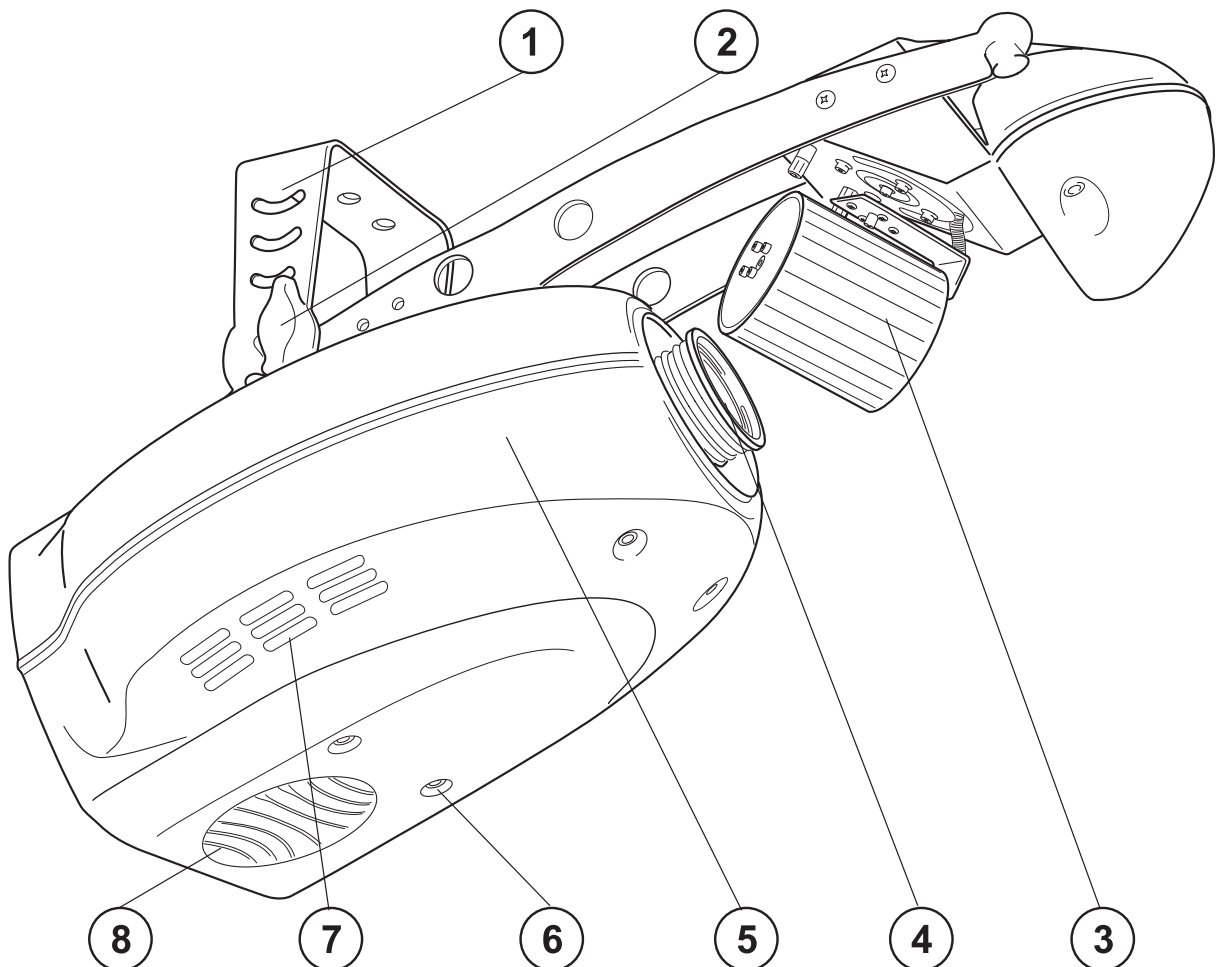
### Features

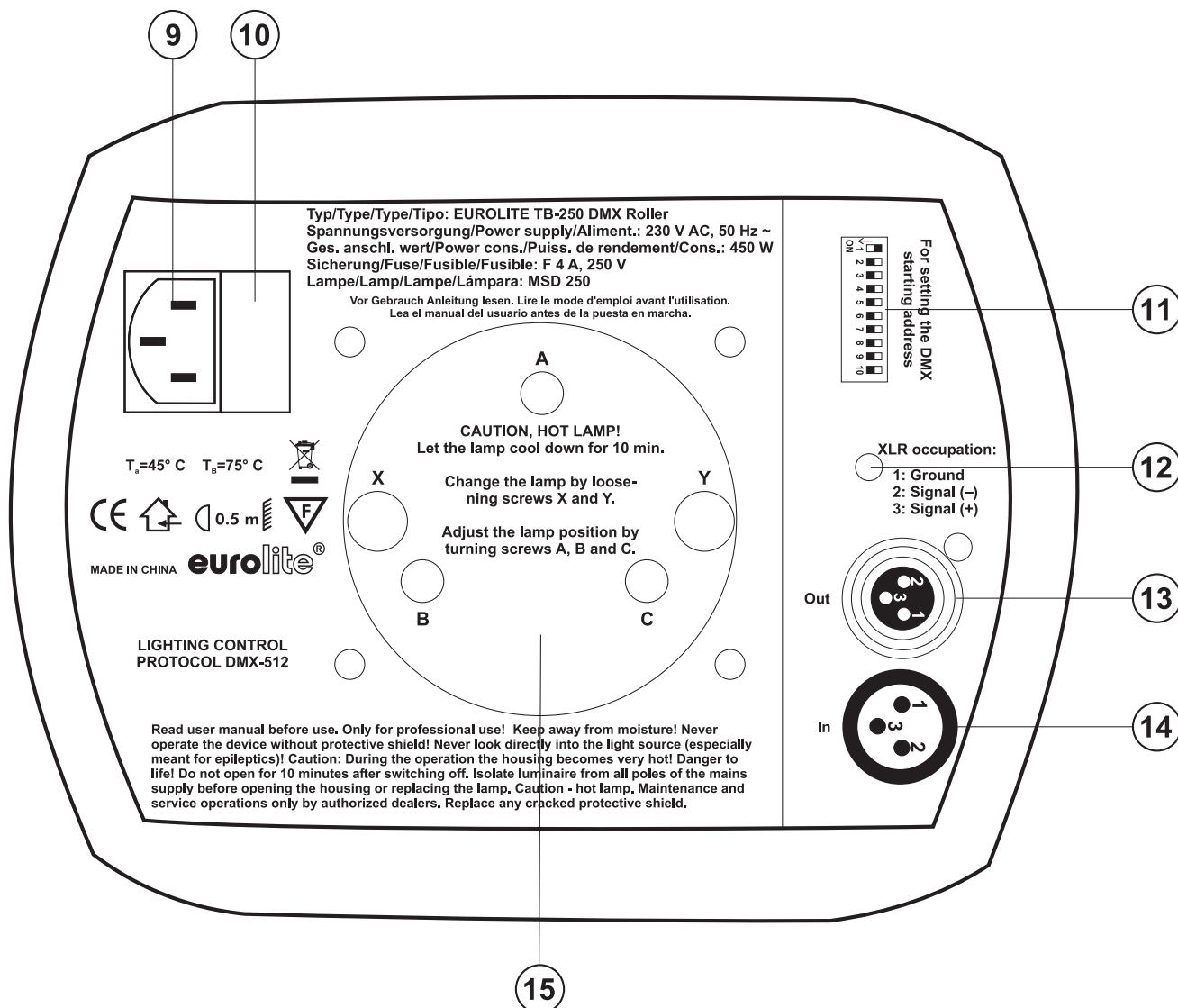
#### Powerful barrel-effect for MSD-lamp

- DMX-controlled operation or stand alone operation with Master/Slave-function
- For bright MSD discharge lamp
- Colour-wheel with 12 dichroic colour-filtres, 2 bi-colour-filters and white
- Gobo-wheel with 14 gobos and open
- Manual focus
- Strobe-effect with adjustable speed (1-7 flashes/sec.)
- DMX-control via every standard DMX-controller
- 5 DMX-control-channels required
- Sound-controlled via built-in microphone
- 5 high-quality stepping-motors
- Suitable EUROLITE controllers: DMX Operator

### Overview

- (1) Mounting bracket
- (2) Fixation screw
- (3) Mirrored cylinder
- (4) Objective-lens/Focus
- (5) Housing cover
- (6) Housing screws
- (7) Venting slots
- (8) Ventilation fan





- (9) Power supply
- (10) Fuseholder
- (11) DIP-switches
- (12) Control LED
- (13) DMX-Out socket
- (14) DMX-In socket
- (15) Lamp system

## INSTALLATION

### Installing/Replacing the lamp



#### **DANGER TO LIFE!**

Only install the lamp with the device switched off!  
 Unplug from mains before!

For the installation, you need one MSD/HSD 200 GY-9.5, MSD/HSD 250 GY-9.5 or MSD 250/2 GY-9.5 lamp.

The lamp must only be changed when wearing appropriate protective clothing (protection glasses, protection gloves, helmet with sight, leather apron).

**CAUTION!**

The lamp has to be replaced when it is damaged or deformed due to the heat!

The lamp life given by the manufacturer must never be exceeded. This is why you need to take notes on the operational time of the lamp and replace the lamp in time.

Keep exchanged lamp in a protective container and remove accordingly.

During the operation, the lamp reaches temperatures of up to 600° C.

**Before replacing the lamp, unplug mains lead and let the lamp cool down (approx. 10 minutes).**

During the installation do not touch the glass-bulbs bare-handed! Please follow the lamp manufacturer's notes!

Do not install lamps with a higher wattage! Lamps with a higher wattage generate temperatures the device was not designed for. Damages caused by non-observance are not subject to warranty.

**Procedure:**

**Step 1:** Unscrew the fixation screws X, Y of the lamp system and carefully remove it from the housing.

**Step 2:** If replacing the lamp, remove the old lamp from the lamp holder.

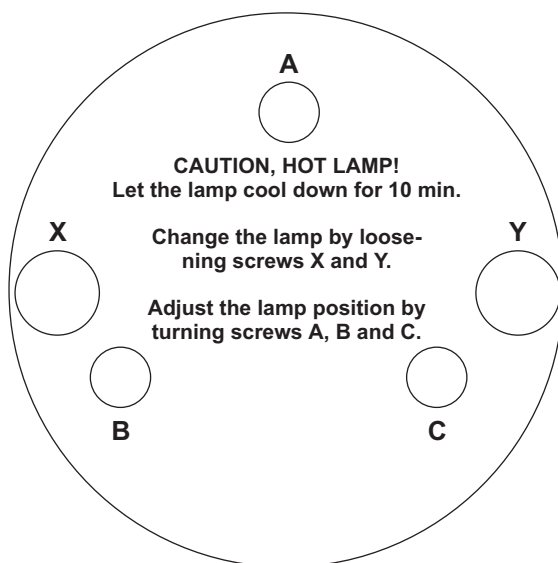
**Step 3:** Insert the lamp into the lamp holder.

**Step 4:** Replace the lamp system in the housing and tighten the fixation screws.

**Step 5:** Adjust the lamp as described under lamp adjustment.



Do not operate this device with opened cover!

**Lamp adjustment**

The lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance.

Strike the lamp, open the shutter and the iris, set the dimmer intensity onto 100 % and focus the light on a flat surface (wall). Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws "A, B, C". Turn one screw at a time to drag the hot-spot diagonally across the projected image. If you cannot detect a hot-spot, adjust the lamp until the light is even.

To reduce a hot-spot, pull the lamp in by turning all three screws "A, B, C" clockwise ¼-turn at a time until the light is evenly distributed.

If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. "Push" the lamp out by turning the screws "A, B, C" counterclockwise ¼-turn at a time the light is bright and evenly distributed.

## Overhead rigging



### **DANGER TO LIFE!**

Please consider the EN 60598-2-17 and the respective national norms during the installation! The installation must only be carried out by an authorized dealer!

The installation of the device has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the device staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.

The operator has to make sure that safety-relating and machine-technical installations are approved by an expert after every four year in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

Machine-technical installations in the sense of these instructions are all technical installations and working material used for operating places of events and productions for scenery presentations.

### **Procedure:**

The device should be installed outside areas where persons may walk by or be seated.

**IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE**, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the device. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and or damage to property.

The device has to be installed out of the reach of people.

If the device shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The device must never be fixed swinging freely in the room.

**Caution:** Devices in hanging installations may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the device!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the device's weight.



### **DANGER OF FIRE!**

When installing the device, make sure there is no highly-inflammable material (decoration articles, etc.) within a distance of min. 0.5 m.

Mount the device to your trussing system using an appropriate clamp.

For overhead use, always install a safety-rope that can hold at least 12 times the weight of the fixture. You must only use safety-ropes with quick links with screw cap. Lead the safety-rope through the mounting-

bracket of the device and over the trussing system or a safe fixation spot. Insert the end in the quick link and tighten the safety screw.

The maximum drop distance must never exceed 20 cm.

A safety rope which already hold the strain of a crash or which is defective must not be used again.

Adjust the desired inclination-angle via the mounting-bracket and tighten the fixation screws.



### DANGER TO LIFE!

Before taking into operation for the first time, the installation has to be approved by an expert!

## Master/Slave-operation

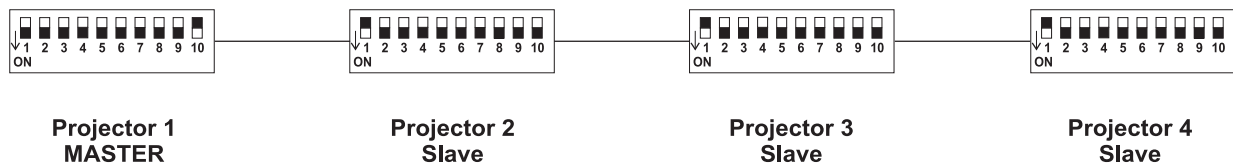
The master/slave-operation enables that several devices can be synchronized and controlled by one master-device.

On the rear panel of the TB-250 you can find an XLR-jack (DMX Out) and an XLR-plug (DMX In), which can be used for connecting several devices.

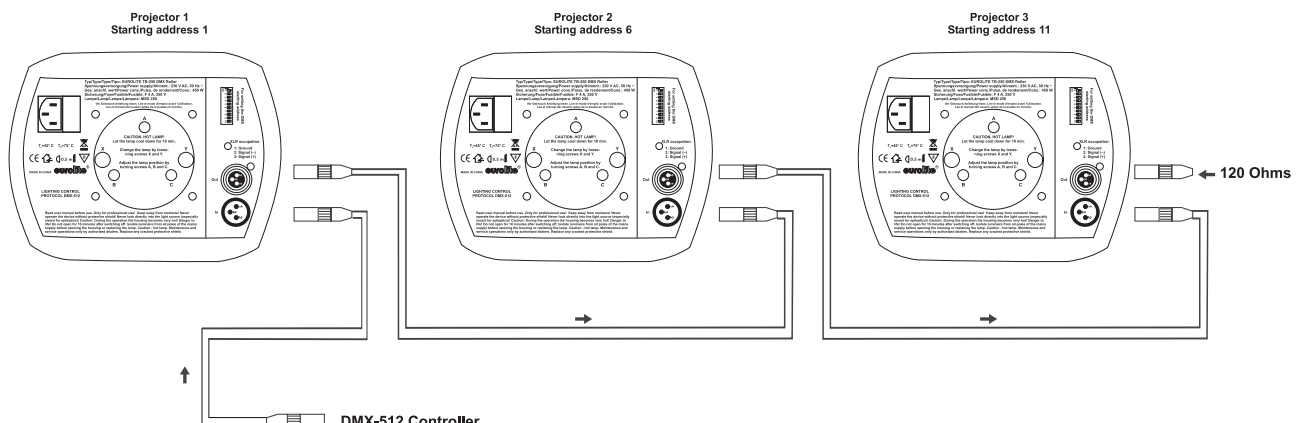
Choose the device which is to control the effects. This device then works as master-device and controls all other slave-devices, which are to be connected to the master-device via a balanced microphone lead. Connect the DMX OUT-jack with the DMX IN-plug of the next device.

Set DIP-switch No. 10 to On for the master-device. Set DIP-switch No. 1 to On for all slave-devices.

### Occupation of the DIP-switches:



## DMX-512 connection / connection between fixtures



The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.







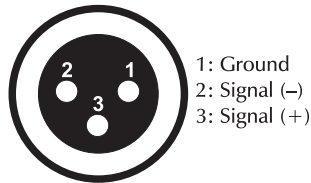
Please note, the starting address depends upon which controller is being used.



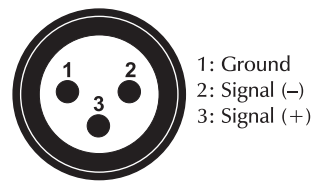
Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

#### Occupation of the XLR-connection:

**DMX-output**  
XLR mounting-socket:



**DMX-input**  
XLR mounting-plug:



If you are using controllers with this occupation, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

#### Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

**Caution:** At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120  $\Omega$  resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

### Addressing

Each projector occupies 5 channels. To ensure that the control signals are properly directed to each projector, the projector requires addressing. This is to be done for every single projector by changing the DIP switches as set out in this table.

The starting address is defined as the first channel from which the TB-250 will respond to the controller.

Please make sure that you don't have any overlapping channels in order to control each TB-250 correctly and independently from any other fixture on the DMX data link. If two, three or more TB-250 are addressed similarly, they will work similarly.


#### Occupation of the DIP-switches:

Setting the DMX-starting address:	DIP-switch no.	1	2	3	4	5	6	7	8	9
Projector number & channels	DMX-starting address	1	2	4	8	16	32	64	128	256
Device 1 - channels 1-5	On	▲								
	Off		▼	▼	▼	▼	▼	▼	▼	▼
Device 2 - channels 6-10	On		▲	▲						
	Off	▼			▼	▼	▼	▼	▼	▼
Device 3 - channels 11-15	On	▲	▲		▲					
	Off			▼		▼	▼	▼	▼	▼
Device 4 - channels 16-20	On					▲				
	Off	▼	▼	▼	▼		▼	▼	▼	▼
Device 5 - channels 21-25	On	▲		▲		▲				
	Off		▼		▼		▼	▼	▼	▼

## Connection with the mains

Connect the device to the mains with the enclosed power supply cable.

The occupation of the connection-cables is as follows:

Cable	Pin	International
Brown	Live	L
Blue	Neutral	N
Yellow/Green	Earth	

The earth has to be connected!

If the device will be directly connected with the local power supply network, a disconnection switch with a minimum opening of 3 mm at every pole has to be included in the permanent electrical installation.

The device must only be connected with an electric installation carried out in compliance with the IEC-standards. The electric installation must be equipped with a Residual Current Device (RCD) with a maximum fault current of 30 mA.

Lighting effects must not be connected to dimming-packs.

## OPERATION

After you connected the effect to the mains, the TB-250 starts running. During the Reset, the motors are trimmed and the device is ready for use within approximately 20 seconds.

Turn the objective-lens for adjusting the focus in order to obtain a sharp projection.

### Stand Alone operation

In the Stand Alone mode, the TB-250 can be used without controller. You can do without a controller as the TB-250 features a built-in microphone, which provides automatic sound control.

Disconnect the TB-250 from the controller and set all DIP-switches to Off.

### Call up the internal program

In order to call up the internal program, set DIP-switches No. 9 and 10 to On.

### Master/Slave-operation

Connect the master and slave-devices as described above and set the DIP-switches accordingly.

**Please note:** If you wish to change from one operating mode into another, you have to unplug the projector from the mains and plug it again.

### DMX-controlled operation

You can control the projectors individually via your DMX-controller. Every DMX-channel has a different occupation with different features.

### DMX-protocol

#### Control-channel 1 - Mirrored cylinder movement

Push slider up in order to move the mirrored cylinder.

Gradual mirrored cylinder adjustment from one end of the slider to the other (0-255, 128-center).

The mirrored cylinder can be stopped at any position you wish.

Decimal	Hexad.	Percentage	S/F	Feature
0 255	00 FF	0% 100%	F	Gradual adjustment of the mirrored cylinder position from left to right

**Control-channel 2 - Mirrored cylinder rotation**

Push slider up to rotate the mirrored cylinder.

Decimal	Hexad.	Percentage	S/F	Feature
0 4	00 04	0% 2%	S	No rotation
5 120	05 78	2% 47%	F	Forwards rotation with increasing speed
121 139	79 8B	47% 55%	S	No rotation
140 255	8C FF	55% 100%	F	Backwards rotation with increasing speed

**Control-channel 3 - Colour-wheel**

Linear colour change following the movement of the slider.

In this way you can stop the colour-wheel in any position.

Decimal	Hexad.	Percentage	S/F	Feature
0 17	00 11	0% 7%	S	Open / white
18 35	12 23	7% 14%	S	Red
36 53	24 35	14% 21%	S	Yellow
54 71	36 47	21% 28%	S	Violet
72 89	48 59	28% 35%	S	Green
90 107	5A 6B	35% 42%	S	Orange
108 125	6C 7D	42% 49%	S	Blue
126 143	7E 8F	49% 56%	S	Pink
144 161	90 A1	56% 63%	S	Light green
162 179	A2 B3	64% 70%	S	Light blue
180 197	B4 C5	71% 77%	S	Orange
198 215	C6 D7	78% 84%	S	Light yellow
216 233	D8 E9	85% 91%	S	Magenta
234 251	EA FB	92% 98%	S	Red/blue
252 255	FC FF	99% 100%	S	Yellow/green

**Control-channel 4 - Gobo-wheel**

Decimal	Hexad.	Percentage	S/F	Feature
0 17	00 11	0% 7%	S	Open
18 35	12 23	7% 14%	S	Gobo 1
36 53	24 35	14% 21%	S	Gobo 2
54 71	36 47	21% 28%	S	Gobo 3
72 89	48 59	28% 35%	S	Gobo 4
90 107	5A 6B	35% 42%	S	Gobo 5
108 125	6C 7D	42% 49%	S	Gobo 6
126 143	7E 8F	49% 56%	S	Gobo 7
144 161	90 A1	56% 63%	S	Gobo 8
162 179	A2 B3	64% 70%	S	Gobo 9
180 197	B4 C5	71% 77%	S	Gobo 10
198 215	C6 D7	78% 84%	S	Gobo 11
216 233	D8 E9	85% 91%	S	Gobo 12
234 251	EA FB	92% 98%	S	Gobo 13
252 255	FC FF	99% 100%	S	Gobo 14

**Control-channel 5 - Shutter, strobe**

Decimal	Hexad.	Percentage	S/F	Feature
0 14	00 0E	0% 5%	S	Shutter closed
15 29	0F 1D	6% 11%	S	No function (shutter open)
30 250	1E FA	12% 98%	F	Strobe-effect with increasing speed (max. 7 flashes/sec.)
251 255	FB FF	98% 100%	S	No function (shutter open)

## CLEANING AND MAINTENANCE

The operator has to make sure that safety-relating and machine-technical installations are inspected by an expert after every four years in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are inspected by a skilled person once a year.

The following points have to be considered during the inspection:

- 1) All screws used for installing the devices or parts of the device have to be tightly connected and must not be corroded.
- 2) There must not be any deformations on housings, fixations and installation spots (ceiling, suspension, trussing).
- 3) The electric power supply cables must not show any damages, material fatigue (e.g. porous cables) or sediments. Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.



### **DANGER TO LIFE!**

**Disconnect from mains before starting maintenance operation!**

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol or solvents!

The interior of the device should be cleaned at least annually using a vacuum-cleaner or an air-jet.

There are no serviceable parts inside the device except for the lamp and the fuse. Maintenance and service operations are only to be carried out by authorized dealers.

Please refer to the instructions under "Installing/Replacing the lamps".

### ***Replacing the fuse***

If the fine-wire fuse of the device fuses, only replace the fuse by a fuse of same type and rating.

**Before replacing the fuse, unplug mains lead.**

#### **Procedure:**

- Step 1:** Open the fuseholder on the rearpanel with a fitting screwdriver.
- Step 2:** Remove the old fuse from the fuseholder.
- Step 3:** Install the new fuse in the fuseholder.
- Step 4:** Replace the fuseholder in the housing.

Should you need any spare parts, please use genuine parts.

If the power supply cable of this device becomes damaged, it has to be replaced by a special power supply cable available at your dealer.

Should you have further questions, please contact your dealer.

## TECHNICAL SPECIFICATIONS

Power supply:	230 V AC, 50 Hz ~
Power consumption:	450 W
DMX-control-channels:	5
DMX-512-connection:	3-pin XLR
Sound-control:	via built-in microphone
Flash-rate:	1-7 Hz
Number of colours:	14 dichroic + white
Number of gobos:	14 gobos and open
Dimensions (LxWxH):	555 x 270 x 285 mm
Weight:	8.5 kg
Maximum ambient temperature $T_a$ :	45° C
Maximum housing temperature $T_B$ (steady state):	75° C
Min.distance from flammable surfaces:	0.5 m
Min.distance to lighted object:	0.5 m
Fuse:	F 4 A, 250 V
<b>Accessory:</b>	
OMNILUX OSD 90V/250W GY-9.5 2000h 6700K	No. 89106005
OSRAM HSD 250/60 90V/250W GY-9.5 2000h	No. 89106010
PHILIPS MSD250 90V/250W GY-9.5 2000h	No. 89106015
GE CSD250/2 95V/250W GY-9.5 2000h 8500K	No. 89106100
OMNILUX OSD 250/2 94V/250W 2000h 8000K	No. 89106105
PHILIPS MSD250/2 90V/250W GY-9.5 2000h	No. 89106115
SYLVANIA BA250/2 SE D 90V/250W GY-9.5	No. 89106120
OSRAM HSD250/80 90/250W GY9.5 3000h 8000K	No. 89106210
EUROLITE DMX Operator 192 Kanal	No. 70064520
EUROLITE DMX Scan Control 192 Kanal	No. 70064525
Wizard-512 USB DMX-Software + Interface	No. 51860102
Wizard-1024 USB DMX-Software + Interface	No. 51860110
FUTURELIGHT DES-3 DMX-terminator 3-pin	No. 51834001

**Please note: Every information is subject to change without prior notice. 06.02.2006 ©**